

# City of San Diego

CONTRACTOR'S NAME: Hazard Construction Company

ADDRESS: 6465 MarIndustry Drive, San Diego, CA 92121

TELEPHONE NO.: 858-587-3600 FAX NO.: 858-453-6034

CITY CONTACT: Michelle Muñoz, Contract Specialist, Email: MichelleM@sandiego.gov

Phone: (619) 533-3482, Fax No. (619) 533-3633

J. Sleiman / RWBustamante / Lad

## BIDDING DOCUMENTS



### ORIGINAL

### FOR

## BROWN FIELD AIRPORT (SDM) 8L/26R RUNWAY REHABILITATION PHASE III

BID NO.:	K-17-1575-DBB-3
SAP NO. (WBS/IO/CC):	B-16150
CLIENT DEPARTMENT:	2111
COUNCIL DISTRICT:	8
PROJECT TYPE:	AA

### THIS CONTRACT WILL BE SUBJECT TO THE FOLLOWING:

- > FEDERAL EQUAL OPPORTUNITY CONTRACTING REQUIREMENTS
- > PREVAILING WAGE RATES: STATE  FEDERAL
- > APPRENTICESHIP

### BID DUE DATE:

2:00 PM

JULY 11, 2017

CITY OF SAN DIEGO

PUBLIC WORKS CONTRACTS

1010 SECOND AVENUE, 14<sup>th</sup> 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:

Antone T. Fermela  
1) Registered Engineer

05/25/2017  
Date

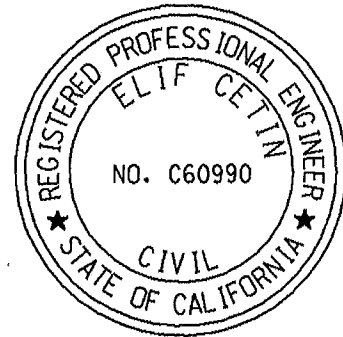
Seal:



Elif Cetin  
2) For City Engineer

5/31/2017  
Date

Seal:





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**NOTICE INVITING BIDS**

1. **SUMMARY OF WORK:** This is the City of San Diego's (City) solicitation process to acquire Construction services for **Brown Field Airport (SDM) 8L/26R Runway Rehabilitation Phase III**. For additional information refer to Attachment A.
2. **FULL AND OPEN COMPETITION:** This contract is open to full competition and may be bid on by Contractors who are on the City's current Prequalified Contractors' List. For information regarding the Contractors Prequalified list visit the City's web site: <http://www.sandiego.gov>.
3. **ESTIMATED CONSTRUCTION COST:** The City's estimated construction cost for this project is **\$5,461,000**.
4. **BID DUE DATE AND TIME ARE: JULY 11, 2017 at 2:00 PM**
5. **PREVAILING WAGE RATES APPLY TO THIS CONTRACT:** Refer to Attachment D.
6. **LICENSE REQUIREMENT:** The City has determined that the following licensing classification is required for this contract: **A**
7. **SUBCONTRACTING PARTICIPATION PERCENTAGES:** Subcontracting participation percentages apply to this contract.
  - 7.1 The City affirms that in any contract entered into pursuant to this advertisement, DBE firms will be afforded full opportunity to submit Bids in response to this invitation.
  - 7.2 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.
  - 7.3 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.
  - 7.4 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.
  - 7.5 **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:

1. DBE Percentage	26.9%
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The Contractor shall meet the Project specific goals for DBE's as outlined in the Specifications or satisfy GFE documentation requirements.

**7.6** Bid may be **declared non-responsive** if the Bidder fails any of the following conditions:

- I. Submission of GFE documentation, as specified in the Special Provisions.
- II. Attending the Pre-Bid Meeting.
- III. 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.

**8. PRE-BID MEETING:**

**8.1.** Prospective Bidders are required to attend the Pre-Bid Meeting. The purpose of the meeting is to discuss the scope of the Project, submittal requirements, the pre-qualification process and any Equal Opportunity Contracting Program requirements and reporting procedures. To request a sign language or oral interpreter for this visit, call the Public Works Contracts Division at (619) 533-3450 at least 5 Working Days prior to the meeting to ensure availability. Failure to attend the Mandatory Pre-Bid Meeting may result in Bid being deemed non-responsive. The Pre-Bid meeting is scheduled as follows:

Date: **JUNE 21, 2017**  
Time: **10:00 AM**  
Location: **1010 Second Avenue, Suite 1400, San Diego, CA 92101 (Large Conf. Room)**

Attendance at the Pre-Submittal Meeting will be evidenced by the Bidder's representative's signature on the attendance roster. It is the responsibility of the Bidder's representative to complete and sign the attendance roster.

**Bidders may not be admitted after the specified start time of the mandatory Pre-Bid Meeting.**

**9. AWARD PROCESS:**

**9.1.** The Award of this contract is contingent upon the Contractor's compliance with all conditions of Award as stated within these documents and within the Notice of Intent to Award.

**9.2.** Upon acceptance of a Bid, the City will prepare contract documents for execution within approximately 21 days of the date of the Bid opening. The City will then award the Contract within approximately 14 days of receipt of properly signed Contract, bonds, and insurance documents.

- 9.3. This contract will be deemed executed and effective only upon the signing of the Contract by the Mayor or his designee and approval as to form the City Attorney's Office.
- 9.4. The low Bid will be determined by the Base Bid alone.
- 9.5. Once the low bid has been determined, the City may, at its sole discretion, award the contract for the Base bid alone.

**10. SUBMISSION OF QUESTIONS:**

- 10.1. The Director (or Designee) of 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. Any questions related to this solicitation shall be submitted to:

Public Works Contracts  
1010 Second Avenue, 14<sup>th</sup> Floor  
San Diego, California, 92101  
Attention: **Michelle Muñoz**

OR:

[MichelleM@sandiego.gov](mailto:MichelleM@sandiego.gov)

- 10.2. Questions received less than 14 days prior to the date for opening of Bids may not be considered.
- 10.3. Questions or clarifications deemed by the City to be material shall be answered via issuance of an addendum and posted to the City's online bidding service.
- 10.4. Only questions answered by formal written addenda shall be binding. Oral and other interpretations or clarifications shall be without legal effect. It is the Bidder's responsibility to be informed of any addenda that have been issued and to include all such information in its Bid.

## INSTRUCTIONS TO BIDDERS

### 1. PREQUALIFICATION OF CONTRACTORS:

- 1.1. Contractors submitting a Bid must be pre-qualified for the total amount proposed, including 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 may be deemed **non-responsive** and ineligible for award. Complete information and links to the on-line prequalification application are available at:

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

- 1.2. The completed application must be submitted online no later than 2 weeks prior to the bid opening. For additional information or the answer to questions about the prequalification program, contact David Stucky at 619-533-3474 or [dstucky@sandiego.gov](mailto:dstucky@sandiego.gov).
- 1.3. Due to the City's responsibility to protect the confidentiality of the contractors' information, City staff will not be able to provide information regarding contractors' prequalification status over the telephone. Contractors may access real-time information about their prequalification status via their vendor profile on [PlanetBids™](#).

2. **ELECTRONIC FORMAT RECEIPT AND OPENING OF BIDS:** Bids will be received in electronic format (eBids) EXCLUSIVELY at the City of San Diego's electronic bidding (eBidding) site, at: <http://www.sandiego.gov/cip/bidopps/index.shtml> and are due by the date, and time shown on the cover of this solicitation.

- 2.1. **BIDDERS MUST BE PRE-REGISTERED** with the City's bidding system and possess a system-assigned Digital ID in order to submit and electronic bid.
- 2.2. The City's bidding system will automatically track information submitted to the site including IP addresses, browsers being used and the URLs from which information was submitted. In addition, the City's bidding system will keep a history of every login instance including the time of login, and other information about the user's computer configuration such as the operating system, browser type, version, and more. Because of these security features, Contractors who disable their browsers' cookies will not be able to log in and use the City's bidding system.
- 2.3. The City's electronic bidding system is responsible for bid tabulations. Upon the bidder's or proposer's entry of their bid, the system will ensure that all required fields are entered. **The system will not accept a bid for which any required information is missing.** This includes all necessary pricing, subcontractor listing(s)

and any other essential documentation and supporting materials and forms requested or contained in these solicitation documents.

**2.4. BIDS REMAIN SEALED UNTIL BID DEADLINE.** eBids are transmitted into the City's bidding system via hypertext transfer protocol secure (https) mechanism using SSL 128-256 bit security certificates issued from Verisign/Thawte which encrypts data being transferred from client to server. Bids submitted prior to the "Bid Due Date and Time" are not available for review by anyone other than the submitter which has until the "Bid Due Date and Time" to change, rescind or retrieve its proposal should it desire to do so.

**2.5. BIDS MUST BE SUBMITTED BY BID DUE DATE AND TIME.** Once the bid deadline is reached, no further submissions are accepted into the system. Once the Bid Due Date and Time has lapsed, bidders, proposers, the general public, and City staff are able to immediately see the results on line. City staff may then begin reviewing the submissions for responsiveness, EOCB compliance and other issues. The City may require any Bidder to furnish statement of experience, financial responsibility, technical ability, equipment, and references.

**2.6. RECAPITULATION OF THE WORK.** Bids shall not contain any recapitulation of the Work. Conditional Bids may be rejected as being non-responsive. Alternative proposals will not be considered unless called for.

**2.7. BIDS MAY BE WITHDRAWN** by the Bidder only up to the bid due date and time.

**2.7.1. Important Note:** Submission of the electronic bid into the system may not be instantaneous. Due to the speed and capabilities of the user's internet service provider (ISP), bandwidth, computer hardware and other variables, it may take time for the bidder's submission to upload and be received by the City's eBidding system. It is the bidder's sole responsibility to ensure their bids are received on time by the City's eBidding system. The City of San Diego is not responsible for bids that do not arrive by the required date and time.

**2.8. ACCESSIBILITY AND AMERICANS WITH DISABILITIES ACT (ADA) COMPLIANCE:** To request a copy of this solicitation in an alternative format, contact the Public Works Contract Specialist listed on the cover of this solicitation at least five (5) working days prior to the Bid/Proposal due date to ensure availability.

### **3. ELECTRONIC BID SUBMISSIONS CARRY FULL FORCE AND EFFECT**

**3.1.** The bidder, by submitting its electronic bid, acknowledges that doing so carries the same force and full legal effect as a paper submission with a longhand (wet) signature.

- 3.2.** By submitting an electronic bid, the bidder certifies that the bidder has thoroughly examined and understands the entire Contract Documents (which consist of the plans and specifications, drawings, forms, affidavits and the solicitation documents), and that by submitting the eBid as its bid proposal, the bidder acknowledges, agrees to and is bound by the entire Contract Documents, including any addenda issued thereto, and incorporated by reference in the Contract Documents.
- 3.3.** The Bidder, by submitting its electronic bid, agrees to and certifies under penalty of perjury under the laws of the State of California, that the certification, forms and affidavits submitted as part of this bid are true and correct.
- 3.4.** The Bidder agrees to the construction of the project as described in Attachment "A-Scope of Work" for the City of San Diego, in accordance with the requirements set forth herein for the electronically submitted prices. The Bidder guarantees the Contract Price for a period of 120 days (90 days for federally funded contracts and contracts valued at \$500,000 or less) from the date of Bid opening. 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.
- 4. 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.
- 5. CONTRACTOR REGISTRATION AND ELECTRONIC REPORTING SYSTEM:**

  - 5.1.** Prior to the Award of the Contract or Task Order, you and your Subcontractors and Suppliers must register with the City's web-based vendor registration and bid management system. For additional information go to:  
  
<http://www.sandiego.gov/purchasing/bids-contracts/vendorreg.shtml>.
  - 5.2.** 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.



6. **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 7-6, "The Contractors Representative" in The GREENBOOK and 7-6.1 in The WHITEBOOK.
7. **PREVAILING WAGE RATES WILL APPLY:** Refer to Attachment D.
8. **SUBCONTRACTING PARTICIPATION PERCENTAGES:** Subcontracting participation percentages apply to this contract. Refer to Attachment E.
9. **INSURANCE REQUIREMENTS:**
  - 9.1. 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.
  - 9.2. 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.
10. **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") <a href="http://www.greenbookspecs.org/">http://www.greenbookspecs.org/</a>	2015	PWPI070116-01
City of San Diego Standard Specifications for Public Works Construction ("The WHITEBOOK")* <a href="https://www.sandiego.gov/publicworks/edocref/greenbook">https://www.sandiego.gov/publicworks/edocref/greenbook</a>	2015	PWPI070116-02
City of San Diego Standard Drawings* <a href="https://www.sandiego.gov/publicworks/edocref/standarddraw">https://www.sandiego.gov/publicworks/edocref/standarddraw</a>	2016	PWPI070116-03
Citywide Computer Aided Design and Drafting (CADD) Standards <a href="https://www.sandiego.gov/publicworks/edocref/drawings">https://www.sandiego.gov/publicworks/edocref/drawings</a>	2016	PWPI092816-04
California Department of Transportation (CALTRANS) Standard Specifications - <a href="http://www.dot.ca.gov/des/oe/construction-contract-standards.html">http://www.dot.ca.gov/des/oe/construction-contract-standards.html</a>	2015	PWPI092816-05
CALTRANS Standard Plans <a href="http://www.dot.ca.gov/des/oe/construction-contract-standards.html">http://www.dot.ca.gov/des/oe/construction-contract-standards.html</a>	2015	PWPI092816-06
California Manual on Uniform Traffic Control Devices Revision 1 (CA MUTCD Rev 1) - <a href="http://www.dot.ca.gov/trafficops/camutcd/">http://www.dot.ca.gov/trafficops/camutcd/</a>	2014	PWPI092816-07
<b>NOTE:</b> *Available online under Engineering Documents and References at: <a href="http://www.sandiego.gov/publicworks/edocref/index.shtml">http://www.sandiego.gov/publicworks/edocref/index.shtml</a>		

11. **CITY'S RESPONSES AND ADDENDA:** The City, at its discretion, may respond to any or all questions submitted in writing via the City's eBidding web site in the **form of an addendum**. No other responses to questions, oral or written shall be of any force or effect with respect to this solicitation. The changes to the Contract Documents through addenda are made effective as though originally issued with the Bid. The Bidders shall acknowledge the receipt of Addenda at the time of bid submission.
12. **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.
13. **CONTRACT PRICING:** This solicitation is for a Lump Sum contract with Unit Price provisions as set forth herein. The Bidder agrees to perform construction services for the City of San Diego in accordance with these contract documents for the prices listed below. The Bidder further agrees to guarantee the Contract Price for a period of 120 days from the date of Bid opening. The duration of the Contract Price guarantee may be extended, by mutual consent of the parties, by the number of days required for the City to obtain all items necessary to fulfill all contractual conditions.
14. **SUBCONTRACTOR INFORMATION:**
- 14.1. **LISTING OF SUBCONTRACTORS.** In accordance with the requirements provided in the "Subletting and Subcontracting Fair Practices Act" of the California Public Contract Code, the Bidder shall provide the **NAME** and **ADDRESS** of each Subcontractor who will perform work, labor, render services or who 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 state within the description, whether the subcontractor is a **CONSTRUCTOR, CONSULTANT** or **SUPPLIER**. The Bidder shall further state within the description, the **PORION** of the work which will be performed 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 may 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 for which Bidders are seeking recognition towards achieving any mandatory, voluntary (or both) subcontracting participation goals.

- 14.2. LISTING OF SUPPLIERS.** Any Bidder seeking the recognition of Suppliers of equipment, materials, or supplies obtained from third party Suppliers towards achieving any mandatory or voluntary (or both) subcontracting participation goals shall provide, at a minimum, the **NAME, LOCATION (CITY)** and the **DOLLAR VALUE** of each supplier. The Bidder will be credited up to 60% of the amount to be paid to the Suppliers for materials and supplies unless vendor manufactures or substantially alters materials and supplies, in which case, 100% will be credited. The Bidder is to indicate within the description whether the listed firm is a supplier or manufacturer. If no indication is provided, the listed firm will be credited at 60% of the listed dollar value for purposes of calculating the Subcontractor Participation Percentage.
- 14.3. LISTING OF SUBCONTRACTORS OR SUPPLIERS FOR ALTERNATES.** For subcontractors or suppliers to be used on additive or deductive alternate items, in addition to the above requirements, bidder shall further note "ALTERNATE" and alternate item number within the description.
- 15. SUBMITTAL OF "OR EQUAL" ITEMS:** See Section 4-1.6, "Trade Names or Equals" in The WHITEBOOK and as amended in the SSP.
- 16. AWARD:**
- 16.1.** The Award of this contract is contingent upon the Contractor's compliance with all conditions precedent to Award.
- 16.2.** 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.
- 16.3.** This contract will be deemed executed and effective only upon the signing of the Contract by the Mayor or his designee and approval as to form the City Attorney's Office.
- 17. 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 not less than the specified amount. Failure to comply with this requirement shall render the bid **non-responsive** and ineligible for award.
- 18. 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.

19. **ONLY ONE BID PER CONTRACTOR SHALL BE ACCEPTED:** 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.
20. **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 within these documents.
21. **BIDDER'S GUARANTEE OF GOOD FAITH (BID SECURITY) FOR DESIGN-BID-BUILD CONTRACTS:**
- 21.1. For bids \$250,000 and above, bidders shall submit Bid Security at bid time. Bid Security shall be in one of the following forms: a cashier's check, or a properly certified check upon some responsible bank; or an approved corporate surety bond payable to the City of San Diego for an amount of not less than 10% of the total bid amount.
- 21.2. This check or bond, and the monies represented thereby, will be held by the City as a guarantee that the Bidder, if awarded the contract, will in good faith enter into the contract and furnish the required final performance and payment bonds.
- 21.3. The Bidder agrees that in the event of the Bidder's failure to execute this contract and provide the required final bonds, the money represented by the cashier's or certified check will remain the property of the City; and the Surety agrees that it will pay to the City the damages, not exceeding the sum of 10% of the amount of the Bid, that the City may suffer as a result of such failure.
- 21.4. At the time of bid submission, bidders must upload and submit an electronic PDF copy of the aforementioned bid security. Whether in the form of a cashier's check, a properly certified check or an approved corporate surety bond payable to the City of San Diego, the bid security must be uploaded to the City's eBidding system. Within twenty-four (24) hours after the bid due date and time, the first five (5) apparent low bidders must provide the City with the original bid security.
- 21.5. Failure to submit the electronic version of the bid security at the time of bid submission AND failure to provide the original within twenty-four (24) hours may cause the bid to be rejected and deemed **non-responsive**.

**22. AWARD OF CONTRACT OR REJECTION OF BIDS:**

- 22.1.** This contract may be awarded to the lowest responsible and reliable Bidder.
- 22.2.** Bidders shall complete ALL eBid forms as required by this solicitation. Incomplete eBids will not be accepted.
- 22.3.** The City reserves the right to reject any or all Bids, to waive any informality or technicality in Bids received, and to waive any requirements of these specifications as to bidding procedure.
- 22.4.** Bidders will not be released on account of their errors of judgment. Bidders may be released only upon receipt by the City within 3 Working Days of the bid opening, written notice from the Bidder which shows proof of honest, credible, clerical error of a material nature, free from fraud or fraudulent intent; and of evidence that reasonable care was observed in the preparation of the Bid.
- 22.5.** A bidder who is not selected for contract award may protest the award of a contract to another bidder by submitting a written protest in accordance with the San Diego Municipal Code.
- 22.6.** The City of San Diego will not discriminate in the award of contracts with regard to race, religion creed, color, national origin, ancestry, physical handicap, marital status, sex or age.
- 22.7.** Each Bid package properly signed as required by these specifications shall constitute a firm offer which may be accepted by the City within the time specified herein.
- 22.8.** The City reserves the right to evaluate all Bids and determine the lowest Bidder on the basis of the base bid and any proposed alternates or options as detailed herein.

**23. BID RESULTS:**

- 23.1.** The availability of the bids on the City's eBidding system 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 notation of such will be made on the eBidding system. The new ranking and apparent low bidder will be adjusted accordingly.
- 23.2.** To obtain the bid results, view the results on the City's web site, or request the results by U.S. mail and provide a self-addressed, stamped envelope. If requesting by mail, be sure to reference the bid name and number. The bid tabulations will be mailed to you upon their completion. The results will not be given over the telephone.

**24. THE CONTRACT:**

- 24.1.** 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.
- 24.2.** 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.
- 24.3.** 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.
- 24.4.** 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.
- 24.5.** 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 and approval as to form the City Attorney's Office. 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.

- 25. 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.

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

- 26.1.** The City of San Diego Resolution No. R-277952 adopted on May 20, 1991 for a Drug-Free Workplace.
- 26.2.** The City of San Diego Resolution No. R-282153 adopted on June 14, 1993 related to the Americans with Disabilities Act.
- 26.3.** The City of San Diego Municipal Code §22.3004 for Contractor Standards.
- 26.4.** The City of San Diego's Labor Compliance Program and the State of California Labor Code §§1771.5(b) and 1776.
- 26.5.** 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.
- 26.6.** The City's Equal Benefits Ordinance (EBO), Chapter 2, Article 2, Division 43 of The San Diego Municipal Code (SDMC).
- 26.7.** The City's Information Security Policy (ISP) as defined in the City's Administrative Regulation 90.63.

**27. PRE-AWARD ACTIVITIES:**

- 27.1.** The contractor selected by the City to execute a contract for this Work shall submit the required documentation as specified in the herein and in the Notice of Award. Failure to provide the Information as specified may result in the Bid being rejected as **non-responsive**.
- 27.2.** The decision that bid is non-responsive for failure to provide the information required within the time specified shall be at the sole discretion of the City.

**PERFORMANCE BOND, LABOR AND MATERIALMEN'S BOND**

**FAITHFUL PERFORMANCE BOND AND LABOR AND MATERIALMEN'S BOND:**

Hazard Construction Company, a corporation, as principal, and Nationwide Mutual Insurance Company, 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 **Five Million Eighty Nine Thousand Five Hundred Five Dollars and Thirty Cents (\$5,089,505.30)** for the faithful performance of the annexed contract, and in the sum of **Five Million Eighty Nine Thousand Five Hundred Five Dollars and Thirty Cents (\$5,089,505.30)** for the benefit of laborers and materialmen designated below:

**Conditions:**

If the Principal shall faithfully perform the annexed contract with the City of 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 Article 2. Claimants, (iii) public works of improvement commencing with Civil Code Section 9100 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.

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

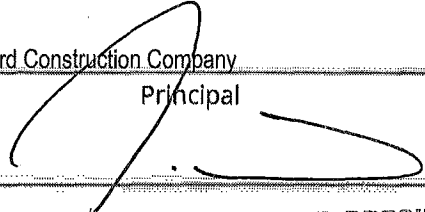


**PERFORMANCE BOND, LABOR AND MATERIALMEN'S BOND (continued)**

Dated September 25, 2017

Approved as to Form

Hazard Construction Company  
Principal

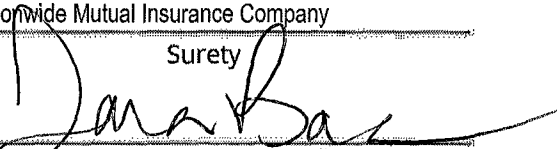
By:   
**JASON A. MORDHORST, PRESIDENT**

Printed Name of Person Signing for Principal

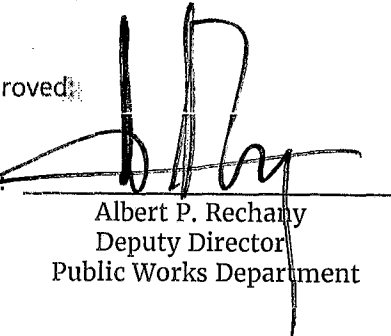
Mara W. Elliott, City Attorney

By:   
Deputy City Attorney

Nationwide Mutual Insurance Company  
Surety

By:   
Tara Bacon Attorney-in-fact

Approved:

  
By: **Albert P. Rechan**  
Deputy Director  
Public Works Department

7777 Alvarado Rd, Suite 201  
Local Address of Surety

La Mesa, CA 91942  
Local Address (City, State) of Surety

(619) 668-6542  
Local Telephone No. of Surety

Premium \$ 45,806.00

Bond No. SNN4007249

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document, to which this certificate is attached, and not the truthfulness, accuracy or validity of that document.

State of California

County of San Diego

On October 4, 2017 before me, Apryle M. Briede, Notary Public

Date

NAME, TITLE OF OFFICER - E.G. AJANE DOE, NOTARY PUBLIC

personally appeared Jason A. Mordhorst

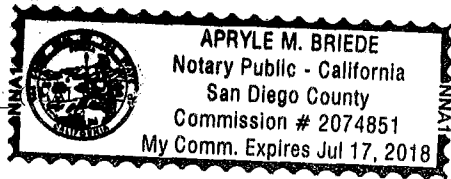
NAME(S) OF SIGNER(S)

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.

Apryle M. Briede  
NOTARY PUBLIC SIGNATURE



**CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT**  
**CIVIL CODE § 1189**

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California  
County of San Diego )

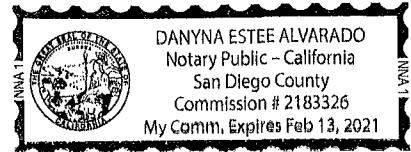
On September 25, 2017 before me, Danyna Estee Alvarado, Notary Public  
(insert name and title of the officer)

personally appeared Tara Bacon,  
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  (Seal)



Power of Attorney

KNOW ALL MEN BY THESE PRESENTS THAT:

Nationwide Mutual Insurance Company, an Ohio corporation hereinafter referred to as the "Company" and does hereby make, constitute and appoint:

Minna Huovila, Tara Bacon, Kyle King, Dale Gene Harshaw

each in their individual capacity, its true and lawful attorney-in-fact, with full power and authority to sign, seal, and execute on its behalf any and all bonds and undertakings, and other obligatory instruments of similar nature, in penalties not exceeding the sum of

UNLIMITED

and to bind the Company thereby, as fully and to the same extent as if such instruments were signed by the duly authorized officers of the Company; and all acts of said Attorney pursuant to the authority given are hereby ratified and confirmed.

This power of attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the board of directors of the Company:

"RESOLVED, that the president, or any vice president be, and each hereby is, authorized and empowered to appoint attorneys-in-fact of the Company, and to authorize them to execute and deliver on behalf of the Company any and all bonds, forms, applications, memorandums, undertakings, recognizances, transfers, contracts of indemnity, policies, contracts guaranteeing the fidelity of persons holding positions of public or private trust, and other writings obligatory in nature that the business of the Company may require; and to modify or revoke, with or without cause, any such appointment or authority; provided, however, that the authority granted hereby shall in no way limit the authority of other duly authorized agents to sign and countersign any of said documents on behalf of the Company."

"RESOLVED FURTHER, that such attorneys-in-fact shall have full power and authority to execute and deliver any and all such documents and to bind the Company subject to the terms and limitations of the power of attorney issued to them, and to affix the seal of the Company thereto; provided, however, that said seal shall not be necessary for the validity of any such documents."

This power of attorney is signed and sealed under and by the following bylaws duly adopted by the board of directors of the Company.

Execution of Instruments. Any vice president, any assistant secretary or any assistant treasurer shall have the power and authority to sign or attest all approved documents, instruments, contracts, or other papers in connection with the operation of the business of the company in addition to the chairman of the board, the chief executive officer, president, treasurer or secretary; provided, however, the signature of any of them may be printed, engraved, or stamped on any approved document, contract, instrument, or other papers of the Company.

IN WITNESS WHEREOF, the Company has caused this instrument to be sealed and duly attested by the signature of its officer the 1st day of May, 2017.

[Signature]
Antonio C. Albanese, Vice President of Nationwide Mutual Insurance Company

ACKNOWLEDGMENT

STATE OF NEW YORK, COUNTY OF NEW YORK: ss
On this 1st day of May, 2017, before me came the above-named officer for the Company aforesaid, to me personally known to be the officer described in and who executed the preceding instrument, and he acknowledged the execution of the same, and being by me duly sworn, deposes and says, that he is the officer of the Company aforesaid, that the seal affixed hereto is the corporate seal of said Company, and the said corporate seal and his signature were duly affixed and subscribed to said instrument by the authority and direction of said Company.

BARRY T. BASSIS
Notary Public, State of New York
No. 02BA4656400
Qualified in New York County
Commission Expires April 30, 2019

[Signature]
Notary Public
My Commission Expires
April 30, 2019



CERTIFICATE

I, Laura B. Guy, Assistant Secretary of the Company, do hereby certify that the foregoing is a full, true and correct copy of the original power of attorney issued by the Company; that the resolution included therein is a true and correct transcript from the minutes of the meetings of the boards of directors and the same has not been revoked or amended in any manner; that said Antonio C. Albanese was on the date of the execution of the foregoing power of attorney the duly elected officer of the Company, and the corporate seal and his signature as officer were duly affixed and subscribed to the said instrument by the authority of said board of directors; and the foregoing power of attorney is still in full force and effect.

IN WITNESS WHEREOF, I have hereunto subscribed my name as Assistant Secretary, and affixed the corporate seal of said Company this 25th day of September, 2017.

[Signature]
Assistant Secretary

## ATTACHMENTS

**ATTACHMENT A**  
**SCOPE OF WORK**

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## SCOPE OF WORK

1. **SCOPE OF WORK:** The scope of work for Phase III will include, but is not limited to, and the construction of the rehabilitation of approximately 5,500 LF of AC pavement for the middle section of Runway 8L/26R per the Geotechnical Investigation prepared by HNTB Corporation/Allied Geotechnical Engineers, Inc, dated April 17, 2014, construction drawings and contract documents. This includes lighting and sign modifications, and enhanced runway striping. The runway conditions are to meet aircraft demand forecasts and be safe for use, in compliance with the FAA Advisory Circulars, as well as all other applicable federal, state, and local engineering construction standards and permits.
  - 1.1. The Work shall be performed in accordance with:
    - 1.1.1. The Notice Inviting Bids and Plans numbered 39885-1-D through 39885-75-D, inclusive.
2. **ESTIMATED CONSTRUCTION COST:** The City's estimated construction cost for this project is **\$5,461,000**.
3. **LOCATION OF WORK:** The location of the Work is as follows:

See Attachment E – Location Map.
4. **CONTRACT TIME:** The Contract Time for completion of the Work shall be **109 Working Days**.
  - 4.1. **CONTRACTOR'S LICENSE CLASSIFICATION:** In accordance with the provisions of California Law, the Contractor shall possess valid, appropriate license at the time that the Bid is submitted. Failure to possess the specified license may render the Bid as **non-responsive** and ineligible for award.
  - 4.2. The City has determined that the following licensing classification is required for this contract:

- **CLASS A**

**ATTACHMENT B**  
**INTENTIONALLY LEFT BLANK**



**ATTACHMENT C**  
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**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 Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.

1.2. 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:

	<u>Goal</u>
1. Goals for Minority Participation for Each Trade:	16.9%
2. Goals for Female Participation in Each Trade:	6.9%

1.3. 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.

1.4. 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.

1.5. 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.

1.6. The Contractor shall provide written notification to the Director the Office of Federal Contract Compliance Programs (OFCCP) 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.

- 1.7. As used in this notice and in the contract resulting from this solicitation, the "covered area" is San Diego, California.

## **2. EQUAL OPPORTUNITY CLAUSES:**

- 2.1. During the performance of this contract, the Contractor, for itself, its assignees, 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 OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS:**

As used in these specifications:

- a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;

b. "Director" means Director, Office of Federal Contract Compliance Programs (OFCCP), U.S. Department of Labor, or any person to whom the Director delegates authority;

c. "Employer identification number" means the Federal social security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941;

d. "Minority" includes:

(1) Black (all) persons having origins in any of the Black African racial groups not of Hispanic origin);

(2) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin regardless of race);

(3) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

(4) American Indian or Alaskan native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors shall be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each contractor or subcontractor participating in an approved plan is individually required to comply with its obligations under the EEO clause and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other contractors or subcontractors toward a goal in an approved Plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The contractor shall implement the specific affirmative action standards provided in paragraphs 7a through 7p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing construction work in a geographical area where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area

where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement nor the failure by a union with whom the contractor has a collective bargaining agreement to refer either minorities or women shall excuse the contractor's obligations under these specifications, Executive Order 11246 or the regulations promulgated pursuant thereto.

6. In order for the non-working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees shall be employed by the contractor during the training period and the contractor shall have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees shall be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the 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 action steps at least as extensive as the following:

a. 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 two or more women to each construction project. The contractor shall specifically ensure that all foremen, superintendents, and other onsite 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.

b. 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.

c. Maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street 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.

d. 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 female 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.

e. Develop on-the-job training opportunities and/or participate in training programs for the area 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 7b above.

f. 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 agreement; 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.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions including specific review of these items with onsite supervisory personnel such as superintendents, general foremen, etc., prior to the initiation of construction 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 disposition of the subject matter.

h. 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.

i. 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.

j. 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 workforce.

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

l. 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.

m. 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.

n. 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.

o. 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.

p. Conduct a review, at least annually, of all supervisor's adherence to and performance under the contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations, which assist in fulfilling one or more of their affirmative action obligations (7a through 7p). The efforts of a contractor association, joint contractor union, contractor community, or other similar groups of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through 7p of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the contractor. The obligation to comply, however, is the contractor's and failure of such a group to fulfill an obligation shall not be a defense for the contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, if the particular group is employed in a substantially disparate manner (for example, even though the contractor has achieved its goals for women generally,) the contractor may be in violation of the Executive Order if a specific minority group of women is underutilized.

10. The contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

11. The contractor shall not enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.



12. The contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination, and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government, and to keep records. Records shall at least include for each employee, the name, address, telephone number, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

#### **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, funding agency, 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 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 expended 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.
    - 8.1.1. 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.
    - 8.1.2. 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.

- 8.2. 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.
- 8.3. 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.
- 8.3.1.** For contracts entered into on or after April 1, 2015, Contractor and their subcontractors shall furnish records specified in Labor Code section 1776 directly to the Labor Commissioner in the manner required by Labor Code section 1771.4.
- 8.4. 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 is held responsible for the compliance of their subcontractors with sections 1777.5, 1777.6 and 1777.7.
- 8.5. Working Hours.** Contractor and their 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 sections 1810 through 1815.
- 8.6. 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, 1771.1, 1775, 1776, 1777.5, 1810, 1813, 1815, 1860 and 1861.
- 8.7. 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."

**8.8. Labor Compliance Program.** The City has its own Labor Compliance Program authorized in August 2011 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. For questions or assistance, please contact the City of San Diego's Equal Opportunity Contracting Department at 619-236-6000.

**8.9. Contractor and Subcontractor Registration Requirements.** This project is subject to compliance monitoring and enforcement by the DIR. As of March 1, 2015, no contractor or subcontractor may be listed on a bid or proposal for a public works project unless registered with the DIR pursuant to Labor Code section 1725.5. As of April 1, 2015, a contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal, or enter into any contract for public work, unless currently registered and qualified to perform public work pursuant to Labor Code section 1725.5. By submitting a bid or proposal to the City, Contractor is certifying that he or she has verified that all subcontractors used on this public work project are registered with the DIR in compliance with Labor Code sections 1771.1 and 1725.5, and Contractor shall provide proof of registration to the City upon request.

**8.9.1.** A Contractor's inadvertent error in listing a subcontractor who is not registered pursuant to Labor Code section 1725.5 in response to a solicitation shall not be grounds for filing a bid protest or grounds for considering the bid non-responsive provided that any of the following apply: (1) the subcontractor is registered prior to bid opening; (2) within twenty-four hours after the bid opening, the subcontractor is registered and has paid the penalty registration fee specified in Labor Code section 1725.5; or (3) the subcontractor is replaced by another registered subcontractor pursuant to Public Contract Code section 4107.

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

General Decision Number: CA170001 05/26/2017 CA1

Superseded General Decision Number: CA20160001

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)

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.20 for calendar year 2017 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.20 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2017. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at [www.dol.gov/whd/govcontracts](http://www.dol.gov/whd/govcontracts).

Modification Number	Publication Date
0	01/06/2017
1	01/27/2017
2	02/17/2017
3	02/24/2017
4	03/03/2017
5	03/10/2017
6	03/24/2017
7	05/05/2017
8	05/12/2017
9	05/26/2017

ASBE0005-002 07/04/2016

	Rates	Fringes
Asbestos Workers/Insulator (Includes the application of all insulating materials, protective coverings, coatings, and finishes to all types of mechanical systems).....	\$ 38.37	20.13
Fire Stop Technician (Application of Firestopping Materials for wall openings and penetrations in walls, floors, ceilings and curtain walls).....	\$ 26.15	17.31

ASBE0005-004 07/04/2016

	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)....	\$ 18.38	10.82

BOIL0092-003 10/01/2012

	Rates	Fringes
BOILERMAKER.....	\$ 41.17	28.27

BRCA0004-008 11/01/2016

	Rates	Fringes
BRICKLAYER; MARBLE SETTER.....	\$ 35.30	17.35

BRCA0018-004 06/01/2016

	Rates	Fringes
MARBLE FINISHER.....	\$ 29.20	12.93
TILE FINISHER.....	\$ 24.53	11.08
TILE LAYER.....	\$ 35.89	16.24

BRCA0018-010 09/01/2016

	Rates	Fringes
TERRAZZO FINISHER.....	\$ 28.53	12.27

TERRAZZO WORKER/SETTER.....\$ 35.57 13.14

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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

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CARP0409-008 08/01/2010

	Rates	Fringes
Modular Furniture Installer.....	\$ 17.00	7.41

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CARP0547-001 07/01/2016

	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.....	\$ 40.70	17.03
PILEDRIVERMAN.....	\$ 37.28	10.58

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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

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\* ELEC0569-001 10/01/2016

	Rates	Fringes
Electricians (Tunnel Work)		
Cable Splicer.....	\$ 47.72	3%+12.63
Electrician.....	\$ 48.66	3%+12.63

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Electricians: (All Other  
Work, Including 4 Stories  
Residential)

Cable Splicer.....	\$ 42.50	3%+12.63
Electrician.....	\$ 41.75	3%+12.63

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ELEC0569-004 06/01/2015

	Rates	Fringes
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ELECTRICIAN (Sound & Communications Sound Technician).....	\$ 29.55	11.92
SOUND TECHNICIAN: Terminating, operating and performing final check-out		

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ELEC0569-005 06/06/2016

	Rates	Fringes
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Sound & Communications Sound Technician.....	\$ 30.22	12.21
SOUND TECHNICIAN: Terminating, operating and performing final check-out		

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ELEC0569-006 02/27/2017

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

	Rates	Fringes
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Traffic signal, street light and underground work		
Utility Technician #1.....	\$ 30.48	3%+7.70
Utility Technician #2.....	\$ 25.45	3%+7.70

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.

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ELEC0569-008 06/06/2016

	Rates	Fringes
ELECTRICIAN (Residential, 1-3 Stories).....	\$ 31.69	3%+6.61

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ELEC1245-001 06/01/2015

	Rates	Fringes
LINE CONSTRUCTION		
(1) Lineman; Cable splicer..	\$ 52.85	15.53
(2) Equipment specialist (operates crawler tractors, commercial motor vehicles, backhoes, trenchers, cranes (50 tons and below), overhead & underground distribution line equipment).....	\$ 42.21	14.32
(3) Groundman.....	\$ 32.28	14.03
(4) Powderman.....	\$ 47.19	14.60

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 01/01/2017

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 52.21	31.585

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.

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ENGI0012-003 07/01/2016

	Rates	Fringes
OPERATOR: Power Equipment (All Other Work)		
GROUP 1.....	\$ 39.95	23.35
GROUP 2.....	\$ 40.73	23.35
GROUP 3.....	\$ 41.02	23.35
GROUP 4.....	\$ 42.51	23.35

GROUP 5.....	\$ 41.86	23.35
GROUP 6.....	\$ 41.83	23.35
GROUP 8.....	\$ 42.84	23.35
GROUP 9.....	\$ 42.19	23.35
GROUP 10.....	\$ 42.96	23.35
GROUP 11.....	\$ 42.31	23.35
GROUP 12.....	\$ 43.13	23.35
GROUP 13.....	\$ 43.23	23.35
GROUP 14.....	\$ 43.26	23.35
GROUP 15.....	\$ 43.34	23.35
GROUP 16.....	\$ 43.46	23.35
GROUP 17.....	\$ 43.63	23.35
GROUP 18.....	\$ 43.73	23.35
GROUP 19.....	\$ 43.84	23.35
GROUP 20.....	\$ 43.96	23.35
GROUP 21.....	\$ 44.13	23.35
GROUP 22.....	\$ 44.23	23.35
GROUP 23.....	\$ 44.34	23.35
GROUP 24.....	\$ 44.46	23.35
GROUP 25.....	\$ 44.63	23.35

OPERATOR: Power Equipment

(Cranes, Piledriving &

Hoisting)

GROUP 1.....	\$ 43.20	22.15
GROUP 2.....	\$ 43.98	22.15
GROUP 3.....	\$ 44.27	22.15
GROUP 4.....	\$ 44.41	22.15
GROUP 5.....	\$ 44.63	22.15
GROUP 6.....	\$ 44.74	22.15
GROUP 7.....	\$ 44.86	22.15
GROUP 8.....	\$ 45.03	22.15
GROUP 9.....	\$ 45.20	22.15
GROUP 10.....	\$ 46.20	22.15
GROUP 11.....	\$ 47.20	22.15
GROUP 12.....	\$ 48.20	22.15
GROUP 13.....	\$ 49.20	22.15

OPERATOR: Power Equipment

(Tunnel Work)

GROUP 1.....	\$ 41.80	23.35
GROUP 2.....	\$ 42.58	23.35
GROUP 3.....	\$ 42.87	23.35
GROUP 4.....	\$ 43.01	23.35
GROUP 5.....	\$ 43.23	23.35
GROUP 6.....	\$ 43.34	23.35
GROUP 7.....	\$ 43.46	23.35

PREMIUM PAY:

\$3.75 per hour shall be paid on all Power Equipment Operator work on the following 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 bending 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, PILEDIVING 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 which 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 thin 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 08/01/2015

	Rates	Fringes
OPERATOR: Power Equipment (DREDGING)		
(1) Leverman.....	\$ 49.50	23.60
(2) Dredge dozer.....	\$ 43.53	23.60
(3) Deckmate.....	\$ 43.42	23.60
(4) Winch operator (stern winch on dredge).....	\$ 42.87	23.60
(5) Fireman-Oiler, Deckhand, Bargeman, Leveehand.....	\$ 42.33	23.60
(6) Barge Mate.....	\$ 42.94	23.60

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 IRON0377-002 07/01/2016

	Rates	Fringes
Ironworkers:		
Fence Erector.....	\$ 28.33	20.64
Ornamental, Reinforcing and Structural.....	\$ 34.75	29.20

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

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LABO0089-001 07/18/2016

	Rates	Fringes
LABORER (BUILDING and all other Residential Construction)		
Group 1.....	\$ 29.42	19.78
Group 2.....	\$ 30.10	19.78
Group 3.....	\$ 30.81	19.78
Group 4.....	\$ 31.61	19.78
Group 5.....	\$ 33.54	19.78
LABORER (RESIDENTIAL CONSTRUCTION - See definition below)		
(1) Laborer.....	\$ 27.32	18.11
(2) Cleanup, Landscape, Fencing (Chain Link & Wood).....	\$ 26.03	18.11

RESIDENTIAL DEFINITION: Wood or metal frame construction of single family residences, apartments and condominiums - 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 chute 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 (demolition); Guinea chaser; Headboard man-asphalt; Laborer, packing rod steel and pans; membrane vapor barrier installer; Power broom sweepers (small); Rii-prap, 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, multi-plate; Kettlemen, potmen and men 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, vibrating 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 including rubber gasket joints, pointing and any and all other services; Rotary Scarifier or multiple head concrete chipping scarifier; Steel header board man and guideline setter; Tampers, Barko, Wacker and similar type; Trenching machine, handpropelled

GROUP 4: Asphalt raker, luterman, ironer, asphalt 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 operation, 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 powder 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.

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 LABO0089-002 11/01/2016

	Rates	Fringes
LABORER (MASON TENDER).....	\$ 29.62	15.89

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LABO0089-004 07/03/2016

HEAVY AND HIGHWAY CONSTRUCTION

	Rates	Fringes
Laborers:		
Group 1.....	\$ 30.54	17.89
Group 2.....	\$ 31.00	17.89
Group 3.....	\$ 31.41	17.89
Group 4.....	\$ 32.25	17.89
Group 5.....	\$ 36.37	17.89

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-kold, 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.

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LABO0300-005 01/01/2017

	Rates	Fringes
Asbestos Removal Laborer.....	\$ 31.88	16.82

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.

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LABO1184-001 07/04/2016

	Rates	Fringes
Laborers: (HORIZONTAL DIRECTIONAL DRILLING)		
(1) Drilling Crew Laborer...	\$ 33.65	13.95
(2) Vehicle Operator/Hauler.	\$ 33.82	13.95
(3) Horizontal Directional Drill Operator.....	\$ 35.67	13.95
(4) Electronic Tracking Locator.....	\$ 37.67	13.95
Laborers: (STRIPING/SLURRY SEAL)		
GROUP 1.....	\$ 34.86	17.03
GROUP 2.....	\$ 36.16	17.03
GROUP 3.....	\$ 38.17	17.03
GROUP 4.....	\$ 39.91	17.03

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 08/03/2016

	Rates	Fringes
LABORER		
PLASTER CLEAN-UP LABORER....	\$ 31.60	19.28
PLASTER TENDER.....	\$ 34.15	19.28

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.

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PAIN0036-001 08/01/2016

	Rates	Fringes
Painters: (Including Lead Abatement)		
(1) Repaint (excludes San Diego County).....	\$ 27.59	13.24
(2) All Other Work.....	\$ 31.12	13.24

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.

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PAIN0036-010 10/01/2015

Rates	Fringes
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DRYWALL FINISHER/TAPER

(1) Building & Heavy Construction.....	\$ 27.84	15.20
(2) Residential Construction (Wood frame apartments, single family homes and multi-duplexes up to and including four stories).....	\$ 21.00	13.91

PAIN0036-012 10/01/2016

	Rates	Fringes
GLAZIER.....	\$ 41.55	11.93

PAIN0036-019 01/01/2017

	Rates	Fringes
SOFT FLOOR LAYER.....	\$ 28.77	13.31

PLAS0200-005 08/06/2015

	Rates	Fringes
PLASTERER.....	\$ 38.44	13.77

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

PLAS0500-001 07/01/2016

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER		
GROUP 1.....	\$ 23.84	21.17
GROUP 2.....	\$ 25.49	21.17
GROUP 3.....	\$ 27.57	21.17

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 07/01/2016

	Rates	Fringes
PLUMBER, PIPEFITTER, STEAMFITTER		
Camp Pendleton.....	\$ 51.69	21.41
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.....	\$ 47.19	21.41
Work ONLY on new additions and remodeling of commercial buildings, bars, restaurants, and stores not to exceed 5,000 sq. ft. of floor space.....	\$ 45.73	20.43
Work ONLY on strip malls, light commercial, tenant improvement and remodel work.....	\$ 35.69	18.76

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 PLUM0016-011 07/01/2016

	Rates	Fringes
PLUMBER/PIPEFITTER		
Residential.....	\$ 38.17	17.33

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 PLUM0345-001 07/01/2014

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

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 ROOF0045-001 07/01/2014

	Rates	Fringes
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ROOFER.....\$ 27.73 8.12

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 SFCA0669-001 04/01/2017

	Rates	Fringes
SPRINKLER FITTER.....	\$ 39.17	15.84

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 SHEE0206-001 07/01/2015

	Rates	Fringes
SHEET METAL WORKER		
Camp Pendleton.....	\$ 37.55	23.23
Except Camp Pendleton.....	\$ 35.33	23.23
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 07/04/2016

	Rates	Fringes
Truck drivers:		
GROUP 1.....	\$ 15.90	30.69
GROUP 2.....	\$ 23.49	30.69
GROUP 3.....	\$ 23.69	30.69
GROUP 4.....	\$ 23.89	30.69
GROUP 5.....	\$ 24.09	30.69
GROUP 6.....	\$ 24.59	30.69
GROUP 7.....	\$ 26.09	30.69

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

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.  
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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at [www.dol.gov/whd/govcontracts](http://www.dol.gov/whd/govcontracts).

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)).

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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 a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

#### Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 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. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

#### Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

#### Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate

that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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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:

**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 (Office of the Secretary of Labor 29 CFR 5) are included in this Contract pursuant to the provisions applicable to such Federal assistance.

### SECTION A.

#### 1. Minimum Wages.

- (i) All laborers and mechanics employed or working upon the site of the work, 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 I(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 Administration 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, all or part of the wages required by the contract, the Federal Aviation Administration 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. 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 1(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 1(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 Aviation Administration 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 <https://www.dol.gov/whd/forms/wh347.pdf> 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 Aviation Administration, 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 Aviation Administration 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 Aviation Administration 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. Certification of Eligibility.**

- (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.

**SECTION B.** The provisions of this section 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. Contract Work Hours and Safety Standards Act.**

- (i) **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.
- (ii) **Violation; Liability For Unpaid Wages; Liquidated Damages.** In the event of any violation of the clause set forth in subparagraph (B)(1)(i) 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)(i) 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)(i) of this clause.



- (iii) **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)(1)(ii) of this section.
- (iv) **Subcontractors.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraphs (B)(1)(i) through (B)(1)(iv) 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)(i) through (B)(1)(iv) of this clause.

- 2. In addition to the clauses contained in Section 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 29 CFR 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.

## **SECTION C.**

### **1. Compliance Verification.**

- (i) The Recipient shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that contractors or subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. Use Standard Form 1445 (SF 1445) or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are available from the funding agency upon request.
- (ii) The Recipient shall establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, the

Recipient should conduct interviews with a representative group of covered employees within two weeks of each contractor or subcontractor's submission of its initial weekly payroll data and two weeks prior to the estimated completion date for the contract or subcontract. The Recipient must conduct more frequent interviews if the initial interviews or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. The Recipient shall immediately conduct necessary interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence.

- (iii) The Recipient shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that contractors or subcontractors are paying the appropriate wage rates. The Recipient shall establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, if practicable the Recipient shall spot check payroll data within two weeks of each contractor or subcontractor's submission of its initial payroll data and two weeks prior to the completion date the contract or subcontract. The Recipient must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. In addition, during the examinations the Recipient shall verify evidence of fringe benefit plans and payments thereunder by contractors and subcontractors who claim credit for fringe benefit contributions.
- (iv) The Recipient shall periodically review contractors and subcontractors use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that contractors and subcontractors are not using disproportionate numbers of, laborers, trainees and apprentices. These reviews shall be conducted in accordance with the schedules for spot checks and interviews described in subsection (ii) and (iii) above.
- (v) The Recipient must immediately report potential violations of the DB prevailing wage requirements to the funding agency DB contact listed above and to the appropriate DOL Wage and Hour District Office listed at <http://www.dol.gov/whd/america2.htm>.

### **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.

### **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 with the Bid will lead to the Bid being declared **non-responsive** and, therefore, shall be rejected.

**11.1. FAA Requirements:**

- 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](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.

**11.2. FAA Required Contract Provisions for Airport Improvement Program:**

**ACCESS TO RECORDS AND REPORTS**

The contractor must maintain an acceptable cost accounting system. The contractor agrees to provide the City, the Federal Aviation Administration, and the Comptroller General of the United State or any of their duly authorized representatives, access to any books, documents, papers, and records of the contractor which are directly pertinent to the specific contract for the purpose of making audit, examination, excerpts and transcriptions. The contractor agrees to maintain all books, records, and reports required under this contract for a period of not less than three (3) years after final payment is made and all pending matters are closed.

**BREACH OF CONTRACT TERMS**

Any violation or breach of terms of this contract on the part of the contractor or its subcontractors may result in the suspension or termination of this contract or such other action that may be necessary to enforce the rights of the parties of this agreement. The City will provide the contractor written notice that describes the nature of the breach and corrective actions the contractor must undertake in order to avoid termination of the contract. City reserves the right to withhold payments to contractor until such time the contractor corrects the breach or the City elects to terminate the contract. The City's notice will identify a specific date by which the contractor must correct the breach. City may proceed with termination of the contract if the contractor fails to correct the breach by deadline indicated in the City's notice.

The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder are in addition to, and not a limitation of, any duties, obligations, rights and remedies otherwise imposed or available by law.

### **BUY AMERICAN PREFERENCE**

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 or offeror must complete and submit the Buy America certification included herein with their bid or offer. The City will reject as nonresponsive any bid or offer that does not include a completed Certificate of Buy American Compliance.

### **GENERAL CIVIL RIGHTS PROVISIONS**

The Contractor agrees to comply with pertinent statutes, Executive Orders and such rules as are promulgated to ensure that no person shall, on the grounds of race, creed, color, national origin, sex, age, or disability be excluded from participating in any activity conducted with or benefiting from Federal assistance.

The provision binds the contractor and subtier contractors from the bid solicitation period through the completion of the Contract. This provision is in addition to that required of Title VI of the Civil Rights Act of 1964.

### **COMPLIANCE WITH NONDISCRIMINATION REQUIREMENTS**

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

- 1. Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the Title VI List of Pertinent Nondiscrimination Acts And Authorities, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
- 2. Non-Discrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Nondiscrimination Acts and Authorities, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR part 21.
- 3. Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases

of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Nondiscrimination Acts And Authorities on the grounds of race, color, or national origin.

- 4. Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the City or the Federal Aviation Administration to be pertinent to ascertain compliance with such Nondiscrimination Acts And Authorities and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the City or the Federal Aviation Administration, as appropriate, and will set forth what efforts it has made to obtain the information.
- 5. Sanctions for Noncompliance:** In the event of a contractor's noncompliance with the Nondiscrimination provisions of this contract, the City will impose such contract sanctions as it or the Federal Aviation Administration may determine to be appropriate, including, but not limited to:
  - a. Withholding payments to the contractor under the contract until the contractor complies; and/or
  - b. Cancelling, terminating, or suspending a contract, in whole or in part.
- 6. Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the City or the Federal Aviation Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the City to enter into any litigation to protect the interests of the City. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

#### **TITLE VI LIST OF PERTINENT NONDISCRIMINATION ACTS AND AUTHORITIES**

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following nondiscrimination statutes and authorities; including but not limited to:

1. Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*, 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin);
2. 49 CFR part 21 (Non-discrimination In Federally-Assisted Programs of The Department of Transportation—Effectuation of Title VI of The Civil Rights Act of 1964);

3. The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
4. Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq.*), as amended, (prohibits discrimination on the basis of disability); and 49 CFR part 27;
5. The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq.*), (prohibits discrimination on the basis of age);
6. Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
7. The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, subrecipients and contractors, whether such programs or activities are Federally funded or not);
8. Titles II and III of the Americans with Disabilities Act of 1990, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 – 12189) as implemented by Department of Transportation regulations at 49 CFR parts 37 and 38;
9. The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
10. Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
11. Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
12. Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 *et seq.*).

### **COPELAND "ANTI-KICKBACK" ACT**

Contractor must comply with the requirements of the Copeland "Anti-Kickback" Act (18 U.S.C. 874 and 40 U.S.C. 3145), as supplemented by Department of Labor regulation 29 CFR part 3. Contractor and subcontractors are prohibited from inducing, by any means, any person employed on the project to give up any part of the compensation to which the employee is entitled. The contractor and each subcontractor must submit to the City, a weekly statement on the wages paid to each

employee performing on covered work during the prior week. The City must report any violations of the Act to the Federal Aviation Administration.

#### **CERTIFICATION OF OFFEROR/BIDDER REGARDING DEBARMENT**

By submitting a bid/proposal under this solicitation, the bidder or offer or certifies that neither it nor its principals are presently debarred or suspended by any Federal department or agency from participation in this transaction.

#### **CERTIFICATION OF LOWER TIER CONTRACTORS REGARDING DEBARMENT**

The successful bidder, by administering each lower tier subcontract that exceeds \$25,000 as a "covered transaction", must verify each lower tier participant of a "covered transaction" under the project is not presently debarred or otherwise disqualified from participation in this federally assisted project. The successful bidder will accomplish this by:

1. Checking the System for Award Management at website: <http://www.sam.gov>
2. Collecting a certification statement similar to the Certificate Regarding Debarment and Suspension (Bidder or Offeror), above.
3. Inserting a clause or condition in the covered transaction with the lower tier contract

If the FAA later determines that a lower tier participant failed to disclose to a higher tier participant that it was excluded or disqualified at the time it entered the covered transaction, the FAA may pursue any available remedies, including suspension and debarment of the non-compliant participant.

#### **DISADVANTAGED BUSINESS ENTERPRISES**

Contract Assurance (§ 26.13) - The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. 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.

Prompt Payment (§26.29) - The prime contractor agrees to pay each subcontractor under this prime contract for satisfactory performance of its contract no later than {specify number} days from the receipt of each payment the prime contractor receives from {Name of recipient}. The prime contractor agrees further to return retainage payments to each subcontractor within {specify the same number as above} days after the subcontractor's work is satisfactorily completed. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the {Name of Recipient}. This clause applies to both DBE and non-DBE subcontractors.



## **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), the 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.

In support of this initiative, the City encourages the Contractor to promote policies and initiatives for its employees and other work personnel that decrease crashes by distracted drivers, including policies that ban text messaging while driving motor vehicles while performing work activities associated with the project. The Contractor must include the substance of this clause in all sub-tier contracts exceeding \$3,500 and involve driving a motor vehicle in performance of work activities associated with the project.

## **ENERGY CONSERVATION REQUIREMENTS**

Contractor and Subcontractor agree to comply with mandatory standards and policies relating to energy efficiency as contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C. 6201 et seq).

## **EQUAL OPPORTUNITY CLAUSE**

During the performance of this contract, the contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identify or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.

(3) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(7) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, That in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the contractor may request the United States to enter into such litigation to protect the interests of the United States.

#### **FEDERAL FAIR LABOR STANDARDS ACT (FEDERAL MINIMUM WAGE)**

All contracts and subcontracts that result from this solicitation incorporate by reference the provisions of 29 CFR part 201, the Federal Fair Labor Standards Act (FLSA), with the same force and effect as if given in full text. The FLSA sets minimum wage, overtime pay, recordkeeping, and child labor standards for full and part time workers.

The contractor has full responsibility to monitor compliance to the referenced statute or regulation. The contractor must address any claims or disputes that arise from this requirement directly with the U.S. Department of Labor – Wage and Hour Division

#### **CERTIFICATION REGARDING LOBBYING**

The bidder or offeror certifies by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the Bidder or Offeror, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person 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 this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

#### **PROHIBITION of SEGREGATED FACILITIES**

(a) The Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Contractor agrees that a breach of this clause is a violation of the Equal Opportunity clause in this contract.

(b) "Segregated facilities," as used in this clause, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.

(c) The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Opportunity clause of this contract.

#### **OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970**

All contracts and subcontracts that result from this solicitation incorporate by reference the requirements of 29 CFR Part 1910 with the same force and effect as if given in full text. Contractor must provide a work environment that is free from recognized hazards that may cause death or serious physical harm to the employee. The Contractor retains full responsibility to monitor its compliance and their subcontractor's compliance with the applicable requirements of the Occupational Safety and Health Act of 1970 (29 CFR Part 1910). Contractor must address any claims or disputes that pertain to a referenced requirement directly with the U.S. Department of Labor - Occupational Safety and Health Administration.

## **PROCUREMENT OF RECOVERED MATERIALS**

Contractor and subcontractor agree to comply with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, and the regulatory provisions of 40 CFR Part 247. In the performance of this contract and to the extent practicable, the Contractor and subcontractors are to use of products containing the highest percentage of recovered materials for items designated by the Environmental Protection Agency (EPA) under 40 CFR Part 247 whenever:

- a) The contract requires procurement of \$10,000 or more of a designated item during the fiscal year; or,
- b) The contractor has procured \$10,000 or more of a designated item using Federal funding during the previous fiscal year.

The list of EPA-designated items is available at [www.epa.gov/epawaste/consERVE/tools/cpg/products/](http://www.epa.gov/epawaste/consERVE/tools/cpg/products/).

Section 6002(c) establishes exceptions to the preference for recovery of EPA-designated products if the contractor can demonstrate the item is:

- a) Not reasonably available within a timeframe providing for compliance with the contract performance schedule;
- b) Fails to meet reasonable contract performance requirements; or
- c) Is only available at an unreasonable price.

## **SEISMIC SAFETY**

The contractor agrees to ensure that all work performed under this contract, including work performed by subcontractors, conforms to a building code standard that provides a level of seismic safety substantially equivalent to standards established by the National Earthquake Hazards Reduction Program (NEHRP). Local building codes that model their code after the current version of the International Building Code (IBC) meet the NEHRP equivalency level for seismic safety.

## **TERMINATION FOR CONVENIENCE**

The City may terminate this contract in whole or in part at any time by providing written notice to the Contractor. Such action may be without cause and without prejudice to any other right or remedy of Owner. Upon receipt of a written notice of termination, except as explicitly directed by the City, the Contractor shall immediately proceed with the following obligations regardless of any delay in determining or adjusting amounts due under this clause:

1. Contractor must immediately discontinue work as specified in the written notice.
2. Terminate all subcontracts to the extent they relate to the work terminated under the notice.
3. Discontinue orders for materials and services except as directed by the written notice.

4. Deliver to the owner all fabricated and partially fabricated parts, completed and partially completed work, supplies, equipment and materials acquired prior to termination of the work and as directed in the written notice.
5. Complete performance of the work not terminated by the notice.
6. Take action as directed by the owner to protect and preserve property and work related to this contract that Owner will take possession.

City agrees to pay Contractor for:

- a) completed and acceptable work executed in accordance with the contract documents prior to the effective date of termination;
- b) documented expenses sustained prior to the effective date of termination in performing work and furnishing labor, materials, or equipment as required by the contract documents in connection with uncompleted work;
- c) reasonable and substantiated claims, costs and damages incurred in settlement of terminated contracts with Subcontractors and Suppliers; and
- d) reasonable and substantiated expenses to the contractor directly attributable to Owner's termination action

City will not pay Contractor for loss of anticipated profits or revenue or other economic loss arising out of or resulting from the Owner's termination action.

The rights and remedies this clause provides are in addition to any other rights and remedies provided by law or under this contract.

#### **TERMINATION FOR DEFAULT**

Section 80-09 of FAA Advisory Circular 150/5370-10 establishes conditions, rights and remedies associated with Owner termination of this contract due default of the Contractor.

#### **TRADE RESTRICTION CERTIFICATION**

By submission of an offer, the Offeror certifies that with respect to this solicitation and any resultant contract, the Offeror -

- a. is not owned or controlled by one or more citizens of a foreign country included in the list of countries that discriminate against U.S. firms as published by the Office of the United States Trade Representative (U.S.T.R.);
- b. has not knowingly entered into any contract or subcontract for this project with a person that is a citizen or national of a foreign country included on the list of countries that discriminate against U.S. firms as published by the U.S.T.R; and
- c. has not entered into any subcontract for any product to be used on the Federal on the project that is produced in a foreign country included on the list of countries that discriminate against U.S. firms published by the U.S.T.R.

This certification concerns a matter within the jurisdiction of an agency of the United States of America and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code, Section 1001.

The Offeror/Contractor must provide immediate written notice to the Owner if the Offeror/Contractor learns that its certification or that of a subcontractor was erroneous when submitted or has become erroneous by reason of changed circumstances. The Contractor must require subcontractors provide immediate written notice to the Contractor if at any time it learns that its certification was erroneous by reason of changed circumstances.

Unless the restrictions of this clause are waived by the Secretary of Transportation in accordance with 49 CFR 30.17, no contract shall be awarded to an Offeror or subcontractor:

- (1) who is owned or controlled by one or more citizens or nationals of a foreign country included on the list of countries that discriminate against U.S. firms published by the U.S.T.R. or
- (2) whose subcontractors are owned or controlled by one or more citizens or nationals of a foreign country on such U.S.T.R. list or
- (3) who incorporates in the public works project any product of a foreign country on such U.S.T.R. list;

Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by this provision. The knowledge and information of a contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

The Offeror agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification without modification in all lower tier subcontracts. The contractor may rely on the certification of a prospective subcontractor that it is not a firm from a foreign country included on the list of countries that discriminate against U.S. firms as published by U.S.T.R, unless the Offeror has knowledge that the certification is erroneous.

This certification is a material representation of fact upon which reliance was placed when making an award. If it is later determined that the Contractor or subcontractor knowingly rendered an erroneous certification, the Federal Aviation Administration may direct through the City cancellation of the contract or subcontract for default at no cost to the City or the FAA.

#### **VETERAN'S PREFERENCE**

In the employment of labor (excluding executive, administrative, and supervisory positions), the contractor and all sub-tier contractors must give preference to covered veterans as defined within Title 49 United States Code Section 47112. Covered veterans include Vietnam-era veterans, Persian Gulf veterans, Afghanistan-Iraq war veterans, disabled veterans, and small business concerns (as defined by 15 U.S.C. 632) owned and controlled by disabled veterans. This preference only applies when there are covered veterans readily available and qualified to perform the work to which the employment relates.

**12. GOOD FAITH EFFORT DOCUMENTATION SUBMITTALS:**

- 12.1.** The City's award of this contract is conditioned upon the Bidder or Offeror satisfying the good faith effort requirements of 49 CFR §26.53.
- 12.2.** As a condition of bid responsiveness, the Bidder or Offeror must submit the Bidder DBE Commitment Form which contains the following:
  - 12.2.1.** The names and addresses of Disadvantaged Business Enterprise (DBE) firms that will participate in the contract.
  - 12.2.2.** A description of the work that each DBE firm will perform.
  - 12.2.3.** The dollar amount of the participation of each DBE firm listed under 13.2.1.
- 12.3.** The affirmative GFE steps documentation undertaken by the Bidder or Offeror as described in Appendix A to CFR Part 26 shall be submitted **within 4 Working Days of the Bid Opening if the Bidder or Offeror cannot meet the advertised project DBE goal**. If this documentation is not submitted when due, the City will declare the Bid **non-responsive** and reject it.
- 12.4.** The required documentation shall be submitted and logged in at the following address:

CITY OF SAN DIEGO  
PUBLIC WORKS CONTRACTS  
1010 SECOND AVENUE, 14<sup>TH</sup> FLOOR, MS 614C  
SAN DIEGO, CA 92101  
SUBJECT: AFFIRMATIVE GOOD FAITH EFFORT DOCUMENTATION  
BID NO. **K-17-1575-DBB-3**

- 12.5.** 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.** The following forms shall be completed and submitted within **4 Working Days of the Bid opening** by 4:00 PM. 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. Form AA62 Summary of Bids Received
  - 3. Form AA63 Good Faith Effort List of Subcontractors Solicited

**14. APPENDIX:**

1. DBE Commitment Form
2. Buy American Certification



**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

**SUMMARY OF BIDS RECEIVED**

Type of Job	NAICS CODES	Company Name	Selected (Y/N)	Bid Amount	DBE	Non-DBE	Explanation for not Selecting

**USE ADDITIONAL FORMS AS NECESSARY**

**DISADVANTAGE BUSINESS ENTERPRISE (DBE)  
GOOD FAITH EFFORT LIST OF SUBCONTRACTORS SOLICITED**

<b>Contractor Name</b>	<b>Contractor Address</b>	<b>How Located</b>	<b>Date of Contact</b>	<b>Contact Method</b>	<b>Task Description</b>	<b>Response (Yes/No)</b>

**USE ADDITIONAL FORMS AS NECESSARY**

**FUNDING AGENCY PROVISIONS**

**APPENDIX**

**ATTACHMENT 6**

**Demonstration of Good Faith Efforts - Forms 1 & 2**

*[Forms 1 and 2 should be provided as part of the solicitation documents.]*

**FORM 1: DISADVANTAGED BUSINESS ENTERPRISE (DBE) UTILIZATION**

The undersigned bidder/offeror has satisfied the requirements of the bid specification in the following manner (please check the appropriate space):

\_\_\_\_\_ The bidder/offeror is committed to a minimum of \_\_\_\_\_ % DBE utilization on this contract.

\_\_\_\_\_ The bidder/offeror (if unable to meet the DBE goal of \_\_\_\_\_%) is committed to a minimum of \_\_\_\_\_% DBE utilization on this contract and should submit documentation demonstrating good faith efforts.

Name of bidder/offeror's firm: \_\_\_\_\_

State Registration No. \_\_\_\_\_

By \_\_\_\_\_ Title \_\_\_\_\_  
(Signature)

**FORM 2: LETTER OF INTENT**

Name of bidder/offeror's firm: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Name of DBE firm: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Telephone: \_\_\_\_\_

Description of work to be performed by DBE firm:

-----  
-----  
-----  
-----

The bidder/offeror is committed to utilizing the above-named DBE firm for the work described above. The estimated dollar value of this work is \$ \_\_\_\_\_.

**Affirmation**

The above-named DBE firm affirms that it will perform the portion of the contract for the estimated dollar value as stated above and that the firm is DBE certified to perform the specific trades.

By \_\_\_\_\_  
\_\_\_\_\_  
(Signature)

Date:

\_\_\_\_\_  
(Title)

**If 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.**

Submit this page for each DBE subcontractor.

**A4.3.2 Certificate of Buy American Compliance – Total Facility**

**CERTIFICATE OF BUY AMERICAN COMPLIANCE FOR TOTAL FACILITY**

As a matter of bid responsiveness, the bidder or offeror must complete, sign, date, and submit this certification statement with their proposal. The bidder or offeror must indicate how they intend to comply with 49 USC § 50101 by selecting one of the following certification statements. These statements are mutually exclusive. Bidder must select one or the other (i.e. not both) by inserting a checkmark (✓) or the letter "X".

- Bidder or offeror hereby certifies that it will comply with 49 USC. 50101 by:
- a) Only installing steel and manufactured products produced in the United States; or
  - b) Installing manufactured products for which the FAA has issued a waiver as indicated by inclusion on the current FAA Nationwide Buy American Waivers Issued listing; or
  - c) Installing products listed as an Excepted Article, Material or Supply in Federal Acquisition Regulation Subpart 25.108.

By selecting this certification statement, the bidder or offeror agrees:

- 1. To provide to the Owner evidence that documents the source and origin of the steel and manufactured product.
  - 2. To faithfully comply with providing US domestic products.
  - 3. To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.
- The bidder or offeror hereby certifies it cannot comply with the 100% Buy American Preferences of 49 USC § 50101(a) but may qualify for either a Type 3 or Type 4 waiver under 49 USC § 50101(b). By selecting this certification statement, the apparent bidder or offeror with the apparent low bid agrees:
- 1. To submit to the Owner within 15 calendar days of the bid opening, a formal waiver request and required documentation that support the type of waiver being requested.
  - 2. That failure to submit the required documentation within the specified timeframe is cause for a non-responsive determination that may result in rejection of the proposal.
  - 3. To faithfully comply with providing US domestic products at or above the approved US domestic content percentage as approved by the FAA.
  - 4. To furnish US domestic product for any waiver request that the FAA rejects.
  - 5. To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.

**Required Documentation**

**Type 3 Waiver** - The cost of components and subcomponents produced in the United States is more than 60% of the cost of all components and subcomponents of the "facility". The required documentation for a type 3 waiver is:

- a) Listing of all manufactured products that are not comprised of 100% US domestic content (Excludes products listed on the FAA Nationwide Buy American Waivers Issued listing and



products excluded by Federal Acquisition Regulation Subpart 25.108; products of unknown origin must be considered as non-domestic products in their entirety)

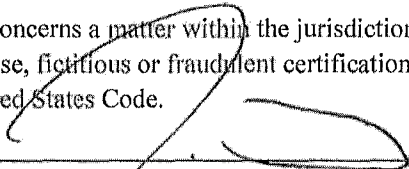
- b) Cost of non-domestic components and subcomponents, excluding labor costs associated with final assembly and installation at project location.
- c) Percentage of non-domestic component and subcomponent cost as compared to total "facility" component and subcomponent costs, excluding labor costs associated with final assembly and installation at project location.

**Type 4 Waiver** – Total cost of project using US domestic source product exceeds the total project cost using non-domestic product by 25%. The required documentation for a type 4 of waiver is:

- a) Detailed cost information for total project using US domestic product
- b) Detailed cost information for total project using non-domestic product

**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.

7/5/17  
\_\_\_\_\_  
Date  
**HAZARD CONSTRUCTION COMPANY**  
\_\_\_\_\_  
Company Name

  
\_\_\_\_\_  
Signature  
**JASON A. MORDHORST, PRESIDENT**  
\_\_\_\_\_  
Title

### A4.3.3 Certificate of Buy American Compliance – Manufactured Product

#### Certificate of Buy American Compliance for Manufactured Products

As a matter of bid responsiveness, the bidder or offeror must complete, sign, date, and submit this certification statement with their proposal. The bidder or offeror must indicate how they intend to comply with 49 USC § 50101 by selecting one on the following certification statements. These statements are mutually exclusive. Bidder must select one or the other (not both) by inserting a checkmark (✓) or the letter "X".

- Bidder or offeror hereby certifies that it will comply with 49 USC § 50101 by:
- Only installing steel and manufactured products produced in the United States, or;
  - Installing manufactured products for which the FAA has issued a waiver as indicated by inclusion on the current FAA Nationwide Buy American Waivers Issued listing, or;
  - Installing products listed as an Excepted Article, Material or Supply in Federal Acquisition Regulation Subpart 25.108.

By selecting this certification statement, the bidder or offeror agrees:

- To provide to the Owner evidence that documents the source and origin of the steel and manufactured product.
- To faithfully comply with providing US domestic product
- To furnish US domestic product for any waiver request that the FAA rejects
- To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.

- The bidder or offeror hereby certifies it cannot comply with the 100% Buy American Preferences of 49 USC § 50101(a) but may qualify for either a Type 3 or Type 4 waiver under 49 USC § 50101(b). By selecting this certification statement, the apparent bidder or offeror with the apparent low bid agrees:

- To the submit to the Owner within 15 calendar days of the bid opening, a formal waiver request and required documentation that support the type of waiver being requested.
- That failure to submit the required documentation within the specified timeframe is cause for a non-responsive determination may result in rejection of the proposal.
- To faithfully comply with providing US domestic products at or above the approved US domestic content percentage as approved by the FAA.
- To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.

#### Required Documentation

**Type 3 Waiver** - The cost of the item components and subcomponents produced in the United States is more that 60% of the cost of all components and subcomponents of the "item". The required documentation for a type 3 waiver is:

- Listing of all product components and subcomponents that are not comprised of 100% US domestic content (Excludes products listed on the FAA Nationwide Buy American

Waivers Issued listing and products excluded by Federal Acquisition Regulation Subpart 25.108; products of unknown origin must be considered as non-domestic products in their entirety).

- b) Cost of non-domestic components and subcomponents, excluding labor costs associated with final assembly at place of manufacture.
- c) Percentage of non-domestic component and subcomponent cost as compared to total "item" component and subcomponent costs, excluding labor costs associated with final assembly at place of manufacture.

**Type 4 Waiver** – Total cost of project using US domestic source product exceeds the total project cost using non-domestic product by 25%. The required documentation for a type 4 of waiver is:

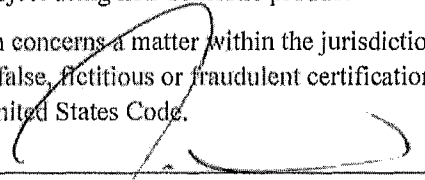
- a) Detailed cost information for total project using US domestic product
- b) Detailed cost information for total project using non-domestic product

**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.

7/5/17  
\_\_\_\_\_  
Date

**HAZARD CONSTRUCTION COMPANY**

\_\_\_\_\_  
Company Name

  
\_\_\_\_\_  
Signature

**JASON A. MORDHORST, PRESIDENT**

\_\_\_\_\_  
Title

**ATTACHMENT E**  
**SUPPLEMENTARY SPECIAL PROVISIONS**

## **SUPPLEMENTARY SPECIAL PROVISIONS**

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

1. The **2015 Edition** of the Standard Specifications for Public Works Construction (The "GREENBOOK").
2. The **2015 Edition** of the City of San Diego Standard Specifications for Public Works Construction (The "WHITEBOOK"), including the following:
  - a) General Provisions (A) for all Contracts.

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### **SECTION 1 - TERMS, DEFINITIONS, ABBREVIATIONS, UNITS OF MEASURE, AND SYMBOLS**

- 1-2 TERMS AND DEFINITIONS.** To the "WHITEBOOK", item 54, "Normal Working Hours", ADD the following:

The **Normal Working Hours** are 7:00 AM to 5:00 PM.

### **SECTION 2 - SCOPE AND CONTROL OF WORK**

- 2-3.2 Self Performance.** To the "GREENBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. You shall perform, with your own organization, Contract Work amounting to at least 50% of the base Bid **AND** 50% of any alternates.

- 2-7 SUBSURFACE DATA.** To the "WHITEBOOK", 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:
  - a) Report of Geotechnical Investigation dated April 17, 2014 by Allied Geotechnical Engineers, Inc. **See Appendix F.**

- 2-16 CONTRACTOR REGISTRATION AND ELECTRONIC REPORTING SYSTEM.** To the "WHITEBOOK", item 1, DELETE in its entirety.

## **SECTION 3 – CHANGES IN WORK**

**3-5.1**        **Claims.** To the “WHITEBOOK”, DELETE in its entirety and SUBSTITUTE with the following:

**ADD:**

**3-5.1**        **Claims.**

1.        A Claim is a written demand by you that seeks an adjustment in the Contract Price, Contract Time, or other relief associated with a dispute arising under or relating to the Contract, including a breach of any provision thereof. A voucher, invoice, or other routine request for payment is not a Claim.
2.        A Claim shall conform to these specifications and may be considered after the City has previously denied a request by you for a Change Order seeking the demanded relief.
3.        You shall submit a Claim to the Engineer if a dispute occurs that arises from or relates to the Contract. The Claim shall seek all relief to which you assert you are entitled as a result of the event(s) giving rise to the dispute. Your failure to process a Claim in accordance with these specifications shall constitute a waiver of all relief associated with the dispute. Claims are subject to 6-11, “Right to Audit”.
4.        You shall continue to perform the Services and Work and shall maintain the Schedule during any dispute proceedings. The Engineer will continue to make payments for undisputed Services and Work.
5.        The City’s Claims process specified herein shall not relieve you of your statutory obligations to present claims prior to any action under the California Government Code.

**3-5.1.1**        **Initiation of Claim.**

1.        You shall promptly, but no later than 30 Days after the event(s) giving rise to the Claim, deliver the Claim to the Engineer.
2.        You shall not process a Claim unless the Engineer has previously denied a request by you for a Change Order that sought the relief to be pursued in the claim.

**3-5.1.1.1**        **Claim Certification Submittal.**

1.        If your Claim seeks an increase in the Contract Price, the Contract Time, or both, submit with the Claim an affidavit certifying the following:
  - a)        The Claim is made in good faith and covers all costs and delays to which you are entitled as a result of the event(s) giving rise to the Claim.
  - b)        The amount claimed accurately reflects the adjustments in the Contract Price, the Contract Time, or both to which you believe you are entitled.

- c) All supporting costs and pricing data are current, accurate, and complete to the best of your knowledge. The cost breakdown per item of Work shall be supplied.
- d) You shall ensure that the affidavit is executed by an official who has the authority to legally bind you.

**3-5.1.2 Initial Determination.**

- 1. The Engineer will respond in writing to your Claim within 30 Days of receipt of the Claim.

**3-5.1.3 Settlement Meeting.**

- 1. If you disagree with the Initial Determination, you shall request a Settlement Meeting within 30 Days. Upon receipt of this request, the Engineer will schedule the Settlement Meeting within 15 Working Days.

**3-5.1.7 City's Final Determination.**

- 1. If a settle agreement is not reached, the City shall make a written Final Determination within 10 Working Days after the Settlement Meeting.
- 2. If you disagree with the City's Final Determination, notify the Engineer in writing of your objection within 15 Working Days after receipt of the written determination and file a "Request for Mediation" in accordance with 3-5.2, "Dispute Resolution Process".
- 3. Failure to give notice of objection within the 15 Working Days period shall waive your right to pursue the Claim.

**3-5.1.8 Mandatory Assistance.**

- 1. If a third party dispute, litigation, or both arises out of or relates in any way to the Services provided under the Contract, upon the City's request, you shall agree to assist in resolving the dispute or litigation. Your assistance includes, but is not limited to the following:
  - a) Providing professional consultations.
  - b) Attending mediations, arbitrations, depositions, trials, or any event related to the dispute resolution and litigation.

**3-5.1.8.1 Compensation for Mandatory Assistance.**

- 1. The City will reimburse you for reasonable fees and expenses incurred by you for any required assistance rendered in accordance with 3-5.1.8, "Mandatory Assistance" as Extra Work.
- 2. The Engineer will determine whether these fees and expenses were necessary due to your conduct or failure to act.
- 3. If the Engineer determines that the basis of the dispute or litigation in which these fees and expenses were incurred were the result of your conduct or your failure to act in part or in whole, you shall reimburse the City for any payments made for these fees and expenses.

4. Reimbursement may be through any legal means necessary, including the City's withholding of your payment.

**3-5.2.3 Selection of Mediator.** To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. A single mediator, knowledgeable in construction aspects and acceptable to both parties, shall be used to mediate the dispute.
2. To initiate mediation, the initiating party shall serve a Request for Mediation at the American Arbitration Association (AAA) on the opposing party.
3. If AAA is used, the initiating party shall concurrently file with AAA a "Request for Mediation" along with the appropriate fees, a copy of requested mediators marked in preference order, and a preference for available dates.
4. If AAA is selected to coordinate the mediation (Administrator), within 10 Working Days from the receipt of the initiating party's Request for Mediation, the opposing party shall file the following:
  - a) A copy of the list of the preferred mediators listed in preference order after striking any mediators to which they have any objection.
  - b) A preference for available dates.
  - c) Appropriate fees.
5. If the parties cannot agree on a mediator, then each party shall select a mediator and those mediators shall select the neutral third party to mediate the matter.

**3-5.3 Forum of Litigation.** To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. It is the express intention that all legal actions and proceedings related to the Contract or Agreement with the City or to any rights or any relationship between the parties arising therefrom shall be solely and exclusively initiated and maintained in courts of the State of California for the County of San Diego.

## **SECTION 4 - CONTROL OF MATERIALS**

**4-1.3.1 General.** To the "WHITEBOOK", ADD the following:

1. Steel pipe in sizes larger than 18 inches shall require inspection at the source of production.
2. City lab staff or a qualified inspection agency approved by the Engineer shall witness all welding, lining, coating, and testing. You shall incur additional inspection costs outlined in 4-1.3.3, "Inspection of Items Not Locally Produced".



3. All parts of production (including but not limited to product fabrication, welding, testing, lining, and coating of straight pieces and specials) shall be performed or produced in the United States.
4. Welding and all testing shall be performed by certified welders and testing staff with credentials traceable in the United States.

**4-1.3.2 Inspection by the Agency.** To the "GREENBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. The City will provide inspection and testing laboratory services within the continental United States within a 200-mile radius of the geographical limits of the City.

**4-1.3.3 Inspection of Items Not Locally Produced.** To the "WHITEBOOK", DELETE in its entirety.

**ADD:**

**4-1.3.3 Inspection of Items Not Locally Produced.** To the "GREENBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. When you intend to purchase materials, fabricated products, or equipment from sources located more than 200 miles (321.9 km) outside the geographical limits of the City, City Lab staff or a qualified inspection agency approved by the Engineer, shall be engaged at your expense to inspect the materials, equipment, or process.
2. This approval shall be obtained before producing any material or equipment. City Lab staff or inspector shall evaluate the materials for conformance with the requirements of the Plans and Specifications. You shall forward reports required by the Engineer. No materials or equipment shall be shipped nor shall any processing, fabrication or treatment of such materials be done without proper inspection by City Lab staff or the approved agent. Approval by said agent shall not relieve you of responsibility for complying with the requirements of the Contract Documents.
3. The Engineer may elect City Lab staff to perform inspection of an out-of-town manufacturer. You shall incur additional inspection costs of the Engineer including lodging, meals, and incidental expenses based on Federal Per Diem Rates, along with travel and car rental expenses. If the manufacturing plant operates a double shift, a double shift shall be figured in the inspection costs.
  - a) At the option of the Engineer, full time inspection shall continue for the length of the manufacturing period. If the manufacturing period will exceed 3 consecutive weeks, you shall incur additional inspection expenses of the Engineer's supervisor for a trip of 2 Days to the site per month.
  - b) When the Engineer elects City Lab staff to perform out-of-town inspections, the wages of staff employed by the City shall not be part of the additional inspection expenses paid by you.

- c) Federal Per Diem Rates can be determined at the location below:

<https://www.gsa.gov/portal/content/104877>

**4-1.3.6 Preapproved Materials.** To the "WHITEBOOK", ADD the following:

3. You shall submit in writing a list of all products to be incorporated in the Work that are on the AML.

**4-1.6 Trade Names or Equals.** To the "WHITEBOOK", ADD the following:

11. You shall submit your list of proposed substitutions for an "equal" item **no later than 5 Working Days after the determination of the Apparent Low Bidder** and on the City's Product Submittal Form available at:

<http://www.sandiego.gov/publicworks/edocref/index.shtml>

**SECTION 6 - PROSECUTION, PROGRESS AND ACCEPTANCE OF WORK**

**6-2.1 Moratoriums.** To the "WHITEBOOK", ADD the following:

3. Do not Work in the areas where there is currently a moratorium issued by the City. The areas subject to moratorium are listed here:
- a) 300 feet from any occupied burrow of burrowing owls (*Speotyto cunicularia hypugaea*) from February 1 to August 31 (inclusive). See **Appendix A**.

**ADD:**

**6-3.2.1.1 Environmental Document.**

1. The City of San Diego Environmental Analysis Section (EAS) of the Development Services Department has prepared an Amended Mitigated Negative Declaration (A-MND) for Brown Field Airport (SDM) 8L/26R Runway Rehabilitation Phase III, as referenced in the Contract Appendix. You shall comply with all requirements of the A-MND as set forth in **Appendix A**.
2. Compliance with the City's environmental document shall be included in the Contract Price, unless separate bid items have been provided.

**6-3.2.2 Archaeological and Native American Monitoring Program.** To the "WHITEBOOK", ADD the following:

4. The Contractor will retain a qualified archaeologist for this Contract. You shall coordinate your activities and Schedule with the activities and schedules of the archaeologist monitor. Notify the Engineer before noon of the Working Day before monitoring is required. See 2-11, "INSPECTION" for details.

## SECTION 7 - RESPONSIBILITIES OF THE CONTRACTOR

**7-3 INSURANCE.** To the "GREENBOOK", DELETE in its entirety and SUBSTITUTE with the following:

**7-3 INSURANCE.**

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

**7-3.1 Policies and Procedures.**

1. You shall 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 shall 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. The payment for insurance shall be included in the Contract Price as bid by you. 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 shall 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 shall 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 shall 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 shall be no endorsement or modification limiting the scope of coverage for either "insured vs. insured" claims or contractual liability. You shall maintain the same or equivalent insurance for at least 10 years following completion of the Work.
4. All costs of defense shall be outside the policy limits. Policy coverage shall be in liability limits of not less than the following:

<u>General Annual Aggregate Limit</u>	<u>Limits of Liability</u>
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 shall 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 shall be outside the limits of the policy.

**7-3.3 Rating Requirements.** Except for the State Compensation Insurance Fund, all insurance required by this Contract as described herein shall 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 shall 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 shall

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.**

1. You shall 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.
2. To the fullest extent allowed by law e.g., California Insurance Code §11580.04, the policy shall be endorsed to include the City and its respective elected officials, officers, employees, agents, and representatives as additional insured.
3. The additional insured coverage for projects for which the Engineer's Estimate is \$1,000,000 or more shall 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.
4. The additional insured coverage for projects for which the Engineer's Estimate is less than \$1,000,000 shall 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 shall 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 shall provide that any insurance maintained by the City and its elected officials, officers, employees, agents and representatives shall be in excess of your insurance and shall not contribute to it.

**7-3.5.1.3 Project General Aggregate Limit.** The policy or policies shall 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 shall reduce the Designated Construction Project General Aggregate Limit. The Designated Construction Project General Aggregate Limit shall 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 shall 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.

**7-3.6 Deductibles and Self-Insured Retentions.** You shall pay for all deductibles and self-insured retentions. You shall 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 shall 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 shall follow the form of the primary policy or policies e.g., all endorsements.

**7-4 NOT USED.** To the "GREENBOOK", DELETE in its entirety and SUBSTITUTE with the following:

**7-4 WORKERS' COMPENSATION INSURANCE AND EMPLOYERS LIABILITY INSURANCE.**

1. In accordance with the provisions of §3700 of the California Labor Code, you shall 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 shall be not less than the following:

<u>Workers' Compensation</u>	<u>Statutory Employers Liability</u>
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 requires 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 shall comply with such provisions before commencing the Work as required by §1861 of the California Labor Code.

**7-4.1. Waiver of Subrogation.** The policy or policies shall 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.

**7-8.6 Water Pollution Control.** To the "WHITEBOOK", ADD the following:

6. Based on a preliminary assessment by the City, this Contract is subject to WPCP.

**ADD:**

**7-16.1.3 Weekly Updates Recipients.**

1. Submit a weekly correspondence with updates, traffic control issues and locations, lane closures, and any other pertinent information (with additional contact names given during award process) to the following recipients:

Cynthia Meinhardt, Senior Engineer, [CMeinhardt@sandiego.gov](mailto:CMeinhardt@sandiego.gov)

Jihad Sleiman, Project Engineer, [JSleiman@sandiego.gov](mailto:JSleiman@sandiego.gov)

James Botica, Project Engineer, [JBotica@sandiego.gov](mailto:JBotica@sandiego.gov)

**7-20 ELECTRONIC COMMUNICATION.** To the "WHITEBOOK", ADD the following:

2. Virtual Project Manager shall be used on this Contract.

**7-21.1 General.** To the "WHITEBOOK", item 3, DELETE in its entirety and SUBSTITUTE with the following:

3. During the construction phase of projects, the minimum waste management reduction goal is 90% of the inert material (a material not subject to decomposition such as concrete, asphalt, brick, rock, block, dirt, metal, glass, and etc.) and 65% of the remaining project waste. You shall provide appropriate documentation, including a Waste Management Form attached as an appendix, and evidence of recycling and reuse of materials to meet the waste reduction goals specified.

**SECTION 9 - MEASUREMENT AND PAYMENT**

**9-3.2 Partial and Final Payment.** To the "GREENBOOK", paragraph (3), DELETE in its entirety and SUBSTITUTE with the following:

Upon commencement of the Work, an escrow account shall be established in a financial institution chosen by you and approved by the City. Documentation for an escrow payment shall have an escrow agreement signed by you, the City, and the escrow agent. From each progress payment, no less than 5% will be deducted and deposited by the City into the escrow account. Upon completion of the Contract, the City will notify the Escrow agent in writing to release the funds to you. Only the designated representative of the City shall sign the request for the release of Escrow funds.

**ADD:**

**9-3.7 Compensation Adjustments for Price Index Fluctuations.** To the "WHITEBOOK" ADD the following:

5. This Contract is not subject to the provisions of The "WHITEBOOK" for Compensation Adjustments for Price Index Fluctuations for paving asphalt.

**SECTION 217 – BEDDING AND BACKFILL MATERIALS**

**217-2.2 Stones, Boulders, and Broken Concrete.** To the "GREENBOOK", Table 217-2.2, DELETE in its entirety and SUBSTITUTE with the following:

**TABLE 217-2.2**

<b>Zone</b>	<b>Zone Limits</b>	<b>Maximum Size (greatest dimension)</b>	<b>Backfill Requirements in Addition to 217-2.1</b>
Street or Surface Zone	From ground surface to 12" (300 mm) below pavement subgrade or ground surface	2.5" (63 mm)	As required by the Plans or Special Provisions.
Street or Surface Zone Backfill of Tunnels beneath Concrete Flatwork		Sand	Sand equivalent of not less than 30.
Trench Zone	From 12" (300 mm) below pavement subgrade or ground surface to 12" (300 mm) above top of pipe or box	6" (150 mm)	
Deep Trench Zone (Trenches 3' (0.9 m) wide or wider)	From 60" (1.5 m) below finished surface to 12" (300 mm) above top of pipe or box	Rocks up to 12" (300 mm) excavated from trench may be placed as backfill	
Pipe Zone	From 12" (300 mm) above top of pipe or box to 6" (150 mm) below bottom of pipe or box exterior	2.5" (63 mm)	Sand equivalent of not less than 30 or a coefficient of permeability greater than 1-½ inches/hour (35 mm per hour).



Zone	Zone Limits	Maximum Size (greatest dimension)	Backfill Requirements in Addition to 217-2.1
Overexcavation	Backfill more than 6" (150 mm) below bottom of pipe or box exterior	6" (150 mm)	Sand equivalent of not less than 30 or a coefficient of permeability greater than 1-½ inches/hour (35 mm per hour). Trench backfill slurry (100-E-100) per 201- 1 may also be used.

**302-7.4 Payment.** To the "WHITEBOOK", Item 1, last sentence, DELETE in its entirety and SUBSTITUTE with the following:

Payment shall not be made for additional fabric for overlapped areas.

**SECTION 802 - NATIVE HABITAT PROTECTION, INSTALLATION, MAINTENANCE, AND MONITORING**

**802-2.1 Project Biologist.** To the "WHITEBOOK", ADD the following:

5. The Contractor will retain a qualified Project Biologist to perform biological monitoring work for this Contract. You shall coordinate your activities and Schedule with the activities and schedules of the Project Biologist.

**EQUAL OPPORTUNITY CONTRACTING PROGRAM (EOCP) SECTION A - GENERAL REQUIREMENTS**

**4.1 Nondiscrimination in Contracting Ordinance.** To the "WHITEBOOK", subsection 4.1.1, paragraph (2), sentence (1), DELETE in its entirety and SUBSTITUTE with the following:

You shall not discriminate on the basis of race, gender, gender expression, gender identity, religion, national origin, ethnicity, sexual orientation, age, or disability in the solicitation, selection, hiring, or treatment of subcontractors, vendors, or suppliers.

**END OF SUPPLEMENTARY SPECIAL PROVISIONS (SSP)**

## TECHNICAL SPECIFICATIONS

**TECHNICAL SPECIFICATIONS  
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## SECTION M-100

### MOBILIZATION AND DEMOBILIZATION

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. This item shall consist of obtaining all required insurance, preparatory work and operations necessary for the movement of personnel, equipment, supplies, and incidentals to the project site; furnishing and erecting a field office, and other facilities necessary for work on the project; and all other work and operations, as specified herein, which must be performed or cost incurred prior to beginning work on the various contract items at the project site.

##### 1.2 PRINCIPAL ITEMS OF MOBILIZATION

- A. Mobilization shall include the following principal items:
1. Required insurance.
  2. Required bonds
  3. Permits for this project as required by these specifications
  4. Contractor shall prepare, submit and obtain approval from the FAA for construction activities required. FAA Form 7460-1 shall be used and submitted to the FAA at least 45 days before construction.
  5. Contractor shall prepare, submit and obtain approval from the FAA for FAA Form 7480-1, Notice for Construction, Alteration and Deactivation of Airports. FAA Form 7480-1 shall be submitted at least 90 days before construction.
  6. The Contractor's approved Baseline Construction Schedule
  7. Contractor's Staging and Laydown Area, including:
    - a. complete installation of all field offices and laboratories
    - b. site utilities,
    - c. power service and supply of temporary generator power as may be needed until power service is procured.
    - d. fencing and gates,
    - e. roadways and site improvements,
    - f. installation of anti-tracking plates,
    - g. supplies and other infrastructure requirements shown on the drawings and required by the specifications.
  8. Posting all required OSHA notices and establishing on-site safety programs.
  9. Submittals of Shop and Coordination Drawings and Job Mixes for the first thirty (30) days of construction.

10. Security badging and training as required per these specifications
11. Procurement and transport of long lead construction materials to the job site.
12. Procurement of barricades, flag lines, and construction fences as depicted in the construction drawings, or as required.
13. Survey, potholing, and electrical investigations as required and not otherwise provided for by the City per Section 2.9.2 of The City of San Diego Standard Specifications for Public Works Construction (The WHITEBOOK).
14. Contractor shall staff and maintain at least one (1) operational vacuum sweeper truck and at least one (1) water truck on site at all times during working hours.
15. Biological Resources
  - a. Contractor shall procure a certified biologist to perform the requirements as shown on the plans and contained in **Appendix A, Burrowing Owl Survey Memorandum, July 2014** and the MMRP for the Amended Mitigated Negative Declaration No. 358563.
16. Historical Resources
  - a. Contractor shall procure a certified archaeologist and a Native American monitor to perform the requirements of Mitigation Measure HIST-1 of the City of San Diego Archeological Monitoring Program as shown on the plans outlined in the MMRP contained in **Appendix A.**

### **1.3 DEMOBILIZATION**

- A. Demobilization shall include:
  1. Removal of construction facilities, including all utilities
  2. Removal of all equipment and remaining stockpiles off the site
  3. Reconstruction of haul and service roads and taxiways to pre-construction conditions and approved by the Engineer.
  4. Repair of existing structures, lighting and signage that may have been damaged during construction.
  5. Final cleanup of the site after completion of the project
  6. Submittal of as-built redline drawing to the City

## **PART 2 - METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

### **2.1 MEASUREMENT**

- A. Mobilization and Demobilization, excluding the procurement of Biological and Historical Resources, shall be measured for payment as one completed item

- B. Biological Resources shall be measured for payment as one completed item.
- C. Historical Resources shall be measured for payment as one completed item.

**2.2 PAYMENT**

- A. Payment for Mobilization and Demobilization will be made in accordance with 2015 Whitebook Section 9-3.4.1.
- B. Biological Resources shall be paid for at the contract lump sum price.
- C. Historical Resources shall be paid for at the contract lump sum price.
- D. The right is reserved to require submittal of invoices, receipted bills, payrolls, and other appropriate documents to justify any or all payment under this item.
- E. Should the contract be altered as provided in the General Provisions, additional costs shall be included in the price for the individual items of additive work only. The contract prices for Mobilization and Demobilization shall not be altered.

Payment will be made under:

Item M-100-2.2-1	Mobilization and Demobilization .....	per Lump Sum
Item M-100-2.2-2	Biological Resources.....	per Lump Sum
Item M-100-2.2-3	Historical Resources.....	per Lump Sum

**END OF SECTION M-100**

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**PART I-GENERAL**  
**PROVISIONS SECTION G-10**  
**DEFINITION OF TERMS**

See 2015 Edition of the Standard Specifications for Public Works Construction (the Greenbook) as supplemented by the 2015 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:

- 10-1 AASHTO.** See 2015 Greenbook, Section 1, Subsection 1-3.3 "Institutions".
- 10-2 ACCESS ROAD.** The right-of-way, the roadway and all improvements constructed thereon connecting the airport to a public highway.
- 10-3 ADVERTISEMENT.** A public announcement, as required by local law, inviting bids for work to be performed and materials to be furnished.
- 10-4 AIP.** The Airport Improvement Program, a grant-in-aid program, administered by the Federal Aviation Administration.
- 10-5 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.
- 10-6 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.
- 10-7 ASTM.** See 2015 Greenbook, Section 1, Subsection 1-3.3 "Institutions".
- 10-8 AWARD.** See 2015 City Supplement, Section 1, Subsection 1-2, Terms and Definitions.
- 10-9 BIDDER.** See 2015 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 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 2015 City Supplement.

**10-14 CITY ENGINEER.** The Director, Department of Public Works, and the appointed official of the City of San Diego authorized to administer the contract.

**10-15 CONTRACT.** See 2015 City Supplement, Section 1, Subsection 1-2, Terms and Definitions.

**10-16 CONTRACT ITEM (PAY ITEM).** A specific unit of work for which a price is provided in the contract.

**10-17 CONTRACTOR.** See 2015 Greenbook, Section 1, Subsection 1-2 “Terms and Definitions”.

**10-18 CONTRACTOR’S LABORATORY.** The Contractor’s quality control organization in accordance with the Contractor Quality Control Program.

**10-19 CONSTRUCTION SAFETY AND PHASING PLAN (CSPP).** The overall plan for safety and phasing of a construction project developed by the airport operator, or developed by the airport operator’s consultant and approved by the airport operator. It is included in the invitation for bids and becomes part of the project specifications.

**10-20 DRAINAGE SYSTEM.** The system of pipes, ditches, and structures by which surface or subsurface waters are collected and conducted from the airport area.

**10-21 ENGINEER.** See Greenbook, Section 1, Subsection 1-2 “Terms and Definitions”.

**10-22 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.

**10-23 EXTRA WORK.** See 2015 Greenbook, Section 1, Subsection 1-2 “Terms and Definitions”.

**10-24 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.

**10-25 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.

**10-26 FORCE ACCOUNT.** Force account work is planning, engineering, or construction work done by the Owner or by another public agency pursuant to an agreement with the Sponsor’s employees.

**10-27 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.

**10-28 HOLIDAY.** See 2015 City Supplement, Section 1, Subsection 1-2, Terms and Definitions.

- 10-29 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. . Also referred to as "Engineer's Laboratory" or "quality assurance laboratory."
- 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 2015 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. Where the term "Owner" is capitalized in this document, it shall mean airport Sponsor only. Also See 2015 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 2015 Greenbook, Section 1, Subsection 1-2 "Terms and Definitions". In the above definitions, the following terms are defined as follows:
- 10-35 STANDARD PLANS.** The Standard Plans issued by the City of San Diego Standard Drawings.
- 10-36 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.
- 10-37 PROJECT.** See 2015 City Supplement, Section 1, Subsection 1-2, Terms and Definitions.
- 10-38 PROPOSAL.** See 2015 Greenbook, Section 1, Subsection 1-2 "Terms and Definitions".
- 10-39 RUNWAY.** The area on the airport prepared for the landing and takeoff of aircraft.

- 10-40 SPECIFICATIONS.** See 2015 Greenbook, Section 1, Subsection 1-2 “Terms and Definitions”.
- 10-41 SPONSOR.** A Sponsor is defined in 49 USC § 47102(24) as a public agency that submits to the FAA for an AIP grant; or a private Owner of a public-use airport that submits to the FAA an application for an AIP grant for the airport.
- 10-42 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.
- 10-43 SUBGRADE.** See 2015 Greenbook, Section 1, Subsection 1-2 “Terms and Definitions”.
- 10-44 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.
- 10-45 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.
- 10-46 SURETY.** See 2015 Greenbook, Section 1, Subsection 1-2 “Terms and Definitions”.
- 10-47 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 and terminal areas.
- 10-48 WORK.** See 2015 Greenbook, Section 1, Subsection 1-2 “Terms and Definitions”.

**END OF SECTION G-10**

## SECTION G-20

### PROPOSAL REQUIREMENTS AND CONDITIONS

- 20-1 ADVERTISEMENT (Notice Inviting Bids).** See Special Provisions and Supplementary Special Provisions (SSP)
- 20-2 PREQUALIFICATION OF BIDDERS.** See Special Provisions and Supplementary Special Provisions (SSP)
- 20-3 CONTENTS OF PROPOSAL FORMS.** See Special Provisions and Supplementary Special Provisions (SSP)
- 20-4 ISSUANCE OF PROPOSAL FORMS.** See Special Provisions and Supplementary Special Provisions (SSP)
- 20-5 INTERPRETATION OF ESTIMATED PROPOSAL QUANTITIES.**
- See 2015 Greenbook/Whitebook.
- Implementation of the Safety Plan is incidental to the individual bid items and no separate payment shall be made.
- 20-6 EXAMINATION OF PLANS, SPECIFICATIONS, AND SITE.** See requirements outlined in the Special Provisions and Supplementary Special Provisions (SSP)
- 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/Whitebook, Section 2, Subsection 2-7.
- 20-7 PREPARATION OF PROPOSAL.** See Special Provisions and Supplementary Special Provisions (SSP)
- 20-8 RESPONSIVE AND RESPONSIBLE BIDDER.** See Special Provisions and Supplementary Special Provisions (SSP)

A responsible bidder has the ability to perform successfully under the terms and conditions of a proposed procurement, as defined in 49 CFR § 18.36(b)(8). This includes such matters as Contractor integrity, compliance with public policy, record of past performance, and

financial and technical resources.

- 20-9 **IRREGULAR PROPOSALS.** See Special Provisions and Supplementary Special Provisions (SSP)
- 20-10 **BID GUARANTEE.** See Special Provisions and Supplementary Special Provisions (SSP)
- 20-11 **DELIVERY OF PROPOSAL.** See Special Provisions and Supplementary Special Provisions (SSP)
- 20-12 **WITHDRAWAL OR REVISION OF PROPOSALS.** See Special Provisions and Supplementary Special Provisions (SSP)
- 20-13 **PUBLIC OPENING OF PROPOSALS.** See Special Provisions and Supplementary Special Provisions (SSP)
- 20-14 **DISQUALIFICATION OF BIDDERS.** See Special Provisions and Supplementary Special Provisions (SSP)
- 20-15 **RELIEF OF BIDDER.** See Special Provisions and Supplementary Special Provisions (SSP)

**END OF SECTION G-20**

## SECTION G- 40

### SCOPE OF WORK

- 40-1 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 Brown Field Airport Runway 8L-26R Rehabilitation Phase 3. 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.
- 40-2 ALTERATION OF WORK AND QUANTITIES.** See 2015 Greenbook/Whitebook and Supplementary Special Provisions (SSP)
- 40-3 OMITTED ITEMS.** See 2015 Greenbook/Whitebook and Supplementary Special Provisions (SSP)
- 40-4 EXTRA WORK.** See 2105 Greenbook/Whitebook and Supplementary Special Provisions (SSP)
- 40-5 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 G-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 G-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 be responsible for the repair of any damage caused by the Contractor's equipment and personnel. The Contractor shall furnish erect, and maintain barricades, warning signs, flagperson, and other traffic control devices in reasonable conformity with the Manual on Uniform Traffic Control Devices, (MUTCD) (<http://mutcd.fhwa.dot.gov/>), unless otherwise specified. 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.

**40-6 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.

**40-7 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.

**40-8 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 G-40**

## SECTION G-50

### CONTROL OF WORK

- 50-1 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.

- 50-2 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.

**50-3 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.

From time to time, discrepancies within cited testing standards occur due to the timing of the change, edits, and/or replacement of the standards. If the Contractor discovers any apparent discrepancy within standard test methods, the Contractor shall immediately ask the Engineer for an interpretation and decision, and such decision shall be final.

The Order of Precedence of contract documents shall be as described in the "Whitebook" 2015 Edition Section 2-5.2 20-1 and Supplementary Special Provisions (SSP)

**50-4 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.

**50-5 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 "Whitebook" 2015 Edition Section 2-14 "Site Activities By The City or Separate Contractors."

**50-6 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 copies of survey notes to the Engineer for each area of construction and for each placement of material as specified to allow the Engineer to make periodic checks for conformance with plan grades, alignments, grade tolerances required by applicable material specifications. All surveys must be provided to the Engineer prior to commencing work items that will cover or disturb the survey staking as set by the Contractor's surveyor. Survey(s) and notes shall be provided in the following format(s): hard copy and electronic files. In the case of error on the part of the Contractor, or his/her employees or subcontractors, 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
- e. Fence lines at 100 foot stations.
- f. 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.
- g. Drain lines, cut stakes and alignment on 25-foot stations, inlet and manholes.
- h. 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)
- i. 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).

The establishment of Survey Control and/or reestablishment of survey control shall be by a State Licensed Land Surveyor.

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.

**50-7 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.

**50-8 AUTHORITY AND DUTIES OF INSPECTORS.** Inspectors 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 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 can be referred to the Engineer for his/her decision.

**50-9 INSPECTION OF THE WORK.** Reference Greenbook and Whitebook 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 G-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 2015 Greenbook and Whitebook 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.** See Greenbook/Whitebook and Supplementary Special Provisions (SSP)

**50-17 COST REDUCTION INCENTIVE.** See Greenbook/Whitebook and Supplementary Special Provisions (SSP)

**END OF SECTION G-50**



## SECTION G-60

### CONTROL OF MATERIALS

**60-1 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:

- a. Light Can Spacers
- b. L-867/868 Light Base and Transformer Housing

**60-2 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, quality assurance 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 quality assurance 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 for quality assurance 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 after review and approval of the Engineer.

The Contractor shall employ a testing organization to perform all Contractor required quality control 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 PDF, 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.

**60-3 CERTIFICATION OF COMPLIANCE.** See 2015 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.

**60-4 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.

**60-5 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.

**60-6 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.

**60-7 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 use in the work.

**60-8 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 G-60**

## SECTION G-70

### LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC

- 70-1 LAWS TO BE OBSERVED.** See Greenbook/Whitebook and Supplementary Special Provisions (SSP)
- 70-2 PERMITS, LICENSES, AND TAXES.** See Greenbook/Whitebook and Supplementary Special Provisions (SSP)
- 70-3 PATENTED DEVICES, MATERIALS, AND PROCESSES.** See 2015 Greenbook, Section 7, Subsection 7-11, "Patent Fees or Royalties".
- 70-4 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.

- 70-5 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.

**70-6 SANITARY, HEALTH, AND SAFETY PROVISIONS.** See Greenbook/Whitebook and Supplementary Special Provisions (SSP)

**70-7 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 G-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 G-80 hereinafter.

**70-8 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 G-101.

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.

**70-9 USE OF EXPLOSIVES.** Use of explosives is not authorized on this project.

**70-10 PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE.** See Greenbook/Whitebook and Supplementary Special Provisions (SSP)

**70-11 RESPONSIBILITY FOR DAMAGE CLAIMS.** See Greenbook/Whitebook and Supplementary Special Provisions (SSP)

**70-12 THIRD PARTY BENEFICIARY CLAUSE.** See Greenbook/Whitebook and Supplementary Special Provisions (SSP)

**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; the Construction Safety and Phasing Plan (CSPP); and any additional requirements as a result of a Safety Risk Management (SRM) review, if required. (See Special Provisions.)

Contractor shall refer to the approved CSPP to identify barricade requirements and other safety requirements prior to opening up sections of work to traffic.

**70-14 CONTRACTOR'S RESPONSIBILITY FOR WORK.** See Greenbook/Whitebook and Supplementary Special Provisions (SSP)

**70-15 CONTRACTOR'S RESPONSIBILITY FOR UTILITY SERVICE AND FACILITIES OF OTHERS.** *(Section Not Used)*

**70-16 FURNISHING RIGHTS-OF-WAY.** See Greenbook/Whitebook Section 2, Subsection 2-8 "Right-Of- Way".

- 70-17 PERSONAL LIABILITY OF PUBLIC OFFICIALS.** See Greenbook/Whitebook and Supplementary Special Provisions (SSP)
- 70-18 NO WAIVER OF LEGAL RIGHTS.** See Greenbook/Whitebook and Supplementary Special Provisions (SSP)
- 70-19 ENVIRONMENTAL PROTECTION.** See Greenbook/Whitebook and Supplementary Special Provisions (SSP)
- 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 Paleontological 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 Section G-40. 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 G-80.

**END OF SECTION G-70**



## SECTION G-80

### PROSECUTION AND PROGRESS

**80-1 SUBLETTING OF CONTRACT.** See Greenbook/Whitebook and Supplementary Special Provisions (SSP)

**80-2 NOTICE TO PROCEED.** See Greenbook/Whitebook and Supplementary Special Provisions (SSP)

**80-3 EXECUTION AND PROGRESS.** See Greenbook/Whitebook and Supplementary Special Provisions (SSP)

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.

**80-4 LIMITATION OF OPERATIONS.** See SECTION G-100, GENERAL PROJECT REQUIREMENTS.

- a. Operational safety on airport during construction. All Contractors' operations shall be conducted in accordance with the project Construction Safety and Phasing Plan (CSPP) and the provisions set forth within the current version of AC 150/5370-2. The CSPP included within the contract documents conveys minimum requirements for operational safety on the airport during construction activities. The Contractor shall prepare and submit a Safety Plan Compliance Document that details how it proposes to comply with the requirements presented within the CSPP.

The Contractor shall implement all necessary safety plan measures prior to commencement of any work activity. The Contractor shall conduct routine checks 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 CSPP and that they implement and maintain all necessary measures.

No deviation or modifications may be made to the approved CSPP unless approved in writing by the Owner or Engineer.

**80-5 CHARACTER OF WORKERS, METHODS, AND EQUIPMENT.** See Greenbook/Whitebook and Supplementary Special Provisions (SSP)

**80-6 TEMPORARY SUSPENSION OF THE WORK.** See Greenbook/Whitebook and Supplementary Special Provisions (SSP).

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.

- 80-7 DETERMINATION AND EXTENSION OF CONTRACT TIME.** See Greenbook/Whitebook and Supplementary Special Provisions (SSP)
- 80-8 FAILURE TO COMPLETE ON TIME.** See SECTION G-100, GENERAL PROJECT REQUIREMENTS.
- 80-9 DEFAULT AND TERMINATION OF CONTRACT.** See 2015 Greenbook/Whitebook 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.** See SECTION G-100, GENERAL PROJECT REQUIREMENTS.

**END OF SECTION G-80**

## SECTION G-100

### GENERAL PROJECT REQUIREMENTS

#### PART 1 - GENERAL

##### 1.1 DESCRIPTION OF WORK

- A. The Contractor shall include the furnishing of all supervision, labor, materials, tools, equipment and incidentals necessary to construct the Runway 8L-26R Pavement Rehabilitation-Phase 3 and associated improvements at Brown Field Airport, including other pertinent and incidental work, in accordance with the project Plans, and Specifications, and Federal Aviation Administration requirements noted herein. Specific phasing requirements are shown on the plans and discussed in the following sections of these Specifications.
- B. Specific work tasks include, but are not limited to:
1. Installation and maintenance of construction area fencing, construction barricades, closure markings and all other phasing improvement as shown on the plans.
  2. Construction of temporary crushed aggregate base access road.
  3. Milling of existing asphalt pavements.
  4. Construction of new pavements.
  5. Permanent and temporary pavement marking.
  6. Additional work as indicated on the project plans, and as specified herein, and the Federal Aviation Administration requirements and specifications as noted and specified herein.

##### 1.2 OPERATIONAL SAFETY ON THE AIRPORT

- A. The Contractor shall conduct all operations in a manner that will cause no interference with airplane traffic or normal operation of the airport. It is the contractor's responsibility to regulate the movements of his vehicles and equipment when it is necessary for a vehicle or piece of equipment to cross an active runway or taxiway, or when working within the safety area of an active taxiway or runway. Unescorted crossings of active runways and taxiways will not be allowed. All escorts shall be equipped with ground radios and shall contact the airport traffic control tower to receive permission to cross any active taxiways or runways. When an aircraft approaches work in progress adjacent to an active taxiway, the workers and equipment shall be withdrawn to a safe distance until the aircraft has passed. Aircraft shall always have the right-of-way. Pullbacks made by the Contractor shall be considered incidental and no separate payment shall be made.

B. In all operations, the Contractor shall be governed by the regulations and rules of the Airport and shall cooperate fully with the Engineer and Airport Manager. The Contractor shall refer to Section G-100-1.5 of these specifications regarding the operation of vehicles on the AOA. The Contractor shall also be bound by the operational safety requirements outlined in the Federal Aviation Administration (FAA) Advisory Circular No. 150/5370-2F, entitled "Operational Safety On Airports During Construction" and the provisions thereof. Should there be a conflict in the requirements, the provisions of the Plans and Specifications shall govern over the requirements in the FAA Advisory Circular. At all times, the Contractor shall keep the following requirements in mind:

1. Keep the airport operational for all users.
2. Minimize delays to aircraft operations.
3. Maintain safety of aircraft movement and airport operations as a whole.
4. Minimize delays to construction operations.
5. Minimize airport operation and construction activity conflicts.
6. Maintain a minimum of one (1) lane of traffic to ATCT and EEA buildings at all times.

### **1.3 INTERRUPTIONS AND STOPPAGES OF THE WORK DUE TO AIRCRAFT OPERATIONS AND HAZARDOUS CONDITIONS**

A. Work Stoppages:

1. Construction may be stopped by the Engineer any time he/she considers that the intent of the regulations regarding safety or Security Requirements is being violated or that a hazardous condition exists. This decision to suspend the operation will be final and will only be rescinded by the Engineer when satisfied that the Contractor has taken action to correct the condition and prevent recurrence.
2. Frequent inspections will be made by the Engineer or its authorized representative during the critical phases of the work to insure that the Contractor is following the recommended safety procedures. The Inspector shall report any violations or potential safety hazards to the Engineer who will in turn advise the Contractor of the concern for immediate correction by the Contractor.
3. Construction may also be stopped or suspended by Airport Management through the Engineer during periods of unsuitable weather, such as low visibility, or when it is necessary to provide an extra margin of safety to aircraft operations, or reduce other activities to keep the airport operational. Unsuitable weather is defined as atmospheric or environmental conditions which restrict construction activities and/or affect operation of aircraft while approaching a runway to land; during landing; taxiing between runways, ramps, aprons, hangars, or loading zones; standing by to takeoff as determined by the Airport Management or the

Engineer or his authorized representative. In addition, if a cloud condition is below 1,000 feet above ground level and or the prevailing visibility is below three miles, as reported by the airport traffic control tower at Brown Field Airport or if environmental conditions which may, in the opinion of the Engineer, affect the final outcome, position, or condition of the construction work, maintenance work, or improvement of any sort or nature.

**B. Intermittent Construction Operations:**

1. Work in this contract will occur on the AOA (Air Operation Area). Construction may require closing of certain areas by the Airport. However, some work may be done on an intermittent basis. The Contractor shall maintain constant communication with the Engineer when working on an AOA location, and immediately obey all instructions from the Engineer. Failure to obey instructions or maintain proper communication will be cause to suspend the Contractor's operations in such areas until satisfactory conditions are assured. Intermittent delays which can be expected to be a normal condition while working on an active airport include holding for aircraft on active taxiways, and holding short of NAVAID critical areas. No compensation or time extensions will be granted for such delays.
2. When directed to cease construction and move from the area, the Contractor shall immediately respond and move all material, equipment and personnel outside areas. Operations shall not be resumed until directed by the Engineer. Every reasonable effort will be made to cause minimum disturbance to the Contractor's operations; however, no guarantee can be made as to the extent to which disturbance can be avoided.
3. Limitation of Operations: The Contractor shall be responsible for controlling its operations and those of its subcontractors so as to provide for the free movement of aircraft in the operating areas of the AOA.

**1.4 JET BLAST**

- A. During all times during the construction work on this project, the Contractor shall be cognizant of the effects of jet blast and prop wash on the work site, materials, equipment and workers and shall take all steps necessary to ensure that no adverse effects from jet blast compromise safety. The Engineer reserves the right to shut down the Contractor's operations without compensatory contract time if he deems that the Contractor is not adequately protecting against possible jet blast damage to persons or property.

**1.5 MOTOR VEHICLES**

**A. Operation**

1. Motor vehicle operations within and on the Airport premises shall be governed generally by the provisions of the California State Motor Vehicle Codes and Traffic Direction procedures and signals for turns. Lights and safe-driving precaution shall be in conformity therewith. In addition, motor vehicles shall

conform to all special regulations prescribed by the Airport regulations or procedures.

2. Traffic on perimeter roads, public thoroughfares and parking areas of the Airport is limited to those vehicles properly licensed to operate on public streets and highways.
3. All vehicular equipment in the AOA, access road, aircraft parking or storage areas shall at all times comply with any lawful signal or direction of the Engineer, or Brown Field Airport employees. All traffic signs, lights and signals shall be obeyed, unless otherwise directed by the Engineer.
4. All persons operating motorized equipment of any character on any area shall operate the same in a careful and prudent manner and at a rate of speed posted or fixed by this section. At no time shall vehicles be operated at speeds greater than is reasonable and proper under the conditions existing at the point of operation, taking into account traffic and road conditions, view, and obstructions. Operation of vehicles shall be consistent with all conditions so as not to endanger the life, limb, or property or the rights of others entitled to the use thereof.
5. All Contractor vehicles shall be equipped with operable yellow flashing beacons. Beacons must be lighted during all periods of vehicle operation and while vehicle is on the AOA.
6. Any person operating equipment in the Air Operations Area shall, in addition to this section, abide by all existing Federal Aviation Administration and other governmental rules and regulations.
7. No person shall operate any motor vehicle or motorized equipment on the aircraft movement or non-movement areas of the Airport at a speed in excess of twenty (20) miles [32 km/h] per hour, or the posted speed limit, whichever is lower, less where conditions warrant, unless specified otherwise elsewhere. Designated motor vehicle drive lanes shall be utilized where provided unless specific authorization to the contrary is given by the Engineer.
8. No person operating a motor vehicle or motorized equipment in the AOA shall in any way hinder, stop, slow, or otherwise interfere with the operation of any aircraft on the Airport.
9. All aircraft and emergency vehicles have priority over Contractor vehicles. Contractor vehicles shall yield right of way to aircraft and emergency vehicles. Contractor shall ensure that under no circumstances will any contractor or subcontractor or other vehicle associated with the job pass beneath any part of an aircraft, or block the access to any parking area or delay any aircraft movement.

B. Parking

1. No parking is permitted on any Airport roadway as the primary purpose of the Airport roadways is for motor vehicle traffic.
2. No person shall park any motor vehicle, other equipment, or materials in the AOA of the Airport, except in a neat and orderly manner and at such points as prescribed by the contract documents.
3. Parking of construction workers' private vehicles shall also be in a public or private parking facility outside the AOA.

C. Vehicle Identification

1. All vehicular equipment operating within the AOA must display signs of commercial design on both sides of the vehicle, which identify the vehicle as belonging to the Contractor firm.
2. All Contractor vehicles must be equipped with 3 foot by 3-foot flags having a checkered pattern of International orange and white squares at least 1 foot on each side. For fabric color specifications, see FAA AC 150/5210-5D. Attach flag on top of vehicles with rigid pole so that the flag will be visible at all times. Vehicles without flags will not be permitted to enter the AOA.

D. Load Limits

1. When using airport roadways, the Contractor shall restrict the gross combination weight to 12,500 pounds, single axle maximum weight of 10,000 pounds, and a tandem axle weight maximum of 20,000 pounds. The vehicle weights are subject to verification by the Engineer.

E. Operators of Vehicles

1. All drivers operating vehicles on airport property must carry a valid United States driver's license on his/her person, appropriately endorsed for the type of equipment being operated.

**1.6 PERIMETER FENCE SECURITY**

- A. Contractor is required to ensure that the security of the airport is not compromised at any time.
- B. Contractor shall ensure that no gates are left open or fencing removed without approval of the Engineer. Adequate precautions shall be taken to prevent entrance of unauthorized persons to Airport-restricted areas or inadvertent entry of dogs or large animals into the AOA.
- C. Contractor shall provide a security guard at the AOA access gate during times of high construction traffic and during any asphalt paving operations.

## 1.7 DUST, DEBRIS AND DAMAGE CONTROL

### A. Debris

1. When Airport roadways and public highways are used in connection with construction under this contract, the Contractor shall remove all debris cluttering the surfaces of such roadways which is due to the operations of the Contractor, his subcontractors or suppliers. Trucks and equipment shall have all accumulated dirt, mud, rocks and debris removed before accessing the AOA, and when leaving the work area. Loads shall be struck flush and secured to prohibit loss of material. If spillage occurs, such roadways shall be swept clean immediately after such spillage to allow for safe operation of vehicles as determined by the Engineer. If the Contractor is negligent in cleanup and the City of San Diego forces are required to perform the work, the expense of said cleanup shall be paid by the Contractor.

### B. Foreign Object Debris (FOD)

1. No loose material or waste capable of causing damage to aircraft or capable of being ingested into jet engines may be left in the working area, on or next to runways, taxiways, ramps, or aprons. The Contractor shall direct special attention to all areas, which are operational to aircraft during construction. These shall be kept clean and clear of all materials or debris at all time. Any food waste shall be promptly cleared to prevent attracting birds and animals.

### C. Existing Airport Pavements and Facilities

1. The Contractor shall preserve and/or protect existing and new pavements and other facilities from damage due to construction operations. Existing pavements, facilities, utilities, or equipment, which are damaged, shall be replaced or reconstructed to original strength and appearance at the Contractor's expense. The Contractor shall take immediate action to replace any damaged facilities and equipment and reconstruct any damaged area, which is to remain in service.

### D. Dust Control

1. Dust resulting from salvage, demolition removal, or other construction activity work shall be controlled to avoid creation of a nuisance in the surrounding area. Use of water will not be permitted when it will result in, or create, hazardous or objectionable conditions such as flooding, pollution or pumping subgrade.

### E. Best Management Practices

1. The Contractor must conduct his operations in accordance with the City of San Diego's Best Management Practices. The Contractor shall provide erosion control devices such as silt fences and sandbags as required and as directed by the Engineer.



## **1.8 STORAGE AREAS**

- A. The Contractor Staging Area, depicted on the plans, shall be used to store all idle equipment, supplies and construction materials. Storage shall not interfere with operational areas.
- B. When not in use during working hours, and at all other times, all material and equipment shall be stored at the Contractor Staging Area indicated on the drawings unless the Engineer provides prior approval.
- C. Contractor shall not store materials or equipment in areas in which the equipment or materials will affect the operation of FAA electronic equipment.
- D. All equipment storage and movement shall have prior approval of the Engineer.
- E. No materials may be stored on the Aircraft Operating Area (AOA).
- F. Contractor's vehicles, equipment and materials shall be parked in the Contractor's staging area designated on the drawings with the restrictions listed thereon.
- G. The storage area shall be used to store all bulk materials needed for the project and may or may not be fenced at the Contractor's option. However, barricades with yellow flashing lights shall be installed where potential conflicts with aircraft or ground vehicular traffic exist. Stockpiles shall not penetrate the FAR Part 77 Imaginary Surfaces or present FOD problems. The Engineer shall first approve location of stockpiles of all bulk items (aggregates, etc.) in writing.
- H. The staging area shall be restored to its original condition at the completion of the project. The staging shall be cleaned and free of all excess material, stockpiles and debris at the completion of the project.

## **1.9 MAINTENANCE AND REPAIR OF HAUL ROAD**

- A. During removal and other work operations, and at the conclusion of the project, it will be the Contractor's responsibility to maintain the haul road in its initial condition and cross section. Material used to repair and rebuild the haul road shall be from Contractor-provided sources.
- B. Adequate sweeper trucks and water-distribution trucks shall operate as directed by the Engineer to eliminate dust and to Foreign Object Debris accumulation. Contractor shall take photographs and video tape the existing conditions of the asphalt road before and during the work and shall provide copies of photos and video to the Engineer to establish control conditions. At the conclusion of the project, the contractor shall repair asphalt damage to the existing airport vehicle service road. Repairs and maintenance of the haul road and vehicle service road will be considered incidental to the project.

## **1.10 CONSTRUCTION PHASING**

- A. The Contractor shall perform all construction work in accordance with the Construction Phasing Plans as shown and as described herein. The Contractor's schedule shall be

prepared in accordance with the Section 6-1 of the Standards Works for Public Construction and shall be submitted to the Engineer prior to commencement of construction. It shall show all work to be completed within the contract time limit. Liquidated damages in the amounts specified in Section G-100-1.12 will be assessed if the Contractor fails to complete any phase within the specified allowable duration.

1. **Work within Area Limit Lines.** The limits of work for each construction Work Area/Phase are clearly shown on the Phasing plans, indicating offset distances from the centerlines of adjacent active runways and/or taxiways. For each phase, these lines show the limit of the work area in which the Contractor may have workers, equipment, and materials, and in which he may conduct work for that phase. The limits of work for each work area for construction are shown on the construction phasing plans, indicating offset distances from adjacent active runways, taxilanes and/or taxiways. For each Work Area, these lines show the limit of the work area in which the Contractor may have workers, equipment, and materials, and in which he may conduct work for that area, including barriers, fencing, etc.

No Construction activity is permissible within the designated Runway Safety Area (RSA)/ Taxiway Object Free Area (TOFA) while the subject runway/taxiway or taxilane is open to aircraft operations. Work within the RSA/TOFA shall only be accomplished during night shift operations unless otherwise specified. Prior to reopening a runway/taxiway/taxilane closed for construction for any period, all equipment and materials shall be moved outside of the RSA/TOFA, all barricades and lighting shall be established per plan requirements, no stockpiles shall remain within RSA/TSA, grade shall be covered in a manner to prevent dust, rock movement due to jet blast, or other objectionable movement of material onto the open runway/taxiway/taxilane, and the adjacent taxiway pavement shall be cleaned of all construction debris and sweep.

Contractor shall maintain FOD control measures and dust control of all haul routes to and from the construction site. All utilities within and passing through the Work/Area Phase shall be kept operational at all times, unless otherwise specified.

Engineer shall retain the right to shut down Contractor operations in any Work Area if these conditions are not being met.

2. **Operations.** The Contractor shall conduct all his operations in such a manner so as to maintain a smooth, safe, uninterrupted flow of aircraft and vehicular traffic adjacent to the work site. He/she shall also ensure that runway and taxiway safety areas adjacent to active aircraft operations are in conformance with FAA standards at all times.
  - a. Limits of the various phases of work shall be clearly delineated with barricades, barricade lights and other markings as shown on the plans and specified herein, in order to deter aircraft and vehicles from entering the construction areas. The Contractor shall work closely with Airport

Management personnel and the Engineer to ensure that the work is accomplished with minimal interference to aircraft movements.

- b. The contractor shall be prepared to pullback his operations, workers, and equipment a maximum of fifteen (15) separate times, per work phase to allow for the safe passage of aircraft. Pullbacks made by the Contractor shall be considered incidental and no separate payment shall be made.
  - c. Whenever the Contractor is working adjacent to an active taxiway or next to an apron area that does not have alternative access to the airfield and aircraft approaches the work area, the Contractor will be required to "pull back" his operations, i.e., move workers, materials and equipment away from the taxiway. At no time shall a Contractor work within the safety area of an active taxiway or runway.
  - d. The Contractor shall maintain power supply for the runway lighting systems at all times, unless otherwise specified. When temporary bypasses of active lines are to be constructed in order to work on portions of the circuits, the circuits shall be de-energized and re-energized only in coordination with the Engineer.
3. **Work Time Restrictions.** Work shall be restricted by phase as indicated on the plans. The closures areas are defined as followed:
- a. Day/Unrestricted Closures Areas: Phases 0, 1A, 2, 2A and 3. Contractor work in these areas shall be during the hours of 7:00 AM and 5:00 PM, Monday through Saturday.
    - i) Barricade Lighting, as detailed on the plans, and temporary taxiway closure markings shall be erected and maintained around the perimeter of work areas as shown on the plans and shall be removed at the conclusion of each shift.
    - ii) The time allowances stated for all work shifts are totally inclusive of the Contractor moving onto the site, performing work activities, performing all clean-up, having the work area and haul routes inspected and approved by the Engineer, and moving off the site. The Contractor shall provide adequate lighting for the needs of the inspection personnel.
    - iii) Any Aircraft Operating Areas (AOA's) or adjoining runway, taxiway or taxilane safety area that does not pass inspection must remain closed until such time cleanup is performed and approved.
  - b. Off peak- Night Time Work Areas: Phase 2B. Contractor work in this area shall occur during hours of 10:00PM to 6:00AM, Monday through Friday.
    - i) Barricade Lighting, as detailed on the plans, and temporary taxiway/runway closure markings shall be erected and maintained

around the perimeter of work areas as shown on the plans and shall be removed at the conclusion of each shift.

- ii) The time allowances stated for all work shifts are totally inclusive of the Contractor moving onto the site, performing work activities, performing all clean-up, installing and removing Runway Lighted Xs, having the work area and haul routes inspected and approved by the Engineer, and moving off the site. The Contractor shall provide adequate lighting for the needs of the inspection personnel.
- iii) Any Aircraft Operating Areas (AOA's) or adjoining runway, taxiway or taxilane safety area that does not pass inspection must remain closed until such time cleanup is performed and approved.

4. **Phase Completion Requirements.** Each construction phase is discussed in detail below.

- a. The Contractor is subject to two separate types of Liquidated Damages relative to the phased work. Phase Liquidated Damages will be assessed for each calendar day beyond the stated completion period that any phase remains unfinished. Completion tasks necessary to relieve the Contractor of Phase Liquidated Damages are listed for each phase. A separate Total Project Liquidated Damage will be assessed for every day of delay after the specified number of total contract days. Liquidated Damages amounts are described in Section G-100-1.12.

B. Phase Descriptions

1. Mobilization

- a. Description of Work: Complete items in Subsection 1.2 of Section M-100, Mobilization.
- b. Duration: 72 Working days
- c. Work Hours: Monday – Saturday, 7:00AM – 5:00PM
- d. Areas Closed to Aircraft Operations: None

2. Phase 0

- a. Description of Work: Installation of temporary fences, trailers, and utility connections to create contractor laydown yard as shown on the plans.
- b. Duration: One (1) Working day during Mobilization tied end to end with Mobilization duration.
- c. Work Hours: Monday – Saturday, 7:00AM – 5:00PM

- d. Areas Closed to Aircraft Operations: Portions of Taxiway A, Runways 8L-26R and 8R-26L.
  - e. Contractor Access / Haul Routes: Access AOA via gate and proceed along vehicle access road. Close portions of Taxiway A for access. No crossing of active taxiways required
  - f. Lighting/Marking Changes: Temporary airfield lighting and marking modifications
3. Phase 1A – Test Strip Construction
- a. Description of Work: Construction of asphalt test strip
  - b. Duration: 1 Working day
  - c. Work Hours: Monday – Saturday, 7:00AM – 5:00PM
  - d. Areas Closed to Aircraft Operations: Runway 8R-26L
  - e. Contractor Access / Haul Routes: Access AOA via gate and proceed along vehicle access road. Crossing of active Taxiway C is required and contractor to provide flaggers as shown on the plans.
  - f. Lighting/Marking Changes: Re-striping of runway markings within paved area of test strip.
4. Phases 2, and 2A – Runway Rehabilitation and Signage
- a. Description of Work: Runway rehabilitation and sign panel replacements.
  - b. Duration: 36 Working Days
  - c. Work Hours: Monday – Saturday, 7:00AM – 5:00PM
  - d. Areas Closed to Aircraft Operations: Runway 8L-26R and portions of Taxiways A, B and C.
5. Phase 2B – Runway Rehabilitation and Signage
- a. Description of Work: Sign panel replacements.
  - b. Duration: One (1) Working night during Phase 2 tied end to end with Phase 2 duration
  - c. Work Hours: Monday – Saturday, 10:00PM – 5:00AM
  - d. Areas Closed to Aircraft Operations: Runway 8L-26R and portions of Taxiways A, B and C.

6. Phase 3 – Punch List and Closeout
  - a. Description of Work: Punch list and closeout items
  - b. Duration: 6 Working Days
  - c. Work Hours: Monday – Saturday, 7:00AM – 5:00PM
  - d. Areas Closed to Aircraft Operations: Runway 8L-26R and portions of Taxiways A, B and C.
  
- C. The Contractor shall complete all work within each Phase within the stipulated number of Working Days specified above, plus any extra time as may be allowed for delays or extra work as herein provided, commencing and including the date stipulated in the Notice to Proceed. No work shall be done on, Sundays or legal holidays without the written permission of the Engineer. Work schedules are described and detailed in Section G-100-1.10, Construction Phasing, and as outlined on the Phasing Plans.
  
- D. Should the Contractor discontinue the prosecution of the work for any reason, he/she shall notify the Engineer at least twenty-four (24) hours in advance of resuming operations.
  
- E. The Contractor shall make his own estimate of the inherent difficulties involved in completing the work under the conditions and phasing herein described. No additional payment will be made to compensate the Contractor for expenses necessitated by operational working restrictions on the project.

**1.11 DAILY INSPECTIONS OF RUNWAY SAFETY AREAS AND TAXIWAY OBJECT FREE AREAS**

- A. At the conclusion of each work shift in areas are scheduled to be reopened to aircraft traffic after each work shift, the Engineer will conduct an inspection of each of construction work area before Contractor's workers leave for the day. This inspection is to ensure that the site is safe for aircraft operations. All areas within runway safety areas (RSA's) and Taxiway Object Free Areas (TOFA's) shall satisfy the conditions described below before opening to aircraft traffic will be approved.
  
- B. Conditions that Inspectors will consider potentially hazardous and which must be corrected prior to reopening the runways and taxiways but are not limited to the following:
  1. Trenches, holes, or excavations on, or adjacent to, any open runway, taxiway or related RSA and TOFA. No hole, bump or trench in excess of three inches in height, depth or width may remain. Open excavations in pavement areas shall be backfilled and asphalt paved at the end of each work shift and prior to opening to aircraft traffic. Open excavations within the RSA or TOFA in excess of three inches in height shall be slurry backfilled or steel plated.

2. Unmarked/unlighted holes or excavations in any apron, open taxiway, open taxilane, or RSA/TOFA.
3. Mounds or piles of earth, construction materials, temporary structures, or other objects on or in the vicinity of any open runway, taxiway, taxilane or in a related RSA, TOFA, approach or departure area.
4. Pavement drop-offs or pavement turf lips (either permanent or temporary) which would cause, if crossed at normal operating speeds, damage to aircraft that normally use the airport.
5. Vehicles or equipment (whether operating or idle) on any open runway, taxiway, taxilane, or in any related RSA, TOFA, approach or departure area.
6. Vehicles, equipment, excavations, stockpiles, or other materials which could impinge upon NAVAID critical areas and degrade or otherwise interfere with electronic signals from radios or electronic NAVAIDs or interfere with visual NAVAID facilities. NAVAID critical areas are shown on the plans.
7. Unmarked utility, NAVAID, weather service, runway lighting, or other power or signal cables that could be damaged during construction.
8. Objects (whether marked/flagged or not) or activities anywhere on or in the vicinity of airport which could be distracting, confusing, or alarming to pilots during aircraft operations.
9. Unflagged/unlighted low visibility items (such as tall cranes, drills, etc.) in the vicinity of an active runway, or in any approach or departure area.
10. Misleading or malfunctioning obstruction lights.
11. Unlighted/unmarked obstructions in an approach to any open runway.
12. Inadequate approach/departure surfaces (needed to assure adequate landing/takeoff clearance over obstructions or work or storage areas).
13. Inadequate, confusing, or misleading (to pilots) marking/lighting of runways (including, displaced or relocated thresholds), taxiways, or taxilanes.
14. Water, dirt, debris, or other transient accumulation, which temporarily obscures pavement marking, pavement edges, or derogates the visibility of runway/taxiway marking, lighting or of construction and maintenance areas.
15. Inadequate or improper methods of marking, barricading, or lighting of temporarily closed portions of airport operation areas.
16. Trash or other materials with foreign object damage (FOD) potential, whether on runways, taxiways, aprons or related RSA/TOFA.

17. Inadequate fencing or other marking to separate construction or maintenance areas from open aircraft operating areas.
  18. Inadequate control of vehicle and human access, and non-essential, non-aeronautical activities on open aircraft operating areas.
  19. Improper radio communication maintained between construction/ maintenance vehicles and air traffic control tower or, other on-field communications facility (e.g., FAA Flight Service Station (FSS) or Unicom radio).
  20. Construction/maintenance activities or materials which could hamper airport rescue and fire fighting (ARFF) vehicle access from ARFF stations to all parts of the runway/taxiway system, runway approach and departure areas, or aircraft parking locations.
  21. Bird attractants such as edibles (food scraps, etc.), trees, brush, other trash, grass/crop seeding, or pond water on or near the airport.
  22. Vehicles involved in the project that do not meet safety requirements.
  23. Improperly marked, lighted and flagged vehicles involved in the project.
  24. Barricades that are located within the RSA or TOFA
- C. Any RSA or TOFA that does not pass inspection must be addressed by the Contractor prior to the completion of the shift.

#### **1.12 LIQUIDATED DAMAGES**

- A. Liquidated damages for the various components of the work shall be assessed in the following amounts in accordance with this Section:
1. Phase Liquidated Damages. Liquidated damages will be assessed for failure to complete the milestone tasks required for each phase in the following amounts:
    - a. Phases 2, 2A and 3; one thousand dollars (\$1,000) per calendar day shall be imposed for each additional day work continues beyond the contract days allowed for these phases.
    - b. Phases 0, 1A and 2B: two thousand dollars (\$2,000) per each 15-minute period shall be imposed for failure to open Runway 8R-26L after work shift, from the time indicated on the Contract Documents.
- B. For each consecutive calendar day over the Time of the Completion specified for each phase, the Contractor shall pay to the City, or have it withheld from monies due to it, the sum amounts specified above. These amounts will be deducted from the Contractor's progress payments, however, the City will waive from the final payment request Phase liquidated damages, should the Contractor complete the work within the time allowed for the overall completion of the project, thus allowing the Contractor to make up time lost in each individual phase.



- C. Completion of Total Project
  - 1. Liquidated damages in the amount of five hundred dollars (\$500) per day shall be imposed for each additional calendar day work continues beyond the allowable 109 total Working Days. These amounts shall be *assessed in addition to* any liquidated damages in effect for any particular phases.
- D. The City of San Diego expressly denies that any progress payment made after the scheduled completion date constitutes a waiver of liquidated damages.

### **1.13 HAUL ROAD AND WORK AREA DELINEATORS**

- A. The Contractor shall delineate the edges of the haul road, from the Contractor Staging Area to the work areas, and shall delineate the edges of the various work areas, with fencing, small signs or other methods shown on the plans to ensure that Contractor employees limit their vehicular access to their designated areas only. Signs shall be clearly marked with the Contractor's logo, and shall clearly show, with arrows or other symbols, the direction and location of the various sites. Delineation must be done in a manner, which will not interfere with any navigational aids and which will not introduce the potential for FOD or jet blast damage. Such fencing, signage or delineation shall be incidental under Item M-100.
- B. The Contractor shall submit his proposed access/haul route for each phase of work to the Engineer for review. Upon approval of haul routes, the Contractor shall adhere to the access/haul routes throughout the entire phase. Access/Haul routes must be submitted 48 hours prior to beginning work in said work area.

## **PART 2 - MEASUREMENT AND PAYMENT**

### **2.1 MEASUREMENT AND PAYMENT**

- A. The Contractor shall make his 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 costs due to opening a portion of the contract work or for difficulties or costs associated with other staging considerations. No separate payment will be made for general project requirement or phasing the work under the requirements of this section.

**END OF SECTION G-100**

## SECTION G-101

### CONSTRUCTION BARRICADES, FENCING, MARKERS AND SIGNS

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. The contractor shall perform all work required by the plans and specifications for providing and maintaining construction barricades, fencing, markers, and signs and as needed to facilitate safety during construction. Work shall be as shown on the plans, as specified hereafter, and as designated by the Engineer.
- B. Because of its nature, Contractor shall anticipate providing and relocating items multiple times throughout the project as the work progresses. Unless otherwise stated, all items specified herein shall be provided, placed, maintained, relocated and replaced as necessary during the entire duration of the progress. Normal wear and tear for the duration of the project shall be anticipated and will not be considered grounds for additional payment.
- C. Temporary removal and restriping of pavement markings required to temporarily reroute aircraft and vehicular traffic to accommodate construction are not measured separately for payment and is considered incidental to mobilization and demobilization.

##### 1.2 TEMPORARY CONSTRUCTION SAFETY FENCING

- A. The contractor shall provide and maintain construction safety fencing to delineate work area limits as shown on the plans. Location of fencing shall be as shown on the plans and as approved by the engineer and airport operations. The fencing lines are intended as a safety device to aid the contractor's workers and subcontractors in easily delineating areas of the airport which are off limits from those areas approved for his work activities. Fencing shall be 24" high, orange temporary safety fence, Tensar easy gardener BX 205116, or approved equal. Posts, excavation, backfill, and all other incidentals necessary for complete fencing installation, as detailed on the plans and as approved by the engineer, shall be included in this item, including periodic relocation as may be needed to accommodate construction phasing.

##### 1.3 CONSTRUCTION BARRICADES, DELINEATORS AND FLASHERS

- A. The contractor shall provide and maintain barricades of the types shown on the plans. Barricades shall be used to delineate airfield pavement work area limits for the project. Location of barricades shall be as shown on the plans or as approved by the engineer and airport operations. Maintenance of all barricades and flashers will be the sole responsibility of the contractor. No additional payment will be made for maintaining and moving barricades to accommodate the phasing.

#### **1.4 LOW PROFILE AIRFIELD BARRICADES**

- A. The contractor shall provide the amount of low-profile construction barricades required to delineate airfield pavement work area limits for the project. All barricades will need to be maintained in an operational state throughout the course of construction. Barricades that are leaking, damaged or have lights that are not working to the satisfaction of airport operations will need to be replaced.
- B. Barricades shall be low profile type 1, water-filled barricades. The Type 1 barricades shall be 10 inches in height, as shown on the plans, furnished with orange and white reflective striping on two sides. They shall be constructed of resiliently deformable and frangible material, designed as modular, interlocking units, which will easily assemble, disassemble, and nest for compact storage. Barricade shape shall be low enough to not interfere with taxiing aircraft. The Type 1 barricade shall be furnished in alternating orange and white and will be installed so that the colors alternate on adjacent barricades. Each 96" length of barricade shall be equipped with at least one red omnidirectional steady burning light. Barricades shall meet the minimum requirements of FAA AC 150/5370-2, Operational Safety on Airports During Construction, latest edition. Barricades will be multi-barrier safety barricade model AR10- x96 or approved equal. Weighted wooden barricades will not be allowed.

#### **1.5 TEMPORARY AIRFIELD LIGHTING AND CIRCUITING**

- A. Temporary airfield lighting conduit and light modifications shall be installed in accordance with the locations and details shown on the plans or as directed by the engineer, and in accordance with Section L-125, Airfield Electrical Work. The contractor shall coordinate with the engineer prior to connection of existing airfield lighting circuitry to confirm circuit capacity.

#### **1.6 CONSTRUCTION SIGNS**

- A. Where required on the plans, the contractor shall provide 16-gauge aluminum signs, with reflectorized faces and legends, for "stop" signs, "stop for aircraft" signs, taxiway designation signs, active runway signs and other signs as shown on the plans. Sizes, materials, and mounting methods shall be as indicated on the plans. Posts, excavation, backfill, and all other incidentals necessary for complete signs as detailed on the plans and as approved by the engineer shall be included in this item, including periodic relocation as may be needed to accommodate construction phasing.
- B. Messages and dimensions shall be as shown on the plans. Roadway signage shall conform to the requirements of the manual of uniform traffic control devices, latest edition.

#### **1.7 LIGHTED "X" RUNWAY CLOSURE MARKERS**

- A. The airport will supply two generator-powered, trailer-mounted, portable lighted runway closure markers for contractor's use during the project. Each marker consists of an all-weather sign panel and illuminated "X".

- B. When directed, the contractor shall transport and operate each runway closure marker to the locations shown on the drawings and take-down and remove to the contractor’s laydown area at the complete of each phase or as directed. The contractor shall protect, clean, and maintain the equipment throughout duration of the project, and shall supply fuel (diesel or gasoline as required) to continuously operate the closure marker when in place for runway closures. The contractor shall comply with all manufacture instructions when towing, storing, and operating the closure markers. When not in use, the markers shall be towed and stored in a safe location within the contractor’s laydown area. At the project completion, lighted X markers shall be returned, fully fueled, in initial condition, and in working order to the City.

**PART 2 - SUBMITTALS.**

**2.1** Submittals required for this item include, but are not limited to:

- A. Temporary fencing (as required)
- B. Low profile airfield barricades
- C. Temporary airfield electrical equipment (lights, sign panels, etc.)
- D. Construction signs

**PART 3 - METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

**3.1 Measurement**

- A. “Construction Barricades, Fencing, Markers and Signs” shall be measured for providing and maintaining construction barricades, signs, safety fencing, runway closure markers, and sign covers, modifying runway distance remaining signage, to facilitate safety during construction. Work shall be as shown on the plans and as specified herein and pursuant to the contract documents.

**3.2 Payment**

- A. Payment will be made at the contract unit price per lump sum for “Construction Barricades, Fencing, Markers and Signs”, which price shall be full compensation for furnishing all materials, labor, equipment, tools, and incidentals necessary to provide, maintain, replace as necessary and relocate the item for each phase/work area and throughout the duration of the project, and for cleaning and delivery to the Airport specified items.
- B. No separate payment will be made for “Temporary Airfield Lighting and Circuiting”.

Payment will be made under:

Item G-101-3.2-1 Construction Barricades, Fencing, Markers and Signs ..... per lump sum

**END OF SECTION G-101**

## SECTION G-110

### METHOD OF DETERMINING PERCENTAGE OF MATERIAL WITHIN SPECIFICATION LIMITS

#### PART 1 - GENERAL

##### 1.1 GENERAL

- A. This section describes the Method of Determining the Percentage Within Limits (PWL) used to calculate adjusted pay factors for pavement. PWL determination shall be made in accordance with the FAA Standard Specification 110 as included and modified herein:

#### **SECTION 110**

### **METHOD OF ESTIMATING PERCENTAGE OF MATERIAL WITHIN SPECIFICATION LIMITS (PWL)**

#### **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 ( $\bar{X}$ ) and sample standard deviation ( $S_n$ ) 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),  $Q_L$  for Lower Quality Index and/or  $Q_U$  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.

#### **METHOD FOR COMPUTING PWL**

The computational sequence for computing PWL is as follows:

Divide the lot into  $n$  sublots in accordance with the acceptance requirements of the specification.

Locate the random sampling position within the subplot in accordance with the requirements of the specification.

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.

Find the sample average ( $X$ ) for all subplot values within the lot by using the following formula:

$$X = (x_1 + x_2 + x_3 + \dots + x_n) / n$$

Where:  $X$  = Sample average of all subplot values within a lot

$x_1, x_2$  = Individual subplot values

$n$  = Number of sublots

Find the sample standard deviation ( $S_n$ ) by use of the following formula:

$$S_n = [(d_1^2 + d_2^2 + d_3^2 + \dots + d_n^2) / (n-1)]^{1/2}$$

Where:  $S_n$  = Sample standard deviation of the number of subplot values in the set

$d_1, d_2$ , = Deviations of the individual subplot values

$x_1, x_2$ , ... from the average value  $X$

that is:  $d_1 = (x_1 - X), d_2 = (x_2 - X) \dots d_n = (x_n - X)$

$n$  = Number of sublots

For single sided specification limits (i.e.,  $L$  only), compute the Lower Quality Index  $Q_L$  by use of the following formula:

$$Q_L = (X - L) / S_n$$

Where:  $L$  = specification lower tolerance limit

Estimate the percentage of material within limits (PWL) by entering Table 1 with  $Q_L$ , using the column appropriate to the total number ( $n$ ) of measurements. If the value of  $Q_L$  falls between values shown on the table, use the next higher value of PWL.

For double-sided specification limits (i.e.  $L$  and  $U$ ), compute the Quality Indexes  $Q_L$  and  $Q_U$  by use of the following formulas:

$$Q_L = (X - L) / S_n \quad \text{and} \quad Q_U = (U - X) / S_n$$

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  $Q_L$  and  $Q_U$ , using the column appropriate to the total number ( $n$ ) of measurements, and determining the percent of material above  $P_L$  and percent of material below  $P_U$  for each tolerance limit. If the values of  $Q_L$  fall between values shown on the table, use the next higher value of  $P_L$  or  $P_U$ . Determine the PWL by use of the following formula:

$$PWL = (P_U + P_L) - 100$$

Where:  $P_L$  = percent within lower specification limit

$P_U$  = percent within upper specification limit

### **EXAMPLE OF PWL CALCULATION**

Project: Example Project

Test Item: Item P-401, Lot A.

**i)** PWL Determination for Mat Density.

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

$n = 4$

Calculate average density for the lot.

$$X = (x_1 + x_2 + x_3 + \dots + x_n) / n$$

$$X = (96.60 + 97.55 + 99.30 + 98.35) / 4$$

$$X = 97.95 \text{ percent density}$$

Calculate the standard deviation for the lot.

$$S_n = [((96.60 - 97.95)^2 + (97.55 - 97.95)^2 + (99.30 - 97.95)^2 + (98.35 - 97.95)^2) / (4 - 1)]^{1/2}$$

$$S_n = [(1.82 + 0.16 + 1.82 + 0.16) / 3]^{1/2}$$

$$S_n = 1.15$$

Calculate the Lower Quality Index  $Q_L$  for the lot. ( $L=96.3$ )

$$Q_L = (X - L) / S_n$$

$$Q_L = (97.95 - 96.30) / 1.15$$

$$Q_L = 1.4348$$

Determine PWL by entering Table 1 with  $Q_L=1.44$  and  $n=4$ .

$$PWL = 98$$

PWL Determination for Air Voids.

Air Voids of four random samples taken from Lot A.

$$A-1 \quad 5.00$$

$$A-2 \quad 3.74$$

$$A-3 \quad 2.30$$

$$A-4 \quad 3.25$$

Calculate the average air voids for the lot.

$$X = (x_1 + x_2 + x_3 + \dots + x_n) / n$$

$$X = (5.00 + 3.74 + 2.30 + 3.25) / 4$$

$$X = 3.57 \text{ percent}$$

3. Calculate the standard deviation  $S_n$  for the lot.



$$S_n = [((3.57 - 5.00)^2 + (3.57 - 3.74)^2 + (3.57 - 2.30)^2 + (3.57 - 3.25)^2) / (4 - 1)]^{1/2}$$

$$S_n = [(2.04 + 0.03 + 1.62 + 0.10) / 3]^{1/2}$$

$$S_n = 1.12$$

Calculate the Lower Quality Index  $Q_L$  for the lot. ( $L = 2.0$ )

$$Q_L = (X - L) / S_n$$

$$Q_L = (3.57 - 2.00) / 1.12$$

$$Q_L = 1.3992$$

Determine  $P_L$  by entering Table 1 with  $Q_L = 1.41$  and  $n = 4$ .

$$P_L = 97$$

Calculate the Upper Quality Index  $Q_U$  for the lot. ( $U = 5.0$ )

$$Q_U = (U - X) / S_n$$

$$Q_U = (5.00 - 3.57) / 1.12$$

$$Q_U = 1.2702$$

Determine  $P_U$  by entering Table 1 with  $Q_U = 1.29$  and  $n = 4$ .

$$P_U = 93$$

Calculate Air Voids  $PWL$

$$PWL = (P_L + P_U) - 100$$

$$PWL = (97 + 93) - 100 = 90$$

### **EXAMPLE OF OUTLIER CALCULATION (Reference ASTM E 178)**

Project: Example Project

Test Item: Item P-401, Lot A.

i) Outlier Determination for Mat Density.

*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*

*Use  $n=4$  and upper 5 percent significance level of to find the critical value for test criterion = 1.463.*

*Use average density, standard deviation, and test criterion value to evaluate density measurements.*

*For measurements greater than the average:*

*If:  $(\text{measurement} - \text{average})/(\text{standard deviation})$  is less than test criterion,*

*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*

*For measurements less than the average:*

*If  $(\text{average} - \text{measurement})/(\text{standard deviation})$  is less than test criterion,*

*Then 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  $(97.95 + 1.463 \times 1.15) = 99.63$  percent or,*

*less than  $(97.95 - 1.463 \times 1.15) = 96.27$  percent*

**TABLE 1**  
**TABLE FOR ESTIMATING PERCENT OF LOT WITHIN LIMITS (PWL)**

Percent Within Limits (P <sub>L</sub> and P <sub>U</sub> )	Positive Values of Q (Q <sub>L</sub> and Q <sub>U</sub> )							
	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

**TABLE 1**  
**TABLE FOR ESTIMATING PERCENT OF LOT WITHIN LIMITS (PWL)**

Percent Within Limits (P <sub>L</sub> and P <sub>U</sub> )	Positive Values of Q (Q <sub>L</sub> and Q <sub>U</sub> )							
	n=3	n=4	n=5	n=6	n=7	n=8	n=9	n=10
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

**TABLE 1**  
**TABLE FOR ESTIMATING PERCENT OF LOT WITHIN LIMITS (PWL)**

Percent Within Limits (P <sub>L</sub> and P <sub>U</sub> )	Positive Values of Q (Q <sub>L</sub> and Q <sub>U</sub> )							
	n=3	n=4	n=5	n=6	n=7	n=8	n=9	n=10
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
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

**TABLE 1**  
**TABLE FOR ESTIMATING PERCENT OF LOT WITHIN LIMITS (PWL)**

Percent Within Limits (P <sub>L</sub> and P <sub>V</sub> )	Positive Values of Q (Q <sub>L</sub> and Q <sub>V</sub> )							
	n=3	n=4	n=5	n=6	n=7	n=8	n=9	n=10
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

**TABLE 1**  
**TABLE FOR ESTIMATING PERCENT OF LOT WITHIN LIMITS (PWL)**

Percent Within Limits (P <sub>L</sub> and P <sub>V</sub> )	Positive Values of Q (Q <sub>L</sub> and Q <sub>V</sub> )							
	n=3	n=4	n=5	n=6	n=7	n=8	n=9	n=10
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

<b>TABLE 1</b>								
<b>TABLE FOR ESTIMATING PERCENT OF LOT WITHIN LIMITS (PWL)</b>								
Percent Within Limits ( $P_L$ and $P_U$ )	Positive Values of $Q$ ( $Q_L$ and $Q_U$ )							
	$n=3$	$n=4$	$n=5$	$n=6$	$n=7$	$n=8$	$n=9$	$n=10$
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**

**PART 2 - METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

Work described in this section shall be considered incidental to other pay items and no separate payment will be made.

**END OF SECTION G-110**



## SECTION G-150

### CONTRACTOR QUALITY CONTROL PROGRAM

**150-1 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 and excepted 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.

Paving projects over \$250,000 shall have a Quality Control (QC)/Quality Assurance (QA) workshop with the Engineer, Contractor, subcontractors, testing laboratories, and Owner's representative and the FAA prior to or at start of construction. The workshop shall address QC and QA requirements of the project specifications. The Contractor shall coordinate with the Airport and the Engineer on time and location of the QC/QA workshop.

#### **150-2 DESCRIPTION OF PROGRAM.**

1. **General Description.** The Contractor shall establish a Quality Control Program to perform quality control 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 and approved 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 and approval at least 10 calendar days before the Notice to Proceed. The Contractor's Quality Control Plan and Quality Control testing laboratory must be approved in writing by the Engineer prior to the Notice to Proceed (NTP).

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.

- 150-3 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 150-03a and 150-03b. 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 150-06.
- (2) Performance of all quality control tests as required by the technical specifications and Section 150-07.
- (3) Performance of density tests for the Engineer when required by the technical specifications.

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.

**150-4 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), Program Evaluation and Review Technique (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.

**150-5 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.

**150-6 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 150-07.

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.

**150-7 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 D3665. 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 150-08.

**150-8 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.

**150-9 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.

**150-10 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.

- a. **NONCOMPLIANCE.** 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 G-150**

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## SECTION P-101

### SURFACE PREPARATION

#### PART 1 - GENERAL

##### 1.1 GENERAL

- A. The Contractor shall perform all work required by the plans and specifications for surface preparation of asphalt pavements prior to bituminous overlays, emulsified asphalt slurry sealing, or other surface repair work as stated. All work shall be done as shown on the Plans or as directed by the Engineer. All work shall be in accordance with FAA Specification Item P-101 as included and modified hereafter.
- B. Work covered under this Section includes:
1. Cold milling of AC pavement
  2. Preparation of joints and cracking sealing
  3. Rubber removal
  4. Weed Control

#### ***ITEM P-101 SURFACE PREPARATION***

##### ***DESCRIPTION***

***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.

##### ***EQUIPMENT***

***101-2.1*** 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.*** Section not used.

***101-3.2*** ***PREPARATION OF JOINTS AND CRACKS.*** All joints and cracks in bituminous pavements to be sealed with an emulsified asphalt slurry seal shall be cleaned of any existing joint and crack sealer, debris, and vegetation. Any excess joint or crack sealer on the surface of the pavement shall

also be removed from the pavement surface. A soil sterilant shall be applied to the crack after cleaning and preparation has been completed.

**1. Crack Size Guidelines.** Crack preparation procedures depend on size. The following information shall be used when preparing cracks for sealing.

a. **Hairline cracks.** Hairline cracks (less than 1/4 inch). Hairline cracks require no preparation.

b. **Small cracks (1/4 to 2 inches).** Cracks that are 1/4 to 2 inches shall be prepared by cleaning the crack using a sandblaster, HCA heat lance, or wire brushes, followed by cleaning with compressed air. The crack must be clean and dry prior to filling.

c. **Large cracks (greater than 2 inches).** Cracks wider than 2 inches shall be prepared in the same manner as failed AC sections. A saw shall be used to cut away damaged pavement to provide vertical faces and a section suitable for patching. The area shall then be cleaned and filled in accordance with asphalt as directed by the Engineer.

**2. Preparation of Cracks in AC Pavements.**

a. **Cleaning.** All cracks shall be cleaned of any debris or laitance by use of a hot air lance, picks, stiff wire brushes and compressed air free of oil and water. The crack shall be dry prior to sealing.

b. **Sealing.** Immediately before sealing, the cracks shall be blown out with compressed air free of oil and water. Only air compressors with operable oil and water traps shall be used to prepare the cracks for sealing. The crack faces shall be surface dry when the seal is applied. Sealing shall only be performed when the air temperature is higher than the dew point.

**3. FILLING CRACKS IN AC PAVEMENT GENERAL REPAIR.** Repair of cracks in AC pavement identified for crack filling shall be cleaned and prepared as described in 101-3.2. Crack filler shall be a hot-applied material conforming to ASTM D 6690, Type I, Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements. Cracks shall be filled within 0 to 1/8 inch of the surface, or in conformance with the manufacturer's recommendations. Cracks will be inspected for proper width, depth, alignment, and preparation, and will be approved by the Engineer before sealing is allowed. Sealants shall be installed in accordance with the following requirements:

a. **Hot Poured Sealants.** The crack sealant shall be applied uniformly solid from bottom to top and shall be filled without formation of

entrapped air or voids. The heating kettle shall be an indirect heating type, constructed as a double boiler. A positive temperature control and mechanical agitation will be provided. The sealant shall not be heated to more than 20°F (-11°C) below the safe heating temperature. The safe heating temperature can be obtained from the manufacturer's shipping container. A direct connecting pressure type extruding device with nozzles shaped for insertion into the joint will be provided. Any sealant spilled on the surface of the pavement, structures and/or lighting fixtures shall be removed immediately. Any material spilled outside the width of the joint shall be removed from the surface prior to constructing the overlay.

**101-3.3 REMOVAL OF PAINT AND RUBBER.** All paint and rubber over 1 ft wide that will affect the bond of the new overlay 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. 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 wastes shall be disposed of in areas indicated in this specification or shown on the plans. This specification shall not be used for removal of rubber deposits to improve skid resistance or obliterate traffic markings where a new overlay is not to be constructed.

**101-3.4 CONCRETE SPALL OR FAILED ASPHALTIC CONCRETE PAVEMENT REPAIR.** Section not used.

**101-3.5 COLD MILLING OF AC PAVEMENT.** AC pavement shall be cold milled in accordance with Sections 302-5.2.1 through 302-5.2.5 in the Standard Specifications (Greenbook 2000). All match points shall be sawcut to a vertical edge unless a vertical cut can be made by milling in the transverse direction.

Only a minimal amount of water needed to facilitate the pavement milling operation shall be permitted. If the Engineer determines that excess water is being used, the contractor shall immediately reduce the water volume and remove all standing water completely from the surface to achieve a dry condition.

The milled surface shall be dry prior to placement of tack coat.

**101-3.6 WEED CONTROL.** Weed control measures shall be applied according to the manufacturer's specifications and guidelines as shown on the plans.

## **METHOD OF MEASUREMENT**

**101-4.1 RUBBER REMOVAL.** Rubber removal shall not be measured for payment but shall be considered incidental to the other bid items.

**101-4.2 CRACK SEALING IN ASPHALT PAVEMENT.** The unit of measurement for crack sealing in asphalt pavement shall be linear foot performed in accordance with the specifications and accepted by the Engineer.

**101-4.3 COLD MILLING.** The unit of measurement for cold milling shall be  $\frac{1}{4}$  to 3 inches variable depth milling, per square yard. The location and average depth of the cold milling shall be determined and agreed to by the Engineer and the Contractor prior to beginning the work. If the initial cut doesn't correct the condition and surface correction is required, the Contractor shall re-mill the area and will be paid only once for the total depth of milling.

**101-4.4 WEED CONTROL.** The unit of measurement for weed control shall be per acre performed in accordance with the specifications and accepted by the Engineer.

## **BASIS OF PAYMENT**

### **101-5.1 PAYMENT**

**A.** For "Asphalt Crack Sealing", payment shall be made at the contract unit price per linear foot measured in application of crack sealing, including pavement preparation and cleaning. The prices shall be full compensation for furnishing all labor, supervision, materials, layout, equipment, tools, and incidentals necessary to complete the item as specified herein and pursuant to the contract documents.

**a.** No additional payment will be made for difficulties encountered when placing sealant under restricted time or night periods, or in other areas subject to construction phasing restrictions.

**b.** Rubber removal shall not be measured for payment and shall be considered incidental to the other bid items.

**B.** For "Cold Milling of AC Pavement," payment shall be made at the contract unit price per square yard for milling, hauling and disposal of all material as shown on the plans and as required in specifications. This price shall be full compensation for furnishing all labor, supervision, equipment, tools, and incidentals necessary to complete the item.

No separate payment will be made for performing this item under construction sequencing restrictions, including limited access or nighttime work areas.

C. For "Weed Control," payment shall be made at the contract unit price per acre for weed control as shown on the plans and as required in specifications. This price shall be full compensation for furnishing all labor, supervision, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-101-5.1-1 Asphalt Crack Sealing .....per Linear Foot  
Item P-101-5.1-2 Cold Milling of AC Pavement..... per Square Yard  
Item P-101-5.1-3 Weed Control.....per Acre

**END OF ITEM P-101**

**PART 2 - SUBMITTALS**

Submittals required for this item include, but are not limited to: Equipment, Material including herbicide

**END OF SECTION P-101**

## SECTION P-150

### REMOVALS

#### PART 1 - GENERAL

##### 1.1 GENERAL

- A. The contractor shall perform all work required by the plans and specifications for removing salvaging, abandoning, and/or disposing of pavement markings and other miscellaneous items identified from within the limits designated on the plans, required by the specifications, or as directed by the engineer.
- B. Items identified to be “salvaged” and/or “relocated” shall be carefully removed and taken to a site as shown on the plans or as directed by the engineer. Maximum distance for such relocation and/or stockpiling will be to the contractor’s storage yard.
- C. Unless otherwise specified, all items designated to be “removed” shall be removed and legally disposed of off the airport property. Proof of legal disposal is required.
- D. Removal of item for salvage shall include labeling all pieces, members, and joints to provide a sequence for reassembly. Salvaged material shall be packaged and delivered to the Airport for storage.
- E. Whenever a pipeline, conduit, or other utility not shown on the Plans is encountered, the Contractor shall immediately inform the Engineer.
- F. All trash, debris, pavements, and other items being removed shall be disposed of legally off Airport property.

#### PART 2 - CONSTRUCTION METHODS

##### 2.1 GENERAL

- A. All items designated or required to be removed shall be disposed of off Airport property, unless otherwise noted, and shall be transported to a legal disposal site(s). Proof of proper disposal at a legally authorized dumping site is required.
- B. Excavation required for any removals under this section will not be measured for payment, except as noted in Section G-100 General Requirements.
- C. No stockpiling of any material shall be allowed anywhere on the AOA except at the designated Stockpile Site.
- D. Prior to beginning any demolition operation, the Contractor shall:
  - 1. Conform to Section 3303.9 of Uniform Building code for demolition of structures, safety of adjacent structures, dust control, runoff control and disposal.

2. Obtain required permits from authorities.
  3. Notify affected utility companies before starting work, and with adequate lead time to comply with their schedule and requirements.
  4. Provide, erect, and maintain temporary barriers, hazard lights, and security devices as needed.
  5. Mark locations of all utilities
- E. At all times during demolition operations the Contractor shall:
1. Provide adequate and appropriate equipment to transport materials.
  2. Maintain haul roads and stockpile sites in satisfactory condition.
  3. Protect existing landscaping materials, appurtenances and structures which are not to be demolished.
  4. Prevent movement or settlement of adjacent structures. Provide bracing and shoring as needed.
  5. Conduct demolition to minimize interference with adjacent structures.
  6. Cease operations immediately if adjacent structures appear to be in danger. Notify Engineer. Do not resume operations until directed.
  7. Conduct operations with minimum interference to public or private accesses. Maintain protected egress and access at all times.
  8. Sprinkle Work with water to minimize dust. Provide hoses and water connections for this purpose.
  9. Do not close or obstruct roadways or hydrants without permits.
  10. Conform to applicable regulatory procedures when discovering hazardous or contaminated materials.

## **2.2 REMOVAL OF PAVEMENT MARKINGS**

- A. The Contractor shall be required to obliterate or remove existing markings as indicated on the Plans, or directed by the Engineer, using shotblasting or high pressure water to the satisfaction of the Engineer. Paint markings shall be removed from all areas to receive an asphalt overlay or other asphaltic treatment. Paintovers (obliteration of existing markings by covering with paint or bituminous materials) will not be allowed.
- B. Upon completion of paint removal operations, any paint, pavement, or obliteration materials left on the pavement shall be removed by means of high performance vacuum.

Areas where marking removals have occurred but where no subsequent overlay or surface treatment is planned shall have an emulsified slurry seal placed on them after marking removal to bring the pavement color back to its original color. The slurry seal shall be considered incidental to the marking removals bid item and no separate payment will be made. Application rate shall be as approved by the Engineer.

### **2.3 MAINTENANCE AND REPAIR OF HAUL ROAD**

- A. During removal and other work operations, and at the conclusion of the project, it will be the Contractor's responsibility to maintain the haul road in its initial condition and cross section. Material used to repair and rebuild the haul road shall be from Contractor-provided sources.
- B. Adequate sweeper trucks and water-distribution trucks shall operate as directed by the Engineer to eliminate dust and to Foreign Object Debris accumulation. Contractor shall take photographs and video tape the existing conditions of the asphalt road before and during the work and shall provide copies of photos and video to the Engineer to establish control conditions. . At the conclusion of the project, the contractor shall repair asphalt damage to the existing airport vehicle service road. Repairs and maintenance of the haul road and vehicle service road will be considered incidental to the project.

**2.4 DUST CONTROL** The Contractor is advised that control of dust during demolition operations is his sole responsibility and is of utmost importance in the safe operation of the airport. Airborne dust and debris can cause hazards to operating jet aircraft in addition to creating visibility concerns. Adequate use of water trucks or other methods of dust control shall be utilized at all times during demolition operations. The Engineer will retain the authority to cease all construction operations, with no modification to the allowable contract schedule, when excess dust is observed. Dust control measures will not be measured for payment, but will be considered incidental to other bid items.

### **2.5 PROTECTION OF EXISTING UTILITIES**

- A. The Contractor shall protect all existing utilities and improvements not designated for removal. The Contractor shall determine the exact locations and depth of all utilities indicated on the drawings. In addition to those indicated, the Contractor shall make exploratory excavations of all utilities. All such exploratory excavations shall be performed as soon as practicable after award of the Contract, and in any event, a sufficient time in advance of construction to avoid possible delays to the Contractor's work. When such exploratory excavations show the utility locations as indicated on the drawings to be in error, the Contractor shall so notify the Engineer. The number of exploratory excavations required should be that number which is sufficient to determine the alignment of the utility. All costs for such work shall be absorbed by the Contractor.

## **PART 3 - METHOD OF MEASUREMENT**



**3.1 MEASUREMENT**

- A. The quantity of pavement markings removal to be paid shall be for square footage in place removal in accordance with the specifications and accepted by the Engineer. Blacking out existing markings shall be measured and paid for under section P-620.

**PART 4 - BASIS OF PAYMENT**

**4.1 PAYMENT**

- A. Payment shall be made at the contract unit price per square foot for “Remove Pavement Markings”. 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-150          Remove Pavement Markings..... Per Square Foot

**END OF SECTION P-150**

## SECTION P-154

### SUBBASE COURSE

#### PART 1 - GENERAL

##### 1.1 GENERAL

- A. The Contractor shall perform all work required by the plans and specifications for construction of aggregate subbase courses for airfield or road pavement subbase, for haul road surfacing, or for other uses as shown on the Plans. Work shall be done in accordance with FAA Specification Item P-154 as included and modified hereafter.

#### ***ITEM P-154 SUBBASE COURSE***

**154-1 DESCRIPTION.** *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.*

#### **154-2 MATERIALS.**

##### **154-2.1 PMB MATERIAL SOURCES**

- a. *PMB may be obtained from two sources, at the Contractor's discretion:*
- (1) Produced by the Contractor from recycled materials produced under Section 150 of these Specifications, Removals, from the crushing of removed concrete and asphalt pavements. Actual production of PMB shall be considered incidental to the applicable removal item under Section 150.*
  - (2) PMB obtained by the Contractor from other sources.*
- b. *If PMB is Contractor-provided from sources outside of the project limits, the bid price shall include the cost of acquiring the material. The bid price for PMB regardless of its source shall include all costs for transporting, handling, placing, shaping, watering and compacting the material.*
- c. *When PMB is accepted as a substitute for another material, it will be measured and paid under the original specification. In those instances, the Contractor shall consider the source of the material and associated costs in establishing bid prices for PMB provided under those specification sections.*

**154-2.2 MATERIAL QUALITY.** Processed Miscellaneous Base shall conform to Section 200-2.5 of the Standard Specifications for Public Works Construction (SSPWC) "Greenbook", latest edition.

**a. General.** Processed miscellaneous base shall consist of broken or crushed asphalt concrete, portland cement concrete, railroad ballast, glass, crushed porcelain material, crushed rock, rock dust, or natural material. The material that is retained on a No. 4 sieve shall contain at least 25 percent particles with two or more fractured faces. The material shall be free of any detrimental quantity of soft, friable, thin, elongated or laminated pieces, disintegrated material, organic matter, oil, alkali, or other deleterious substance. The material may contain no more than 3 percent brick by weight as determined by California Test 202 as modified. Brick material retained on a No. 4 sieve shall be identified visually and separated manually. Brick quantification shall be based on total weight of dry sample.

Prior to crushing and processing salvaged asphalt and concrete materials as PMB, all materials not suitable for subbase materials shall be segregated, removed, and disposed of by the Contractor off airport property, including but not limited to joint sealant material, reinforcing steel, dowel bars, conduit, wire and cable, and any other material deemed unsuitable by the Engineer.

**b. Grading.** The material shall be uniformly graded and shall conform to one of the gradations in Table 1. (ASTM C 131 Test Grading A, B):

TABLE 1. PROCESSED MISCELLANEOUS BASE GRADATION		
Sieve Size	Percentage Passing Sieve	
	Coarse	Fine
2"	100	100
1-1/2"	85-100	100
3/4"	50-85	85-100
3/8"	-	55-75
No. 4	25-45	35-60
No. 30	10-25	10-30
No. 200	2-9	2-9

**c. Quality Requirements.** This material shall conform to the following requirements in Table 2. The Engineer may waive the percentage wear

requirements, provided the material has a minimum durability of 35 in accordance with California Test 229.

<b>TABLE 2. Quality Requirements</b>		
<b>Tests</b>	<b>Test Method No.</b>	<b>Requirements</b>
R-Value	California 301	78 Minimum
Sand Equivalent	California 217	35 Minimum
Percentage Wear:	ASTM C131	
100 Revolutions		15 Maximum
500 Revolutions		52 Maximum

The portion of the material passing the No. 40 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.

- d. Testing.** All PMB, whether Contractor-produced, or Contractor-furnished, shall be tested per these specifications and approved by the Engineer prior to acceptance.
- e. Moisture-Density Requirements.** Moisture content is critical to obtaining adequate compaction of PMB. To ensure proper moisture content PMB shall be tested at the source of production (or plant), at stockpile or storage locations, and at the point of placement.

Maximum density and optimum moisture content shall be established in accordance with ASTM D 1557. In-place field density shall be determined in accordance with ASTM D 1556. The moisture content of the material at the start of compaction shall be not more than 1 1/2 percentage points above, or below, the optimum moisture content. If PMB is free-draining and maintaining specified moisture content is difficult, the Engineer may specify an alternate minimum moisture content for placement and compaction of the material.

- f. Contractor-Produced PMB.** The material shall be produced from a crushing and screening plant with the proper blending as described in Section P-150 of these Specifications, Removals. The materials from these sources shall meet the requirements noted herein for gradation, quality, and consistency. It is the intent of this section to secure materials that will not require further mixing.

The moisture content of the material shall be approximately that required to obtain maximum density. When the entire PMB 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.

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.

- g. Plant Mixing of PMB.** When materials from several sources are to be blended and mixed, the PMB material shall be processed in a central or travel mixing plant. The PMB 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.

The Engineer may require additional and on-going monitoring of moisture content to ensure conformance with requirements.

- h. Mix-in-Place PMB.** Mix-in-Place PMB shall not be allowed.

### **154-3 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 the construction equipment without movement shall be mechanically stabilized to the depth necessary to provide such stability as required 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 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.** When 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 nor more than 8 inches 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 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 for airfield pavement subbase, and at least 95% for haul road surfacing. The laboratory specimens shall be compacted and tested in accordance with ASTM D 1557. The in-place field density shall be determined in accordance with ASTM D 1556 or ASTM D 2922. 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.

For material with more than 30% retained on the 3/4-inch sieve, AASHTO T180 should be used in lieu of D 1557.

If subbase material is free-draining and maintaining specified moisture content is difficult, the Engineer may specify an alternate minimum moisture content for placement and compaction of the material.

When nuclear density gauges are to be used for density determination, testing shall be in accordance with Section G-120 of these Specifications, Nuclear Gauges.

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 when tested with a Contractor-provided 16-foot 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 ACCEPTANCE SAMPLING AND TESTING FOR DENSITY.** Aggregate subbase 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. 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.

*Each lot shall be divided into two equal sublots. One test shall be made for each subplot. 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 as specified in 154-3.7. The specimens shall be compacted and as specified in 154-3.7. The in-place field density shall be determined as specified in 154-3.7. 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.*

**154-3.9 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 are obtained. The finished surface shall not vary more than 1/2 inch when tested with a Contractor-provided 16-foot straightedge applied parallel with, and at right angles to, the centerline.*

**154-3.10 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. When the deficiency in thickness is more than 1/2 inch, 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 expense the subbase material where borings are taken for test purposes.*

*The use of survey for thickness determination is permitted.*

**154-3.11 PROTECTION.** *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, in the opinion of the Engineer, excessively wet, the construction shall be stopped.*

**154-3.12 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.*

**154-4 METHOD OF MEASUREMENT.** *The subbase course shall not be measured for payment.*



**154-5**            **BASIS OF PAYMENT.** *The subbase course shall be considered incidental to the other pay items and no separate payment will be made.*

**154-5.1**            **TESTING REQUIREMENTS**

<i>ASTM C 136</i>	<i>Sieve Analysis of Fine and Coarse Aggregates</i>
<i>ASTM D 422</i>	<i>Particle Size Analysis of Soils</i>
<i>ASTM D 1556</i>	<i>Density of Soil in Place by the Sand-Cone Method</i>
<i>ASTM D 1557</i>	<i>Test for Laboratory Compaction Characteristics of Soil Using Modified Effort</i>
<i>ASTM D 4318</i>	<i>Liquid Limit, Plastic Limit, and Plasticity Index of Soils</i>
<i>ASTM D 6938</i>	<i>Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)</i>
<i>AASHTO T180</i>	<i>Moisture-Density Relations of Soils Using a 10-lb. Rammer and a 18-in. Drop</i>

**END OF ITEM P-154**

**PART 2 - SUBMITTALS**

- 2.1**            Submittals required for this item include, but are not limited to:
- A.            Aggregate subbase

**END OF SECTION P-154**

**SECTION P-156**

**TEMPORARY AIR AND WATER POLLUTION, SOIL EROSION, AND SILTATION CONTROL**

**PART 1 - GENERAL**

**1.1 GENERAL**

- A. The Contractor shall perform all work required by the plans and specifications for the temporary control of erosion, siltation, and pollution on the Airport in accordance with Section 7-8.6 – Water Pollution Control of the City Supplement to the 2015 Standard Specifications for Public Works Construction (the “WhiteBook”), Supplementary Special Provisions and these special provisions. In case of conflict between these requirements, the more stringent requirement shall govern.
- B. Work includes providing and installing erosion control materials and maintaining them for the duration of the project – modifying where necessary to accommodate changes required as the project progresses. The Contractor shall carefully examine project sequencing and include costs for all installation, relocation, revision and maintenance of erosion control measures in his bid price.
- C. The Contractor shall prepare and implement a Water Pollution Control Plan (WPCP) and shall implement Best Management Practices (BMPs) in addition to the other requirements of this section.

***ITEM P-156 TEMPORARY AIR AND WATER POLLUTION, SOIL EROSION, AND SILTATION CONTROL***

**156-1 DESCRIPTION.** *This item shall consist of temporary control measures as shown on the plans, or as ordered by the Engineer, required during the life of the contract to control water pollution, soil erosion, and siltation through the use of berms, dikes, dams, sediment basins, fiber mats, silt fences, fiber rolls, sand bags, gravel, mulches, grasses, slope drains, and other erosion control devices or methods.*

*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 ensure 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.*

## **156-2 MATERIALS**

**156-2.1 GRASS.** *Not Used*

**156-2.2 MULCHES.** *Not Used*

**156-2.3 FERTILIZER.** *Not Used.*

**156-2.4 SLOPE DRAINS.** *Not Used*

**156-2.5 SILT FENCES.** *Silt fence fabric shall be woven polypropylene with a minimum width of 36 inches and a minimum tensile strength of 0.45 kN . The fabric shall conform to the requirements in ASTM designation D4632 and shall have an integral reinforcement layer. The reinforcement layer shall be a polypropylene, or equivalent, net provided by the manufacturer. The permittivity of the fabric shall be between 0.1 sec<sup>-1</sup> and 0.15 sec<sup>-1</sup> in conformance with the requirements in ASTM designation D4491.*

**156-2.6 STABILIZED CONSTRUCTION ENTRANCES.** *Sediments and other materials may not be tracked from the construction site by vehicle traffic. The Contractor shall stabilize the entrance roadways so as to inhibit sediments from being deposited into the airport and public ways. Accidental depositions must be swept up immediately and may not be washed down by rain or by any other means.*

*At all points where construction traffic crosses airfield pavement, the Contractor shall install shaker plates or other devices to ensure that loose soil, rocks or other construction materials are not tracked onto the airfield pavement. In addition to other requirements in the contract documents for sweeper trucks, the Engineer may require sweeper trucks and operators to be dedicated during construction hours to all areas deemed to be likely sources of Foreign Object Debris (FOD) from such construction traffic.*

**156-2.7 OTHER.** *All other materials shall meet commercial grade standards and shall be approved by the Engineer before being incorporated into the project.*

## **156-3 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 Contractor shall be responsible for ensuring compliance to the extent that construction practices, construction operations, and construction work are involved. The Engineer will monitor and inspect for compliance with the applicable regulations.*

**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 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.*

*Several methods of controlling dust and other air pollutants exist, including exposing the minimum area of erodible earth; applying temporary mulch with or without seeding; using water sprinkler trucks; using covered haul trucks; using dust palliatives or penetration asphalt on haul roads; using plastic sheet coverings.*

**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. Except where future construction operations will damage slopes, the Contractor shall perform the permanent erosion control work in stages, as soon as substantial areas of exposed slopes can be made available. 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, demolition operations shall 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 demolition, excavation, and embankment operations in progress, commensurate with the Contractor's capability and progress in keeping the finish grading, mulching, seeding, 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 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. Harmful materials shall be any substances deleterious to water quality, and materials prohibited under Federal, State or local laws and regulations.*

**156-3.5 MAINTENANCE AND/OR REVISION OF EROSION CONTROL MEASURES.** *The Contractor shall be responsible for relocating or revising erosion control materials, devices and methods as the project sequencing advances. No additional payment will be made for additional erosion control measures needed to accommodate project sequencing. In addition, maintenance, including replacement of materials which have become worn or ineffective, shall be done in a timely manner at the sole expense of the Contractor.*

#### **METHOD OF MEASUREMENT**

**156-4.1** *Temporary Water Pollution, Soil Erosion, and Siltation Control will not be measured for payment*

**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***

***156-5.1 Temporary Water Pollution, Soil Erosion, and Siltation Control shall be considered incidental to the other pay items***

***END OF ITEM P-156***

**PART 2 - SUBMITTALS**

**2.1** Submittals required for this item include, but are not limited to:

- A. Materials
  - 1. Erosion control materials, methods or devices
  - 2. Fiber rolls
  - 3. Straw Bale Erosion Barrier

**END OF SECTION P-156**

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## SECTION P-401

### PLANT-MIX BITUMINOUS PAVEMENT

#### PART 1 - GENERAL

##### 1.1 GENERAL

- A. The Contractor shall perform all work required by the plans and specifications for construction of Asphalt Concrete Surface Course for Runways and Taxiways as shown on the plans and in accordance with FAA Specification Item P-401 as included and modified herein. In addition, for topics relevant to the construction of Asphalt Concrete Surface Course which are not addressed in P-401, Sections 203 and 302 of the Standard Specifications shall be applicable unless otherwise stipulated.
- B. Unless otherwise indicated on the plans, asphalt concrete for full strength airfield pavement covered under this section shall be used for:
  - 1. Surface Courses for pavement serving aircraft > 12,500# gross weight

#### **ITEM P-401 HOT MIX ASPHALT (HMA) PAVEMENTS**

##### **401-1 DESCRIPTION**

*This item shall consist of pavement courses composed of mineral aggregate and asphalt cement binder (asphalt binder) mixed in a central mixing plant and placed on a prepared course in accordance with these specifications, and courses 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.*

##### **401-2 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 sieve is coarse aggregate. The portion of combined materials passing the No. 4 sieve and retained on the No. 200 sieve is fine aggregate, and the portion passing the No. 200 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 shall 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 12 percent, or the magnesium sulfate soundness loss shall not exceed 18 percent, after five cycles, when tested in accordance with ASTM C 88.*

*Aggregate shall contain at least 75 percent by weight of individual pieces having two or more fractured faces and 85 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 mid-sectional 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.*

*Slag shall be air-cooled, blast furnace slag, and shall have a compacted weight of not less than 70 pounds per cubic foot 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.*

*The soundness loss shall not exceed 10% when sodium sulfate is used or 15% when magnesium sulfate is used, after five cycles, when tested per ASTM C88.*

*Natural (non-manufactured) 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.

- 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.
- d. **Sources of Aggregates.** Sources of aggregates shall be selected well in advance of the time the materials are required in the work. When the aggregates are obtained from a previously approved source, or an existing source producing aggregates that has a satisfactory service record in airport bituminous pavement construction for at least 5 years, samples shall be submitted 21 days prior to start of production. An inspection of the producer's operation will be made by the Engineer. When new sources are to be developed, the Contractor shall indicate the sources and shall submit a plan for operation 30 days in advance of starting production. Samples from test pits, borings, and other excavations shall be submitted at the same time. Approval of the source of aggregate does not relieve the Contractor in any way of the responsibility for delivery at the job site of aggregates that meet the requirements specified herein.
- e. **Samples of Aggregates.** If requested by the Engineer, samples of aggregates shall be furnished by the Contractor at the start of production, and at intervals during production of bituminous mixtures. The sampling points and intervals will be designated by the Engineer. The samples will be the basis of approval of specific lots of aggregates from the standpoint of the quality requirements of this section. The Contractor shall furnish documentation and samples to the Engineer confirming that the aggregates meet the specification requirements.

**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 ASPHALT CEMENT BINDER.** Asphalt cement binder shall conform to ASTM D6373 Performance Grade (PG) 76-22 M. A certificate of compliance from the manufacturer shall be included with the mix design submittal.

The supplier's certified test report with test data indicating grade certification for the asphalt binder shall be provided to the Engineer for each load at the time of delivery to the mix plant. A certified test report with test data indicating grade certification for the asphalt binder shall also be provided to the Engineer

*for any modification of the asphalt binder after delivery to the mix plant and before use in the HMA.*

**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) Clay lumps and friable particles*
- (4) Percent fractured faces.*
- (5) Flat and elongated particles*
- (6) Unit weight of slag*

**b. Fine Aggregate**

- (1) Liquid limit and Plasticity index.*
- (2) Soundness*
- (3) Clay lumps and friable particles*
- (4) Percent natural sand*
- (5) Sand equivalent.*

**c. Mineral Filler**

- d. Asphalt Binder.** *Test results for asphalt binder 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.

#### **401-3 COMPOSITION**

**401-3.1 COMPOSITION OF MIXTURE.** *The HMA mix shall be composed of a mixture of well-graded aggregate, filler, anti-strip agent if required, and bituminous material. The several aggregate fractions shall be sized, handled in separate size groups and shall be combined in such proportions that the resulting mixture meets the grading requirements of the job mix formula (JMF).*

**401-3.2 JOB MIX FORMULA (JMF).** *No hot-mixed asphalt (HMA) for payment shall be produced until a JMF has been approved in writing by the Engineer. The asphalt mix-design and JMF shall be prepared by an accredited laboratory that meets the requirements of paragraph 401-3.4. The HMA shall be designed using procedures contained in Asphalt Institute MS-2 Mix Design Manual, 7th Edition. ASTM D6926 shall be used for preparation of specimens using the manually held and operated hammer for the mix design procedure. ASTM D6927 shall be used for testing for Marshall stability and flow.*

*If material variability exceeds the standard deviations indicated, the JMF and subsequent production targets shall be based on a stability greater than shown in Table 1 and the flow 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 D4867, shall not be less than 75 when tested at a saturation of 70-80% or an anti-stripping agent shall be added to the HMA, as necessary, to produce a TSR of not less than 75 when tested at a saturation of 70-80%. If an anti-strip agent is required, it shall be provided by the Contractor at no additional cost to the Owner.*

*The JMF shall be submitted in writing by the Contractor at least 30 days prior to the start of paving operations. The JMF shall be developed within the same construction season using aggregates currently being produced.*

*The submitted JMF shall be stamped or sealed by the responsible professional Engineer of the laboratory and shall include the following items 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. Laboratory Mixing temperature.*
- f. Laboratory Compaction temperature.*
- g. Temperature-viscosity relationship of the PG asphalt cement binder showing acceptable range of mixing and compaction temperatures; and for modified binders include supplier recommended mixing and compaction temperatures.*
- h. Plot of the combined gradation on the Federal Highway Administration (FHWA) 0.45 power gradation curve.*
- i. Graphical plots of stability, flow, air voids, voids in the mineral aggregate, and unit weight versus asphalt content.*
- j. Specific Gravity and absorption of each aggregate.*
- 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. Anti-strip agent (if required).*
- p. Date the JMF was developed. Mix designs that are not dated or which are from a prior construction season shall not be accepted.*

*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 JMF requirements specified in Tables 1 and 3.*

*When the project requires asphalt mixtures of differing aggregate gradations, a separate JMF and the results of JMF verification testing shall be submitted for each mix.*

*The JMF 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 JMF must be submitted within 15 days and approved by the Engineer in writing before the new material is used. After the initial production JMF has been approved by the Engineer and a new or modified JMF is required for whatever reason, the subsequent cost of the Engineer's approval of the new or modified JMF 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 JMF.

Job mix formula not developed within the previous 90 days-will not be accepted.

<b>TABLE 1. MARSHALL DESIGN CRITERIA</b>	
<b>Test Property</b>	<b>Criteria</b>
Number of blows	75
Stability, pounds minimum	2,150
Flow, 0.01 in.	10-16
Air voids (percent)	3.5
Percent voids in mineral aggregate, minimum	See Table 2

<b>TABLE 2 MINIMUM PERCENT VOIDS IN MINERAL AGGREGATE (VMA)</b>	
<b>Aggregate (See Table 3)</b>	<b>Minimum VMA</b>
Gradation 3	16%
Gradation 2	15%
Gradation 1	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. Unless otherwise specified, the Contractor shall select one gradation from those in Table 3, appropriate to the lift thickness as stated herein.

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. Mixes may be submitted with any of the approved gradations listed in Table 3, except that the

maximum aggregate size for any mix shall not be more than one-quarter the thickness of the lift for which it is intended.

<b>TABLE 3</b>			
<b>AGGREGATE – HMA PAVEMENTS</b>			
<b>Sieve Size</b>	<b>Percentage by Weight Passing Sieves</b>		
	<b>Gradation 1</b>	<b>Gradation 2</b>	<b>Gradation 3 (Not Used)</b>
<i>1 in.</i>	<i>100</i>	<i>-</i>	
<i>¾ in.</i>	<i>76-98</i>	<i>100</i>	
<i>½ in.</i>	<i>66-86</i>	<i>79-99</i>	
<i>3/8 in.</i>	<i>57-77</i>	<i>68-88</i>	
<i>No. 4</i>	<i>40-60</i>	<i>48-68</i>	
<i>No. 8</i>	<i>26-46</i>	<i>33-53</i>	
<i>No. 16</i>	<i>17-37</i>	<i>20-40</i>	
<i>No. 30</i>	<i>11-27</i>	<i>14-30</i>	
<i>No. 50</i>	<i>7-19</i>	<i>9-21</i>	
<i>No. 100</i>	<i>6-16</i>	<i>6-16</i>	
<i>No. 200</i>	<i>3-6</i>	<i>3-6</i>	
<i>Asphalt percent</i>	<i>4.5-7.0</i>	<i>5.0-7.5</i>	

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 MS-2 Mix Design Manual, 7th Edition.

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-quarter of the thickness of the course being constructed, except where otherwise shown on the plans or approved by the Engineer.

**401-3.3 RECYCLED ASPHALT CONCRETE.** Section not used.

**401-3.4 JOB MIX FORMULA (JMF) LABORATORY.** The Contractor's laboratory used to develop the JMF shall be accredited in accordance with ASTM D3666. The laboratory accreditation must be current and listed on the accrediting authority's website. All test methods required for developing the JMF must be listed on the lab accreditation. A copy of the laboratory's current accreditation and accredited test methods shall be submitted to the Engineer prior to start of construction.

**401-3.5 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 as shown on the plans, 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. A cold joint is an exposed construction joint at least 4 hours old or whose mat has cooled to less than 160° F. The cold joint must be cut back using the same procedure that will be used during production in accordance with 401-4.13. 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 401-5.2. 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 asphalt content determined in the same manner as for the original JMF tests.

The Contractor will not be allowed to place the test section until the Contractor Quality Control Program, showing conformance with the requirements and Paragraph 401-6.1, has been approved, in writing, by the Engineer.

**401-4 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.

<b>TABLE 4 BASE TEMPERATURE LIMITATIONS</b>	
<b>Mat Thickness</b>	<b>Deg. F (Deg. C)</b>
3 in. or greater	40 (4)
Greater than 1 in. but less than 3 in.	45 (7)
1 in. or less	50 (10)

**401-4.2 HMA PLANT.** Plants used for the preparation of HMA shall conform to the requirements of American Association of State Highway and Transportation Officials (AASHTO) M156 with the following changes:

Requirements for all plants include:

- a. Truck Scales.** *The HMA 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, subsection 90-01.*

*In lieu of scales, and as approved by the Engineer, HMA weight may be determined by the use of an electronic weighing system equipped with an automatic printer that weighs the total HMA production and as often thereafter as requested by the Engineer*

- b. Testing Facilities.** *The Contractor shall ensure laboratory facilities are provided at the plant for the use of the Engineer. The lab shall have sufficient space and equipment so that both testing representatives (Engineer's and Contractor's) can operate efficiently. The lab shall meet the requirements of ASTM D3666 including all necessary equipment, materials, calibrations, current reference standards to comply with the specifications and a masonry saw with diamond blade for trimming pavement cores and samples.*

*The plant testing laboratory shall have a floor space area of not less than 200 square feet, with a ceiling height of not less than 7-1/2 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°F ±5°. 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. In addition, the facility shall include the minimum:*

- (1) Adequate artificial lighting*
- (2) Electrical outlets sufficient in number and capacity for operating the required testing equipment and drying samples.*
- (3) Fire extinguishers (2), Underwriter's Laboratories approved*
- (4) Work benches for testing, minimum 2-1/2 feet by 10 feet.*
- (5) Desk with 2 chairs*
- (6) Sanitary facilities convenient to testing laboratory*
- (7) Exhaust fan to outside air, minimum 12 inch blade diameter*
- (8) Sink with running water*

*Failure to provide the specified facilities shall be sufficient cause for disapproving HMA plant operations.*

*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.*

**c. 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.*

**d. Storage Bins and Surge Bins.** *The HMA stored in storage and surge bins shall meet the same requirements as HMA loaded directly into trucks and may be permitted under the following conditions:*

**(1)** *Stored in non-insulated bins for a period of time not to exceed three (3) hours.*

**(2)** *Stored in insulated bins for a period of time not to exceed eight (8) hours.*

*If the Engineer determines that there is an excessive amount of heat loss, segregation, or oxidation of the HMA 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 an approved asphalt release agent. 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.*

**a. Material transfer vehicle (MTV).** *Material transfer vehicles used to transfer the material from the hauling equipment to the paver, shall use a self-propelled, material transfer vehicle with a swing conveyor that can deliver*

material to the paver without making contact with the paver. The MTV shall be able to move back and forth between the hauling equipment and the paver providing material transfer to the paver, while allowing the paver to operate at a constant speed. The Material Transfer Vehicle will have remixing and storage capability to prevent physical and thermal segregation.

**401-4.4 HMA 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 continuous and 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. Pavers shall be setup for nominal 12.5' paving lanes with screed extensions and augers installed to provide a continuous supply of mix in front of the screed. Consideration should be given to utilizing pavers set up for paving 25' lane widths to minimize the number of longitudinal joints to be tested.

The HMA 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  $\pm 0.1\%$ .

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 m) in length.
- b. Taut string-line (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.*

**401-4.6 Density device.** *The Contractor shall have on site a density gauge 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 gauge and obtain accurate density readings for all new HMA. 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.*

**401-4.7 PREPARATION OF ASPHALT BINDER.** *The asphalt binder shall be heated in a manner that will avoid local overheating and provide a continuous supply of the asphalt binder to the mixer at a uniform temperature. The temperature of unmodified asphalt binder delivered to the mixer shall be sufficient to provide a suitable viscosity for adequate coating of the aggregate particles, but shall not exceed 325°F (160°C) when added to the aggregate. The temperature of modified asphalt binder shall be no more than 350°F (175°C) when added to the aggregate.*

**401-4.8 PREPARATION OF MINERAL AGGREGATE.** *The aggregate for the HMA shall be heated and dried. 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°F (175°C) when the asphalt binder 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*

**401-4.9 PREPARATION OF HMA.** *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 aggregates and the asphalt binder shall be weighed or metered and introduced into the mixer in the amount specified by the JMF. The combined materials shall be mixed until the aggregate obtains a uniform coating of asphalt binder 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 HMA upon discharge shall not exceed 0.5 percent.*

*For batch plants, wet mixing time begins with the introduction of asphalt binder into the mixer and ends with the opening of the mixer discharge gate. Distribution of aggregate and bituminous material as they enter the pugmill, speed of mixer shafts, and arrangement and pitch of paddles are factors governing efficiency of mixing. Prolonged exposure to air and heat in the pugmill harden the asphalt film on the aggregate. Mixing time, therefore, should be the shortest time required to obtain uniform distribution of aggregate sizes and thorough coating of aggregate particles with asphalt binder.*

**401-4.10 PREPARATION OF THE UNDERLYING SURFACE.** *Immediately before placing the HMA, the underlying course shall be cleaned of all dust and debris. A prime coat or tack coat shall be applied in accordance with Sections P-602 and P-603 of these specifications (Bituminous Prime Coat and Bituminous Tack Coat, FAA Items P-602 or P-603, respectively). A tack coat shall be applied in accordance with Section P-603 when paving on existing paved surfaces, including asphalt base course, and shall be applied between all lifts of multiple lift asphalt paving, regardless of age.*

**401-4.11 LAYDOWN PLAN, TRANSPORTING, PLACING, AND FINISHING.** *Prior to the placement of the HMA, 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 HMA 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.*

*The alignment and elevation of the paver shall be regulated from outside reference lines established for this purpose for the first lift of all runway and taxiway pavements. Successive lifts of HMA surface course may be placed using a ski, or laser control per paragraph 401-4.4.1, provided grades of the first lift of HMA surface course meet the tolerances of paragraphs 401-5.2b(6) as verified by a survey. Contractor shall survey each lift of HMA surface course and certify to Engineer that every lot of each lift meets the grade tolerances of paragraph 401-5.2b(6) before the next lift can be placed. If the grades of a single lot do not meet the tolerances of 401-5.2b(6), then the Contractor shall use a stringline for each entire lift. Corrective action in paragraph 401-5.2b(6) applies to the final lift of surface course; however, for multiple lift construction, the Contractor shall correct to ensure the final lift of surface course is a nominal 3 inches or as dictated by the typical sections.*

*The Contractor shall use a material transfer vehicle to deliver HMA to the paver for all work on the runway.*

*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). The Contractor shall provide a thermometer onsite to test the temperature of each truck load.*

*Edges of existing bituminous pavement abutting the new work shall be saw cut and carefully removed as shown on the drawings and painted with bituminous tack coat before new material is placed against it.*

*Upon arrival, the mixture shall be placed to the full width by the asphalt 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 ft 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; 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 from transverse joints in the previous course.*

*Transverse joints in adjacent lanes shall be offset a minimum of 10 feet except as dictated when utilizing off peak paving techniques.*

*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.*

**401-4.12 Compaction of HMA.** *After placing, the HMA shall be thoroughly and uniformly compacted by power rollers. The surface shall be compacted as soon as possible when the HMA 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 HMA 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 HMA 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.*

**401-4.13 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 HMA 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 coated with an asphalt tack coat before placing any fresh HMA against the joint.

Longitudinal joints which have been left exposed for more than four (4) hours; the surface temperature has cooled to less than 175°F (80°C); or are irregular, damaged, uncompacted or otherwise defective shall be cut back 3 inches to 6 inches to expose a clean, sound, uniform vertical surface for the full depth of the course. All cutback material shall be removed from the project. Asphalt tack coat or other product approved by the Engineer shall be applied to the clean, dry joint, prior to placing any additional fresh HMA against the joint. Any laitance produced from cutting joints shall be removed by vacuuming and washing. The cost of this work shall be considered incidental to the cost of the HMA.

**401-4.14 SAW-CUT GROOVING.**

Not Used

**401-4.15 DIAMOND GRINDING.**

Not Used

**401-4.16 NIGHTTIME PAVING.** 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 portable floodlight units as necessary to achieve quality requirements. It shall be left to the Engineer's sole judgment as to whether the Contractor has supplied a satisfactory amount of lighting units.*
  - e.** *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.*
  - f.** *See Section G-100, General Requirements and Phasing Summary, for other requirements relative to opening night work areas to aircraft traffic after each shift. It is the Contractor's responsibility to leave the facilities to be paved in a safe condition ready for aircraft operations. The Contractor shall allow sufficient time for the mat to cool to a surface temperature of 160° to mitigate rutting from aircraft loading. 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.*

**401-4.17 PAVING PLAN.** *Prior to the placement of the HMA, the Contractor shall prepare a paving plan outlining the means and methods for the surface preparation, setting grades and the placement of pavement for approval by the Engineer.*

#### **401-5 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 and profilograph*

testing as required in this section shall be completed and paid for by the Contractor.

Testing organizations performing these tests, except profilograph testing, shall meet the requirements of ASTM D 3666. The laboratory accreditation must be current and listed on the accrediting authority's website. All test methods required for acceptance sampling and testing must be listed on the lab accreditation. A copy of the laboratory's current accreditation and accredited test methods shall be submitted to the Engineer prior to start of construction. 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. **Hot mixed asphalt.** Plant-produced HMA shall be tested for stability, flow, and air voids on a lot basis. Sampling shall be performed at the plant. Samples shall be taken in accordance with ASTM D 979.

A standard lot shall be equal to one day's production or 2000 tons (1814 metric tons) whichever is smaller. If the day's production is expected to exceed 2000 tons, but less than 4000 tons, the lot size shall be 1/2 day's production. If the day's production exceeds 4000 tons, the lot size shall be an equal sized fraction of the day's production, but shall not exceed 2000 tons.

Where more than one plant is simultaneously producing HMA for the job, the lot sizes shall apply separately for each plant.

Each truck sampled at the plant shall be identified such that when arriving on site it can be tracked and the location of the placement of its load can be recorded.

- (1) **Sampling.** Each lot will consist of four equal sublots. Sufficient HMA 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 D3665. Samples will be taken in accordance with ASTM D979.

The sample of HMA 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 JMF.

- (2) **Testing.** Sample specimens shall be tested for stability and flow in accordance with ASTM D6927. Air voids will be determined by the Engineer in accordance with ASTM D3203. One set of

*laboratory compacted specimens will be prepared for each subplot in accordance with ASTM D6926 at the number of blows required by paragraph 401-3.2, Table 1. Each set of laboratory compacted specimens will consist of three test specimens prepared from the same sample. The manual hammer in ASTM D6926 shall be used.*

*Prior to testing, the bulk specific gravity of each test specimen shall be measured by the Contractor 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 subplot in accordance with ASTM D2041. The value used in the air voids computation for each subplot shall be based on theoretical maximum specific gravity measurement for the subplot..*

*The stability and flow for each subplot shall be computed by averaging the results of all test specimens representing that subplot.*

**(3) Acceptance.** *Acceptance of HMA for stability, flow, and air voids shall be determined by the Engineer in accordance with the requirements of paragraph 401-5.2b.*

**b. In-place HMA.** *HMA placed in the field shall be tested for mat and joint density on a lot basis. A standard lot shall be equal to one day's production or 2000 tons whichever is smaller. If the day's production is expected to exceed 2000 tons, but less than 4000 tons, the lot size shall be 1/2 day's production. If the day's production exceeds 4000 tons, the lot size shall be an equal sized fraction of the day's production, but shall not exceed 2000 tons.*

**(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 subplot. 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 by a 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 subplot. 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 diamond core drill bit. Samples will be taken in accordance with ASTM D979. The minimum diameter of the sample shall be 5 inches (125 mm). 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. Laitance produced by the coring operation shall be removed immediately.

The top most lift of HMA shall be completely bonded to the underlying layer. If any of the cores reveal that the surface is not bonded to the layer immediately below the surface then additional cores shall be taken as directed by the Engineer in accordance with paragraph 401-5.1b to determine the extent of any delamination. All delaminated areas shall be completely removed by milling to the limits and depth and replaced as directed by the Engineer at no additional cost. Cored pavement shall be cleaned and core holes shall be filled in a manner acceptable to the Engineer and within one day after sampling or prior to reopening the runway, whichever is first.

- (4) Testing.** The bulk specific gravity of each cored sample will be measured by the Engineer in accordance with ASTM D 2726. Samples will be taken in accordance with ASTM D979. The percent compaction (density) of each sample will be determined by dividing the bulk specific gravity of each subplot 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.** 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 subplot 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 subplot 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.

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 HMA 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

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(7).*

*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 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 5 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 Contractor 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. After the final rolling, but not later than 24 hours after placement, the surface of each lot shall be tested in both longitudinal and transverse directions for smoothness to reveal all surface irregularities exceeding the tolerances specified. The Contractor shall furnish paving equipment and employ methods that produce a surface for each pavement lot having an average profile index meeting the requirements of paragraph 401-8.1d when evaluated with a profilograph; and the finished surface course of the pavement shall not vary more than 1/4 inch when evaluated with a 12-foot straightedge. When the surface course smoothness exceeds specification tolerances which cannot be corrected by diamond grinding of the surface course, full depth removal and replacement of surface course corrections shall be to the limit of the longitudinal placement. Corrections involving diamond grinding will be subject to the final pavement thickness tolerances specified. The Contractor shall apply a surface treatment per Item P-626 to all areas that have been subject to grinding as directed by the Engineer.*

**(a) Transverse measurements.** *Transverse measurements will be taken for each lot placed. Transverse measurements will be taken perpendicular to the pavement centerline each 50 feet or more often as determined by the Engineer.*



(i) Testing shall be continuous across all joints, starting with one-half the length of the straightedge at the edge of pavement section being tested and then moved ahead one-half the length of the straightedge for each successive measurement. Smoothness readings will not be made across grade changes or cross slope transitions; at these transition areas, the straightedge position shall be adjusted to measure surface smoothness and not design grade or cross slope transitions. The amount of surface irregularity shall be determined by placing the freestanding (unleveled) straightedge on the pavement surface and allowing it to rest upon the two highest spots covered by its length, and measuring the maximum gap between the straightedge and the pavement surface in the area between these two high points. High spots on final surface course > 1/4 inch in transverse direction shall be corrected with diamond grinding per paragraph 401-4.15 or by removing and replacing full depth of surface course. Grinding will be tapered in all directions to provide smooth transitions to areas not requiring grinding. The area corrected by grinding should not exceed 10% of the total area and these areas shall be retested after grinding.

(ii) The joint between lots shall be tested separately to facilitate smoothness between lots. The amount of surface irregularity shall be determined by placing the freestanding (unleveled) straightedge on the pavement surface, with half the straightedge on one side of the joint and the other half of the straightedge on the other side of the joint. Measure the maximum gap between the straightedge and the pavement surface in the area between these two high points. One measurement shall be taken at the joint every 50 feet or more often if directed by the Engineer. Deviations on final surface course > 1/4 inch (6mm) in transverse direction shall be corrected with diamond grinding per paragraph 401-4.15 or by removing and replacing full depth of surface course. Each measurement shall be recorded and a copy of the data shall be furnished to the Engineer at the end of each days testing.

(b) Longitudinal measurements. Longitudinal measurements will be taken for each lot placed. Longitudinal tests will be parallel to the centerline of paving; at the center of paving lanes when widths of paving lanes are less than 20 feet;

*and at the third points of paving lanes when widths of paving lanes are 20 ft or greater.*

*(i) Longitudinal Short Sections. Longitudinal Short Sections are when the longitudinal lot length is less than 200 feet and areas not requiring a profilograph. When approved by the Engineer, the first and last 15 feet of the lot can also be considered as short sections for smoothness. The finished surface shall not vary more than 1/4 inch when evaluated with a 12-foot straightedge. Smoothness readings will not be made across grade changes or cross slope transitions; at these transition areas, the straightedge position shall be adjusted to measure surface smoothness and not design grade or cross slope transitions. Testing shall be continuous across all joints, starting with one-half the length of the straightedge at the edge of pavement section being tested and then moved ahead one-half the length of the straightedge for each successive measurement. The amount of surface irregularity shall be determined by placing the freestanding (unleveled) straightedge on the pavement surface and allowing it to rest upon the two highest spots covered by its length, and measuring the maximum gap between the straightedge and the pavement surface in the area between these two high points. Deviations on final surface course > 1/4 inch in longitudinal direction will be corrected with diamond grinding per paragraph 401-4.15 or by removing and replacing full depth of surface course. Grinding will be tapered in all directions to provide smooth transitions to areas not requiring grinding. The area corrected by grinding should not exceed 10% of the total area and these areas shall be retested after grinding.*

*(ii) Profilograph Testing. Profilograph testing shall be performed by the contractor using approved equipment and procedures as described as ASTM E1274. The equipment shall utilize electronic recording and automatic computerized reduction of data to indicate "must grind" bumps and the Profile Index for the pavement using a 0.2 inch blanking band. The bump template must span one inch with an offset of 0.4 inches. The profilograph must be calibrated prior to use and operated by a factory or State DOT approved operator. Profilograms shall be recorded on a longitudinal scale of one inch equals 25 feet and a vertical*

*scale of one inch equals one inch. A copy of the reduced tapes shall be furnished to the Engineer at the end of each days testing.*

*The pavement must have an average profile index meeting the requirements of paragraph 401-8.1d. High spots, or “must grind” spots, on final surface course in longitudinal direction shall be corrected with diamond grinding per paragraph 401-4.15 or by removing and replacing full depth of surface course. Grinding will be tapered in all directions to provide smooth transitions to areas not requiring grinding. The area corrected by grinding should not exceed 10% of the total area and these areas shall be retested after grinding.*

*(iii) Final profilograph of runway. Final profilograph, full length of runway, shall be performed to facilitate testing of smoothness between lots. Profilograph testing shall be performed by the contractor using approved equipment and procedures as described as ASTM E1274. The pavement must have an average profile index meeting the requirements of paragraph 401-8.1d. The equipment shall utilize electronic recording and automatic computerized reduction of data to indicate “must grind” bumps and the Profile Index for the pavement using a 0.2 inch blanking band. The bump template must span one inch with an offset of 0.4 inches. The profilograph must be calibrated prior to use and operated by a factory or State DOT approved, trained operator. Profilograms shall be recorded on a longitudinal scale of one inch equals 25 feet and a vertical scale of one inch equals one inch. A copy of the reduced tapes shall be furnished to the Engineer at the end of each days testing. Profilograph of final runway shall be performed one foot right and left of runway centerline and 15 feet right and left of centerline. Any areas that indicate “must grind” will be corrected as directed by the Engineer.*

*Smoothness testing indicated in the above paragraphs except paragraph (iii) shall be performed within 24 hours of placement of material. Smoothness testing indicated in paragraph (iii) shall be performed within 48 hours of paving completion. The primary purpose of smoothness testing is to identify areas that may be prone to ponding of water which could lead to hydroplaning of aircraft. If the contractor’s machines and/or*

*methods are producing significant areas that need corrective actions then production should be stopped until corrective measures can be implemented. If corrective measures are not implemented and when directed by the Engineer, production shall be stopped until corrective measures can be implemented.*

**(6) Grade.** *Grade shall be evaluated on the first day of placement and then as a minimum, every 50 feet to allow adjustments to paving operations if measurements do not meet specification requirements. The Contractor must submit the survey data to the Engineer by the following day after measurements have been taken. The finished surface of the pavement shall not vary from the gradeline elevations and cross-sections shown on the plans by more than 1/2 inch. The finished grade of each lot will be determined by running levels at intervals of 50 feet 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 2,000 square yards. When more than 15% of all the measurements within a lot are outside the specified tolerance, or if any one shot within the lot deviates 3/4 inch or more from planned grade, the Contractor shall remove the deficient area to the depth of the final course plus 1/2 inch of pavement and replace with new material. Skin patching shall not be permitted. Isolated high points may be ground off provided 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. The Contractor shall apply a surface treatment per P-608 to all areas that have been subject to grinding.*

**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 **G-110**, Method of Determining Percentage within Specification Limits. 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.

<b>TABLE 5</b>		
<b>ACCEPTANCE LIMITS FOR STABILITY, FLOW, AIR VOIDS, AND DENSITY</b>		
<b>Test Property</b>	<b>Pavements Designed for Aircraft Gross Weights of 60,000 lbs or More or Tire Pressure Greater than 100 psi</b>	
<b>Number of Blows</b>	<b>75</b>	
	<b>Specification Tolerance</b>	
	<b>L</b>	<b>U</b>
<i>Stability, minimum pounds</i>	1,800	—
<i>Flow, 0.01-inch</i>	8	18
<i>Air voids total mix (percent)</i>	2.0	5.0
<i>Mat Density (percent)</i>	96.3	—
<i>Joint density (percent)</i>	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,

(2) 90 PWL is achieved when consistently producing a base course with an average mat density of at least 97.5 percent with 1.55% or less variability, and

(3) 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.

**401-5.4 LEVELING COURSE.** Any course used for truing and leveling shall meet the requirements of paragraph 401-3.2, 401-5.2b(1) for air voids and 401-5.2b(2), but shall not be subject to the density requirements of paragraph 401-5.2b(1) for mat density and 401-5.2b(3). The leveling course shall be compacted with the same effort used to achieve density of the test section. The truing and leveling course shall not exceed a nominal thickness of 1-1/2 inches. The leveling course is the first variable thickness lift of an overlay placed prior to subsequent courses.

#### **401-6 CONTRACTOR QUALITY CONTROL**

**401-6.1 GENERAL.** The Contractor shall develop a Quality Control Program in accordance with these Specifications. 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*

*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 of these Specifications. 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 CONTRACTOR TESTING LABORATORY.** *The lab shall meet the requirements of ASTM D3666 including all necessary equipment, materials, and current reference standards to comply with the specifications. The Contractor shall provide a fully equipped asphalt laboratory 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 as required by of these Specifications. The testing program shall include, but shall 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.

All testing may be witnessed by the Engineer and/or by the City of San Diego Standards Division.

- a. Asphalt Content.** A minimum of two asphalt content tests shall be performed per lot in accordance with ASTM D6307 or ASTM D2172 if the correction factor in ASTM D6307 is greater than 1.0. 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 D5444, ASTM C136, and ASTM C117.
- 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 or AASHTO T329.
- 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 D2950.
- 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.

**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 VMA. The VMA for each subplot will be calculated and monitored by the Quality Control laboratory.

Control charts shall be posted in a location satisfactory to the Engineer and shall be kept current. 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:

<b>CONTROL CHART LIMITS FOR INDIVIDUAL MEASUREMENTS</b>		
<b>Sieve</b>	<b>Action Limit</b>	<b>Suspension Limit</b>
3/4 inch	±6%	±9%
1/2 inch	±6%	±9%
3/8 inch	±6%	±9%
No. 4	±6%	±9%
No. 16	±5%	±7.5%
No. 50	±3%	±4.5%
No. 200	±2%	±3%
Asphalt Content	±0.45%	±0.70%
VMA	-1.00%	-1.50%

**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  $n = 4$ .

<b>CONTROL CHART LIMITS BASED ON RANGE(Based on <math>n = 2</math>)</b>	
<b>Sieve</b>	<b>Suspension Limit</b>
1/2 inch	11 %
3/8 inch	11 %
No. 4	11 %
No. 16	9 %
No. 50	6 %
No. 200	3.5 %
Asphalt Content	0.8 %

**Control Chart Modification.** Charts are based on 3/4-inch max aggregate. If 1" or 1.5" max aggregate used:

(1) Amend Individual Measurement chart as follows:

<b>Sieve</b>	<b>Action Limit</b>	<b>Suspension Limit</b>
1 inch or 1-1/2 inch	0%	0%
3/4 inch	6%	11%

(2) Delete 1-inch and 3/4 inch Action and Suspension Limits

(3) Revise 1/2 -inch limits to:

<b>Sieve</b>	<b>Action Limit</b>	<b>Suspension Limit</b>
1/2-inch	0%	0%

**(4)** delete 1/2-inch sieve from Range Chart

**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.

#### **401-7 MEASUREMENT.**

**401-7.1 MEASUREMENT** Plant mix bituminous concrete pavement shall be measured by the number of tons of bituminous mixture used in the accepted work. Recorded batch weights or truck scale weights will be used to determine the basis for the tonnage.

#### **401-8 BASIS OF PAYMENT.**

**401-8.1 PAYMENT.** Payment for a lot of bituminous concrete pavement meeting all acceptance criteria as specified in Paragraph 401-5.2 shall be made based on results of tests for smoothness, mat density and air voids. Payment for acceptable lots shall be adjusted according to paragraph 401-8.1a for mat density and air voids and 401-8.1c for smoothness, subject to the limitation that:

- a.** 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 of bituminous mixture used in the accepted work (See Note 1 under Table 6).
- b.** The price shall be full compensation for furnishing all materials, for all preparation, mixing, and placing and compaction of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

No separate payment will be made for constructing the item under construction sequencing restrictions, including limited access or nighttime work areas.

Unless otherwise specified, work performed under this section which is identified on the plans as “temporary” will be measured for payment in accordance with this specification.

No separate payment will be made for Lab services for Acceptance, Sampling, Inspection, Testing and Quality Control Testing as specified herein. If a separate bid item has not been included for the item of work described or shown in the Contract Document, payment shall be included in the various bid items.

- c. **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. If PWL for joint density is less than 71 percent then the lot pay factor shall be reduced by 5 percent but be no higher than 95 percent.

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. Payment in excess of 100% for accepted lots of HMA shall be used to offset payment for accepted lots of bituminous concrete pavement that achieve a lot pay factor less than 100%.

<b>TABLE 6. PRICE ADJUSTMENT SCHEDULE <sup>1</sup></b>	
<b>Percentage of Material Within Specification Limits (PWL)</b>	<b>Lot Pay Factor (Percent of Contract Unit Price)</b>
96 – 100	106
90 – 95	PWL + 10

75 – 89	0.5 PWL + 55
55 – 74	1.4PWL – 12
Below 55	Reject <sup>2</sup>

<sup>1</sup> 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.

<sup>2</sup> 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. 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.

**d. Profilograph Smoothness.** When the final average profile index (subsequent to any required corrective action) does not exceed 7 inches per mile, payment will be made for that section at the contract unit price for the completed pavement. If the final average profile index (subsequent to any required corrective action) exceeds 7 inches per mile, but does not exceed 15 inches per mile, the Contractor may elect to accept a contract unit price adjustment in lieu of reducing the profile index.

**e. Basis of Adjusted Payment for Smoothness.** Price adjustment for pavement smoothness will be made in accordance with Table 7. The adjustment will apply to the total tonnage of asphalt concrete within a lot of pavement and shall be applied with the following equation:

$$(Tons\ of\ asphalt\ concrete\ in\ lot) \times (lot\ pay\ factor) \times (unit\ price\ per\ ton) \times (smoothness\ pay\ factor) = payment\ for\ lot$$

**Table 7. Average Profile Index Smoothness Pay Factor**

(Inches per mile per 1/10 mile)	Short Sections	Pay Factor
00.0 - 7	00.0 - 15.0	100%
7.1 - 9	15.1 - 16	98%
9.1 - 11	16.1 - 17	96%
11.1 - 13	17.1 - 18	94%
13.1 - 14	18.1 - 20	92%
14.1 - 15	20.1 - 22	90%
15.1 & up	22.1 & up	Corrective work required <sup>1</sup>

<sup>1</sup> The Contractor shall correct payment areas not meeting these tolerances by removing and replacing the defective work. If the Contractor elects to construct an overlay to correct deficiencies, the minimum thickness of the overlay shall not be less than twice the size of the maximum size aggregate. The corrective overlay shall not violate grade Criteria and butt joints shall be constructed by sawing and removing the original pavement in compliance with the thickness/maximum aggregate size ratio. Skin patching shall not be permitted.

*HMA placed above the specified grade shall not be included in the quantities for payment.*

**Payment.** *Payment will be made under:*

*Item P-401-8.1-1 .....Bituminous Surface Course  
per Ton*

**401-9 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 75µm (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*

<i>ASTM C 566</i>	<i>Total Evaporable Moisture Content of Aggregate by Drying</i>
<i>ASTM D 75</i>	<i>Sampling Aggregates</i>
<i>ASTM D 979</i>	<i>Sampling Bituminous Paving Mixtures</i>
<i>ASTM D 995</i>	<i>Mixing Plants for Hot-Mixed Hot-Laid Bituminous Paving Mixtures</i>
<i>ASTM D 1073</i>	<i>Fine Aggregate for Bituminous Paving Mixtures</i>
<i>ASTM D 1188</i>	<i>Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Paraffin-Coated Specimens</i>
<i>ASTM D 1461</i>	<i>Moisture or Volatile Distillates in Bituminous Paving Mixtures</i>
<i>ASTM D 2041</i>	<i>Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures</i>
<i>ASTM D 2172</i>	<i>Quantitative Extraction of Bitumen from Bituminous Paving Mixtures</i>
<i>ASTM D 2419</i>	<i>Sand Equivalent Value of Soils and Fine Aggregate</i>
<i>ASTM D 2489</i>	<i>Estimating Degree of Particle Coating of Bituminous-Aggregate Mixtures</i>
<i>ASTM D 2726</i>	<i>Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures</i>
<i>ASTM D 2950</i>	<i>Density of Bituminous Concrete in Place by Nuclear Methods</i>
<i>ASTM D 3203</i>	<i>Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures</i>
<i>ASTM D 3665</i>	<i>Random Sampling of Construction Materials</i>
<i>ASTM D 3666</i>	<i>Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials</i>
<i>ASTM D 4125</i>	<i>Asphalt Content of Bituminous Mixtures by the Nuclear Method</i>
<i>ASTM D 4318</i>	<i>Liquid Limit, Plastic Limit, and Plasticity Index of Soils</i>

<i>ASTM D 4791</i>	<i>Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate</i>
<i>ASTM D 4867</i>	<i>Effect of Moisture on Asphalt Concrete Paving Mixtures</i>
<i>ASTM D 5444</i>	<i>Mechanical Size Analysis of Extracted Aggregate</i>
<i>ASTM D 5581</i>	<i>Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus (6" Diameter Specimen)</i>
<i>ASTM D 6926</i>	<i>Preparation of Bituminous Specimens Using Marshall Apparatus</i>
<i>ASTM D 6927</i>	<i>Marshall Stability and Flow of Bituminous Mixtures</i>
<i>ASTM E 11</i>	<i>Wire-Cloth Sieves for Testing Purposes</i>
<i>ASTM E 178</i>	<i>Dealing with Outlying Observations</i>
<i>ASTM E 1274</i>	<i>Measuring Pavement Roughness Using a Profilograph</i>
<i>AASHTO T 30</i>	<i>Mechanical Analysis of Extracted Aggregate</i>
<i>AASHTO T 110</i>	<i>Moisture or Volatile Distillates in Bituminous Paving Mixtures</i>

*The Asphalt Institute's Mix Design Methods for Asphalt Concrete Manual No. 2  
(MS-2)*

*Asphalt Institute Handbook MS-26, Asphalt Binder*

**401-10 MATERIAL REQUIREMENTS**

<i>ASTM D 242</i>	<i>Mineral Filler for Bituminous Paving Mixtures</i>
<i>ASTM D 946</i>	<i>Penetration Graded Asphalt Cement for Use in Pavement Construction</i>
<i>ASTM D 3381</i>	<i>Viscosity-Graded Asphalt Cement for Use in Pavement Construction</i>
<i>ASTM D 4552</i>	<i>Classifying Hot-Mix Recycling Agents</i>
<i>AASHTO M320</i>	<i>Performance Graded Asphalt Binder</i>

**END OF ITEM P-401**

**PART 2 - SUBMITTALS**



**2.1** Submittals required for this item include, but are not limited to:

- A. Job Mix Formula (See 401-3.2)
- B. Aggregates (See 401-2.5)
- C. Bitumen (See 401-2.4)
- D. Plant and Equipment (See 401-4.2)
- E. Laboratory Certifications (See 401-3.4)
- F. Testing Facility Certification (See 401-4.2)
- G. Laydown Plan (See 401-4.11)
- H. Paving Plan (See 401-4.17)

**END OF SECTION P-401**

## SECTION P-403

### PLANT MIX BITUMINOUS PAVEMENTS -BASE COURSE

#### PART 1 - GENERAL

##### 1.1 GENERAL

- A. The Contractor shall perform all work required by the plans and specifications for construction of Asphalt Concrete Base Course for pavement areas as shown on the Plans and in accordance with FAA Specification Item P-403 as included and modified herein. In addition, for topics relevant to the construction of Asphalt Concrete Base Course which are not addressed in P-403, Sections 203 (Bituminous Materials) and 301 (Treated Soil, Subgrade Preparation and Placement of Base Materials) of the Standard Specifications shall be applicable unless otherwise stipulated.
- B. Asphalt pavement base course will be either P-403 or "Asphalt Concrete Pavement" as indicated on the plans or as directed by the Engineer.

##### 1.2 USES OF THIS SECTION

- A. Unless otherwise indicated on the plans, asphalt concrete covered under this section shall be used for:
  - 1. Base Courses for pavement serving all aircraft weight categories
  - 2. Leveling Courses for pavement serving all aircraft weight categories

### ***ITEM P-403 HOT MIX ASPHALT (HMA) PAVEMENTS (BASE, LEVELING OR SURFACE COURSE)***

#### ***403-1 DESCRIPTION***

***403-1.1*** This item shall consist of a base and or leveling course composed of mineral aggregate and asphalt cement binder (asphalt binder) mixed in a central mixing plant and placed on a prepared course in accordance with these specifications. Courses 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.

#### ***403-2 MATERIALS***

***403-2.1 AGGREGATE.*** Aggregates shall consist of crushed stone, crushed gravel crushed slag, screenings, natural sand and mineral filler, as required. The aggregates should be free of ferrous sulfides, such as pyrite, that

would cause "rust" staining that can bleed through pavement markings. The portion retained on the No. 4 sieve is coarse aggregate. The portion passing the No. 4 sieve and retained on the No. 200 sieve is fine aggregate, and the portion passing the No. 200 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 shall be free from organic matter and other deleterious substances. The percentage of wear shall not be greater than 40 percent for surface courses and 50 for base courses, when tested in accordance with ASTM C 131. The sodium sulfate soundness loss shall not exceed 12 percent, or the magnesium sulfate soundness loss shall not exceed 18 percent, after five cycles, when tested in accordance with ASTM C 88. Clay Lumps and friable particles shall not exceed 1.0% when tested in accordance with ASTM C142.

Aggregate shall contain at least 75 percent by weight of individual pieces having two or more fractured faces and 85 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 mid-sectional 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.

Slag shall be air-cooled, blast furnace slag, and shall have a compacted weight of not less than 70 pounds per cubic foot when tested in accordance with ASTM C 29.

- b. **Fine Aggregate.** Fine aggregate shall consist of clean, sound, tough, 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.

The fine aggregate, including any blended material for the fine aggregate, shall have a plasticity index of not more than six (6) and a liquid limit of not more than 25 when tested in accordance with ASTM D4318.

*The soundness loss shall not exceed 10% when sodium sulfate is used or 15% when magnesium sulfate is used, after five cycles, when tested per ASTM C88.*

*Clay lumps and friable particles shall not exceed 1.0 percent, by weight, when tested in accordance with ASTM C142.*

*Natural (non-manufactured) 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.*

- 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.*

**403-2.2 Mineral filler.** *If filler, in addition to that naturally present in the aggregate, is necessary, it shall meet the requirements of ASTM D242. Asphalt cement binder.*

**403-2.3 Asphalt Cement Binder.** *Asphalt cement binder shall conform to ASTM D6373 Performance Grade (PG) 64-10 . A certificate of compliance from the manufacturer shall be included with the mix design submittal.*

**403-2.4 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)** *Clay lumps and friable particles*
  - (4)** *Percent fractured faces*
  - (5)** *Flat and elongated particles*
  - (6)** *Unit weight of slag*

**b. Fine Aggregate**

- (1) Liquid limit and Plasticity index
- (2) Soundness
- (3) Clay lumps and friable particles
- (4) Percent natural sand
- (5) Sand equivalent

**c. Mineral Filler**

- d. Asphalt Binder.** Test results for asphalt binder 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.

**403-2.5 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 Caltrans.

**403-3 COMPOSITION**

**403-3.1 COMPOSITION OF MIXTURE.** The HMA plan 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 shall be combined in such proportions that the resulting mixture meets the grading requirements of the job mix formula (JMF).

**403-3.2 JOB MIX FORMULA.** No HMA for payment shall be produced until a job mix formula has been approved in writing by the Engineer. The asphalt mix design and JMF shall be prepared by an accredited laboratory that meets the requirements of paragraph 403-3.4. The HMA shall be designed using procedures contained Asphalt Institute MS-2 Mix Design Manual, 7th Edition. ASTM D6926 shall be used for preparation of specimens using the

*manually held and operated hammer for the mix design procedure. ASTM D6927 shall be used for testing for Marshall stability and flow.*

*If material variability exceeds the standard deviations indicated, the JMF and subsequent production targets shall be based on a stability greater than shown in Table 1 and the flow shall be targeted close to the mid-range of the criteria in order to meet the acceptance requirements.*

*The design criteria in Table 1 are target values necessary to meet the acceptance requirements contained in paragraph 403-5.2b. The criteria are based on a production process which has a material variability with the following standard deviations: Stability = 270 lbs; Flow (0.01 inch) = 1.5 inches; Air Voids = 0.65%.*

*The Tensile Strength Ratio (TSR) of the composite mixture, as determined by ASTM D 4867, shall not be less than 75. when tested at a saturation of 70-80% or an anti-stripping agent shall be added to the HMA, as necessary, to produce a TSR of not less than 75 when tested at a saturation of 70-80%. If an anti-strip agent is required, it shall be provided by the Contractor at no additional cost to the Owner.*

*The Job Mix Formula (JMF) JMF shall be submitted in writing by the Contractor at least 30 days prior to the start of paving operations. The JMF shall be developed within the same construction season using aggregates currently being produced.*

*The submitted JMF shall be stamped or sealed by the responsible professional Engineer of the laboratory and shall include the following items 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. Laboratory mixing temperature*
- f. Laboratory compaction temperature*
- g. Temperature-viscosity relationship of the PG asphalt cement binder showing acceptable range of mixing and compaction temperatures and for modified binders include supplier recommended mixing and compaction temperatures.*

- h. Plot of the combined gradation on the Federal Highway Administration (FHWA) 45 power gradation curve*
- i. Graphical plots of stability, flow, air voids, voids in the mineral aggregate, and unit weight versus asphalt content*
- j. Specific gravity and absorption of each aggregate.*
- 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. Anti-strip agent (if required)*
- p. Date the job mix formula was developed. Mix designs that are not dated or which are from a prior construction season shall not be accepted.*

*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, 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 15 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.*

<b>TABLE 1. MARSHALL DESIGN CRITERIA</b>	
<b>Test Property</b>	<b>Criteria</b>
Number of blows	75
Stability, pounds minimum	1,800
Flow, 0.01 in.	8-16
Air voids (percent)	3.5
Percent voids in mineral aggregate, minimum	See Table 2

*The flow requirement is not applicable for Polymer Modified Asphalts.*

<b>TABLE 2 MINIMUM PERCENT VOIDS IN MINERAL AGGREGATE (VMA)</b>	
<b>Aggregate (See Table 3)</b>	<b>Minimum VMA</b>
Gradation 3	16
Gradation 2	15
Gradation 1	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, 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 sieve, or vice versa.*



<b>TABLE 3</b>			
<b>AGGREGATE – BITUMINOUS PAVEMENTS – P-403</b>			
<b>Sieve Size</b>	<b>Percentage by Weight Passing Sieves</b>		
	<b>Gradation 1</b>		
1 in.	100		
¾ in.	76-98		
½ in.	66-86		
3/8 in.	57-77		
No. 4	40-60		
No. 8	26-46		
No. 16	17-37		
No. 30	11-27		
No. 50	7-19		
No. 100	6-16		
No. 200	3-6		
<b>Asphalt Percent:</b>			
Stone or gravel	4.5–7.0		

*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 MS-2 Mix Design Manual, 7th Edition.*

*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 403-6.5a. 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 approved by the Engineer.*

**403-3.3 RECYCLED ASPHALT CONCRETE.** *Not used.*

**403-3.4 JOB MIX (JMF) FORMULA LABORATORY.** *The Contractor's laboratory used to develop the job mix formula (JMF) shall meet the requirements of ASTM D 3666. The laboratory accreditation must be current and listed on the accrediting authority's website. All test methods required for developing the JMF must be listed on the lab accreditation. A copy of the laboratory's current accreditation and accredited test methods shall be submitted to the Engineer prior to start of construction.*

**403-3.5 TEST SECTION.** *Prior to full production, the Contractor shall prepare and place a quantity of HMA according to the job mix formula. The amount of HMA shall be sufficient to construct a test section 300 feet long and 20 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. A cold joint is an exposed construction joint at least 4 hours old or whose mat has cooled to less than 160°F. The cold joint must be cut back using the same procedure that will be used during production in accordance with 403-4.12. 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. If night construction is required, the test section will be constructed under the same lighting and timing restrictions as planned for production paving.*

*The Test Section shall be evaluated for acceptance as a single lot in accordance with the acceptance criteria in paragraph 403-5.1 and 403-5.2. 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 the average mat density of the test section cores is greater than or equal to 96 percent and the average joint density of the test section cores is greater than or equal to 94 percent.*

*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 403-8.1.

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 the 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 403-6.1, has been approved, in writing, by the Engineer

#### **403-4 CONSTRUCTION METHODS**

**403-4.1 WEATHER LIMITATIONS.** The HMA 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.

<b>TABLE 4 BASE TEMPERATURE LIMITATIONS</b>	
<b>Mat Thickness</b>	<b>Deg. F (Deg. C)</b>
3 in. or greater	40 (4)
Greater than 1 in. but less than 3 in.	45 (7)
1 in. or less	50 (10)

**403-4.2 HMA PLANT.** Plants used for the preparation of HMA shall conform to the requirements of American Association of State Highway and Transportation Officials (AASHTO) M156 with the following changes:

**a. Requirements for All Plants.**

**(1) Truck Scales.** The HMA 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, subsection 90-01.*

*In lieu of scales, and as approved by the Engineer, HMA 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 acceptance testing and the Contractor's quality control testing. The Engineer will always have access to 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 including all necessary equipment, materials, and current reference standards to comply with the specifications and masonry saw with diamond blade for trimming pavement cores and samples.*

*The plant testing laboratory shall have a floor space area of not less than 200 square feet, with a ceiling height of not less than 7-1/2 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.*

*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,.*
- (e)** *Desk with chairs and file cabinet*

- (f) Sanitary facilities convenient to testing laboratory*
- (g) Exhaust fan to outside air.*
- (h) Sink with running water, attached drain board and drain capable of handling separate material*

*Failure to provide the specified facilities shall be sufficient cause for disapproving HMA plant operations.*

*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*

*The Owner shall have access to the lab and at the plant whenever Contractor is producing asphalt for the project.*

**(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.** *The HMA stored in storage and surge bins shall meet the same requirements as HMA loaded directly into trucks and may be permitted under the following conditions:*

**(a)** *Stored in non-insulated bins for a period of time not to exceed three (3) hours.*

**(b)** *Stored in insulated storage bins for a period of time not to exceed eight (8) hours.*

*If the Engineer determines that there is an excessive amount of heat loss, segregation or oxidation of the HMA due to temporary storage, no temporary storage will be allowed.*

**403-4.3 HAULING EQUIPMENT.** Trucks used for hauling HMA 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 an approved asphalt release agent. 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.

- a.** *Material transfer vehicle (MTV).* Material transfer Vehicles shall be required due to the improvement in smoothness and decrease in both physical and thermal segregation. To transfer the material from the hauling equipment to the paver, use a self-propelled, material transfer vehicle with a swing conveyor that can deliver material to the paver without making contact with the paver. The MTV shall be able to move back and forth between the hauling equipment and the paver providing material transfer to the paver, while allowing the paver to operate at a constant speed. The Material Transfer Vehicle will have remixing and storage capability to prevent physical and thermal segregation.

**403-4.4 HMA PAVERS.** Bituminous pavers shall be self-propelled with an activated heated screed, capable of spreading and finishing courses of HMA 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 continuous and 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.

Pavers shall be setup for nominal 12.5' paving lanes with screed extensions and augers installed to provide a continuous supply of mix in front of the screed. Consideration should be given to utilizing pavers set up for paving 25' lane widths to minimize the number of longitudinal joints to be tested.

- a. Automatic grade control** 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. Paving operations utilizing slope control will not be allowed.

The transverse slope controller shall be capable of maintaining the screed at the desired slope within  $\pm 0.1\%$ .

The controls shall be capable of working in conjunction with any of the following attachments:

- (1) Ski-type device of not less than 30 feet in length.
- (2) Taut stringline (wire) set to grade.
- (3) Short ski or shoe.
- (4) 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 and/or base course 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.

**403-4.5 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.

- a. **Density device.** The Contractor shall have on site a density gauge 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 density gauge and obtain accurate density readings for all new HMA. 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.

**403-4.6 PREPARATION OF ASPHALT BINDER.** *The asphalt binder 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), when added to the aggregate. The temperature of modified asphalt binder shall be no more than 350°F (175°C) when added to the aggregate unless otherwise required by the manufacturer.*

**403-4.7 PREPARATION OF MINERAL AGGREGATE.** *The aggregate for the HMA 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 binder 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.*

**403-4.8 HMA.** *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. For batch plants, wet mixing time begins with the introduction of bituminous material into the mixer and ends with the opening of the mixer discharge gate. Distribution of aggregate and bituminous material as they enter the pugmill, speed of mixer shafts, and arrangement and pitch of paddles are factors*



*governing efficiency of mixing. Prolonged exposure to air and heat in the pugmill hardens the asphalt film on the aggregate. Mixing time, therefore, should be the shortest time required to obtain uniform distribution of aggregate sizes and thorough coating of aggregate particles with bituminous material.*

**403-4.9 PREPARATION OF THE UNDERLYING SURFACE.** *Immediately before placing the HMA, the underlying course shall be cleaned of all dust and debris. A prime coat or tack coat shall be applied in accordance with Sections P-602 and p-603 of these specifications, Bituminous Prime Coat and Bituminous Tack Coat (FAA Items P-602 or P-603, respectively). A tack coat shall be applied in accordance with Section P-603, Bituminous Tack Coat (FAA Item P-603) when paving on existing paved surfaces, including asphalt base course, and between all lifts of multiple lift asphalt paving.*

**403-4.10 LAYDOWN PLAN, TRANSPORTING, PLACING, AND FINISHING.** *Prior to the placement of HMA, 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 specifically address the paving operations to be performed during night shifts or continuous full runway closures. This type of paving is generally called off peak paving and requires special considerations such as spare equipment, as discussed elsewhere, and a major cleanup effort at the end of each shift to return the runway surface to operation. 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 HMA shall be transported from the mixing plant to the site in vehicles conforming to the requirements of paragraph 403-4.3. 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.*

*The Contractor shall use a material transfer vehicle to deliver HMA to the paver*

*The alignment and elevation of the paver shall be regulated from outside reference lines established for this purpose for the first lift of all runway and taxiway pavements. Successive lifts of HMA surface course may be placed using a ski, or laser control per paragraph 403-4.4.1, provided grades of the first lift of bituminous surface course meet the tolerances of paragraphs 403-5.2b(5) as verified by a survey. Contractor shall survey each lift of HMA surface course and certify to Engineer that every lot of each lift meets the grade tolerances of paragraph 403-5.2b(5) before the next lift can be placed.*

*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°F (121°C). The Contractor shall provide a thermometer onsite to test the temperature of each truck load.*

*Edges of existing HMA pavement abutting the new work shall be saw cut and carefully removed as shown on the drawings and painted with bituminous tack coat before new material is placed against it. Longitudinal cuts with a milling machine such that a generally square cut is made will be acceptable.*

*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 ft 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; 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 from transverse joints in the previous course.*

*Transverse joints in adjacent lanes shall be offset a minimum of 10 feet except as dictated by off peak paving.*

*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 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.*

**403-4.11 COMPACTION OF HMA.** *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 using a water soluble asphalt release agent approved by the engineer. 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 HMA 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.*

**403-4.12 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 tack coat of 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 175°, shall be cut back 3-6 inches to expose a clean, sound surface for the full depth of the course. All cutback material shall be removed from the project. A asphalt tack coat or other product approved by the Engineer shall be applied to the clean, dry joint prior to placing any additional fresh HMA against the joint. Any laitance produced from cutting*

*joints shall be removed by vacuuming and washing. The cost of this work shall be considered incidental to the cost of the HMA.*

**403-4.13**     **DIAMOND GRINDING** *Section not used*

**403-4.13**     **NIGHTTIME PAVING.** *Paving during nighttime construction shall require the following:*

- a. All paving machines, rollers, distributor 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. A lighting plan must be submitted by the Contractor and approved by the Engineer prior to the start of any nighttime work*
- e. In addition, the Contractor shall furnish portable floodlight units as necessary to achieve quality requirements. It shall be left to the Engineer's sole judgment as to whether the Contractor has supplied a satisfactory amount of lighting units.*
- f. 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.*
- g. See Section G-100, General Requirements, for other requirements relative to opening night work areas to aircraft traffic after each shift.*

*It is the Contractor's responsibility to leave the facilities to be paved in a safe condition ready for aircraft operations. The Contractor shall allow sufficient time for the mat to cool to a surface temperature of 160° to mitigate rutting from aircraft loading. 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.*

#### **403-5 MATERIAL ACCEPTANCE**

**403-5.1 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 the testing organization prior to the start of operations. The laboratory accreditation must be current and listed on the accrediting authority's website. All test methods required for acceptance sampling and testing must be listed on the lab accreditation. A copy of the laboratory's current accreditation and accredited test methods shall be submitted to the Engineer prior to start of construction. All equipment in Contractor furnished laboratories shall be calibrated by an independent testing organization prior to the start of operations.*

- a. Hot mixed asphalt.** *Plant-produced HMA shall be tested for air voids and stability and flow 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 D979. A standard lot shall be equal to one day's production or 2000 tons (1814 metric tons) whichever is smaller.*

*If the day's production is expected to exceed 2000 tons, but less than 4000 tons, the lot size shall be 1/2 day's production. If the day's production exceeds 4000 tons, the lot size shall be an equal sized fraction of the day's production, but shall not exceed 2000 tons.*

*Where more than one plant is simultaneously producing HMA for the job, the lot sizes shall apply separately for each plant.*

- (1) Sampling.** Each lot will consist of four equal sublots. Sufficient HMA 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 D3665. Samples will be taken in accordance with ASTM D979.

The sample of HMA 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 JMF.

- (2) Testing.** Sample specimens shall be tested for stability and flow in accordance with ASTM D6927. Air voids will be determined by the Engineer in accordance with ASTM D3203. One set of laboratory compacted specimens will be prepared for each subplot in accordance with ASTM D6926 at the number of blows required by paragraph 403-3.2, Table 1. Each set of laboratory compacted specimens will consist of three test specimens prepared from the same sample. The manual hammer in ASTM D6926 shall be used.

Prior to testing, the bulk specific gravity of each test specimen shall be measured by the Engineer in accordance with ASTM D2726 using the procedure for laboratory-prepared thoroughly dry specimens 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 subplot in accordance with ASTM D2041. The value used in the air voids computation for each subplot shall be based on theoretical maximum specific gravity measurement for the subplot.

The stability and flow for each subplot shall be computed by averaging the results of all test specimens representing that subplot.

- (3) Acceptance.** Acceptance of plant produced HMA for stability, flow, and air voids shall be determined by the Engineer in accordance with the requirements of paragraph 403-5.1.

- b. In-place HMA.** HMA placed in the field shall be tested for mat and joint density on a lot basis. A standard lot shall be equal to one day's production or 2000 tons whichever is smaller. If the day's production is expected to exceed 2000 tons, but less than 4000 tons, the lot size shall be 1/2 day's production. If the day's production exceeds 4000 tons, the lot size shall be an equal sized fraction of the day's production, but shall not exceed 2000 tons (1814 metric tons).

**(1) Mat Density.** *The lot size shall be the same as that indicated in paragraph 403-5.1a. The lot shall be divided into four equal sublots. One core of finished, compacted HMA shall be taken by the Contractor from each subplot. Core locations will be determined by the Engineer on a random basis in accordance with procedures contained in ASTM D3665. 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 by a lot of HMA as defined in paragraph 403-5.1a. The lot shall be divided into four equal sublots. One core of finished, compacted HMA shall be taken by the Contractor from each subplot. Core locations will be determined by the Engineer on a random basis in accordance with procedures contained in ASTM D3665.*

*Edge of cores will be taken within 6 inches of the joint of the same lot material but not directly 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 bit. Samples will be taken in accordance with ASTM D979. 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. The top most lift of bituminous material shall be completely bonded to the underlying layers of bituminous material. If any of the cores reveal that the surface is not bonded to the bituminous layer immediately below the surface then additional cores shall be taken as directed by the Engineer in accordance with paragraph 403-5.1a to determine the extent of any delamination. All delaminated areas shall be completely removed by milling to the limits and depth and replaced as directed by the Engineer at no additional cost.*

**(4) Testing.** *The bulk specific gravity of each cored sample will be measured by the Contractor in accordance with ASTM D 2726. Samples will be taken in accordance with ASTM D979. The percent compaction (density) of each sample will be determined by dividing the bulk specific gravity of each subplot sample by the*

average bulk specific gravity of all laboratory prepared specimens for the lot, as determined in paragraph 403-5.1a(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 HMA format density will be determined by the Engineer in accordance with the requirements of paragraph 403-5.2b(1). Acceptance for joint density will be determined by the Engineer in accordance with the requirements of paragraph 403-5.2b(2).

**c. Partial Lots - Field Placed 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 subplot 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 subplot 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. 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, that is,  $n = 3$

#### **403-5.2 ACCEPTANCE CRITERIA.**

**a. General.** Acceptance will be based on the following characteristics of the bituminous mixture and completed pavement and test results:

- (1) Air Voids**
- (2) Mat density**
- (3) Joint density**
- (4) Thickness**
- (5) Grade**



**(6) Stability**

**(7) Flow**

*Mat density will be evaluated for acceptance in accordance with paragraph 403-5.2b(1). Stability and flow will be evaluated for acceptance in accordance with paragraph 403-5.1. Joint density will be evaluated for acceptance in accordance with paragraph 403-5.2b(2).*

*Thickness will be evaluated by the Contractor for compliance in accordance with paragraph 403-5.2b(3). Acceptance for smoothness will be based on the criteria contained in paragraph 403-5.2b(4). Acceptance for grade will be based on the criteria contained in paragraph 403-5.2b(5).*

*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.** *Acceptance of each lot of plant produced material for mat density shall be based on the average of all of the densities taken from the sublots. If the average mat density of the lot so established equals or exceeds 96 percent, the lot shall be acceptable. If the average mat density of the lot is below 96 percent, the lot shall be removed and replaced at the Contractor's expense.*

**(2) Joint Density.** *Acceptance of each lot of plant produced material for joint density shall be based on the average of all of the joint densities taken from the sublots. If the average joint density of the lot so established equals or exceeds 94 percent, the lot shall be acceptable. If the average joint density of the lot is less than 94 percent, the Contractor shall stop production and evaluate the method of compacting joints. Production may resume once the*

*reason for poor compaction has been determined and appropriate measures have been taken to ensure proper compaction.*

- (3) Thickness.** *Thickness of each course shall be evaluated by the Engineer for compliance to the requirements shown on the plans. Measurements of thickness shall be made by the Contractor using the cores extracted for each subplot 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 thickness deficiency exceeds the specified tolerances, the lot or subplot 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.*
- (4) Smoothness.** *Section not used.*
- (5) Grade.** *Grade shall be evaluated on the first day of placement and then every 50 feet to allow adjustments to paving operations if measurements do not meet specification requirements. The Contractor must submit the survey data to the Engineer by the following day after measurements have been taken. 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. The finished grade of each lot will be determined by running levels at intervals of 50 feet 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 2,000 square yards. 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. High point grinding will be limited to 15 square yards. 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. Areas in excess of 15 square yards will require removal and replacement of the pavement in accordance with the limitations noted above.

- c. **Density Outliers.** If the tests within a lot include a very large or a very small value that appears to be outside the normal limits of variation, check for an outlier in accordance with ASTM E 178, at a significance level of 5 percent, to determine if this value should be discarded.

#### **403-5.3 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 403-5.1. Only one resampling per lot will be permitted.
  - (1) A redefined mat density shall be calculated for the resampled lot. The number of tests used to calculate the redefined mat density 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 mat density for a resampled lot shall be used to evaluate the acceptance of that lot in accordance with Paragraph 403-5.2.
- c. **Outliers.** Check for outliers in accordance with ASTM E178, at a significance level of 5%.

#### **403-6 CONTRACTOR QUALITY CONTROL**

**403-6.1 GENERAL.** 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 403-6.3, 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*

*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 403-6.3 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.*

**403-6.2 CONTRACTOR TESTING LABORATORY.** *The lab shall meet the requirements of ASTM D3666 including all necessary equipment, materials, and current reference standards to comply with the specifications*

**403-6.3 QUALITY CONTROL TESTING.** *The Contractor shall perform all quality control tests necessary to control the production and construction processes applicable to the specifications and as set forth in the approved Quality Control Program as required by these Specifications. The testing program shall include, but shall not 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.*

All testing may be witnessed by the Engineer and/or by the City of San Diego Standards Division.

- a. Asphalt Content.** A minimum of two asphalt content tests shall be performed per lot in accordance with ASTM D6307 or ASTM D2172 if the correction factor in ASTM D6307 is greater than 1.0. 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 D5444 and ASTM C136, and ASTM C117.
- 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 HMA.** The moisture content of the HMA shall be determined once per lot in accordance with ASTM D1461
- e. Temperatures.** Temperatures shall be checked, at least four times per lot, at necessary locations to determine the temperatures of the dryer, asphalt binder in the storage tank, the HMA at the plant, and the HMA 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.

**403-6.4 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.

**403-6.5 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 and asphalt content and VMA. The VMA for each subplot will be calculated and monitored by the Quality Control laboratory.

Control charts shall be posted in a location satisfactory to the Engineer and shall be kept current. 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, asphalt content, and VMA. The control charts shall use the JMF target values as indicators of central tendency for the following test parameters with associated Action and Suspension Limits:

<b>CONTROL CHART LIMITS FOR INDIVIDUAL MEASUREMENTS</b>		
<b>Sieve</b>	<b>Action Limit</b>	<b>Suspension Limit</b>
3/4 inch	±6%	±9%
1/2 inch	±6%	±9%
3/8 inch	±6%	±9%
No. 4	±6%	±9%
No. 16	±5%	±7.5%
No. 50	±3%	±4.5%
No. 200	±2%	±3%
Asphalt Content	±0.45%	±0.70%
VMA	-1.00%	-1.5%

- 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  $n = 4$ .

<b>CONTROL CHART LIMITS BASED ON RANGE(Based on n = 2)</b>	
<b>Sieve</b>	<b>Suspension Limit</b>
1/2 inch	11 %
3/8 inch	11 %
No. 4	11 %
No. 16	9 %
No. 50	6 %
No. 200	3.5 %
Asphalt Content	0.8 %

**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

**403-6.6 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.

**403-7 METHOD OF MEASUREMENT**

**403-7.1 MEASUREMENT.** Plant mix bituminous concrete pavement shall be measured by the number of tons of HMA mixture used in the accepted work. Recorded batch weights or truck scale weights will be used to determine the basis for the tonnage.

**403-8 BASIS OF PAYMENT**

**403-8.1 PAYMENT.** Payment for a lot of HMA meeting all acceptance criteria as specified in paragraph 403-5.2 shall be made at the contract unit price per ton for HMA. 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.

**403-8.2** No separate payment will be made for lab services for Acceptance, Sampling, Inspection and Testing and Quality Control Testing as specified herein. If a separate Bid Item has not been provided for an item of Work described or shown in the Contract Document, the payment shall be included in various bid items. Payment will be made under:

Item P-403 Bituminous Base Course .....per ton

**403-9 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 $\mu$ m (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 1074 Compressive Strength of Bituminous Mixtures
- ASTM D 1188 Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Paraffin-Coated Specimens



<i>ASTM D 1461</i>	<i>Moisture or Volatile Distillates in Bituminous Paving Mixtures</i>
<i>ASTM D 2041</i>	<i>Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures</i>
<i>ASTM D 2172</i>	<i>Quantitative Extraction of Bitumen from Bituminous Paving Mixtures</i>
<i>ASTM D 2419</i>	<i>Sand Equivalent Value of Soils and Fine Aggregate</i>
<i>ASTM D 2489</i>	<i>Estimating Degree of Particle Coating of Bituminous-Aggregate Mixtures</i>
<i>ASTM D 2726</i>	<i>Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures</i>
<i>ASTM D 2950</i>	<i>Density of Bituminous Concrete in Place by Nuclear Methods</i>
<i>ASTM D 3203</i>	<i>Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures</i>
<i>ASTM D 3665</i>	<i>Random Sampling of Construction Materials</i>
<i>ASTM D 3666</i>	<i>Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials</i>
<i>ASTM D 4125</i>	<i>Asphalt Content of Bituminous Mixtures by the Nuclear Method</i>
<i>ASTM D 4318</i>	<i>Liquid Limit, Plastic Limit, and Plasticity Index of Soils</i>
<i>ASTM D 4791</i>	<i>Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate</i>
<i>ASTM D 4867</i>	<i>Effect of Moisture on Asphalt Concrete Paving Mixtures</i>
<i>ASTM D 5444</i>	<i>Mechanical Size Analysis of Extracted Aggregate</i>
<i>ASTM D 5581</i>	<i>Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus (6" Diameter Specimen)</i>
<i>ASTM D 6926</i>	<i>Preparation of Bituminous Specimens Using Marshall Apparatus</i>
<i>ASTM D 6927</i>	<i>Marshall Stability and Flow of Bituminous Mixtures</i>

<i>ASTM D6752</i>	<i>Standard Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Automatic Vacuum Sealing Method</i>
<i>ASTM E 11</i>	<i>Wire-Cloth Sieves for Testing Purposes</i>
<i>ASTM E 178</i>	<i>Dealing with Outlying Observations</i>
<i>AASHTO T 30</i>	<i>Mechanical Analysis of Extracted Aggregate</i>
<i>AASHTO T 110</i>	<i>Moisture or Volatile Distillates in Hot Mix Asphalt (HMA)</i>
<i>AASHTO T275</i>	<i>Standard Method of Test for Bulk Specific Gravity (Gmb) of Compacted Hot Mix Asphalt (HMA) Using Paraffin-Coated Specimens).</i>

*Asphalt Institute Handbook MS-26 Asphalt Binder*

*Asphalt Institute MS-2 Mix Design Manual, 7th Edition*

#### **MATERIAL REQUIREMENTS**

<i>ASTM D 242</i>	<i>Mineral Filler for Bituminous Paving Mixtures</i>
<i>ASTM D 946</i>	<i>Penetration Graded Asphalt Cement for Use in Pavement Construction</i>
<i>ASTM D 3381</i>	<i>Viscosity-Graded Asphalt Cement for Use in Pavement Construction</i>
<i>ASTM D 4552</i>	<i>Classifying Hot-Mix Recycling Agents</i>
<i>ASTM D6373</i>	<i>Standard Specification for Performance Graded Asphalt Binder</i>

#### **PART 2 - SUBMITTALS**

**2.1** Submittals required for this item include, but are not limited to:

- A. Job Mix Formula (See 403-3.2)
- B. Aggregates (See 403-2.4)
- C. Bitumen (See 403-2.3)
- D. Plant and Equipment (See 403-4.2)
- E. Laboratory Certifications (See 403-3.5)
- F. Testing Facility Certification (See 403-4.2)
- G. Laydown Plan (See 403-4.10)

**END OF SECTION P-403**

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## SECTION P-600

### CONCRETE REMOVAL, REPAIR AND REPLACEMENT

#### PART 1 - GENERAL

##### 1.1 GENERAL

- A. This specification covers the repair of Portland cement concrete pavement (PCCP) panels and joints, as shown on the Plans or as directed by the Engineer. The plans identify areas which are damaged and require various specified repairs. These repairs fall into the following classifications: Remove and reseal joints; Crack repairs and Spall repairs. Each of these classifications of distress is discussed in detail below including procedures to be followed during repair.

#### PART 2 - MATERIALS

##### 2.1 CEMENT-BASED REPAIR MORTAR

- A. Spall repair material shall be a one component, fiber-reinforced, fast setting, high strength, cement based repair mortar, flows readily, strongly adheres to concrete, requires no external application of heat for curing, and cures within one hour of application. Surface to be patched shall be primed if recommended by supplier.
- B. Material shall be "Highway Patch FR" as manufactured by Five Star, or approved equal. Spall repair materials shall be weighed and mixed in accordance with the manufacturer's recommendations. The material shall be placed into the area to be repaired in layers up to finished grade within ten minutes of the initial mixing. The material shall be allowed to cure three hours before opening to construction traffic.

##### 2.2 JOINT FILLING SEALER / BACKER ROD

- A. Joint fill material and backer rod shall conform to the requirements of Section P-605, Joint Sealing Filler.

##### 2.3 TESTING AND QUALITY CONTROL.

- A. Unless otherwise specified herein, quality control testing and evaluation required for repair of concrete pavement shall conform to the testing requirements set forth in Section P-610 of these Specifications, Structural Portland Cement Concrete.

**PART 3 - CONSTRUCTION METHODS**

each classification of repair.

Construction methods shall conform to the following for

**3.1 REMOVE AND RESEAL JOINTS**

- A. The joints in the PCCP shall have the existing sealant removed, the joint cleaned and sealed per Section P-605, Joint Sealing Filler.

**3.2 SPALL REPAIRS**

**A. General**

- 1. The repairs to the spalls identified in the plans shall first begin by laying out the limits of removal for the Engineer's approval. Upon approval, the concrete shall be sawcut a minimum of 3" deep. The corners shall be relieved by using a 2" diameter core thereby alleviating the need to oversaw the corners. The concrete shall then be removed with light chipping hammers suitable for the size of repair to be made. Extreme caution shall be exercised to prevent damage to pavement that is to be retained. Should damage occur, the Contractor shall re-saw that pavement at no additional cost to the owner. The material removal shall be at a minimum consistent to the 3" sawed depth or until a sound surface is found. The Contractor shall drill and epoxy dowels into the repair area as detailed to promote bonding. The repair area shall then be cleaned, primed if required and filled with repair mortar. No traffic shall be placed on the repair for a minimum of 3 hours. The Contractor shall have a sweeper on site at all times during the removal operation to clean and remove demolition debris.
- 2. Spalls shall be measured for payment as the number of spalls sawcut, removed and filled as specified, based on their size as specified herein. Spall repair areas shall be marked by the Engineer and the quantities agreed by the Engineer and Contractor before the work begins, and the spall repair method shall be approved by the Engineer in advance.

**B. Definitions**

- 1. Small spall repairs on existing pavement shall be defined as those areas of spall repair of size up to 2.5 square feet x 4 inches deep.
- 2. Large spall repairs on existing pavement shall be defined as those areas of spall repair from 2.5 up to 7 square feet x 4 inches deep.

**PART 4 - SUBMITTALS**

**4.1** Submittals required for this item include, but are not limited to:

- 1. Repair Mortar
- 2. Joint Filler per Section P-605
- 3. Backer Road per Section P-605

4. Routing equipment

**PART 5 - METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

5.1 For “Concrete Joint Resealing”, payment shall be made at the contract unit price per linear foot and shall include routing, sawing, cleaning and sealing of the existing PCCP joints as shown on the plans and as required in specifications. This price shall be full compensation for furnishing all labor, supervision, equipment, tools, and incidentals necessary to complete the item.

The cost for sealing concrete joints in new concrete slabs shall be considered incidental to the construction of the PCC pavement and no separate payment will be made under this item.

No payment will be made for joint resealing caused by Contractor’s negligence during removal, and no separate payment will be made for performing this item under construction sequencing restrictions, including limited access or nighttime work areas.

5.2 For “Concrete Spall Repair, Small”, payment shall be made at the contract unit price per each including cutting, removals, coring, preparation, forming, patch material, and joint sealant necessary for spall repairs pursuant to the plans and specification. This price shall be full compensation for furnishing all labor, supervision, materials, equipment, tools, and incidentals necessary to complete the item as specified herein and pursuant to the contract documents.

No payment will be made for spall repairs in new pavement slabs or those that are caused by Contractor’s negligence during removals.

5.3 For “Concrete Spall Repair, Large”, payment shall be made at the contract unit price per each including cutting, removals, coring, preparation, forming, patch material, and joint sealant necessary for spall repairs pursuant to the plans and specification. This price shall be full compensation for furnishing all labor, supervision, materials, equipment, tools, and incidentals necessary to complete the item as specified herein and pursuant to the contract documents

No payment will be made for spall repairs in new pavement slabs or those that are caused by Contractor’s negligence during removals.

Payment will be made under:

Item P-600-5.3-1	Concrete Joint Resealing .....	Per Linear Foot
Item P-600-5.3-2	Concrete Spall Repair, Small .....	Per Each
Item P-600-5.3-3	Concrete Spall Repair, Large .....	Per Each

**END OF SECTION P-600**

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**SECTION P-602**

**BITUMINOUS PRIME COAT**

**PART 1 - GENERAL**

**1.1 GENERAL**

- A. The Contractor shall provide bituminous prime coat on unbound base layers prior to paving with asphalt surface course. Application of bituminous prime coat shall be in accordance with the FAA Specification Item P-602, as included and modified hereafter. Prime coat shall be required on compacted aggregate base course prior to paving bituminous concrete.

**ITEM P-602 BITUMINOUS PRIME COAT**

**602-1 DESCRIPTION.** *This item shall consist of an application of bituminous material on the prepared base course in accordance with these specifications and in reasonably close conformity to the lines shown on the plans.*

**602-2 MATERIALS**

**602-2.1 BITUMINOUS MATERIAL.** *The types, grades, controlling specifications, and application temperatures for the bituminous materials are given in Table 1. The Engineer shall approve the specific material to be used.*

<b>TABLE 1. BITUMINOUS MATERIAL FOR PRIME COAT</b>			
<i>Application Temperatures</i>			
<i>Type and Grade</i>	<i>Specification</i>	<i>Deg. F</i>	<i>Deg. C</i>
<i>Emulsified Asphalt</i>			
<i>SS-1, SS-1h</i>	<i>ASTM D 977</i>	<i>70-160</i>	<i>20-70</i>

**602-3 CONSTRUCTION METHODS**

**602-3.1 WEATHER LIMITATIONS.** *The prime coat shall be applied only when the existing surface is dry or contains sufficient moisture to get uniform distribution of the bituminous material, when the atmospheric temperature is above 60°F (15°C), and when the weather is not foggy or*

rainy. The temperature requirements may be waived, but only when so directed by the Engineer.

**602-3.2 EQUIPMENT.** *The equipment used by the Contractor shall include a self-powered pressure bituminous material distributor and equipment for heating 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 prime operations shall be started and stopped on building power.*

*A power broom and/or blower shall be provided for any required cleaning of the surface to be treated.*

**602-3.3 APPLICATION OF BITUMINOUS MATERIAL**

*Immediately before applying the prime coat, the full width of the surface to be primed shall be swept with a power broom to remove all loose dirt and other objectionable material.*

*The bituminous material including solvent shall be uniformly applied with a bituminous distributor at the rate of 0.25 to 0.50 gallons per square yard depending on the base course surface texture. The type of bituminous material, application temperature, and application rate shall be approved by the Engineer prior to application.*

*Following the application, the primed surface shall be allowed to dry not less than 48 hours without being disturbed or for such additional time as may be necessary to permit the drying out of the prime coat until it will not be picked up by traffic or equipment. This period shall be determined by the Engineer. The surface shall then be maintained by the Contractor until the surfacing has been placed. Suitable precautions shall be taken by the Contractor to protect the primed surface against damage during this interval, including supplying and spreading any sand necessary to blot up excess bituminous material. The Contractor shall remove blotting sand prior to asphalt concrete lay down operations at no additional expense to the owner.*

**602-3.4 BITUMINOUS MATERIAL CONTRACTOR'S RESPONSIBILITY**

*Samples of the bituminous materials that the Contractor proposes to use, together with a statement as to their 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 materials 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 vendor's certified test reports for each carload, or equivalent, of bituminous material shipped to the project. The test reports shall contain all the data required by the applicable specification. If the Contractor applies the prime 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 basis for final acceptance. All such test reports shall be subject to verification by testing samples of materials received for use on the project.*

**602-4 METHOD OF MEASUREMENT**

**602-4.1** *The bituminous material for prime coat shall not be measured for payment.*

**602-5 BASIS OF PAYMENT**

**602-5.1** *Bituminous prime coat shall be considered incidental to the other pay items and no separate payment will be made.*

**602-6 MATERIAL REQUIREMENTS**

*ASTM D 977                      Emulsified Asphalt*

**602-7 TESTING REQUIREMENTS**

*ASTM D 1250                      Petroleum Measurement Tables*

*Asphalt Institute                      Asphalt Pocketbook of Useful Information  
Manual MS-6                      (Temperature-Volume Corrections for  
Emulsified Asphalts) Table IV-3*

***END OF ITEM P-602***

**PART 2 - SUBMITTALS**

- 2.1** Submittals required for this item include, but are not limited to:
- A. Bituminous Prime Coat
  - B. Spraying Equipment

**END OF SECTION P-602**

## SECTION P-603

### BITUMINOUS TACK COAT

#### PART 1 - GENERAL

##### 1.1 GENERAL

- A. The Contractor shall perform all work required by the plans for application of bituminous tack coat in accordance FAA Specification Item P-603, as included and modified hereafter, and as shown on the Plans or as directed by the Engineer.
- B. Tack coat shall be required prior to paving bituminous concrete on portland cement concrete or asphalt concrete pavement, and on underlying lifts of multiple-lift asphalt paving. Both horizontal and vertical faces shall be tacked.

#### *ITEM P-603 BITUMINOUS TACK COAT*

**603-1 DESCRIPTION.** *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.*

#### **603-2 MATERIALS**

**603-2.1 BITUMINOUS MATERIALS.** *The bituminous material shall be either emulsified asphalt, or Performance Grade (PG-grade) binder 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 approved by the Engineer.*

<b>TABLE 1. BITUMINOUS MATERIAL</b>			
<i>Application Temperature</i>			
<i>Type and Grade</i>	<i>Specification</i>	<i>Deg. F</i>	<i>Deg. C</i>
<i>Performance Grade Binder</i>	<i>AASHTO M320</i>		
<i>Same grade as pavement being tacked</i>		<i>285-347</i>	<i>140-175</i>
<i>Emulsified Asphalt</i>			
<i>SS-1, SS-1h</i>	<i>ASTM D 977</i>	<i>75-130</i>	<i>25-55</i>

### **603-3 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 60°F (15°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. 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 air blast to remove all loose dirt and other objectionable material.*

*Emulsified asphalt shall be diluted by the addition of water when necessary to produce a satisfactory tack coat 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 for emulsions, and 0.01 to 0.03 gallons per square yard for performance grade binders, depending on the condition of the existing surface. The type of bituminous material, application temperature, 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.

**603-4 METHOD OF MEASUREMENT.** The bituminous tack coat shall not be measured for payment.

**603-5 BASIS OF PAYMENT.** Bituminous tack shall be considered incidental to the other pay items and no separate payment will be made.

**603-6 603-6 MATERIAL REQUIREMENTS**

ASTM D 633	Volume Correction Table for Road Tar
ASTM D 977	Emulsified Asphalt
ASTM D 1250	Petroleum Measurement Tables
AASHTO M320	Standard Spec. for Performance-Graded Asphalt Binder
Asphalt Institute Manual MS-6	Asphalt Pocketbook of Useful Information (Temperature-Volume Corrections for Emulsified Asphalts) Table IV-3

**END ITEM P-603**

**PART 2 - SUBMITTALS**

- 2.1 Submittals required for this item include, but are not limited to:
- A. Bituminous Tack Coat
  - B. Spraying Equipment

**END OF SECTION P-603**



## SECTION P-605

### JOINT SEALING FILLER

#### PART 1 - GENERAL

##### 1.1 GENERAL

- A. The Contractor shall perform all work required by the plans and specifications for construction of joints in Portland cement concrete pavement and between asphalt concrete Pavement and Portland Cement Concrete Pavement. Work shall be in accordance with and as shown on the Plans and FAA Specification Item P-605, as included and modified hereafter.

#### **ITEM P-605 JOINT SEALING FILLER**

**605-1 DESCRIPTION.** *This item shall consist of providing and installing a resilient and adhesive joint sealing filler capable of effectively sealing joints and cracks in pavements.*

##### **605-2 MATERIALS**

**605-2.1 JOINT SEALERS.** *Joint sealing material shall be one of the following types. 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, and shall be accompanied by the manufacturer's certification stating that the compound meets the requirements of this specification.*

- a. **Sealants for Concrete to Concrete Joints.** *Sealants for concrete to concrete joints shall be one of the following:*

*SIKAFLEX 15 LMSL  
Dow Corning 888 Silicone Joint Sealant  
Crafco Roadsaver Silicone*

- b. **Sealants for Asphalt to Concrete Joints.** *Sealants for all asphalt to concrete joint shall be Dow Corning 890 SL Silicone Joint Sealant.*

**605-2.2** *Contractor shall store sealing materials from inclement weather and maintain material temperatures as recommended by manufacturer. Store sealers as required by applicable materials specifications.*

**605-2.3 BACKER ROD.** *Preformed backer rod shall be installed in all pavement construction, expansion, and contraction joints as shown in the Plans.*

Backer rods shall be an approved non-moisture absorbing, non-gassing, extruded closed-cell polyethylene foam or reticulated closed cell extruded polyolefin foam. Material will be non-reactive to the sealant and non-adhesive to Portland cement concrete and asphalt concrete. Backer rods diameter shall be of the size recommended by the supplier for the particular joint width anticipated. Backer rod materials shall be compatible with the sealant, shall not adhere to the sealant, shall be compressible without extruding the sealant, and shall recover to maintain contact with the joint faces when the joint is open. Jute, paper, or other moisture absorbing material shall not be used for the backing material.

**605-2.4 Primer.** Primer shall be as recommended by the manufacturer of the sealant.

### **605-3 CONSTRUCTION METHODS**

**605-3.1 TIME OF APPLICATION.** Joints shall be sealed as soon after completion of the curing period as feasible and before the pavement is opened to traffic, including construction equipment.

#### **605-3.2 PREPARATION OF JOINTS**

- a. Weather Limitations.** Do not apply joint sealing compound in wet joints, when atmospheric and pavement temperatures are below 50 degrees F, or when weather is rainy or foggy.
- b. Sawing.** All joints shall be widened in accordance with specifications and plan details to create a sealant well suitable for installing the joint sealant. Immediately after widening the joint, the resulting slurry shall be completely removed from the joint and adjacent area by flushing with water, vacuum sweeping, and other tools as necessary. All widening slurry and debris shall be disposed of in a legal manner. Slurry will not be allowed to enter the storm drain system.

Under no circumstances shall liquid membrane curing compound be applied in joints.

- c. Cleaning.** Immediately before sealing, the joints shall be thoroughly cleaned of all remaining laitance, curing compound, and other foreign material to a distance not less than 1 inch from each side of joint edge on the pavement surface. Cleaning shall be accomplished by sandblasting. Sandblasting shall be accomplished in a minimum of two passes. Sand shall be of the proper size and quality necessary for the work. Air pressure for sandblasting shall be not less than 90 psi, using a minimum of 300 cubic feet of air per minute. Joints shall be cleaned with one pass per joint face with the nozzle held at an angle

directly toward the joint face, and not more than 3 inches from it. Nozzles shall be of the proper size and of the long-wearing type. Nozzles enlarged by wear shall be replaced as necessary.

Upon completion of cleaning, the joints shall be blown out with compressed air free of oil and water. Air compressors shall be portable and capable of furnishing not less than 90 pounds per square inch pressure. Employ suitable traps to maintain compressed air free of oil and free of moisture. Presence of oil or free moisture in compressed air will necessitate cessation of operations until suitable adjustments are made.

Joint faces shall be surface dry when sealant is applied.

### **605-3.3      INSTALLATION OF SEALANTS**

- a. General.** 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.
- b. Backer Rod Installation.** Place backer rod of the proper size to the depth indicated on the plans or as recommended by the sealant manufacturer. The backer rod shall be placed with a tool that ensures the proper depth of placement.
- c. Sealant Application.** Cold applied joint sealing compound shall be applied by means of pressure equipment that will force the sealing material to the bottom of the joint and completely fill the joint without spilling the material on the surface of the pavement. Sealant that does not bond to the concrete surface of the joint walls, contains voids, or fails to set to a tack-free condition will be rejected and replaced by the Contractor at no additional cost. Adhere to all limitations and cautions for the sealant in the manufacturer's printed literature.
- d. Manufacturer's Representative.** A representative of the manufacturer's technical staff will be on site for the performance of the test section and the first 2 days of production sealing to train the crew and ensure that the manufacturer's guidelines are being complied with. Upon the completion of these operations, the representative will provide a written report to the Contractor for submission to the Engineer attesting to this fact.
- e. Test Section.** Before sealing the joints, the Contractor shall construct a small test section to demonstrate that the materials, equipment and procedures for preparing, mixing, and placing the sealant will produce

a satisfactory joint seal. The test section shall be applied to a portion of the project identified for joint sealing. Size of the test section will be at the discretion of the Engineer. If the test section does not meet the specification requirements, the joints shall be cleaned and refilled.

Fill joint with a continuous body of sealing compound free of voids, blisters, and foreign particles. The top of the compound shall be recessed a minimum of 1/4 inch from top surface of pavement, unless otherwise detailed on the plans or recommended by the joint sealant manufacturer. Excess sealer on surface of pavement shall be removed and surface left in clean condition.

**f. Cleanup.** Any sealant spilled on the surface of the pavement, structures and/or lighting fixtures, shall be removed immediately. If spillage becomes a problem, the Engineer may require that joints be masked prior to filling. Masking will be at the expense of the Contractor.

**605-4 METHOD OF MEASUREMENT.** Joint sealing will be measured per Section P-600, Concrete Repair

**BASIS OF PAYMENT.** Payment for joint sealing shall be made per Section P-600 Concrete Repair.

#### **605-5 TESTING REQUIREMENTS**

ASTM D 412                      Test Methods for Vulcanized Rubber and Thermoplastic Elastomers – Tension

ASTM D 1644                    Test Methods for Nonvolatile Content of Varnishes

#### **605-6 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 SS-S-200E(2) Sealants, Joint, Two-Component, Jet-Blast Resistant, Cold Applied*

***END ITEM P-605***

**PART 2 - SUBMITTALS**

**2.1** Submittals required for this item include, but are not limited to:

- A.** Joint Sealant
- B.** Backer Rod
- C.** Equipment

**END OF SECTION P-605**

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## SECTION P-620

### PAINTING AND MARKING

#### PART 1 - GENERAL

##### 1.1 GENERAL

- A. Contractor shall perform all work required by the plans for the application of permanent and temporary pavement marking paint to taxiways, runways, roads, infield areas and other pavement as shown on the plans and in accordance with FAA Specification Item P-620, as included and modified hereafter. The section also covers reflective media (glass beads).
- B. For marking removals see Section P-150, Removals.

#### **ITEM P-620 RUNWAY AND TAXIWAY PAINTING**

##### **620-1 DESCRIPTION**

*This item shall consist of the painting of numbers, markings, surface painted signs, and stripes on the surface of runways, taxiways, infield areas and aprons, in accordance with these specifications and at the locations shown on the plans, or as directed by the Engineer.*

##### **620-2 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.*

*All emptied containers shall be returned to the paint storage area and shall not be removed from the airport or destroyed until authorized by the Engineer. The Contractor shall periodically provide the Engineer with a report showing the correlation between the total number of square feet painted and the empty containers.*

**620-2.2 PAINT.** *Paint shall be waterborne in accordance with the requirements of paragraph 620-2.2.a. Paint shall be furnished in accordance with Federal Standard No. 595 as listed below:*

- (1) White - 37925
- (2) Red - 31136
- (3) Yellow – 33538 or 33655
- (4) Black – 37038
- (5) Green – 34108

- a. **Waterborne.** Paint shall meet the requirements of Federal Specification TT-P-1952E, Type I. The nonvolatile portion of the vehicle for all paint types shall be composed of a 100% acrylic polymer as determined by infrared spectral analysis.
- b. **Epoxy.** Section not used.
- c. **Methacrylate.** Section not used.
- d. **Solvent Base.** Section not used.
- e. **Preformed Thermoplastic Airport Pavement Markings.** Section not used.

**620-2.3 REFLECTIVE MEDIA.** Glass beads shall meet the requirements for Federal Specification. TT B 1325D, Type I (low index of refraction), 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.

### **620-3 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 the maximum temperature stipulated by the supplier.

**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. Paint shall not be applied to Portland cement concrete pavement until the areas to be painted are clean of curing material. Sandblasting or high-pressure water shall be used to remove curing materials.*

**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, listed herein, or designated by the Engineer. The following locations, at a minimum, shall receive glass beads:*

- a. All runway and taxiway holding position markings*
- b. Runway threshold marking*
- c. Runway threshold bar*
- d. Runway aiming point marking*
- e. Runway designation marking*
- f. Runway touchdown zone markings*
- g. Runway centerline marking*
- h. All taxiway centerline markings*
- i. Geographical position marking*
- j. Surface painted signs*
- k. Runway side stripes*
- l. Taxiway edge markings*
- m. Non-movement area boundary markings*
- n. Displaced threshold markings*

**620-3.5 APPLICATION – PAINT AND GLASS BEADS.** *Paint shall be applied in two coats at the locations and to the dimensions and spacing shown on the plans. The initial coat shall be dry prior to application of the second coat. 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 in 50 feet and marking dimensions and spacing shall be within the following tolerances:

<b>TABLE 1. MARKING DIMENSION AND SPACING</b>	
<i>Dimension and Spacing</i>	<i>Tolerance</i>
<i>36 inches or less</i>	<i>±1/2 inch</i>
<i>greater than 36 inches to 6 feet</i>	<i>± 1 inch</i>
<i>greater than 6 feet to 60 feet</i>	<i>± 2 inches</i>
<i>greater than 60 feet</i>	<i>± 3 inches</i>

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 2. The addition of thinner will not be permitted. A period of 5 days shall elapse between placement of bituminous surface course or seal coat and the first application of the paint. Second application (final coat) of paint shall not be applied until 30 days after the placement of a bituminous surface course or seal coat.

Prior to the initial application of markings, the Contractor shall certify in writing that the surface has been prepared in accordance with the paint manufacturer's requirements, that the application equipment is appropriate for the marking paint and that environmental conditions are appropriate for the material being applied. This certification along with a copy of the paint manufacturer's application and surface preparation requirements must be submitted to the Engineer prior to the initial application of markings.

Curing times stated in Table 2 may be shortened only by written waiver from the Engineer. Engineer shall approve curing time prior to application of temporary marking.

<b>TABLE 2. APPLICATION RATES AND SURFACE CURING TIME FOR APPLICATION OF PAINT AND GLASS BEADS</b>				
<i>Paint Type – Marking Type</i>	<i>Paint Square feet per Gallon (ft<sup>2</sup>/gal)</i>	<i>Glass Beads, Type I, Gradation A Pounds per gallon of paint (lb./gal)</i>	<i>Curing Time for AC Pavement prior to receiving Permanent Markings</i>	<i>Curing Time for PCC Pavement Prior to receiving Permanent Marking</i>
<i>Waterborne – Permanent Markings</i>	<i>115 ft<sup>2</sup>/gal. maximum</i>	<i>7 lb./gal. minimum</i>	<i>30 days</i>	<i>24 days</i>

*Glass beads shall be distributed upon all white and yellow pavement markings immediately after application of the paint, unless otherwise directed. A dispenser shall be furnished that is properly designed for attachment to the marking machine and suitable for dispensing glass beads. Glass beads shall be applied at the rate shown in Table 2. Glass beads shall adhere to the cured paint or all marking operations shall cease until corrections are made. Regular monitoring of glass bead embedment should be performed.*

*Infield painted areas (green) shall not receive glass beads. Glass beads shall not be applied to black paint. Markings placed on concrete pavement shall be outlined with a 6" black stripe to enhance the visibility (no beads).*

*Waterborne paint may be used for temporary markings at 50 percent of the specified application rates. No glass beads are required for temporary markings, except temporary runway markings. A-A-2886A, Type III shall be used for temporary markings when reflectorized temporary markings are desired. Contractor shall be responsible for maintaining temporary markings throughout the construction phase(s) that the markings are required. If the markings fade, bleed into the pavement, become covered due to construction traffic, or otherwise are not capable of serving their intended purpose, the Contractor shall apply additional paint to refresh the visibility of the striping and markings at the Contractor's sole expense.*

*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.*

**620-3.6 TEST STRIP.** *Prior to the full application of airfield markings, the Contractor shall produce a test strip in the presence of the Engineer. The test strip shall include the application of a minimum of 5 gallons of paint and application of 35 lbs of Type I glass beads. The test strip shall be used to establish thickness/darkness standard for all markings. The test strip shall cover no more than the maximum area prescribed in Table 2 (e.g., for 5 gallons of waterborne paint shall cover no more than 575 square feet.*

**620-3.7 PROTECTION AND CLEANUP.** *After application of the markings, all markings shall be protected from damage until dry. All surfaces shall be protected from excess moisture and/or rain and from disfiguration by spatter, splashes, spillage, or drippings. The Contractor shall remove from the work area all debris, waste, loose or un-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.*

*Throughout the duration of the project the Contractor shall be responsible for reapplication of paint and reflective media to all surfaces where markings have been compromised by haul and work activities. Contractor shall bear the entire expense for reapplication.*

**620-4 METHOD OF MEASUREMENT.** *See Part 3*

**620-5 BASIS OF PAYMENT.** *See Part 4*

**620-6 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 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 Inspection,*
- Standard No. 141D/GEN Sampling and Testing*

## **620-7 MATERIAL REQUIREMENTS**

<i>ASTM D 476</i>	<i>Specifications for Dry Pigmentary Titanium Dioxide Pigments Products</i>
<i>Code of Federal Regulations</i>	<i>40 CFR Part 60, Appendix A Definition of Traverse Point Number and Location</i>
<i>Code of Federal Regulations</i>	<i>29 CFR Part 1910.1200 Hazard Communications</i>
<i>FED SPEC TT-B-1325D</i>	<i>Beads (Glass Spheres) Retroreflective</i>
<i>AASHTO M 247</i>	<i>Glass Beads Used in Traffic Paints</i>
<i>FED SPEC TT-P-1952E</i>	<i>Commercial Item Description (CID) A-A-2886B Paint, Traffic and Airfield Marking, Waterborne Paint, Traffic, Solvent Based</i>
<i>FED STD 595</i>	<i>Colors used in Government Procurement</i>

### ***END OF ITEM P-620***

## **PART 2 - SUBMITTALS**

- 2.1 Submittals required for this item include, but are not limited to:
- A. Paint
  - B. Glass Beads

## **PART 3 - METHOD OF MEASUREMENT**

- 3.1 "Runway and Taxiway Marking" shall be measured and paid for per square foot in place performed in accordance with the specifications and accepted by the Engineer.

## **PART 4 - BASIS OF PAYMENT**

- 4.1 For "Runway and Taxiway Marking" payment shall be made at the contract unit price per square foot measured in application of pavement markings, including pavement preparation, double-coat of paint and reflective beads necessary for construction of runway, taxiway, and aircraft ramp pavement markings as shown on the plans and as specified herein. The prices shall be full compensation for furnishing all labor, supervision, materials, layout, equipment, tools, and incidentals necessary to complete the item as specified herein and pursuant to the contract documents.

- A. One square foot of measurement includes two coats of paint over a one square foot area.
- B. No additional payment will be made for difficulties encountered when placing paint and markings under restricted time or night periods, or in other areas subject to construction phasing restrictions.

Payment will be made under:

Item P 620-4.2-1 Runway and Taxiway Marking .....per Square Foot

**END OF SECTION P-620**

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## SECTION P-626

### EMULSIFIED ASPHALT SLURRY SEAL SURFACE TREATMENT

#### PART 1 - GENERAL

- 1.1 Any work performed under this section which fails to meet the requirements stated herein will be considered defective and, unless another remedy is stated, shall be removed and replaced at the Contractor's expense.

#### **ITEM P-626 EMULSIFIED ASPHALT SLURRY SEAL SURFACE TREATMENT**

##### **620-1 DESCRIPTION.**

**620-1.1** *This item shall consist of a mixture of emulsified asphalt, mineral aggregate, and water, properly proportioned, mixed, and spread on an asphalt prepared underlying course or existing wearing course in accordance with these specifications. Work shall conform to the dimensions shown on the plans or as directed by the Engineer.*

##### **620-2 MATERIALS**

##### **620-2.1 AGGREGATE.**

- a. General.** *The aggregate shall consist of sound and durable manufactured sand, slag, crusher fines, crushed stone, or a combination thereof. The aggregate shall be clean and free from vegetable matter, dirt, and other deleterious substances. The aggregate shall have a sand equivalent of not less than 45 percent when tested in accordance with ASTM D 2419. The aggregate shall show a loss of not more than 35 percent when tested in accordance with ASTM C 131. The sodium sulfate soundness loss shall not exceed 12 percent, or the magnesium soundness loss shall not exceed 20 percent after 5 cycles when tested in accordance with ASTM C 88. Aggregate shall be 100 percent crushed.*
- b. Gradation.** *The combined aggregate shall conform to the Gradation Type II shown in Table 1 when tested in accordance with ASTM C 136 and ASTM C 117.*



**TABLE 1. GRADATION OF AGGREGATES**

<b>Sieve Size</b>	<b>Percent by Weight Passing Sieve</b>			
	<b>Type I</b>	<b>Type II</b>	<b>Type III</b>	<b>Type IA</b>
3/8 in.	100	100	100	100
No. 4	100	90 - 100	70 - 90	98 - 100
No. 8	90 - 100	65 - 90	45 - 70	85 - 95
No. 16	65 - 90	45 - 70	28 - 50	50 - 75
No. 30	40 - 65	30 - 50	19 - 34	30 - 50
No. 50	25 - 42	18 - 30	12 - 25	18 - 35
No. 100	15 - 30	10 - 21	7 - 18	10 - 21
No. 200	10 - 20	5 - 15	5 - 15	5 - 10
Residual asphalt content percent dry weight of aggregate	10% - 16%	7.5% - 13.5%	6.5% - 12%	9% - 13.5%

- c. *The job mix formula (mix design) shall be run using aggregate within the gradation band for the desired type shown in Table 1. Once the mix design has been submitted and approved, the aggregate used on the project shall not vary by more than the tolerances shown in Table 2. At no time shall the aggregate used go out of the gradation bands in Table 1.*
- d. *The aggregate will be accepted at the job location or stockpile. The stockpile will be accepted based on five gradation tests samples in accordance with ASTM D 75. If the average of the five tests is within the gradation tolerances, then the materials will be accepted. If the tests show the material to be out of tolerance, the Contractor will be given the choice either to remove the material or to blend other aggregates with the stockpile material to bring it into specification. Materials used in blending shall meet the quality tests before blending*

and shall be blended in a manner to produce a consistent gradation. This blending may require a new mix design.

- e. Screening shall be required at the project stockpile site if there are any problems created by having oversized materials in the mix.
- f. Precautions shall be taken to prevent segregation of the aggregate in storing and handling. The stockpile shall be kept in areas that drain readily.
- g. **Aggregate Tolerance.** Once the mix design has been accepted, the aggregate gradation used on the project may vary from the aggregate gradation used in the mix design on each sieve by the percentages shown in Table 2. If the project aggregate fails to remain within this tolerance, a new mix design will be required by the Engineer at the expense of the Contractor.

<b>TABLE 2. AGGREGATE TOLERANCE</b>	
<b>Sieve Size</b>	<b>Tolerance, percent by weight passing sieve</b>
3/8 in	+ or - 0%
No. 4	+ or - 2%
No. 8	+ or - 5%
No. 16	+ or - 5%
No. 30	+ or - 5%
No. 50	+ or - 4%
No. 100	+ or - 3%
No. 200	+ or - 2%
Residual Asphalt, percent dry weight of aggregate	+ or - 1%

**620-2.2 MINERAL FILLER.** *If mineral filler, in addition to that naturally present in the aggregate, is necessary, it shall meet the requirements of ASTM D 242 and shall be used in the amounts required by the mix design. The mineral filler shall be considered as part of the aggregate.*

**620-2.3 EMULSIFIED ASPHALT.** *The emulsified asphalt shall conform to the requirements of ASTM D 977 and shall be SS or QS type emulsions.*

**620-2.4 WATER.** *All water used in making the slurry shall be potable and free from harmful soluble salts and chemicals.*

### **620-3 COMPOSITION AND APPLICATION**

**620-3.1 COMPOSITION.** *The slurry seal shall consist of a mixture of emulsified asphalt, mineral aggregate, and water.*

**620-3.2 JOB MIX FORMULA.** *No slurry seal for payment shall be placed until a mix design has been approved by the Engineer. The mix design shall be developed by a laboratory with experience in designing slurry seal mixes and a signed copy shall be submitted in writing by the Contractor to the Engineer at least 10 days prior to the start of operations.*

*The laboratory report (mix design) shall indicate the proportions of aggregates, mineral filler (min. and max.), water (min. and max.) and asphalt emulsion based on the dry aggregate weight. It shall also report the quantitative effects of moisture content on the unit weight of the aggregate (bulking effects). The mix design shall be in effect until modified in writing by the Engineer. Should a change in sources of materials be made, a new mix design shall be established before the new material is used.*

*The Contractor shall submit to the Engineer for approval a complete mix design on the materials proposed for use, prepared and certified by an approved laboratory. Compatibility of the aggregate, emulsion, mineral filler, and other additives shall be verified by the mix design. The mix design shall be made with the same aggregate and grade of emulsified asphalt that the Contractor will provide on the project. At a minimum the required tests and values needed are as follows:*

<b>TABLE 3. MIX DESIGN TEST REQUIREMENTS</b>		
<b>SPECIFICATION</b>	<b>DESCRIPTION</b>	<b>VALUE</b>
ISSA TB-100	Wet Track Abrasion Loss One Hour Soak	50 g/ft <sup>2</sup> Max
ISSA TB-115	Determination of Slurry Seal Compatibility	Pass

**620-3.3 APPLICATION RATE.** Unless otherwise specified, the slurry seal shall be applied to at the application rates shown in Table 4 for the gradation of material used.

<b>TABLE 4. APPLICATION RATES</b>				
	Type I	Type II	Type III	Type IA
Pounds of mixture per square yard	8 - 12	12 - 20	18 - 30	10- 16

The rate of application shall not vary more than  $\pm 2$  pounds per square yard.

**620-3.4 TEST SECTIONS.** Test sections shall be placed prior to the start of the slurry seal work in the presence of the Engineer. The test area will be designated by the Engineer and will be located on the existing pavement. Test strips shall be made by each machine after calibration. Samples of the slurry seal may be taken and the mix consistency verified by using ISSA TB-106 Slurry Seal Consistency test. In addition, the proportions of the individual materials may be verified by the Engineer by using the calibration information provided after machine calibration. If any test does not meet specification requirements, additional tests shall be made, at the expense of the Contractor, until an acceptable test strip is placed.

**620-4 CONSTRUCTION METHODS**

**620-4.1 WEATHER LIMITATIONS.** *The slurry seal shall not be applied if either the pavement or air temperature is below 50 °F (10 °C) and falling but may be applied when both pavement and air temperature are above 45 °F (7 °C) and rising. No slurry seal shall be applied when there is danger that the finished product will freeze before 24 hours. The mixture shall not be applied when weather conditions prolong opening to traffic beyond a reasonable time.*

**620-4.2 EQUIPMENT AND TOOLS.** *The Contractor shall furnish all equipment, tools, and machinery necessary for the performance of this work.*

- a. Slurry Mixing Equipment.** *The machine shall be specifically designed and manufactured to lay slurry seal. The material shall be mixed by a self-propelled slurry seal mixing machine of either truck mounted or continuous run design. Either type machine shall be able to accurately deliver and proportion the aggregate, emulsified asphalt, mineral filler, and water to a revolving mixer and discharge the mixed product on a continuous flow basis. The machine shall have sufficient storage capacity for materials to maintain an adequate supply to the proportioning controls.*

*If continuous run equipment is used, the machine shall be equipped to allow the operator to have full control of the forward and reverse speed of the machine during application of the slurry seal, with a self-loading device, with opposite side driver stations, all part of original equipment manufacturer design.*

*The aggregate shall be prewetted immediately prior to mixing with the emulsion. The mixing unit of the mixing chamber shall be capable of thoroughly blending all ingredients. No excessive mixing shall be permitted. The mixing machine shall be equipped with a fines feeder that provides an accurate metering device or method to introduce a predetermined proportion of mineral filler into the mixer at the same time and location that the aggregate is fed into the mixer.*

*The mixing machine shall be equipped with a water pressure system and fog-type spray bar adequate for complete fogging of the surface with an application of 0.05 to 0.10 gallon per square yard preceding the spreading equipment.*

*Sufficient machine storage capacity to mix properly and apply a minimum of 5 tons of the slurry shall be provided. Proportioning devices shall be calibrated prior to placing the slurry seal.*

- b. Slurry Spreading Equipment.** *The mixture shall be spread uniformly by means of a conventional surfacing spreader box attached to the mixer and equipped to agitate and spread the material evenly throughout the box. A front seal shall be provided to insure no loss of the mixture at the surface contact point. The rear seal shall act as the final strike-off and shall be adjustable. The spreader box and rear strike-off shall be so designed and operated that a uniform consistency is achieved to produce a free flow of material to the rear strike-off. The spreader box shall have suitable means provided to side shift the box to compensate for variations in the pavement geometry. A burlap drag or other approved screed may be attached to the rear of the spreader box to provide a uniform mat.*
- c. Auxiliary Equipment.** *Other tools or equipment such as brushes, hand squeegees, hose equipment, tank trucks, water distributors and flushers, power blowers, barricades, etc., shall be provided as required.*
- d. Roller.** *The roller, if required, shall be a self-propelled pneumatic-tired roller capable of exerting a contact pressure during rolling of 50 pounds per square inch. It shall be equipped with a water spray system, to be used if the slurry is picking up on the tires during rolling.*
- e. Tack Coat and Distributor.** *Normally a tack coat is not required unless the surface to be covered is extremely dry and raveled or is concrete or brick. If required, the tack coat should consist of one part emulsified asphalt and three parts water. The emulsified asphalt may be the same as that used in the mix. Pressure distributors used for application of the diluted asphalt emulsion tack coat shall be self-propelled, equipped with pneumatic tires, and capable of uniformly applying 0.05 to 0.15 gallon per square yard of the diluted emulsion over the required width of application. Distributors shall be equipped with tachometers, pressure gages, and volume-measuring devices. The tack coat shall be applied at least 2 hours before the slurry seal but within the same day.*

**620-4.3 EQUIPMENT CALIBRATION.** *Each slurry mixing unit to be used on the project shall be calibrated in the presence of the Engineer prior to construction. Previous calibration documentation covering the exact materials to be used may be accepted by the Engineer provided they were made during the calendar year. The documentation shall include an individual calibration of each material at various settings, which can be related to the machine's metering devices. No machine will be allowed to work on the project until the calibration has been completed and/or accepted.*

**620-4.4 PREPARATION OF EXISTING SURFACE.** *Prior to placing the tack coat and slurry seal coat, unsatisfactory areas shall be repaired and the surface shall be cleaned of dust, dirt, or other loose foreign matter, grease, oil, excessive rubber accumulation, or any type of objectionable surface film. Any standard cleaning method will be acceptable except that water flushing will not be permitted in areas where considerable cracks are present in the pavement surface.*

*Any painted stripes or markings on the surface of the runways or taxiways to be treated, shall be removed. Removal of markings, if required by the plans, will be measured and paid under Section of these specifications, Removals.*

*Cracks wider than 1/4 inch shall be cleaned with compressed air, and sealed with a compatible crack sealer prior to applying the slurry seal. Cracks wider than 3/4 inch should be pre-filled and sealed with the slurry mixture prior to surfacing. Cracks that show evidence of vegetation shall be cleaned and treated with an approved herbicide.*

**620-4.5 APPLICATION OF SLURRY SEAL COAT.** *The surface shall be prewet by fogging ahead of the slurry spreader box. Water used in prewetting the surface shall be applied at such a rate that the entire surface is damp with no apparent flowing water in front of the slurry spreader box. The slurry mixture shall be of the desired consistency when deposited on the surface, and no additional elements shall be added. Total time of mixing shall not exceed 2 minutes. A sufficient amount of slurry shall be carried in all parts of the spreader box at all times so that complete coverage of all surface voids and cracks is obtained. Care shall be taken not to overload the spreader box that shall be towed at a slow and uniform rate not to exceed 5 miles per hour. No lumping, balling, or unmixed aggregate shall be permitted. No segregation of the emulsion and fines from the coarse aggregate will be permitted. If the coarse aggregate settles to the bottom of the mix, the slurry shall be removed from the pavement surface. A sufficient amount of slurry shall be fed into the box to keep a full supply against the full width of the spreader box. The mixture shall not be permitted to overflow the sides of the spreader box. No breaking of the emulsion will be allowed in the spreader box. The finished surface shall have no more than four (4) tear or drag marks greater than 1/2 inch wide and 4 inches long in any 12 foot by 22 foot section. It shall have no tear or drag marks greater than 1 inch wide and 3 inches long.*

*The finished surface shall have no transverse ripples of 1/4 inch or more in depth, as measured with a 10-foot straight edge laid upon the surface.*

*Adjacent lanes shall be lapped at the edges a minimum of 2 inches with a maximum of 4 inches to provide complete sealing at the overlap. Construction longitudinal and transverse joints shall be neat and uniform without buildup,*

uncovered areas, or unsightly appearance. All joints shall have no more than 1/4 inch difference in elevation when measured across with a 10 foot straight edge.

The fresh slurry seal application shall be protected by barricades and markers and permitted to cure for 4 to 24 hours, depending on weather conditions. Any damage to uncured slurry shall be repaired at the expense of the Contractor.

In areas where the spreader box cannot be used, the slurry shall be applied by means of a hand squeegee. Upon completion of the work, the seal coat shall have no holes, bare spots, or cracks through which liquids or foreign matter could penetrate to the underlying pavement. The finished surface shall present a uniform and skid resistant texture satisfactory to the Engineer. All wasted and unused material and all debris shall be removed from the site prior to final acceptance.

Upon completion of the project, the Contractor shall sweep the finished surface with a conventional power rotary broom, to remove any potential loose material from the surface. The material removed by sweeping shall be disposed of in a manner satisfactory to the Engineer.

#### **620-4.6 EMULSION MATERIAL**

Samples of the emulsion that the Contractor proposes to use, together with a statement as to its source, shall be submitted, and approval shall be obtained, before using such material. The Contractor shall submit to the Engineer a manufacturer's certified report for each consignment of the emulsion. The manufacturer's certified report shall not be interpreted as a basis for final acceptance. All such reports shall be subject to verification by testing samples of the emulsion as received for use on the project.

**620-5** METHOD OF MEASUREMENT. See Part 3

**620-6** BASIS OF PAYMENT. See Part 4.

#### **620-7 TESTING REQUIREMENTS**

*ASTM C 88 Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate*

*ASTM C 117 Materials Finer than No. 200 Sieve in Mineral Aggregates by Washing*

*ASTM C 128 Density, Relative Density (Specific Gravity), and Absorption of Fine Aggregate*



<i>ASTM C 131</i>	<i>Resistance to Degradation of Small Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine</i>
<i>ASTM C 136</i>	<i>Sieve or Screen Analysis of Fine and Coarse Aggregates</i>
<i>ASTM D 75</i>	<i>Sampling Aggregates</i>
<i>ASTM D 2419</i>	<i>Sand Equivalent Value of Soils and Fine Aggregate</i>
<i>ISSA A 105</i>	<i>Recommended Performance Guidelines</i>
<i>ISSA TB-100</i>	<i>Wet Track Abrasion Loss</i>
<i>ISSA TB-106</i>	<i>Slurry Seal Consistency</i>
<i>ISSA TB 111</i>	<i>Outline Guide Design Procedure for Slurry Seal</i>
<i>ISSA TB-115</i>	<i>Determination of Slurry Seal Compatibility</i>

**620-8 MATERIAL REQUIREMENTS**

<i>ASTM D 242</i>	<i>Mineral Filler for Bituminous Paving Mixtures</i>
<i>ASTM D 977</i>	<i>Emulsified Asphalt</i>
<i>ASTM D 2397</i>	<i>Cationic Emulsified Asphalt</i>

**END OF ITEM P-626**

**PART 2 - SUBMITTALS** - Submittals required for this item include, but are not limited to:

- 2.1 Job Mix Formula**
  - A. Aggregate
  - B. Emulsified Asphalt
  - C. Mineral Filler
- 2.2 Tack Coat (if required)**
- 2.3 Equipment**

**PART 3 - METHOD OF MEASUREMENT**

- 3.1** The emulsified asphalt shall be measured by square yard for completed and accepted slurry seal. Aggregate and emulsified asphalt will not be measured separately but will be considered incidental to the slurry seal.

**PART 4 - BASIS OF PAYMENT**

**4.1** Payment shall be made at the contract unit price per square yard for the emulsified slurry seal, completed and accepted by the Engineer, including pavement cleaning, and tack coat. This price shall be full compensation for furnishing all materials, for preparing, mixing, and applying these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

No separate payment will be made for constructing the item under construction sequencing restrictions, including limited access or nighttime work areas.

Payment will be made under:

Item P 626            Emulsified Asphalt Slurry Seal .....Per Square Yard

**END OF SECTION P-626**

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## SECTION L-125

### AIRFIELD ELECTRICAL WORK

#### PART 1 - GENERAL

##### 1.1 DESCRIPTION

- A. The Contractor shall perform all work required by the plans and specifications for installation of airfield lighting and signage systems on runways, taxiways and aprons as shown on the Plans, and in accordance with Item L-125 as included and modified hereafter.

##### 1.2 SUMMARY OF WORK

- A. The work to be performed shall include furnishing all labor, supplies, materials, equipment, plant, transportation, and services required to augment, move, install, and complete electrical work as specified herein and as shown on the contract drawings.
- B. This work includes but is not limited to the following:
1. Maintain in operation, electrical facilities and circuits while this improvement work is in progress, including; furnish and maintain temporary circuits, and place temporary airport lighting into operation.
  2. Furnish, install, and remove temporary lighting, including but not limited to taxiway edge lights, runway edge lights, and runway end lights.
  3. Adjust existing base cans and junction cans to new finished elevations with shims, spaces, and/or extensions.
  4. Remove and replace sign panels per plans.
  5. Provide temporary power connections and cable as required during construction
  6. Other items required to complete the work shown on the plans. The omission of express reference to any parts necessary for or incidental to the complete installation shall not be construed as releasing the Contractor from furnishing such parts.
- C. All items of general work required, such as excavation, cutting, patching, etc., shall be included in this Contract. Experienced and skilled persons to obtain only the best workmanship shall perform installation. All equipment shall be set square and true with construction. The work shall be under constant supervision by the Contractor and by an authorized and competent superintendent.

#### ***AIRFIELD ELECTRICAL WORK (FAA ITEM L-125)***

**125-1.1 GENERAL.** *This Item includes furnishing and installing all material, equipment and apparatus, and all labor, tools, services and equipment required for removal, modification and installation of temporary and permanent airfield lighting systems.*

*Installation shall be in accordance with Specifications FAA-C-1217 and FAA-C-1391, except as specified herein. The CONTRACTOR shall perform all work not included in the FAA Specifications in accordance with the National Electrical Code and applicable local standards and regulations. The CONTRACTOR shall obtain and pay for all electrical inspections and permits required.*

**125-1.2 FAA-APPROVED EQUIPMENT.** *Before any electrical equipment is ordered, the Contractor shall furnish the Engineer a list of the equipment and materials he/she plans to incorporate into the work. Only airport lighting equipment that is listed on the latest edition of the FAA approved list (AC 150/5345-53C Addendum) shall be acceptable for use on this contract. All other equipment and materials covered by other referenced specifications shall be UL approved and subject to acceptance through manufacturer's certification of compliance with the applicable specification. The Contractor shall furnish written proof of FAA approval on all equipment covered by FAA specifications.*

*The equipment list shall include the name of each item, the Federal Aviation Administration Specification Number, the manufacturer's name, the manufacturer's catalog number, and the size, type, and/or rating of each item.*

*After the list has been approved, the Contractor shall assemble the equipment and materials at a single location and request inspection by the Engineer. None of the equipment or materials may be used on the job until such an inspection has been completed.*

*All work shall be performed in strict accordance with these contract specifications, and project drawings and any instructions as may be furnished by the Engineer during execution of the work to aid in interpretation of said drawings, and specifications. Installation details and material and equipment specifications shall be in conformance with all applicable FAA Advisory Circulars.*

**125-1.3 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 the bid opening are incorporated herein by reference and are made a part hereof for electrical work.*

**\* IMPORTANT NOTE: Current version for all references, including any changes \***

FAA-STD-019E	<i>Lightning Protection, Grounding, Bonding and Shielding Requirements for Facilities</i>
FAA-C-1391B	<i>Installation and Splicing of Underground Cables</i>
FAA-C-1217F	<i>Electrical Work, Interior</i>
AC 150/5340-30	<i>Design and Installation Details for Airport Visual Aids</i>
AC 150/5345-1	<i>Approved Airport Equipment</i>
AC 150/5345-26	<i>Specification for L-823 Plug and Receptacle, Cable Connections</i>
AC 150/5345-42	<i>Specification for Light Base and Transformer Housings, Junction Boxes and Accessories</i>
AC 150/5345-46	<i>Specification for Runway and Taxiway Light Fixtures</i>
AC 150/5345-47	<i>Specifications for Series to Series Isolation Transformers for Airport Lighting Systems</i>
AC 150/5345-53	<i>Airport Lighting Equipment Certification Program</i>

**125-1.4 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 ENGINEER for approval 6 copies of manufacturers' brochures containing complete dimensional and performance characteristics, wiring diagrams, installation and operation instructions, etc., for the equipment listed in the L-Series Specification Items. CONTRACTOR will provide systems training to the ENGINEER's appointed operation and maintenance staff member(s). A materials list shall be included with the submittal listing each Specifications paragraph number.

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.

Shall be in accordance for the following equipment:

- 1) Installation tools and details.
- 2) L-867/868 base cans.
- 3) L-867/868 extension, shims, and spacers.
- 4) Base can cover plates.

**125-1.5 RELATED DOCUMENTS.** The General Provisions of the Contract, including General and Special Conditions, apply to work specified in this Item.

**125-1.6 APPLICABLE DOCUMENTS.** The publications listed above 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 bid 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 the Plans and Specifications and the referenced documents, the more stringent rule shall be applied.*

#### **125-1.7 INSTALLATION SCHEDULING AND COORDINATION**

- 1) *There are significant task and task time constraints between paving-related work and electrical work:*
  - a. *Before any paving-related work (removal, milling, or paving) in a given area can proceed, all existing light locations must be surveyed, existing light units must be removed and the temporary covers installed.*
  - b. *Sufficient time must be scheduled after paving and prior to contract time completion to allow for the surveying back, coring, extension, shim, flange ring installation work, sealing, and light fixture reinstallation work.*
- 2) *The drawings and these specifications often indicate a construction sequence. In some cases, for various reasons, the sequence cannot be altered; but in other cases, altering the sequence may be possible and beneficial. Submittal of proposed alternates is encouraged; these shall be submitted to the Engineer for review and possible approval prior to making these sequence changes.*

#### **MATERIALS**

**125-2.1 GENERAL.** *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, and Approved Airport Equipment described in AC 150/5345-1, current version.*

**125-2.2 TEMPORARY LIGHTING.** *The Temporary Lighting shall be installed at locations shown on the plans and in conformance with the details. The Contractor shall assemble and install lighting elements as shown on the plans.*

Installation and testing performed under this item shall be as specified in the applicable Advisory Circulars. Once the permanent lighting improvements are installed and accepted by the Engineer. The Contractor shall remove and salvage the temporary lighting and signage. If in the opinion of the Engineer, individual components (i.e. conduit, isolation transforms, fixtures) of the lighting temporary lighting system are in good working condition and are fit to be reused after removal, the Contractor will then be allow to install them in other work areas. After removal, any additional labor necessary to assemble the lighting system to meet the details shown on the plans will be at the contractor's expense.

Temporary lighting components shall include but not limited to the following:

**Light Base Plates, Couplings, and Accessories.** All base plates, couplings, mounting bolts, columns, and other accessories required to complete the temporary lighting system as shown on the plans shall be provided by the Contractor.

**Conduit.** Conduit shall conform to the requirements of permanent conduit as listed in this Section.

**Cable.** Power cable shall conform to the requirements of permanent cable as listed in this Section.

**125-2.3 LIGHT BASES AND JUNCTION CANS.** Section not used.

**125-2.4 BLANK COVERS, EXTENSIONS, SPACER RINGS, SHIMS AND BASE PLATES.** Blank cover, extensions, spacer rings, shims, and base plates shall meet the requirements of FAA AC 150/5345-42, current version. All items shall be sized to the base can being installed, adjusted, or modified. Base plates for temporary lights shall be sized to fit the can type and sized specified on the plans and be compatible with the fixture provided. Blank base can covers for new junction cans shall be steel, minimum  $\frac{3}{4}$  inches thick, with traffic rating of 100,000 lbs. Temporary base can covers for installation during milling and paving shall be compatible with L-867 and L-868 base cans as indicated on the drawings.

**125-2.5 IN-PAVEMENT RUNWAY AND TAXIWAY LIGHTS.** Section not used.

**125-2.6 ELEVATED RUNWAY AND TAXIWAY LIGHTS.** Section not used.

**125-2.7 OBSTRUCTION LIGHTS.** Section not used



**125-2.8 AIRFIELD SIGNS.** Sign panels shall be removed, and installed in accordance with these specifications and as shown on the plans.

**125-2.9 ISOLATION TRANSFORMERS.** Section not used

**125-2.10 CONCRETE.** Section not used.

**125-2.11 BASE CAN SEALANT.** Base can sealant shall be as follows:

- (1) Section P-605 Joint Sealing Filler (FAA P-605) for sealant to be used around flange rings and shims.
- (2) Section P-606 Adhesive Compounds, Two-component for Sealing Wire and Lights in Pavement (FAA P-606) for sealant to be used around extensions and base can top sections.
- (3) Silicone Sealant for base can extensions and shims. Liquid gasket material placed between base cans, extensions, and shims shall be General Electric Co. RTV Silicone Rubber adhesive sealant, or equal.

**125-2.12 CONDUIT.** Conduit shall conform to the requirements listed in Section 115, Underground Conduit for Airports (FAA L-110).

**125-2.13 CABLE.** Cable shall conform to the requirements listed in Section 113, Underground Cable for Airports (FAA L-108).

**125-2.14 HARDWARE.** All bolts, nuts, washers and lock washers shall be stainless steel and meet FAA requirements. All bolts  $\frac{1}{4}$  in and larger shall be hex head type. All bolts smaller than  $\frac{1}{4}$  in trade sized shall be recessed Allen type. All bolted connection shall utilize an anti-rotational locking type device. The base can cover and fixture mounting bolts shall extend through the base can mounting flange into the base can a minimum of  $\frac{1}{2}$  inch. The bolts shall have enough thread length so they do not shoulder out before the fixture is securely tightened. All hardware shall be stainless steel 316.

The CONTRACTOR shall use anti-seize compound manufactured by Ideal: "Noalox", or approved equal. Use Dow Corning Compound 111 valve lubricant, no curing sealant, or approved equal to seal between section of base cans, spacer rings, adapter rings, or fixtures.

**125-2.15 ELECTRICAL TAPE.** Section not used.

**125-2.16 CABLE TAGS.** Section not used.

## **CONSTRUCTION METHODS AND TESTING REQUIREMENTS**

**125-3.1 GENERAL.** *The CONTRACTOR shall at all times keep the construction areas free from accumulations of waste material and rubbish, and prior to completion of work, remove any rubbish from and about the Work site, and all tools, reels, equipment, and materials, not a part of the Work. Upon completion of the construction, the CONTRACTOR shall leave the work and premises in a clean, neat and workmanlike condition satisfactory to the ENGINEER. The CONTRACTOR shall be responsible for the proper performance in all respects, in whole and in part, of the electrical equipment until acceptance of the entire Work by the ENGINEER.*

*The electrical construction and installation shall be complete, and the Contractor shall furnish all equipment necessary for the satisfactory installation and operation of electrical apparatus and for the operation of the electrical system as indicated, whether specifically mentioned or not. Materials shall bear the Underwriter Laboratories' seal of approval.*

**125-3.2 DRAWINGS.** *The construction drawings, which constitute an integral part of this Contract, are diagrammatic in nature. They indicate the extent and general layout of the lighting system, arrangement of circuits, cables through ducts, connections to existing circuit cables and other work near the construction area. Field verification of scale dimensions is required to determine actual locations, distances, and levels. No extra compensation will be allowed because of differences between work shown on the drawings and as in the field. The Contractor shall check the plans and specifications and, if any portion of the work is found to be omitted, unclear, or in error, the Contractor shall immediately notify the Engineer. The directions of the Engineer shall be followed and the work completed accordingly.*

*The construction drawings may be utilized in the preparation of the as-built drawings showing the permanent construction as actually made.*

*The plans and specifications are complementary and what is called for in either one shall be as binding as if called for in both.*

*Where a disagreement exists between the plans and specifications, the item or arrangements of better quality, greater quantity, or higher cost shall be included in the base bid.*

*Any discrepancies between the drawing, Advisory Circulars, and field condition must be resolved with the Engineer before proceeding. All agreements shall be verified in writing.*

*The responsibility for the correct and satisfactory installation and operation of all materials and equipment required herein shall rest with the Contractor. Before any equipment is ordered or commencement of installation of the lighting installations and electrical systems, a complete schedule of materials and detailed shop drawings covering all items of equipment and brochures of the lighting fixtures and signs proposed for installation shall be submitted for approval by the Engineer. The schedule of materials and shop drawings shall initially include five sets of catalog cuts, diagrams, drawings, brochures, or other such descriptive data as may be required by the Engineer. No equipment shall be ordered or put into manufacture until these shop drawings or brochures have been approved by the Engineer. Samples of conduit, duct, fittings, cables, tapes, fixtures, etc., may be required for approval. After they have been approved, samples will be returned in tested condition to the Contractor. In the event any items of material or equipment contained in the schedule fail to comply with specification requirements, such items will be rejected.*

### **125-3.3 SAFETY PROCEDURES FOR WORKING ON AIRPORT LIGHTING SYSTEM**

*The Contractor shall follow the safety procedures working on airfield lighting as specified below:*

- 1) *Procedures for Taking Circuits Out of Service:*
  - a. *Contractor will notify the Engineer which circuits are to be taken out of service and the specified portions to be worked on.*
  - b. *Inspector will notify the Engineer, who will notify the Tower, to verify that the circuits can be removed from Tower control.*
    1. *If the Tower relinquishes control, the Engineer will notify the Airport Manager.*
    2. *If the Tower does not relinquish control, no work can be done on the circuits at this time. (With the Tower in control, the circuits can be energized at any time.)*
  - c. *If the Tower relinquishes control, the Airport manager and the contract electrician will proceed to the vault where the regulator will be taken out of service by Airport maintenance and tagged by the contract electrician.*
  - d. *Airport maintenance will log - time, circuits and Contractor - into the vault log.*
  - e. *After shutdown, the Contractor shall field test the circuits to verify that they are not energized before starting work on the circuits in the field.*
  
- 2) *Procedures for Placing Circuits Back in Service:*

- a. *The Contractor will notify the Engineer when circuits are ready to be tested.*
- b. *The Engineer will contact all other inspectors who are working with the Contractor's electricians and notify them that the lighting circuits are about to be energized. When it has been verified that all personnel are clear, the Engineer will call Operations requesting a "burn".*
- c. *Operations will notify Airport maintenance. Airport maintenance and the contract electrician will meet at the vault, where the contract electrician will remove its tag. Airport maintenance will then energize the circuits.*
- d. *Airport maintenance will notify Operations who will verify that the lights are burning.*
  1. *If all lights are operating, control of the lights will be given back to the Tower.*
  2. *If all lights are not operating, Airport maintenance will work with the contract electrician to rectify the problem.*

**125-3.4 EXISTING UTILITIES.** *Prior to any excavation or trenching, locate any existing cables and utilities that 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 ENGINEER and in compliance with applicable codes and standards, at no additional cost to the ENGINEER.*

*The CONTRACTOR shall protect existing airport lighting systems. Any portion of the existing airport lighting systems damaged or disconnected during installation of the new systems shall be repaired and reconnected and must be fully functional prior to dusk each day or during adverse weather conditions, to the satisfaction of the ENGINEER. This work shall be completed at the CONTRACTOR's sole expense.*

*The CONTRACTOR shall be responsible for troubleshooting and investigative work necessary to install completely operating lighting circuits and temporary circuits. These shall be incidental to the other electrical work and no separate payment will be made.*

**125-3.5 REMOVALS, DEMOLITION, AND SALVAGE.** *1) Removal of airfield electrical equipment included under this Item shall include, but not be limited to the specific elements, of the following:*

- a. *Existing lights in areas scheduled for pavement overlay, or immediately adjacent to overlay work and which may be subject to damage due to overlay work, shall be temporarily removed.*
  - 1. *As soon as a fixture is removed, the base can shall be immediately covered by bolting a temporary cover in place.*
    - i. *Bolts, six per cover, are to be hex-head-socket button-head type.*
    - ii. *Gaskets utilized under the elevated edge lights shall be removed with the light units, and they will be ultimately reused in the reinstallation.*
    - iii. *O-rings used under the lights shall be removed and saved for reuse when the light units are reinstalled.*
    - iv. *Note and record the thickness of each cover installed, at the edge, to be able to compute the extension height requirement later. Install covers with target up.*
    - v. *All bolts shall be secured to prevent the possibility of loosening (and becoming a hazard to aircraft operations).*
    - vi. *Each bolt head, and each threaded hole (3) in each cover should be covered with a piece of masking tape. This will improve the ease of removal, benefiting Contractor operations.*
  - 2. *Each light unit shall be marked with its assigned number immediately after it is removed. Use masking tape and a waterproof marking pen. Additionally, it is recommended that the interior of each can be provided with some type of marker, identifying it by its assigned number - it will be beneficial to future Contractor work.*
    - i. *All lights shall be handled carefully to prevent damage to the secondary conductors (between bottom of fixture and hard surfaces). After removal lights shall be kept in a dry and protective area until reinstallation.*
    - ii. *The bolts on the edge light fixture may have to be cleaned to be able to get a socket over the head due to the possible buildup of asphalt products.*
- b. *Sign panels shall be removed and turned over to the airport as indicated on plans.*

**125-3.6 TEMPORARY LIGHTING AND CIRCUITS.** *Temporary airfield electrical equipment shall be installed as shown in the plans and specified herein.*

**125-3.7 PHASING.** *All existing runway and taxiway lights not included in the construction phasing must be kept in operation, except as permitted otherwise by the Engineer.*

*The Contractor shall be responsible for troubleshooting and investigative work necessary to install completely operative temporary circuits. These shall be*

*incidental to the other electrical work and no separate payment will be made unless otherwise specified.*

*The Contractor shall be responsible for installing, maintaining, and removing all required temporary jumper cables, conduits and splices.*

*The Contractor shall test and verify that the circuits and lights involved in construction that are necessary for operation of aircraft are in working order at the end of each working day.*

**125-3.8 INTERRUPTIONS.** *Interruptions of lighting circuits may be necessary during construction. The Contractor shall not interrupt any circuit or perform any work that might endanger any circuit until approval of the Engineer has been received.*

*The Contractor shall remove all circuit cables from their respective power sources in the vault before working on the cables in the field. This work is incidental to the electrical work and no separate payment will be made.*

**125-3.9 ORIENTATION OF LIGHT BEAM FOR TAXIWAY CENTERLINE LIGHTS.** *Section not used.*

**125-3.10 ELEVATED EDGE LIGHT BASE CAN AND JUNCTION CAN INSTALLATION** *Section not used.*

**125-3.11 INSTALLATION OF ELEVATED LIGHT FIXTURES.** *Section not used.*

**125-3.12 FLUSH (IN-PAVEMENT) LIGHT BASE CAN INSTALLATION IN ASPHALT CONCRETE PAVEMENT** *Section not used.*

**125-3.13 INSTALLATION OF FLUSH LIGHT FIXTURES.** *Section not used.*

**125-3.14 EXISTING LIGHT BASE ADJUSTMENT TO FINISH GRADE.**

*To accommodate overlay work, light bases are required to be adjusted to new finish elevations. In order to properly adjust the light bases, correct combinations of shims and/or extensions will be required. As soon as the contract has been awarded, review the estimated overlay thicknesses shown on the drawings and order sufficient extensions and spacers for light base extension work. Make sure the materials are available and onsite prior to coring work. Temporary shims, spacers, and extension materials may be used following the initial coring until the final extension and/or shims can be installed based on final paving elevations. The following procedure shall be implemented to adjust the L-867 and L-868 cans shown on the drawings to be adjusted:*

- 1) *Remove existing lights fixtures as described in the removals paragraph of this section and document existing extension, flange ring, and/or shim dimensions and quantities.*
- 2) *Install temporary base can target plates. Each temporary cover shall have a piece of craft paper placed over the temporary covers. This will protect the target on the cover from being obliterated with tack coat and paving material. The masking tape over the bolts and holes should remain also. The Contractor shall choose the method of attachment. The condition of each unit's covering shall be checked immediately prior to any overlay paving.*
- 3) *Complete milling as indicated in the drawings. For base cans within 1.5-inches of finish grade, the concrete backfill around the base can shall be removed to allow a minimum of 1.5-inches of new asphalt to be placed around the base can. The Contractor shall utilize equipment and procedures that will not damage the existing base can.*
- 4) *After the final lift of pavement overlay is complete, each can must be located and the thickness of its overlay determined for coring and extending to finish grades.*
- 5) *The timing of the large diameter cores will be a function of their type and location, see the plans for specific details.*
- 6) *The core shall be made by accurately locating the machine using the target at the base of the small diameter core hole. To be acceptable, there must be a 1/2-inch minimum to 3/4-inch maximum gap between the extension and the core wall. Positive contact indicates that the extension may not be properly seated against the top of the existing can, which is not acceptable.*
- 7) *Install extensions and/or shims to extend base cans to finish grades. Extensions shall be utilized for adjustments greater than 2-inches. If shims/spacers are used, a maximum of two shims/spacers shall be installed for each base can.*
- 8) *After coring the full diameter, remove the paper, tape, bolts, and temporary cover.*
- 9) *The interior of the cans shall be cleaned of debris.*
- 10) *The top of the existing can shall be thoroughly cleaned, using a solvent as necessary to cut oils, tack coat, asphalt; there shall be no debris on the surface to impede positive metal-to-metal contact.*
- 11) *Additionally all mating surfaces between cans, shims, extensions, shall be cleaned.*
- 12) *Install the components in the hole to confirm correct components – the top of the extension components shall be the correct height relative to adjacent pavement edge. Tolerance requirements are as follows:*
  - a. *Edge Lights: + 1/8" to -0"*
  - b. *In-Pavement Lights: +0" to -1/16"*
- 13) *Install the extension components in the order specified with a small bead of silicone continuous around the outside of the bolt circle. Note: Too much silicone may affect good positive metal-to-metal contact and get into bolt holes; too little, gaps, or improperly located silicone will allow subsequent epoxy to drain into the cans and/or onto the bolt threads (making it impossible to remove bolts if necessary).*
- 14) *The exteriors of the extensions, shims, and rings shall be degreased with a solvent to insure proper adhesion of P-606 sealant when placed.*

- 15) *The extension and shims shall be temporarily bolted down with at least three alternately spaced bolts until the P-606 sealant is placed. It is recommended that the temporary covers be placed over the cans if there is a delay between extension component installation and subsequent epoxy and light or cover installation.*
- 16) *Following the initial curing of the P-606 sealant, install shims and flange ring (for in-pavement installations) and place P-605 sealant.*
- 17) *Set the original gasket in place. Set the light assembly in place and bolt down utilizing the original bolts.*

**125-3.15 LIGHT BASE GROUNDING.** *Section not used.*

**125-3.16 LIGHT FIXTURE AND BASE PLATE GROUNDING.** *Section not used.*

**125-3.17 AIRFIELD SIGN INSTALLATION.** *Sign panels shall be relocated and installed where shown on the drawings. Sign foundations and junction cans shall be installed and constructed as shown on the drawings.*

**125-3.18 ISOLATION TRANSFORMER.** *Section not used.*

**125-3.19 CABLE CONNECTIONS.** *All airfield lighting connections to cable, transformers, and fixtures shall be made with L-823 5 kV connectors in accordance with Section 113, Underground Cable for Airports (FAA Item L-108).*

**125-3.20 AS-BUILT DRAWINGS.** *The Contractor shall mark up one set of redline prints to show the as-built conditions which differ from the original, including any existing utilities discovered during the course of the work. The Engineer will furnish a newly printed set of drawings for this purpose. As-builts shall be kept up daily and initialed off by Contractor and Engineer's inspector weekly. There shall be sufficient detail, including station numbers, markers, panel circuit numbers, etc., to allow for easy location and correcting tracings. This work shall be completed and accepted by the Engineer before approval of final payment.*

**END OF ITEM L-125**

## **PART 2 - SUBMITTALS.**

**2.1** The Contractor shall submit material specification for the items listed in this Specification Section.

## **PART 3 - METHOD OF MEASUREMENT**



The airfield electrical work under this item shall consist of the number of components specified herein, including airfield lighting, signage, and temporary circuiting as shown on the drawings and accepted as a complete unit

**3.1** Removal of Existing Jean and Concrete Foundation and Backfill shall be measured and paid for each unit in place performed in accordance with the specifications and accepted by the Engineer.

**3.2** Adjust Edge Light Base or Junction Can shall be measured and paid for each unit in place performed in accordance with the specifications and accepted by the Engineer.

**3.3** Replace Existing Sign Panel shall be measured and paid for each unit in place performed in accordance with the specifications and accepted by the Engineer.

**3.4** Removal and Reinstallation of Existing Light Fixtures shall be measured and paid for each unit to be removed, stored, and reinstalled in accordance with the specifications and accepted by the Engineer.

#### **PART 4 - BASIS OF PAYMENT.**

**4.1** Removal of Existing Jean and Concrete Foundation and Backfill payment shall be made at the contract unit price per each unit measured in place. The prices shall be full compensation for furnishing all labor, supervision, materials, layout, equipment, tools, and incidentals necessary to complete the item as specified herein and pursuant to the contract documents.

**4.2** Adjust Edge Light Base or Junction Can payment shall be made at the contract unit price per each unit measured in place. The prices shall be full compensation for furnishing all labor, supervision, materials, layout, equipment, tools, and incidentals necessary to complete the item as specified herein and pursuant to the contract documents.

**4.3** Replace Existing Sign Panel payment shall be made at the contract unit price per each unit measured in place. The prices shall be full compensation for furnishing all labor, supervision, materials, layout, equipment, tools, and incidentals necessary to complete the item as specified herein and pursuant to the contract documents.

**4.4** Remove and Reinstall Existing Light Fixtures payment shall be made at the contract unit price per each. The price shall be full compensation for furnishing all labor, supervision, materials, layout, equipment, tools, and incidentals necessary to complete the item as specified herein and pursuant to the contract documents.

**4.5** No separate direct payment shall be made for temporary airfield electrical work. All costs associated with furnishing materials, preparation, delivering and installation of these materials, and all labor, equipment, tools, and incidentals necessary to provide items constructed of temporary airfield electrical shall be considered subsidiary to, and shall be included in, the contract bid price paid for the Mobilization and Demobilization.

Payment will be made under:

- Item L-125-1      Removal of Existing Jean and Concrete Foundation and Backfill..... per Each
- Item L-125-2      Adjust Edge Light Base or Junction Can to Grade..... per Each
- Item L-125-3      Replace Existing Sign Panel..... per Each
- Item L-125-4      Remove and Reinstall Existing Light Fixtures..... per Each

**END OF SECTION L-125**

**SUPPLEMENTARY SPECIAL PROVISIONS**

**APPENDICES**

**APPENDIX A**

**ADDENDUM TO MITIGATED NEGATIVE DECLARATION  
AND FOCUSED BURROWING OWL SURVEYS**



THE CITY OF SAN DIEGO

**ADDENDUM TO  
MITIGATED NEGATIVE DECLARATION No. 358563**

SCH No. 2014071015

Project No. 541000

SUBJECT: Brown Field Municipal Airport Phase III Runway 8L-26R Rehabilitation Project

I. PROJECT DESCRIPTION:

Applicant: City of San Diego Public Engineering and Capital Projects Department, Right of Way Division

Project Location

The project is located at Brown Field Municipal Airport at 1424 Continental Street in the Otay Mesa community of the City of San Diego. (See attached location map).

Project Description

The proposed project is the third phase of the rehabilitation of the 8L-26R runway at Brown Field Municipal Airport to comply with current Federal Aviation Administration (FAA) standards to increase reliability and safety of the runway. The first and second phases have been completed and included the rehabilitation of the western and eastern portions of the runway. The third phase would rehabilitate the central portion of the runway. The rehabilitation consists of adjustment of light cans to grade, and installation of airfield improvements to include new asphalt concrete (AC) pavement, concrete joint repairs, concrete spall repairs, and runway markings. The construction staging area for the project will occur at the eastern portion of the runway which was rehabilitated as part of Phase I and II of the project. The construction haul route from Continental Street would occur on existing developed vehicular access roads and a developed abandoned airport taxiway.

II. ENVIRONMENTAL SETTING: The Brown Field 8L-26R Phase III Runway Rehabilitation project would occur within the developed existing roads, abandoned taxiways and developed runway at Brown Field Municipal Airport. Surrounding land uses include existing industrial, and open space areas. See attached MND for additional information on the environmental setting.

III. PROJECT BACKGROUND: Mitigated Negative Declaration (MND) No. 358563 was adopted by the City of San Diego Development Services Department for Phase I and II of the Brown Field Runway 8L-26R Rehabilitation project. Section 15164 of CEQA Guidelines allows addenda to the adopted MND to be prepared for subsequent projects that would not result in new or more severe significant impacts or new or substantially modified mitigation measures not identified by the adopted MND. Pursuant to the City of San Diego's Municipal Code Section 128.0306 and Section 15164(c) of State CEQA Guidelines addenda to environmental documents are not required to be circulated for public review.

## BIOLOGICAL RESOURCES

MND No. 358563 concluded that Phase I and II of the runway rehabilitation project could result in significant environmental impacts relating to biological resources, and included mitigation to reduce impacts to biological resources to below a level of significance. The project areas identified with Phase III of the runway rehabilitation project have the potential to indirectly impact biological resources as described below. This Addendum clarifies and amplifies the biological resources mitigation measures that were required for the original MND.

### Direct Impacts

The Brown Field Airport – Runway 8L/26R Pavement Rehabilitation – Phase III Biological Survey Letter Report (BLR) dated April 14, 2017 by ESA concludes that there will be no direct impacts to sensitive Biological Resources (ESL) because the Phase III runway rehabilitation project will take place entirely on developed land. Therefore, no mitigation would be required for direct impacts to Sensitive Biological Resources for the proposed project.

### Indirect Impacts

The BLR determined that the Phase III Brown Field Runway Rehabilitation Project could potentially result in significant indirect impacts to sensitive biological resources. Specifically, four jurisdictional drainages and two vernal pools, including one containing San Diego fairy shrimp occur within the Haul Route 100-foot buffer. The proposed project also has the potential to indirectly impact nesting avian species including Burrowing Owls. A Focused Burrowing Owl Surveys Report was prepared for the Phase III runway rehabilitation project by Brian F. Smith & Associates (Revised August 31, 2016), which determined that Burrowing Owls are present in the vicinity of the project construction.

The BLR recommends mitigation and monitoring measures be implemented for the proposed project, which clarify and amplify the mitigation measures in the Final Mitigated Negative Declaration (MND) that was adopted for Phase I and II of the runway rehabilitation project (MND No. 358563). The BLR concludes that these clarified and amplified measures would reduce potentially significant indirect impacts to sensitive biological resources to a less than significant level. These biological resources mitigation and monitoring measures are stated in Section V (Mitigation, Monitoring and Reporting Program) of this MND Addendum.

## HISTORICAL RESOURCES (ARCHAEOLOGY)

MND No. 358563 concluded that Phase I and II of the runway rehabilitation project could result in significant environmental impacts relating to archaeological resources, and included mitigation to reduce impacts to archaeological resources to below a level of significance. The project areas identified with Phase III of the runway rehabilitation project would include excavation of previously undisturbed soil which has the potential to contain sensitive archaeological resources.

To reduce potential archaeological resource impacts to below a level of significance, all project grading, trenching, and excavation, will be required to be monitored by a qualified archaeologist or archaeological monitor, and a Native American monitor. Any significant archaeological resources

encountered would be recovered and curated in accordance with the mitigation monitoring and Reporting Program (MMRP) detailed in Section V.

#### IV. DETERMINATION:

The City of San Diego previously prepared Mitigated Negative Declaration No. 358563 for the project described in the attached MND.

Based upon a review of the current project, it has been determined that:

- a. There are no new significant environmental impacts not considered in the previous MND;
- b. No substantial changes have occurred with respect to the circumstances under which the project is undertaken; and
- c. There is no new information of substantial importance to the project.

Therefore, in accordance with Section 15164 of the State CEQA Guidelines this addendum has been prepared. No public review of this addendum is required.

#### V. MITIGATION, MONITORING AND REPORTING PROGRAM INCORPORATED INTO THE PROJECT:

##### A. GENERAL REQUIREMENTS - PART I: Prior to Notice to Proceed

1. Prior to the Notice To Proceed (NTP), or any construction permits, such as Demolition, Grading or Building, or beginning any construction related activity on-site, the Development Services Department (DSD) Director's Environmental Designee (ED) shall review and approve all Construction Documents (CD), (plans, specification, details, etc.) to ensure the MMRP requirements are incorporated into the design.
2. In addition, the ED shall verify that the MMRP Conditions/Notes that apply ONLY to the construction phases of this project are included VERBATIM, under the heading, "**ENVIRONMENTAL/MITIGATION REQUIREMENTS.**"
3. These notes must be shown within the first three (3) sheets of the construction documents in the format specified for engineering construction document templates as shown on the City website:  
  
<http://www.sandiego.gov/development-services/industry/standtemp.shtml>
4. The **TITLE INDEX SHEET** must also show on which pages the "Environmental/Mitigation Requirements" notes are provided.
5. **SURETY AND COST RECOVERY** - The Development Services Director or City Manager may require appropriate surety instruments or bonds from private Permit Holders to ensure the long term performance or implementation of required mitigation measures or programs. The City is authorized to recover



its cost to offset the salary, overhead, and expenses for City personnel and programs to monitor qualifying projects.

**B. GENERAL REQUIREMENTS - PART II: Prior to start of construction**

1. **PRE CONSTRUCTION MEETING IS REQUIRED TEN (10) WORKING DAYS PRIOR TO BEGINNING ANY WORK ON THIS PROJECT.** The PERMIT HOLDER/OWNER is responsible to arrange and perform this meeting by contacting the CITY RESIDENT ENGINEER (RE) of the Field Engineering Division and City staff from MITIGATION MONITORING COORDINATION (MMC). Attendees must also include the Permit holder's Representative(s), Job Site Superintendent and the following consultants:

*Qualified Archaeological and Native American Monitors  
Qualified Biologist and Biological Resources Monitor*

**Note: Failure of all responsible Permit Holder's representatives and consultants to attend shall require an additional meeting with all parties present.**

**CONTACT INFORMATION:**

- a) The PRIMARY POINT OF CONTACT is the RE at the **Field Engineering Division - (858) 627-3200**
  - b) For Clarification of ENVIRONMENTAL REQUIREMENTS, it is also required to call **RE and MMC at (858) 627-3360**
2. **MMRP COMPLIANCE:** This Project, Project Tracking System (PTS) No. 541000 and /or Environmental Document No. 541000 shall conform to the mitigation requirements contained in the associated Environmental Document and implemented to the satisfaction of the DSD's Environmental Designee (MMC) and the City Engineer (RE). The requirements may not be reduced or changed but may be annotated (i.e. to explain when and how compliance is being met and location of verifying proof, etc.). Additional clarifying information may also be added to other relevant plan sheets and/or specifications as appropriate (i.e., specific locations, times of monitoring, methodology, etc.  
  
**Note: Permit Holder's Representatives must alert RE and MMC if there are any discrepancies in the plans or notes, or any changes due to field conditions. All conflicts must be approved by RE and MMC BEFORE the work is performed.**
  3. **OTHER AGENCY REQUIREMENTS:** Evidence of compliance with all other agency requirements or permits shall be submitted to the RE and MMC for review and acceptance prior to the beginning of work or within one week of the Permit Holder obtaining documentation of those permits or requirements. Evidence shall include copies of permits, letters of resolution or other documentation issued by the responsible agency.



**None required for this project.**

4. **MONITORING EXHIBITS:** All consultants are required to submit, to RE and MMC, a monitoring exhibit on a 11x17 reduction of the appropriate construction plan, such as site plan, grading, landscape, etc., marked to clearly show the specific areas including the **LIMIT OF WORK**, scope of that discipline's work, and notes indicating when in the construction schedule that work will be performed. When necessary for clarification, a detailed methodology of how the work will be performed shall be included.

**Note: Surety and Cost Recovery - When deemed necessary by the Development Services Director or City Manager, additional surety instruments or bonds from the private Permit Holder may be required to ensure the long term performance or implementation of required mitigation measures or programs. The City is authorized to recover its cost to offset the salary, overhead, and expenses for City personnel and programs to monitor qualifying projects.**

5. **OTHER SUBMITTALS AND INSPECTIONS:** The Permit Holder/Owner's representative shall submit all required documentation, verification letters, and requests for all associated inspections to the RE and MMC for approval per the following schedule:

Document Submittal/Inspection Checklist		
Issue Area	Document Submittal	Associated Inspection/Approvals/Notes
General	Consultant Qualification Letters	Prior to Preconstruction Meeting
General	Consultant Construction Monitoring Exhibits	Prior to or at Preconstruction Meeting
Biology	Biologist Limit of Work Verification	Limit of Work Inspection
Biology	Biology Reports	Biology/Habitat Restoration Inspection
Archaeology	Archaeology Reports	Archaeology/Historic Site Observation
Bond Release	Request for Bond Release Letter	Final MMRP Inspections Prior to Bond Release Letter

**C. SPECIFIC MMRP ISSUE AREA CONDITIONS/REQUIREMENTS**

Biological Resources

To reduce potentially significant impacts to biological resources to less than significant level, the following mitigation measures (MM) are required:

**MM-BIO-1: Worker Education** - Prior to the start of construction activities, the project biologist shall provide a worker education training that provides information to the construction crew about avoiding sensitive biological resources in the Project vicinity. The training shall include discussion of the following:

1. The project speed limit of 10 miles per hour while driving on airport property.
2. Sensitive resources on site including burrowing owls, nesting birds, vernal pools, and fairy shrimp.
3. The need to stay within the paved Project boundaries at all times, because using unpaved areas for driving or parking could result in collapse of burrowing owl burrows or damage to vernal pools.

**MM-BIO-2: Speed Limits** - To avoid impacts to special-status species resulting from vehicle collisions, all project personnel shall not exceed speeds of 10 miles per hour when driving on airport property. Additionally, project personnel shall adhere to posted speed limits.

**MM-BIO-3: Nesting Birds** - For any work conducted during the avian breeding season (February 1 – September 15), the following measures shall be followed:

1. A nesting bird survey of all accessible natural habitats within 900 feet of construction activities shall be conducted by a Qualified Avian Biologist no more than one week prior to commencement of construction. A Qualified Avian Biologist refers to a person with the ability to identify birds present in San Diego County to the species level by sight or sound and who is familiar with the breeding and nesting behaviors of native bird species.
2. If active nests with eggs or chicks of bird species protected under the MBTA are detected, an appropriate buffer shall be determined by the avian biologist and no work shall take place within the buffer until it is determined that the nest is no longer active. Additional visits after the initial survey shall be conducted as necessary to determine that nests are no longer active. Buffers will be no less than those specified as follows in the City's Biology Guidelines: 900 feet for northern harriers and 300 feet for BUOW.

**MM-BIO-4: Burrowing Owl (BUOW)** - The following species-specific mitigation shall be implemented to meet the MSCP Subarea Plan Conditions of Coverage for potential impacts to BUOW and associated habitat located outside of the MHPA:

#### **PRE-CONSTRUCTION SURVEY ELEMENT**

##### **A. Prior to Permit or Notice to Proceed Issuance:**

1. As this Project has been determined to be BUOW occupied or to have BUOW occupation potential, the Applicant Department or Permit Holder shall submit

evidence to the ADD of Entitlements verifying that a Qualified BUOW Biologist possessing qualifications pursuant to the California Department of Fish and Game 2012 Staff Report on Burrowing Owl Mitigation (Appendix F), has been retained to implement a BUOW construction impact avoidance program.

2. The Qualified BUOW Biologist (or their designated biological representative) shall attend the pre-construction meeting to inform construction personnel about the City's BUOW requirements and subsequent survey schedule.

**B. Prior to Start of Construction:**

1. The Applicant Department or Permit Holder and Qualified BUOW Biologist must ensure that initial pre-construction/take avoidance surveys of the Project "site" are completed between 14 and 30 days before initial construction activities, including brushing, clearing, grubbing, or grading of the Project site, regardless of the time of the year. "Site" means the Project site and the area within a radius of 450 feet of the Project site. The report shall be submitted and approved by the Wildlife Agencies and/or City MSCP staff prior to construction or BUOW eviction(s) and shall include maps of the Project site and BUOW locations on aerial photos.
2. The pre-construction survey shall follow the methods described in Appendix F.
3. Twenty-four hours prior to commencement of ground disturbing activities, the Qualified BUOW Biologist shall verify results of pre-construction/take avoidance surveys. Verification shall be provided to the City's Mitigation Monitoring and Coordination (MMC) Section. If results of the pre-construction surveys have changed, and BUOW are present in areas not previously identified, immediate notification to the City and Wildlife Agencies shall be provided prior to ground disturbing activities.

**C. During Construction:**

1. **Best Management Practices Shall Be Employed as BUOWs** – BUOWs are known to use open pipes, culverts, excavated holes, and other burrow-like structures at construction sites. Legally permitted active construction projects which are BUOW-occupied and have followed all protocols in this mitigation section, or sites within 450 feet of occupied BUOW areas, should undertake measures to discourage BUOWs from recolonizing previously occupied areas or colonizing new portions of the site. Such measures include, but are not limited to, ensuring that the ends of all pipes and culverts are covered when they are not being worked on, and covering rubble piles, dirt piles, ditches, and berms.
2. **Ongoing BUOW Detection** -If BUOWs or active burrows are not detected during the pre-construction surveys, Section "A" below shall be followed. If BUOWs or burrows are detected during the pre-construction surveys, Section "B" shall be followed. NEITHER THE MSCP SUBAREA PLAN NOR THIS MITIGATION SECTION ALLOW FOR ANY BUOWS TO BE INJURED OR KILLED OUTSIDE OR WITHIN THE MHPA; in addition, IMPACTS TO BUOWS WITHIN THE MHPA MUST BE AVOIDED.
  - a. **Post Survey Follow Up if Burrowing Owls and/or Signs of Active Natural or Artificial Burrows Are Not Detected During the Initial Pre-**



**Construction Survey** - Monitoring the site for new burrows is required using the Appendix F protocol for the period following the initial pre-construction survey, until construction is scheduled to be complete, and is complete. *(NOTE - Using a projected completion date (that is amended if needed) will allow development of a monitoring schedule which adheres to the required number of surveys in the detection protocol.)*

- i. If no active burrows are found but BUOWs are observed to occasionally use the site for roosting or foraging (one to three sightings), they should be allowed to do so with no changes in the construction or construction schedule.
- ii. If no active burrows are found but BUOWs are observed during follow up monitoring to repeatedly use the site for roosting or foraging (four or more sightings), the City's MMC Section shall be notified and any portion of the site where owls have been sighted and that has not been graded or otherwise disturbed shall be avoided until further notice.
- iii. If a BUOW begins using a burrow on the site at any time after the initial pre-construction survey, procedures described in Section B must be followed.
- iv. Any actions other than these require the approval of the City and the Wildlife Agencies.

**b. Post-Survey Follow Up if Burrowing Owls and/or Active Natural or Artificial Burrows are detected during the Initial Pre-Construction Survey** - Monitoring the site for new burrows is required using Appendix F for the period following the initial pre-construction survey, until construction is scheduled to be complete, and is complete. *(NOTE - Using a projected completion date (that is amended if needed) will allow development of a monitoring schedule which adheres to the required number of surveys in the detection protocol.)*

- i. This section (B) applies only to sites (including biologically defined territory) wholly outside of the MHPA - **all direct and indirect impacts to BUOWs within the MHPA SHALL be avoided.**
- ii. If one or more BUOWs are using any burrows (including pipes, culverts, debris piles, etc.) on or within 300 feet of the proposed construction area, the City's MMC Section shall be contacted. The City's MMC Section shall contact the Wildlife Agencies regarding eviction/collapsing burrows and enlist an appropriate City biologist for on-going coordination with the Wildlife and the Qualified BUOW Biologist. No construction shall occur within 300 feet of an active burrow without written concurrence

from the Wildlife Agencies. This distance may increase or decrease, depending on the burrow's location in relation to the site's topography and other physical and biological characteristics.

- 1) **Outside the Breeding Season** – If the BUOW is using a burrow on site outside the breeding season (i.e., September 1 - January 31), the BUOW may be evicted after the Qualified BUOW Biologist has determined via fiber optic camera or other appropriate device, that no eggs, young, or adults are in the burrow and written concurrence from the Wildlife Agencies for eviction is obtained prior to implementation.
- 2) **During Breeding Season** – If a BUOW is using a burrow on site during the breeding season (February 1-August 31), construction shall not occur within 300 feet of the burrow until the young have fledged and are no longer dependent on the burrow, at which time the BUOWs can be evicted. Eviction requires written concurrence from the Wildlife Agencies prior to implementation.
3. **Survey Reporting During Construction** – Details of construction surveys and evictions (if applicable) carried out shall be reported immediately (within five working days or sooner) to the City's MMC Section and the Wildlife Agencies and must be provided in writing (as by email) and acknowledged to have been received by the required Agencies and Development Services Department Staff member(s).

**D. Post-Construction:**

1. Details of the all surveys and actions undertaken on site with respect to BUOW (i.e., occupation, eviction, locations, etc.) shall be reported to the City's MMC Section and the Wildlife Agencies within 21 days post-construction and prior to the release of any grading bonds. This report must include summaries of all previous reports for the site and maps of the Project site and BUOW locations on aerial photos.

**MM-BI0-5: Erosion and Sediment Control Best Management Practices** - In areas where there is potential for erosion or construction-generated runoff, sedimentation, or dust to impact jurisdictional drainages or vernal pools within the 100-foot project area buffer, BMPs such as silt fencing and/or straw wattles shall be installed along the downslope portions of disturbance areas during Project construction activities. Additionally, at the two locations where vernal pools occur adjacent to the Haul Route, construction or silt fencing will be placed along the haul route boundary to prevent accidental vehicle intrusion.

## Historical Resources (Archaeology)

### I. Prior to Permit Issuance or Bid Opening/Bid Award

#### A. Entitlements Plan Check

1. Prior to permit issuance or Bid Opening/Bid Award, whichever is applicable, the Assistant Deputy Director (ADD) Environmental designee shall verify that the requirements for Archaeological Monitoring and Native American monitoring have been noted on the applicable construction documents through the plan check process.

#### B. Letters of Qualification have been submitted to ADD

1. Prior to Bid Award, the applicant shall submit a letter of verification to Mitigation Monitoring Coordination (MMC) identifying the Principal Investigator (PI) for the project and the names of all persons involved in the archaeological monitoring program, as defined in the City of San Diego Historical Resources Guidelines (HRG). If applicable, individuals involved in the archaeological monitoring program must have completed the 40-hour HAZWOPER training with certification documentation.
2. MMC will provide a letter to the applicant confirming the qualifications of the PI and all persons involved in the archaeological monitoring of the project meet the qualifications established in the HRG.
3. Prior to the start of work, the applicant must obtain written approval from MMC for any personnel changes associated with the monitoring program.

### II. Prior to Start of Construction

#### A. Verification of Records Search

1. The PI shall provide verification to MMC that a site specific records search (1/4 mile radius) has been completed. Verification includes, but is not limited to a copy of a confirmation letter from South Coastal Information Center, or, if the search was in-house, a letter of verification from the PI stating that the search was completed.
2. The letter shall introduce any pertinent information concerning expectations and probabilities of discovery during trenching and/or grading activities.
3. The PI may submit a detailed letter to MMC requesting a reduction to the ¼ mile radius.

#### B. PI Shall Attend Precon Meetings

1. Prior to beginning any work that requires monitoring, the Applicant shall arrange a Precon Meeting that shall include the PI, Native American consultant/monitor (where Native American resources may be impacted), Construction Manager (CM) and/or Grading Contractor, Resident Engineer (RE), Building Inspector (BI), if appropriate, and MMC. The qualified Archaeologist and Native American Monitor shall attend any grading/excavation related Precon Meetings to make comments and/or suggestions concerning the Archaeological Monitoring program with the Construction Manager and/or Grading Contractor.
  - a. If the PI is unable to attend the Precon Meeting, the Applicant shall schedule a focused Precon Meeting with MMC, the PI, RE, CM or BI, if appropriate, prior to the start of any work that requires monitoring.

2. Acknowledgement of Responsibility for Curation (CIP or Other Public Projects)



The applicant shall submit a letter to MMC acknowledging their responsibility for the cost of curation associated with all phases of the archaeological monitoring program.

3. Identify Areas to be Monitored
  - a. Prior to the start of any work that requires monitoring, the PI shall submit an Archaeological Monitoring Exhibit (AME) (with verification that the AME has been reviewed and approved by the Native American consultant/monitor when Native American resources may be impacted) based on the appropriate construction documents (reduced to 11x17) to MMC identifying the areas to be monitored including the delineation of grading/excavation limits.
  - b. The AME shall be based on the results of a site specific records search as well as information regarding the age of existing pipelines, laterals and associated appurtenances and/or any known soil conditions (native or formation).
  - c. MMC shall notify the PI that the AME has been approved.
4. When Monitoring Will Occur
  - a. Prior to the start of any work, the PI shall also submit a construction schedule to MMC through the RE indicating when and where monitoring will occur.
  - b. The PI may submit a detailed letter to MMC prior to the start of work or during construction requesting a modification to the monitoring program. This request shall be based on relevant information such as review of final construction documents which indicate conditions such as age of existing pipe to be replaced, depth of excavation and/or site graded to bedrock, etc., which may reduce or increase the potential for resources to be present.
5. Approval of AME and Construction Schedule  
After approval of the AME by MMC, the PI shall submit to MMC written authorization of the AME and Construction Schedule from the CM.

### III. During Construction

- A. Monitor Shall be Present During Grading/Excavation/Trenching
  1. The Archaeological Monitor shall be present full-time during all soil disturbing and grading/excavation/trenching activities which could result in impacts to archaeological resources as identified on the AME. The Construction Manager is responsible for notifying the RE, PI, and MMC of changes to any construction activities such as in the case of a potential safety concern within the area being monitored. In certain circumstances OSHA safety requirements may necessitate modification of the AME.
  2. The Native American consultant/monitor shall determine the extent of their presence during soil disturbing and grading/excavation/trenching activities based on the AME and provide that information to the PI and MMC. If prehistoric resources are encountered during the Native American consultant/monitor's absence, work shall stop and the Discovery Notification Process detailed in Section III.B-C and IV.A-D shall commence.
  3. The PI may submit a detailed letter to MMC during construction requesting a modification to the monitoring program when a field condition such as modern disturbance post-dating the previous grading/trenching activities, presence of fossil formations, or when native soils are encountered that may reduce or increase the potential for resources to be present.

4. The archaeological and Native American consultant/monitor shall document field activity via the Consultant Site Visit Record (CSVSR). The CSVSR's shall be faxed by the CM to the RE the first day of monitoring, the last day of monitoring, monthly **(Notification of Monitoring Completion)**, and in the case of ANY discoveries. The RE shall forward copies to MMC.
- B. Discovery Notification Process
1. In the event of a discovery, the Archaeological Monitor shall direct the contractor to temporarily divert all soil disturbing activities, including but not limited to digging, trenching, excavating or grading activities in the area of discovery and in the area reasonably suspected to overlay adjacent resources and immediately notify the RE or Bl, as appropriate.
  2. The Monitor shall immediately notify the PI (unless Monitor is the PI) of the discovery.
  3. The PI shall immediately notify MMC by phone of the discovery, and shall also submit written documentation to MMC within 24 hours by fax or email with photos of the resource in context, if possible.
  4. No soil shall be exported off-site until a determination can be made regarding the significance of the resource specifically if Native American resources are encountered.
- C. Determination of Significance
1. The PI and Native American consultant/monitor, where Native American resources are discovered shall evaluate the significance of the resource. If Human Remains are involved, follow protocol in Section IV below.
    - a. The PI shall immediately notify MMC by phone to discuss significance determination and shall also submit a letter to MMC indicating whether additional mitigation is required.
    - b. If the resource is significant, the PI shall submit an Archaeological Data Recovery Program (ADRP) and obtain written approval of the program from MMC, CM and RE. ADRP and any mitigation must be approved by MMC, RE and/or CM before ground disturbing activities in the area of discovery will be allowed to resume. Note: If a unique archaeological site is also an historical resource as defined in CEQA Section 15064.5, then the limits on the amount(s) that a project applicant may be required to pay to cover mitigation costs as indicated in CEQA Section 21083.2 shall not apply.
      - (1). Note: For pipeline trenching and other linear projects in the public Right-of-Way, the PI shall implement the Discovery Process for Pipeline Trenching projects identified below under "D."
    - c. If the resource is not significant, the PI shall submit a letter to MMC indicating that artifacts will be collected, curated, and documented in the Final Monitoring Report. The letter shall also indicate that that no further work is required.
      - (1). Note: For Pipeline Trenching and other linear projects in the public Right-of-Way, if the deposit is limited in size, both in length and depth; the information value is limited and is not associated with any other resource; and there are no unique features/artifacts associated with the deposit, the discovery should be considered not significant.
      - (2). Note, for Pipeline Trenching and other linear projects in the public Right-of-Way, if significance cannot be determined, the Final Monitoring Report and



Site Record (DPR Form 523A/B) shall identify the discovery as Potentially Significant.

D. Discovery Process for Significant Resources - Pipeline Trenching and other Linear Projects in the Public Right-of-Way

The following procedure constitutes adequate mitigation of a significant discovery encountered during pipeline trenching activities or for other linear project types within the Public Right-of-Way including but not limited to excavation for jacking pits, receiving pits, laterals, and manholes to reduce impacts to below a level of significance:

1. Procedures for documentation, curation and reporting
  - a. One hundred percent of the artifacts within the trench alignment and width shall be documented in-situ, to include photographic records, plan view of the trench and profiles of side walls, recovered, photographed after cleaning and analyzed and curated. The remainder of the deposit within the limits of excavation (trench walls) shall be left intact.
  - b. The PI shall prepare a Draft Monitoring Report and submit to MMC via the RE as indicated in Section VI-A.
  - c. The PI shall be responsible for recording (on the appropriate State of California Department of Park and Recreation forms-DPR 523 A/B) the resource(s) encountered during the Archaeological Monitoring Program in accordance with the City's Historical Resources Guidelines. The DPR forms shall be submitted to the South Coastal Information Center for either a Primary Record or SDI Number and included in the Final Monitoring Report.
  - d. The Final Monitoring Report shall include a recommendation for monitoring of any future work in the vicinity of the resource.

IV. Discovery of Human Remains

If human remains are discovered, work shall halt in that area and no soil shall be exported off-site until a determination can be made regarding the provenance of the human remains; and the following procedures as set forth in CEQA Section 15064.5(e), the California Public Resources Code (Sec. 5097.98) and State Health and Safety Code (Sec. 7050.5) shall be undertaken:

A. Notification

1. Archaeological Monitor shall notify the RE or BI as appropriate, MMC, and the PI, if the Monitor is not qualified as a PI. MMC will notify the appropriate Senior Planner in the Environmental Analysis Section (EAS) of the Development Services Department to assist with the discovery notification process.
2. The PI shall notify the Medical Examiner after consultation with the RE, either in person or via telephone.

B. Isolate discovery site

1. Work shall be directed away from the location of the discovery and any nearby area reasonably suspected to overlay adjacent human remains until a determination can be made by the Medical Examiner in consultation with the PI concerning the provenience of the remains.
2. The Medical Examiner, in consultation with the PI, will determine the need for a field examination to determine the provenience.

3. If a field examination is not warranted, the Medical Examiner will determine with input from the PI, if the remains are or are most likely to be of Native American origin.
- C. If Human Remains **ARE** determined to be Native American
1. The Medical Examiner will notify the Native American Heritage Commission (NAHC) within 24 hours. By law, **ONLY** the Medical Examiner can make this call.
  2. NAHC will immediately identify the person or persons determined to be the Most Likely Descendent (MLD) and provide contact information.
  3. The MLD will contact the PI within 24 hours or sooner after the Medical Examiner has completed coordination, to begin the consultation process in accordance with CEQA Section 15064.5(e), the California Public Resources and Health & Safety Codes.
  4. The MLD will have 48 hours to make recommendations to the property owner or representative, for the treatment or disposition with proper dignity, of the human remains and associated grave goods.
  5. Disposition of Native American Human Remains will be determined between the MLD and the PI, and, if:
    - a. The NAHC is unable to identify the MLD, OR the MLD failed to make a recommendation within 48 hours after being notified by the Commission, OR;
    - b. The landowner or authorized representative rejects the recommendation of the MLD and mediation in accordance with PRC 5097.94 (k) by the NAHC fails to provide measures acceptable to the landowner, THEN
    - c. To protect these sites, the landowner shall do one or more of the following:
      - (1) Record the site with the NAHC;
      - (2) Record an open space or conservation easement; or
      - (3) Record a document with the County.
    - d. Upon the discovery of multiple Native American human remains during a ground disturbing land development activity, the landowner may agree that additional conferral with descendants is necessary to consider culturally appropriate treatment of multiple Native American human remains. Culturally appropriate treatment of such a discovery may be ascertained from review of the site utilizing cultural and archaeological standards. Where the parties are unable to agree on the appropriate treatment measures the human remains and items associated and buried with Native American human remains shall be reinterred with appropriate dignity, pursuant to Section 5.c., above.
- D. If Human Remains are **NOT** Native American
1. The PI shall contact the Medical Examiner and notify them of the historic era context of the burial.
  2. The Medical Examiner will determine the appropriate course of action with the PI and City staff (PRC 5097.98).
  3. If the remains are of historic origin, they shall be appropriately removed and conveyed to the San Diego Museum of Man for analysis. The decision for internment of the human remains shall be made in consultation with MMC, EAS, the applicant/landowner, any known descendant group, and the San Diego Museum of Man.
- V. Night and/or Weekend Work
- A. If night and/or weekend work is included in the contract

1. When night and/or weekend work is included in the contract package, the extent and timing shall be presented and discussed at the precon meeting.
2. The following procedures shall be followed.
  - a. No Discoveries  
In the event that no discoveries were encountered during night and/or weekend work, the PI shall record the information on the CSVR and submit to MMC via fax by 8AM of the next business day.
  - b. Discoveries  
All discoveries shall be processed and documented using the existing procedures detailed in Sections III - During Construction, and IV - Discovery of Human Remains. Discovery of human remains shall always be treated as a significant discovery.
  - c. Potentially Significant Discoveries  
If the PI determines that a potentially significant discovery has been made, the procedures detailed under Section III - During Construction and IV-Discovery of Human Remains shall be followed.
  - d. The PI shall immediately contact the RE and MMC, or by 8AM of the next business day to report and discuss the findings as indicated in Section III-B, unless other specific arrangements have been made.
- B. If night and/or weekend work becomes necessary during the course of construction
  1. The Construction Manager shall notify the RE, or BI, as appropriate, a minimum of 24 hours before the work is to begin.
  2. The RE, or BI, as appropriate, shall notify MMC immediately.
- C. All other procedures described above shall apply, as appropriate.

## VI. Post Construction

### A. Submittal of Draft Monitoring Report

1. The PI shall submit two copies of the Draft Monitoring Report (even if negative), prepared in accordance with the Historical Resources Guidelines (Appendix C/D) which describes the results, analysis, and conclusions of all phases of the Archaeological Monitoring Program (with appropriate graphics) to MMC via the RE for review and approval within 90 days following the completion of monitoring. It should be noted that if the PI is unable to submit the Draft Monitoring Report within the allotted 90-day timeframe as a result of delays with analysis, special study results or other complex issues, a schedule shall be submitted to MMC establishing agreed due dates and the provision for submittal of monthly status reports until this measure can be met.
  - a. For significant archaeological resources encountered during monitoring, the Archaeological Data Recovery Program or Pipeline Trenching Discovery Process shall be included in the Draft Monitoring Report.
  - b. Recording Sites with State of California Department of Parks and Recreation  
The PI shall be responsible for recording (on the appropriate State of California Department of Park and Recreation forms-DPR 523 A/B) any significant or potentially significant resources encountered during the Archaeological Monitoring Program in accordance with the City's Historical Resources Guidelines, and submittal of such forms to the South Coastal Information Center with the Final Monitoring Report.



2. MMC shall return the Draft Monitoring Report to the PI via the RE for revision or, for preparation of the Final Report.
  3. The PI shall submit revised Draft Monitoring Report to MMC via the RE for approval.
  4. MMC shall provide written verification to the PI of the approved report.
  5. MMC shall notify the RE or BI, as appropriate, of receipt of all Draft Monitoring Report submittals and approvals.
- B. Handling of Artifacts
1. The PI shall be responsible for ensuring that all cultural remains collected are cleaned and catalogued
  2. The PI shall be responsible for ensuring that all artifacts are analyzed to identify function and chronology as they relate to the history of the area; that faunal material is identified as to species; and that specialty studies are completed, as appropriate.
- C. Curation of artifacts: Accession Agreement and Acceptance Verification
1. The PI shall be responsible for ensuring that all artifacts associated with the survey, testing and/or data recovery for this project are permanently curated with an appropriate institution. This shall be completed in consultation with MMC and the Native American representative, as applicable.
  2. When applicable to the situation, the PI shall include written verification from the Native American consultant/monitor indicating that Native American resources were treated in accordance with state law and/or applicable agreements. If the resources were reinterred, verification shall be provided to show what protective measures were taken to ensure no further disturbance occurs in accordance with Section IV – Discovery of Human Remains, Subsection C.
  3. The PI shall submit the Accession Agreement and catalogue record(s) to the RE or BI, as appropriate for donor signature with a copy submitted to MMC.
  4. The RE or BI, as appropriate shall obtain signature on the Accession Agreement and shall return to PI with copy submitted to MMC.
  5. The PI shall include the Acceptance Verification from the curation institution in the Final Monitoring Report submitted to the RE or BI and MMC.
- D. Final Monitoring Report(s)
1. The PI shall submit one copy of the approved Final Monitoring Report to the RE or BI as appropriate, and one copy to MMC (even if negative), within 90 days after notification from MMC of the approved report.
  2. The RE shall, in no case, issue the Notice of Completion until receiving a copy of the approved Final Monitoring Report from MMC which includes the Acceptance Verification from the curation institution.



Mark Brunette, Senior Planner  
Development Services Department

May 15, 2017

Date

Analyst: Mark Brunette

Attachments: Biological Survey Results Map  
Mitigated Negative Declaration No. 358563

The Addendum to Mitigated Negative Declaration No. 358563 was not circulated for public review pursuant to San Diego Municipal Code (SDMC) Chapter 6, Article 9, Paragraph 69.0211 (Addenda to Environmental Reports). The final Addendum was distributed to the following City of San Diego staff members for informational purposes in accordance with CEQA Section 15164.

**DISTRIBUTION:**

City of San Diego

Development Services

Peter Kann, Development Project Manager

Mark Brunette, Environmental Analysis

Sam Johnson, MMC

Planning Department

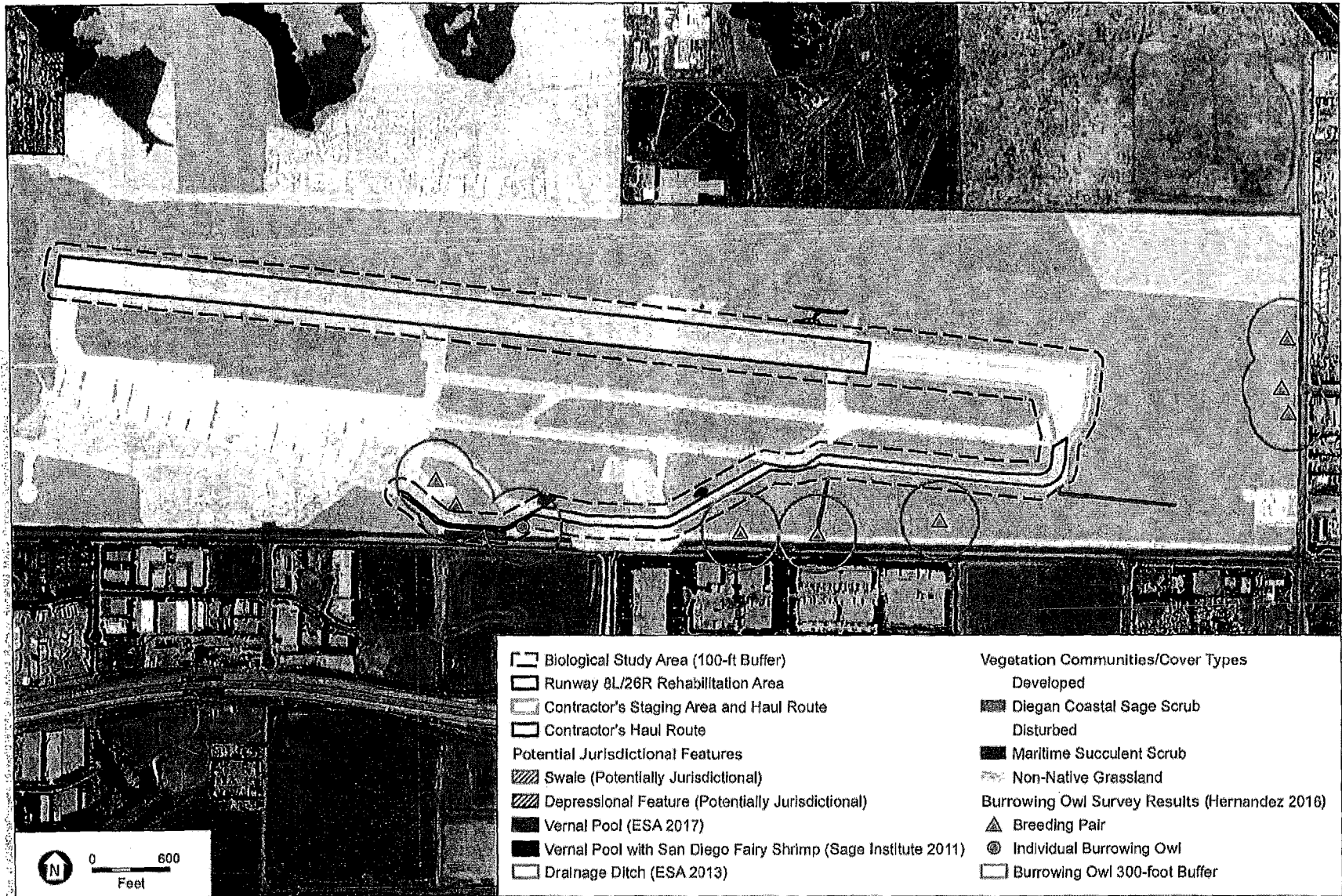
Kristy Forburger, Senior Planner

Public Works

Jihad Sleiman, Project Manager

Peter Fogec, Associate Planner

Copies of the addendum, the final MND, the Mitigation Monitoring and Reporting Program, and any technical appendices may be reviewed in the office of the Entitlements Division of the Development Services Department, or purchased for the cost of reproduction.



SOURCE: ESRI; Hernandez; Sage Institute

Brown Field Airport Runway Rehabilitation

Figure 2  
Survey Results



Brown Field Airport (SDM) 8L/26R Runway Rehabilitation Phase III  
Appendix A - Addendum to Mitigated Negative Declaration and Focused Burrowing Owl Surveys



**FINAL  
MITIGATED NEGATIVE DECLARATION**

Project No. 358563  
SCH No. 2014071015

**SUBJECT: BROWN FIELD MUNICIPAL AIRPORT RUNWAY 8L-26R REHABILITATION PROJECT.** **MAYORAL APPROVAL** for the rehabilitation of Runway 8L-26R (Project). Runway 8L-26R measures 7,972 feet in length and 150 feet in width, and is comprised of both Portland Cement Concrete (PCC) and Asphalt (AC) pavements. Review of historic aerial photographs suggests that the existing paving was put in place in 1953. In the early 1990's approximately 5,500 feet of the runway's middle section was milled and overlaid, but the end portions of the Runway have had no major rehabilitation work since its construction over half a century ago. The current conditions of the concrete ends of the runway require immediate evaluation and rehabilitation to ensure safety and compliance with current design and construction standards as set forth by applicable regulatory agencies, including the Federal Aviation Administration (FAA).

The touchdown pavement areas, in particular, the eastern end of the main runway (Runway 26R), is in very poor condition due to the usual westbound direction of air traffic. The expected life of this section is less than one year. Due to the poor condition of the runway, the project will require the following: 1) removal of 50 feet of existing PCC closest to the runway shoulders and excavation of fill material up to 26 inches below grade; 2) building up of AC section to proposed grade; 3) rubbilization of existing PCC in middle 50 feet of Runway 26R; 4) building up variable depth AC base layer; and 5) constructing AC surface layer with a crown on centerline and matching grades at the AC previously placed on the outer 50 feet of Runway 26R. Repairs to the westerly end of Runway 8L-26R, which will involve minor surface and joint repairs, will also be included as part of this rehabilitation project. Other project elements include the replacement of an existing service road and milling and overlaying of existing runway shoulder on the north side of Runway 26R. The site is not included on any Government Code listing of hazardous waste sites.

**UPDATE (OCTOBER 24, 2014):**

Subsequent to distribution of the Draft Mitigated Negative Declaration (MND), a comment letter received from the Center for Biological Diversity (CBD) raised several project-related issues requiring further review and consideration. The issues related to potential direct and indirect impacts to biological resources, air quality, public health and safety, climate change, cumulative impacts and presumed violations of CEQA. All of these issues have been studied and addressed in the Initial Study discussion but require further clarification and documentation in this final MND to support the environmental determination. As such, the Initial Study checklist has been modified to provide the additional information in response to comments submitted by CBD. All revisions to the environmental document (e.g. Biological Resources Mitigation Program, Project Description, Environmental Setting and the Biological Resources section of the Initial Study Checklist) made in response to comments received during public review in the area denoted by ~~strikeout~~ and underline, and do not change the conclusions of the environmental document.

In accordance with California Environmental Quality Act (CEQA) Section 15073.5 (c)(4), the addition of new information that clarifies, amplifies, or makes insignificant modification does not require recirculation as there are no new impacts and no new mitigation identified. An environmental document need only be recirculated when there is identification of new significant environmental impact or the addition of a new mitigation measure required to avoid a significant environmental impact.

- I. PROJECT DESCRIPTION: See attached Initial Study.
- II. ENVIRONMENTAL SETTING: See attached Initial Study.
- III. DETERMINATION:

The City of San Diego conducted an Initial Study which determined that the proposed project could have a significant environmental effect in the following areas(s): **Biological Resources and Historical Resources**. Subsequent revisions in the project proposal create the specific mitigation identified in Section V of this Mitigated Negative Declaration. The project as revised now avoids or mitigates the potentially significant environmental effects previously identified, and the preparation of an Environmental Impact Report will not be required.

IV. DOCUMENTATION:

The attached Initial Study documents the reasons to support the above Determination.

V. MITIGATION, MONITORING AND REPORTING PROGRAM:

**A. GENERAL REQUIREMENTS -- PART I**

**Plan Check Phase (prior to permit issuance)**

- 1. Prior to issuance of any construction permits, such as Demolition, Grading or Building, or beginning any construction related activity on-site, the Development Services Department (DSD) Director's Environmental Designee (ED) shall review and approve all Construction Documents (CD), (plans, specification, details, etc.) to ensure the MMRP requirements are incorporated into the design.
- 2. In addition, the ED shall verify that the MMRP Conditions/Notes that apply ONLY to the construction phases of the project(s) are included VERBATIM, under the heading, "ENVIRONMENTAL/MITIGATION REQUIREMENTS."
- 3. These notes must be shown within the first three (3) sheets of the construction documents in the format specified for engineering construction document templates as shown on the City website:

<http://www.sandiego.gov/development-services/industry/standtemp.shtml>

- 4. The **TITLE INDEX SHEET** must also show on which pages the "Environmental/Mitigation Requirements" notes are provided.



**B. GENERAL REQUIREMENTS – PART II**

**Post Plan Check (After permit issuance/Prior to start of construction)**

1. **PRE CONSTRUCTION MEETING IS REQUIRED TEN (10) WORKING DAYS PRIOR TO BEGINNING ANY WORK ON THIS PROJECT.** The PERMIT HOLDER/OWNER is responsible to arrange and perform this meeting by contacting the CITY RESIDENT ENGINEER (RE) of the Field Engineering Division and City staff from MITIGATION MONITORING COORDINATION (MMC). Attendees must also include the Permit holder's Representative(s), Job Site Superintendent and the following consultants:

*Archaeological Consultants and Native American Monitor*  
*Paleontological Consultants/Monitor*  
*Biological Consultants/Monitor*

**Note: Failure of all responsible Permit Holder's representatives and consultants to attend shall require an additional meeting with all parties present.**

**CONTACT INFORMATION:**

- a) The PRIMARY POINT OF CONTACT is the RE at the **Field Engineering Division (858) 627-3200**
  - b) For Clarification of ENVIRONMENTAL REQUIREMENTS, it is also required to call RE and MMC at **(858)627-3360**
2. **MMRP COMPLIANCE:** This **Project No. 358563** shall conform to the mitigation requirements contained in the associated Construction Plans and implemented to the satisfaction of the DSD's Environmental Designee (MMC) and the City Engineer (RE). The requirements may not be reduced or changed but may be annotated (i.e. to explain when and how compliance is being met and location of verifying proof, etc.). Additional clarifying information may also be added to other relevant plan sheets and/or specifications as appropriate (i.e., specific locations, times of monitoring, methodology, etc

**Note: Permit Holder's Representatives must alert RE and MMC if there are any discrepancies in the plans or notes, or any changes due to field conditions. All conflicts must be approved by RE and MMC BEFORE the work is performed.**

3. **OTHER AGENCY REQUIREMENTS:** Evidence of compliance with all other agency requirements or permits shall be submitted to the RE and MMC for review and acceptance prior to the beginning of work or within one week of the Permit Holder obtaining documentation of those permits or requirements. Evidence shall include copies of permits, letters of resolution or other documentation issued by the responsible agency.

*None required for this project*

4. **MONITORING EXHIBITS.** All consultants are required to submit, to RE and MMC, a monitoring exhibit on a 11x17 reduction of the appropriate construction plan, such as site plan, grading, landscape, etc., marked to clearly show the specific areas

including the **LIMIT OF WORK**, scope of that discipline's work, and notes indicating when in the construction schedule that work will be performed. When necessary for clarification, a detailed methodology of how the work will be performed shall be included.

5. **OTHER SUBMITTALS AND INSPECTIONS:** The Permit Holder/Owner's representative shall submit all required documentation, verification letters, and requests for all associated inspections to the RE and MMC for approval per the following schedule:

**Document Submittal/Inspection Checklist**

<i>Issue Area</i>	<i>Document submittal</i>	<i>Assoc Inspection/Approvals/Notes</i>
<i>General</i>	<i>Consultant Qualification Letters</i>	<i>Prior to Pre-construction Meeting</i>
<i>General</i>	<i>Consultant Const. Monitoring Exhibits</i>	<i>Prior to or at Pre-Construction Mtg</i>
<i>Archaeology</i>	<i>Archaeology Reports</i>	<i>Archaeology Site observation</i>
<i>Biology</i>	<i>Biology Reports</i>	<i>Biology Site observation</i>
<i>Final MMRP</i>	<i>Final monitoring reports</i>	<i>Final MMRP inspection</i>

**C. SPECIFIC MMRP ISSUE AREA CONDITIONS/REQUIREMENTS**

**BIOLOGICAL RESOURCES**

**BIO-1:** Between 14 and 30 days prior to any construction activity, the impact area shall be surveyed by a qualified biologist in accordance with current accepted protocols for burrowing owls and occupied burrows. The impact area includes any area involving construction activity that may negatively affect burrowing owls, such as grading activities and staging of equipment and materials, and the area within 150 meters of the construction activity.

In addition, no more than three (3) days prior to the start of construction activity, a pre-construction survey shall be conducted by a qualified biologist. If no burrowing owls are found, then no further avoidance measures are required. If burrowing owls are found, the following measures shall be implemented:

- No active burrowing owl burrows shall be directly impacted by the project.
- Construction activities shall occur during the non-breeding season for burrowing owls, generally considered to be September 1 to January 31, to the greatest extent feasible.
- Should active burrows be found within 150 meters of the construction activity be necessary during the breeding season, the following measures shall be required:
  - A qualified biologist shall conduct surveillance of the active burrow(s) within 24 hours of the start of construction.
  - A no-work buffer shall be established around active burrow(s), as determined by a qualified biologist in consultation with the California Department of Fish and Wildlife. The width of the buffer will be based on such factors as location of the burrow, local ambient conditions, type of project activity, intensity and duration of project activity, timing within the nesting cycle, and the species tolerance for disturbance. An effective buffer is wide enough to preclude detrimental affects to

nesting behavior that could lead to nest abandonment and mortality of fledglings from noises or vibrations generated from construction activities.

- Buffers areas shall be delineated in some fashion with suitable material for demarcating the area, as determined by the biologist in consultation with the California Department of Fish and Wildlife and the City of San Diego Airports Division in accordance with FAA rules and regulations.
- A qualified biologist shall monitor construction activities occurring within the buffer area at least twice per month during construction; to determine if any circumstances have changed that would warrant additional measures to be taken to avoid impacts to the nest(s). Should the biologist determine that additional measures are necessary; the biologist shall consult with the California Department of Fish and Wildlife prior to the implementation of such measures.
- Existing roadways and paved access ways on airport property shall be used during construction, to the greatest extent feasible.
- A worker education program shall be implemented by the construction contractor for all personnel working at the project site. Prior to any construction personnel starting work on the project site, they shall be educated about the importance of avoiding the burrow location(s) within the buffer area, and the need to minimize activities in the vicinity of the burrow(s) that would disturb the species.

### **HISTORICAL RESOURCES**

**HIST-1:** The project applicant shall comply with the City of San Diego Archeological Monitoring Program, as outlined:

#### **I. Prior to Permit Issuance or Bid Opening/Bid Award**

##### **A. Entitlements Plan Check**

1. Prior to permit issuance or Bid Opening/Bid Award, whichever is applicable, the Assistant Deputy Director (ADD) Environmental designee shall verify that the requirements for Archaeological Monitoring and Native American monitoring have been noted on the applicable construction documents through the plan check process.

##### **B. Letters of Qualification have been submitted to ADD**

1. Prior to Bid Award, the applicant shall submit a letter of verification to Mitigation Monitoring Coordination (MMC) identifying the Principal Investigator (PI) for the project and the names of all persons involved in the archaeological monitoring program, as defined in the City of San Diego Historical Resources Guidelines (HRG). If applicable, individuals involved in the archaeological monitoring program must have completed the 40-hour HAZWOPER training with certification documentation.
2. MMC will provide a letter to the applicant confirming the qualifications of the PI and all persons involved in the archaeological monitoring of the project meet the qualifications established in the HRG.
3. Prior to the start of work, the applicant must obtain written approval from MMC for any personnel changes associated with the monitoring program.

## II. Prior to Start of Construction

### A. Verification of Records Search

1. The PI shall provide verification to MMC that a site specific records search (1/4 mile radius) has been completed. Verification includes, but is not limited to a copy of a confirmation letter from South Coastal Information Center, or, if the search was in-house, a letter of verification from the PI stating that the search was completed.
2. The letter shall introduce any pertinent information concerning expectations and probabilities of discovery during trenching and/or grading activities.
3. The PI may submit a detailed letter to MMC requesting a reduction to the ¼ mile radius.

### B. PI Shall Attend Precon Meetings

1. Prior to beginning any work that requires monitoring, the Applicant shall arrange a Precon Meeting that shall include the PI, Native American consultant/monitor (where Native American resources may be impacted), Construction Manager (CM) and/or Grading Contractor, Resident Engineer (RE), Building Inspector (BI), if appropriate, and MMC. The qualified Archaeologist and Native American Monitor shall attend any grading/excavation related Precon Meetings to make comments and/or suggestions concerning the Archaeological Monitoring program with the Construction Manager and/or Grading Contractor.
  - a. If the PI is unable to attend the Precon Meeting, the Applicant shall schedule a focused Precon Meeting with MMC, the PI, RE, CM or BI, if appropriate, prior to the start of any work that requires monitoring.
2. Acknowledgement of Responsibility for Curation (CIP or Other Public Projects)  
The applicant shall submit a letter to MMC acknowledging their responsibility for the cost of curation associated with all phases of the archaeological monitoring program.
3. Identify Areas to be Monitored
  - a. Prior to the start of any work that requires monitoring, the PI shall submit an Archaeological Monitoring Exhibit (AME) (with verification that the AME has been reviewed and approved by the Native American consultant/monitor when Native American resources may be impacted) based on the appropriate construction documents (reduced to 11x17) to MMC identifying the areas to be monitored including the delineation of grading/excavation limits.
  - b. The AME shall be based on the results of a site specific records search as well as information regarding the age of existing pipelines, laterals and associated appurtenances and/or any known soil conditions (native or formation).
  - c. MMC shall notify the PI that the AME has been approved.
4. When Monitoring Will Occur
  - a. Prior to the start of any work, the PI shall also submit a construction schedule to MMC through the RE indicating when and where monitoring will occur.
  - b. The PI may submit a detailed letter to MMC prior to the start of work or during construction requesting a modification to the monitoring program. This request shall be based on relevant information such as review of final construction documents which indicate conditions such as age of existing pipe to be

replaced, depth of excavation and/or site graded to bedrock, etc., which may reduce or increase the potential for resources to be present.

5. Approval of AME and Construction Schedule  
After approval of the AME by MMC, the PI shall submit to MMC written authorization of the AME and Construction Schedule from the CM.

### III. During Construction

#### A. Monitor Shall be Present During Grading/Excavation/Trenching

1. The Archaeological Monitor shall be present full-time during all soil disturbing and grading/excavation/trenching activities which could result in impacts to archaeological resources as identified on the AME. **The Construction Manager is responsible for notifying the RE, PI, and MMC of changes to any construction activities such as in the case of a potential safety concern within the area being monitored. In certain circumstances OSHA safety requirements may necessitate modification of the AME.**
2. The Native American consultant/monitor shall determine the extent of their presence during soil disturbing and grading/excavation/trenching activities based on the AME and provide that information to the PI and MMC. If prehistoric resources are encountered during the Native American consultant/monitor's absence, work shall stop and the Discovery Notification Process detailed in Section III.B-C and IV.A-D shall commence.
3. The PI may submit a detailed letter to MMC during construction requesting a modification to the monitoring program when a field condition such as modern disturbance post-dating the previous grading/trenching activities, presence of fossil formations, or when native soils are encountered that may reduce or increase the potential for resources to be present.
4. The archaeological and Native American consultant/monitor shall document field activity via the Consultant Site Visit Record (CSV). The CSV's shall be faxed by the CM to the RE the first day of monitoring, the last day of monitoring, monthly (**Notification of Monitoring Completion**), and in the case of ANY discoveries. The RE shall forward copies to MMC.

#### B. Discovery Notification Process

1. In the event of a discovery, the Archaeological Monitor shall direct the contractor to temporarily divert all soil disturbing activities, including but not limited to digging, trenching, excavating or grading activities in the area of discovery and in the area reasonably suspected to overlay adjacent resources and immediately notify the RE or BI, as appropriate.
2. The Monitor shall immediately notify the PI (unless Monitor is the PI) of the discovery.
3. The PI shall immediately notify MMC by phone of the discovery, and shall also submit written documentation to MMC within 24 hours by fax or email with photos of the resource in context, if possible.
4. No soil shall be exported off-site until a determination can be made regarding the significance of the resource specifically if Native American resources are encountered.

C. Determination of Significance

1. The PI and Native American consultant/monitor, where Native American resources are discovered shall evaluate the significance of the resource. If Human Remains are involved, follow protocol in Section IV below.
  - a. The PI shall immediately notify MMC by phone to discuss significance determination and shall also submit a letter to MMC indicating whether additional mitigation is required.
  - b. If the resource is significant, the PI shall submit an Archaeological Data Recovery Program (ADRP) and obtain written approval of the program from MMC, CM and RE. ADRP and any mitigation must be approved by MMC, RE and/or CM before ground disturbing activities in the area of discovery will be allowed to resume. **Note: If a unique archaeological site is also an historical resource as defined in CEQA Section 15064.5, then the limits on the amount(s) that a project applicant may be required to pay to cover mitigation costs as indicated in CEQA Section 21083.2 shall not apply.**
    - (1). Note: For pipeline trenching and other linear projects in the public Right-of-Way, the PI shall implement the Discovery Process for Pipeline Trenching projects identified below under "D."
  - c. If the resource is not significant, the PI shall submit a letter to MMC indicating that artifacts will be collected, curated, and documented in the Final Monitoring Report. The letter shall also indicate that that no further work is required.
    - (1). Note: For Pipeline Trenching and other linear projects in the public Right-of-Way, if the deposit is limited in size, both in length and depth; the information value is limited and is not associated with any other resource; and there are no unique features/artifacts associated with the deposit, the discovery should be considered not significant.
    - (2). Note, for Pipeline Trenching and other linear projects in the public Right-of-Way, if significance can not be determined, the Final Monitoring Report and Site Record (DPR Form 523A/B) shall identify the discovery as Potentially Significant.

D. Discovery Process for Significant Resources - Pipeline Trenching and other Linear Projects in the Public Right-of-Way

The following procedure constitutes adequate mitigation of a significant discovery encountered during pipeline trenching activities or for other linear project types within the Public Right-of-Way including but not limited to excavation for jacking pits, receiving pits, laterals, and manholes to reduce impacts to below a level of significance:

1. Procedures for documentation, curation and reporting
  - a. One hundred percent of the artifacts within the trench alignment and width shall be documented in-situ, to include photographic records, plan view of the trench and profiles of side walls, recovered, photographed after cleaning and analyzed and curated. The remainder of the deposit within the limits of excavation (trench walls) shall be left intact.
  - b. The PI shall prepare a Draft Monitoring Report and submit to MMC via the RE as indicated in Section VI-A.

- c. The PI shall be responsible for recording (on the appropriate State of California Department of Park and Recreation forms-DPR 523 A/B) the resource(s) encountered during the Archaeological Monitoring Program in accordance with the City's Historical Resources Guidelines. The DPR forms shall be submitted to the South Coastal Information Center for either a Primary Record or SDI Number and included in the Final Monitoring Report.
- d. The Final Monitoring Report shall include a recommendation for monitoring of any future work in the vicinity of the resource.

#### IV. Discovery of Human Remains

If human remains are discovered, work shall halt in that area and no soil shall be exported off-site until a determination can be made regarding the provenance of the human remains; and the following procedures as set forth in CEQA Section 15064.5(e), the California Public Resources Code (Sec. 5097.98) and State Health and Safety Code (Sec. 7050.5) shall be undertaken:

##### A. Notification

- 1. Archaeological Monitor shall notify the RE or BI as appropriate, MMC, and the PI, if the Monitor is not qualified as a PI. MMC will notify the appropriate Senior Planner in the Environmental Analysis Section (EAS) of the Development Services Department to assist with the discovery notification process.
- 2. The PI shall notify the Medical Examiner after consultation with the RE, either in person or via telephone.

##### B. Isolate discovery site

- 1. Work shall be directed away from the location of the discovery and any nearby area reasonably suspected to overlay adjacent human remains until a determination can be made by the Medical Examiner in consultation with the PI concerning the provenience of the remains.
- 2. The Medical Examiner, in consultation with the PI, will determine the need for a field examination to determine the provenience.
- 3. If a field examination is not warranted, the Medical Examiner will determine with input from the PI, if the remains are or are most likely to be of Native American origin.

##### C. If Human Remains **ARE** determined to be Native American

- 1. The Medical Examiner will notify the Native American Heritage Commission (NAHC) within 24 hours. By law, **ONLY** the Medical Examiner can make this call.
- 2. NAHC will immediately identify the person or persons determined to be the Most Likely Descendent (MLD) and provide contact information.
- 3. The MLD will contact the PI within 24 hours or sooner after the Medical Examiner has completed coordination, to begin the consultation process in accordance with CEQA Section 15064.5(e), the California Public Resources and Health & Safety Codes.
- 4. The MLD will have 48 hours to make recommendations to the property owner or representative, for the treatment or disposition with proper dignity, of the human remains and associated grave goods.

5. Disposition of Native American Human Remains will be determined between the MLD and the PI, and, if:
  - a. The NAHC is unable to identify the MLD, OR the MLD failed to make a recommendation within 48 hours after being notified by the Commission, OR;
  - b. The landowner or authorized representative rejects the recommendation of the MLD and mediation in accordance with PRC 5097.94 (k) by the NAHC fails to provide measures acceptable to the landowner, THEN
  - c. To protect these sites, the landowner shall do one or more of the following:
    - (1) Record the site with the NAHC;
    - (2) Record an open space or conservation easement; or
    - (3) Record a document with the County.
  - d. Upon the discovery of multiple Native American human remains during a ground disturbing land development activity, the landowner may agree that additional conferral with descendants is necessary to consider culturally appropriate treatment of multiple Native American human remains. Culturally appropriate treatment of such a discovery may be ascertained from review of the site utilizing cultural and archaeological standards. Where the parties are unable to agree on the appropriate treatment measures the human remains and items associated and buried with Native American human remains shall be reinterred with appropriate dignity, pursuant to Section 5.c., above.
- D. If Human Remains are **NOT** Native American
  1. The PI shall contact the Medical Examiner and notify them of the historic-era context of the burial.
  2. The Medical Examiner will determine the appropriate course of action with the PI and City staff (PRC 5097.98).
  3. If the remains are of historic origin, they shall be appropriately removed and conveyed to the San Diego Museum of Man for analysis. The decision for internment of the human remains shall be made in consultation with MMC, EAS, the applicant/landowner, any known descendant group, and the San Diego Museum of Man.

#### **V. Night and/or Weekend Work**

- A. If night and/or weekend work is included in the contract
  1. When night and/or weekend work is included in the contract package, the extent and timing shall be presented and discussed at the precon meeting.
  2. The following procedures shall be followed.
    - a. No Discoveries  
In the event that no discoveries were encountered during night and/or weekend work, the PI shall record the information on the CSV and submit to MMC via fax by 8AM of the next business day.
    - b. Discoveries  
All discoveries shall be processed and documented using the existing procedures detailed in Sections III - During Construction, and IV – Discovery of Human Remains. Discovery of human remains shall always be treated as a significant discovery.
    - c. Potentially Significant Discoveries



- If the PI determines that a potentially significant discovery has been made, the procedures detailed under Section III - During Construction and IV-Discovery of Human Remains shall be followed.
- d. The PI shall immediately contact the RE and MMC, or by 8AM of the next business day to report and discuss the findings as indicated in Section III-B, unless other specific arrangements have been made.
- B. If night and/or weekend work becomes necessary during the course of construction
    1. The Construction Manager shall notify the RE, or BI, as appropriate, a minimum of 24 hours before the work is to begin,
    2. The RE, or BI, as appropriate, shall notify MMC immediately.
  - C. All other procedures described above shall apply, as appropriate.

## VI. Post Construction

- A. Submittal of Draft Monitoring Report
  1. The PI shall submit two copies of the Draft Monitoring Report (even if negative), prepared in accordance with the Historical Resources Guidelines (Appendix C/D) which describes the results, analysis, and conclusions of all phases of the Archaeological Monitoring Program (with appropriate graphics) to MMC via the RE for review and approval within 90 days following the completion of monitoring. **It should be noted that if the PI is unable to submit the Draft Monitoring Report within the allotted 90-day timeframe as a result of delays with analysis, special study results or other complex issues, a schedule shall be submitted to MMC establishing agreed due dates and the provision for submittal of monthly status reports until this measure can be met.**
    - a. For significant archaeological resources encountered during monitoring, the Archaeological Data Recovery Program or Pipeline Trenching Discovery Process shall be included in the Draft Monitoring Report.
    - b. Recording Sites with State of California Department of Parks and Recreation  
The PI shall be responsible for recording (on the appropriate State of California Department of Park and Recreation forms-DPR 523 A/B) any significant or potentially significant resources encountered during the Archaeological Monitoring Program in accordance with the City's Historical Resources Guidelines, and submittal of such forms to the South Coastal Information Center with the Final Monitoring Report.
  2. MMC shall return the Draft Monitoring Report to the PI via the RE for revision or, for preparation of the Final Report.
  3. The PI shall submit revised Draft Monitoring Report to MMC via the RE for approval.
  4. MMC shall provide written verification to the PI of the approved report.
  5. MMC shall notify the RE or BI, as appropriate, of receipt of all Draft Monitoring Report submittals and approvals.
- B. Handling of Artifacts
  1. The PI shall be responsible for ensuring that all cultural remains collected are cleaned and catalogued
  2. The PI shall be responsible for ensuring that all artifacts are analyzed to identify function and chronology as they relate to the history of the area; that faunal

material is identified as to species; and that specialty studies are completed, as appropriate.

- C. Curation of artifacts: Accession Agreement and Acceptance Verification
  - 1. The PI shall be responsible for ensuring that all artifacts associated with the survey, testing and/or data recovery for this project are permanently curated with an appropriate institution. This shall be completed in consultation with MMC and the Native American representative, as applicable.
  - 2. When applicable to the situation, the PI shall include written verification from the Native American consultant/monitor indicating that Native American resources were treated in accordance with state law and/or applicable agreements. If the resources were reinterred, verification shall be provided to show what protective measures were taken to ensure no further disturbance occurs in accordance with Section IV – Discovery of Human Remains, Subsection C.
  - 3. The PI shall submit the Accession Agreement and catalogue record(s) to the RE or BI, as appropriate for donor signature with a copy submitted to MMC.
  - 4. The RE or BI, as appropriate shall obtain signature on the Accession Agreement and shall return to PI with copy submitted to MMC.
  - 5. The PI shall include the Acceptance Verification from the curation institution in the Final Monitoring Report submitted to the RE or BI and MMC.
- D. Final Monitoring Report(s)
  - 1. The PI shall submit one copy of the approved Final Monitoring Report to the RE or BI as appropriate, and one copy to MMC (even if negative), within 90 days after notification from MMC of the approved report.
  - 2. The RE shall, in no case, issue the Notice of Completion until receiving a copy of the approved Final Monitoring Report from MMC which includes the Acceptance Verification from the curation institution.

## VI. PUBLIC REVIEW DISTRIBUTION:

Draft copies or notice of this Mitigated Negative Declaration were distributed to:

### Federal Government

- Federal Aviation Administration (1)
- Naval Facilities Engineering Command Southwest Real Estate (8)
- Naval Facilities Engineering Command Southwest Environmental Business Line (12)
- US Army Corps of Engineering (16)
- US Environmental Protection Agency (19)
- US Border Patrol (22)
- US Fish and Wildlife Service (23)

### State Government

- State Clearinghouse (46)
- Caltrans District 11 (31)
- CA Department of Fish and Wildlife (32)
- CalRecycle (35)
- California Environmental Protection Agency (37A)

California Department of Toxic Substance Control (39)  
 CA Natural Resources Agency (43)  
 CA Regional Water Quality Control Board (44)  
 Caltrans Division of Aeronautics (51A)  
 Native American Heritage Commission (56)

County Government  
 Department of Environmental Health (75)  
 Department of Environmental Health Land and Water Quality Division (76)

City of San Diego  
 Mayor's Office  
 Councilmember David Alvarez  
 City Attorney  
 Shannon Thomas  
 Development Services Department  
 Rebecca Malone  
 Myra Herrmann  
 Helene Deisher  
 Gary Geiler  
 Planning Department  
 Theresa Millette  
 Jeanne Krosch  
 Historical Resources Board (87)  
 Public Works Department  
 Jihad Sleiman  
 Darren Genova  
 Fire and Life Safety Services (79)  
 Fire Chief Javier Mainar  
 Michelle Abella-Shon  
 Brian Fennessy  
 Otay Mesa – Nestor Branch Library (81W)  
 Library Department – Government Documents (81)  
 Real Estate Assets Dept. (85)


Others  
 Otay Mesa Nestor Community Planning Group (228)  
 Otay Mesa Chamber of Commerce (231A)  
 Otay Mesa Planning Committee (235)  
 Janet Vadakkumcherry (236)  
 Sierra Club (165)  
 San Diego Audubon Society (167)  
 Mr. Jim Peugh (167A)  
 California Native Plant Society (170)  
 Endangered Habitats League (182A)  
 MMC, MS-1102B (77A)  
 Carmen Lucas (206)  
 South Coastal Information Center (210)  
 San Diego Archaeological Center (212)

Save Our Heritage Organisation (214)  
Ron Christman (215)  
Clint Linton (215B)  
Frank Brown – Inter-Tribal Cultural Resources Council (216)  
Campo Band of Mission Indians (217)  
San Diego County Archaeological Society, Inc. (218)  
Kumeyaay Cultural Heritage Preservation (223)  
Kumeyaay Cultural Repatriation Committee (225)  
Native American Distribution (225 A-S) (Public Notice & Location Map Only)

VII. RESULTS OF PUBLIC REVIEW:

- ( ) No comments were received during the public input period.
- ( ) Comments were received but did not address the draft Mitigated Negative Declaration finding or the accuracy/completeness of the Initial Study. No response is necessary. The letters are attached.
- (X) Comments addressing the findings of the draft Mitigated Negative Declaration and/or accuracy or completeness of the Initial Study were received during the public input period. The letters and responses follow.

Copies of the ~~draft~~ Final Mitigated Negative Declaration, the Mitigation, Monitoring and Reporting Program and any Initial Study material are available in the office of the Development Services Department for review, or for purchase at the cost of reproduction.

  
Myra Herrmann, Senior Planner  
Development Services Department

July 3, 2014  
Date of Draft Report

October 24, 2014  
Date of Final Report

Analyst: **Rebecca Malone**

Attachments: Figure 1 – Regional Location Map  
Figure 2 – Project Site  
Figure 3 – Project Components  
Figure 4 - Vernal Pool Watershed with BMP Overview  
Figure 5 - Vernal Pool Watershed Boundary Detail  
Initial Study Checklist - Revised  
Responses to Comments  
Revised Submittal Memo: Estimated Construction Crews and Equipment used to Calculate Construction Emissions (HNTB, August 25, 2014)  
Brown Field Municipal Airport Runway Rehabilitation Project: Burrowing Owl Survey (July 2014)

LETTER

RESPONSE



Edmund G. Brown Jr.  
Governor

STATE OF CALIFORNIA  
Governor's Office of Planning and Research  
State Clearinghouse and Planning Unit



Ken Alty  
Director

August 4, 2014

Rebecca Malone  
City of San Diego  
1222 First Avenue, MS-501  
San Diego, CA 92101

Subject: Brown Field Municipal Airport Runway 8L-26R Rehabilitation Project  
SCH#: 2014071015

Dear Rebecca Malone:

A-1  
The State Clearinghouse submitted the above named Mitigated Negative Declaration to selected state agencies for review. The review period closed on August 1, 2014, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Scott Morgan  
Director, State Clearinghouse

1400 TENTH STREET P.O. BOX 8044 SACRAMENTO, CALIFORNIA 95812-5044  
TEL (916) 445-0613 FAX (916) 523-9918 www.opr.ca.gov

STATE CLEARINGHOUSE (AUGUST 4, 2014)

A-1 Comment acknowledged.

Document Details Report  
State Clearinghouse Data Base

SCH# 2014071015  
Project Title Brown Field Municipal Airport Runway 8L-26R Rehabilitation Project  
Lead Agency San Diego, City of

Type MND Mitigated Negative Declaration  
Description Mayoral Approval for the rehabilitation of Runway 8L-26R (Project). Runway 8L-26R measures 7,972 feet in length and 150 feet in width, and is comprised of both Portland Cement Concrete (PCC) and Asphalt (AC) pavements. Review of historic aerial photographs suggests that the existing paving was put in place in 1953. In the early 1990's approximately 5,500 feet of the runway's middle section was milled and overlaid, but the end portions of the Runway have had no major rehabilitation work since its construction over half a century ago. The current conditions of the concrete ends of the runway require immediate evaluation and rehabilitation to ensure safety and compliance with current design and construction standards as set forth by applicable regulatory agencies, including the Federal Aviation Administration.

Lead Agency Contact

Name Rebecca Malone  
Agency City of San Diego  
Phone 619 445 5371 Fax  
email  
Address 1222 First Avenue, MS-501  
City San Diego State CA Zip 92101

Project Location

County San Diego  
City San Diego  
Region  
Lat / Long 32° 56' N / 116° W  
Cross Streets Clay Mesa Rd / Heritage Rd  
Parcel No. 646-05-002, 003, 004, 646-06-003, 004, 006  
Township 18S Range 1 Section 27/28 Base SBB&M

Proximity to:

Highways SR-905, 125  
Airports Brown Field, Tijuana Int'l  
Railways  
Waterways Otay River  
Schools San Ysidro  
Land Use  
Z: Project site is Un-zoned  
GPLUD: Institutional and Semi-Public Facility

Project Issues Archaeologic-Historic; Biological Resources

Reviewing Agencies Resources Agency; Department of Fish and Wildlife, Region 5; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; Caltrans, Division of Aeronautics; California Highway Patrol; Caltrans, District 11; Air Resources Board; Regional Water Quality Control Board, Region 9; Department of Toxic Substances Control; Native American Heritage Commission

Date Received 07/03/2014 Start of Review 07/03/2014 End of Review 08/01/2014

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LETTER

RESPONSE



**San Diego County Archaeological Society, Inc.**

Environmental Review Committee

24 July 2014

To: Ms. Rebecca Malone  
Development Services Department  
City of San Diego  
1222 First Avenue, Mail Station 501  
San Diego, California 92101

Subject: Draft Mitigated Negative Declaration  
Brown Field Municipal Airport Runway 8L-26R Rehabilitation Project

Dear Ms. Malone:

I have reviewed the subject DMND on behalf of this committee of the San Diego County Archaeological Society.

B-1

Based on the information contained in the initial study and DMND, we concur with the impact analysis and mitigation measures as proposed.

SDCAS appreciates being afforded this opportunity to participate in the City's environmental review process.

Sincerely,

  
James W. Royle, Jr., Chairperson  
Environmental Review Committee

cc: SDCAS President  
File

P.O. Box 81108 San Diego, CA 92138-1108 (619) 538-0935

**SAN DIEGO COUNTY ARCHAEOLOGICAL SOCIETY (JULY 24, 2014)**

**B-1** Comment acknowledged.



PO Box 908  
Alpine, CA 91903  
#1 Viejas Grade Road  
Alpine, CA 91901

Phone: 619/453810  
Fax: 619/453337  
viejas.com

August 4, 2014

Rebecca Malone  
Environmental Planner  
City of San Diego Development Services Center  
1222 First Ave., MS501  
San Diego, CA 92101

RE: Brown Field Municipal Airport Runway 8L-26 Rehabilitation Project

Dear Ms. Malone,

The Viejas Band of Kumeyaay Indians ("Viejas") has reviewed the proposed project and at this time we have determined that the project site is has cultural significance or ties to Viejas. Viejas Band request that a Native American Cultural Monitor be on site for all initial ground disturbing activities to inform us of any new developments such as inadvertent discovery of cultural artifacts, cremation sites, or human remains. Please call Julie Hagen for scheduling at 619-659-2339 or email [jhagen@viejas-nsn.gov](mailto:jhagen@viejas-nsn.gov). Thank you

Sincerely,

VIEJAS BAND OF KUMEYAAY INDIANS

VIEJAS TRIBAL GOVERNMENT (AUGUST 4, 2014)

C-1 Comment noted. A Native American (Kumeyaay) monitor will be on-site to monitor any ground disturbing activities associated with project implementation.

RINCON BAND OF LUISENO INDIANS (JULY 11, 2014)



**RINCON BAND OF LUISEÑO INDIANS****Culture Committee**

1 W. Central Road, Valley Center, California 92082  
 (760) 297-2635 or (760) 297-2611 & (760) 297-7400; 730-8800



July 11, 2014

Rebecca Malone  
 City of San Diego  
 Development Services Center  
 1222 First Avenue, MS 501  
 San Diego, CA 92101

**Re: Brown Field Municipal Airport Runway 8L-26R Rehabilitation Project**

Dear Ms. Malone:

This letter is written on behalf of the Rincon Band of Luiseño Indians. Thank you for inviting us to submit comments on Brown Field Municipal Airport Runway 8L-26R Rehabilitation Project. Rincon is submitting these comments concerning your projects potential impact on Luiseño cultural resources.

*D-1* The Rincon Band has concerns for impacts to historic and cultural resources and the finding of items of significant cultural value that could be disturbed or destroyed and are considered culturally significant to the Luiseño people. This is to inform you, your identified location is not within the Luiseño Aboriginal Territory. In fact, your project falls within Kumeyaay Aboriginal Territory. We recommend that you locate a tribe within the project area to receive direction on how to handle any inadvertent findings according to their customs and traditions.

If you would like information on tribes within your project area, please contact the Native American Heritage Commission and they will assist with a referral. If for some reason you are unable to locate an interested tribe please notify our office at (760) 297-2635 and we will be happy to assist you in the matter.

Thank you for the opportunity to protect and preserve our cultural assets.

Sincerely,

Rose Duro  
 Rincon Culture Committee Chairman

Bo Mazzetti  
 Tribal Chairman

Stephanie Spencer  
 Vice Chairman

Steve Stallings  
 Council Member

Laurie E. Gonzalez  
 Council Member

Frank Mazzetti III  
 Council Member

**D-1** Please see Response to Comment No. C-1. A Native American monitor will be on-site to monitor any ground disturbing activities associated with project implementation.

**CENTER FOR BIOLOGICAL DIVERSITY (AUGUST 4, 2014)**



Preserve Wild Santee

August 4, 2014

VIA Electronic Mail and USPS

Rebecca Malone  
Environmental Planner  
City of San Diego Development Services Center  
1222 First Avenue, MS 501  
San Diego, CA 92101  
[DSDEAS@sanidiego.gov](mailto:DSDEAS@sanidiego.gov)

RE: Brown Field Municipal Airport Runway 8L-26R Rehabilitation Project Mitigated Negative Declaration

Dear Ms. Malone,

These comments are submitted on behalf of the Center for Biological Diversity and Preserve Wild Santee on the Brown Field Municipal Airport Runway 8L-26R Rehabilitation Project ("Project") Draft Mitigated Negative Declaration. The Project will rehabilitate a runway at the Brown Field Municipal Airport ("Brown Field") in San Diego by removing concrete, excavating fill material, grading, and building up asphalt. CITY OF SAN DIEGO, BROWN FIELD MUNICIPAL AIRPORT RUNWAY 8L-26R REHABILITATION PROJECT INITIAL STUDY 1-2 (2013) ("IS"). Despite the purported limited area of construction and temporary nature of the Project, the Project will result in significant impacts to biological and other resources on Environmentally Sensitive Lands. See CITY OF SAN DIEGO, METROPOLITAN AIRPARK PROJECT FINAL ENVIRONMENTAL IMPACT REPORT 2-5 (2013) ("Airpark EIR").

The Project will have both individually and cumulatively considerable significant impacts on biological resources, air quality, and climate change. The City has failed to disclose many of these impacts, as required by the California Environmental Quality Act ("CEQA"), and its proposed mitigation measures cannot adequately minimize these significant impacts. See Cal. Code Regs. tit. 14, § 15144 ("CEQA Guidelines"). Therefore, the City must prepare an

Alaska • Arizona • California • Florida • Illinois • Indiana • Iowa • Kansas • Kentucky • Louisiana • Maine • Maryland • Massachusetts • Michigan • Minnesota • Missouri • Montana • Nebraska • Nevada • New Hampshire • New Jersey • New Mexico • New York • North Carolina • North Dakota • Ohio • Oklahoma • Oregon • Pennsylvania • Rhode Island • South Carolina • South Dakota • Texas • Utah • Vermont • Virginia • Washington • Washington, DC • Wisconsin • Wyoming

Jonathan Evans, Toxics and Endangered Species Campaign Director & Staff Attorney  
351 California St., Ste. 600 • San Francisco, CA 94104  
tel: (415) 436-9682 x 318 fax: (415) 436-9683 email: [jevans@biologicaldiversity.org](mailto:jevans@biologicaldiversity.org)  
[www.BiologicalDiversity.org](http://www.BiologicalDiversity.org)

E-1 These first statements are introductory and do not require response. Responses to specific comments included in this letter are provided below.

Environmental Impact Report ("EIR") to fully evaluate the impacts of the Project on the environment.

E-1

The Center for Biological Diversity is a non-profit environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental law. The Center for Biological Diversity has over 775,000 members and e-activists throughout California and the western United States, including residents of San Diego County where the Project is located. Preserve Wild Santece is a non-profit environmental organization that engages in land use decisions to produce a more healthy community with cleaner air, greater recreational opportunities, more scenic views, less traffic congestion and more informed decisions from our public officials.

**I. Legal Background**

The Legislature enacted CEQA to "[e]nsure that the long-term protection of the environment . . . shall be the guiding criterion in public decisions." Cal. Pub. Res. Code § 21001(d); see also *No Oil, Inc. v. City of Los Angeles*, 529 P.2d 66, 69 (Cal. 1974). CEQA must be interpreted to "afford the fullest possible protection to the environment." *Mejia v. City of Los Angeles*, 29 Cal. Rptr. 3d 788, 792 (Cal. Ct. App. 2005) (quoting *Mountain Lion Found. V. Fish & Game Comm'n*, 939 P.2d 1280, 1284 (Cal. 1997)). The purpose of an EIR is "to demonstrate to an apprehensive citizenry that the agency has in fact analyzed and considered the ecological implications of its action." *No Oil*, 529 P.2d at 78.

E-2

"[W]henver it can be fairly argued on the basis of substantial evidence that the project may have significant environmental impact," an agency must prepare an EIR. *No Oil*, 529 P.2d at 70; Cal. Pub. Res. Code, §§ 21082.2(d), 21100, 21151; Cal. Code Regs. tit. 14, § 15064(a)(1). This "fair argument standard establishes a low threshold" for the preparation of an EIR. *Consol. Irrigation Dist. v. City of Selma*, 138 Cal. Rptr. 3d 428, 444 (Cal. Ct. App. 2012). If "any aspect" of a project may cause a significant effect on the environment, "either individually or cumulatively . . . regardless of whether the overall effect of the project is adverse or beneficial," an agency must prepare an EIR. Cal. Code Regs. tit. 14, § 15063(b)(1).

Negative declarations are reserved for projects that will not have a significant effect on the environment. Cal. Pub. Res. Code § 21080; Cal. Code Regs. tit. 14, § 15070. If a project will have significant impacts on the environment but revisions would either avoid the impact or mitigate the effects so that the project will no longer have a significant impact, then an agency can prepare a mitigated negative declaration ("MND"). Cal. Pub. Res. Code §§ 21064.5, 21080I.

**II. The Project Will Have Significant Impacts on the Environment and Therefore, an EIR Is Required**

**A. The City Failed to Disclose the Project's Significant Impacts**

**1. The City Failed to Disclose the Significant Impacts to Biological Resources, Air Quality, and Climate Change**

E-1 These first statements are introductory and do not require response. Responses to specific comments included in this letter are provided below.

E-2 The statements included in Section I provide legal background on CEQA and do not require response. Responses to specific comments detailed in Section II of this letter are provided below.

ii. Impacts to Special-Status Species and Biological Resources Will Be Significant

Substantial evidence exists before the public agency that the Project will have a significant impact on special status species. Negative declarations are appropriate when there is no substantial evidence in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment. Cal. Pub. Res. Code §§ 21064.5, 21080; Cal. Code Regs. tit. 14, §§ 15064(h)(2), 15070, 15369.5. The requirement to disclose and analyze impacts to special status species is founded in CEQA's principles to "[p]revent the elimination of fish and wildlife species due to man's activities, insure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for future generations representations of all plant and animal communities." Cal. Pub. Res. Code § 21001. It is in this context that the Supreme Court found that a "potential substantial impact on endangered, rare or threatened species is per se significant." *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova*, 150 P.3d 709, 732 (2007) (quoting Cal. Code Regs. tit. 14, § 15065(a)(1)). The comments below present evidence that the Project will result in a significant impact, requiring an EIR.

In this instance, an EIR must be prepared to address the direct and cumulative impacts to threatened, endangered, and sensitive species from potential construction and operation resulting from the Project. The site contains habitat for several sensitive species including the San Diego fairy shrimp, San Diego button celery, burrowing owl, Coastal California gnatcatcher, peregrine falcon, and loggerhead shrike, among others. These species qualify as "Endangered, Rare, or Threatened Species" pursuant to CEQA Guidelines section 15380. The MND improperly dismisses impacts to these special-status species as insignificant. As discussed below, the direct impacts of the Project disclosed by the MND would be significant. The MND omits any discussion of indirect and cumulative impacts to these species, which would also be significant. The City cannot satisfy CEQA's requirement to fully disclose, analyze, avoid, and mitigate impacts on the basis of the MND's cursory or non-existent analysis of impacts to the San Diego fairy shrimp, San Diego button celery, burrowing owl, Coastal California gnatcatcher, peregrine falcon, loggerhead shrike, and other sensitive species.

The Project will substantially restrict the range of endangered, rare and threatened species. Contrary to CEQA Guidelines and relevant case law, the MND erroneously concludes that the impacts to sensitive species will be less than significant. The Project will have significant impacts on the habitat of endangered, rare, and threatened species. The Legislature and the Secretary of Resources have determined that certain kinds of impacts are necessarily significant. "Mandatory findings of significance" are required for the following circumstances: "the project has the potential to . . . substantially reduce the habitat of a fish or wildlife species . . . [or] substantially reduce the number or restrict the range of an endangered, rare or threatened species." Cal. Code Regs. tit. 14, § 15065 (emphasis added). Additionally, the State CEQA Guidelines Appendix G defines an impact significant if it would "[h]ave a substantial adverse effect, either directly or through habitat modification, on any species" recognized as special status by local, state, or federal laws. Cal. Code Regs. tit. 14, app. G § 1V(b). Courts have determined that impacts to habitat for rare flora and fauna are significant under section 15065

E-3

E-3 The commenter states that impacts to biological resources will be significant, however no evidence is provided to support the statement. The project involves the rehabilitation of existing paved areas of Runway 8L/26R. Construction methods for this rehabilitation project generally consist of removing the existing Portland cement concrete (PCC) runway surface from edge to edge and excavating within the existing footprint, building back up with the new asphalt concrete (AC) base layer and constructing the new AC surface layer to design specifications. The PCC materials will be rubbilized on-site. This work is within the existing runway footprint and does not extend beyond the Runway Safety Areas (RSA) surrounding the project APE. As noted in the MND, focused burrowing owl surveys were conducted for the Project which identified 14 active burrows within the airport property. While none of the observed owls or burrows are within the runway rehabilitation APE, two breeding pairs (BF-BUOW-06 & BF-BUOW-07) were observed in proximity to, but well outside of the staging area. This represented a potential indirect impact during construction-related activities and therefore mitigation was identified and presented to the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife for concurrence prior to release of the draft MND for public review.

The commenter also states that the MND fails to analyze the direct, indirect and cumulative effects of the project. Please see Sections I through XVIII of the MND for a discussion on direct and cumulative impacts.

The commenter also states that the project site contains habitat for a number of sensitive species, including fairy shrimp and button celery. As stated in the MND, there is no riparian habitat within or adjacent to the project site; and, therefore, no direct impacts to sensitive species such as the San Diego fairy shrimp and San Diego button-celery.

and require full evaluation and recirculation prior to approval. *Mira Monte Homeowners Ass'n v. City of Ventura*, 212 Cal. Rptr. 127, 131 (Cal. Ct. App. 1985).

ii. San Diego Fairy Shrimp and San Diego Button-Celery

Development like the Project in southern California has proven devastating to the San Diego fairy shrimp, and the relatively flat vernal pool habitat that it relies upon has been a prime target for development. As a result "97 percent of its vernal pool habitat has been destroyed" and remaining populations "face severe, imminent threats that could result in substantial habitat losses and extirpations in the future." 62 Fed. Reg. at 4925, 4929 (Feb. 3, 1997). "The loss of vernal pool habitat is now nearly total in Los Angeles and Orange counties." *Id.* at 4926. The San Diego fairy shrimp has fared no better in its namesake county where the cumulative loss of vernal pool habitat is estimated at 95 to 97 percent. U.S. FISH & WILDLIFE SERV., RECOVERY FOR VERNAL POOLS OF SOUTHERN CALIFORNIA 45 (1998); 62 Fed. Reg. at 4926. San Diego fairy shrimp on Otay Mesa have faced similar threats that "have continually disturbed this area and have destroyed 78 percent of the vernal pools once located on Otay Mesa." 62 Fed. Reg. at 4932. The pace of vernal pool habitat destruction on Otay Mesa increased in the late twentieth century, "where over 40 percent of vernal pools were destroyed between 1979 to 1990." 65 Fed. Reg. 12,181, 12,182 (Mar. 8, 2000). Significant portions of Otay Mesa have been designated for development and many of those projects would eliminate San Diego fairy shrimp habitat. 62 Fed. Reg. at 4932-33.

E-4 Considering the historical loss of habitat, Fish and Wildlife Service ("FWS") properly determined that all remaining vernal pool habitat, whether occupied or not, must be protected if the species is ever to recover. See, e.g., 72 Fed. Reg. 70,648, 70,666 (Dec. 12, 2007) (Recovery "calls for the preservation and enhancement of existing vernal pools that are within the extant range of the San Diego fairy shrimp."). In 1997 FWS found that "sizeable areas of vernal pool habitat occur[] on the northeastern corner of Otay Mesa" where the Project is located. 62 Fed. Reg. at 4932. FWS further noted that Otay Mesa contains "vernal pools known to be inhabited by the San Diego fairy shrimp" that were being adversely impacted by human threats. *Id.* at 4937.

One of the physical or biological features essential to the conservation of the San Diego fairy shrimp is the vernal pool watershed. 16 U.S.C. § 1532(5)(A)(i)(I); 72 Fed. Reg. at 70,665. FWS explains the need to protect the watershed as a vital "matrix" essential for the conservation of the San Diego fairy shrimp. 72 Fed. Reg. 70,665 ("The matrix of vernal pools/ephemeral wetlands, upland habitats . . . in combination create ecologically functional units."). Because of the delicate hydrology of vernal pools and the accompanying sensitivity of San Diego fairy shrimp to the impacts to water quality and temperature, it is necessary to maintain a healthy vernal pool watershed for their conservation. See, e.g., 72 Fed. Reg. 70,648 (vernal pool ecosystems are best described from a watershed perspective because of hydrological needs); *id.* at 70,664 (protection of the upland watershed habitat is important to protect hydrology and to "buffer the vernal pools from edge effects" such as those caused by nearby urbanization); *See, Cir. For Biological Diversity v. Bartel*, 470 F. Supp. 2d 1118, 1127 (S.D. Cal. 2006).

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There could be potential indirect impacts to the watershed associated with vernal pool number BFVP-5. While not initially described in the draft MND, construction activities could temporarily impact the northern tip of the watershed associated with (BFVP-5) which exists in the same location as the eastern portion of the existing Runway 8L/26R which will not be changed or expanded; the vernal pool basin is located approximately 1,700 feet to the southeast of the project area; BMP's will be in place to avoid any potential runoff; the temporary impact will occur in an area that is likely not contributing a significant amount of hydrology to the vernal pool basin; and the temporary impact represents less than a sixth (6<sup>th</sup>) of the mapped watershed for BFVP-5. This impact would be less than significant. This information has been incorporated into the Biological Resources Section of the Initial Study Checklist and two figures showing the proximity of the vernal pool basin and watershed to the project APE (Figures 4 & 5) have been added.

E-4 The commenter states that the project would result in direct and indirect impacts to San Diego Fairy Shrimp and San Diego Button Celery; however no evidence is provided to support the statement. As stated in Response to Comment No. E-3, the project could temporarily impact the watershed for BFVP-5. In the 2011 Biology Survey Report prepared by Sage Institute for the Metropolitan Airpark Project, vernal pool BFVP-5 was described as an 1,800 square-foot road rut pool where a low density of fairy shrimp cysts were found (less than five cysts for the entire pool) but no adults. No San Diego button-celery was found in BFVP-5.

Enhanced Best Management Practices (BMPs) have been incorporated into the project to further protect the watershed from runoff, prior to, during and post-construction. The total mapped watershed for this vernal pool basin is 24.3 acres, out of which 4.1 acres would be temporarily affected by repairs to the existing runway. This results in a temporary indirect impact to 17 percent of the mapped watershed (less than a sixth) and is considered a less than significant impact. The access route for the project will follow an existing taxiway which runs adjacent to BFVP-2. This is an existing condition and no impacts (direct or indirect) to the

Critical habitat for the San Diego fairy shrimp includes accompanying upland habitats and watersheds that are necessary for the conservation of the species. See e.g., 72 Fed. Reg. at 70,650 (expert comments emphasizing the need to include "upland habitat and functional watersheds" for the conservation of San Diego fairy shrimp), 70,664 (protection of adjacent upland habitat is "important to the vernal pool ecosystem"). "Vernal pool habitats derive most of their nutrients from detritus (decaying matter) washed into pools from adjacent uplands, and these nutrients provide the foundation for a vernal pool aquatic community's food chain." *Homa Builders Ass'n of N. Cal. v. U.S. Fish & Wildlife Serv.*, No. Civ. S-05-0629 WBS-GGH, 2006 U.S. Dist. LEXIS 80255 at \*52-53 (E.D. Cal. Nov. 2, 2006).

FWS's designation of the vernal pool watershed for critical habitat was emphasized by scientific peer review experts on the San Diego fairy shrimp: "One peer reviewer stressed the importance of viewing vernal pools as ecosystems with several important components, such as intact upland habitat and functional watersheds that contribute to the health and productivity of the vernal pool ecosystem and to the conservation of the San Diego fairy shrimp." 72 Fed. Reg. at 70,650. In some cases vernal pools in a complex can have "substantial watersheds" that cover a broad area to fill vernal pools. *Id.* at 70,649.

The Project will result in direct and indirect impacts to vernal pool watersheds of known vernal pools including BFVP-5 and potentially BFVP-2 that contain San Diego fairy shrimp. Airpark EIR at 5.6-17, fig. 5.6-3. Watersheds are a critical component of the essential biological and physical needs of San Diego fairy shrimp. 72 Fed. Reg. at 70,665. The Project's construction in the vernal pool watershed and disturbance in adjacent areas, which could wash into the watershed, result in direct and indirect impacts to vernal pool species that are completely omitted from discussion in the MND. Furthermore, critical habitat for the San Diego Fairy Shrimp is located at the Brown Field Municipal Airport. 72 Fed. Reg. at 70,674; CENTER FOR BIOLOGICAL DIVERSITY, SAN DIEGO FAIRY SHRIMP CRITICAL HABITAT (2014) ("Fairy Shrimp CH"). The San Diego button celery is also an endangered species known to exist on vernal pools in the Project area. Airpark EIR at 5.6-17, fig. 5.6-3. Nowhere does the MND discuss these potential impacts or even disclose the existence of listed vernal pool species. The failure to analyze a potential impact to ESA listed species violates CEQA. *Vineyard Area Citizens for Responsible Growth*, 150 P.3d at 732.

ii. Other Special-Status Species

The MND's failure to discuss a whole range of special status species known to occur in the Project area runs contrary to CEQA. The Environmental Impact Report for the Brown Field Metropolitan Airpark Project at the same location as the current Project documented fourteen species with a "High Potential" to occur in or near the Project Area and three species with a "Medium Potential" to occur in or near the Project Area. Airpark EIR at 5.6-20-21. The MND's "inadequate consideration and documentation . . . of existing environmental conditions," such as sensitive wildlife species, renders it "impossible . . . to accurately assess the impacts the project would have on wildlife and wildlife habitat or to determine appropriate mitigation." *San Joaquin Riparian/Wildlife Rescue Ctr. v. Cnty. Of Stanislaus*, 27 Cal. App. 4th 713, 722 (Cal. Ct. App. 1994).

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vernal pool basin or fairy shrimp would result from the access use. This information has been added to the Initial Study Checklist (Item 9 – Surrounding land uses and setting and Biological Resources Section)

**E-5** Table 5.6-3 from the Metropolitan Air Park Project FEIR was reviewed in order to provide responses to this comment. Based on review of the table, staff concurs that many of the Special-Status species were observed or mapped within the Metropolitan Air Park project study area in 2011; however, the only species that has been observed in proximity to the project APE; specifically proximate to the staging area, is the burrowing owl. Because it is possible that at any given time, migratory birds or small reptiles listed on the table will forage in the adjacent non-native grasslands, this information has been incorporated into the existing conditions discussion of baseline at the time project was deemed complete in accordance with CEQA.

**E-6** The commenter states that the project will result in significant impacts because of its conflicts with the MSCP; however no evidence is provided to support the statement. As stated in the Initial Study Checklist, the project will not have a direct impact on burrowing owls, burrows or associated habitat. Although not clearly stated in the project scope but is stated in mitigation measure BIO-1, construction activities are intended to occur during the non-breeding season for burrowing owls (generally considered to be September 1 to January 31). This detail has been added to the project description. Additionally, construction is limited to Runway 8L-26R where no burrowing owls or burrows have been observed. However, staging for the project is in proximity to mapped burrows and owl observation areas and therefore the mitigation measure noted in this comment is intended to reduce the potential for any impacts on this species in the event that construction is necessary during the breeding season. This measure includes a provision for a no-work buffer and additional consultation with the California Department of Fish and Wildlife to develop additional measures for the protection of this species. This mitigation measure was developed by a qualified biologist and presented to the U.S. Fish and Wildlife Service and the California

b. The Project Will Conflict With Local Plans Protecting Biological Resources

The Project will result in significant impacts because of its conflicts with the Multiple Species Conservation Plan ("MSCP") and local plans and ordinances implementing the MSCP. Under CEQA, conflicts with applicable planning documents, particularly those adopted for the purpose of avoiding or mitigating environmental impacts, constitute adverse impacts that a public agency must analyze and mitigate. *Pocket Protectors v. City of Sacramento*, 21 Cal. Rptr. 3d 791, 810-11 (Cal. Ct. App. 2004).

The City of San Diego, County of San Diego, U.S Fish and Wildlife Service, California Department of Fish and Game, and other local jurisdictions collaborated in the late 1990s to develop the MSCP, a comprehensive long-term plan that addresses the needs of multiple species by identifying key areas for preservation as open space that link core biological areas into regional wildlife preserve. The Project is within the City's MSCP Subarea Plan and must comply with the MSCP. IS at 8. The MSCP requires that impacts to burrowing owls "must be avoided to the maximum extent practicable." CITY OF SAN DIEGO, MULTIPLE SPECIES CONSERVATION PROGRAM app. A, at 161 (1998) ("MSCP Excerpt"). The MND claims that mitigation measures will assure compliance with the MSCP. "With implementation of Mitigation Measure BIO-1, the project would not be in conflict with the terms, conditions, and provisions of the MSCP as required; and therefore, impacts would be less than significant." IS at 8. Mitigation Measure BIO-1 calls for pre-construction surveys, minimizing construction during the breeding season "to the greatest extent feasible," and requirements for construction occurring during the breeding seasons such as a buffer to be "determined by a qualified biologist," consultation with the California Department of Fish and Wildlife, and worker education. CITY OF SAN DIEGO, BROWN FIELD MUNICIPAL AIRPORT RUNWAY 8L-26R REHABILITATION PROJECT DRAFT MITIGATED NEGATIVE DECLARATION 4 (2014) ("MND"). These minimal standards fail to assure that impacts to burrowing owls are avoided to the "maximum extent practicable."

First, the MND fails to discuss other mitigation requirements in the MSCP such as the following:

any impacted individuals must be relocated out of the impact area using passive or active methodologies approved by the wildlife agencies; mitigation for impacts to occupied habitat at the Subarea Plan specified ratio must be through the conservation of occupied burrowing owl habitat or conservation of lands appropriate for restoration management and enhancement of burrowing owl nesting and foraging requirements.

MSCP excerpt at 161. There is no discussion or provision for the relocation of impacted individuals in the MND. There is no mitigation for impacts to occupied habitat at any ratio for the conservation of occupied burrowing owl habitat or restoration lands. The MND acknowledges that the Project may impact lands occupied during both the breeding and non-

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Department of Fish and Wildlife for concurrence prior to release of the draft MND for public review. Also see Response to Comment No. E-3 and E-16.

E-7 See Response to Comment No. E-5.

E-8 The commenter noted that construction emissions for the Project were not quantitatively analyzed and disclosed in the Initial Study. Quantitative emissions are presented in Table 1 below for construction of the Project. Based on the linear nature of the runway rehabilitation, the Sacramento Metropolitan Air Quality Management District (SMAQMD) Roadway Construction Model (version 7.1.5.1), which incorporates the latest EMFAC2011 and OFFROAD2011 emission factors, was used for the following phases of construction: Demolition, Grading, Site Preparation, Paving and Striping.

TABLE 1  
UNMITIGATED CONSTRUCTION EMISSIONS

Phase	Estimated Emissions <sup>a</sup>				
	ROG	NO <sub>x</sub>	CO	Total PM10 <sup>b</sup>	Total PM2.5 <sup>b</sup>
Demolition	3.6	26.2	17.6	4.2	2.4
Grading	7.7	115.3	34.0	6.8	4.5
Site Preparation	2.8	24.6	13.8	3.7	1.9
Paving and Striping	6.1	59.6	31.4	3.6	3.2
Maximum Daily Emissions (lbs/day)	7.7	115.3	34.0	6.8	4.5
Daily Significance Threshold	137	250	550	100	None
Significant Impact?	No	No	No	No	No
Total Tons of Emissions (tons/project)	0.2	2.7	1.2	0.2	0.1
Annual Significance Threshold	15	40	100	15	None
Significant Impact?	No	No	No	No	No

a. Ambient air quality thresholds for criteria pollutants based on SDAPCD Rule 1303, Table A-2 unless otherwise stated.

b. Total particulates (PM10 and PM2.5) include exhaust and fugitive dust

SOURCE: City of San Diego, 2011; HNTB, 2014

breeding season, yet provides for no mitigation of impacts to that habitat. See Draft MND at 4; IS attach. A, at 2.

E-6 Second, the MND patently fails to mitigate to the maximum extent practicable by failing to provide for buffers or avoidance necessary between February 1 and August 31. The MND fails to require avoidance of inactive burrows or burrows where burrowing owls were not sighted using the burrows on the day of the survey. Burrowing owls could be absent and foraging away from an active burrow during the time of the survey, but the MND presumes that burrows will have owls in them at all times during the survey in order to be active. The MND fails to require adequate mitigation by only requiring avoidance if burrowing owls are sighted three days prior to construction, but failing to account for historical use or areas where the burrowing owls may have been absent on the day of the survey. Allowing construction and staging activities within a 150 meter buffer of known, documented breeding pairs also fails to maximize mitigation. The MND fails to require mitigation to assure that staging areas are not within an area of active use by the burrowing owls. With the amount of underutilized space on Brown Field or adjacent to Brown Field that is available for a construction staging area there are clearly places where a staging area could be located away from known burrowing owls. The MND's failure to require mitigation to avoid impacts to burrowing owls to the "maximum extent practicable" or provide an explanation as to why those measures are infeasible runs contrary to CEQA's requirements to disclose and analyze impacts to regional plans. Cal. Code Regs. tit. 14 app G. § IV(e), (f).

E-7 The MND also fails to mention other species that are covered in the MSCFP that may be affected by the Project and any discussion of the impacts of the Project, steps taken to mitigate impacts to those species, or how the Project complies with the MSCFP's requirements for those species. There are eight species that are covered by the MSCFP that have a "High" or "Medium" potential to occur in or near the Project area and the MND fails to mention almost all of them. Airpark EIR at 5.6-20-21. The MND's attempt to avoid collecting information about the potential significant impacts outlined by wildlife responsible agencies is an abuse of discretion under CEQA. *Sierra Club v. State Bd. of Forestry*, 876 P.2d 505, 518-19 (Cal. 1994). This blanket failure to disclose and analyze the species present and how the Project will comply with the MSCFP's requirements for those species violates CEQA.

c. Impacts to Air Quality Will be Significant

E-8 The City fails to quantify impacts to air quality or describe how these impacts will be mitigated to insignificant levels. The City admits that the Project will result in "fugitive dust from grading activities; construction equipment exhaust; construction-related trips by workers, delivery trucks, and material-hauling trucks; and construction-related power consumption," but fails to quantify the likely amounts of dust that these activities will produce. IS at 5. To mitigate these impacts, the City states that "[c]onstruction operations would include standard measures as required by the [City] to reduce potential air quality impacts from dust emissions to a less than significant level." *Id.* The City also claims that "[s]tandard construction best management practices (BMPs), such as dust control measures, will ensure that construction-related visual degradation is minimized." *Id.* at 2. These vague statements are all the City offers to demonstrate that dust emissions will be less than significant.

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As shown in Table 1 above, the Project would result in emissions of each pollutant substantially below the applicable City daily and annual significance thresholds. In particular, total particulate matter emissions (PM10 and PM2.5) in Table 1, which include exhaust and fugitive dust, would be minimal. Inclusion of standard construction best management practices would further reduce emissions, particularly fugitive dust. Construction of the Project would thus result in less-than-significant emissions.

E-9 The commenter claims that the IS/MND fails to disclose and analyze the impacts related to the Project's release of toxic chemicals through the use of asphalt and the potential disturbance of existing hazardous materials sites. Asphalt is a petroleum product which can vary in its composition but generally consists primarily of crude petroleum oils. The exact chemical composition of asphalt depends on the chemical complexity of the original crude petroleum and the manufacturing processes. The proportions of the chemicals that constitute asphalt can vary because of significant differences in crude petroleum from various oil fields and even from various locations within the same oil field. Off-gassing is highest when asphalt is first applied and then after it has cooled and cured, it quickly diminishes. The National Institute for Occupational Safety and Health (NIOSH) critically evaluated the scientific data on potentially hazardous occupational exposures or work conditions in a study titled, *Hazard Review: Health Effects of Occupational Exposures to Asphalt* (NIOSH, 200 - <http://www.cdc.gov/niosh/docs/2001-110/pdfs/2001-110.pdf>). Observations of acute irritation in workers from airborne and dermal exposures to asphalt fumes and aerosols have been shown to include temporary health effects such as headaches, skin rash, sensitization, fatigue, reduced appetite, throat and eye irritation, and coughing. The available data from studies in humans have not provided consistent evidence of carcinogenic effects in workers exposed to asphalt fumes during paving operations (NIOSH, 2000). Regardless, workers are required to adhere to OSHA safety requirements that include the use of appropriate personal protective equipment to minimize contact and exposure to asphalt fumes. Material Safety Data Sheets (MSDS) for the product are required by law to be available to workers which will include the ingredients and possible health and safety hazards as well as



E-8  
This failure to disclose these impacts violates CEQA, which requires an agency to "use its best efforts to find out and disclose all that it reasonably can." Cal. Code Regs. tit. 14 § 15144. Instead of using its best efforts to disclose what it knew about likely dust emissions and mitigation measures, the City simply claims that standard measures will ensure that emissions are not significant. "Mere conclusions" are not appropriate—initial studies "must disclose the data or evidence upon which the person(s) conducting the study relied." *Genby v. City of Murrieta*, 43 Cal. Rptr. 2d 170, 184 (Cal. Ct. App. 1995) (quoting *Citizens Ass'n for Sensible Dev. of Bishop Area v. City of Inyo*, 217 Cal. Rptr. 893, 906 (Cal. Ct. App. 1985)). Simply claiming that these measures will reduce air quality impacts to a less than significant level does not demonstrate that the measures will "clearly" mitigate adverse impacts so that there are no significant effects. See Cal. Pub. Res. Code § 21064.5. There is no evidence in the initial study that the dust emissions will be insignificant or will be properly mitigated by dust control measures. Without any supporting evidence, the City defies the Legislature's intent in enacting CEQA to ensure that agencies give consideration to the environment. The public cannot know whether the City's figures are accurate and therefore, whether the Project's dust emissions will be significant and mitigated, without this information.

This fugitive dust is especially significant because it will contribute to an existing air quality violation. The City is already in nonattainment for ozone, PM-2.5, and PM-10. IS at 4-5. Fugitive dust from the Project is particulate matter and will contribute to these violations. See AIR RESOURCES BOARD, FUGITIVE DUST CONTROL 1 (2007), available at [http://www.arb.ca.gov/pn/fugitivedust\\_large.pdf](http://www.arb.ca.gov/pn/fugitivedust_large.pdf). The City fails to disclose that dust contributes to particulate matter in the initial study, although it has made the connection in a related EIR. See Airpark EIR at 5.4-3. And the fact that the Project will not result in long-term emissions does not excuse the City from evaluating the Project's significant impacts to air quality. See IS at 5. "Nothing in [CEQA] suggests that short-term effects cannot be of such significance as to require an EIR." *No Oil*, 529 P.2d at 77.

d. **The Project's Release or Disturbance of Toxic Materials Will Have a Potentially Significant Impact on Public Health and the Environment**

E-9  
The Project fails to disclose and analyze the impacts from the Project's release and potential disturbance of toxic chemicals. The Project would rely on the use of asphalt for paving and could result in the potential disturbance of hazardous materials sites. IS at 13, 15. Unfortunately, the MND fails to disclose the potentially significant emissions hazards resulting from asphalt paving and PM, and the potentially significant impacts that could result to airport workers. The MND is similarly deficient in failing to provide information on the location and types of hazardous materials sites that are located at the Brown Field Airport.

The Project will require the use of asphalt for much of the runway repaving. IS Checklist at 1-2; IS at 13. Asphalt fumes are known carcinogens that can irritate the eyes, nose, throat, and lungs and cause headaches, dizziness, nausea, and vomiting. NEW JERSEY DEP'T OF HEALTH &

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recommended protective equipment. Therefore, considering the lack of evidence for chronic or carcinogenic effects in workers, the temporary nature of the asphalt work and exposure, and the existing safety regulatory requirements from Cal OSHA for workers, there would be a less than significant impact from the proposed asphaltting work.

E-10 In regards to health risks associated with construction of the Project, the primary concern, as noted by the commenter, would be PM2.5 emissions associated with diesel exhaust from off-road equipment and trucks. Sensitive receptors in the immediate vicinity of the Project site include Otay Mesa residential uses to the west. The closest residences in this development area, on Vista Santo Tomas, are located approximately one-half mile (2,600 feet) from the western end of Brown Field's Runway 8L-26R. Exposure of sensitive receptors is the primary factor used to determine health risk. Exposure is a function of the concentration of a substance or substances in the environment and the extent of exposure that person has with the substance. A longer exposure period would result in a higher exposure level, assuming the concentration of the substance would be constant. Thus, the risks estimated for a maximally exposed individual are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project. Thus, the duration of the proposed construction activities (4 months) would only constitute a small percentage of the total 70 year exposure period. In addition, as mentioned above, Project construction would occur at 2,600 or more feet from the nearest residential receptors. These receptors would be a substantial distance from Project construction (more than double the Bay Area Air Quality Management District (BAAQMD)-recommended 1,000 foot zone of influence). As described in the BAAQMD's 2009 *Justification Report* (BAAQMD, 2009), the 1,000 foot distance was selected based on several factors:

"A summary of research findings in CARB's *Land Use Compatibility Handbook* (CARB, 2005) indicates that traffic-related pollutants were higher than regional levels within approximately 1,000 feet downwind and that differences in health-

SENIOR SERV., ASPHALT, HAZARDOUS SUBSTANCE FACT SHEET 1-2 (2007) ("Asphalt 2007"). Asphalt can also cause severe burns, dermatitis, and long term changes to skin pigments. *Id.*

E-10

The MND also admits that the Project will result in the release of dust and particulate matter. IS at 5. The effects of PM-2.5 on humans are profound. For example, long-term exposure has been associated "with an array of health effects, notably premature mortality, increased respiratory symptoms and illnesses (e.g. bronchitis and cough in children), and reduced lung function." 62 Fed. Reg. 38,653, 38,668 (July 18, 1997). Moreover, PM-2.5 adversely affects our natural surroundings. For example, PM-2.5 adversely impacts wildlife. EPA has explained "a number of animal toxicologic . . . studies had reported health effects associations with high concentrations of numerous fine particle components." 71 Fed. Reg. 2620, 2643-44 (Jan. 17, 2006). PM-2.5 also causes direct foliar injury to vegetation. *Id.* at 2682. Moreover, PM-2.5 adversely affects the aesthetics of our natural surroundings. For example, Regional haze is caused in part by particulates in the air scattering sunlight. ENVTL. PROT. AGENCY, HAZE, HOW AIR POLLUTION AFFECTS THE VIEW, available at [http://www.epa.gov/ttn/oaqpg/1/1r\\_notices/haze.pdf](http://www.epa.gov/ttn/oaqpg/1/1r_notices/haze.pdf). Nowhere in the MND are these impacts discussed.

The MND must discuss the potentially significant impacts from the multiple types of air pollutants. "The discussion [of significant effects] should include . . . health and safety problems caused by the physical changes . . . of the project." Cal. Code Regs. tit. 14, § 15126.2. Furthermore, CEQA requires "some analysis of the correlation between the Project's emissions and human health impacts." *Sierra Club v. City of Fresno*, 172 Cal. Rptr. 3d 271, 305-06 (Cal. Ct. App. 2014) (stating that an EIR is inadequate when it does not "analyze the adverse human health impacts that are likely to result from the air quality impacts identified in the EIR") (citing *Bakersfield Citizens for Local Control v. City of Bakersfield*, 22 Cal. Rptr. 3d 203, 231 (Cal. Ct. App. 2004)). The MND's failure to disclose and analyze the Project's potential health impacts and discuss the health impact violates CEQA.

E-11

The MND also fails to disclose and analyze the potentially significant impacts from the disturbances of existing hazardous materials sites. The MND admits that the entire Brown Field Airport is a hazardous waste site as documented by the Spills, Leaks, Investigation, and Cleanup ("SLIC") Program database and that the Brown Field Airport hazardous sites have not been properly evaluated. IS at 15.<sup>1</sup> The SLIC Program database, a Regional Water Quality Control Board program, includes sites where a hazardous materials spill or leak has occurred. The MND incorrectly claims that the Brown Field Airport is "not located in the immediate vicinity of areas where pavement removal and rehabilitation are to occur." IS at 16. Considering that the MND admits the entire Brown Field Airport is described as a hazardous waste site that has not been properly evaluated and that construction will be occurring on the Brown Field Airport, this statement clearly misleads the public and decision makers and is the type of "clearly erroneous" statement that runs contrary to CEQA's requirements. Cal. Code Regs. tit. 14, § 15384(a). The MND must fully disclose, analyze, and mitigate the location, hazardous materials, and impacts

<sup>1</sup> The Brown Field NAAS (Naval Auxiliary Air Station) is listed as a Hazardous Materials Release Site that "Needs Evaluation."

related effects (such as asthma, bronchitis, reduced lung function, and increased medical visits) could be attributed in part to the proximity to heavy vehicle and truck traffic within 300 to 1,000 feet of receptors. Although CARB has recommended avoiding siting sensitive land uses within 500 feet of a freeway or high-volume urban roads, this option uses 1,000 feet based on research that has indicated attributable increased health effects in some cases out to as far as 1,000 feet. In the same study, CARB recommended avoiding siting sensitive land uses within 1,000 feet of a distribution center and major rail yard, which supports the use of a 1,000 feet evaluation distance in case such sources may be relevant to a particular project setting. A second consideration is that studies have shown that the concentrations of particulate matter tends to be reduced substantially or can even be indistinguishable from upwind background concentrations a distance 1,000 feet downwind from sources such as freeways or large distribution centers."

Based on the short-term duration of construction, the low level of PM2.5 emissions, and the substantial distance from the nearest residential receptors, the Project would not expose these receptors to substantial PM2.5 concentrations. Notably, workers are not considered sensitive receptors because all employers must follow regulations set forth by the Occupation Safety and Health Administration (OSHA) to ensure the health and well-being of their employees.

E-11 As noted in the IS/MND on Page 15, a review of environmental databases for sites with previous releases of hazardous materials was conducted for the project site and surrounding vicinity. Table 2 provides a summary of the sites that were found in this search and their current status. The only case that was found on the project site itself, which is very large, concerned an investigation of petroleum constituents in the soil and groundwater for a former tank farm. The former tank farm is located at the western end of the Airport property which is at the opposite end of the proposed paving activities for the project and over 4,000 feet from the Runway 26R paving activities and approximately 3,000 feet from the service road proposed for repaving. While minor surface and joint repair would occur on the western end of the runway, these activities are not expected to disturb underlying soils or groundwater. As noted in the IS/MND, the former tank farm as well as

that could result from the Project's disturbance of the documented SLIC sites on the Brown Field Airport.

e. **The Project's Climate Change Impacts are Potentially Significant**

The City also fails to disclose information about the significant impacts to climate change in the initial study. The City provides a figure of estimated greenhouse gas emissions, but fails to disclose the data that it used to determine this figure. IS at 13. The City only reveals that it included information about "the project's duration and construction method, the type and amount of heavy duty construction equipment, haul trucks, and worker commute trips." *Id.* The City provides no numbers from these individual contributors, instead stating that the Project would "produce a total of 228.6 MTCO<sub>2</sub>E." *Id.* Once again, the City should have "disclos[ed] the data or evidence" on which it relied when calculating such a figure. *Gentry*, 43 Cal. Rptr. 2d at 184 (citation omitted).

The City again gives excuses for not evaluating the significant of greenhouse gas emissions. Because its unfounded estimate of greenhouse gas emissions is below an unofficial level of significance determined in 2008 by the California Air Pollution Control Officers Association, the City excuses itself from analyzing the Project's emissions. IS at 13. But Even though emissions may be below the "screening threshold" determined by CAPCOA, "[a] threshold of significance is not conclusive . . . and does not relieve a public agency of the duty to consider the evidence under the fair argument standard." *Majia v. City of Los Angeles*, 29 Cal. Rptr. 3d 788, 802 (Cal. Ct. App. 2005). Although some sources of greenhouse gas emissions may seem insignificant, climate change is a problem with cumulative impacts and effects. (*Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1217 (9th Cir. 2008) ("[T]he impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct"). And the City's attempt to avoid complying with greenhouse gas reduction plans, policies, and regulations because of the Project's short-term nature is incorrect, again, "nothing in [CEQA] suggests that short-term effects cannot be of such significance as to require an EIR." *No Oil*, 529 P.2d at 77 (Cal. Ct. App. 1974).

2. **The City Failed to Disclose the Project's Cumulative Impacts**

In addition to not disclosing information about the significant impacts of individual issues, the City fails to disclose the cumulative impacts of the Project and its relation to a larger development project. The Metropolitan Airpark Project—located within the boundaries of the Brown Field Municipal Airport—will develop 331 acres of land over twenty years. City of San Diego, Metropolitan Airpark Notice of Determination (Oct. 22, 2013). The initial study and mitigated negative declaration fail to mention this larger project. It is the City's duty to disclose that a larger development project is located on the same site and analyze the cumulative impacts of the two projects. To do otherwise is contrary to CEQA, which requires a mandatory finding of significance when a "project has possible environmental effects that are individually limited but cumulatively considerable." Cal. Code Regs. tit. 14 § 15065. "Cumulatively considerable"

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the other sites mentioned in Table 2 are located sufficiently far enough away such that there is no indication that contamination would be encountered during the asphalt removal for the proposed project. As such, there would be a less than significant impact related to potential exposure to hazards from the construction activities.

**E-12** The commenter noted that supportive information regarding the emissions of greenhouse gases (GHG) was not provided in the Initial Study for the Project. GHG emissions have been included in the Initial Study in support of the significance determination. Construction calculations were revisited and slightly revised using the Sacramento Metropolitan Air Quality Management District (SMAQMD) Roadway Construction Model (version 7.1.5.1), with model inputs and outputs provided in the *Estimated Construction Crews and Equipment used to Calculate Construction Emissions – Submittal Memo* (HNTB, 2014) for the commenter's reference. As shown in that *Submittal Memo*, construction of the Project would result in 272.7 metric tons of CO<sub>2</sub> based on one megagram equal to one metric ton.

In regards to the cumulative nature of GHG impacts, the California Air Pollution Control Officers Association (CAPCOA) considers GHG impacts to be exclusively cumulative impacts (CAPCOA, 2008). The screening threshold of 900 metric tons was developed by CAPCOA by analyzing the capture of 90 percent or more of future discretionary development and would "exclude the smallest of proposed development from potentially burdensome requirements to quantify and mitigate GHGs under CEQA... [and]... would require the vast majority of new development emission sources to quantify their GHG emissions, apportion the forecast emissions to relevant source categories, and develop GHG mitigation measures to reduce their emissions" (CAPCOA, 2008). As such, this threshold is based on substantial evidence, rather than just an unofficial value as suggested by the commenter. The Project would result in GHG emissions that would be substantially less than the 900 metric ton per year threshold applied by the City and would result in a less than significant cumulative contribution of GHGs.

means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." *Id.*

This segmentation of projects to avoid a mandatory finding of cumulative considerable impacts violates CEQA. CEQA guidelines require that an agency consider cumulative effects in the case of related projects, requiring that an EIR "address itself to the scope of the larger project" where one project is a necessary precedent for action on a larger project. Cal. Code Regs. tit. 14 § 15165. Or, if "one project is one of several similar projects . . . but is not deemed to be part of a larger undertaking or larger project, the agency . . . shall . . . comment upon the cumulative effect." *Id.* Whether the current Project is part of the Airpark project or not, the fact that they will both take place in the same location and work to rehabilitate and redevelop the same airport demands that their impacts be evaluated cumulatively.

In the Airpark EIR, the City admits that there are significant cumulative impacts to air quality, biological resources, land use, transportation, visual effects, and water quality. Airpark EIR at 6-5-6-10. The City fails to mention these cumulatively considerable impacts in the initial study or mitigated negative declaration or analyze how the Project's impacts will contribute to the Airpark's significant impacts. Instead, it repeatedly mentions the temporary nature of the Project as a reason why its impacts are less than significant. IS at 30. If the City had analyzed the Project's impacts in light of the bigger development project in the same location, it would have determined that the Project contributed to the significant effects of the Airpark project.

**B. The Project Will Have Significant Impacts to Burrowing Owls Despite Mitigation**

The population of burrowing owls at Brown Field is one of the largest populations remaining in San Diego County. Letter from Karen A. Goebel, Assistant Field Supervisor, Fish & Wildlife Serv. to Myra Herrmann, Envtl. Planner, City of San Diego 2 (Dec. 21, 2012). The burrowing owls frequently live on airport sites because they prefer the regularly-mowed short vegetation and being free from human and predator disturbances. John H. Barclay et al., *Long-Term Population Dynamics of a Managed Burrowing Owl Colony*, 75 J. WILDLIFE MGMT. 1295, 1296 (2011). Airports also serve as habitat islands in areas surrounded by areas of unfavorable habitat. *Id.*

The burrowing owls at Brown Field are at risk. Burrowing owls are a Species of Special Concern and a Covered Species in the City's Multi-Species Conservation Program. Airpark EIR at 5.9-38. The MSCP "require[s] that impacts to [burrowing owls] outside of the MHPA be avoided to the maximum extent practicable." MSCP Excerpt at 161. However, the City has disregarded the protections for burrowing owls and has actively filled occupied burrows with gravel and fluids with high concentrations of herbicides. JESSÉ N. MARQUEZ, BURROWING OWL POPULATION RESEARCH FIELD REPORT Q2060-62 (2012) ("Owl Report"). Reports of the City's failure to adhere to legal requirements and mitigation requirements to protect burrowing owls is substantial evidence that the Project may result in significant impacts to burrowing owls in the future, requiring an EIR. See *Oro Fino Gold Mining Corp. v. City of El Dorado*, 274 Cal. Rptr.

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**AIR QUALITY / GHG REFERENCES:**

Bay Area Air Quality Management District (BAAQMD), 2009. *Revised Draft Options and Justification Report California Environmental Quality Act Thresholds of Significance*, October 2009.

California Air Pollution Control Officers Association (CAPCOA), 2008. *CEQA & Climate Change, Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act*, January 2008.

California Air Resources Board (CARB), 2005. *Air Quality and Land Use Handbook: A Community Health Perspective*, <http://www.arb.ca.gov/ch/handbook.pdf>, April 2005.

City of San Diego, 2011. *California Environmental Quality Act Significance Determination Thresholds*, January 2011.

City of San Diego, 2010. Memorandum from Cecilia Gallardo to Environmental Analysis Section. *UPDATED – Addressing Greenhouse Gas Emissions from Projects Subject to CEQA*. August 18, 2010.

HNTB, 2014. Memorandum from Sean Naismith, P.E. to Rebecca Malone. *Estimated Construction Crews and Equipment Used to Calculate Construction Emissions – Submittal Memo*. April 30, 2014. Revised August 25, 2014.

**E-13** The commenter states that the project will have a cumulative effect on the environment when viewed in connection with the Metropolitan Air Park Project. While it is known that the runway rehabilitation project which is the subject of this MND is within Brown Field, airport operations and maintenance are separate and unrelated to the Metropolitan Air Park Project; runway rehabilitation would occur with or without the Metropolitan Airpark Project and is a necessary component for continued operation of the airport under Federal Aviation Administration (FAA) grant assurances. The project does not have any direct impacts which would contribute to a cumulative impact as stated in the IS/MND Page 30. As such, the project's contribution to cumulative impacts is less than cumulatively considerable.

720, 726 (Cal. Ct. App. 1990) (stating that residents' personal knowledge of increased traffic was substantial evidence meeting the fair argument standard). An EIR analyzing the Project's impacts to owls and avoiding impacts to the maximum extent practicable is especially necessary given this recent illegal activity that has already reduced the airport's burrowing owl population. See Owl Report at 02061.

**1. The Project's Impacts to Burrowing Owls Are Significant**

The City has already recognized the significant impacts of development on burrowing owls in the Airpark EIR. Airpark EIR at 5.6-38. This Project is occurring in the same area and poses the same risks to burrowing owls, which have recently been found within 150 meters of the construction staging area. See IS attach. A, at fig. 2. Only this time, the City has not recognized the significance of the impacts to burrowing owls or demanded strong mitigation measures to reduce the adverse impacts to this sensitive population. It claims that any impacts will be temporary, but activities that fill in burrows used by owls—as the City has already authorized or allowed—result in permanent impacts that are not mitigated. See IS at 7.

A finding of significance is mandatory when a project "ha[s] the potential to . . . substantially reduce the habitat of a fish or wildlife species, [or] cause a fish or wildlife population to drop below self-sustaining levels." Cal. Code Regs. tit. 14, § 15065; IS at 29. Considering that the Brown Field burrowing owl population is the largest population left in San Diego County, the potential for the project to substantially reduce burrowing owl numbers or cause the county's population to drop below self-sustaining levels is high. See Letter from Karen A. Goebel, Assistant Field Supervisor, Fish & Wildlife Serv. to Myra Hurmann, Envtl. Planner, City of San Diego 2 (Dec. 21, 2012). The City recognizes this mandatory finding of significance, but claims that its mitigation measures will reduce the impacts to less than significant.

**2. The Proposed Mitigation Measures Are Inadequate**

The proposed mitigation measures cannot, however, reduce the impacts on burrowing owls to less than significant. There are two glaring problems with the proposed measure BIO-1. First, the measure lessens the protections for burrowing owls from those proposed for the Airpark project. Draft MND at 4; Airpark EIR at 5.6-48. The Airpark EIR requires that setback buffers be at least 200 meters from March to October 15, at least fifty meters from October 16 to February, and up to 500 meters year round. Airpark EIR at 5.6-48. The MND, however, does not even quantify how large setback buffers must be, vaguely stating that "no-work buffer[s] shall be established around active burrow(s)." Draft MND at 4. The City should hold this Project at least to the standard of the Airpark project, which has undergone the full EIR process. Further, the City is proposing locating the construction staging area less than 150 meters from an active burrow. IS attach. A, at fig. 2. This does not comply with the minimum standards for this time of year. The City previously admitted that the buffer zones in the Airpark EIR for burrowing owls were the minimum necessary to reduce the potentially significant impacts of construction at the Brown Field Airport, but has failed to follow those standards here. The City's recognition that larger buffer zones are necessary in the Airpark EIR, but failure to follow them

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**E-14** See Response to Comment Nos. E-3, E-5 and E-6.

**E-15** This project will not have a direct impact on burrowing owls, burrows or associated habitat. The comment implies that the City has allowed or authorized burrows to be filled, however that is further from the case. This project will not fill burrows, nor will it substantially reduce burrowing owl numbers or cause the county's population of burrowing owls to drop below self-sustaining levels. See Response to Comment Nos. E-3, E-5 and E-6.

**E-16** As stated in Response to Comment E-6, mitigation measure BIO-1 was developed by a qualified biologist and presented to the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife for concurrence prior to release of the draft MND for public review.

As this project has independent utility (see Response to Comment E-13) from the Metropolitan Airpark Project, the wildlife agencies focused on the specifics of the project with full knowledge of active burrowing owl burrows in the vicinity of the project, based on a 2014 protocol-level burrowing owl survey. Based on this survey, the nearest active burrow was found to be no closer than 101 meters from the nearest proposed construction activity (staging area). It was determined that two pre-construction burrowing owl surveys should be performed within 150 meters of any proposed construction activity prior to the start of construction, the majority of which is scheduled to occur outside the breeding season (Feb 1 - Aug 31) with the slim possibility of work encroaching into February of the following year. Should construction extend into the breeding season and an active burrow is located within 150 meters of construction activity, all work will stop and not restart until a no-work buffer is established around the burrow at a distance to be determined through consultation with the wildlife agencies. The radius of this buffer will be based on burrowing owl behavior and other variables as identified in the *Staff Report on Burrowing Owl Mitigation*, CDFW, March 2012; such as: location of the burrow, local ambient conditions, type of project activity, intensity and duration of project activity, timing within the nesting cycle, and the species tolerance for disturbance. An effective buffer would be wide enough to preclude

in the MND demonstrates that the City failed to fully disclose, analyze, and mitigate impacts to burrowing owls.

Second, BIO-1 improperly defers mitigation until a later date. As opposed to the defined setback buffers in the Airport EIR, in the MND the City leaves setback buffer determinations to be "determined by a qualified biologist . . . based on" a number of factors. Draft MND at 4. "The City also defers making a procedure for marking the buffers, stating that "[b]uffers shall be delineated in some fashion with suitable material for demarcating the area, as determined by the biologist." *Id.* The biologist is also to "determine [if] additional measures are necessary" at a later date. *Id.*

E-16

This deferral of mitigation is unacceptable. Agencies are required to identify mitigation measures "at the earliest possible time in the environmental review process." Cal. Pub. Res. Code § 21093.1(a); *Standstrom v. City of Mendocino*, 248 Cal. Rptr. 352, 358 (Cal. Ct. App. 1988). Deferral is sometimes appropriate if an agency has "recognized the significance of the . . . effects, ha[s] committed itself to mitigating the[] impact, . . . and ha[s] adequately discussed possible mitigation alternatives." *Gentry*, 43 Cal. Rptr. At 195 (citation omitted). The City has not met those requirements. It has taken the potential impacts to burrowing owls lightly and has failed to adequately define mitigation measures. It has not described different alternatives or the possible measures the biologist may employ—it simply defers all protective measures until a later date.

Further, BIO-1 is vague and fails to disclose how such measures will work. One of the "measures" provided is simply this: "No active burrowing owl burrows shall be directly impacted by the project." MND at 4. This is too vague and provides no steps for workers to follow to prevent impacts to burrows.

Another problem with BIO-1 is that the proposed measures do not adequately protect owls. The measure requires surveys, but does not demand any action upon the discovery of owls or burrows. See MND at 4. The only purpose for such surveys would be to track the owls and burrows, not to protect them. And the measure only requires mitigation in the event that an owl is found within three days prior to construction, in the breeding season. *Id.* At all other times, no specific protective measures are mandated. This leaves owls that are for some reason not visible or within the boundaries of Brown Field within three days of construction vulnerable, and does the same to owls in the non-breeding season. The City is still required to protect these owls and must prepare an EIR to do so.

III. The Project Must Comply with the Endangered Species Act

E-17

The Project is subject to the Endangered Species Act ("ESA"), and must fully comply with the ESA's provisions. Section 9 of the ESA, and Federal regulations issued pursuant to section 4(d) of the ESA, prohibit take of endangered and threatened species without a special exemption. 16 U.S.C. 1531 *et seq.* Section 7 of the ESA requires Federal agencies to consult with the United States Fish and Wildlife Service ("USFWS") should it be determined that their actions may affect federally listed threatened or endangered species. Take is defined as harass.

detrimental effects to nesting behavior that could lead to nest abandonment and mortality of fledglings from noises or vibrations generated from construction activities (BIO-1). There is CDFW guidance (setback standards) but no regulatory requirement for a specific buffer width under the circumstances, as these matters are determined on a case-by-case basis. In addition, on-going biological monitoring during the course of construction is required to determine if any conditions have changes after implementation of the measures that would warrant additional action, in consultation with CDFW. As such, there is nothing deferred, with action to be taken based on measurable variables.

Regarding the commenter's assertion that because the method of marking any buffers is not defined this is considered deferred mitigation. Because of the uniqueness of the location of the project (on an FAA grant-assurance airport), it is premature to identify how a buffer would be marked as it will depend on the location of any active burrow(s) in relation to the taxiways and runways, and taking into consideration FAA safety regulations. To further clarify, the following italicized text has been added to bullet point number three under BIO-1: "Buffer areas shall be delineated in some fashion with suitable material for demarcating the area, as determined by the biologist in consultation with the California Department of Fish and Wildlife and the City of San Diego Airports Division, *in accordance with FAA rules and regulations.*"

The commenter's also claims that BIO-1 does not go far enough to protect burrowing owls outside the breeding season. While the breeding season is of most concern because nest abandonment/failure as a result of nearby disturbance is one of the greatest know threats to burrowing owls, the mitigation measure has been revised to take a more conservative approach to the protection of burrowing owls. As such, bullet point number three under BIO-1 has been revised to read as follows:

- ~~Should construction be necessary during the breeding season~~  
*Should active burrows be found within 150 meters of the construction activity, the following measures shall be required:*

harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct. 16 U.S.C. § 1532(19). Harm is further defined by USFWS to include significant habitat modification or degradation that actually kills or injures a listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. 50 C.F.R. § 17.3. Harass is defined by USFWS as an action that creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. *Id.*

Approval of the Project will result in harm and harassment of the vernal pool species that are protected under the ESA, specifically San Diego fairy shrimp (*Branchinecta sandiegonensis*) and San Diego button-celery (*Eryngium aristulatum* var. *parishii*). The Project will result in direct and indirect impacts to vernal pool watersheds of known vernal pools including BFVP-5 and potentially BFVP-2 that contain San Diego fairy shrimp. Airpark EIR at 5.6-17, fig. 5.6-3. Furthermore, critical habitat for the San Diego Fairy Shrimp is located at the Brown Field Municipal Airport. 72 Fed. Reg. at 70,674; Fairy Shrimp CH. Nowhere does the MND discuss these potential impacts or even disclose the existence of listed species.

The Project is subject to the Endangered Species Act, and consultation with the USFWS, regarding impacts to threatened and endangered species, must occur. The Project requires funding from the Federal Aviation Administration ("FAA"). IS at 3. A Federal agency that carries out, permits, licenses, funds, or otherwise authorizes activities that may affect a listed species must consult with USFWS to ensure that its actions are not likely to jeopardize the continued existence of any listed species.

The Initial Study also does not require any consultation with the California Department of Fish and Wildlife for take of a state listed species pursuant to the California Endangered Species Act. Cal. Fish & Game Code § 2081. The City must assure that any take of the San Francisco popcorn flower is fully mitigated and minimized pursuant to CESA. *Id.*

#### IV. The City Violated CEQA by Commencing Construction Prior to Environmental Review

City staff commenced construction of the Project before the MND has been approved and even before the comment period for the MND closes on August 4. It is a foundational principle of the California Environmental Quality Act that review must be completed prior to the initiation of a project. Cal. Code of Regs. tit. 14, § 15004; *Laurel Heights Improvement Ass'n v. Regents of the Univ. of Cal.*, 764 P.2d 278, 284 (Cal. 1988) (condemning "post-approval environmental review" because it relegates CEQA documents to "nothing more than *post hoc* rationalizations to support action already taken"). A lead agency improperly approves a project if it has taken "an essential step leading to potential environmental impacts" before conducting CEQA review. *Muzzy Ranch Co. v. Solano Cnty. Airport Land Use Comm'n*, 60 Cal. Rptr. 3d 247, 255 (Cal. 2007). Staff at the City of San Diego notified the public in an email dated July 29, 2014 that construction activities at the airport are related to the Brown Field Municipal Airport Runway 8L-26R Rehabilitation Project ("Project"). Email from Mike Tassey, Deputy Director -

August 4, 2014  
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In summary, mitigation measure BIO-1 provides adequate protective measures tailored to the project that would ensure potential impacts to burrowing owls would be below a level of significance. See also Response to Comment E-3.

**E-17** The commenter states that the project will result in a take under the federal Endangered Species Act for federally threatened or endangered species that may occur in vernal pool habitat; in particular, the San Diego fairy shrimp and San Diego button-celery. This matter is being addressed by the federal lead agency, the FAA, in consultation with the USFWS. Also, see Response to Comment E-3 and E-4.

The commenter also states that the lead agency must consult with CDFW for the take of a State listed species pursuant to the California Endangered Species Act (CESA). As noted in the Initial Study/MND and Response to Comment E-5, the only sensitive State species that is located within or near the project site is the burrowing owl. This species is not listed as threatened or endangered under the CESA.

**E-18** This comment implies that the City commenced construction prior to environmental review; however, that was not the case. Construction activities referred to in this comment were actually pre-construction geotechnical investigations being carried out for the approved Metropolitan Air Park Project and are in no way related to the project which is the subject of this MND. The geotechnical investigations were specifically designed to avoid vernal pool watersheds and active burrowing owl burrows, and were closely monitored by a qualified biologist. In addition, a qualified archaeologist and Native American monitor were on-site during the geotechnical investigation activities. All work was conducted in accordance with the MMRP adopted for the Metropolitan Air Park project.



Airports, City of San Diego to Livia Borsik, Attorney, Coast Law Group LLP (July 29, 2014).  
The City's commencement of construction prior to environmental review violates CEQA.

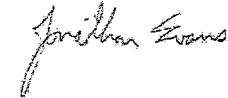
V. Conclusion

*E-19* [ The MND does not meet the standards of CEQA. It does not recognize the significant impacts of the Project to biological resources, air quality, and climate change and fails to account for cumulative impacts. The proposed mitigation measures to protect burrowing owls are vague and defer any specific actions until a later date. And the City has not complied with the Endangered Species Act. Given the potential for such significant effects despite mitigation, the City should prepare an EIR.

Thank you for your attention to these comments. We look forward to working with the City to assure that the Project conforms to the requirements of CEQA to assure that all significant impacts to the environment are fully analyzed, mitigated or avoided. Should you have any questions feel free to contact Jonathan Evans at the contact information listed above.

Please place us on the notice list for any future Project related environmental review or approvals. The contact information for the Center for Biological Diversity is listed above. The contact information for Preserve Wild Santee is 9222 Lake Canyon Road / Santee, CA 92071, (619) 258 - 7929, [SaveFania@cox.net](mailto:SaveFania@cox.net).

Sincerely,



Jonathan Evans  
Staff Attorney

/s/  
Amanda Prasohn  
Legal Intern

Center for Biological Diversity

August 4, 2014  
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**E-19** The project does not result in any impacts (direct or indirect) which cannot be mitigated to below a level of significance. There are no significant unmitigated impacts from the project which warrants preparation of an Environmental Impact Report.



## LETTER

## RESPONSE

References  
(Included on CD)

AIR RESOURCES BOARD, FUGITIVE DUST CONTROL (2007), available at [http://www.arb.ca.gov/pn/fugitivedust\\_large.pdf](http://www.arb.ca.gov/pn/fugitivedust_large.pdf).

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CITY OF SAN DIEGO, BROWN FIELD MUNICIPAL AIRPORT RUNWAY 8L-26R REHABILITATION PROJECT DRAFT MITIGATED NEGATIVE DECLARATION (2014).

CITY OF SAN DIEGO, BROWN FIELD MUNICIPAL AIRPORT RUNWAY 8L-26R REHABILITATION PROJECT INITIAL STUDY (2013).

City of San Diego, Metropolitan Airpark Notice of Determination (Oct. 22, 2013)

CITY OF SAN DIEGO, METROPOLITAN AIRPARK PROJECT FINAL ENVIRONMENTAL IMPACT REPORT (2013).

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ENVTL. PROT. AGENCY, HAZE, HOW AIR POLLUTION AFFECTS THE VIEW, available at [http://www.epa.gov/ttn/oarpg/t11/fr\\_notices/haaz.pdf](http://www.epa.gov/ttn/oarpg/t11/fr_notices/haaz.pdf).

JESSE N. MARQUEZ, BURROWING OWL POPULATION RESEARCH FIELD REPORT (2012).

John H. Barclay et al., *Long-Term Population Dynamics of a Managed Burrowing Owl Colony*, 75 J. WILDLIFE MGMT. 1295 (2011).

Letter from Karen A. Goebel, Assistant Field Supervisor, Fish & Wildlife Serv. to Myra Hermann, Envtl. Planner, City of San Diego (Dec. 21, 2012).

NEW JERSEY DEPT OF HEALTH & SENIOR SERV., ASPHALT, HAZARDOUS SUBSTANCE FACT SHEET (2007).

U.S. FISH & WILDLIFE SERV., RECOVERY FOR VERNAL POOLS OF SOUTHERN CALIFORNIA (1998).

August 4, 2014  
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References identified at the end of the comment letter and contained on a separate CD provided by the commenter do not require responses, but are acknowledged here for the record.

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**Date**  
8/25/14

**To**  
Rebecca Malone  
Environmental Analysis Section  
City of San Diego, Development  
Services

**HNTB**

**From**  
Sean Naismith, P.E.

## **ESTIMATED CONSTRUCTION CREWS AND EQUIPMENT USED TO CALCULATE CONSTRUCTION EMISSIONS - SUBMITTAL MEMO**

Brown Field Airport Runway 8L/26R Rehabilitation Project

The project will not add any impervious surface area, and only rehabilitate existing pavement areas in distress. The existing Portland cement concrete (PCC) section of the runway is to be replaced with an asphalt concrete (AC) pavement section. The proposed section consists of a 50' center keel with 4" AC on 5" - 10" varying depth AC base on a rubilized existing PCC base. The outer 50' on either side of the keel will be new full depth AC pavement section with 4" AC on a 14" crushed aggregate base. This project will not result in an increase in aircraft traffic as measured in average daily trips (ADT), energy consumption, or water usage. Therefore, operational emissions resulting in direct, indirect, or cumulative Greenhouse Gas (GHG) impacts are not generated.

However, this project would result in construction-related emissions. We used a Roadway Construction Emissions Model, which is a spreadsheet based model created by the Sacramento Metropolitan Air Quality Management District, and approved by DSD for the purpose of analyzing construction related GHGs - Carbon Dioxide. The model is capable of using basic project information (e.g. total construction months, project type, total project area) to estimate a construction schedule and quantify GHG emissions from heavy-duty construction equipment, haul trucks, and worker commute trips associated with linear construction projects. The output of the model (see attached Model outputs) is CO<sub>2</sub> in units of 1 megagram/project = 1 metric ton/project.

The following are the results based on the project's GHG or carbon dioxide emissions estimated by the model:

This project's duration is four months. It is estimated from the model that it would produce a total of 272.7 metric tons of CO<sub>2</sub>. This project's GHG emissions will, therefore, fall well below the DSD established significance threshold of 900 metric tons per project per year.

The construction means and methods will ultimately be decided by the contractor, but the construction process anticipated is as follows: 1) remove existing 50' of PCC closest to the shoulders and excavate fill material up to 26" below grade, 2) build back up AC section to proposed grade, 3) rubilize existing PCC in middle 50' of runway, 4) build up variable depth AC base layer, 5) construct AC surface layer with a crown on centerline and matching grades at the AC previously placed on the outer 50'. Rubilization is a

technique that involves saving time and transportation costs by reducing existing concrete to rubble in its current location rather than hauling it to another location.

Construction Emission Estimator Assumptions:

1. Asphalt and base material provided by Hanson Aggregates (Hollister Street Asphalt, 389 Hollister St. San Diego ) 7.7 miles from Brown Field Airport
2. Construction Phases include:
  - a. Demolition – Demolition Crew, Quality Control Team
  - b. Site Preparation – Crusher Crew, Milling Crew, Quality Control Team
  - c. Grading – Grading Crew, Quality Control Team
  - d. Paving – ACP Paving Crew, Quality Control Team
  - e. Pavement Striping – Striping Crew, Quality Control Team
3. Construction duration 16 weeks. Construction beginning November 3, 2014 with each phase having the following durations:
  - a. Demolition – 3 weeks (starting 11/3/14 for 3 weeks, 5 days/week, 8hrs/day)
  - b. Site Preparation – 3 weeks (starting 11/24/14 for 3 weeks, 6 days/week, 10 hrs/day)
  - c. Grading – 4 weeks (starting 12/15/14 for 4 weeks, 6 days/week, 10 hrs/day)
  - d. Paving – 5 weeks (starting 1/12/15 for 5 weeks, 6 days/week, 10 hrs/day)
  - e. Pavement Striping – 1 week (starting 2/16/15, 5 days/week, 8 hrs/day)
4. All grading material will be imported (volume of P-403 + P-154)
5. Demolition material will be all material excavated.
6. Number of workers/day for each phase (each phase includes 6 personnel for Quality Control):
  - a. Demolition – 13
  - b. Site Preparation – 16
  - c. Grading – 12
  - d. Paving – 15
  - e. Pavement Striping – 9
7. Each Construction Period will have a Sweeper/Scrubber truck

Crew breakdown and Production Rates:

Administrative Support Team

Labor	Equipment
1 – Project Manager	1 – Crew Van
3 – Field Engineers	1 – SUV
2 – Administrative Assistance	8 - Pick-ups
1 – General Superintendent	1 – Fuel Truck
1 – PCCP Superintendent	2 – Maintenance Vehicles with Crane
1 – Electrical Supervisor	
1 – Safety Manager	
2 – Mechanics	
1 – Fuel Truck Operator	

This team will be in place for the duration of the contract. They will provide the managerial oversight for the project.

Crusher Crew

Labor	Equipment
1 – Foreman	1 – Pickup
1 – Operators	2 – Loaders
2 - Laborers	

This team will be in place from the time the crusher is set up until four weeks after the demolition is completed.

Quality Control Team

Labor	Equipment
1 – Quality Control Manager	6 – Pickups
5 – Quality Control Technicians	

This team will be in place for the duration of the contract. They will be responsible for monitoring the quality of the project.

Grading/Pulverizer Crew

Labor	Equipment
1 – Foreman	1 – Motor Grader
3 – Operators	1 – Pulverizer
2 - Laborers	1 – Scraper
	1 – Loader
	1 – Roller
	1 – Plate Compactor
	1 – Pickups

Production rate of Excavation is 150 Cubic Yards per hour

Production of fine grade and compact is 100 Square Yards per hour.

Production rate for PMB/P-154 placement is 200 Cubic Yards per hour.

ACP Paving Crew

Labor	Equipment
1 - Foreman	1 - Paver
4 - Operators	1 - Paving Equipment
4 - Laborers	2 - Rollers
	1 - Rubber Tired Loader
	1 - Pickups
	1 - Crew Truck

Production rate of Asphalt placement is 150 Tons per hour

Striping Crew

Labor	Equipment
1 - Foreman	1 - Pick-up
1 - Operators	1 - Crew Truck
1 - Laborer	3 - Parking Lot Paint Machines
	1 - Paint Truck

Demolition Crew

Labor	Equipment
1 - Foreman	1 - Pick-up
2 - Operators	2 - Loaders
4 - Laborer	1 - Compressors
	1 - Walk Behind Saw

Production rate of runway pavement demolition is 3500 Square Yards per day

Milling Crew

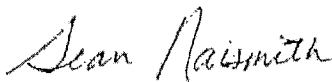
Labor	Equipment
1 - Foreman	1 - Milling Machine
2 - Operators	1 - Water Truck
2 - Laborer	2 - Pickups
1 - Teamster	

Production rate of asphalt pavement demolition (milling) is 480 Square Yards per hour.

Should you need any additional information that will assist in the evaluation of the greenhouse gases, please do not hesitate to contact us.

Sincerely,

**HNTB Corporation**



Sean Naismith, P.E.  
Project Design Lead


Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Brown Field Airport Runway 8L/26R Rehabilitation				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	CO2 (lbs/day)
Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	
Grubbing/Land Clearing	3.6	17.6	26.2	4.2	2.2	2.0	2.4	1.9	0.4	3,180.7
Grading/Excavation	7.7	34.0	115.3	6.8	4.8	2.0	4.5	4.1	0.4	14,081.0
Drainage/Utilities/Sub-Grade	2.8	13.8	24.6	3.7	1.7	2.0	1.9	1.5	0.4	2,740.3
Paving	6.1	31.4	59.6	3.6	3.6	-	3.2	3.2	-	5,859.7
Maximum (pounds/day)	7.7	34.0	115.3	6.8	4.8	2.0	4.5	4.1	0.4	14,081.0
Total (tons/construction project)	0.2	1.2	2.7	0.2	0.1	0.1	0.1	0.1	0.0	300.7
Notes: Project Start Year -> 2014										
Project Length (months) -> 4										
Total Project Area (acres) -> 9										
Maximum Area Disturbed/Day (acres) -> 0										
Total Soil Imported/Exported (yd <sup>3</sup> /day)-> 2800										
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.										
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and L. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.										
Emission Estimates for -> Brown Field Airport Runway 8L/26R Rehabilitation				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	CO2 (kgs/day)
Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM2.5 (kgs/day)	PM2.5 (kgs/day)	PM2.5 (kgs/day)	
Grubbing/Land Clearing	1.6	8.0	11.9	1.9	1.0	0.9	1.1	0.9	0.2	1,445.8
Grading/Excavation	3.5	15.4	52.4	3.1	2.2	0.9	2.1	1.9	0.2	6,400.4
Drainage/Utilities/Sub-Grade	1.3	6.3	11.2	1.7	0.8	0.9	0.9	0.7	0.2	1,245.6
Paving	2.8	14.3	27.1	1.6	1.6	-	1.5	1.5	-	2,663.5
Maximum (kilograms/day)	3.5	15.4	52.4	3.1	2.2	0.9	2.1	1.9	0.2	6,400.4
Total (megagrams/construction project)	0.2	1.0	2.4	0.2	0.1	0.1	0.1	0.1	0.0	272.7
Notes: Project Start Year -> 2014										
Project Length (months) -> 4										
Total Project Area (hectares) -> 4										
Maximum Area Disturbed/Day (hectares) -> 0										
Total Soil Imported/Exported (meters <sup>3</sup> /day)-> 2141										
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.										
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.										

**Road Construction Emissions Model** Version 7.1.5.1

**Data Entry Worksheet**

Note: Required data input sections have a yellow background.  
 Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.  
 The user is required to enter information in cells C18 through C25.



**Input Type**

Project Name: **Brown Field Airport Runway 8L/26R Rehabilitation**

Construction Start Year: **2014** (Enter a Year between 2009 and 2025 (inclusive))

Project Type: **1**  
 1 New Road Construction  
 2 Road Widening  
 3 Bridge/Overpass Construction

Project Construction Time: **4.00** months  
 1. Sand Gravel  
 2. Weathered Rock-Earth  
 3. Blasted Rock

Predominant Soil/Site Type: Enter 1, 2, or 3  
**1**

Project Length: **0.40** miles

Total Project Area: **9.00** acres

Maximum Area Disturbed/Day: **0.20** acres

Water Trucks Used?: **1**  
 1. Yes  
 2. No

Soil Imported: **1600.00** yd<sup>3</sup>/day

Soil Exported: **1200.00** yd<sup>3</sup>/day

Average Truck Capacity: **20** yd<sup>3</sup> (assume 20 if unknown)

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

Construction Periods	User Override of	Program
	Construction Months	Calculated Months
Grubbing/Land Clearing	0.00	0.40
Grading/Excavation	1.00	1.60
Drainage/Utilities/Sub-Grade	0.70	1.40
Paving	1.50	0.60
Totals	4.00	4.00

NOTE: soil hauling emissions are included in the Grading/Excavation Construction Period Phase, therefore the Construction Period for Grading/Excavation cannot be zero if hauling is part of the project.  
 Hauling emission default values can be overridden in cells C45 through C46.

Soil Hauling Emissions	User Override of		Default Values			
	User Input	Soil Hauling Defaults				
Miles/round trip	16.00	30				
Round trips/day		140				
Vehicle miles traveled/day (calculated)			2240			
<b>Hauling Emissions</b>	<b>ROG</b>	<b>NOx</b>	<b>CO</b>	<b>PM10</b>	<b>PM2.5</b>	<b>CO2</b>
Emission rate (grams/mile)	0.28	10.43	1.26	0.25	0.18	1713.35
Emission rate (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day	1.40	51.44	6.23	1.24	0.88	8453.54
Tons per construction period	0.02	0.57	0.07	0.01	0.01	92.99



Worker commute default values can be overridden in cells C69 through C85

Worker Commute Emissions	User Override of Worker					
	Commute Default Values	Default Values				
Miles/ one-way trip	20.00	20				
One-way trips/day	2.00	2				
No. of employees: Grubbing/Land Clearing	16.00	4				
No. of employees: Grading/Excavation	12.00	16				
No. of employees: Drainage/Utilities/Sub-Grade	15.00	14				
No. of employees: Paving	15.00	10				
	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.182	0.249	2.208	0.047	0.020	443.370
Emission rate - Grading/Excavation (grams/mile)	0.182	0.249	2.208	0.047	0.020	443.370
Emission rate - Drainage/Utilities/Sub-Grade (gr/mile)	0.182	0.249	2.208	0.047	0.020	443.370
Emission rate - Paving (grams/mile)	0.182	0.249	2.208	0.047	0.020	443.370
Emission rate - Grubbing/Land Clearing (grams/strip)	0.616	0.407	5.187	0.004	0.003	95.481
Emission rate - Grading/Excavation (grams/strip)	0.616	0.407	5.187	0.004	0.003	95.481
Emission rate - Drainage/Utilities/Sub-Grade (gr/strip)	0.616	0.407	5.187	0.004	0.003	95.481
Emission rate - Paving (grams/strip)	0.616	0.407	5.187	0.004	0.003	95.481
Pounds per day - Grubbing/Land Clearing	0.300	0.379	3.478	0.067	0.028	631.745
Tons per const. Period - Grub/Land Clear	0.003	0.003	0.031	0.001	0.000	5.559
Pounds per day - Grading/Excavation	0.225	0.285	2.608	0.050	0.021	473.809
Tons per const. Period - Grading/Excavation	0.002	0.003	0.029	0.001	0.000	5.212
Pounds per day - Drainage/Utilities/Sub-Grade	0.281	0.356	3.260	0.063	0.027	592.261
Tons per const. Period - Drain/UT/Sub-Grade	0.002	0.003	0.025	0.000	0.000	4.560
Pounds per day - Paving	0.281	0.356	3.260	0.063	0.027	592.261
Tons per const. Period - Paving	0.005	0.006	0.054	0.001	0.000	9.772
Tons per construction period	0.012	0.015	0.138	0.003	0.001	25.104

Water Truck default values can be overridden in cells C91 through C93 and E91 through E93

Water Truck Emissions	User Override of	Program Estimate of	User Override of Truck	Default Values		
	Default # Water Trucks	Number of Water Trucks	Miles Traveled/Day	Miles Traveled/Day		
Grubbing/Land Clearing - Exhaust		1		40		
Grading/Excavation - Exhaust		1		40		
Drainage/Utilities/Subgrade		1		40		
	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.28	10.43	1.26	0.25	0.18	1713.35
Emission rate - Grading/Excavation (grams/mile)	0.28	10.43	1.26	0.25	0.18	1713.35
Emission rate - Drainage/Utilities/Sub-Grade (gr/mile)	0.28	10.43	1.26	0.25	0.18	1713.35
Pounds per day - Grubbing/Land Clearing	0.03	0.92	0.11	0.02	0.02	150.96
Tons per const. Period - Grub/Land Clear	0.00	0.01	0.00	0.00	0.00	1.33
Pound per day - Grading/Excavation	0.03	0.92	0.11	0.02	0.02	150.96
Tons per const. Period - Grading/Excavation	0.00	0.01	0.00	0.00	0.00	1.66
Pound per day - Drainage/Utilities/Subgrade	0.03	0.92	0.11	0.02	0.02	150.96
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.01	0.00	0.00	0.00	1.16

Fugitive dust default values can be overridden in cells C110 through C112

Fugitive Dust	User Override of Max	Default	PM10	PM10	PM2.5	PM2.5
	Acreage Disturbed/Day	Maximum Acreage/Day	pounds/day	tons/per period	pounds/day	tons/per period
Fugitive Dust - Grubbing/Land Clearing		0.2	2.0	0.0	0.4	0.0
Fugitive Dust - Grading/Excavation		0.2	2.0	0.0	0.4	0.0
Fugitive Dust - Drainage/Utilities/Subgrade		0.2	2.0	0.0	0.4	0.0

Off-Road Equipment Emissions								
Grubbing/Land Clearing Override of Default Number of Vehicles	Default Number of Vehicles Program-estimate	Type	ROG	CO	NOx	PM10	PM2.5	CO2
			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
1.00		Air Compressors	1.00	4.33	6.25	0.55	0.51	634.93
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
1.00		Concrete/Industrial Saws	0.77	3.78	5.31	0.42	0.39	583.93
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
1.00		Sweepers/Scrubbers	0.56	1.97	4.46	0.39	0.36	337.61
2.00		Tractors/Loaders/Backhoes	0.97	3.94	8.87	0.70	0.64	841.54
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
		Grubbing/Land Clearing	3.3	14.0	24.9	2.1	1.9	2398.0
		Grubbing/Land Clearing	0.0	0.1	0.2	0.0	0.0	21.1

Grading/Excavation	Default		ROG	CO	NOx	PM10	PM2.5	CO2
	Override of Default Number of Vehicles	Number of Vehicles						
	Program-estimate	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00	3	Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
1.00	1	Graders	1.12	3.49	10.95	0.61	0.57	672.31
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
1.00		Other Construction Equipment	0.93	4.50	10.01	0.52	0.48	517.97
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
1.00		Plate Compactors	0.05	0.26	0.31	0.01	0.01	43.06
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
2.00	2	Rollers	0.97	3.77	8.50	0.63	0.58	696.91
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
1.00	2	Scrapers	1.93	9.08	23.95	0.97	0.89	2012.03
0.00	1	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
1.00		Sweepers/Scrubbers	0.56	1.97	4.46	0.39	0.36	337.61
1.00	2	Tractors/Loaders/Backhoes	0.48	1.97	4.44	0.35	0.32	420.77
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	6.0	25.0	62.6	3.5	3.2	5002.7
	Grading	tons per phase	0.1	0.3	0.7	0.0	0.0	58.0

Drainage/Utilities/Subgrade	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	Program-estimate		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	1	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
1.00		Other Construction Equipment	0.93	4.50	10.01	0.52	0.48	817.97
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
1.00		Sweepers/Scrubbers	0.56	1.97	4.46	0.39	0.36	337.61
2.00	2	Tractors/Loaders/Backhoes	0.97	3.94	8.87	0.70	0.64	841.54
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	2.5	10.4	23.3	1.6	1.5	1997.1
	Drainage	tons per phase	0.0	0.1	0.2	0.0	0.0	15.4

Paving	Default		ROG	CO	NOx	PM10	PM2.5	CO2
	Override of Default Number of Vehicles	Number of Vehicles Program-estimate						
			0.00	0.00	0.00	0.00	0.00	0.00
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
	1.00	Other Construction Equipment	0.93	4.50	10.01	0.52	0.48	817.97
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1.00	Other Material Handling Equipment	0.64	3.17	6.74	0.36	0.33	608.60
		1 Pavers	0.60	3.55	6.60	0.33	0.30	601.75
		1 Paving Equipment	0.44	3.37	5.33	0.25	0.23	532.62
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	2.00	3 Rollers	0.97	3.77	8.50	0.63	0.58	698.91
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
	1.00	Rubber Tired Loaders	0.68	3.89	8.75	0.30	0.27	828.48
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	1 Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1.00	Sweepers/Scrubbers	0.56	1.97	4.46	0.39	0.36	337.61
		2 Tractors/Loaders/Backhoes	0.97	3.94	8.87	0.70	0.64	841.54
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
		Paving pounds per day	5.8	28.2	59.3	3.5	3.2	5267.5
		Paving tons per phase	0.1	0.5	1.0	0.1	0.1	96.9
		Total Emissions all Phases (tons per construction period) =>	0.2	0.9	2.1	0.1	0.1	178.4

Equipment default values for horsepower and hours/day can be overridden in cells C299 through C322 and E285 through E322.

Equipment	Default Values Horsepower	Default Values Hours/day
Aerial Lifts	63	8
Air Compressors	106	8
Bore/Drill Rigs	206	8
Cement and Mortar Mixers	10	8
Concrete/Industrial Saws	54	8
Cranes	226	8
Crawler Tractors	208	8
Crushing/Proc. Equipment	142	8
Excavators	153	8
Forklifts	89	8
Generator Sets	66	8
Graders	175	8
Off-Highway Tractors	123	8
Off-Highway Trucks	430	8
Other Construction Equipment	172	8
Other General Industrial Equipment	88	8
Other Material Handling Equipment	167	8
Pavers	126	8
Paving Equipment	131	8
Plate Compactors	8	8
Pressure Washers	26	8
Pumps	53	8
Rollers	81	8
Rough Terrain Forklifts	130	8
Rubber Tired Dozers	255	8
Rubber Tired Loaders	200	8
Scrapers	382	8
Signal Boards	20	8
Skid Steer Loaders	65	8
Surfacing Equipment	254	8
Sweepers/Scrubbers	64	8
Tractors/Loaders/Backhoes	98	8
Trenchers	81	8
Welders	45	8

END OF DATA ENTRY SHEET

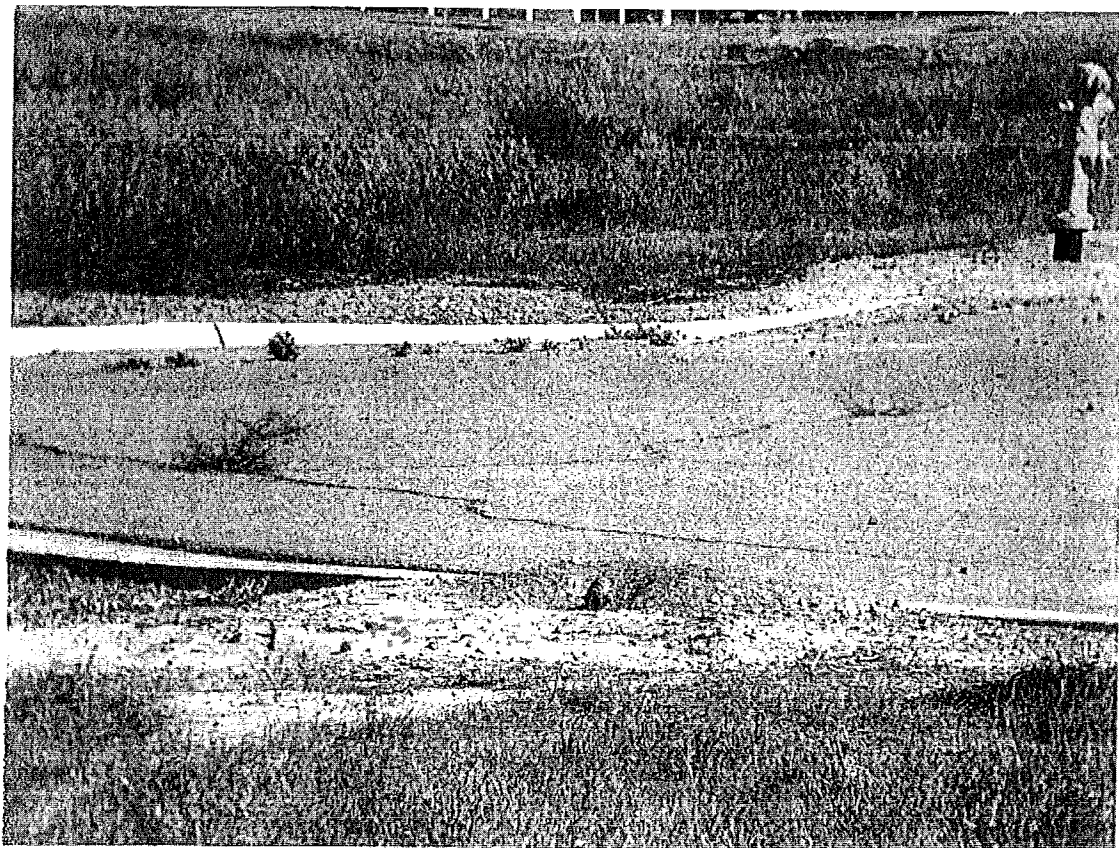
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# BROWN FIELD MUNICIPAL AIRPORT RUNWAY REHABILITATION PROJECT

Burrowing Owl Survey Report  
San Diego County, California

Prepared for  
City of San Diego Airports Division

July 2014



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# BROWN FIELD MUNICIPAL AIRPORT RUNWAY REHABILITATION PROJECT

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## Burrowing Owl Survey Report

### 1. Introduction

#### 1.1 Project Location and Description

The Brown Field Municipal Airport (Airport) is located in the City of San Diego (City) within the community of Otay Mesa, approximately 21 miles southeast of downtown, 2.5 miles east of Interstate 805, and 1.5 miles north of the U.S.-Mexico International Border and the General A.L. Rodríguez-Tijuana International Airport as depicted on the United States (U.S.) Geologic Survey (USGS) 7.5-Minute Series Otay Mesa Quadrangle Township 18 South, Range 1 East, Section 30 (Figure 1 and Figure 2). The Airport is owned by the City and managed by the City's Real Estate Assets Department, Airports Division.

The City is proposing to rehabilitate the ends of Runway 8L-26R (proposed project) located on the Airport. The Airport currently operates two runways, one parallel taxiway and five connecting taxiways. The City has identified the need for the rehabilitation of the larger of the two runways, Runway 8L-26R. Runway 8L-26R measures 7,972 feet in length and 150 feet in width. The current conditions of the concrete ends of the runway require immediate evaluation and rehabilitation to ensure safety and compliance with current design and construction standards as set forth by applicable regulatory agencies, including the Federal Aviation Administration.

#### 1.2 Purpose of Report

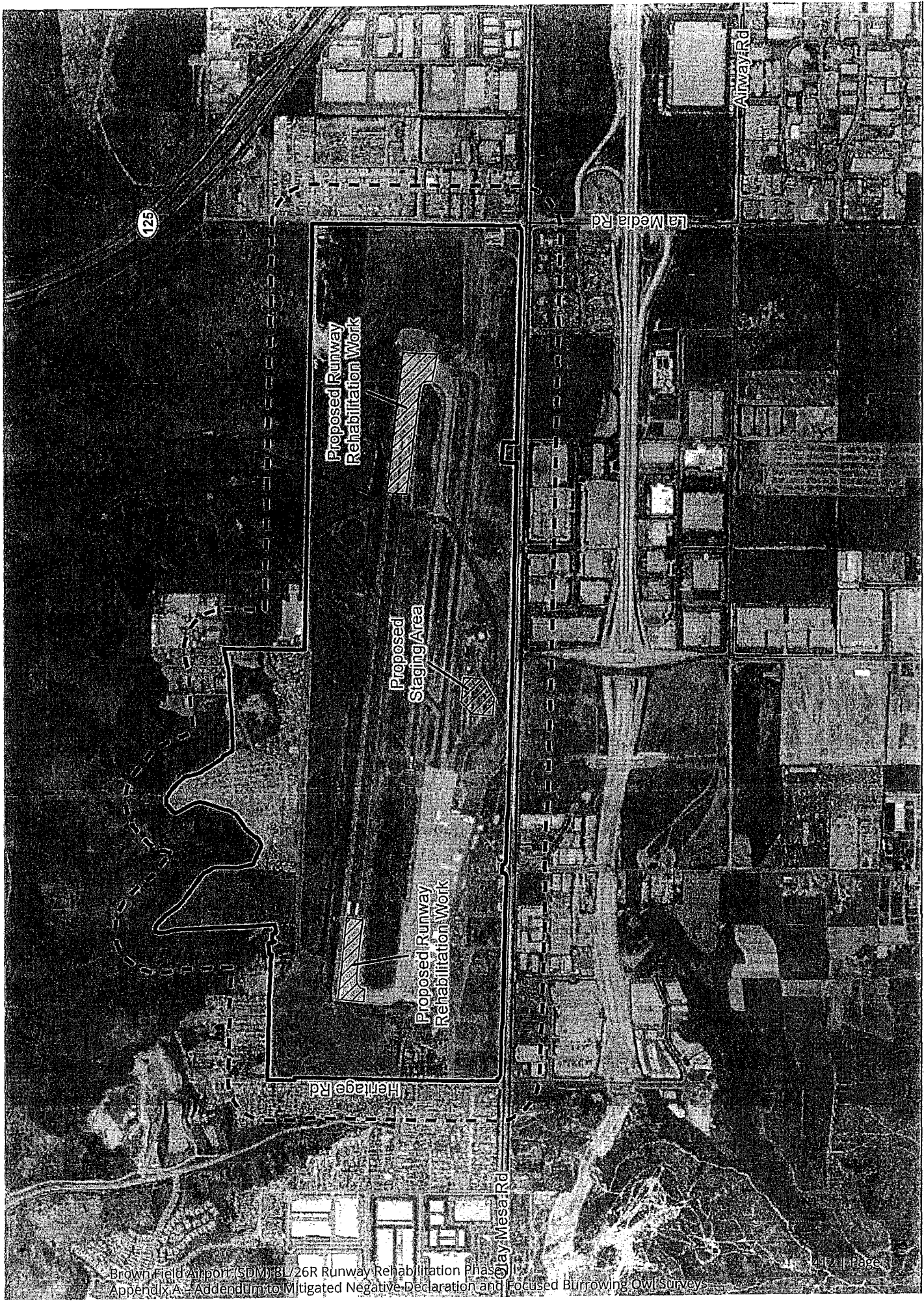
The purpose of this report is to document focused western burrowing owl (*Athene cucularia hypugaea*) surveys conducted for the proposed project by Environmental Science Associates (ESA), and to recommend any feasible measures to avoid or reduce potential project impacts on burrowing owl nesting activity in the vicinity of the proposed project. The purpose of the surveys was to determine the breeding occupancy of burrowing owls on, and within the immediate vicinity of, the Airport. The information provided herein is consistent with accepted scientific and technical standards, and meets the reporting requirements outlined in the California Department of Fish and Wildlife (CDFW) *Staff Report on Burrowing Owl Mitigation* (CDFW, 2012).



SOURCE: i-cubed; County of Riverside; San Diego County GIS, 2011.

Regional Location Map  
Figure 1





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## 2. Background Information

### 2.1 Species Distribution and Regulatory Context

There are two recognized subspecies of burrowing owls that are known to occur within North America. The western burrowing owl occurs throughout western North America, from the Mississippi River to the Pacific Ocean, and from the prairie provinces of Canada south to portions of Central and South America; while the Florida burrowing owl (*Athene cunicularia floridana*) is restricted to Florida, extreme southeastern Georgia, and the Bahamas.

The burrowing owl is a migratory species protected under the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711). The MBTA makes it unlawful to possess, buy, sell, or barter any migratory bird listed in 50 C.F.R. Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 C.F.R. 21).

Additionally, burrowing owls and their nests are protected by Section 2000, 3503, 3503.5, and 3800 of the California Fish and Game Code that prohibit the take, possession, or destruction of birds, their nests, or eggs. Avoiding violation of the take provisions of these laws generally requires that the project-related disturbance at active nesting territories be reduced or eliminated during the nesting period (generally considered February 1 to August 31). Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young) may be considered “take” and is potentially punishable by fines.

Furthermore, the burrowing owl is a covered species under the City’s Multiple Species Conservation Plan (MSCP) Subarea Plan for the Otay Mesa Area. The City outlines specific management goals intended to preserve the Otay Mesa area in a condition that includes a full complement of native species which provides functional wildlife habitat and allows for wildlife movement (City, 1997). Additionally, the San Diego Municipal Code Land Development Code Biology Guidelines provide guidance for the protection of burrowing owl habitat, framework for avoidance of occupied burrows by development, and mitigation requirements for impacts to occupied habitat (City, 2002).

### 2.2 Habitat Requirements

Burrowing owls are known to occur in a variety of generally flat, dry, and open habitats with adequate densities of suitable burrows. Burrowing owls typically require relatively low vegetative cover and sufficient perching locations to aid in foraging and predator detection. Specifically, preferred natural breeding habitat for the species includes annual grasslands, shrub steppe, and desert habitats (CDFW, 2012). Burrowing owls typically require an existing burrow or cavity of appropriate size and depth for a nest burrow, although they have been documented to excavate their own burrows where existing burrows are absent (CDFW, 2012). Burrowing owls are also

well-adapted to a variety of urban environments, often utilizing man-made structures (e.g., drainage pipes, culverts, agricultural berms, irrigation ditches, etc.). Within California, the western burrowing owl is often associated with the burrows of the California ground squirrel (*Spermophilus beecheyi*); however, within desert habitats the burrows of other species (e.g., round-tailed ground squirrel [*Citellus tereticaudus*], American badger [*Taxidea taxus*], coyote [*Canis latrans*], etc.) are known to be utilized (CDFW, 2012).

## 2.3 Breeding Ecology

Within California, western burrowing owls typically breed between February 1 and August 31, with the peak of breeding season generally occurring between April 15 and July 15 (CDFW, 2012). Males select a nest burrow, and begin engaging in courtship behaviors. Burrowing owls typically lay one clutch of eggs per season, with females incubating and brooding the young, while males engage in territory defense and foraging behaviors. Incubation typically takes approximately 29 days, and nestlings can be observed at burrow entrances within approximately two weeks after hatching, and generally fledge within six weeks of hatching (Haug, 1993). Burrowing owls are known to exercise a moderate level of nest site fidelity, often utilizing the same nest burrows in subsequent years (CDFW, 2012).

## 2.4 Dietary Habits

Burrowing owls are considered opportunistic predators, feeding on a wide variety of prey species, including arthropods, birds, small mammals, amphibians, reptiles, and carrion (CDFW, 2012). Although burrowing owls are typically active during the day, they are known to forage during the night, potentially to avoid predation by diurnal predator species (e.g., falcon, hawks, etc.). Burrowing owls are known to hunt from elevated perches, often engaging in short glides, flights, or runs to capture prey (Thomsen, 1971).

## 2.5 Population Trends

Burrowing owl populations have shown a continuous decline throughout much of their North American range over the last century (Johnson et al., 2010). The historical breeding range of the species has been restricted significantly across the plains and coastal areas of North America, with the species believed extirpated in much of its northern range (EcoSystems, 2005). The species has declined in several southern California and Bay Area counties, particularly within coastal areas. Extensive population declines in the Imperial and Central Valley regions have been associated with agricultural conversion (Rosenberg et al., 2009). Within San Diego County, the species was historically widespread throughout the coastal areas and inland grassland habitats (Lincer and Bloom, 2007). However, over the second half of the 20<sup>th</sup> century, the species became increasingly uncommon, with populations becoming smaller and more isolated over time. Some historic strongholds within San Diego County remain occupied, including the Otay Mesa, although population numbers have been significantly reduced (Lincer and Bloom, 2007). Locally,



loss of suitable habitat to development and habitat type conversion are largely responsible for the decline of the species.

### 3. Methods

All aspects of the field surveys were conducted by ESA biologists experienced and knowledgeable in identifying burrowing owl habitat, ecology, and individuals, as well as sign of presence such as feathers, excrement, pellets and potential burrows suitable for breeding and shelter.

#### 3.1 Habitat Assessment

A baseline burrowing owl habitat assessment was conducted on the Airport property, as well as within a 150-meter buffer surrounding the Airport by ESA biologist Joseph Henry on March 25, 2014. Conditions during the habitat assessment are provided in Table 1. Prior to the habitat assessment, existing vegetation maps, survey reports, and aerial photographs were referenced to aid in the field assessment (Google Earth, 2014; Helix, 2011; Merkel, 2008; Sage Institute, 2011). Suitability of habitat was determined by walking and driving throughout the Airport property and surrounding buffer. In areas where direct access was not available, potential habitat was assessed with the aid binoculars from the nearest accessible vantage point. The initial habitat suitability assessment was continually refined throughout the course of the focused survey effort.

Plant communities were classified during the baseline habitat assessment in order to evaluate the potential for burrowing owl to utilize the Airport property and surrounding buffer. All plants observed during the habitat assessment were either identified in the field or a sample was collected and later identified with the aid of taxonomic keys. Plant taxonomy followed Hickman (1993), as updated in Baldwin, et al. (2012). Plant communities were classified according to Holland-Oberbauer (2008).

#### 3.2 Focused Surveys

Focused surveys were conducted on foot throughout the Airport property and surrounding buffer within all areas of suitable habitat where safe and legal access was obtained. In areas where direct access was not available (e.g., areas in close proximity to active runways, adjacent private property, etc.), suitable habitat was surveyed with the aid binoculars from the nearest accessible vantage point. Surveys were conducted by walking straight-line transects spaced no more than 20 meters apart, adjusting for vegetation height and density. At the start of each transect, and at least every 100 meters, biologists scanned the entire visible area for burrowing owls with the aid of binoculars. All potential burrows, as identified by the presence of burrowing owls or sign (i.e., pellets, prey remains, whitewash, or decoration) were recorded. Care was taken not to flush burrowing owls from their burrows or perches.

Pursuant to burrowing owl survey protocol, as defined in Appendix D of the *Staff Report on Burrowing Owl Mitigation* (Appendix B; CDFW, 2012), the morning survey period was initiated

at morning civil twilight and concluded at 1000, and the evening survey period was initiated two hours prior to sunset and concluded at evening civil twilight. Surveys were not conducted during times of inclement weather, defined as winds exceeding 20 kilometers per hour (kph), precipitation, dense fog, temperatures exceeding 20 degrees Celsius (°C), or cloud cover exceeding 75 percent. Survey dates, times, personnel, and conditions are provided in Table 1, below.

**TABLE 1  
SURVEY DATES AND PERSONNEL**

Dates	Times	Personnel	Temperature (°C)	Wind (kph)	Cloud Cover (%)
March 25, 2014 <sup>a</sup>	1100 to 1500	Joseph Henry	17 to 19	0 to 2	60 to 75
April 3, 2014	0610 to 1000; 1710 to 1915	Joseph Henry and Dallas Pugh	9 to 19	0 to 14	0 to 10
May 6, 2014 <sup>b</sup>	0540 to 0700	Joseph Henry and Dallas Pugh	13 to 14	3 to 6	50 to 60
May 9, 2014	0530 to 1000	Joseph Henry and Dallas Pugh	14 to 20	0 to 3	10 to 15
June 2, 2014	0515 to 1000; 1755 to 2020	Joseph Henry and Robert Sweet	18 to 23	0 to 8	15 to 30
June 24, 2104	0515 to 1000; 1805 to 2015	Joseph Henry and Dallas Pugh	16 to 22	2 to 7	55 to 70

<sup>a</sup> Baseline habitat assessment.  
<sup>b</sup> Survey suspended due to precipitation.

## 4. Results

### 4.1 Habitat Assessment

The Airport property and surrounding buffer is characterized by active aviation, open fields not associated with active aviation, as well as commercial and industrial development. Habitat types within the Airport property and surrounding buffer included mainly non-native grassland, disturbed, and developed habitats, although Diegan coastal sage scrub and maritime succulent scrub were also mapped within the area (Sage Institute, 2011). The proposed staging area for the project occurs within disturbed habitat, while the two proposed runway rehabilitation sites on the ends of Runway 8L-26R occur within developed areas. Representative photographs of the habitat types within the Airport property and surrounding buffer are included in Appendix A. Due to the undeveloped nature of the area, the majority of the Airport property and surrounding buffer was considered potential burrowing owl habitat. Certain areas were identified as providing high quality burrowing owl habitat, as indicated by the presence of existing burrows, berms, or proximity to suitable foraging habitat. Contrarily, other areas were identified as providing little to know habitat value, as indicted by relatively recent development or steep terrain unsuitable to the species. Certain portions of developed habitat were considered suitable burrowing owl habitat, based on adjacency to suitable foraging habitat, presence of existing burrows, and relatively low human visitation.

The majority of the Airport property was classified as non-native grassland and identified as suitable burrowing owl habitat. Portions of the Airport property not considered suitable habitat, and therefore excluded from the focused surveys, included active runways, and areas of extensive and relatively recent development not supporting burrows (e.g., paved taxiways, terminal buildings, etc.). Much of the surrounding buffer was also considered unsuitable habitat, and therefore excluded from the focused surveys, based on the presence of dense and extensive development, lack of existing burrows, and inadequate connectivity to foraging habitat. Additional areas to the north of the Airport property, and within the surrounding buffer, were excluded from the focused surveys based on the presence of steep terrain. Previously suitable habitat south of the Airport property, within the surrounding buffer, was also excluded from focused surveys, as the property was recently graded in preparation for development. Suitable habitat within the surrounding buffer included an open field to the southeast of the Airport property, and the area northeast of the Airport property, much of which includes the recently restored Caltrans Lonestar Mitigation Property.

### 4.2 Focused Surveys

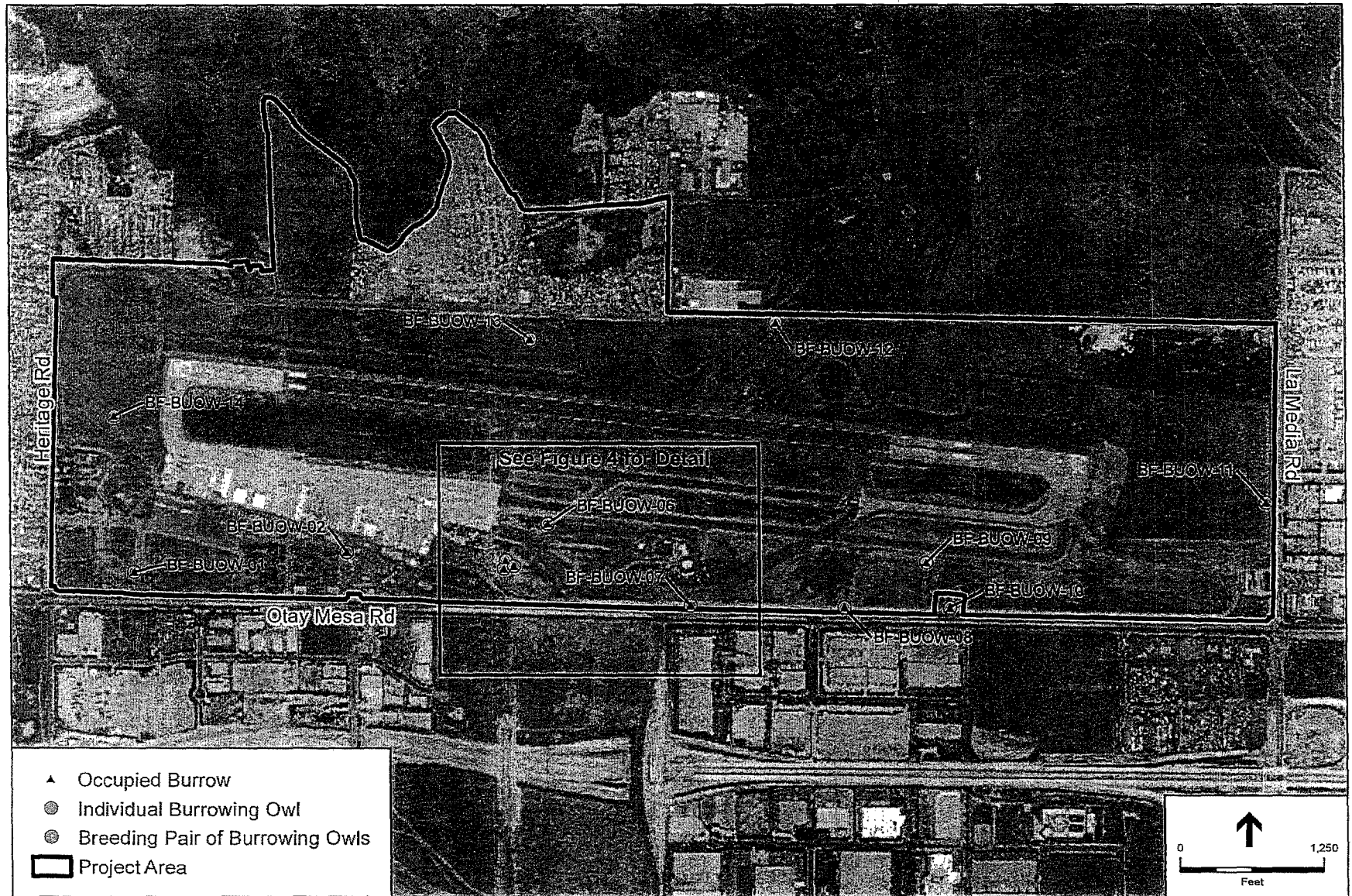
A total of 14 active burrows were identified during the focused surveys (Figure 3 and Figure 4). All 14 of the active burrows were identified within the Airport property. An active burrow consisted of at least one adult burrowing owl associated with a burrow, determined by direct observation. An active burrow may support a single burrowing owl, and pair of burrowing owls,

or a family group (i.e., a breeding pair and nestlings). Representative photographs of active burrows identified within the Airport property and included in Appendix A. Seven of the active burrows were identified within non-native grassland habitat, and seven were identified within disturbed or developed habitat. The highest density of active burrows was observed in the southern portion of the Airport property, where ten active burrows were identified.

Five of the burrows were only observed to be occupied by a single adult burrowing owl. The remaining nine active burrows were observed to support breeding pairs of burrowing owls, with nestlings observed at eight of these burrows. A total of 15 nestlings were observed during the focused surveys. Occupancy details for each of the identified active burrows are provided in Table 2, below.

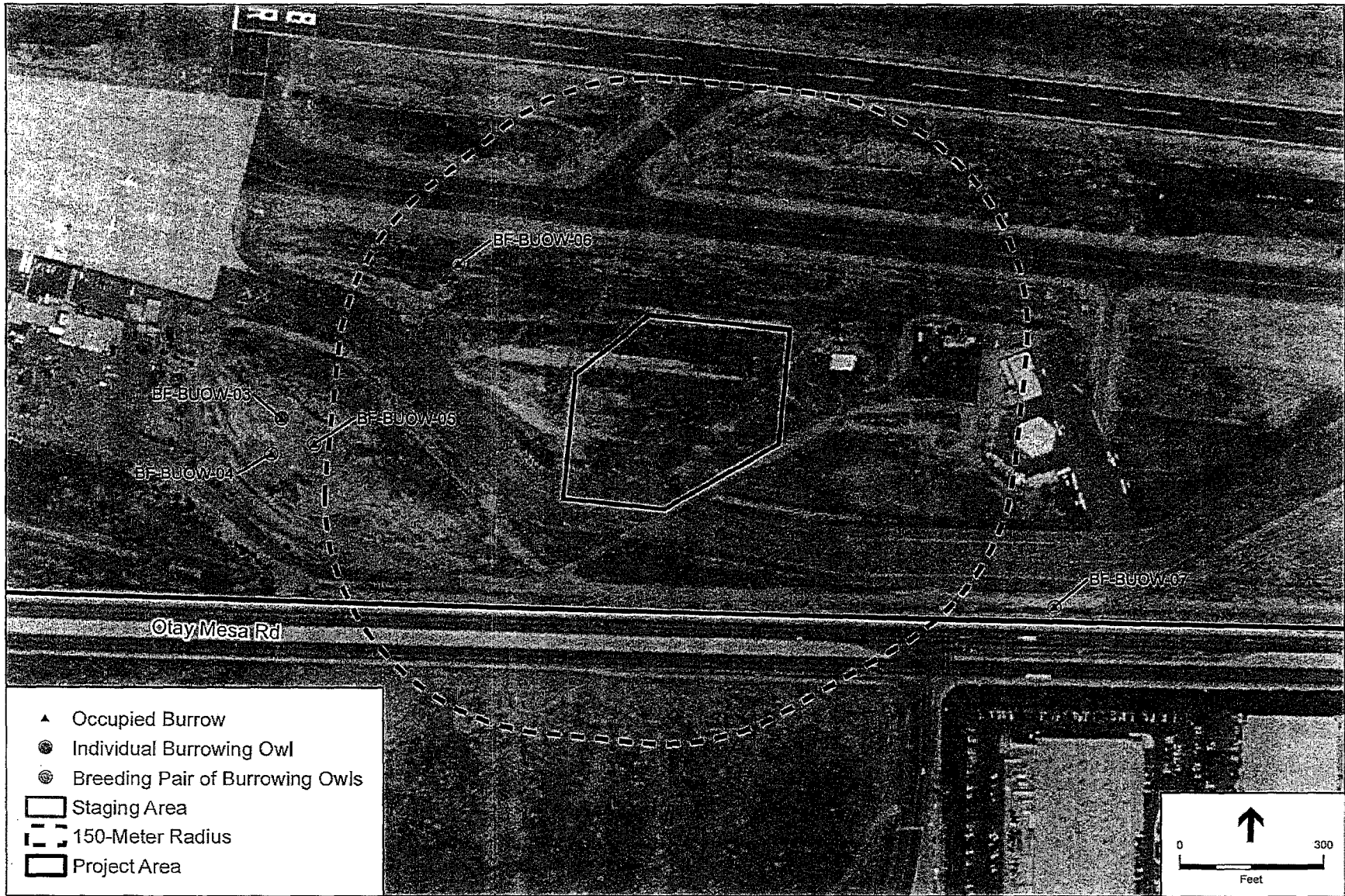
**TABLE 2  
BURROW OCCUPANCY DETAILS**

Burrow Number	Habitat Type	Occupancy	Minimum Number of Nestlings
BF-BUOW-01	Disturbed	Single	N/A
BF-BUOW-02	Developed	Breeding Pair	2
BF-BUOW-03	Developed	Single	N/A
BF-BUOW-04	Developed	Breeding Pair	2
BF-BUOW-05	Developed	Breeding Pair	2
BF-BUOW-06	Disturbed	Breeding Pair	1
BF-BUOW-07	Developed	Breeding Pair	2
BF-BUOW-08	Non-native grassland	Breeding Pair	0
BF-BUOW-09	Non-native grassland	Single	N/A
BF-BUOW-10	Non-native grassland	Breeding Pair	2
BF-BUOW-11	Non-native grassland	Breeding Pair	3
BF-BUOW-12	Non-native grassland	Single	N/A
BF-BUOW-13	Non-native grassland	Single	N/A
BF-BUOW-14	Non-native grassland	Breeding Pair	1



SOURCE: ESRI Imagery

2014 Burrowing Owl Survey Results on Brown Field Municipal Airport  
Figure 3



SOURCE: ESRI Imagery

2014 Burrowing Owl Survey Results on Brown Field Municipal Airport  
**Figure 4**



## 5. Discussion

Although the vast majority of the Airport property was considered suitable burrowing owl habitat, there was a noticeable difference in occupancy rates between the northern and southern portions of the Airport property. Despite the presence of suitable habitat within the northern portion of the Airport property, only two burrows were identified north of the active runway. Additionally, it was noted that there was a decreased density of California ground squirrel burrows within the northern portion of the Airport property. As burrowing owls within the region are closely associated with the presence of California ground squirrel burrows, the lower density of burrows in the northern portion of the site likely contributes to the reduced density of burrowing owls north of the active runway. Additional threats within the northern portion of the Airport property were noted during focused surveys, including regular low-elevation flyovers by helicopters associated with the adjacent U.S. Department of Homeland Security facility and regular occurrence of domestic dogs associated with the adjacent automotive facilities along Pogo Row. Additionally, the recent restoration of the Lonestar Mitigation Property, located to the northeast of the Airport property, may provide higher quality habitat potentially attracting burrowing owl away from the northern portion of the Airport property.

Comparatively, the southern portion of the Airport property was observed to support higher densities of active burrowing owl burrows. In addition to the higher density of California ground squirrel burrows, several existing man-made structures (e.g., drainage berm, seldom-used helicopter pads, historic building foundations, etc.) were noted that provide high quality burrowing owl habitat. Existing vegetation management (i.e., mowing) throughout the Airport increases the quality of burrowing owl habitat. The regular mowing activities on the Airport property do not appear to negatively impact the burrow locations, and provide the burrowing owls with increased visibility vital to foraging success and predator avoidance.

Prior to the initiation of construction activities, the following measures are recommended to avoid impacts to burrowing owl:

- Between 14 and 30 days prior to any construction activity, the impact area should be surveyed by a qualified biologist in accordance with the most recent accepted protocols (currently those within the California Department of Fish and Wildlife 2012 *Staff Report on Burrowing Owl Mitigation*) for burrowing owls and occupied burrows. The impact area includes any area involving construction activity that may negatively affect burrowing owls, such as grading activities and staging of equipment and materials, and the area within 150 meters of the construction activity.
- In addition, no more than three days prior to the start of construction activity, a pre-construction nesting bird survey should be conducted by a qualified biologist. If no burrowing owls are found, then no further avoidance measures are recommended. If burrowing owls are found, the following measures should be implemented:
  - No active burrowing owl burrows should be directly impacted by the project.

- Construction activities should occur during the non-breeding season for burrowing owls, generally considered to be September 1 to January 31.
- Should construction be necessary during the breeding season, the following measures are recommended:
  - A qualified biologist should conduct surveillance of the active burrow(s) within 24 hours of the start of construction.
  - A no-work buffer should be established around active nest(s), as determined by a qualified biologist in consultation with the California Department of Fish and Wildlife. The width of the buffer should be based on such factors as location of nest, local ambient conditions, type of project activity, intensity and duration of project activity, timing within the nesting cycle, and the species tolerance for disturbance. An effective buffer is wide enough to preclude detrimental effects to nesting behavior that could lead to nest abandonment and mortality of fledglings from noises or vibrations generated from construction activities.
  - Buffers should be delineated in the field with suitable material, as determined by the biologist in consultation with the California Department of Fish and Wildlife and the City of San Diego Airports Division.
  - A qualified biologist should monitor construction activities occurring within the buffer area at least twice a month during construction, to determine if any circumstances have changed that would warrant additional measures to be taken to avoid impacts to the nest(s). If the biologist determines that additional measures are necessary, the biologist should consult with the California Department of Fish and Wildlife prior to the implementation of such measures.
- Existing roadways and paved accessways on Airport property should be used during construction, to the greatest extent feasible.
- A worker education program should be implemented by the construction contractor for all personnel working at the project site. Prior to any construction personnel starting work on the project site, they should be educated about the importance of avoiding the nesting site(s) within the buffer area, and the need to minimize activities in the vicinity of the nest(s) that would disturb the species.



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# APPENDIX A

## Representative Photographs

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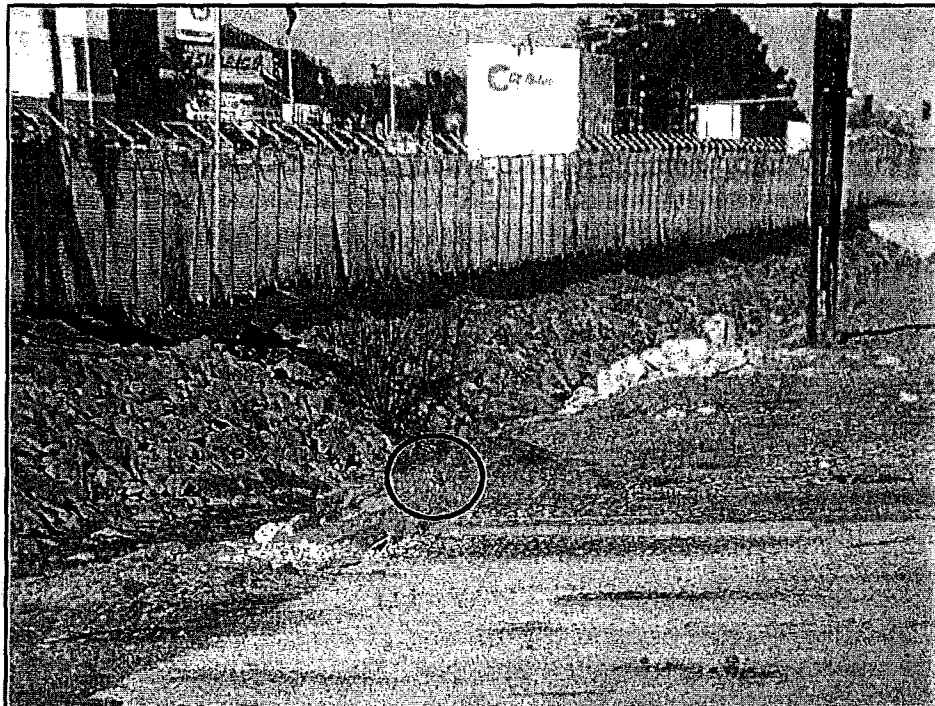
Photograph 1: View of high-quality non-native grassland habitat. Facing generally northwest.



Photograph 2: View of active burrow BF-BUOW-12 within drain located underneath tire. Note whitewash covering the tire. Facing generally northeast.



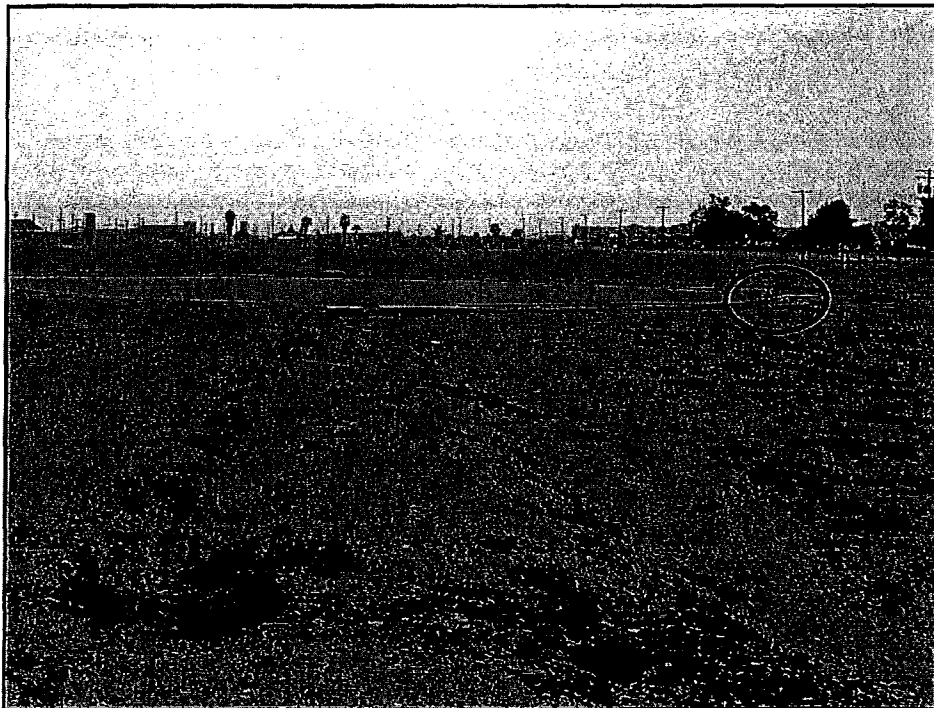
Photograph 3: View of high-quality disturbed and non-native grassland habitat. Facing generally west.



Photograph 4: View of active burrow located within developed habitat. Note owl perched at burrow BF-BUOW-07 entrance along rip rap. Facing generally west.



Photograph 5: View of high-quality non-native grassland and disturbed habitat.  
Facing generally north.



Photograph 6: High-quality non-native grassland and developed habitat.  
Note BF-BUOW-01 located along road edge at right. Facing generally east.

## **APPENDIX B**

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# Burrowing Owl Survey Protocol

## Appendix C. Habitat Assessment and Reporting Details

### Habitat Assessment Data Collection and Reporting

Current scientific literature indicates that it would be most effective to gather the data in the manner described below when conducting project scoping, conducting a habitat assessment site visit and preparing a habitat assessment report:

1. Conduct at least one visit covering the entire potential project/activity area including areas that will be directly or indirectly impacted by the project. Survey adjoining areas within 150 m (Thomsen 1971, Martin 1973), or more where direct or indirect effects could potentially extend offsite. If lawful access cannot be achieved to adjacent areas, surveys can be performed with a spotting scope or other methods.
2. Prior to the site visit, compile relevant biological information for the site and surrounding area to provide a local and regional context.
3. Check all available sources for burrowing owl occurrence information regionally prior to a field inspection. The CNDDDB and BIOS (see References cited) may be consulted for known occurrences of burrowing owls. Other sources of information include, but are not limited to, the Proceedings of the California Burrowing Owl Symposium (Barclay et al. 2007), county bird atlas projects, Breeding Bird Survey records, eBIRD (<http://ebird.org>), Gervais et al. (2008), local reports or experts, museum records, and other site-specific relevant information.
4. Identify vegetation and habitat types potentially supporting burrowing owls in the project area and vicinity.
5. Record and report on the following information:
  - a. A full description of the proposed project, including but not limited to, expected work periods, daily work schedules, equipment used, activities performed (such as drilling, construction, excavation, etc.) and whether the expected activities will vary in location or intensity over the project's timeline;
  - b. A regional setting map, showing the general project location relative to major roads and other recognizable features;
  - c. A detailed map (preferably a USGS topo 7.5' quad base map) of the site and proposed project, including the footprint of proposed land and/or vegetation-altering activities, base map source, identifying topography, landscape features, a north arrow, bar scale, and legend;
  - d. A written description of the biological setting, including location (Section, Township, Range, baseline and meridian), acreage, topography, soils, geographic and hydrologic characteristics, land use and management history on and adjoining the site (i.e., whether it is urban, semi-urban or rural; whether there is any evidence of past or current livestock grazing, mowing, disking, or other vegetation management activities);
  - e. An analysis of any relevant, historical information concerning burrowing owl use or occupancy (breeding, foraging, over-wintering) on site or in the assessment area;
  - f. Vegetation type and structure (using Sawyer et al. 2009), vegetation height, habitat types and features in the surrounding area plus a reasonably sized (as supported with logical justification) assessment area; (Note: use caution in discounting habitat based on grass height as it can be a temporary condition variable by season and conditions (such as current grazing regime) or may be distributed as a mosaic).

- g. The presence of burrowing owl individuals or pairs or sign (see Appendix B);
- h. The presence of suitable burrows and/or burrow surrogates (>11 cm in diameter (height and width) and >150 cm in depth) (Johnson et al. 2010), regardless of a lack of any burrowing owl sign and/or burrow surrogates; and burrowing owls and/or their sign that have recently or historically (within the last 3 years) been identified on or adjacent to the site.



## Appendix D. Breeding and Non-breeding Season Surveys and Reports

Current scientific literature indicates that it is most effective to conduct breeding and non-breeding season surveys and report in the manner that follows:

### Breeding Season Surveys

*Number of visits and timing.* Conduct 4 survey visits: 1) at least one site visit between 15 February and 15 April, and 2) a minimum of three survey visits, at least three weeks apart, between 15 April and 15 July, with at least one visit after 15 June. Note: many burrowing owl migrants are still present in southwestern California during mid-March, therefore, exercise caution in assuming breeding occupancy early in the breeding season.

*Survey method.* Rosenberg et al. (2007) confirmed walking line transects were most effective in smaller habitat patches. Conduct surveys in all portions of the project site that were identified in the Habitat Assessment and fit the description of habitat in Appendix A. Conduct surveys by walking straight-line transects spaced 7 m to 20 m apart, adjusting for vegetation height and density (Rosenberg et al. 2007). At the start of each transect and, at least, every 100 m, scan the entire visible project area for burrowing owls using binoculars. During walking surveys, record all potential burrows used by burrowing owls as determined by the presence of one or more burrowing owls, pellets, prey remains, whitewash, or decoration. Some burrowing owls may be detected by their calls, so observers should also listen for burrowing owls while conducting the survey.

Care should be taken to minimize disturbance near occupied burrows during all seasons and not to “flush” burrowing owls especially if predators are present to reduce any potential for needless energy expenditure or burrowing owl mortality. Burrowing owls may flush if approached by pedestrians within 50 m (Conway et al. 2003). If raptors or other predators are present that may suppress burrowing owl activity, return at another time or later date for a follow-up survey.

Check all burrowing owls detected for bands and/or color bands and report band combinations to the Bird Banding Laboratory (BBL). Some site-specific variations to survey methods discussed below may be developed in coordination with species experts and Department staff.

*Weather conditions.* Poor weather may affect the surveyor’s ability to detect burrowing owls, therefore, avoid conducting surveys when wind speed is >20 km/hr, and there is precipitation or dense fog. Surveys have greater detection probability if conducted when ambient temperatures are >20° C, <12 km/hr winds, and cloud cover is <75% (Conway et al. 2008).

*Time of day.* Daily timing of surveys varies according to the literature, latitude, and survey method. However, surveys between morning civil twilight and 10:00 AM and two hours before sunset until evening civil twilight provide the highest detection probabilities (Barclay pers. comm. 2012, Conway et al. 2008).

*Alternate methods.* If the project site is large enough to warrant an alternate method, consult current literature for generally accepted survey methods and consult with the Department on the proposed survey approach.

*Additional breeding season site visits.* Additional breeding season site visits may be necessary, especially if non-breeding season exclusion methods are contemplated. Detailed information, such as approximate home ranges of each individual or of family units, as well as foraging areas as related to the proposed project, will be important to document for evaluating impacts, planning avoidance measure implementation and for mitigation measure performance monitoring.

Adverse conditions may prevent investigators from determining presence or occupancy. Disease, predation, drought, high rainfall or site disturbance may preclude presence of burrowing owls in any given year. Any such conditions should be identified and discussed in the survey report. Visits to the site in more than one year may increase the likelihood of detection. Also, visits to adjacent known occupied habitat may help determine appropriate survey timing.

Given the high site fidelity shown by burrowing owls (see Appendix A, Importance of burrows), conducting surveys over several years may be necessary when project activities are ongoing, occur annually, or start and stop seasonally. (See Negative surveys).

### **Non-breeding Season Surveys**

If conducting non-breeding season surveys, follow the methods described above for breeding season surveys, but conduct at least four (4) visits, spread evenly, throughout the non-breeding season. Burrowing owl experts and local Department staff are available to assist with interpreting results.

### **Negative Surveys**

Adverse conditions may prevent investigators from documenting presence or occupancy. Disease, predation, drought, high rainfall or site disturbance may preclude presence of burrowing owl in any given year. Discuss such conditions in the Survey Report. Visits to the site in more than one year increase the likelihood of detection and failure to locate burrowing owls during one field season does not constitute evidence that the site is no longer occupied, particularly if adverse conditions influenced the survey results. Visits to other nearby known occupied sites can affirm whether the survey timing is appropriate.

### **Take Avoidance Surveys**

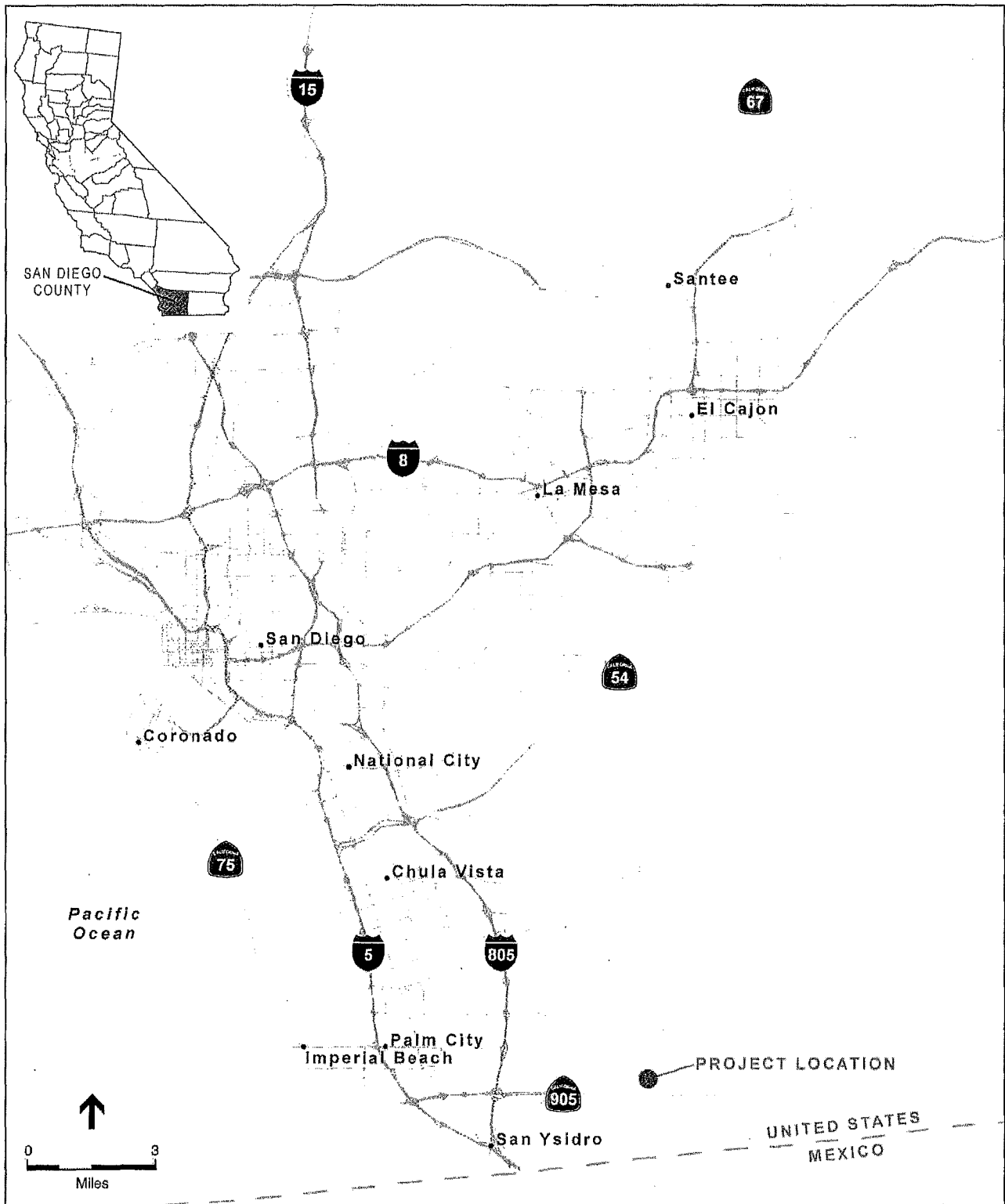
Field experience from 1995 to present supports the conclusion that it would be effective to complete an initial take avoidance survey no less than 14 days prior to initiating ground disturbance activities using the recommended methods described in the Detection Surveys section above. Implementation of avoidance and minimization measures would be triggered by positive owl presence on the site where project activities will occur. The development of avoidance and minimization approaches would be informed by monitoring the burrowing owls.

Burrowing owls may re-colonize a site after only a few days. Time lapses between project activities trigger subsequent take avoidance surveys including but not limited to a final survey conducted within 24 hours prior to ground disturbance.

## Survey Reports

Report on the survey methods used and results including the information described in the Summary Report and include the reports within the CEQA documentation:

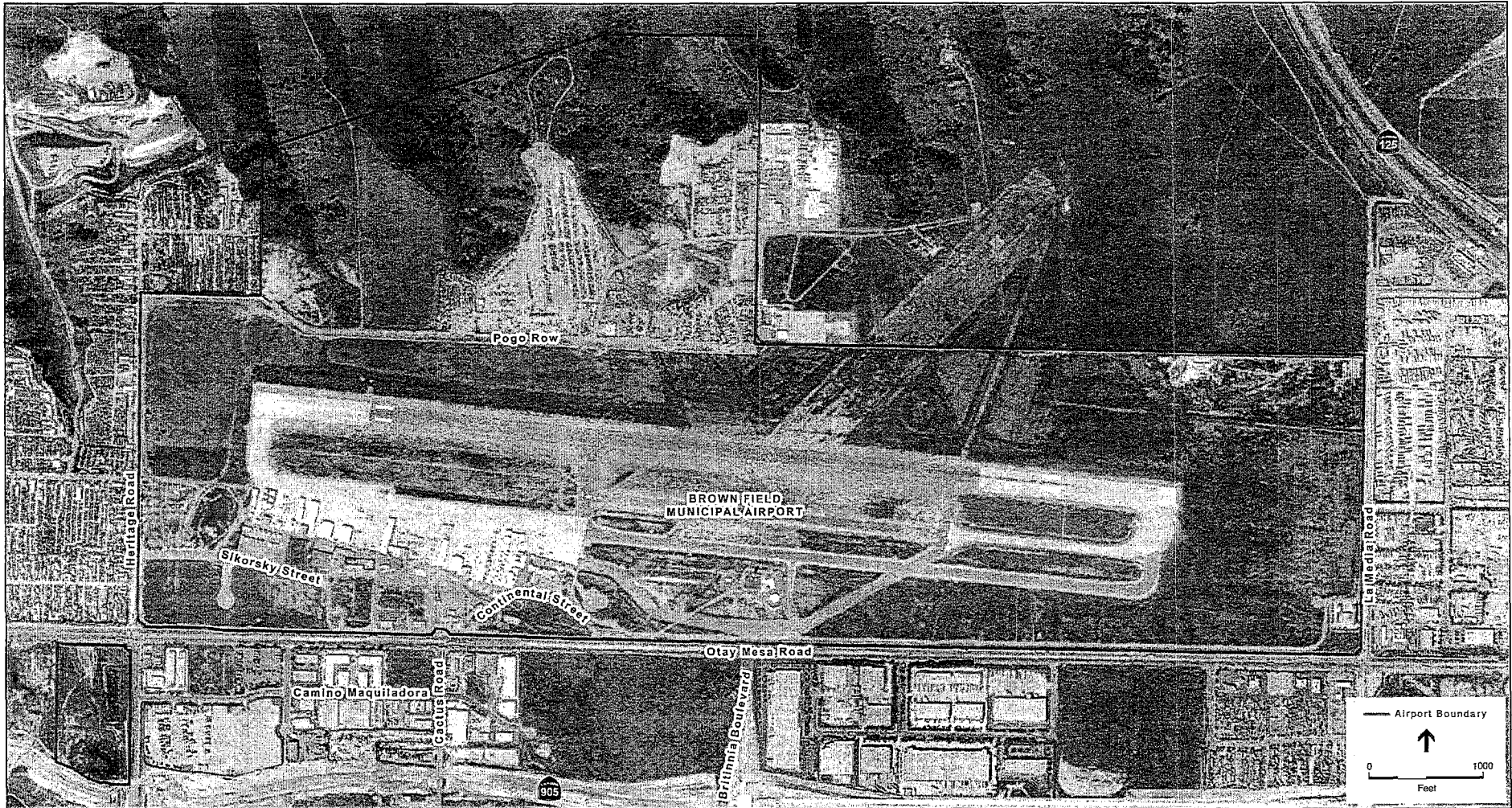
1. Date, start and end time of surveys including weather conditions (ambient temperature, wind speed, percent cloud cover, precipitation and visibility);
2. Name(s) of surveyor(s) and qualifications;
3. A discussion of how the timing of the survey affected the comprehensiveness and detection probability;
4. A description of survey methods used including transect spacing, point count dispersal and duration, and any calls used;
5. A description and justification of the area surveyed relative to the project area;
6. A description that includes: number of owls or nesting pairs at each location (by nestlings, juveniles, adults, and those of an unknown age), number of burrows being used by owls, and burrowing owl sign at burrows. Include a description of individual markers, such as bands (numbers and colors), transmitters, or unique natural identifying features. If any owls are banded, request documentation from the BBL and bander to report on the details regarding the known history of the banded burrowing owl(s) (age, sex, origins, whether it was previously relocated) and provide with the report if available;
7. A description of the behavior of burrowing owls during the surveys, including feeding, resting, courtship, alarm, territorial defense, and those indicative of parents or juveniles;
8. A list of possible burrowing owl predators present and documentation of any evidence of predation of owls;
9. A detailed map (1:24,000 or closer to show details) showing locations of all burrowing owls, potential burrows, occupied burrows, areas of concentrated burrows, and burrowing owl sign. Locations documented by use of global positioning system (GPS) coordinates must include the datum in which they were collected. The map should include a title, north arrow, bar scale and legend;
10. Signed field forms, photos, etc., as appendices to the field survey report;
11. Recent color photographs of the proposed project or activity site; and
12. Original CNDDDB Field Survey Forms should be sent directly to the Department's CNDDDB office, and copies should be included in the environmental document as an appendix. (<http://www.dfg.ca.gov/bdb/html/cnddb.html>).



SOURCE: DeLorme Street Atlas USA, 2000; ESA, 2014

Brown Field Runway Rehabilitation Project . 140361

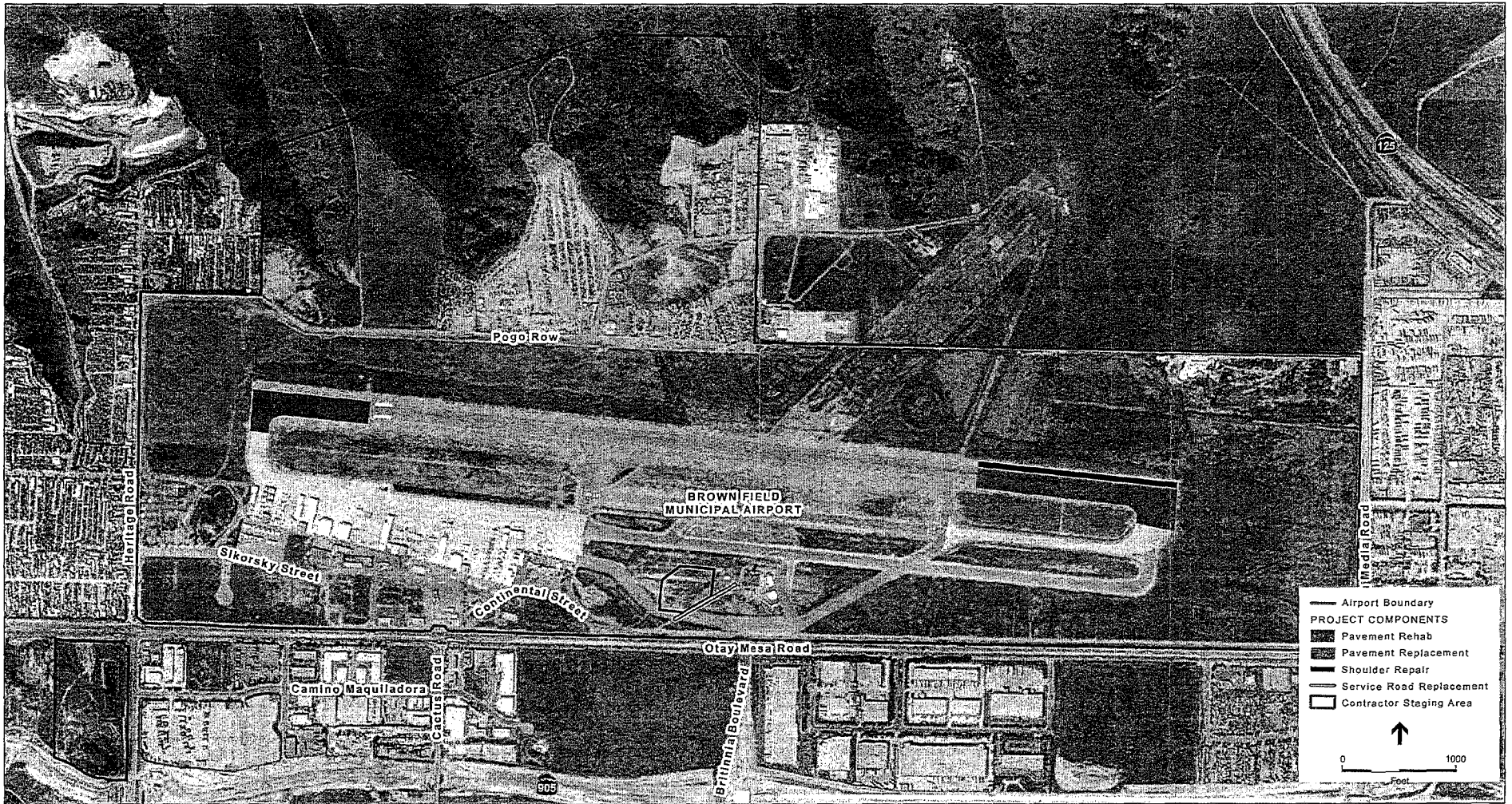
**Figure 1**  
Regional Location



SOURCE: Aerials Express; Sage Institute, 2011; ESA, 2014

Brown Field Runway Rehabilitation Project . 140361  
**Figure 2**  
 Project Site

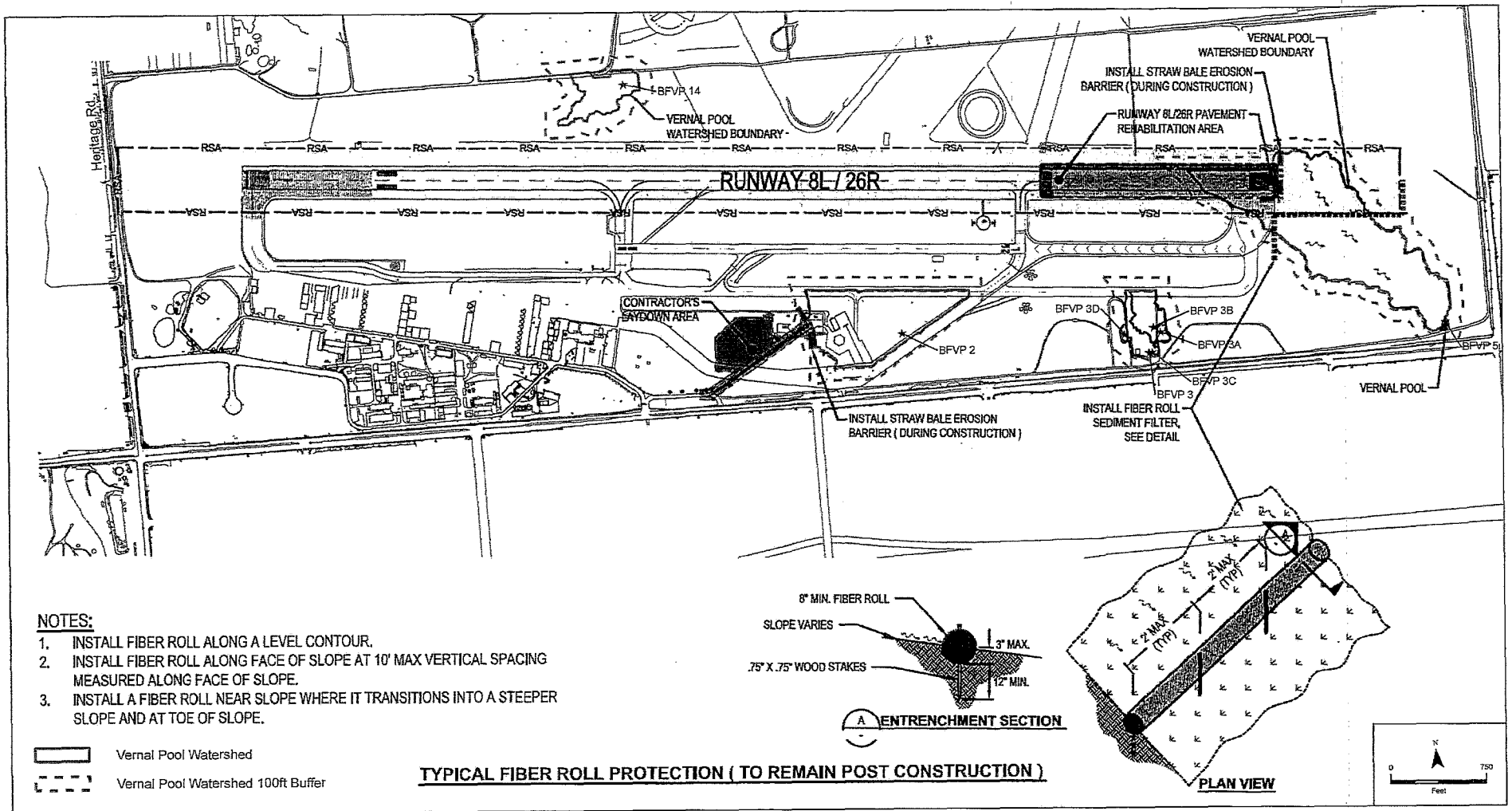




SOURCE: Aerials Express; Sage Institute, 2011; ESA, 2014

Brown Field Runway Rehabilitation Project . 140361

**Figure 3**  
Project Components



SOURCE: HNTB, ESA 2014

Overview

**FIGURE 4**





## INITIAL STUDY CHECKLIST

1. **Project title/Project number:**  
Brown Field Municipal Airport Runway 8L-26R Rehabilitation Project / PTS No. 358563
2. **Lead agency name and address:**  
City of San Diego, Development Services Department, 1222 First Avenue, MS 501, San Diego, CA 92101
3. **Contact person and phone number:**  
Rebecca Malone, Associate Planner, 619-446-5371
4. **Project location:**  
The proposed project is located at Brown Field Municipal Airport, which is located in the City of San Diego; approximately one and one-half miles north of the border between the United States and Mexico (see Figure 1).
5. **Project Applicant/Sponsor's name and address:**  
Mike Tussey, City of San Diego Airports Division, 3750 John J. Montgomery Drive, San Diego, CA 92123
6. **General/Community Plan designation:**  
The 2008 General Plan land use designation for Brown Field Municipal Airport is Institutional & Public and Semi-Public Facilities. The recently adopted Otay Mesa Community Plan Update shows a land use designation as Institutional.
7. **Zoning:**  
The project is located in an area of Brown Field Municipal Airport that is un-zoned.
8. **Description of project:**  
The project is located on Brown Field Municipal Airport (Brown Field), a General Aviation airport. Brown Field is regionally located approximately 21 miles southeast of downtown San Diego and one and one-half miles north of the border between the United States and Mexico (Figure 1). The airport is owned and operated by the City of San Diego. The airport currently operates two runways, one parallel taxiway and five connecting taxiways. The City has identified the need for the rehabilitation of the larger of the two runways, Runway 8L-26R (the project). Runway 8L-26R measures 7,972 feet in length and 150 feet in width, and is comprised of both Portland Cement Concrete (PCC) and Asphalt (AC) pavements. Review of historic aerial photographs suggests that the existing paving was put in place in 1953. In the early 1990's approximately 5,500 feet of the runway's middle section was milled and overlaid, but the end portions of the Runway have had no major rehabilitation work since its construction over half a century ago. The current conditions of the concrete ends of the runway require immediate evaluation and rehabilitation to ensure safety and compliance with current design and construction standards as set forth by applicable regulatory agencies, including the Federal Aviation Administration (FAA).

The touchdown pavement areas, in particular, the eastern end of the main runway (Runway 26R), is in very poor condition due to the usual westbound direction of air traffic. The expected life of this section is less than one year. Due to the poor condition of the runway, the project will require the following: 1) removal of 50 feet of existing PCC closest to the runway shoulders and excavation of fill material up to 26 inches below grade; 2) building up of AC section to proposed grade; 3) rubbilization<sup>1</sup> of existing PCC in middle 50 feet of Runway 26R; 4) building up variable depth AC

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<sup>1</sup> Rubbilization is technique that reduces existing concrete to rubble and reusing it in its current location, rather than hauling it to another location.

base layer; and 5) constructing AC surface layer with a crown on centerline and matching grades at the AC previously placed on the outer 50 feet of Runway 26R. Repairs to the westerly end of Runway 26R, which will involve minor surface and joint repairs, will also be included as part of this rehabilitation project. Other project elements include the replacement of an existing service road and milling and overlaying of existing runway shoulder on the north side of Runway 26R. Construction activities are intended to occur during the non-breeding season for burrowing owls (generally considered to be September 1 to January 31). Additionally, construction is limited to Runway 8L-26R where no burrowing owls or burrows have been observed. However, staging for the project is in proximity to mapped burrows and owl observation areas and requires mitigation measure to reduce the potential for any impacts on this species in the event that construction is necessary during the breeding season. This measure also includes a provision for a no-work buffer and additional consultation with the California Department of Fish and Wildlife to develop additional measures for the protection of this species.

The proposed project would include implementation of source control and erosion control BMPs during construction of the proposed project to prevent sediment and/or hazardous materials and substances from leaving the project site. Erosion control BMPs, such as scheduling during the non-rainy season and preservation of existing vegetation, would prevent the exposure of soil to water and reduce the threat of erosion during construction. The proposed project would also implement sediment control BMPs, such as sandbags and fiber rolls, to trap any sediment that mobilizes on-site, thereby preventing siltation from occurring. Minimum construction BMP's for the proposed project are listed shown in Table 1.

**TABLE 1  
APPLICABLE SET OF BMPs FOR ALL CONSTRUCTION SITES**

Erosion Controls	Scheduling
	Preservation of Existing Vegetation
Sediment Controls	Sandbag Barrier
	Fiber Rolls / Straw Watties
	Stabilized Construction Site Entrance/Exit
Non-Storm Water Management	Water Conservation Practices
Waste Management	Material Delivery and Storage
	Stockpile Management
	Spill Prevention and Control
	Solid Waste Management
	Asphalt/Pavement Waste Management
	Sanitary/Septic Waste Management

SOURCE: Order No. R9-2013-0001

The general contractor will establish a construction staging area that will be located east of the main aircraft parking apron. Construction and worker vehicles will access Brown Field via Continental Street, where they will pass through a security fence and travel along a service road that leads to the proposed construction staging area. Construction vehicles will access Runway 26R via service roads and Taxiway A. Construction vehicles transporting materials and/or debris to and from the project site will travel via Otay Mesa Road and Britannia Boulevard (see Figure 2). The locations of all project elements are provided in Figure 3. The construction contractor will coordinate with airport management to inform them of planned construction activities. These updates will occur on a weekly basis or as construction phasing warrants. Appropriate information regarding construction activities will be posted by airport management in locations accessible to pilots and also shared with air traffic control.

Construction of the proposed project is anticipated to occur over five phases and take approximately 16 weeks to complete, as detailed below:

Construction Phase	Duration
Demolition	3 weeks
Site Preparation	3 weeks
Grading	4 weeks
Paving	5 weeks
Pavement Striping	1 week
Source: HNTB, 2014.	

Use of the following equipment is anticipated for each phase of construction of the proposed project.

Construction Phase	Equipment
Demolition	Pickup, Loaders, Compressors, Walk Behind Saw
Site Preparation	Pickup, Milling Machine, Water Truck
Grading	Pickup, Loader, Motor Grader, Pulverizer, Scraper, Water Truck
Paving	Spreader, Steel Wheels, Rubber Tired, IT Carrier, Pickups, Crew Truck
Pavement Striping	Pickup, Crew Truck, Parking Lot Paint Machines, Paint Truck
General	Fuel Truck
Source: HNTB, 2014.	

9. **Surrounding land uses and setting:**

The proposed project is staged at various locations within the boundaries of Brown Field. Uses to the north of Brown Field consist of open space associated with Multi-Habitat Planning Area (MHPA) lands. Uses to the south of Brown Field consist of industrial uses and undeveloped land. Similarly, uses to the east and west of Brown Field also consist predominately of industrial uses. The airport is bound by public roads on three sides: La Media Road on the east, Otay Mesa Road on the south, and Heritage Road on the west. The northern tip of the watershed associated with vernal pool number BFVP-5 exists in the same location as the eastern portion of the existing Runway 8L/26R which will not be changed or expanded; the vernal pool basin is located approximately 1,700 feet to the southeast of the project area. The access route for the project will follow an existing taxiway which runs adjacent to BFVP-2. This is an existing condition and no impacts (direct or indirect) to the vernal pool basin or fairy shrimp would result from the access use. In addition to the burrowing owl (a CDFW Species of Special Concern), it is possible that at any given time, migratory birds or small reptiles may forage in the adjacent non-native grasslands within proximity to the project site and staging area.

10. **Other public agencies whose approval is required:**

The City, as owner and operator of Brown Field, is the lead agency pursuant to the California Environmental Quality Act (CEQA), and is responsible for obtaining appropriate permits (e.g., grading permits). The proposed project would be funded by the FAA via the Airport Capital Improvement Plan (ACIP). An extraordinary circumstances evaluation was prepared separately for the proposed project pursuant to the requirements of the National Environmental Policy Act (NEPA). No other permits or approvals from other agencies are required.

**ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:**

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Aesthetics                         | <input type="checkbox"/> Greenhouse Gas Emissions      | <input type="checkbox"/> Population/Housing                         |
| <input type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Public Services                            |
| <input type="checkbox"/> Air Quality                        | <input type="checkbox"/> Hydrology/Water Quality       | <input type="checkbox"/> Recreation                                 |
| <input checked="" type="checkbox"/> Biological Resources    | <input type="checkbox"/> Land Use/Planning             | <input type="checkbox"/> Transportation/Traffic                     |
| <input checked="" type="checkbox"/> Cultural Resources      | <input type="checkbox"/> Mineral Resources             | <input type="checkbox"/> Utilities/Service System                   |
| <input type="checkbox"/> Geology/Solls                      | <input type="checkbox"/> Noise                         | <input checked="" type="checkbox"/> Mandatory Findings Significance |

**DETERMINATION:** (To be completed by Lead Agency)

On the basis of this initial evaluation:

- The proposed project **COULD NOT** have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.
- Although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A **MITIGATED NEGATIVE DECLARATION** will be prepared.
- The proposed project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required.
- The proposed project **MAY** have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (a) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (b) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An **ENVIRONMENTAL IMPACT REPORT** is required.
- Although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or (MITIGATED) **NEGATIVE DECLARATION** pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or (MITIGATED) **NEGATIVE DECLARATION**, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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I) AESTHETICS – Would the project:

- a) Have a substantial adverse effect on a scenic vista?

**Less Than Significant Impact.** The project site is predominately flat, consisting of runways and taxiways. To the east of the project site, the Otay Mountain Wilderness provides scenic value, and is viewable to motorists traveling on the following roads bordering the airport: Heritage Road along the western boundary, Otay Mesa Road along the southern boundary, and La Media Road along the eastern boundary. The project would involve repaving an easterly end portion of Runway 26R and an adjoining shoulder via mill-and-overlay, as well as some minor surface and joint repairs along the westerly end of Runway 26R. The project would also include a contractor staging area south of both runways and immediately north of Otay Mesa Road, proximate to the corner of Otay Mesa Road and Britannia Boulevard. The proposed project would also include replacing a service road adjacent to the construction staging area. The current and proposed repaving and surface repairs would only affect ground level surfaces on the runways, thereby not altering any existing views. Construction activities on site would temporarily create dust and possibly alter the views at certain points near the runways, but would not create permanent obstructions. Due to the temporary nature of the proposed project, and that post-project scenic values would be the same as pre-project conditions, this impact would be less than significant.

- b) Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

**No Impact.** As mentioned in the previous impact discussion, the project would only involve repaving and repairing Runway 26R and no other areas of the project site or vicinity. As per Caltrans, there are no designated or registered scenic highways within the Otay Mesa area (Caltrans, 2014). The current and proposed repaving and surface conditions would not alter or damage any existing scenic resources within a state- or locally designated scenic highway, and thus no impact would occur.

- c) Substantially degrade the existing visual character or quality of the site and its surroundings?

**Less Than Significant Impact.** As mentioned previously in Section I(a), the repaving and minor surface and joint repairs for Runway 26R would generate some temporary visual obstructions from construction, mainly from the generation of dust. This dust would potentially alter the visual character and the quality of the site temporarily, but only until the construction and repair work has been completed. Standard construction best management practices (BMPs), such as dust control measures, will ensure that construction-related visual degradation is minimized, and given the fact that the proposed repairs would not permanently affect any visual characteristics nor degrade the quality of the site or surroundings, this impact would be less than significant.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Less Than Significant Impact.** While the project would involve removing several lights along the western and eastern ends of the Runway 26R for a temporary period of time, these lights would be replaced and no new lights would be added to the site. Additionally, the repaving and minor surface and joint repairs for Runway 26R would not create any new light or glare sources nor adversely affect day or nighttime views in the area. Therefore, this impact would be less than significant.

II. **AGRICULTURAL AND FOREST RESOURCES:** In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. – Would the project

a) Converts Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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**No Impact.** The project site is surrounded by industrial and commercial uses to the northeast, east, south, and west, and low and medium density and agricultural residential uses to the northwest (City of San Diego, 2008). The AR 1-1 agricultural-residential zone to the northwest of the site requires lots to be a minimum of 10 acres in size, and accommodates a wide range of agricultural uses and single dwelling unit homes on lots as well as allowing land to remain undeveloped (City of San Diego, 2014). The California Resources Agency has defined the project site as urban and built-up land, and they have designated the areas surrounding the project site as built-up land, grazing land, and farmland of local importance (California Department of Conservation, 2013a). The California Resources Agency has identified none of the areas surrounding the project site or the project site itself as prime farmland, unique farmland, or farmland of statewide importance (Ibid). The construction and repair of Runway 26R would not convert any farmland or agricultural zones; thus there would be no impact.

b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--	--------------------------	--------------------------	--------------------------	-------------------------------------

**No Impact.** As mentioned previously in Section II(a), the zoning for the project site and the majority of areas surrounding the project site does not feature agricultural uses. For the area to the northwest of the project site, its current agricultural-residential status would not be affected by the proposed project. In addition, none of the Otay Mesa area features Williamson Act designated lands, as all areas surrounding and within the project site are either built-up land or non-enrolled

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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land (California Department of Conservation 2013b). The construction and repair of Runway 26R would not conflict with any farmland, agricultural zones, or Williamson Act Contracts; thus there would be no impact.

- c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 1220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?
- |                          |                          |                          |                                     |
|--------------------------|--------------------------|--------------------------|-------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|-------------------------------------|

**No impact.** The zoning for the project site and surrounding area does not feature forest land, timberland, or areas zoned for Timberland Production. The construction and repair of Runway 26R would not conflict with any forest land or timberland; thus there would be no impact.

- d) Result in the loss of forest land or conversion of forest land to non-forest use?
- |                          |                          |                          |                                     |
|--------------------------|--------------------------|--------------------------|-------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|-------------------------------------|

**No impact.** As mentioned previously in Section II(c), no forest land exists either on the project site or in the vicinity of the project site. The construction and repair of Runway 26R would not result in the loss of any forest land or convert any forest land to a non-forest use; thus there would be no impact.

- e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?
- |                          |                          |                          |                                     |
|--------------------------|--------------------------|--------------------------|-------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|-------------------------------------|

**No impact.** As mentioned previously in Sections II(a) and II(d), no farmland or forest land exists on site, and the areas that are zoned agricultural-residential to the northwest of the project site would not be affected by the project. The construction and repair of Runway 26R would not result in the conversion of any farmland to a non-agricultural use, or the conversion of any forest land to a non-forest use; thus there would be no impact.

III. AIR QUALITY— Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the following determinations – Would the project:

- a) Conflict with or obstruct implementation of the applicable air quality plan?
- |                          |                          |                          |                                     |
|--------------------------|--------------------------|--------------------------|-------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|-------------------------------------|

**No Impact.** The San Diego Air Pollution Control District (SDAPCD) and the San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the San Diego Air Basin (SDAB). Applicable air quality plans include the State Implementation Plan (SIP), Regional Air Quality Strategy (RAQS), and the associated Transportation Control Measures (TCMs). The SDAB is currently designated as non-attainment for federal and state ozone

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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standards, the state PM2.5 standard, and for the state PM10 standard. The SDAB is in attainment for the remaining criteria pollutant air quality standards:

The RAQS and SIP rely on information from the California Air Resources Board (CARB) and SANDAG, including projected growth in the SDAB, and mobile, area, and all other source emissions, to project future emissions and to determine the strategies necessary for the reduction of emissions through regulatory controls. The CARB mobile source emission projections and SANDAG growth projections are based on population, vehicle trends, and land use plans developed by the cities and by the County. As such, projects that propose development consistent with the growth anticipated by the general plan(s) would be consistent with the RAQS and applicable portions of the SIP because associated emissions of criteria pollutants in a designated non-attainment area would be accounted for in these air quality plans. In the event that a project would propose development which is less dense than anticipated within the general plan, the project would likewise be consistent with the RAQS and SIP. If a project proposes development that is greater than that anticipated in SANDAG's growth projections, the project would be in conflict with the RAQS and SIP, and may have a potentially significant impact on air quality. The project proposes runway end improvements, replacing an existing service road, and milling/overlaying an existing runway shoulder. The project is not growth inducing and would not result in long-term operational emissions. As such, the project is considered consistent with the growth assumptions of the RAQS and would not conflict with or obstruct implementation of the RAQS or SIP. No impact would occur.

- b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

**Less than Significant.** Construction-related activities are temporary, short-term sources of air emissions. Sources of construction-related air emissions include fugitive dust from grading activities; construction equipment exhaust; construction-related trips by workers, delivery trucks, and material-hauling trucks; and construction-related power consumption.

Variables that factor into the total construction emissions potentially generated include the level of activity, length of construction period, number of pieces and types of equipment in use, site characteristics, weather conditions, number of construction personnel, and the amount of materials to be transported on- or off-site.

Fugitive dust emissions are generally associated with land-clearing and grading operations. Construction operations would include standard measures as required by the City of San Diego to reduce potential air quality impacts from dust emissions to a less than significant level. Impacts associated with fugitive dust or other construction-related emissions would not violate an air quality standard or contribute substantially to an existing or projected air quality violation. Impacts would be less than significant.

Long-term air quality emission impacts are those associated with stationary sources and mobile sources related to any change caused by the project. The project consists of the resurfacing of eastern and western portions of Brown Field Runway 26R, the replacement of an existing service road, and the milling and overlaying of existing runway shoulder on the north side of Runway 26R. The purpose of the resurfacing is to ensure safety and compliance with current design and construction standards. The project would not increase traffic to the runway. Air emissions would remain at a similar level with or without the project. No impact would result.

- c) Result in a cumulatively considerable net increase of any



Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

**Less than significant.** As described above, construction operations could temporarily increase the emissions of dust and other pollutants. However, construction emissions would be short-term in duration; implementation of Best Management Practices (BMPs) would reduce potential impacts related to construction activities to a less than significant level. The project consists of the resurfacing of eastern and western portions of Brown Field Runway 26R, the replacement of an existing service road, and the milling and overlaying of existing runway shoulder on the north side of Runway 26R. The project would not result in a cumulatively considerable net increase of any criteria pollutant for which the region is in non-attainment, Impacts would be less than significant.

- d) Create objectionable odors affecting a substantial number of people?

**No Impact.** The proposed project would consist of temporary construction activities only, which would not result in objectionable odors that would affect a substantial number of people.

IV. BIOLOGICAL RESOURCES – Would the project:

- a) Have substantial adverse effects, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

**Less than Significant Impact with Mitigation Incorporated.** The proposed project would consist of the removal and replacement of pavement at the end of Runway 26R and minor surface and joint repairs to the westerly end of the runway. The proposed project does not intend to add additional impervious surface beyond the baseline condition and the only potential disturbance to non-paved areas would occur from the use of the construction staging area which would be located on disturbed habitat.

The proposed project would result in impacts to 3.3 acres of disturbed habitat. This habitat type has the potential to support the burrowing owl (*Athene cunicularia*), which is a California Department of Fish and Wildlife (CDFW) Species of Special Concern (SSC) and is covered under the City's Multiple Species Conservation Program (MCSP) Subarea Plan. On April 3, May 9, and June 2, 2014, ESA biologists conducted a focused burrowing owl survey of Brown Field that included the project site. All natural burrows and suitable man-made structures that could be used as burrows by burrowing owl were identified, as defined in the *Staff Report on Burrowing Owl Mitigation* (CDFW, 2012). The survey resulted in the identification of 14 active burrows on airport property. Nine burrows were observed to be occupied by a pair of owls, while the remaining five

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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were observed to be occupied by an individual owl. Numerous additional suitable (but unoccupied) burrows were observed throughout the airport. One breeding pair was observed within a 150-meter radius from the project's staging area; approximately 101 meters from the perimeter (see Attachment A). The final survey occurred on June 23. These additional survey results will be incorporated into the Final MND. Based on the survey results, the project could have an indirect temporary impact to burrowing owls in the vicinity of the project. Implementation of Mitigation Measure BIO-1, as further detailed in Section V of the MND, would reduce potential impacts to burrowing owls to less than significant. In addition to the burrowing owl, it is possible that at any given time, migratory birds or small reptiles may forage in the adjacent non-native grasslands within proximity to the project site and staging area. Although mitigation measure BIO-1 is specifically designed to address potential impacts to burrowing owls, in the event that during preconstruction protocol surveys other CDFW SSC migratory birds or small reptiles covered by the MSCP Subarea Plan are present in the APE the project biologist would initiate consultation with CDFW and City Staff to determine appropriate avoidance and minimization efforts to reduce potential direct and/or indirect impacts to below a level of significance.

In addition, the project could result in potential indirect impacts to the watershed associated with vernal pool number BFVP-5. Specifically, construction activities could temporarily impact the northern tip of the watershed associated with (BFVP-5) which exists in the same location as the eastern portion of the existing Runway 8L/26R which will not be changed or expanded; the vernal pool basin is located approximately 1,700 feet to the southeast of the project area; BMP's will be in place to avoid any potential runoff; the temporary impact will occur in an area that is likely not contributing a significant amount of hydrology to the vernal pool basin; and the temporary impact represents less than a sixth (6<sup>th</sup>) of the mapped watershed for BFVP-5. Figures 4 & 5 show the proximity of the vernal pool basin and watershed to the project APE. This impact would be less than significant. The access route for the project will follow an existing taxiway which runs adjacent to BFVP-2. This is an existing condition and no impacts (direct or indirect) to the vernal pool basin or fairy shrimp would result from the access use.

- b) Have a substantial adverse effect on any riparian habitat or other community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

**Less than Significant Impact.** The proposed project would be conducted on existing paved surfaces and within a proposed staging area. Work in vegetation communities includes utilizing disturbed habitat just south of Runway 26R, near the air traffic control tower, as a construction staging area to facilitate the removal and replacement of the pavement on the eastern end of the runway and the minor repair of the surface and joints on the western end of the runway. A total of 3.3 acres of disturbed habitat would be impacted during project implementation; however, disturbed habitat is not considered a sensitive vegetation community per the MSCP or the City's Biology Guidelines. There is no riparian habitat located within or adjacent to the project site. As such, impact to riparian habitat or other sensitive plant communities would be less than significant. Please also see IV.a. above.

- c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including but not

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

**Less than Significant Impact.** The project would not remove or fill federally protected wetlands or other waters of the U.S.; therefore there would be no direct impacts. Wetlands and other waters of the U.S. may be indirectly impacted by construction activities through offsite erosion and/or sedimentation due to ground disturbance if these features are within 250 feet of proposed construction activities. The nearest federal jurisdictional wetland feature is an un-vegetated drainage ditch that parallels Otay Mesa Road, over 300 feet from the proposed staging area. In addition, the project could result in potential indirect impacts to the watershed associated with vernal pool number BFVP-5. Specifically, construction activities could temporarily impact the northern tip of the watershed associated with (BFVP-5) which exists in the same location as the eastern portion of the existing Runway 8L/26R which will not be changed or expanded; the vernal pool basin is located approximately 1,700 feet to the southeast of the project area; BMP's will be in place to avoid any potential runoff; the temporary impact will occur in an area that is likely not contributing a significant amount of hydrology to the vernal pool basin; and the temporary impact represents less than a sixth (6<sup>th</sup>) of the mapped watershed for BFVP-5. Figures 4 & 5 show the proximity of the vernal pool basin and watershed to the project APE. This impact would be less than significant. The access route for the project will follow an existing taxiway which runs adjacent to BFVP-2. This is an existing condition and no impacts (direct or indirect) to the vernal pool basin or fairy shrimp would result from the access use. In addition, the project would implement standard construction BMPs for the term of the project. Therefore, impacts to federally protected wetlands would be less than significant.

- d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?
- |                          |                          |                          |                                     |
|--------------------------|--------------------------|--------------------------|-------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|-------------------------------------|

**No Impact.** The project is located on the interior of Brown Field which is surrounded by an eight-foot high perimeter security fence. As such, the project would not have an effect on the movement of fish or wildlife species or impeded the use of any wildlife corridors. Thus, there would be no impact.

- e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
- |                          |                                     |                          |                          |
|--------------------------|-------------------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--------------------------|-------------------------------------|--------------------------|--------------------------|

**Less than Significant Impact with Mitigation Incorporated.** The Project is within the City's MSCP Subarea Plan and on Environmentally Sensitive Lands (ESL), as defined in the City's Land Development Code. The Project site is subject to the policies, guidelines, and regulations of the City's MSCP Subarea Plan, the ESL Regulations (Chapter 14, Division 1, San Diego Municipal Code), and the Biology Guidelines. The project has minimized any impact to sensitive biological resources, namely the burrowing owl, by locating and configuring the staging area to the extent feasible, to avoid and minimize any impact to the owl. With the implementation of Mitigation Measure BIO-1, the project would not conflict with local policies and ordinances protecting sensitive biological resources and impacts would be less than significant. Also see IV.b. above.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Less than Significant with Mitigation Incorporated.** The project site is located within the City's MSCP Subarea Plan and would be subject to meeting the terms and conditions of the MSCP and associated regulations. The MSCP is a regional plan that seeks to ensure the long-term survival of sensitive plant and animal species and protects the native vegetation found throughout the City. With implementation of Mitigation Measure BIO-1, the project would not be in conflict with the terms, conditions, and provisions of the MSCP as required; and therefore, impacts would be less than significant.

V. CULTURAL RESOURCES – Would the project:

a) Cause a substantial adverse change in the significance of an historical resource as defined in §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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**Less than Significant Impact with Mitigation Incorporated.** The purpose and intent of the *Historical Resources Regulations of the Land Development Code (Chapter 14, Division 3, and Article 2)* is to protect, preserve and, where damaged, restore the historical resources of San Diego. The regulations apply to all proposed development within the City of San Diego when historical resources are present on the premises. CEQA requires that before approving discretionary projects, the Lead Agency must identify and examine the significant adverse environmental effects, which may result from that project. A project that may cause a substantial adverse change in the significance of a historical resource may have a significant effect on the environment (Sections 15064.5(b) and 21084.1). A substantial adverse change is defined as demolition, destruction, relocation, or alteration activities, which would impair historical significance (Sections 15064.5(b)(1)). Any historical resource listed in, or eligible to be listed in the California Register of Historical Resources, including archaeological resources, is considered to be historically or culturally significant.

As part of the cultural resources assessment for the Metropolitan Airpark Project, a records search of the airport, along with a one-mile buffer, was conducted using the California Historical Resources Information System (CHRIS) at the South Coastal Information Center (SCIC) in accordance with the City's Historical Resources Guidelines. This records search identified 198 previously recorded cultural resources within one mile of the airport. Environmental Science Associates conducted an archaeological field survey in three phases: initial field survey in March, 2010, and extended field surveys in October, 2010 and February, 2011. The SCIC records search revealed that 16 historic architectural resources, consisting of a total of 32 structures, have been previously recorded on the airport. However, no architectural resources were identified within the Runway 26R rehabilitation project area.

Based on the results from the records search and surveys, the project would not have a substantial adverse impact on or a change in the significance of any historical resources. However, based on the potential to impact unknown buried resources along the western end of Runway 26R associated with a former historic-period farmstead, mitigation is required for historical resources. Implementation of the MMRP detailed in Section V of the MND would reduce potential impacts to

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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below a level of significance.

- |   |                          |                                     |                          |                          |
|---|--------------------------|-------------------------------------|--------------------------|--------------------------|
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|-------------------------------------|--------------------------|--------------------------|

**Less than Significant Impact with Mitigation Incorporated.** As a result of the above referenced records search and archaeological surveys, a total of 19 archaeological resources, including six previously recorded and 13 newly recorded resources, were identified on airport property. This analysis identified one resource that is very near the eastern portion of the Runway 26R rehabilitation project area, the site P-37-031954 (remnants of historic WWII-era runways and taxiways). This resource consists of two segments of the diagonal runways and a segment of a taxiway constructed in 1943 as part of the WWII-era Naval Auxiliary Air Station. The use of the runways was apparently discontinued in the 1950s. The site is recommended not eligible for listing in the CRHR, NRHP, or local register

Archaeological site P-37-031954 is not significant and is not recommended eligible for listing in the CRHR, NRHP, or local register and does not otherwise meet CEQA's definitions for historical resources and unique archaeological resources or the City of San Diego's criteria for significant archaeological sites. Damage to or destruction of this resource would not be a significant impact.

As mentioned above, site P-37-015982, a former historic-period farmstead, is very near the western portion of Runway 26R. No cultural material was recorded at the site; it was recorded because of its potential to yield buried cultural material related to historic farmsteads.

The potential remains for buried resources to be encountered during the reconstruction of the eastern and western portions of the runway. Mitigation Measure HIST-1 requires archaeological monitoring during ground-disturbing activities. Implementation of Mitigation Measure HIST-1 would reduce any impact to less than significant. Mitigation Measure HIST-1 is included in Section V. of the MND, Mitigation, Monitoring, and Reporting Program.

- |   |                          |                          |                                     |                          |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

**Less than Significant Impact.** The project area is situated on Otay Mesa in the southern portion of San Diego County. Otay Mesa is generally composed of several sedimentary and metavolcanic bedrock units. Otay Mesa is within the Coastal Plain Geomorphic Region of San Diego County. The Coastal Plain Geomorphic Region is characterized by interbedded marine and non-marine sedimentary rock units deposited over the last 140 million years. Brown Field is located on an alluvial deposit (middle to early Pleistocene) consisting of floodplain deposits of gravelly sandy silt and clay. Alluvium deposits are not typically considered sensitive for paleontological resources, nor would project activities extend below the 10-foot-deep threshold used by the City in high paleontological resource sensitivity formations. The potential impact to paleontological resources would be less than significant.

- |  |                          |                                     |                          |                          |
|--|--------------------------|-------------------------------------|--------------------------|--------------------------|
| d) Disturb and human remains, including those interred outside of formal cemeteries? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|-------------------------------------|--------------------------|--------------------------|

**Less than Significant Impact with Mitigation Incorporated.** The project would not disturb known human remains as none are known to exist within the project area. However, since the nature of the

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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project would involve ground-disturbing activities, it is possible that such actions could unearth, expose, or disturb previously unknown human remains.

In the event that human remains are discovered during project activities, all work in the vicinity of the find would be halted until the County Medical Examiner has evaluated the remains, and the procedures and protocols set forth in Section 15064.5 (e)(1) of the CEQA Guidelines, Health and Safety Code Section 7050.5, subdivision (c), and PRC 5097.98 (as amended by Assembly Bill 2641) have been followed.

VI. GEOLOGY AND SOILS – Would the project:

- a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.
 

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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**Less than Significant Impact.** The proposed project site lies within a region of California that contains many active and potentially active faults and is considered an area of moderate seismic activity. An "active" fault is defined by the State of California as a fault that has had surface displacement within Holocene time (approximately the last 11,000 years). A "potentially active" fault is defined as a fault that has shown evidence of surface displacement during the Quaternary (last 1.6 million years), unless direct geologic evidence demonstrates inactivity for all of the Holocene or longer. This definition does not, of course, mean that faults lacking evidence of surface displacement are necessarily inactive. "Sufficiently active" is also used to describe a fault if there is some evidence that Holocene displacement occurred on one or more of its segments or branches (Hart, 1997).

The nearest active fault to the project site is the southern end of the Newport Inglewood/Rose Canyon fault zone, which is approximately 13 miles northwest. The closest potentially active fault, La Nacion fault zone, is located approximately five miles west of the project site. In addition, the Coronado fault zone is located approximately 20 miles west of the site (Krazan & Associates, 2008, 2010).

Implementation of the proposed project, which would rehabilitate the pavement on each end of Runway 26R and replace an existing service road, would not result in the creation of new structures or land uses that would attract a higher, permanent intensification of people at the project site. The construction process is anticipated to last approximately 16 weeks, and construction of the rehabilitated runway ends and replaced service road will meet all applicable design standards for construction in seismic hazard areas (e.g., the California Building Code and FAA Advisory Circular 150/5370-10: Standards for Specifying Construction of Airports). Given the short-term nature of the project and the fact that no new structures are proposed, potential impacts to people or new structures associated with the possible rupture of a known fault, such as the Newport Inglewood/Rose Canyon fault would be less than significant.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Less than Significant Impact.** As described in the last impact statement, there are numerous active faults in Southern California that have experienced significant seismic activity within historic times. This area of California is one of the most seismically active areas in the United States. According to the US Geological Survey, there is a 97 percent chance that a magnitude 6.7 earthquake will occur in southern California by 2037 (Krazan & Associates, 2008, 2010).

The proposed project would not expose people or structures to substantial effects from strong seismic ground shaking due to the fact the project involves replacing existing paved areas and service roadway. Given the temporary nature of the project and the absence of any new structures that would result from the proposed project, impacts related to strong seismic ground shaking would be less than significant.

iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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**Less than Significant Impact.** According to the geotechnical reports prepared Krazan & Associates, the depth to groundwater and composition of subsurface materials indicate a low potential for liquefaction (Krazan & Associates, 2008, 2010). Given that the proposed project would result in temporary construction activities leading to the replacement/rehabilitation of certain existing paved areas at Brown Field, including both ends of Runway 26R and a service road, potential impacts from seismic-related ground failure, including liquefaction, are considered less than significant.

iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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**Less than Significant Impact.** The project site is characterized by very gently sloping topography. Implementation of the proposed project would replace/rehabilitate existing paved areas at various locations at Brown Field; as such, disturbance to non-paved areas would be temporary and limited to the location of the proposed construction staging area located east of the main aircraft parking apron. Potential landslides induced by erosion would be avoided through the application of project BMPs identified in Table 1, as further described on page 2 of the Initial Study Checklist. Given the existing topography and the fact that the proposed project is primarily disturbing existing, paved surfaces, impacts related to landslides induced by project activities would be less than significant.

b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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**Less than Significant Impact.** Implementation of the proposed project would involve the replacement and rehabilitation of existing paved areas at Brown Field. Minimal disturbance to non-paved areas would occur primarily as a result of the use of a construction staging area. The replacement and rehabilitation of pavement on both ends of Runway 26R and the existing service road would not result in erosion or the loss of topsoil. Application of project BMPs as described in Table 1, as further described on page 2 of the Initial Study Checklist, would ensure that erosion and loss of topsoil is minimized. Therefore, overall impacts resulting from soil erosion or the loss of topsoil would be less than significant.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

**Less than Significant Impact.** The project site has very gentle sloping topography that has a very low potential for landslides or slope failure. Furthermore, the depth to groundwater and composition of subsurface materials in the area indicate a low potential for liquefaction (Krazan & Associates, 2008, 2010). Given the nature of the proposed project, which primarily disturbs existing paved areas at Brown Field, and the fact that the project site does not contain the type of characteristics that would be associated with landslides, potential impacts result from on- or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse would be less than significant.

- |  |                          |                          |                                     |                          |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|

**Less than Significant Impact.** Subsurface soils in and around the project site consist of moderately dense, silty clay alluvium known as Terrace Deposits which are underlain by the bedrock Otay Formation. These soils are classified as having "high" to "very high" potential for expansion (Krazan & Associates, 2008, 2010). Typically, soil erosion potential is reduced once the soil is graded and covered with concrete, structures, asphalt, or slope protection. Here, the proposed project would expose a thin layer (no more than 26 inches in depth) of subsurface soils, as a result of rehabilitation of Runway 26R, as well as the replacement of an existing service road. These areas would be graded and repaved, returning these areas to pre-project conditions. Disturbance of non-paved areas would be restricted primarily to the proposed construction staging area, and would not affect subsurface soils. Therefore, despite the project site containing soils that generally have a high potential for expansion, risks to life or property as a result of implementation of the proposed project would be less than significant.

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

**No Impact,** The proposed project does not involve the use or installation of septic tanks or alternative waste water disposal systems. There is no Impact.

#### VII. GREENHOUSE GAS EMISSIONS – Would the project:

- |   |                          |                          |                                     |                          |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

**Less than Significant Impact.** The City of San Diego does not currently have adopted thresholds of significance for GHG emissions. The City utilizes the California Air Pollution Control Officers Association (CAPCOA) report *CEQA and Climate Change* dated January 2008 as an interim approach to determine whether a detailed greenhouse gas (GHG) analysis would be



Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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required, with 900 metric tons of carbon dioxide equivalent (MTCO<sub>2</sub>E) as the established screening threshold. This emission level is based on the amount of vehicle trips, typical energy and water use, and other factors associated with projects. CAPCOA identifies project types that are estimated to emit approximately 900 MTCO<sub>2</sub>E of GHGs annually. Projects that meet the criterion are not required by the City to prepare a detailed Business as Usual (BAU) GHG technical analysis report.

Operational sources of GHG emissions would be substantially similar to existing operational sources. The project would not result in an increase in aircraft traffic as measured in average daily trips (ADT), energy consumption, or water usage. No GHG emissions impact from operation of the proposed project would be expected.

The proposed project would, however, result in construction-related emissions. The project's duration is expected to be four months. Construction means and methods would ultimately be decided by the contractor, but the anticipated construction process is as follows: 1) remove existing 50 ft of PCC closest to the shoulders and excavate fill material up to 26 inches below grade, 2) build back up AC section to proposed grade, 3) rubbilize existing PCC in middle 50 feet of runway, 4) build up variable depth AC base layer, and 5) construct AC surface layer with a crown on centerline and matching grades at the AC previously placed on the outer 50 feet. Assuming the project's duration and construction method, the type and amount of heavy duty construction equipment, haul trucks, and worker commute trips can be anticipated. Taking into account schedule, equipment, and construction method, the proposed project would produce a total of ~~228.6~~ 272.7 MTCO<sub>2</sub>E. Emissions would be less than the 900 MTCO<sub>2</sub>E screening threshold criteria, and therefore, impacts would be less than significant.

- b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

**Less than Significant Impact.** Refer to VII(a), above, regarding discussion of project-related GHG emissions. The City of San Diego General Plan Conservation Element and the San Diego Sustainable Community Program aim to reduce state and local GHG emissions.

The City also recently released the *City of San Diego Climate Action Plan Working Draft* (City of San Diego, 2014) that establishes a Citywide GHG inventory baseline for the year 2010, as well as measures to meet reduction targets of 15 percent below the 2010 baseline by 2020 and 49 percent below the 2010 baseline by 2035. The City's strategies to achieve these reduction targets include (1) Energy and Water Efficient Buildings; (2) Clean and Renewable Energy; (3) Biking, Walking, and Transit; (4) Zero Waste; and (5) Climate Resiliency.

The project consists of runway end improvements, replacing an existing service road, and milling/overlaying an existing runway shoulder and is estimated to take six months to complete. The project would not result in long-term GHG emissions. Therefore, the project would not conflict with any adopted GHG reduction plans, policies, or regulations. In addition, as discussed above under Section VII(a), the project would result in less than 900 MTCO<sub>2</sub>E net increase in GHG emissions. This impact would be less than significant.

VIII. HAZARDS AND HAZARDOUS MATERIALS – Would the project:

- a) Create a significant hazard to the public or the environment through routine transport, use, or disposal of hazardous materials?

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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**Less than Significant Impact.** Implementation of the proposed project would result in the temporary use of a fuel truck, paint truck, and other construction vehicles (as identified in the project description at the beginning of this Initial Study). With the exception of trucks that may transport some debris away from the project site, construction vehicles are anticipated to remain on-site at the construction staging area for the duration of the project. Any movement of vehicles transporting or disposing of hazardous materials to and from the project site will be short term, and will cease upon completion of construction activities. Therefore, potential impacts associated with the routine transport, use, or disposal of hazardous materials as a result of the proposed project would be less than significant.

- b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?
- |                          |                          |                                     |                          |
|--------------------------|--------------------------|-------------------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--------------------------|--------------------------|-------------------------------------|--------------------------|

**Less than Significant Impact.** The project site is located within areas adjacent to the airside facilities of Brown Field that include various uses such as commercial, light industrial, and ancillary aviation uses such as fueling and repair services. Many of these existing and former land uses have handled hazardous materials and wastes in varying quantities (Brown and Caldwell, 2008). Implementation of the proposed project would result in the replacement and rehabilitation of paved areas at the ends of Runway 26R. Replacement of paved surfaces would involve the removal of existing asphalt, grading, and re-paving. Accidental discovery or release of subsurface hazardous materials in these locations is unlikely given the fact that these areas have been previously disturbed and paved.

Construction activities would require the use of certain hazardous materials (e.g., fuels, paints, solvents) that, if improperly used and inadvertently released, could result in temporary hazardous conditions to workers or the public. However, the hazardous materials typically used on a construction site are brought onto the site packaged in consumer quantities and used in accordance with manufacturer recommendations. The overall quantities of these materials on the site at one time do not result in large bulk amounts that, if spilled, could cause significant adverse effects to human health. Spills of hazardous materials on construction sites are typically localized and are cleaned up in a timely manner. The construction contractor is responsible for his/her hazardous materials and is required under their contract to properly store and dispose of these materials in compliance with state and federal laws.

Given the localized nature of construction activities and the low likelihood of encountering subsurface hazardous materials in areas that have previously been disturbed by past construction activities, potential impacts resulting from the upset or accidental release of hazardous materials resulting from the proposed project would be less than significant.

- c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?
- |                          |                          |                          |                                     |
|--------------------------|--------------------------|--------------------------|-------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|-------------------------------------|

**No Impact.** The project is not located within one-quarter mile of an existing or proposed school. There is no impact.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Less than Significant Impact.** A review of available environmental databases maintained by the State Water Resources Control Board (SWRCB) and Department of Toxic Substances Control (DTSC) for sites that have been impacted by leaking underground storage tanks (LUST), non-fuel related cases known as Spills, Leaks, Investigative Cleanup (SLIC), and other cleanup sites was conducted for the project site and surrounding area. Table 2 summarizes active cleanup sites in the vicinity of the proposed project.

Site Name	Address	Cleanup Status	List
SDCTY-Gen Ser, Brown Field	1424 Continental Street, San Diego, CA 92154	Open – Site Assessment as of 1/20/2010	LUST
R Family Properties	935 Heritage Road, San Diego, CA 92154	Open – Site Assessment as of 4/10/2012	SLIC
San Diego Air Force Space Surveillance Station	989 Heritage Road, San Diego, CA 92154	Active – Remedial Investigation	SLIC
Brown Field NAAS	N/A	Inactive – Needs Evaluation	SLIC

Source: SWRCB GeoTracker, 2014; DTSC EnviroStor, 2014.

The sites listed in Table 2 are not located in the immediate vicinity of areas where proposed pavement removal and rehabilitation are to occur. Given the absence of known hazardous material sites in the locations where construction activities would occur, potential impacts associated with creating a significant hazard to the public or environment would be less than significant.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two mile of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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**Less than Significant Impact.** San Diego County Regional Airport Authority (SDCRAA), which serves as the Airport Land Use Commission (ALUC) for San Diego County, has established an airport land use compatibility plan (ALUCP) for Brown Field. The basic function of an ALUCP is to promote compatibility between airports and the land uses that surround them "to the extent that these areas are not already devoted to incompatible uses" (Public Utilities Code §21674(a)).

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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Various components of the proposed project would be located within Zone 1 (rehabilitation to each end of Runway 26R) and Zone 5 (construction staging area and replacement of existing service road), as defined by the ALUCP (SDCRAA, 2010). Implementation of the proposed project would result in temporary, construction-related activities within these zones, but would not create land uses that would lead to the permanent intensification (additional people per acre) of the project site. Given that the proposed project merely rehabilitates existing runway pavement and a service road and does not create new land uses at the project site, potential safety hazards for people residing or working in the area would be less than significant.

Construction of the proposed project would lead to the temporary closure of Runway 26R, resulting in the diversion of aircraft to Runway 8R-26L during this period. Construction activities have the potential to interfere with aircraft operating at Brown Field through the creation of dust or smoke, which may impair a pilot's vision or views of the airfield, or otherwise obstruct airspace. Standard dust control BMPs (e.g., water spray down) would be utilized to the greatest extent feasible to limit the generation of dust on the project site. Other obstructions to navigable airspace from construction activities are not anticipated given that the equipment that would be used have low profiles, and should not penetrate Brown Field's imaginary surfaces (as defined by Federal Aviation Regulation (FAR) Part 77: Safe, Efficient Use, and Preservation of the Navigable Airspace). Nevertheless, in order to further avoid safety issues associated with construction activities on an active airfield, and as part of the project; the construction contractor will coordinate with airport management to inform them of planned construction activities. These updates will occur on a weekly basis or as construction phasing warrants, and appropriate information regarding construction activities will be posted by airport management in locations accessible to pilots and also shared with air traffic control. As such, safety hazards to people in the project area would be less than significant.

- f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?
- |                          |                          |                          |                                     |
|--------------------------|--------------------------|--------------------------|-------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|-------------------------------------|

**No Impact.** There are no private airstrips in the vicinity of the proposed project site. Therefore, there are no impacts.

- g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
- |                          |                          |                                     |                          |
|--------------------------|--------------------------|-------------------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--------------------------|--------------------------|-------------------------------------|--------------------------|

**Less than Significant Impact.** Construction activities associated with the proposed project take place entirely within the confines of Brown Field. While trucks and construction vehicles will deliver materials to and transport debris away from the project site, all other construction activities would remain localized to the confines of the Airport's property boundary. Given the fact that construction activities will be confined to Brown Field and that use of local roadways for movement of construction vehicles and equipment will be temporary, potential impacts associated with the impairment or interference of an adopted emergency response or evacuation plan would be less than significant.

- h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are
- |                          |                          |                                     |                          |
|--------------------------|--------------------------|-------------------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--------------------------|--------------------------|-------------------------------------|--------------------------|

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
adjacent to urbanized areas or where residences are intermixed with wildlands?				

**Less than Significant Impact.** According to the San Diego County Multi-Jurisdictional Hazard Mitigation Plan, the project site is in a very high risk category for wildland fire hazards (San Diego County, 2010). The project site is currently served by City of San Diego Fire Station No. 43, which is located just east of Brown Field. Given the fact that the proposed project would result in short-term construction activities and that it would not introduce new structures to the project site, potential impacts associated with exposing people to significant risk of loss, injury, or death involving wildland fires would be less than significant.

IX. HYDROLOGY AND WATER QUALITY – Would the project:

- a) Violate any water quality standards or waste discharge requirements?

**Less than Significant Impact.** The proposed project would comply with all storm water quality standards during and after construction, and would implement appropriate BMPs. All standard development projects in the City of San Diego are also subject to source control, construction, as specified in the City of San Diego's Stormwater Standards Manual. Implementation of the proposed project would replace existing paved areas associated with Runway 26R and a service road located south of the runways. Pavement rehabilitation and/or replacement activities would not create additional impervious surfaces at the project site beyond what is currently present in the existing condition; therefore, increased runoff would not occur as a result of the proposed project.

Unprotected construction sites have the potential to discharge sediment and other pollutants into local waterways. All construction projects are required to reduce pollution to the maximum extent practicable by implementing best management practices (BMPs). The proposed project pavement removal and replacement activities would be minimal (less than one acre) and very localized; however, the activities would necessitate temporary exposure of soil which, if left uncovered, could result in sedimentation in the event of rain. In addition fuels, oils, lubricants, and other hazardous substances would be used during construction and if these substances are unmanaged, or in the event of an accidental spill, these substances could be released and impact water quality. The proposed project would include implementation of source control and erosion control BMPs during construction of the proposed project to prevent sediment and/or hazardous materials and substances from leaving the project site. Erosion control BMPs, such as scheduling during the non-rainy season and preservation of existing vegetation, would prevent the exposure of soil to water and reduce the threat of erosion during construction. The proposed project would also implement sediment control BMPs, such as sandbags and fiber rolls, to trap any sediment that mobilizes on-site, thereby preventing siltation from occurring.

The City requires a Water Pollution Control Plan (WPCP), a Minor Water Pollution Control Plan (MWPCP) or a Storm Water Pollution Prevention Plan (SWPPP), for all construction projects that have potential for storm water pollution. A Water Pollution Control Plan (WPCP) is required when project sites are less than one acre and exempt from the Statewide Construction General Permit. The City of San Diego will evaluate the adequacy of the owner/contractor's construction site management for storm water pollution prevention, inclusive of BMP implementation.

Given the above considerations, the proposed project would not violate any water quality standards or waste discharge requirements, and impacts would be less than significant.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**No Impact.** The project site is underlain by the Tijuana Groundwater Basin. The proposed project does not involve the use of groundwater. While the proposed project involves some grading activities associated with the replacement of pavement at the end of Runway 26R and the replacement of an existing service road, grading activities are not anticipated to reach subsurface depths greater than 26 inches. In addition, no impervious surfaces would be added over and above what exists. Therefore, no impacts to existing groundwater supplies or quality will occur as a result of the proposed project.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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**Less than Significant Impact.** Implementation of the proposed project would involve rehabilitating or replacing existing paved areas at Brown Field associated with Runway 26R and a service road located south of the runways. These project elements would not add additional impervious surface to the project site, and as such, post-project drainage patterns will be returned to pre-project conditions upon completion of construction work. Potential alterations to the existing drainage pattern at the proposed construction staging area would be avoided through standard erosion control measures typically employed in construction projects (e.g., use of fiber rolls and silt fences to reduce runoff and sediment from leaving the site during storm events; or stabilizing construction entrances to reduce the tracking of mud and dirt onto public roads). Given that the proposed project would add no new impervious surfaces to the project site and that BMPs would be employed for non-paved construction staging areas to avoid altering the existing drainage pattern, potential impacts would be less than significant.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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**Less than Significant Impact.** As explained in Section IX(c), construction of the proposed project would not result in the creation of new impervious surfaces at the project site, nor would it

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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affect non-paved areas such that the existing drainage pattern would be substantially altered or the rate of surface runoff increased. Furthermore, the proposed project would not impact or alter the course of the closest river (Otay River), which is located a quarter-mile north of the project site. Therefore, potential impacts would be less than significant.

- |  |                          |                          |                                     |                          |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| e) Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|

**Less than Significant Impact.** As described previously, rehabilitation and/or replacement of existing paved areas would not result in the creation of additional impervious surfaces at Brown Field. Therefore, post-project runoff rates would not exceed pre-project conditions. As such, potential impacts to Brown Field's and the City of San Diego's on- and off-site existing stormwater drainage systems would be less than significant.

- |   |                          |                          |                                     |                          |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| f) Otherwise substantially degrade water quality? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

**Less than Significant Impact.** See sections IX(a)(c)(d) and (e).

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

**No Impact.** Implementation of the proposed project does not involve the construction of housing, therefore there is no impact.

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| h) Place within a 100-year flood hazard area, structures that would impede or redirect flood flows? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

**No Impact.** The nearest flood zone is located approximately one quarter mile north of the project site, along the Otay River. One hundred-year flood heights along the waterway, in the vicinity of the project site, range from approximately 150 to 180 feet above mean sea level (msl). However, the project site is located on Otay Mesa, approximately 400 feet above mean sea level (amsl), well above this flood zone. As such, the site is not located within a FEMA-defined 100-year flood zone and construction of the proposed project would not impede or redirect flood flows. There would be no impact.

X. LAND USE AND PLANNING – Would the project:

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Physically divide an established community? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

**No Impact.** The closest community to the project site is the Robinhood Ridge neighborhood, which is located approximately .35-mile northwest of the project site and is associated with the northwest district of the Otay Mesa Community Plan. Construction of the proposed project would occur entirely within the boundaries of Brown Field, and therefore would not result in the division

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact.
of an established community. There would be no impact.				

- b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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**No Impact.** Relevant land use planning documents applicable to Brown Field and the project site include the 1980 Brown Field Airport Master Plan, the Brown Field ALUCP, the Airport Layout Plan (ALP) for Brown Field, the City of San Diego General Plan, and the Otay Mesa Community Plan.

Implementation of the proposed project would replace or rehabilitate existing paved areas at Brown Field, including both ends of Runway 26R and an existing service road located south of the air traffic control (ACT) tower. These project components would not add additional or new structures to the project site, but would rather improve existing features. Similarly, these rehabilitative actions would not alter existing operations at Brown Field, but would rather improve conditions for those aircraft currently using the airport. No other features or structures would be added to the project site, therefore, the proposed project would not be inconsistent or otherwise alter the function and purpose of Brown Field as envisioned in the Brown Field Airport Master Plan, the City's General Plan, or the recently adopted Otay Mesa Community Plan Update.

Furthermore, as more fully discussed in Section VIII(e), the proposed project would not be inconsistent with the ALUCP or the ALP for Brown Field, given the fact that the project would not add new structures or otherwise intensify the number of people utilizing the project site beyond the temporary construction period. Therefore, the proposed project is considered consistent with the compatibility guidelines of the Brown Field ALUCP and the general land use designations on the ALP.

The proposed project would be consistent with the City of San Diego Land Development Code (LDC) Environmentally Sensitive Lands, Historical Resources, and Storm Water Regulations. Although the project staging area is located in the vicinity of burrowing owls, the land surrounding the staging area consists of disturbed habitat, which is not environmentally sensitive land per the LDC. Still, Mitigation Measure BIO-1 addresses any potential impact to burrowing owls. Mitigation Measure HIST-1 ensures compliance with LDC Historical Resources Regulations by requiring monitoring in an area with potential to unearth historical or archaeological resources. Implementation of the proposed project would replace existing paved areas associated with Runway 26R and a service road located south of the runways. It would comply with City of San Diego Storm Water Regulations.

Given the proposed project's consistency with applicable land use plans and regulations of the LDC, as described above, there would be no impact.

- c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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**Less than Significant with Mitigation Incorporated.** The project site is located within the City's MSCP Subarea Plan and would be subject to meeting the terms and conditions of the MSCP and associated regulations. The MSCP is a regional plan that seeks to ensure the long-term survival of sensitive plant and animal species and protects the native vegetation found throughout the City. With implementation of Mitigation Measure BIO-1, the project would not be in conflict with the terms, conditions, and provisions of the MSCP as required; and therefore, impacts would be less than significant.

XI. MINERAL RESOURCES – Would the project:

- a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

**Less Than Significant Impact.** As per the City of San Diego General Plan Program Environmental Impact Report, the City has designated Mineral Resource Zones that meet the California Mining and Geology Board's standards for mineral resources in the region (City of San Diego 2007a). The project site and the area surrounding the project site contain land that is classified as MRZ-3—areas containing mineral deposits, the significance of which cannot be evaluated from available data (Ibid). To the north, the Otay River and its surrounding basin is labeled MRZ-2—areas where adequate information indicates that significant mineral deposits are present or where it is judged that there is a high likelihood for their presence (City of San Diego 2007b)—however, the Otay River is located approximately one mile directly north of the project site. The construction and repair of Runway 26R would not result in any loss of a known mineral resource of value to the region or residents of the state; this impact would be less than significant.

- b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

**Less Than Significant Impact.** As mentioned in Section XI(a), there are mineral resources either on the project site or near the project site, but their classification as MRZ-3 indicates that the significance of their deposits cannot be evaluated from available data. While the Otay River has been identified as MRZ-2, the proposed project would not affect that area. The rehabilitation of Runway 8L-26R would not result in the loss of a known mineral resource of value to the region or residents of the state; this impact would be less than significant.

XII. NOISE – Would the project result in:

- a) Generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

**Less than Significant Impact.** The project would result in potential increased noise exposure of sensitive receptors in the vicinity during the short-term construction activities. Per Section 21.04 of the San Diego Municipal Code, it is unlawful for any person, between the hours of 7:00 pm of any day and 7:00 am of the following day, or on legal holidays, with exception of Columbus Day and Washington's Birthday, or on Sundays, to erect, construct, demolish, excavate for, alter or repair any building or structure in such manner as to create disturbing, excessive or offensive noise unless a permit has been applied for and granted beforehand by the Noise Abatement and

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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Control Administrator. Except as provided above, it is unlawful for any person, including the City of San Diego, to conduct any construction activity so as to cause, at or beyond the property lines of any property zoned residential, an average sound level greater than 75 dBA during the 12-hour period from 7:00 am to 7:00 pm.

Sensitive receptors in the immediate vicinity of the project site include residential uses to the west of the project, the closest of which are located approximately one-half mile from the western end of the Brown Field Runway. Excavation and finishing activities, at 89 dBA Leq at 50 feet (U.S. EPA, 1971), would likely be the loudest phases of project construction. At 0.5 mile away, assuming an attenuation of 7.5 dBA per doubling distance, the nearest residences would be exposed to 46 dBA Leq from project construction activities. Construction noise at these levels would comply with the City's CEQA significance threshold of 75 dBA Leq, and therefore would not be considered significant. Other sensitive receptors located further away from construction would be exposed to construction noise at incrementally lower levels.

In regards to operations, there would be no long-term sources of noise associated with the project. Therefore, the project would not conflict with the noise standards in the City General Plan or Noise Abatement and Control Ordinance. There would be no operational noise impact.

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| b) Generation of, excessive ground borne vibration or ground borne noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

**No Impact.** The project would not include construction activities that would result in substantial levels of ground borne vibration or noise, such as blasting or pile driving. As such, and based on the substantial distance to the nearest sensitive receptors, the project would not result in people being exposed to excessive ground borne vibration and ground borne noise. No impact would occur.

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

**No Impact.** As discussed for criterion XII(a), there would be no long-term, permanent sources of noise associated with the project. No impact would occur.

- |   |                          |                          |                                     |                          |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

**Less than Significant Impact.** As discussed in Section XII(a), the project would result in short-term, temporary noise during construction activities. However, this impact would be less than significant.

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|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| e) For a project located within an airport land use plan, or, where such a plan has not been adopted, within two miles of a public airport or public use airport would the project expose people residing or working in the area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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**Less than Significant Impact.** The project consists of runway end improvements, replacing an existing service road, and milling/overlaying an existing runway shoulder at the Brown Field Airport. Construction contractors would be required to comply with all applicable OSHA noise standards to protect workers' hearing. As such, the project would not expose people residing or working in the area to excessive noise levels. No impact would occur.

- f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?
- |                          |                          |                          |                                     |
|--------------------------|--------------------------|--------------------------|-------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|-------------------------------------|

**No Impact.** The project would not be in the vicinity of a private airstrip. No impact would occur.

**XIII. POPULATION AND HOUSING – Would the project:**

- a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?
- |                          |                          |                                     |                          |
|--------------------------|--------------------------|-------------------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--------------------------|--------------------------|-------------------------------------|--------------------------|

**Less Than Significant Impact.** The zoning for areas surrounding the site is predominantly industrial and commercial, with some residential uses located further to the west and northwest of the project site. No new development—residential, commercial, or otherwise—would result from implementation of the proposed project. Although the proposed project would generate approximately sixteen to twenty temporary, construction-related jobs (HNTB, 2014), the labor would be locally sourced and would not cause any migrations for employment. The construction and repair of Runway 26R would not induce substantial population growth, thus the impact would be less than significant.

- b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?
- |                          |                          |                          |                                     |
|--------------------------|--------------------------|--------------------------|-------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|-------------------------------------|

**No Impact.** The proposed project would not displace any developments, housing or otherwise, as the proposed project work would be contained within the boundaries of Brown Field. No displacement of housing would occur, thus there is no impact.

- c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?
- |                          |                          |                          |                                     |
|--------------------------|--------------------------|--------------------------|-------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|-------------------------------------|

**No Impact.** The proposed project would similarly not displace any people; as the project work would be contained on-site and would not affect any households or populations in the vicinity of Brown Field. No displacement of people would occur, thus there is no impact.

**XIV. PUBLIC SERVICES**

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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a) Would the project result in substantial adverse physical impacts associated with the provisions of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service rations, response times or other performance objectives for any of the public services:

i) Fire Protection

**No impact.** Station 43 of the San Diego Fire Department is located on 1590 La Media Road, directly neighboring the southeastern corner of Brown Field (San Diego Fire-Rescue Department, 2014). All construction activities associated with the proposed project would occur on-site, therefore the proposed project would not result in any direct, adverse physical impacts to the fire station or its capabilities. Furthermore, implementation of the proposed project would not increase the use of Brown Field or otherwise increase the population surrounding the project site served by Station 43. Therefore, no new fire protection facilities would be required as a result of the proposed project. Lastly, given that all construction activity will occur within the boundaries of Brown Field (with the exception of trucks occasionally delivering materials and hauling debris away from the project site) and will not affect surrounding roadways, fire protection service and response times will not be affected. Thus, there is no impact.

ii) Police Protection

**No impact.** The Otay Mesa neighborhood is serviced by the Southern Division of the San Diego Police Department (San Diego Police Department, 2013), located at 1120 27<sup>th</sup> Street and about seven miles to the west of the project site. The Southern Division serves 107,631 people and encompasses 31.5 miles (San Diego Police Department 2014). With all of the construction activities occurring on-site, the project would not result in any direct, adverse physical impacts to the Southern District or its capabilities. Furthermore, the proposed project would not generate population growth or create new development in the project area that would require expanded police protection services. Lastly, given that all construction activity will occur within the boundaries of Brown Field (with the exception of trucks occasionally delivering materials and hauling debris away from the project site) and will not affect surrounding roadways, police protection service and response times will not be affected. Therefore, there is no impact.

iii) Schools

**No impact.** The Otay Mesa neighborhood is serviced by San Ysidro School District for elementary and middle schools (San Ysidro School District, 2013) and Sweetwater Union High School District for high schools (Sweetwater Union, 2014, N.D.A., N.D.B.). All schools that are near the project site are located to the north and west of Brown Field, with the two closest schools, San Ysidro High School and Ocean View Hills School, both located approximately 1.5 miles west of the project site. With all of the construction activities occurring on site, the project would not result in any direct, adverse physical impacts to the local schools or their capabilities. Nor would the proposed project result in population growth that would require the expansion of existing schools or the construction of new ones. Thus, there is no impact.

v) Parks

**No impact.** There is one major park, Pacific Gateway Park, located southwest of the project site, along with the Otay River greenbelt to the north. With all of the construction activities occurring on-site, the proposed project would not result in any direct, adverse physical impacts to the park and its capabilities or the Otay River. Similarly, the proposed project would not induce substantial population growth in the vicinity of the project site, therefore the expansion of existing parks or the construction of new ones would not be required. Thus, there is no impact.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
v) Other public facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**No impact.** The project would not induce growth or impact existing public facilities except to resurface Runway 26R, as noted in the project description. As such, the project would not contribute to increased demand for public services. Therefore, the project would have no impact on the need for future public facilities. No impact would occur.

#### XV. RECREATION

- a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?
- |                          |                          |                          |                                     |
|--------------------------|--------------------------|--------------------------|-------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|-------------------------------------|

**No impact.** The closest public park to the project site is Pacific Gateway Park. The proposed project involves the rehabilitation of existing runway pavement and service roadway within the boundaries of Brown Field; therefore, it would not increase the use of existing neighborhood or regional parks and recreational facilities. As such, the proposed project would not increase usage of Pacific Gateway Park or any other nearby recreational resources so as to cause any physical deterioration. Thus, there is no impact.

- b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?
- |                          |                          |                          |                                     |
|--------------------------|--------------------------|--------------------------|-------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|-------------------------------------|

**No impact.** As previously mentioned in Section XV(a), the proposed project would not increase the use of the neighboring recreational resources. Furthermore, the proposed project would not require the expansion of existing facilities or the construction of new ones. There is no impact.

#### XVI. TRANSPORTATION/TRAFFIC – Would the project:

- a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?
- |                          |                          |                                     |                          |
|--------------------------|--------------------------|-------------------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--------------------------|--------------------------|-------------------------------------|--------------------------|

**Less than Significant Impact.** Primary roadways serving Brown Field include Continental Street, Otay Mesa Road, and Britannia Boulevard. Regional access to the project area is provided via State Route 905. Implementation of the proposed project would result in construction vehicles and equipment accessing Brown Field on a daily basis (weekends excluded) for approximately 16

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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weeks. During this timeframe, anywhere from nine to 16 construction workers will be traveling to and from the project site, depending on the phase of development. Equipment and vehicles needed for multiple days may also be kept on-site in the construction staging area, reducing additional trips on local roadways. Following completion of construction of the proposed project, vehicle trips on local roadways will return to pre-project conditions. Given the low number of workers anticipated for construction of the proposed project, as well as the temporary nature of proposed construction activities, impacts to applicable plans, ordinances, or policies establishing level of service standards for roadways in the vicinity of the project site would be less than significant.

- |  |                          |                          |                                     |                          |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|

**Less than Significant Impact.** See response to Section XVI(a).

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|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

**Less than Significant Impact.** Rehabilitation and replacement of pavement on either end of Runway 26R will result in the temporary closure of this runway. During this period, all aircraft operating (arriving or departing) at Brown Field will be diverted to Runway 8R-26L. Aircraft utilizing this runway will be required to operate according to the existing procedures that are published for Brown Field and this specific runway. Therefore, while the proposed project would result in the temporary closure of Runway 26R, overall changes to the standard air traffic pattern would not occur and potential safety risks would be less than significant.

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|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

**No Impact.** Implementation of the proposed project would result in the rehabilitation and/or replacement of existing paved areas at the ends of Runway 26R and the replacement of an existing service road located west of the ATC. The replacement service road and runway ends will be reconstructed pursuant to applicable standards set forth by the City of San Diego as well as the FAA. Therefore, no impacts related to hazardous design features will occur as a result of the proposed project.

- |   |                          |                          |                                     |                          |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| e) Result in inadequate emergency access? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

**Less than Significant Impact.** The proposed project would be contained entirely within the boundaries of Brown Field. Replacement and rehabilitation of the existing paved areas as detailed in the project description would not interfere with emergency access to Brown Field or

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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critical areas (e.g., runways or parking aprons) on the airfield itself. Work on the existing service road would limit access points to the ATC, however, emergency vehicles could still access that facility from an alternative entry point to the east of the tower. Following completion of construction activities, full access capabilities would be restored to all areas on the airfield. Therefore, this impact would be less than significant.

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|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

**No Impact.** All project activities would occur on Airport property and would not involve public transit, bicycle or pedestrian facilities. There would be no impact.

#### XVII. UTILITIES AND SERVICE SYSTEMS – Would the project:

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

**No Impact.** Implementation of the proposed project, which involves the replacement or rehabilitation of paved areas at Brown Field, would not result in the increased generation of waste water at the project site. There would be no impact.

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

**No Impact.** The proposed project does not involve the construction or use of facilities that require water or waste water connections. Therefore, the expansion of existing water and waste water facilities or the construction of new ones is not required. There would be no impact.

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

**No Impact.** Construction of the proposed project would involve the replacement or rehabilitation of the ends of Runway 26R and an existing service road located west of ATC. The rehabilitation or replacement of these paved areas would not result in the creation of additional impervious surfaces beyond what currently exists. Furthermore, areas that are re-paved as a result of the proposed project would continue to utilize existing storm water facilities. Therefore, there would be no project impact associated with the expansion of existing storm water facilities or the construction of new ones.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**No Impact.** The proposed project does not involve the construction of new facilities that would increase water usage at the project site. Rehabilitation or replacement of existing paved areas at Brown Field would not require new or expanded entitlements from the airport's water supplier; therefore, there would be no impact.

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	--------------------------	--------------------------	-------------------------------------

**No Impact.** Implementation of the proposed project would not result in the increased generation of waste water at the project site. Given that post-project waste water generation will be the same as pre-project conditions, implementation of the proposed project would not impact the current capacity of the waste water treatment facility serving the project site. There would be no impact.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	--------------------------	-------------------------------------	--------------------------

**Less than Significant Impact.** Otay Landfill is the nearest solid waste facility to the project site, and is located in the unincorporated area of San Diego County, approximately two miles northwest of the Project. The Otay Landfill has a maximum permitted throughput of 5,830 tons per day and a maximum permitted capacity of 691,154,000 cubic yards. As of March 31, 2012, Otay Landfill had a remaining capacity of 24,514,904 cubic yards (Cal Recycle, 2014).

Implementation of the proposed project is anticipated to generate debris related to the replacement of pavement at the end of Runway 26R and from the replacement of an existing service road. While the proposed project is expected to generate some amount of waste that will be diverted to the local landfill, a portion of the existing PCC will be reused through rubblelization, a technique that reduces existing concrete to rubble for reuse in its current location. Given the above considerations, the proposed project is not expected to generate large amounts of debris that would affect the permitted capacity of the Otay Landfill. Therefore, this impact would be less than significant.

g) Comply with federal, state, and local statutes and regulation related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--	--------------------------	--------------------------	--------------------------	-------------------------------------

**No Impact.** Any solid waste generated during construction related activities would be recycled or disposed of in accordance with all applicable local, state, and federal regulations. (Also see Section XVII(f)). There would be no impact.



Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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XVIII. MANDATORY FINDINGS OF SIGNIFICANCE –

- a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?
- |                          |                                     |                          |                          |
|--------------------------|-------------------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--------------------------|-------------------------------------|--------------------------|--------------------------|

**Less than Significant Impact with Mitigation Incorporated.** The purpose of the proposed project is to rehabilitate or replace existing paved areas of Runway 26R at Brown Field. In this light, the proposed project would have a minimal effect on the natural environment. Nevertheless, as discussed in Section IV(a), Biological Resources, the proposed project would have the potential to impact sensitive biological resources, namely, the burrowing owl. Implementation of Mitigation Measure BIO-1 would ensure that impacts to the burrowing owl would be reduced to less than significant.

Furthermore, proposed improvement of existing paved areas at the project site would not result in land form alterations different from what is existing in the pre-project condition. There are no known archaeological sites that would be impacted by the project. However, there is the potential for the discovery of subsurface archaeological resources during the course of removing the existing pavement on the eastern end of Runway 26R. Implementation of Mitigation Measure HIST-1 would reduce any potential impacts to archaeological resources to less than significant. As the depth of excavation would not exceed 26 inches, no impact to paleontological resources is anticipated.

- b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?
- |                          |                          |                                     |                          |
|--------------------------|--------------------------|-------------------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--------------------------|--------------------------|-------------------------------------|--------------------------|

**Less than Significant Impact.** Implementation of the proposed project primarily affects areas within the project site that are paved (runway, and service roads) or contain disturbed lands (staging area). Other impacts associated with the proposed project, including emissions, noise, and traffic generated by construction activities, would be temporary, largely localized to the project site itself, and less than significant. Given the temporary nature of the proposed project in both its implementation and impacts, any contribution it would have to a cumulatively considerable impact on the environment is considered less than significant.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Less than Significant Impact.** Implementation of the proposed project would have less-than-significant effects on resource areas such as air quality, noise, and traffic. Any impacts associated with these and other issues that may adversely affect humans would be minimal and temporary in duration. Furthermore, rehabilitation of Runway 26R would improve the safety of the air traveling public utilizing Brown Field. Therefore, potential adverse effects on human beings as a result of the proposed project would be less than significant.

**Initial Study Attachments**

Attachment A. Memorandum dated June 3, 2014 from Joe Henry. Brown Field Airport Burrowing Owl Protocol Survey.

## INITIAL STUDY CHECKLIST

### REFERENCES

#### I. Aesthetics / Neighborhood Character

- City of San Diego General Plan.
- Community Plans: Otay Mesa Community Plan
- Local Coastal Plan.
- Site Specific Report: Caltrans, 2014. "California Scenic Highway Mapping System: San Diego County," *Caltrans website*, accessible at [http://www.dot.ca.gov/hq/LandArch/scenic\\_highways/sdiego.htm](http://www.dot.ca.gov/hq/LandArch/scenic_highways/sdiego.htm). Accessed 6/4/2014.

#### II. Agricultural Resources & Forest Resources

- City of San Diego General Plan
- U.S. Department of Agriculture, Soil Survey - San Diego Area, California, Part I and II, 1973
- California Agricultural Land Evaluation and Site Assessment Model (1997)
- Site Specific Report: City of San Diego, 2009. Official Zoning Map – Grid Tile: 7.
- City of San Diego, 2014. "Purpose of the AR (Agricultural—Residential) Zones," City of San Diego Municipal Code. §131.0303.
- California Department of Conservation. 2013a. "Sheet 1 of 2 [West]," San Diego County Important Farmland 2010.
- California Department of Conservation. 2013b. "Sheet 1 of 2 [West]," San Diego County Williamson Act 2013/2014.

#### III. Air Quality

- California Clean Air Act Guidelines (Indirect Source Control Programs) 1990
- Regional Air Quality Strategies (RAQS) - APCD
- Site Specific Report: HNTB, 2014. Estimated Construction Crews and Equipment Used to Calculate Construction Emissions – Submittal Memo. April 29, 2014.

#### IV. Biology

- City of San Diego, Multiple Species Conservation Program (MSCP), Subarea Plan, 1997
- City of San Diego, MSCP, "Vegetation Communities with Sensitive Species and Vernal Pools" Maps, 1996
- City of San Diego, MSCP, "Multi-Habitat Planning Area" maps, 1997
- Community Plan - Resource Element

- California Department of Fish and Game, California Natural Diversity Database, "State and Federally-listed Endangered, Threatened, and Rare Plants of California," January 2001
- California Department of Fish & Game, California Natural Diversity Database, "State and Federally-listed Endangered and Threatened Animals of California," January 2001
- City of San Diego Land Development Code Biology Guidelines
- Site Specific Report: Memorandum dated June 3, 2014 from Joe Henry, Brown Field Airport Burrowing Owl Protocol Survey; Sage Institute, 2011, Metropolitan Airpark Project 2011 Biology Survey Report, October 28, 2011, Revised by ESA, February 2013.

**V. Cultural Resources (includes Historical Resources)**

- City of San Diego Historical Resources Guidelines
- City of San Diego Archaeology Library
- Historical Resources Board List
- Community Historical Survey:
- Site Specific Report: Environmental Science Associates (ESA), 2012, Cultural Resources Survey and Assessment for the Metropolitan Airpark Project, Otay Mesa, San Diego, CA. July 2012.

**VI. Geology/Soils**

- City of San Diego Seismic Safety Study
- U.S. Department of Agriculture Soil Survey - San Diego Area, California, Part I and II, December 1973 and Part III, 1975
- Site Specific Report; Hart, E.W., Fault-Rupture Hazard Zones In California: Alquist-Priolo Earthquake Fault Zoning Act of 1972 with Index to Earthquake Fault Zones, California Geological Survey (formerly known as California Division of Mines and Geology), Special Publication 42, 1990, revised and updated 1997.
- Krazan & Associates. 2008. Geotechnical Engineering Investigation, Brown Field International Business Park Development, San Diego, CA. September 30, 2008.
- Krazan & Associates. 2010. Change of Geotechnical Engineer of Record and Addendum Geotechnical Report, Metropolitan Airpark, San Diego, CA. November 17, 2010.

**VII. Greenhouse Gas Emissions**

- Site Specific Report: City of San Diego, 2014. City of San Diego Climate Action Plan Working Draft, February 2014.
- Site Specific Report: Submittal Memo: Estimated Construction Crews and Equipment used to Calculate Construction Emissions (HNTB, April 30, 2014), revised August 25, 2014.

**VIII. Hazards and Hazardous Materials**

- San Diego County Hazardous Materials Environmental Assessment Listing
- San Diego County Hazardous Materials Management Division
- FAA Determination
- State Assessment and Mitigation, Unauthorized Release Listing, Public Use Authorized
- Airport Land Use Compatibility Plan
- Site Specific Report: Brown and Caldwell, 2008. Phase I Environmental Site Assessment prepared for Distinctive Projects Company, Carlsbad, CA, Brown Field Municipal Airport Area "A," Parcel No. 6460500300. July 28, 2008.

**IX. Hydrology/Water Quality**

- Flood Insurance Rate Map (FIRM)
- Federal Emergency Management Agency (FEMA), National Flood Insurance Program-Flood Boundary and Floodway Map
- Clean Water Act Section 303(b) list, [http://www.swrcb.ca.gov/tmdl/303d\\_lists.html](http://www.swrcb.ca.gov/tmdl/303d_lists.html)
- Site Specific Report:

**X. Land Use and Planning**

- City of San Diego General Plan
- Community Plan: Otay Mesa Community Plan
- Airport Land Use Compatibility Plan
- City of San Diego Zoning Maps
- FAA Determination
- Other Plans: Airport Layout Plan for Brown Field (March 6, 2012)

**XI. Mineral Resources**

- California Department of Conservation - Division of Mines and Geology, Mineral Land Classification
- Division of Mines and Geology, Special Report 153 - Significant Resources Maps
- Site Specific Report: City of San Diego, 2007a. "3.9: Mineral Resources," *City of San Diego General Plan Program Environmental Impact Report*.  
  
City of San Diego, 2007b. "Figure 3.9-1: Generalized Mineral Land Classification," *City of San Diego General Plan Program Environmental Impact Report*.

**XII. Noise**

- City of San Diego General Plan
- Community Plan
- San Diego International Airport - Lindbergh Field CNEL Maps
- Brown Field Airport Master Plan CNEL Maps
- Montgomery Field CNEL Maps
- San Diego Association of Governments - San Diego Regional Average Weekday Traffic Volumes
- San Diego Metropolitan Area Average Weekday Traffic Volume Maps, SANDAG
- Site Specific Report: U.S. Environmental Protection Agency, *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*, 1971

**XIII. Paleontological Resources**

- City of San Diego Paleontological Guidelines
- Deméré, Thomas A., and Stephen L. Walsh, "Paleontological Resources City of San Diego," Department of Paleontology San Diego Natural History Museum, 1996
- Kennedy, Michael P., and Gary L. Peterson, "Geology of the San Diego Metropolitan Area, California. Del Mar, La Jolla, Point Loma, La Mesa, Poway, and SW 1/4 Escondido 7 1/2 Minute Quadrangles," California Division of Mines and Geology Bulletin 200, Sacramento, 1975
- Kennedy, Michael P., and Siang S. Tan, "Geology of National City, Imperial Beach and Otay Mesa Quadrangles, Southern San Diego Metropolitan Area, California," Map Sheet 29, 1977
- Site Specific Report:

**XIV. Population / Housing**

- City of San Diego General Plan
- Community Plan
- Series 11/Series 12 Population Forecasts, SANDAG
- Other: HNTB, 2014. Estimated Construction Crews and Equipment Used to Calculate Construction Emissions – Submittal Memo. April 29, 2014.

**XV. Public Services**

- City of San Diego General Plan
- Community Plan

- X Other: San Diego Fire-Rescue Department, 2014. "Fire Stations," *City of San Diego website*, accessible at <http://www.sandiego.gov/fire/about/firestations/>. Accessed 6/5/2014.
- San Diego Police Department, 2013. "City of San Diego Police Neighborhoods: 11/16/2013," *City of San Diego website*, accessible at <http://www.sandiego.gov/police/pdf/2013policecitywidemap.pdf>. Accessed 6/6/2014.
- San Diego Police Department, 2014. *City of San Diego website*, accessible at <http://www.sandiego.gov/police/services/divisions/southern/index.shtml>. Accessed 6/5/2014.
- San Ysidro School District. 2013. "Schools," *San Ysidro School District website*, accessible at <http://www.sysd.k12.ca.us/schools/>. Accessed 6/6/2014.
- Sweetwater Union High School District. 2014. "Schools," *Sweetwater Union High School District website*, accessible at <http://www.sweetwaterschools.org/schools/#page>. Accessed 6/6/2014.
- Sweetwater Union High School District. No Date A. *High School Attendance Boundaries*.
- Sweetwater Union High School District. No Date B. *Middle School Attendance Boundaries*.

**XVI. Recreational Resources**

- \_\_\_ City of San Diego General Plan
- \_\_\_ Community Plan
- \_\_\_ Department of Park and Recreation
- \_\_\_ City of San Diego - San Diego Regional Bicycling Map
- \_\_\_ Additional Resources:

**XVII. Transportation / Circulation**

- \_\_\_ City of San Diego General Plan
- \_\_\_ Community Plan
- \_\_\_ San Diego Metropolitan Area Average Weekday Traffic Volume Maps, SANDAG
- \_\_\_ San Diego Region Weekday Traffic Volumes, SANDAG
- \_\_\_ Site Specific Report:

**XVIII. Utilities**

- X Site Specific Report : Cal Recycle, 2014. Solid Waste Information System. Accessed at <http://www.calrecycle.ca.gov/SWFacilities/Directory/37-AA-0010/Detail/> on June 9, 2014.

**XIX. Water Conservation**

- \_\_\_ Sunset Magazine, New Western Garden Book, Rev. ed. Menlo Park, CA: Sunset Magazine

Created: REVISED - October 11, 2013

# ATTACHMENT A



# memorandum

Date June 3, 2014  
To FILE  
From Joseph Henry, ESA  
Subject Brown Field Municipal Airport Burrowing Owl Protocol Survey

The purpose of the memorandum is to present the findings of three out of four focused burrowing owl (*Athene cunicularia*) surveys conducted by Environmental Science Associates (ESA) for the Brown Field Airport Runway 8L-26R Rehabilitation Project, and to recommend any feasible measures to avoid or reduce potential project impacts on burrowing owl nesting activity in the vicinity of the project. The area surveyed included all suitable burrowing owl habitat located on Brown Field Airport.

## Methods

ESA biologists conducted a focused burrow survey of all natural burrows and suitable man-made structures that could be used as burrows on April 3, 2014, May 9, 2014, and June 2, 2014. Pursuant to burrowing owl survey protocol, as defined in the *Staff Report on Burrowing Owl Mitigation* (CDFW, 2012), the morning survey period was initiated at morning civil twilight and concluded at 1000, and the evening survey period was initiated two hours prior to sunset and was concluded at evening civil twilight.

The survey was conducted by walking straight-line transects spaced no more than 20 meters apart throughout all portions of the site previously identified as suitable habitat. At the start of each transect, and at least every 100 meters, biologists scanned the entire visible area for burrowing owls. All potential burrows, as identified by the presence of burrowing owls or sign (i.e., pellets, prey remains, whitewash, or decoration) were recorded. Care was taken not to flush burrowing owls from their burrows or perches.

## Results

Temperatures during the survey were between 48 and 74 degrees Fahrenheit, with average wind speeds between one and nine miles per hour, and cloud cover between zero and 30 percent. The survey resulted in the identification of 14 active burrows on the site (Figure 1). Nine burrows were observed to be occupied by a pair of owls, while the remaining five were observed to be occupied by an individual owl. Numerous additional suitable burrows were observed throughout the site. Figure 2 shows the location of the project staging area and a 150-meter radius from the staging in relation to the active burrows.

Pursuant to burrowing owl survey protocol, a total of four survey visits are required. This effort satisfies three of the four required survey visits. The remaining survey visit is required to be conducted at least three weeks from the last survey (June 2) and after June 15.

A fourth and final focused survey is planned for June 23, 2014.

## Recommendations

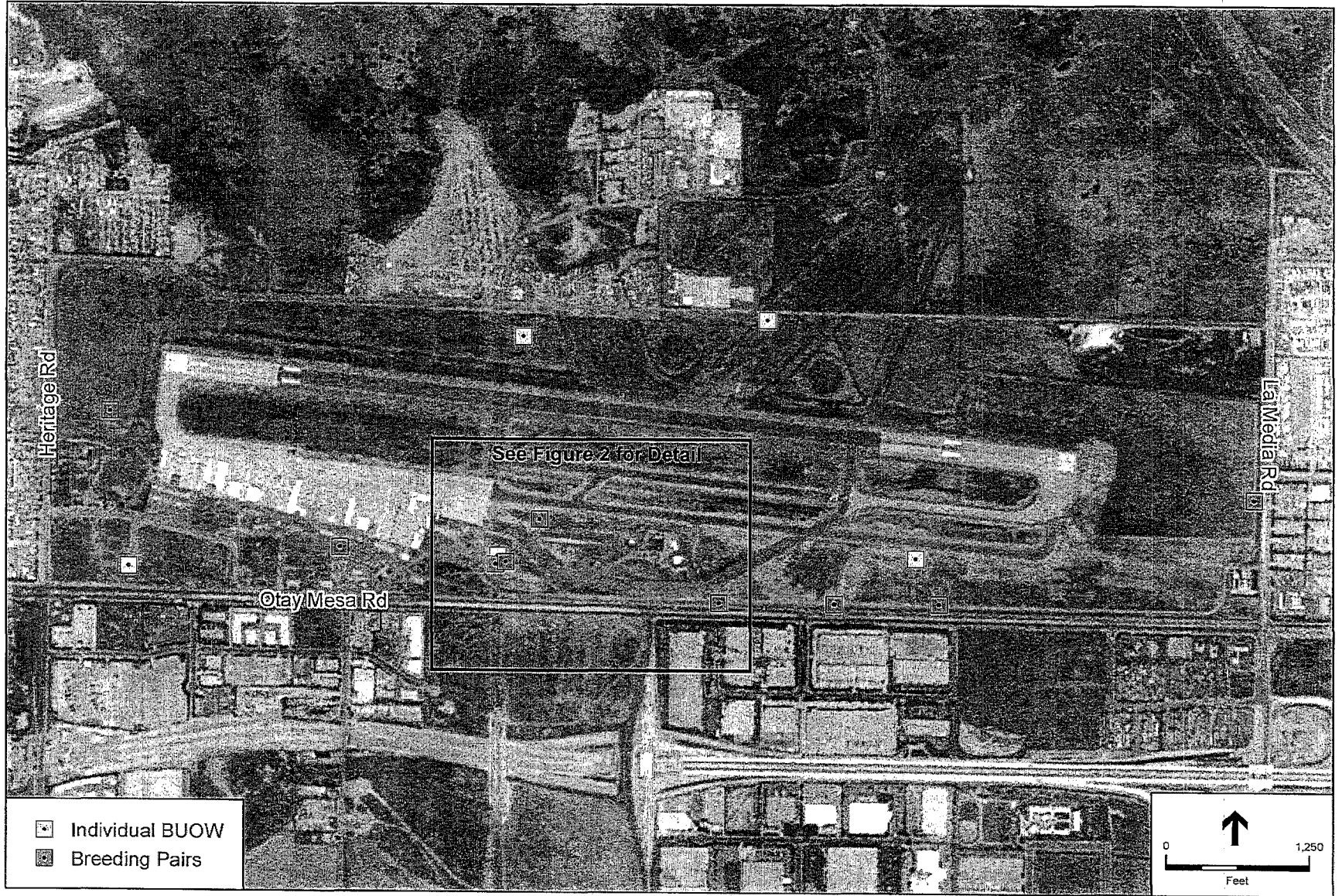
On May 22, 2014, a meeting was held to discuss the survey results and how best to avoid or minimize any potential impacts to active burrowing owl nests in the vicinity of the project. The meeting was attended by representative from the California Department of Fish and Wildlife, the U.S. Fish and Wildlife Service, the City of San Diego, and the consultants for the project. Considering the temporary nature of the potential impacts, the location of the construction activity and staging area, and the proximity of burrows relative to a 150-meter radius from the staging area, the following mitigation measure was acceptable to and recommended by those in attendance, to ensure that impacts to burrowing owls would be minimized to the extent feasible.

### MITIGATION MEASURE

Between 14 and 30 days prior to any construction activity, the impact area shall be surveyed by a qualified biologist in accordance with current accepted protocols for burrowing owls and occupied burrows. The impact area includes any area involving construction activity that may negatively affect burrowing owls, such as grading activities and staging of equipment and materials, and the area within 150 meters of the construction activity.

In addition, no more than three (3) days prior to the start of construction activity, a pre-construction survey shall be conducted by a qualified biologist. If no burrowing owls are found, then no further avoidance measures are required. If burrowing owls are found, the following measures shall be implemented:

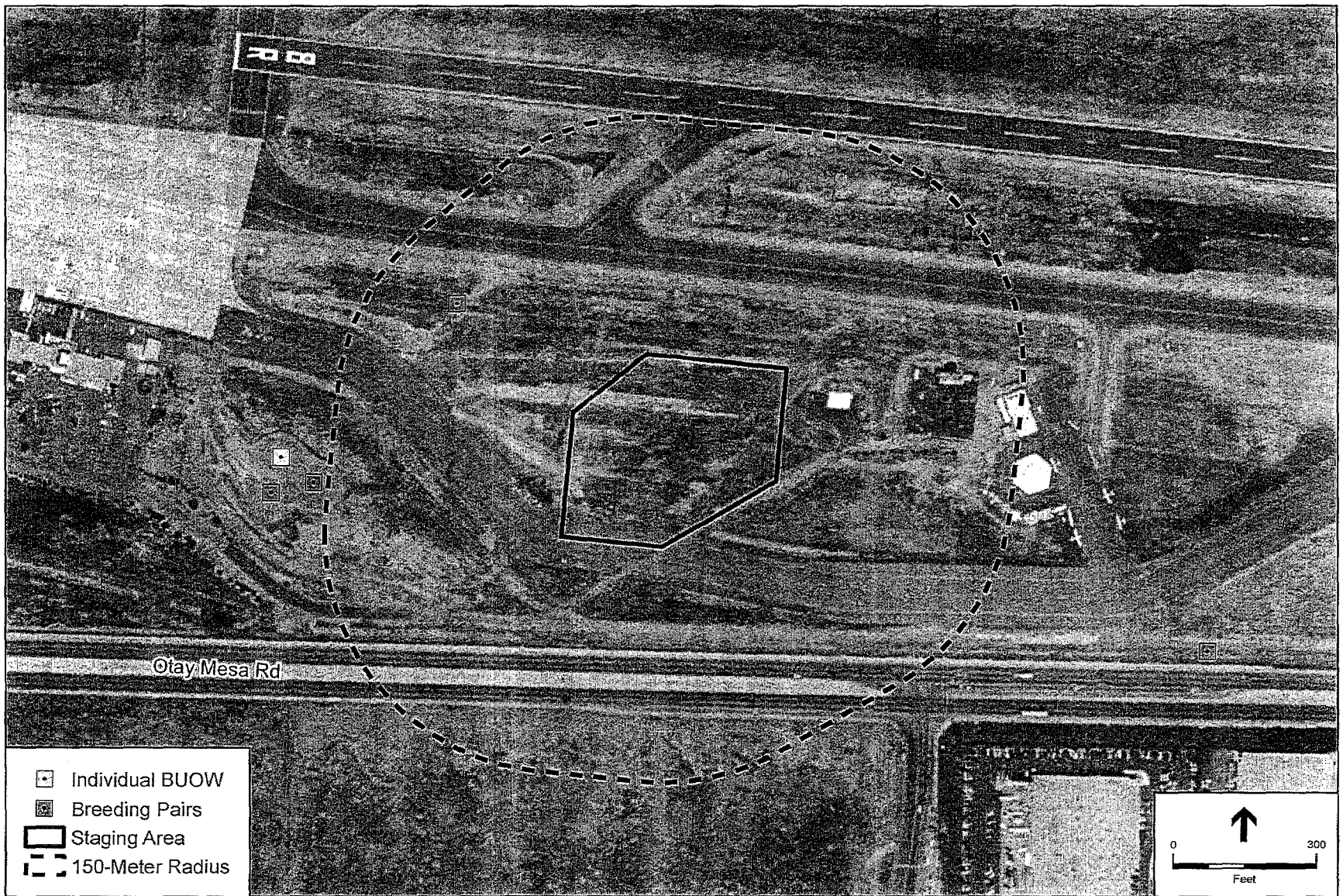
- No active burrowing owl burrows shall be directly impacted by the project.
- Construction activities shall occur during the non-breeding season for burrowing owls, generally considered to be September 1 to January 31, to the greatest extent feasible.
- Should construction be necessary during the breeding season, the following measures shall be required:
  - A qualified biologist shall conduct surveillance of the active burrow(s) within 24 hours of the start of construction.
  - A no-work buffer shall be established around active burrow(s), as determined by a qualified biologist in consultation with the California Department of Fish and Wildlife. The width of the buffer will be based on such factors as location of the burrow, local ambient conditions, type of project activity, intensity and duration of project activity, timing within the nesting cycle, and the species tolerance for disturbance. An effective buffer is wide enough to preclude detrimental affects to nesting behavior that could lead to nest abandonment and mortality of fledglings from noises or vibrations generated from construction activities.
  - Buffers shall be delineated in some fashion with suitable material for demarcating the area, as determined by the biologist in consultation with the California Department of Fish and Wildlife and the City of San Diego Airports Division.
  - A qualified biologist shall monitor construction activities occurring within the buffer area at least twice per month during construction, to determine if any circumstances have changed that would warrant additional measures to be taken to avoid impacts to the nest(s). Should the biologist determine that additional measures are necessary, the biologist shall consult with the California Department of Fish and Wildlife prior to the implementation of such measures.
- Existing roadways and paved accessways on airport property shall be used during construction, to the greatest extent feasible.
- A worker education program shall be implemented by the construction contractor for all personnel working at the project site. Prior to any construction personnel starting work on the project site, they shall be educated about the importance of avoiding the burrow location(s) within the buffer area, and the need to minimize activities in the vicinity of the burrow(s) that would disturb the species.



SOURCE: ESRI Imagery

4/3/2014, 5/9/2014, and 6/2/2014 Burrowing Owl  
Survey Results on Brown Field Airport  
Figure 1





SOURCE: ESRI Imagery

4/3/2014, 5/9/2014, and 6/2/2014 Burrowing Owl  
Survey Results on Brown Field Airport  
Figure 2

BROWN FIELD MUNICIPAL AIRPORT RUNWAY 8L-26R PHASE III REHABILITATION PROJECT  
ADDENDUM TO MITIGATED NEGATIVE DECLARATION NO. 358563  
(Project No. 541000)  
AND  
MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

ADOPTED ON MAY 16, 2017

WHEREAS, on April 26, 2017, The City of San Diego Public Works Department submitted an application to the Development Services Department for a Public Project Assessment for the Brown Filed Municipal Airport Runway 8L-26R Phase III Rehabilitation project (Project), for approval of minor technical changes or additions to the Brown Field Municipal Airport Phase I and II Runway 8L-26R Rehabilitation project scope that was analyzed by adopted Mitigated Negative Declaration No. 358563; and

WHEREAS, the matter was considered without a public hearing by the Deputy Director of the Development Services Department as designated by the City Manager of the City of San Diego on May 16, 2017; and

WHEREAS, on May 16, 2017, the Deputy Director of the Development Services considered the issues discussed in Addendum to Mitigated Negative Declaration No. 358563 (Declaration), a copy of which is on file in the Development Services Department, in accordance with the California Environmental Quality Act of 1970 (CEQA) (Public Resources Code Section 21000 et seq.), as amended, and the State CEQA Guidelines thereto (California Code of Regulations, Title 14, Chapter 3, Section 15000 et seq.); and

WHEREAS, State CEQA Guidelines section 15164(a) allows a lead agency to prepare an Addendum to a final Mitigated Negative Declaration if such Addendum meets the requirements of CEQA; NOW, THEREFORE,

BE IT RESOLVED, by the Deputy Director of the Development Services Department of the City of San Diego as follows:

1. That the information contained in the final Mitigated Negative Declaration No. 358563 along with the Addendum thereto, including any comments received during the public review process, has been reviewed and considered by this Deputy Director of the Development Services Department prior to making a decision on the Project.
2. That there are no substantial changes proposed to the Project and no substantial changes with respect to the circumstances under which the Project is to be undertaken that would require major revisions in the Mitigated Negative Declaration for the Project.
3. That no new information of substantial importance has become available showing that the Project would have any significant effects not discussed previously in Mitigated Negative Declaration or that any significant effects previously examined will be substantially more severe than shown in the Mitigated Negative Declaration.

4. That no new information of substantial importance has become available showing that mitigation measures or alternatives previously found not to be feasible are in fact feasible which would substantially reduce any significant effects, but that the Project proponents decline to adopt, or that there are any considerably different mitigation measures or alternatives not previously considered which would substantially reduce any significant effects, but that the Project proponents decline to adopt.
5. That pursuant to State CEQA Guidelines Section 15164, only minor technical changes or additions are necessary, and therefore, the Deputy Director of the Development Services Department adopts Addendum to Mitigated Negative Declaration No. 358563 with respect to the Project, a copy of which is on file in the office of the Development Services Department.
6. That pursuant to CEQA Section 21081.6, the Deputy Director of the Development Services Department adopts the Mitigation Monitoring and Reporting Program, or alterations to implement the changes to the project as required by this Deputy Director of the Development Services Department in order to mitigate or avoid significant effects on the environment, which is attached hereto as Exhibit A.
7. That DEVELOPMENT SERVICES STAFF is directed to file a Notice of Determination with the Clerk of the Board of Supervisors for the County of San Diego regarding the Project.

APPROVED: Kerry Santoro, Deputy Director, Development Services Department

By:

  
\_\_\_\_\_

Date: May 16, 2017

ATTACHMENT: EXHIBIT A – MITIGATION MONITORING AND REPORTING PROGRAM

## EXHIBIT A

### MITIGATION MONITORING AND REPORTING PROGRAM BROWN FIELD MUNICIPAL AIRPORT RUNWAY 8L-26R PHASE III REHABILITATION PROJECT PROJECT NO. 541000

This Mitigation Monitoring and Reporting Program is designed to ensure compliance with Public Resources Code Section 21081.6 during implementation of mitigation measures. This program identifies at a minimum: the department responsible for the monitoring, what is to be monitored, how the monitoring shall be accomplished, the monitoring and reporting schedule, and completion requirements. A record of the Mitigation Monitoring and Reporting Program will be maintained at the offices of the Entitlements Division, 1222 First Avenue, Fifth Floor, San Diego, CA, 92101.

#### A. GENERAL REQUIREMENTS – PART I: Prior to Notice to Proceed

1. Prior to the Notice To Proceed (NTP), or any construction permits, such as Demolition, Grading or Building, or beginning any construction related activity on-site, the Development Services Department (DSD) Director's Environmental Designee (ED) shall review and approve all Construction Documents (CD), (plans, specification, details, etc.) to ensure the MMRP requirements are incorporated into the design.
2. In addition, the ED shall verify that the MMRP Conditions/Notes that apply ONLY to the construction phases of this project are included VERBATIM, under the heading, "**ENVIRONMENTAL/MITIGATION REQUIREMENTS.**"
3. These notes must be shown within the first three (3) sheets of the construction documents in the format specified for engineering construction document templates as shown on the City website:  
  
<http://www.sandiego.gov/development-services/industry/standtemp.shtml>
4. The **TITLE INDEX SHEET** must also show on which pages the "Environmental/Mitigation Requirements" notes are provided.
5. **SURETY AND COST RECOVERY** - The Development Services Director or City Manager may require appropriate surety instruments or bonds from private Permit Holders to ensure the long term performance or implementation of required mitigation measures or programs. The City is authorized to recover its cost to offset the salary, overhead, and expenses for City personnel and programs to monitor qualifying projects.

#### B. GENERAL REQUIREMENTS – PART II: Prior to start of construction

1. **PRE CONSTRUCTION MEETING IS REQUIRED TEN (10) WORKING DAYS PRIOR TO BEGINNING ANY WORK ON THIS PROJECT.** The PERMIT HOLDER/OWNER is responsible to arrange and perform this meeting by contacting the CITY RESIDENT ENGINEER (RE) of the Field Engineering

Division and City staff from MITIGATION MONITORING COORDINATION (MMC). Attendees must also include the Permit holder's Representative(s), Job Site Superintendent and the following consultants:

***Qualified Archaeological and Native American Monitors  
Qualified Biologist and Biological Resources Monitor***

**Note: Failure of all responsible Permit Holder's representatives and consultants to attend shall require an additional meeting with all parties present.**

CONTACT INFORMATION:

- a) The PRIMARY POINT OF CONTACT is the **RE** at the **Field Engineering Division - (858) 627-3200**
- b) For Clarification of ENVIRONMENTAL REQUIREMENTS, it is also required to call **RE and MMC at (858) 627-3360**

2. **MMRP COMPLIANCE:** This Project, Project Tracking System (PTS) No. 541000 and /or Environmental Document No. 541000 shall conform to the mitigation requirements contained in the associated Environmental Document and implemented to the satisfaction of the DSD's Environmental Designee (MMC) and the City Engineer (RE). The requirements may not be reduced or changed but may be annotated (i.e. to explain when and how compliance is being met and location of verifying proof, etc.). Additional clarifying information may also be added to other relevant plan sheets and/or specifications as appropriate (i.e., specific locations, times of monitoring, methodology, etc.

**Note: Permit Holder's Representatives must alert RE and MMC if there are any discrepancies in the plans or notes, or any changes due to field conditions. All conflicts must be approved by RE and MMC BEFORE the work is performed.**

3. **OTHER AGENCY REQUIREMENTS:** Evidence of compliance with all other agency requirements or permits shall be submitted to the RE and MMC for review and acceptance prior to the beginning of work or within one week of the Permit Holder obtaining documentation of those permits or requirements. Evidence shall include copies of permits, letters of resolution or other documentation issued by the responsible agency.

***None required for this project.***

4. **MONITORING EXHIBITS:** All consultants are required to submit, to RE and MMC, a monitoring exhibit on a 11x17 reduction of the appropriate construction plan, such as site plan, grading, landscape, etc., marked to clearly show the specific areas including the **LIMIT OF WORK**, scope of that discipline's work, and notes indicating when in the construction schedule that



work will be performed. When necessary for clarification, a detailed methodology of how the work will be performed shall be included.

**Note: Surety and Cost Recovery – When deemed necessary by the Development Services Director or City Manager, additional surety instruments or bonds from the private Permit Holder may be required to ensure the long term performance or implementation of required mitigation measures or programs. The City is authorized to recover its cost to offset the salary, overhead, and expenses for City personnel and programs to monitor qualifying projects.**

5. **OTHER SUBMITTALS AND INSPECTIONS:** The Permit Holder/Owner’s representative shall submit all required documentation, verification letters, and requests for all associated inspections to the RE and MMC for approval per the following schedule:

Document Submittal/Inspection Checklist		
Issue Area	Document Submittal	Associated Inspection/Approvals/Notes
General	Consultant Qualification Letters	Prior to Preconstruction Meeting
General	Consultant Construction Monitoring Exhibits	Prior to or at Preconstruction Meeting
Biology	Biologist Limit of Work Verification	Limit of Work Inspection
Biology	Biology Reports	Biology/Habitat Restoration Inspection
Archaeology	Archaeology Reports	Archaeology/Historic Site Observation
Bond Release	Request for Bond Release Letter	Final MMRP Inspections Prior to Bond Release Letter

**C. SPECIFIC MMRP ISSUE AREA CONDITIONS/REQUIREMENTS**

Biological Resources

To reduce potentially significant impacts to biological resources to less than significant level, the following mitigation measures (MM) are required:

**MM-BIO-1: Worker Education** – Prior to the start of construction activities, the project biologist shall provide a worker education training that provides information to the construction crew about avoiding sensitive biological resources in the Project vicinity. The training shall include discussion of the following:

1. The project speed limit of 10 miles per hour while driving on airport property.
2. Sensitive resources on site including burrowing owls, nesting birds, vernal pools, and fairy shrimp.

3. The need to stay within the paved Project boundaries at all times, because using unpaved areas for driving or parking could result in collapse of burrowing owl burrows or damage to vernal pools.

**MM-BI0-2: Speed Limits** -To avoid impacts to special-status species resulting from vehicle collisions, all project personnel shall not exceed speeds of 10 miles per hour when driving on airport property. Additionally, project personnel shall adhere to posted speed limits.

**MM-BI0-3: Nesting Birds** -For any work conducted during the avian breeding season (February 1 – September 15), the following measures shall be followed:

1. A nesting bird survey of all accessible natural habitats within 900 feet of construction activities shall be conducted by a Qualified Avian Biologist no more than one week prior to commencement of construction. A Qualified Avian Biologist refers to a person with the ability to identify birds present in San Diego County to the species level by sight or sound and who is familiar with the breeding and nesting behaviors of native bird species.
2. If active nests with eggs or chicks of bird species protected under the MBTA are detected, an appropriate buffer shall be determined by the avian biologist and no work shall take place within the buffer until it is determined that the nest is no longer active. Additional visits after the initial survey shall be conducted as necessary to determine that nests are no longer active. Buffers will be no less than those specified as follows in the City's Biology Guidelines: 900 feet for northern harriers and 300 feet for BUOW.

**MM-BI0-4: Burrowing Owl (BUOW)** -The following species-specific mitigation shall be implemented to meet the MSCP Subarea Plan Conditions of Coverage for potential impacts to BUOW and associated habitat located outside of the MHPA:

#### **PRE-CONSTRUCTION SURVEY ELEMENT**

**A. Prior to Permit or Notice to Proceed Issuance:**

1. As this Project has been determined to be BUOW occupied or to have BUOW occupation potential, the Applicant Department or Permit Holder shall submit evidence to the ADD of Entitlements verifying that a Qualified BUOW Biologist possessing qualifications pursuant to the California Department of Fish and Game 2012 Staff Report on Burrowing Owl Mitigation (Appendix F), has been retained to implement a BUOW construction impact avoidance program.
2. The Qualified BUOW Biologist (or their designated biological representative) shall attend the pre- construction meeting to inform construction personnel about the City's BUOW requirements and subsequent survey schedule.

**B. Prior to Start of Construction:**

1. The Applicant Department or Permit Holder and Qualified BUOW Biologist must ensure that initial pre-construction/take avoidance surveys of the Project "site" are completed between 14 and 30 days before initial construction activities, including brushing, clearing, grubbing, or grading of the Project site, regardless of the time of the year. "Site" means the Project site and the area within a radius of 450 feet of the Project site. The report shall be submitted and approved by the Wildlife Agencies and/or City MSCP staff prior to construction or BUOW eviction(s) and shall include maps of the Project site and BUOW locations on aerial photos.
2. The pre-construction survey shall follow the methods described in Appendix F.
3. Twenty-four hours prior to commencement of ground disturbing activities, the Qualified BUOW Biologist shall verify results of pre-construction/take avoidance surveys. Verification shall be provided to the City's Mitigation Monitoring and Coordination (MMC) Section. If results of the pre-construction surveys have changed, and BUOW are present in areas not previously identified, immediate notification to the City and Wildlife Agencies shall be provided prior to ground disturbing activities.

**C. During Construction:**

1. **Best Management Practices Shall Be Employed as BUOWs** – BUOWs are known to use open pipes, culverts, excavated holes, and other burrow-like structures at construction sites. Legally permitted active construction projects which are BUOW-occupied and have followed all protocols in this mitigation section, or sites within 450 feet of occupied BUOW areas, should undertake measures to discourage BUOWs from recolonizing previously occupied areas or colonizing new portions of the site. Such measures include, but are not limited to, ensuring that the ends of all pipes and culverts are covered when they are not being worked on, and covering rubble piles, dirt piles, ditches, and berms.
2. **Ongoing BUOW Detection** -If BUOWs or active burrows are not detected during the pre-construction surveys, Section "A" below shall be followed. If BUOWs or burrows are detected during the pre-construction surveys, Section "B" shall be followed. NEITHER THE MSCP SUBAREA PLAN NOR THIS MITIGATION SECTION ALLOW FOR ANY BUOWs TO BE INJURED OR KILLED OUTSIDE **OR** WITHIN THE MHPA; in addition, IMPACTS TO BUOWs WITHIN THE MHPA MUST BE AVOIDED.
  - a. **Post Survey Follow Up if Burrowing Owls and/or Signs of Active Natural or Artificial Burrows Are Not Detected During the Initial Pre-Construction Survey** - Monitoring the site for new burrows is required using the Appendix F protocol for the period following the initial pre-construction survey, until construction is scheduled to be complete, and is complete. *(NOTE - Using a projected completion date (that is amended if needed) will allow development of a monitoring schedule which adheres to the required number of surveys in the detection protocol.)*

- i. If no active burrows are found but BUOWs are observed to

occasionally use the site for roosting or foraging (one to three sightings), they should be allowed to do so with no changes in the construction or construction schedule.

- ii. If no active burrows are found but BUOWs are observed during follow up monitoring to repeatedly use the site for roosting or foraging (four or more sightings), the City's MMC Section shall be notified and any portion of the site where owls have been sighted and that has not been graded or otherwise disturbed shall be avoided until further notice.
- iii. If a BUOW begins using a burrow on the site at any time after the initial pre-construction survey, procedures described in Section B must be followed.
- iv. Any actions other than these require the approval of the City and the Wildlife Agencies.

b. **Post-Survey Follow Up if Burrowing Owls and/or Active Natural or Artificial Burrows are detected during the Initial Pre-Construction Survey** - Monitoring the site for new burrows is required using Appendix F for the period following the initial pre-construction survey, until construction is scheduled to be complete, and is complete. *(NOTE - Using a projected completion date (that is amended if needed) will allow development of a monitoring schedule which adheres to the required number of surveys in the detection protocol.)*

- i. This section (B) applies only to sites (including biologically defined territory) wholly outside of the MHPA – **all direct and indirect impacts to BUOWs within the MHPA SHALL be avoided.**
- ii. If one or more BUOWs are using any burrows (including pipes, culverts, debris piles, etc.) on or within 300 feet of the proposed construction area, the City's MMC Section shall be contacted. The City's MMC Section shall contact the Wildlife Agencies regarding eviction/collapsing burrows and enlist an appropriate City biologist for on-going coordination with the Wildlife Agencies and the Qualified BUOW Biologist. No construction shall occur within 300 feet of an active burrow without written concurrence from the Wildlife Agencies. This distance may increase or decrease, depending on the burrow's location in relation to the site's topography and other physical and biological characteristics.
  - 1) **Outside the Breeding Season** – If the BUOW is using a burrow on site outside the breeding season (i.e., September 1 - January 31), the BUOW may be evicted after

the Qualified BUOW Biologist has determined via fiber optic camera or other appropriate device, that no eggs, young, or adults are in the burrow and written concurrence from the Wildlife Agencies for eviction is obtained prior to implementation.

2) **During Breeding Season** – If a BUOW is using a burrow on site during the breeding season (February 1-August 31), construction shall not occur within 300 feet of the burrow until the young have fledged and are no longer dependent on the burrow, at which time the BUOWs can be evicted. Eviction requires written concurrence from the Wildlife Agencies prior to implementation.

3. **Survey Reporting During Construction** – Details of construction surveys and evictions (if applicable) carried out shall be reported immediately (within five working days or sooner) to the City's MMC Section and the Wildlife Agencies and must be provided in writing (as by email) and acknowledged to have been received by the required Agencies and Development Services Department Staff member(s).

**D. Post-Construction:**

1. Details of the all surveys and actions undertaken on site with respect to BUOW (i.e., occupation, eviction, locations, etc.) shall be reported to the City's MMC Section and the Wildlife Agencies within 21 days post-construction and prior to the release of any grading bonds. This report must include summaries of all previous reports for the site and maps of the Project site and BUOW locations on aerial photos.

**MM-BIO-5: Erosion and Sediment Control Best Management Practices** - In areas where there is potential for erosion or construction-generated runoff, sedimentation, or dust to impact jurisdictional drainages or vernal pools within the 100-foot project area buffer, BMPs such as silt fencing and/or straw waddles shall be installed along the downslope portions of disturbance areas during Project construction activities. Additionally, at the two locations where vernal pools occur adjacent to the Haul Route, construction or silt fencing will be placed along the haul route boundary to prevent accidental vehicle intrusion.

Historical Resources (Archaeology)

**I. Prior to Permit Issuance or Bid Opening/Bid Award**

**A. Entitlements Plan Check**

1. Prior to permit issuance or Bid Opening/Bid Award, whichever is applicable, the Assistant Deputy Director (ADD) Environmental designee shall verify that the requirements for Archaeological Monitoring and Native American monitoring have

been noted on the applicable construction documents through the plan check process.

- B. Letters of Qualification have been submitted to ADD
  - 1. Prior to Bid Award, the applicant shall submit a letter of verification to Mitigation Monitoring Coordination (MMC) identifying the Principal Investigator (PI) for the project and the names of all persons involved in the archaeological monitoring program, as defined in the City of San Diego Historical Resources Guidelines (HRG). If applicable, individuals involved in the archaeological monitoring program must have completed the 40-hour HAZWOPER training with certification documentation.
  - 2. MMC will provide a letter to the applicant confirming the qualifications of the PI and all persons involved in the archaeological monitoring of the project meet the qualifications established in the HRG.
  - 3. Prior to the start of work, the applicant must obtain written approval from MMC for any personnel changes associated with the monitoring program.

## II. Prior to Start of Construction

- A. Verification of Records Search
  - 1. The PI shall provide verification to MMC that a site specific records search (1/4 mile radius) has been completed. Verification includes, but is not limited to a copy of a confirmation letter from South Coastal Information Center, or, if the search was in-house, a letter of verification from the PI stating that the search was completed.
  - 2. The letter shall introduce any pertinent information concerning expectations and probabilities of discovery during trenching and/or grading activities.
  - 3. The PI may submit a detailed letter to MMC requesting a reduction to the ¼ mile radius.
- B. PI Shall Attend Precon Meetings
  - 1. Prior to beginning any work that requires monitoring; the Applicant shall arrange a Precon Meeting that shall include the PI, Native American consultant/monitor (where Native American resources may be impacted), Construction Manager (CM) and/or Grading Contractor, Resident Engineer (RE), Building Inspector (BI), if appropriate, and MMC. The qualified Archaeologist and Native American Monitor shall attend any grading/excavation related Precon Meetings to make comments and/or suggestions concerning the Archaeological Monitoring program with the Construction Manager and/or Grading Contractor.
    - a. If the PI is unable to attend the Precon Meeting, the Applicant shall schedule a focused Precon Meeting with MMC, the PI, RE, CM or BI, if appropriate, prior to the start of any work that requires monitoring.
  - 2. Acknowledgement of Responsibility for Curation (CIP or Other Public Projects)  
The applicant shall submit a letter to MMC acknowledging their responsibility for the cost of curation associated with all phases of the archaeological monitoring program.
  - 3. Identify Areas to be Monitored  
Prior to the start of any work that requires monitoring, the PI shall submit an Archaeological Monitoring Exhibit (AME) (with verification that the AME has been reviewed and approved by the Native American consultant/monitor when Native American resources may be impacted) based on the appropriate construction documents (reduced to 11x17) to MMC identifying the areas to be monitored

including the delineation of grading/excavation limits.

The AME shall be based on the results of a site specific records search as well as information regarding the age of existing pipelines, laterals and associated appurtenances and/or any known soil conditions (native or formation).

MMC shall notify the PI that the AME has been approved.

4. When Monitoring Will Occur
  - a. Prior to the start of any work, the PI shall also submit a construction schedule to MMC through the RE indicating when and where monitoring will occur.
  - b. The PI may submit a detailed letter to MMC prior to the start of work or during construction requesting a modification to the monitoring program. This request shall be based on relevant information such as review of final construction documents which indicate conditions such as age of existing pipe to be replaced, depth of excavation and/or site graded to bedrock, etc., which may reduce or increase the potential for resources to be present.
5. Approval of AME and Construction Schedule

After approval of the AME by MMC, the PI shall submit to MMC written authorization of the AME and Construction Schedule from the CM.

### III. During Construction

#### A. Monitor Shall be Present During Grading/Excavation/Trenching

1. The Archaeological Monitor shall be present full-time during all soil disturbing and grading/excavation/trenching activities which could result in impacts to archaeological resources as identified on the AME. The Construction Manager is responsible for notifying the RE, PI, and MMC of changes to any construction activities such as in the case of a potential safety concern within the area being monitored. In certain circumstances OSHA safety requirements may necessitate modification of the AME.
2. The Native American consultant/monitor shall determine the extent of their presence during soil disturbing and grading/excavation/trenching activities based on the AME and provide that information to the PI and MMC. If prehistoric resources are encountered during the Native American consultant/monitor's absence, work shall stop and the Discovery Notification Process detailed in Section III.B-C and IV.A-D shall commence.
3. The PI may submit a detailed letter to MMC during construction requesting a modification to the monitoring program when a field condition such as modern disturbance post-dating the previous grading/trenching activities, presence of fossil formations, or when native soils are encountered that may reduce or increase the potential for resources to be present.
4. The archaeological and Native American consultant/monitor shall document field activity via the Consultant Site Visit Record (CSV). The CSV's shall be faxed by the CM to the RE the first day of monitoring, the last day of monitoring, monthly **(Notification of Monitoring Completion)**, and in the case of ANY discoveries. The RE shall forward copies to MMC.

#### B. Discovery Notification Process

1. In the event of a discovery, the Archaeological Monitor shall direct the contractor to temporarily divert all soil disturbing activities, including but not limited to digging, trenching, excavating or grading activities in the area of discovery and in the area

reasonably suspected to overlay adjacent resources and immediately notify the RE or BI, as appropriate.

2. The Monitor shall immediately notify the PI (unless Monitor is the PI) of the discovery.
3. The PI shall immediately notify MMC by phone of the discovery, and shall also submit written documentation to MMC within 24 hours by fax or email with photos of the resource in context, if possible.
4. No soil shall be exported off-site until a determination can be made regarding the significance of the resource specifically if Native American resources are encountered.

C. Determination of Significance

1. The PI and Native American consultant/monitor, where Native American resources are discovered shall evaluate the significance of the resource. If Human Remains are involved, follow protocol in Section IV below.

- a. The PI shall immediately notify MMC by phone to discuss significance determination and shall also submit a letter to MMC indicating whether additional mitigation is required.
- b. If the resource is significant, the PI shall submit an Archaeological Data Recovery Program (ADRP) and obtain written approval of the program from MMC, CM and RE. ADRP and any mitigation must be approved by MMC, RE and/or CM before ground disturbing activities in the area of discovery will be allowed to resume. Note: If a unique archaeological site is also an historical resource as defined in CEQA Section 15064.5, then the limits on the amount(s) that a project applicant may be required to pay to cover mitigation costs as indicated in CEQA Section 21083.2 shall not apply.

(1). Note: For pipeline trenching and other linear projects in the public Right-of-Way, the PI shall implement the Discovery Process for Pipeline Trenching projects identified below under "D."

- c. If the resource is not significant, the PI shall submit a letter to MMC indicating that artifacts will be collected, curated, and documented in the Final Monitoring Report. The letter shall also indicate that that no further work is required.

(1). Note: For Pipeline Trenching and other linear projects in the public Right-of-Way, if the deposit is limited in size, both in length and depth; the information value is limited and is not associated with any other resource; and there are no unique features/artifacts associated with the deposit, the discovery should be considered not significant.

(2). Note, for Pipeline Trenching and other linear projects in the public Right-of-Way, if significance cannot be determined, the Final Monitoring Report and Site Record (DPR Form 523A/B) shall identify the discovery as Potentially Significant.

D. Discovery Process for Significant Resources - Pipeline Trenching and other Linear Projects in the Public Right-of-Way

The following procedure constitutes adequate mitigation of a significant discovery encountered during pipeline trenching activities or for other linear project types within the Public Right-of-Way including but not limited to excavation for jacking pits, receiving pits, laterals, and manholes to reduce impacts to below a level of significance:

1. Procedures for documentation, curation and reporting



- a. One hundred percent of the artifacts within the trench alignment and width shall be documented in-situ, to include photographic records, plan view of the trench and profiles of side walls, recovered, photographed after cleaning and analyzed and curated. The remainder of the deposit within the limits of excavation (trench walls) shall be left intact.
- b. The PI shall prepare a Draft Monitoring Report and submit to MMC via the RE as indicated in Section VI-A.
- c. The PI shall be responsible for recording (on the appropriate State of California Department of Park and Recreation forms-DPR 523 A/B) the resource(s) encountered during the Archaeological Monitoring Program in accordance with the City's Historical Resources Guidelines. The DPR forms shall be submitted to the South Coastal Information Center for either a Primary Record or SDI Number and included in the Final Monitoring Report.
- d. The Final Monitoring Report shall include a recommendation for monitoring of any future work in the vicinity of the resource.

#### IV. Discovery of Human Remains

If human remains are discovered, work shall halt in that area and no soil shall be exported off-site until a determination can be made regarding the provenance of the human remains; and the following procedures as set forth in CEQA Section 15064.5(e), the California Public Resources Code (Sec. 5097.98) and State Health and Safety Code (Sec. 7050.5) shall be undertaken:

##### A. Notification

1. Archaeological Monitor shall notify the RE or BI as appropriate, MMC, and the PI, if the Monitor is not qualified as a PI. MMC will notify the appropriate Senior Planner in the Environmental Analysis Section (EAS) of the Development Services Department to assist with the discovery notification process.
2. The PI shall notify the Medical Examiner after consultation with the RE, either in person or via telephone.

##### B. Isolate discovery site

1. Work shall be directed away from the location of the discovery and any nearby area reasonably suspected to overlay adjacent human remains until a determination can be made by the Medical Examiner in consultation with the PI concerning the provenience of the remains.
2. The Medical Examiner, in consultation with the PI, will determine the need for a field examination to determine the provenience.
3. If a field examination is not warranted, the Medical Examiner will determine with input from the PI, if the remains are or are most likely to be of Native American origin.

##### C. If Human Remains **ARE** determined to be Native American

1. The Medical Examiner will notify the Native American Heritage Commission (NAHC) within 24 hours. By law, **ONLY** the Medical Examiner can make this call.
2. NAHC will immediately identify the person or persons determined to be the Most Likely Descendent (MLD) and provide contact information.
3. The MLD will contact the PI within 24 hours or sooner after the Medical Examiner has completed coordination, to begin the consultation process in accordance with CEQA Section 15064.5(e), the California Public Resources and Health & Safety Codes.

4. The MLD will have 48 hours to make recommendations to the property owner or representative, for the treatment or disposition with proper dignity, of the human remains and associated grave goods.
5. Disposition of Native American Human Remains will be determined between the MLD and the PI, and, if:
  - a. The NAHC is unable to identify the MLD, OR the MLD failed to make a recommendation within 48 hours after being notified by the Commission, OR;
  - b. The landowner or authorized representative rejects the recommendation of the MLD and mediation in accordance with PRC 5097.94 (k) by the NAHC fails to provide measures acceptable to the landowner, THEN
  - c. To protect these sites, the landowner shall do one or more of the following:
    - (1) Record the site with the NAHC;
    - (2) Record an open space or conservation easement; or
    - (3) Record a document with the County.
  - d. Upon the discovery of multiple Native American human remains during a ground disturbing land development activity, the landowner may agree that additional conferral with descendants is necessary to consider culturally appropriate treatment of multiple Native American human remains. Culturally appropriate treatment of such a discovery may be ascertained from review of the site utilizing cultural and archaeological standards. Where the parties are unable to agree on the appropriate treatment measures the human remains and items associated and buried with Native American human remains shall be reinterred with appropriate dignity, pursuant to Section 5.c., above.
- D. If Human Remains are **NOT** Native American
  1. The PI shall contact the Medical Examiner and notify them of the historic era context of the burial.
  2. The Medical Examiner will determine the appropriate course of action with the PI and City staff (PRC 5097.98).
  3. If the remains are of historic origin, they shall be appropriately removed and conveyed to the San Diego Museum of Man for analysis. The decision for internment of the human remains shall be made in consultation with MMC, EAS, the applicant/landowner, any known descendant group, and the San Diego Museum of Man.

**V. Night and/or Weekend Work**

- A. If night and/or weekend work is included in the contract
  1. When night and/or weekend work is included in the contract package, the extent and timing shall be presented and discussed at the precon meeting.
  2. The following procedures shall be followed.
    - a. No Discoveries  
In the event that no discoveries were encountered during night and/or weekend work, the PI shall record the information on the CSV and submit to MMC via fax by 8AM of the next business day.
    - b. Discoveries  
All discoveries shall be processed and documented using the existing procedures detailed in Sections III - During Construction, and IV – Discovery of Human Remains. Discovery of human remains shall always be treated as a significant discovery.

- c. Potentially Significant Discoveries  
If the PI determines that a potentially significant discovery has been made, the procedures detailed under Section III - During Construction and IV-Discovery of Human Remains shall be followed.
- d. The PI shall immediately contact the RE and MMC, or by 8AM of the next business day to report and discuss the findings as indicated in Section III-B, unless other specific arrangements have been made.
- B. If night and/or weekend work becomes necessary during the course of construction
  - 1. The Construction Manager shall notify the RE, or BI, as appropriate, a minimum of 24 hours before the work is to begin.
  - 2. The RE, or BI, as appropriate, shall notify MMC immediately.
- C. All other procedures described above shall apply, as appropriate.

## VI. Post Construction

- A. Submittal of Draft Monitoring Report
  - 1. The PI shall submit two copies of the Draft Monitoring Report (even if negative), prepared in accordance with the Historical Resources Guidelines (Appendix C/D) which describes the results, analysis, and conclusions of all phases of the Archaeological Monitoring Program (with appropriate graphics) to MMC via the RE for review and approval within 90 days following the completion of monitoring. It should be noted that if the PI is unable to submit the Draft Monitoring Report within the allotted 90-day timeframe as a result of delays with analysis, special study results or other complex issues, a schedule shall be submitted to MMC establishing agreed due dates and the provision for submittal of monthly status reports until this measure can be met.
    - a. For significant archaeological resources encountered during monitoring, the Archaeological Data Recovery Program or Pipeline Trenching Discovery Process shall be included in the Draft Monitoring Report.
    - b. Recording Sites with State of California Department of Parks and Recreation  
The PI shall be responsible for recording (on the appropriate State of California Department of Park and Recreation forms-DPR 523 A/B) any significant or potentially significant resources encountered during the Archaeological Monitoring Program in accordance with the City's Historical Resources Guidelines, and submittal of such forms to the South Coastal Information Center with the Final Monitoring Report.
  - 2. MMC shall return the Draft Monitoring Report to the PI via the RE for revision or, for preparation of the Final Report.
  - 3. The PI shall submit revised Draft Monitoring Report to MMC via the RE for approval.
  - 4. MMC shall provide written verification to the PI of the approved report.
  - 5. MMC shall notify the RE or BI, as appropriate, of receipt of all Draft Monitoring Report submittals and approvals.
- B. Handling of Artifacts
  - 1. The PI shall be responsible for ensuring that all cultural remains collected are cleaned and catalogued
  - 2. The PI shall be responsible for ensuring that all artifacts are analyzed to identify function and chronology as they relate to the history of the area; that faunal material is identified as to species; and that specialty studies are completed, as appropriate.

- C. Curation of artifacts: Accession Agreement and Acceptance Verification
  - 1. The PI shall be responsible for ensuring that all artifacts associated with the survey, testing and/or data recovery for this project are permanently curated with an appropriate institution. This shall be completed in consultation with MMC and the Native American representative, as applicable.
  - 2. When applicable to the situation, the PI shall include written verification from the Native American consultant/monitor indicating that Native American resources were treated in accordance with state law and/or applicable agreements. If the resources were reinterred, verification shall be provided to show what protective measures were taken to ensure no further disturbance occurs in accordance with Section IV – Discovery of Human Remains, Subsection C.
  - 3. The PI shall submit the Accession Agreement and catalogue record(s) to the RE or BI, as appropriate for donor signature with a copy submitted to MMC.
  - 4. The RE or BI, as appropriate shall obtain signature on the Accession Agreement and shall return to PI with copy submitted to MMC.
  - 5. The PI shall include the Acceptance Verification from the curation institution in the Final Monitoring Report submitted to the RE or BI and MMC.
- D. Final Monitoring Report(s)
  - 1. The PI shall submit one copy of the approved Final Monitoring Report to the RE or BI as appropriate, and one copy to MMC (even if negative), within 90 days after notification from MMC of the approved report.
  - 2. The RE shall, in no case, issue the Notice of Completion until receiving a copy of the approved Final Monitoring Report from MMC which includes the Acceptance Verification from the curation institution.

The above mitigation monitoring and reporting program will require additional fees and/or deposits to be collected prior to the issuance of building permits, certificates of occupancy and/or final maps to ensure the successful completion of the monitoring program.

**FOCUSED BURROWING OWL SURVEYS  
FOR THE BROWN FIELD (SDM) AIRPORT  
PHASE II RUNWAY 8L/26R  
REHABILITATION PROJECT**

**CITY OF SAN DIEGO,  
SAN DIEGO COUNTY, CALIFORNIA**

**Project No. 358563**

**Prepared for:**

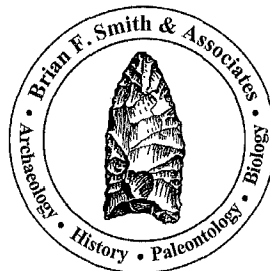
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**Submitted to:**

**City of San Diego Airports Division  
Public Works Department  
9485 Aero Drive  
San Diego, California 92123**

**Prepared by:**

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Hernandez Environmental Services  
c/o Brian F. Smith and Associates, Inc.  
14010 Poway Road, Suite A  
Poway, California 92064**



***August 5, 2016; Revised August 31, 2016***

# Memorandum

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Date: August 5, 2016

To: Kyle Guererro, Brian F. Smith and Associates, Inc

From: Juan J. Hernandez, Principal Biologist

Subject: Focused Burrowing Owl Surveys for the Brown Field Airport (SDM)  
Airport Phase II Runway 8L/26R Rehabilitation Project, City of San  
Diego, California

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This memorandum provides the methods and results of a protocol burrowing owl (*Athene cunicularia*) [BUOW] survey for the proposed Brown Field Airport Runway 8L/26R Rehabilitation Project. The project site is located in the city of San Diego, California bordering Otay Mesa Road to the north (Figures 1 and 2). The Brown Field Airport is located at 1424 Continental Street, in the community of Otay Mesa. The Brown Field Airport Runway 8L/26R Rehabilitation Project consists of the rehabilitation of the westernmost and easternmost portions of Runway 8L/26R. Runway 8L/26R measures 7,972 feet in length and 150 feet in width.

The BUOW study area consisted of the Brown Field Airport property and a 150-meter buffer surrounding the airport (Figure 3). All areas of suitable habitat were surveyed. In areas where direct access was not available, suitable habitat was surveyed with the aid of binoculars from the nearest accessible vantage point. Aside from the avian and industrial development, habitat types within the Brown Field Airport property and surrounding buffer consisted of non-native grassland and disturbed developed habitats. Focused burrow and BUOW surveys were conducted on four separate days during the breeding season: April 12, May 12, June 16, and July 12, 2016. Survey times, weather, and sunrise/sunset information is described in Table 1 below.

**Table 1. Survey Information**

<b>Survey</b>	<b>Date</b>	<b>Survey Start Time</b>	<b>Sunrise/Sunset</b>	<b>Weather</b>
1	April 12, 2016	0600 hours	0700 hours	61 degrees Fahrenheit, sunny and clear, 0-3 mile per hour winds from the southwest
2	May 12, 2016	0730 hours	0900 hours	62 degrees Fahrenheit, overcast, 0-3 mile per hour winds from the southwest
3	June 16, 2016	1730 hours	1900 hours	75 degrees Fahrenheit, sunny and clear, 0-5 mile per hour winds from the west
4	July 12, 2016	1700 hours	1800 hours	77 degrees Fahrenheit, sunny and clear, 1-3 mile per hour winds from the northwest

**Field Survey Methods**

The field survey methods employed for the BUOW habitat assessment survey followed California Department of Fish and Wildlife BUOW survey protocols (*Staff Report On Burrowing Owl Mitigation*, March 2012). The protocol consisted of a habitat assessment and four focused BUOW surveys to locate burrows and BUOWs.

Surveys were conducted between April 12 and July 12, 2016, and during weather that was conducive to observing owls outside their burrows and detecting BUOW signs. The surveys were not conducted during rain, high winds (> 20 miles per hour), dense fog, or temperatures above 90 degrees Fahrenheit.

The BUOW surveys involved walking through potentially suitable habitat within the survey area (i.e., the survey area included areas that will be directly or indirectly impacted by the project). The pedestrian survey transects were spaced approximately 30 to 50 feet apart to allow 100 percent visual coverage of the ground surface. During the surveys, special attention was paid to those habitat areas that appeared to provide suitable habitat for BUOWs. If suitable habitat was present, the biologist also walked a 150-meter (approximately 500 feet) buffer zone around the project boundary. If permission to access the buffer areas was not obtainable, the biologist did not trespass, but instead visually inspected adjacent habitats with binoculars.

All encountered burrows or structure entrances were checked for the presence of BUOWs, molted feathers, cast pellets, prey remains, eggshell fragments, tracks, or excrement at or near a burrow entrance. Natural or man-made structures and debris piles that could support BUOW were also surveyed.

The methods used to detect and identify BUOWs included observation of key signs identified by the California Burrowing Owl Consortium (CBOC), such as sight, scat, tracks, burrows, nests, and calls. All wildlife species encountered visually or audibly during the field survey were identified and recorded in field notes. Binoculars were used to aid in the identification of observed wildlife. The surveys were not conducted within five days of precipitation.

Photographs were taken to document existing conditions within the survey area, as shown in the attached site photographs (Appendix A).

## **Results**

The project site is located within Brown Field Airport. Brown Field Airport is located in the City of San Diego within the community of Otay Mesa, approximately 21 miles southeast of downtown San Diego, 2.5 miles east of Interstate 805, and 1.5 miles north of the U.S.-Mexico International Border. The project site has been heavily disturbed and no quality native habitat remains onsite. The elevation of the project site lies at 527 feet above sea level (ASL).



A baseline BUOW habitat assessment was conducted on the Brown Field Airport property, as well as within a 150-meter buffer. Suitability of habitat was determined by walking and driving throughout the Brown Field Airport property and surrounding buffer. The project site and surrounding buffer areas are characterized by active aviation, open fields not associated with active aviation, commercial, and industrial development. Habitat types within the Brown Field Airport property and surrounding buffer areas consisted of non-native grassland and disturbed developed habitats. Due to the undeveloped nature of the area, the majority of the Brown Field Airport property and surrounding buffer was considered potential BUOW habitat. Certain areas were identified as providing high quality BUOW habitat, as indicated by the presence of existing burrows, berms, or proximity to suitable foraging habitat. Active runways and areas of extensive and relatively recent development were not considered suitable habitat, and were therefore excluded from the focused surveys (Figure 3).

A total of nine active burrows were identified during the surveys, as described in Table 2 below (Figure 4).

**Table 2. Survey Results**

<b>Burrow Number</b>	<b>Habitat Type</b>	<b>Occupancy</b>	<b>Minimum Number of Nestlings</b>
BUOW 1	Disturbed Developed	Breeding Pair	2
BUOW 2	Disturbed Developed	Breeding Pair	2
BUOW 3	Non-Native Grassland	Individual	N/A
BUOW 4	Disturbed Developed	Breeding Pair	0
BUOW 5	Disturbed Developed	Breeding Pair	0
BUOW 6	Non-Native Grassland	Breeding Pair	2
BUOW 7	Disturbed Developed	Breeding Pair	2
BUOW 8	Disturbed Developed	Breeding Pair	1
BUOW 9	Disturbed Developed	Breeding Pair	3

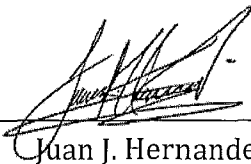
All nine of the active burrows were identified within the Brown Field Airport property. An active burrow consisted of at least one adult BUOW associated with a burrow, as determined by direct observation. An active burrow may support a single BUOW, a pair of BUOWs, or a family group. Two of the active burrows were identified within non-native grassland habitat, and seven were identified within disturbed or developed habitat. The highest density of active burrows was observed within the southern and southeastern portion of the Brown Field Airport property. Only one burrow (BUOW 3) was observed to be occupied by a single adult BUOW. The remaining eight active burrows were observed to support at least a pair of BUOWs. A total of 12 BUOW nestlings were observed during the focused surveys. Most of the BUOW nestlings were observed on the southeastern portion of the Brown Field Airport property, with a total of three to five burrowing owls observed in front of each burrow.

### **Certification**

I hereby certify that the statements furnished above, the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Date: August 5, 2016

Signed: \_\_\_\_\_

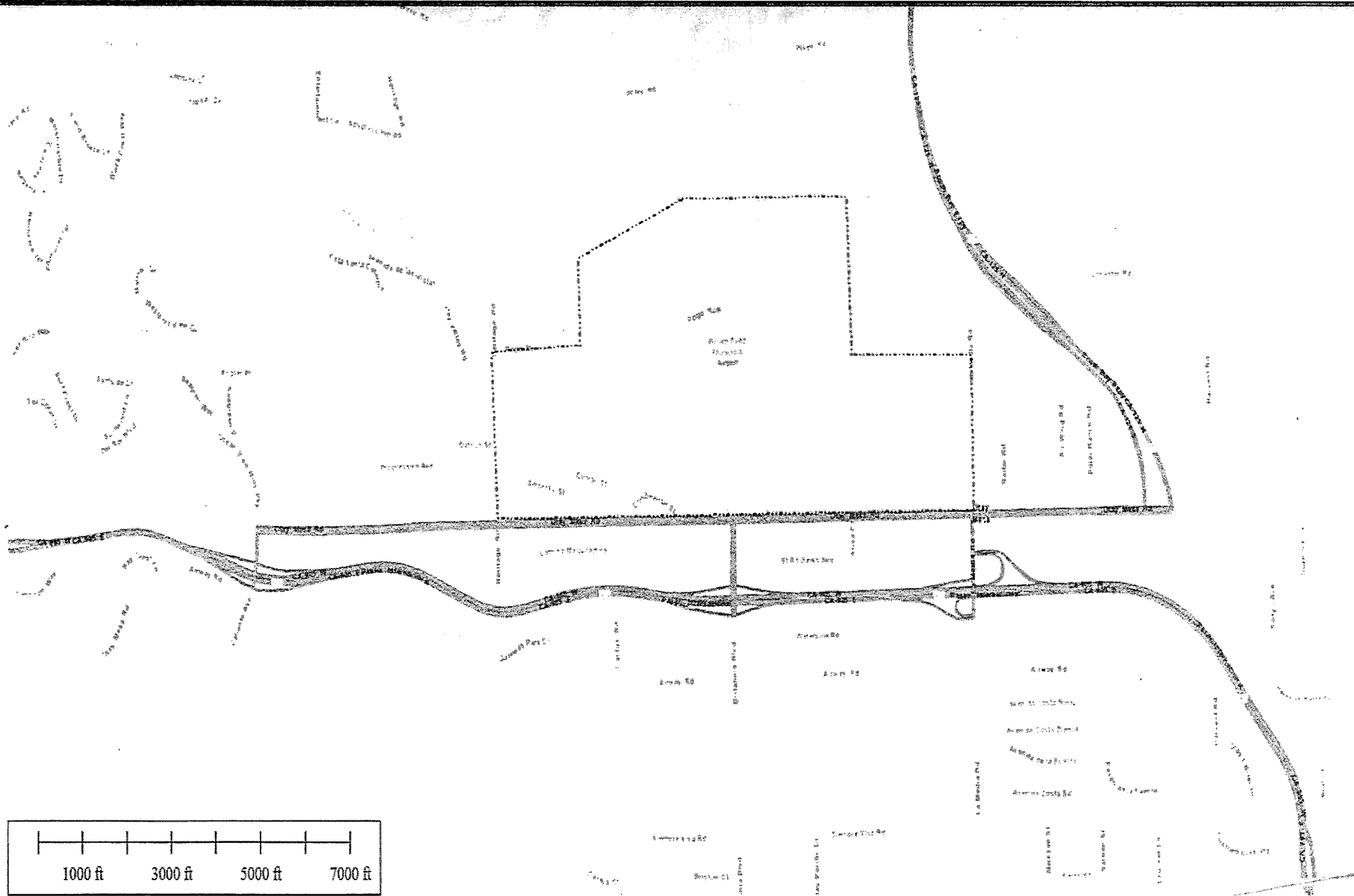


Juan J. Hernandez  
Principal Biologist

### **Attachments:**

- Figure 1 – Location Map
- Figure 2 –Vicinity Map
- Figure 3 – Survey Area Map
- Figure 4 – Focused BUOW Survey Results Map
- Appendix A – Site Photographs

# FIGURES



**Figure 1**

Location Map  
 Brown Field Airport Runway 8L/26R Rehabilitation Project  
 City of San Diego, San Diego County, California

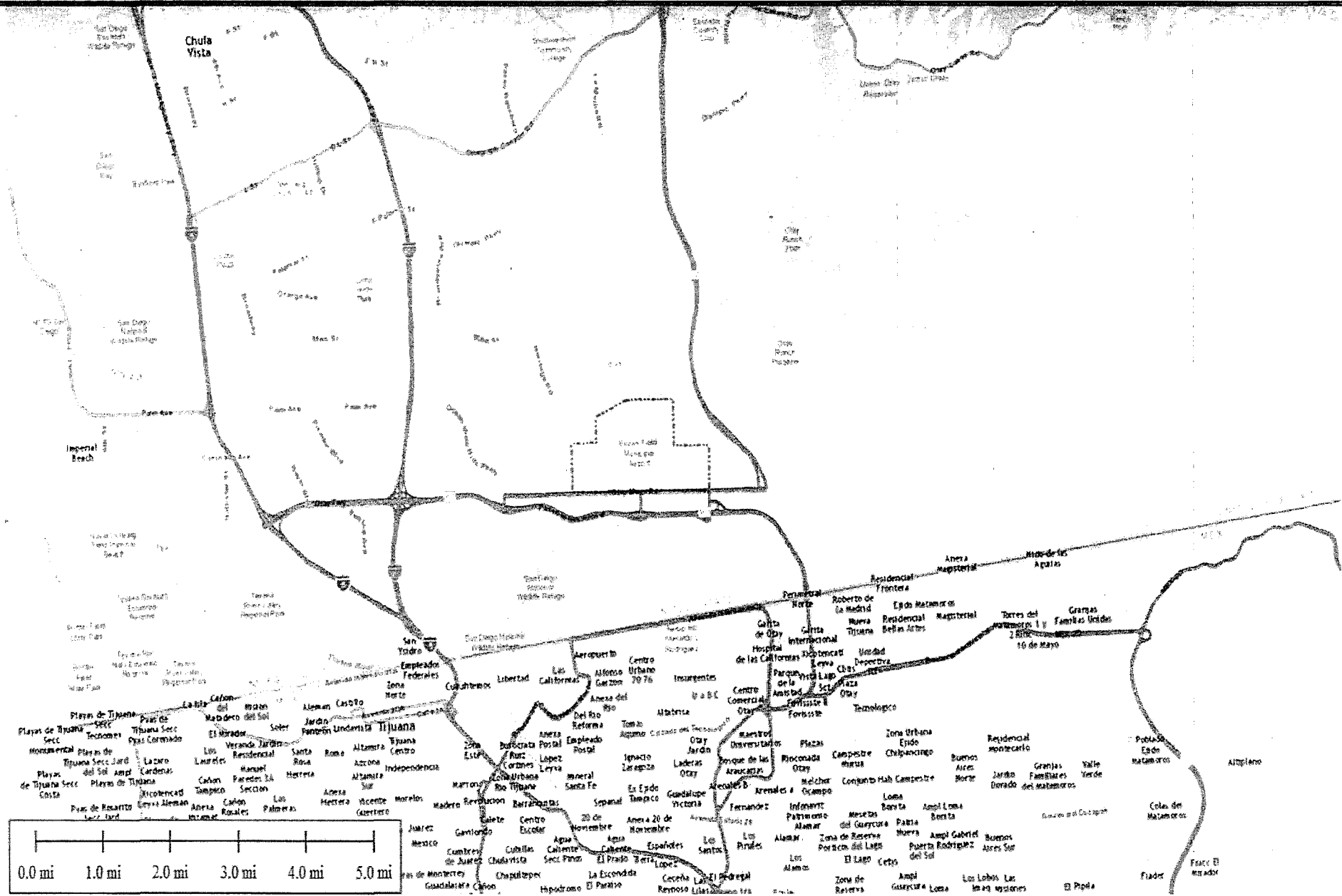
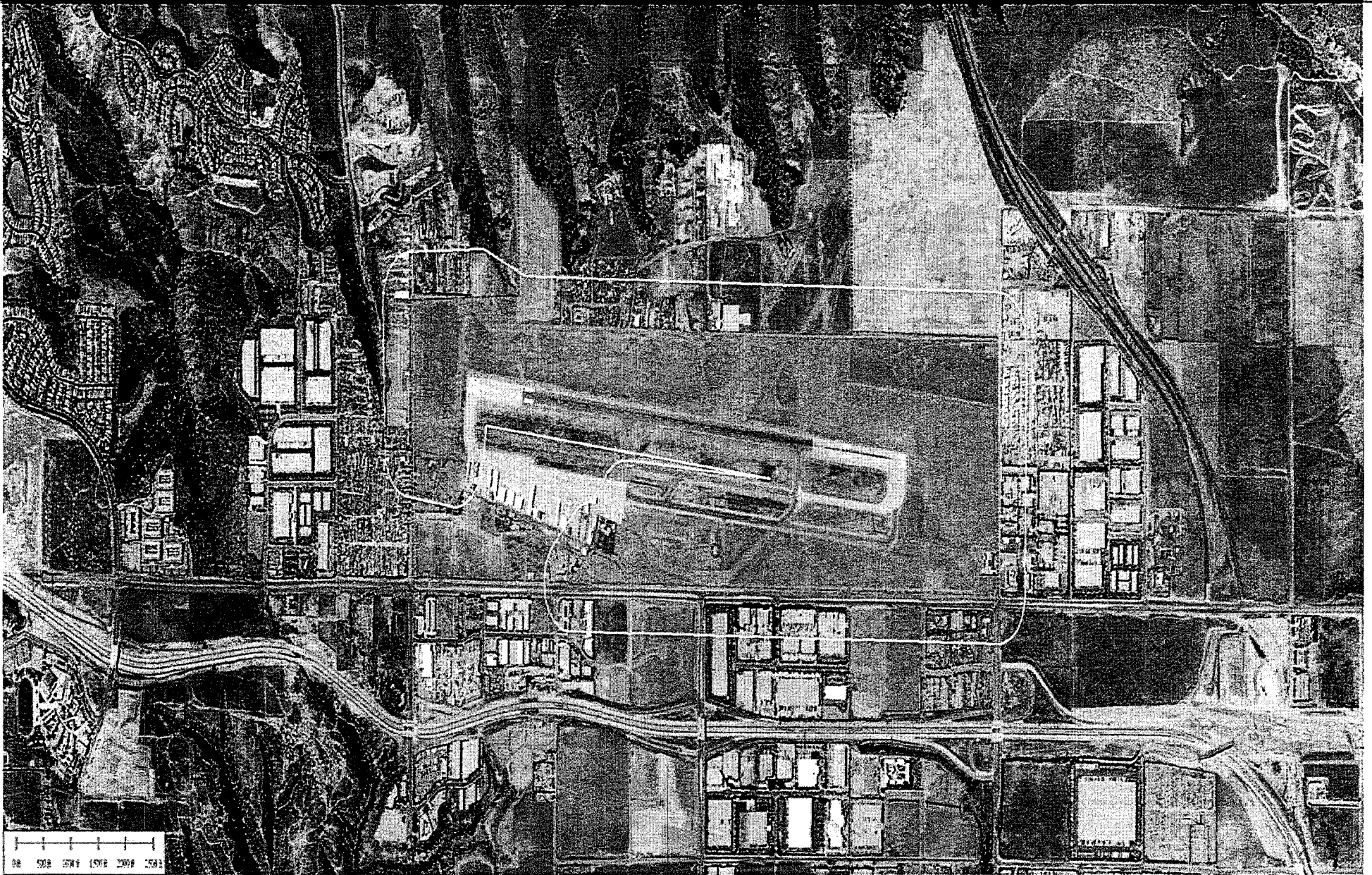


Figure 2

Vicinity Map  
 Brown Field Airport Runway 8L/26R Rehabilitation Project  
 City of San Diego, San Diego County, California




Brown Field Airport (SDM) 8L/26R Runway Rehabilitation Phase III  
 Appendix A - Addendum to Mitigated Negative Declaration and Focused Burrowing Owl Surveys

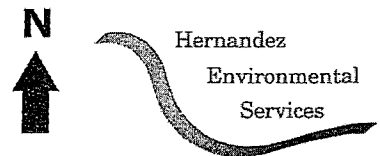


**Figure 3**

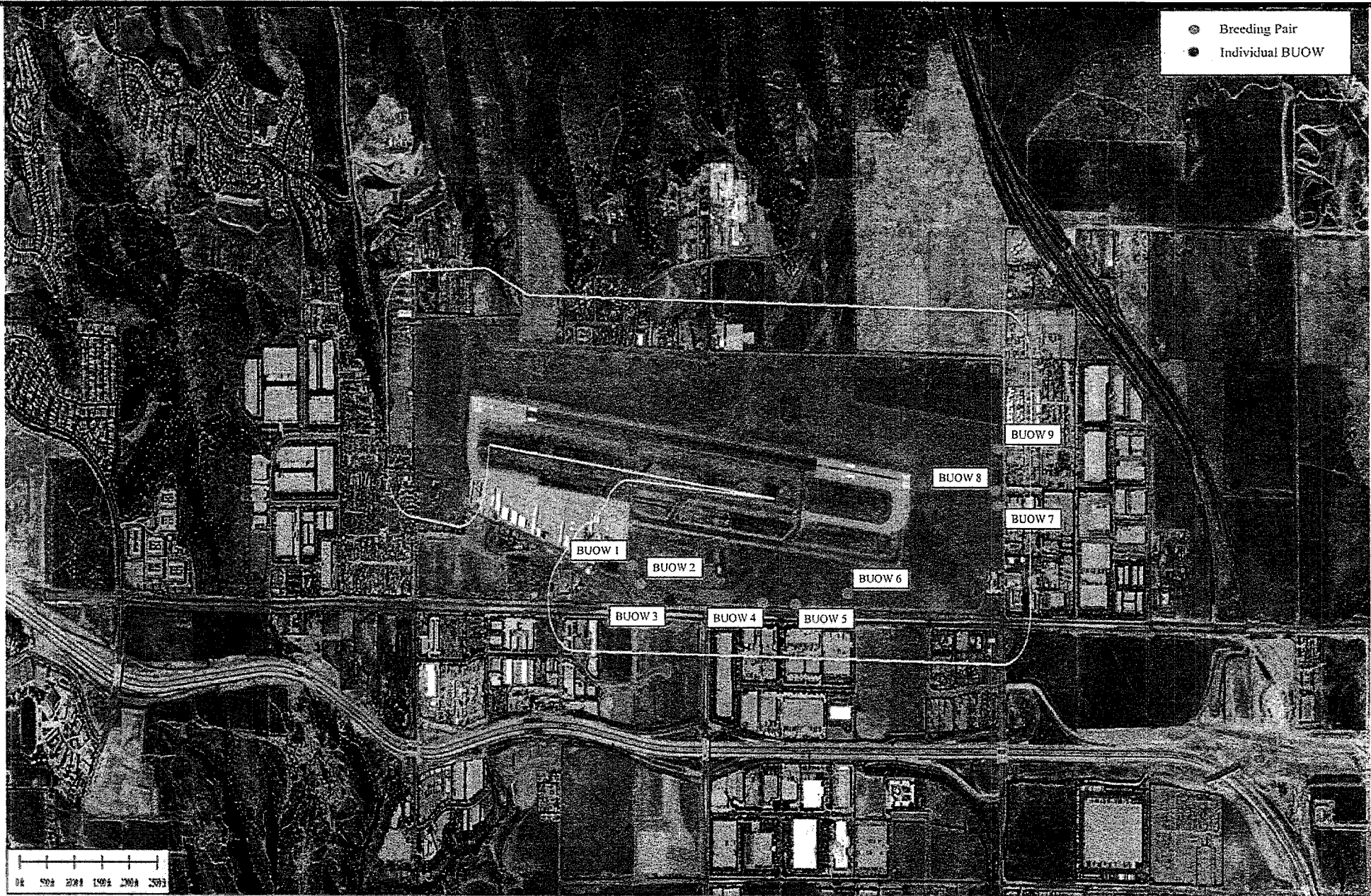
Survey Area Map  
 Brown Field Airport Runway 8L/26R Rehabilitation Project  
 City of San Diego, San Diego County, California

**Legend**

-  Airport Property
-  Survey Area
-  150-Meter Buffer Area








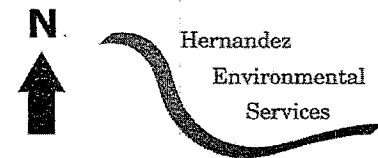


**Figure 4**

Focused BUOW Survey Results Map  
 Brown Field Airport Runway 8L/26R Rehabilitation Project  
 City of San Diego, San Diego County, California

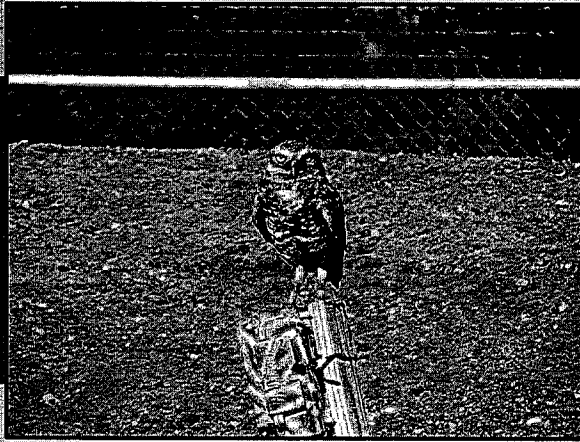
**Legend**

-  Airport Property
-  Survey Area
-  150-Meter Buffer Area

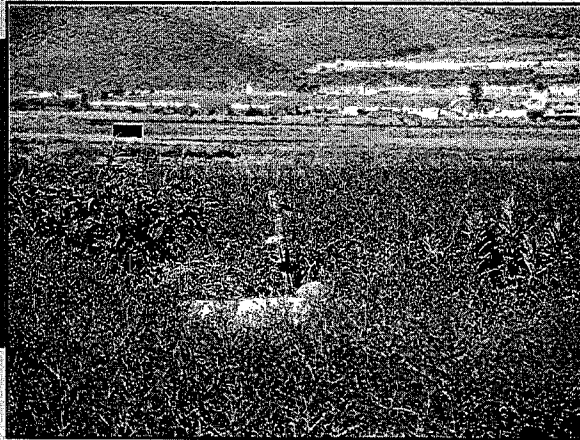


# APPENDIX A





Burrowing owl perched by burrow on the southeastern portion of site.



Burrowing owl (BUOW 2) using cement pad as part of burrow.

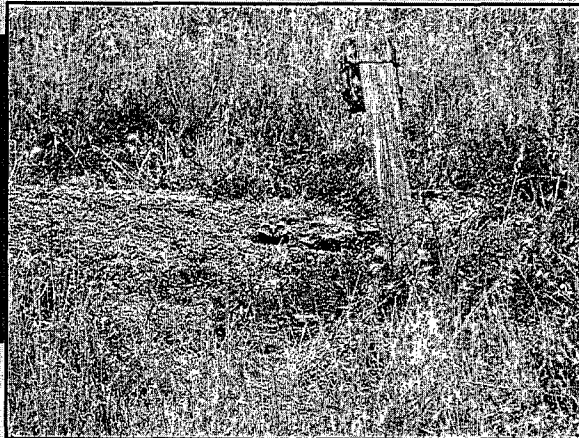


Burrowing owls (BUOW 5) by burrow along road/culvert.

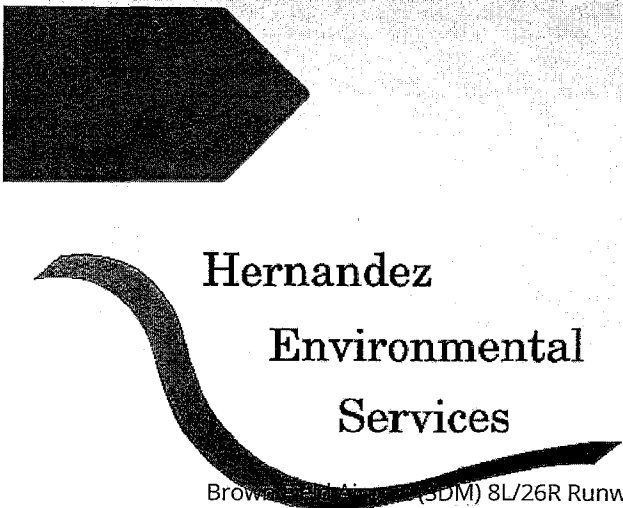
**Hernandez  
Environmental**



Burrowing owl (BUOW 1) by burrow.



Burrowing owl (BUOW 6) by burrow in non-native grassland habitat.



**Hernandez  
Environmental  
Services**

**APPENDIX B**  
**FIRE HYDRANT METER PROGRAM**

<b>CITY OF SAN DIEGO CALIFORNIA DEPARTMENT INSTRUCTIONS</b>	<b>NUMBER DI 55.27</b>	<b>DEPARTMENT Water Department</b>
<b>SUBJECT  FIRE HYDRANT METER PROGRAM (FORMERLY: CONSTRUCTION METER PROGRAM)</b>	<b>PAGE 1 OF 10</b>	<b>EFFECTIVE DATE  October 15, 2002</b>
	<b>SUPERSEDES DI 55.27</b>	<b>DATED April 21, 2000</b>

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.)

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- 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.



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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.

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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.

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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



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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

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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

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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.

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**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. These 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.

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- 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).

**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)

(For Office Use Only)

NS REQ	FAC#
DATE	BY

METER SHOP (619) 527-7449

## Meter Information

Application Date	Requested Install Date:
------------------	-------------------------

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: <small>(PERSON IN ACCOUNTS PAYABLE)</small>		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			

<b>Fire Hydrant Meter Removal Request</b>	Requested Removal Date:
Provide Current Meter Location if Different from Above:	
Signature:	Title: Date:
Phone: ( )	Pager: ( )

<input type="checkbox"/> City Meter	<input type="checkbox"/> Private Meter	
Contract Acct #:	Deposit Amount: <b>\$ 936.00</b>	Fees Amount: <b>\$ 62.00</b>
Meter Serial #	Meter Size: <b>05</b>	Meter Make and Style: <b>6-7</b>
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

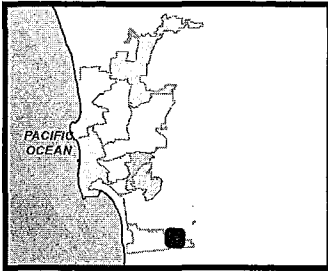
1. Soil amendment
2. Fiber mulch
3. PVC or PE pipe up to 16 inch diameter
4. Stabilizing emulsion
5. Lime
6. Preformed elastomeric joint seal
7. Plain and fabric reinforced elastomeric bearing pads
8. Steel reinforced elastomeric bearing pads
9. Waterstops (Special Condition)
10. Epoxy coated bar reinforcement
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**



**APPENDIX E**  
**LOCATION MAP**

THIS MAP/DATA IS PROVIDED WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Note: This product may contain information from the SANDAG Regional Information System which cannot be reproduced without the written permission of SANDAG. This product may contain information reproduced with permission granted by RAND McNALLY & COMPANY to SanGIS. This map is copyrighted by RAND McNALLY & COMPANY. It is unlawful to copy or reproduce all or any part thereof, whether for personal use or resale, without the prior, written permission of RAND McNALLY & COMPANY.



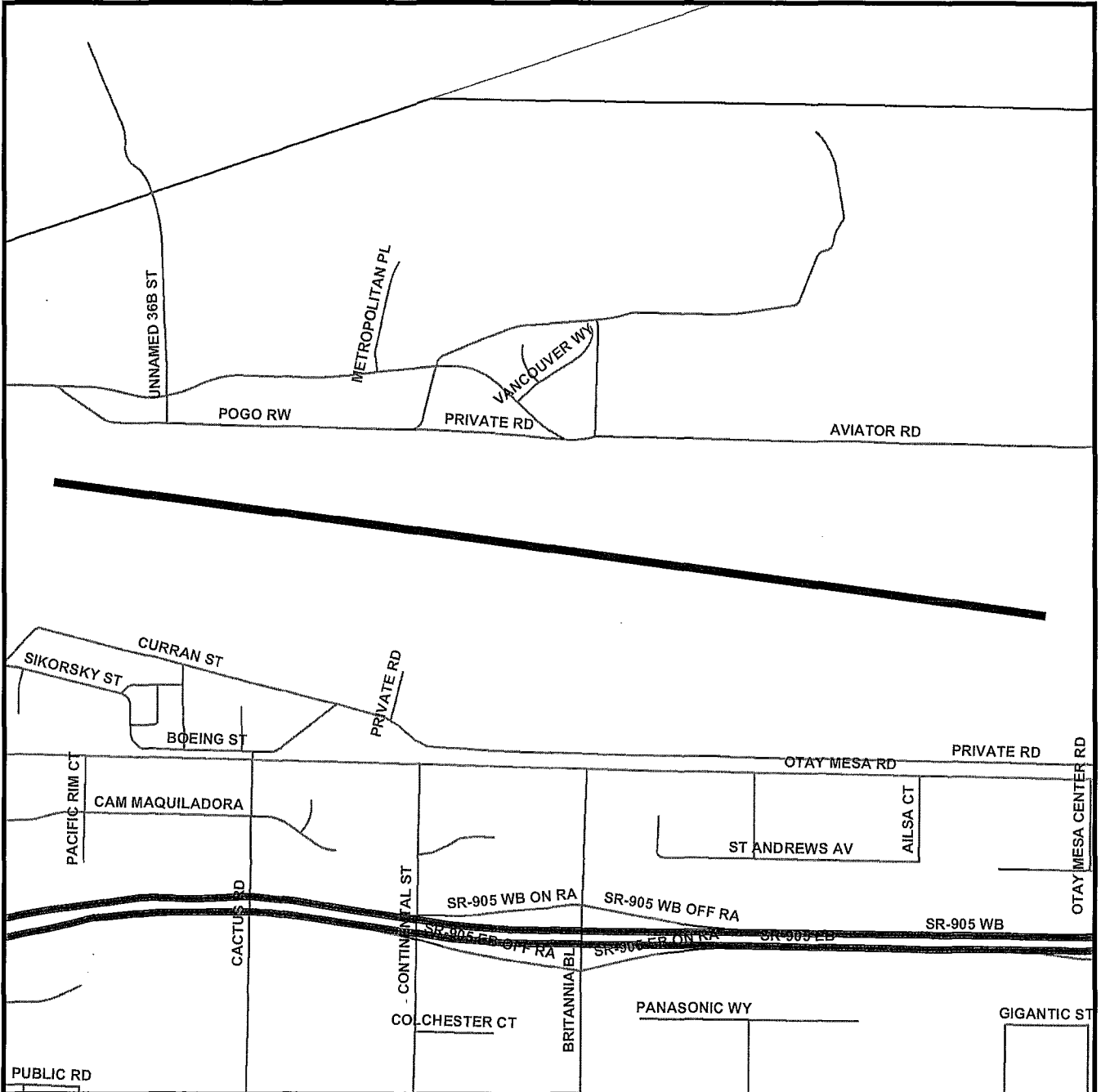
The City of  
**SAN DIEGO** Public Works  
**Brown Field Airport Runway 8L/26R Rehabilitation**  
**Phase 3**

SENIOR ENGINEER  
 Cynthia Meinhardt  
 (619) 533-5259

PROJECT MANAGER  
 Jihad Sleiman  
 (619) 533-7532

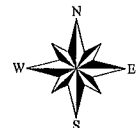
PROJECT ENGINEER  
 James Botica  
 (619) 533-5109

FOR QUESTIONS ABOUT THIS PROJECT  
 Call: (619) 533-4207  
 Email: [engineering@sandiego.gov](mailto:engineering@sandiego.gov)



**Legend**

Brown Field Airport Rehabilitation - Phase 3



COMMUNITY NAME: Otay Mesa East

COUNCIL DISTRICT: 8

SAP ID: B16150

Date: May 13, 2016  
 Brown Field Airport (SDM) 8L/26R Runway Rehabilitation Phase III  
 Appendix E - Location Map



**APPENDIX F**  
**REPORT OF GEOTECHNICAL INVESTIGATION**

**REPORT OF GEOTECHNICAL INVESTIGATION  
BROWN FIELD AIRPORT RUNWAY 8L/26R  
PAVEMENT REHABILITATION**

Submitted to:

HNTB CORPORATION  
6151 W. Century Boulevard, Suite 1200  
Los Angeles, CA 90045

Prepared By:

ALLIED GEOTECHNICAL ENGINEERS, INC.  
9500 Cuyamaca Street, Suite 102  
Santee, California 92071-2685

April 17, 2014





April 17, 2014

Mr. Tony Fermelia, P.E.  
HNTB Corporation  
6151 W. Century Boulevard, Suite 1200  
Los Angeles, CA 90045

**Subject: REPORT OF GEOTECHNICAL INVESTIGATION  
BROWN FIELD AIRPORT RUNWAY 8L/26R PAVEMENT  
REHABILITATION  
City of San Diego Contract No. H115346  
AGE Project No. 72<sub>N</sub>B5**

Dear Mr. Fermelia:

In accordance with your request, we are pleased to submit the accompanying report to present the results of a geotechnical field exploration and laboratory testing program which was conducted for final design of the subject project.

If you have any questions regarding the contents of this report or if we may be of further assistance, please feel free to give us a call. We greatly appreciate the opportunity to be of service on this important project for the City of San Diego.

Respectfully submitted,

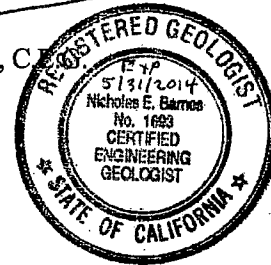
**ALLIED GEOTECHNICAL ENGINEERS, INC.**

Sani Sutanto, P.E.  
Senior Engineer



SS/NB/TJL:cml  
Distr. (1 electronic copy) Addressee

Nicholas E. Barnes, P.G., C.E.  
Senior Geologist



**REPORT OF GEOTECHNICAL INVESTIGATION  
BROWN FIELD AIRPORT RUNWAY 8L/26R PAVEMENT REHABILITATION  
City of San Diego Contract No. H115346**

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**1.0 INTRODUCTION**

Allied Geotechnical Engineers, Inc. (AGE) was retained by HNTB Corporation (HNTB) to perform a geotechnical investigation in connection with the design phase of the rehabilitation of the City of San Diego (City) Runway 8L/26R at Brown Field Airport in San Diego. The purpose of the rehabilitation is to maintain the safe use of the runway by airport users and in compliance with the FAA Airports Capital Improvement Plan and the FAA Grant Assurances. Based on the results of the investigation, AGE has prepared this report to present their findings, opinions and recommendations with regard to the geotechnical aspects of the currently proposed project.

This report has been prepared for the exclusive use of HNTB, other members of the design team, and the City in their final design of the project as described herein. The information presented in this report is not sufficient for any other uses or the purposes of other parties

**2.0 SITE AND PROJECT DESCRIPTION**

The project study area is located at Brown Field Municipal Airport in the Otay Mesa area of San Diego, California (See Location Map, Figure 1). The project site is located at approximate Latitude 32.5697° N and 116.9852° W.

Brown Field was established by the U.S. Army Air Corps in 1918, and was originally named East Field. In 1943 the U.S. Navy took over the airfield, and later that year it was re-named Brown Field. The field was turned over to the city of San Diego in 1946, who utilized portions of the property for a chicken ranch and high school. The U.S. Navy re-commissioned Brown Field in 1951 during the Korean War, and in 1962 turned the property over to the City of San Diego with the stipulation that it remain an airport for the benefit and use of the public.

Runway 8L-26R measures 7,972 feet in length and 150 feet in width, and is comprised of both concrete and A.C. (Asphalt) paving. Review of historic aerial photographs suggests that the existing paving was in place in 1953. The runway elevation ranges from +508 feet above the Mean Sea Level (MSL) at its east end and +526 feet MSL at its west end.

A secondary Runway 8R-26L measures 3,180 feet in length and 75 feet in width. The runway is A.C paved. Other appurtenant structures include concrete and A.C. taxiway and aircraft parking, a control tower, a terminal/administration building with attached restaurant, U.S. Customs, various aircraft hangars and outbuildings, fuel storage tanks, taxiway and runway lighting, parking lots, fencing, and undeveloped infield and peripheral areas that support annual grasses and weeds.

The airport was developed on the relatively level area of Otay Mesa. Based on visual observations and the findings of our subsurface investigation, it appears that only minimal grading was performed for the development of Runway 8L-26R.

Land uses near Brown Field support a growing number of commercial business parks and warehouses, industrial manufacturing facilities, used automobile wrecking and recycling yards, agriculture, and residential housing developments to the west of the airfield.

Based on a review of the 90% submittal plans prepared by HNTB, dated March 27, 2014, it is our understanding that the scope of the proposed project include replacement approximately 2,000 feet of the eastern segment of Runway 8L-26R, the construction test pavement section along the existing access road between the Air Traffic Control Tower and Curran Street, and remark of the existing runway signage. The replacement/test pavement sections consist of 4 inches of asphaltic concrete (A.C.) pavement over a minimum of 6 inches of asphalt stabilized base, which in turn is underlain by 10 inches of the existing Portland Cement Concrete (P.C.C.) pavement rubblelized in place, or 6 to 14 inches of processed miscellaneous base (P.M.B). In areas where the replacement/test pavement sections is underlain by P.M.B., geogrid fabric will be placed between the P.M.B. and the subgrade. Subgrade preparation beneath the P.M.B. consists of the recompaction of the upper 6 inches of the subgrade material.

**3.0 GEOTECHNICAL INVESTIGATION**

The scope of the geotechnical investigation performed for the subject project included several tasks which are described in the following sections of this report.

**3.1 Information Review**

This task involved a review of readily available information pertaining to the project site. The information that was reviewed included the preliminary design and background information that was provided to us, published geologic literature and maps, topographic maps, as-built utility maps, and geotechnical reports previously prepared by others. A listing of the references that were reviewed or cited in this report is presented in Section 6.0 of this report.

**3.2 Permitting and Utility Clearance**

This task involved the performance of several subtasks in preparation of the geotechnical field exploration program, and included:

- Several site visits to review the existing site conditions and to select suitable locations for exploratory soil borings;
- Utility clearance of the proposed field exploration sites through Underground Service Alert (USA) and the Airport Maintenance Department, and coordination with Cable, Pipe & Leak Detection, Inc. to perform additional utility clearance/markout services; and



- Scheduling and coordination of the field exploration activities with representatives from HNTB and the City.

### 3.3 Geotechnical Field Exploration

A total of thirty (30) solid-stem and one (1) hollow-stem auger borings were performed during the period between June 3 and 7, 2013, at the approximate locations shown on the Site Plan (Figure 2). The borings were extended to the approximate depths ranging from 8 to 11.5 feet below the existing ground surface. A more detailed description of the drilling and sampling operations, and the boring logs are presented in Appendix A.

### 3.4 Laboratory Testing

Selected soil samples obtained from the borings were tested in the laboratory to verify visual field classifications and to evaluate certain engineering characteristics. The geotechnical laboratory tests were performed in general conformance with the American Society for Testing and Materials (ASTM) or other generally accepted testing procedures, and included: in-place moisture content and unit dry weight, mechanical and hydrometer analysis, compaction, Atterberg Limits, direct shear, consolidation, Expansion Index, and California Bearing Ratio. A description of the tests that were performed and the final test results are presented in Appendix B.

In addition, representative samples of the soil materials were delivered to Clarkson Laboratory of Chula Vista for chemical (analytical) testing to determine soil pH, resistivity, and soluble sulfate and chloride concentrations. Copies of Clarkson's laboratory test data reports are also included in Appendix B.

#### 4.0 SITE CONDITIONS

The project study area encompasses the entirety of Runway 8L-26R, including a 200 foot by 200 foot square area abutting the east end of the runway for a future blast pad. With the exception of boring B-31 which was advanced within the footprint of the future blast pad, the remaining 30 soil borings were advanced within the existing runway paving. The east and west portions of the runway, measuring approximately 1,725 feet and 960 feet in length, respectively, are concrete paved; and the central portion of the runway, measuring approximately 5,287 feet in length, is A.C. paved. The east and west concrete paving is jointed into individual paving panels measuring approximately 15 feet in length and 12.5 feet in width.

The existing pavement section in the east concrete portion of the runway (borings B-1 thru B-7), was found to vary from 9 1/2 inches to 10 1/2 inches in thickness, placed on top of shallow fill (See boring logs for individual pavement sections, Figures A-3 through A-9).

The existing pavement section in the central portion of the runway (borings B-8 thru B-27), was found to consist of A.C. paving over concrete. The A.C. varied from 6 1/2 inches to 10 inches in thickness, and the underlying concrete varied from 9 1/2 inches to 10 1/2 inches in thickness, placed on top of shallow fill (total paving section varied from 16 1/2 inches to 20 inches in thickness). Individual pavement sections are shown on the boring logs (Figures A-10 through A-29).

The existing pavement section in the west concrete portion of the runway (borings B-28 thru B-30) was found to consist of two separate layers of concrete. The upper concrete layer was found to vary from 7 inches to 8 inches in thickness, and the lower concrete layer was found to vary from 9 ½ inches to 10 inches in thickness, placed on top of shallow fill (total pavement section varied from 16 ½ inches to 18 inches in thickness). We observed that the top of the lower concrete slab displayed a brush finish, and that a thin layer of what appears to be a concrete bonding agent is sandwiched between the lower and upper concrete slabs. Individual pavement sections are shown on the boring logs (Figures A-30 through A-32).

Visual inspection of the runway paving reveals localized cracking of the individual concrete paving panels, spalling and breakage of concrete at joint locations, and degradation of joint sealant materials. Localized patching of the spalled concrete has been performed in the past. We also observed that localized surface grinding has been performed in the east concrete portion of the runway, apparently to smooth the runway surface.

Inspection of the A.C. runway paving reveals some age related degradation and cracking of the asphalt. Some of the paving cracks follow a rectangular grid pattern whose spacing is similar in size to that of the concrete paving panels in the east and west portions of the runway, which suggests that the cracks reflected upward at joint locations in the underlying concrete.

Visual inspection and conversation with the Brown Field personnel confirms that the runway surface is uneven. The unevenness has created a series of “high spots” along portions of the runways’ length, which can cause landing aircraft to skip.

Based on the information gathered from our utility clearance efforts, it appears that buried utilities within the project study area are limited to electrical conduits servicing the runway and taxiway lighting, and aircraft landing systems.

The project study area is situated in the southerly portion of the San Diego Embayment, a thick sequence of nearly flat-lying to gently southwest dipping Cretaceous to Holocene aged marine and non-marine sediments. The embayment is underlain at depth by Cretaceous crystalline rocks of the Southern California Batholith and Jurassic metasedimentary and metavolcanic rocks of the Santiago Peak Volcanics.

The study area is located on Otay Mesa, a relatively level marine terrace bounded by Otay Valley to the north, the International Border to the south, the San Ysidro Mountains to the east, and the San Diego coastal plain to the west. The mesa is incised by numerous drainage canyons.

#### **4.1 Geologic Units**

Based on a review of the published geologic maps and compositional characteristics, the soil types encountered in the borings can be categorized into three distinct geologic units: Fill Materials, an unnamed and unmapped Mudstone Unit, and Terrace Deposits. A brief description of each unit is presented below.

**4.1.1**      Fill Materials

Fill materials were encountered at all boring locations, to depths on the order of 2 to 4.5 feet bgs (Borings B-1 thru B-30 measured from top of runway paving, boring B-31 measured from ground surface). The fill materials consist of a mixture of silty sand, clayey sand and sandy clay with some angular and rounded gravel to 3-inches in size. Fill materials below the runway paving were moist to wet, whereas the fill materials in boring B-31 were dry to damp.

**4.1.2**      Mudstone Unit

An unnamed and unmapped mudstone unit was encountered overlying the Terrace Deposits at all of the boring locations. Borings B-5, B-6, B-20, B-22 thru B-24, and B-26 thru B-30 were terminated within the mudstone. The mudstone unit encountered in the borings varies from about 3 to 8.5 feet or more in thickness, and consists predominantly of a highly plastic olive to greenish gray to olive brown fat clay with sand. The mudstone unit is generally massive, moist to wet, with a medium stiff to very stiff consistency.

The visual characteristics of the mudstone unit appear similar to those of another mudstone unit referred to as the "Normal Heights Mudstone" that was the subject of a study performed by L.D. Reed (1990). As its name implies, the "Normal Heights Mudstone" has been recognized and is mapped in the Normal Heights community in San Diego. It is described as a distinct stratigraphic unit which varies in thickness from less than 5 to more than 10 feet, and forms a cap on top of the San Diego Mesa on the south side of Mission Valley. The unit extends from the ground surface to a sharp disconformable contact with the underlying Lindavista Formation. Similarities between the mudstone encountered in the borings and the "Normal Heights Mudstone" include their color, grain size distribution, thickness, and apparent low-energy depositional environment.

Based on visual observations and the laboratory test results, the mudstone unit was found to have very high expansion potential and low California Bearing Ratio (CBR) values.

AGE performed an analysis of the in situ CBR based on the SPT blow counts which were performed within the upper 5 feet of borings B-1 through B-31. The analysis was performed in accordance with the methods presented in "The Relationship Between In Situ CBR Test and Various Penetration Test, Report Penetration Testing 1988, I. Ishai and M. Livneh, ISOPT-1, ISBN906191 801 4, 1988". The results are shown in Table 1 on the next page.

Table 1

## Summary of CBR Values Based on SPT Blow Counts

Boring ID	CBR (%)	Boring ID	CBR (%)
B-1	7	B-16	2
B-2	3	B-17	2
B-3	8	B-18	4
B-4	5	B-19	2
B-5	7	B-20	5
B-6	5	B-21	3
B-7	2	B-22	5
B-8	2	B-23	3
B-9	5	B-24	6
B-10	3	B-25	4
B-11	4	B-26	9
B-12	4	B-27	3
B-13	4	B-28	10
B-14	3	B-29	4
B-15	4	B-30	14
		B-31	5



---

#### 4.1.3 Terrace Deposits

Terrace Deposits of Pleistocene age (Kuper and Gastil, 1977) were encountered beneath the mudstone unit at borings B-1 thru B-4, B-7 thru B-19, B-21, B-25, and B-31, at depths varying from 8 feet bgs to 11 feet bgs. In the project area, the Terrace Deposits are mapped as the Lindavista Formation of early Pleistocene or late Pliocene age (Kennedy and Tan, 1977), and as Alluvial Deposits of middle to early Pleistocene age (Tan and Kennedy, 2002).

The formational materials encountered in the borings consist primarily of a yellowish red to strong brown gravelly silty sandstone in a dense to very dense condition. The formation is locally clayey near the contact with the overlying mudstone unit. The distinctive reddish color of the unit is due to ferruginous cement. Given the color and compositional similarity of the Terrace Deposits with that of the Lindavista Formation exposed on the San Diego and Linda Vista Mesas, the unit has been named as belonging to the Lindavista Formation.

#### 4.2 **Groundwater**

No groundwater or seepage was encountered in the exploratory borings at the time of our field investigation. In order to determine the regional groundwater depth, we reviewed available data on the Geotracker website ([www.Geotracker.waterboards.ca.gov](http://www.Geotracker.waterboards.ca.gov)). The website indicates that a recent Environmental Site Assessment of a former underground storage tank (UST) farm site at Brown Field was conducted by Ninyo & Moore (2013). The tank farm was located near the west end of the airport property, south of Runway 8L-26R. The report describes a deep groundwater zone at depths of 175.83 to 184.51 feet below casing (+336.38 feet MSL to + 344.70 feet MSL), and a perched groundwater zone at 65.14 feet bgs.

Given the significant depth to the regional groundwater table, the potential for groundwater-related problems affecting the proposed project is considered very low. It must be noted, however, that localized perched water conditions, primarily at the interface between the Mudstone Unit and the more permeable fill, may occur in some areas of the proposed project.

### 5.0 DISCUSSIONS, OPINIONS, AND RECOMMENDATIONS

It must be noted that the design for the proposed project has not been completed at the time of our preparation of this report. Therefore, the recommendations presented herein are preliminary in nature. It is recommended that our firm review the design documents prior to finalizing to evaluate whether the recommendations presented in this report will need to be modified or additional recommendations will be required.

#### 5.1 Potential Geologic Hazards

Geologic hazards are those hazards that could impact a site due to local and surrounding area geologic and seismic conditions. Seismic hazards include phenomena that occur during an earthquake such as ground shaking, surface fault rupture, liquefaction, differential seismic-induced settlement, lateral spread displacement, ground lurching, tsunami or seiches, and seismic-induced flooding. Geologic hazards include subsidence, landslides, and poor soil conditions (expansive or collapsible soil). The potential impact of these hazards to the site has been assessed and is summarized in the following sections.

##### 5.1.1 Faulting

The site is not located within a currently designated California Geological Survey (CGS) Earthquake Fault Special Study Zone. The nearest mapped active faults to the project site are the Rose Canyon fault zone and Coronado Bank.

The Rose Canyon fault zone (RCFZ) represents the most significant source of seismic hazard in the San Diego metropolitan area. Geologic studies performed on the RCFZ in the Rose Creek and downtown San Diego areas have discovered evidence of fault displacement in Holocene age alluvial and colluvial deposits (Patterson, 1986; Rockwell, 1991; Woodward-Clyde Consultants, 1994; Lindvall and Rockwell, 1995). Based on the results of these studies, the Rose Creek and downtown segments of the RCFZ have been classified as "active" and are designated as Alquist-Priolo Earthquake Fault Zones by the State of California. The project site is not located within the Alquist-Priolo Earthquake Fault Zones.

In the San Diego Bay area, the RCFZ is believed to splay into multiple, relatively closely spaced, subparallel strands; the most prominent of which are the Silver Strand, Coronado and Spanish Bight faults. Other, shorter and less distinctive unnamed faults are mapped within the western portion of San Diego Bay. Recent earthquakes, centered in San Diego Bay, indicates the potential for seismic activity along any of these smaller faults exists.

The project site is subject to moderate to severe ground shaking in response to a major earthquake occurring on the RCFZ or on one of the major regional active faults. The closest active regional faults to the site with recurring magnitude 4.0 and greater earthquakes are the Coronado Bank, the Vallecitos-San Miguel, and the Elsinore fault zones. Other more distant, active regional faults that are considered potential sources of seismic activity include the offshore located San Diego Trough and San Clemente fault zones and some of the faults in Imperial Valley which include the San Jacinto and San Andreas fault zones.

The computer program EQFAULT (Blake, 2010) was used to approximate the distance of known faults to the site. Seven known active faults are identified within a search radius of 50 miles from the site. A summary of seismic source characteristics for faults that present the most significant seismic hazard potential to the project area is presented in Table 2 on the next page.

**Table 2**  
**Summary of Seismic Source Characteristics**

<b>Fault</b>	<b>Maximum Magnitude (Mw)</b>	<b>Peak Site Acceleration (g)</b>	<b>Closest Distance to Site (miles)</b>
Rose Canyon	7.5	0.225	12.9
Coronado Banks	7.4	0.183	17.1
Elsinore - Julian	7.1	0.058	43.7
Elsinore - Coyote Mountain	6.8	0.045	45.5
Earthquake Valley	6.5	0.036	47.0
Newport-Inglewood (offshore)	6.9	0.046	48.1

**5.1.2 Historical Seismicity**

EQSEARCH is a program that performs automated searches of a catalog of historical Southern California earthquakes. As the program searches the catalog, it computes and prints the epicentral distance from a selected site to each of the earthquakes within a specified radius (100 kilometers). From the computed distance, the program also estimates (using an appropriate attenuation relation) the peak horizontal ground acceleration that may have occurred at the site due to each earthquake.

An average  $V_{s30}$  of 300 m/s was calculated for the project site. The shear wave velocity was calculated based on the corrected blow counts in AGE borings, and using the correlation method developed by Ohta and Gotto (1978) for cohesive soil and David Boore (2004) extrapolation equation.

$$V_s = 86.9 (N_{60})^{0.333} \quad (\text{Ohta \& Goto, 1978})$$

$$V_{s30} = [1.45 - (0.015 \times d)] \times V_{s(d)} \quad (\text{David Boore, 2004})$$

Based on the estimated shear wave velocities and our visual classification of the geologic units encountered in the soil borings, site Class D attenuation was used for all of our analysis. We used a combined earthquake catalog for magnitude 5.0 or larger events which occur within 100 kilometers from the site between 1800 and December 1999. The earthquake catalog for events prior to about 1933 is limited to the higher magnitude events.

The search results indicate that the nearest earthquake of magnitude 5.0 occurred on October 21, 1862 on a strand of the Newport Inglewood-Rose Canyon fault zone (Silver Strand section-Downtown Graben fault), which is located about 12.8 miles from the project site. This earthquake resulted in a calculated ground acceleration of 0.075 g. The largest magnitude earthquake reported was a magnitude 6.8 event February 9, 1956, located 83 miles from the project site on the San Jacinto fault which resulted in a calculated ground acceleration of 0.038 g. The largest calculated seismic ground acceleration from this search is 0.109 g generated from a magnitude 5.9 seismic event on May 27, 1862 on the RCFZ (Silver Strand section-Spanish Bight fault) located approximately 15.4 miles from the project site.

It is our opinion that the major seismic hazard affecting the project site would be seismic-induced ground shaking. The project site will likely be subject to moderate to severe ground shaking in response to a local or more distant large magnitude earthquake occurring during the life of the proposed facilities. For project design purposes, we recommend that the RCFZ be considered as the dominant seismic source.

### 5.1.3 Seismic Design Parameter

The seismic design parameters presented herein were calculated using the Minimum Design Loads for Buildings and Other Structures procedures of the California Building Codes 2013.

For structural design, the United States Geological Survey Design Maps (USGS, 2013) were used to calculate ground motion parameters for the project site. The Risk-Targeted Maximum Considered Earthquake ( $MCE_R$ ) ground motion response acceleration is calculated based on the most severe earthquake effects considered which were determined for the orientation that resulted in the largest maximum response to the horizontal ground motions and with adjustment to the targeted risk. The Maximum Considered Earthquake Geometric Mean ( $MCE_G$ ) is determined for the geometric peak ground acceleration and without adjustment for the targeted risk. The  $MCE_G$  Peak Ground Acceleration (PGA) adjusted for site effects ( $PGA_M$ ) should be used for design and evaluation of liquefaction, lateral spreading, seismic settlements, and other soil related issues.

We recommend that the seismic design parameters presented in Table 3 on the next page be used for seismic design of proposed facilities. These criteria are based on the soil profile type as determined by existing subsurface geologic conditions, on the proximity of the site to a nearby fault and on the maximum moment magnitude and slip rate of the nearby fault. The Design Response Spectrum and Risk-Targeted Maximum Considered Earthquake ( $MCE_R$ ) Response Spectrum are shown on Figures 3 and 4, respectively.



**Table 3**  
**Summary of Seismic Design Parameters**

<u>REFERENCE</u>	<u>PARAMETER</u>
Table 20.3-1 Site Classification	Site Class = D
Figure 22-1	$S_s = 0.836g$
Table 11.4-1 Site Coefficient $F_a$	$F_a = 1.166$
Figure 22-2	$S_1 = 0.319 g$
Table 11.4-2 Site Coefficient $F_v$	$F_v = 1.762$
Equation 11.4-1	$S_{MS} = 0.974 g$
Equation 11.4-2	$S_{MI} = 0.562 g$
Equation 11.4-3	$S_{DS} = 0.650 g$
Equation 11.4-5	$S_{D1} = 0.375 g$
Figure 22-12	$T_L = 8 \text{ seconds}$
Figure 22-7	$PGA = 0.330$
Equation 11.8-1	$PGA_M = 0.386 g$
Figure 22-17	$C_{RS} = 0.965$
Figure 22-18	$C_{R1} = 1.027$

- Figure 22-1            Ss Risk-Targeted Maximum Considered Earthquake (MCER) Ground Motion Parameter for the Conterminous United States for 0.2 s Spectral Response Acceleration (5% of Critical Damping), Site Class B.
- Figure 22-2            S1 Risk-Targeted Maximum Considered Earthquake (MCER) Ground Motion Parameter for the Conterminous United States for 1.0 s Spectral Response Acceleration (5% of Critical Damping), Site Class B.
- Figure 22-12           Mapped Long-Period Transition Period, TL (s), for the Conterminous United States.
- Figure 22-7            Maximum Considered Earthquake Geometric Mean (MCEG) PGA, %g, Site Class B for the Conterminous United States.
- Figure 22-17           Mapped Risk Coefficient at 0.2 s Spectral Response Period, CRS.
- Figure 22-18           Mapped Risk Coefficient at 1.0 s Spectral Response Period, CR1.

Based on the calculated  $S_{DS}$  of 0.650 g and  $S_{D1}$  of 0.375 g, a Seismic Design Category of “D” may be used for design of facilities with risk categories I, II and III.

### 5.1.4 Fault Ground Rupture

The project site is not located astride or near any known (mapped) active or potentially active faults (Kennedy and Peterson, 1975; City of San Diego, 1995). Therefore, the potential for fault ground rupture at the site is considered insignificant.

### 5.1.5 Soil Liquefaction

Seismically-induced soil liquefaction is a phenomenon in which loose to medium dense, saturated granular materials undergo matrix rearrangement, develop high pore water pressure, and lose shear strength due to cyclic ground vibrations induced by earthquakes or other means.

The project site is underlain by very dense to hard cobble conglomerate which is not considered susceptible to seismic-induced soil liquefaction or ground settlement. Furthermore, a review of the State of California Seismic Hazard Zones (2009) indicates that the site is not located within an area that is considered susceptible to soil liquefaction during a seismic event.

### 5.1.6 Lateral Spread Displacement

The project site has very low susceptibility to liquefaction, therefore, the risk of lateral spread displacement during a seismic event is considered remote.

### 5.1.7 Differential Seismic-Induced Settlement

Differential seismic settlement occurs when seismic shaking causes one type of soil to settle more than another type. It may also occur within a soil deposit with largely homogeneous properties if the seismic shaking is uneven due to variable geometry or thickness of soil deposit. Based on our investigation, the subsurface soils are found to be fairly uniform throughout the site; therefore, the potential of differential settlement is considered low.

### 5.1.8 Ground Lurching

Ground lurching is permanent displacement or shift of the ground in response to seismic shaking. Ground lurching occurs in areas with high topographic relief, and usually occurs near the source of an earthquake. These displacement can results in permanent cracks in the ground surface. Considering the distance from the project site to the nearest potential source of seismic event, it is our opinion that ground lurching does not present a potential hazard for the proposed project.

### 5.1.9 Landslides

A review of the pertinent geologic map indicates that the project site is not located on or below any known (mapped) ancient landslides (Kennedy and Peterson, 1975; City of San Diego, 1995). Furthermore, a review of the State of California Seismic Hazard Zones (2009) indicates that the site is not located in an area that is susceptible to landslide hazards.

5.1.10 Other Seismic-induced Hazards

The project site is located inland and is not located near any open bodies of water which are large enough to generate tsunamis or seiches during a seismic event. Therefore, the potential for damage resulting from seismic-induced tsunamis or seiches is considered non-existent.

**5.2 Soil Corrosivity**

Analytical testing was performed on the soil samples collected from the borings to determine their pH and resistivity, and soluble sulfates, chlorides and bicarbonates content. The tests were performed in accordance with the California Test Method Nos. 643, 417 and 422.

Soil is generally considered aggressive toward concrete foundations if it has a chloride concentration greater than 500 part per million (ppm) or sulfate concentration greater than 2,000 ppm, or if it has a pH of 5.5 or less. The laboratory test results which are summarized in Table 4 on the next page indicate that the on-site soils do not pose an aggressive environment for concrete structure elements.

AGE does not practice corrosion engineering. In the event that corrosion-sensitive buried facilities or utilities are planned, we recommend that a qualified corrosion engineer be retained to evaluate and provide recommendations for the necessary corrosion protection measures.

**Table 4**  
**Summary of Corrosivity Test Results**

Sample #	pH	Resistivity (ohm-cm)	Soluble Sulfate Conc. (ppm)	Soluble Chloride Conc. (ppm)	Bicarbonates (ppm)
B3-B1@2'-5'	8.4	380	130	190	110
B5-B1@2'-4'	8.9	730	50	50	100
B8-B1@2'-5'	8.5	480	50	20	100
B11-B1@2'-5'	8.4	780	110	20	80
B16-B1@5'-8'	6.5	300	450	120	N.A.
B19-B2@3'-6'	8.9	800	130	20	100
B21-B3@6'-9'	7.1	190	1,020	520	N.A.
B23-B1@2'-5'	8.4	560	70	130	N.A.
B27-B2@2'-5'	8.6	700	50	10	N.A.
B29-B1@2'-5'	8.6	890	60	10	N.A.
B14-B1@2'-5'	7.7	410	990	110	70

### 5.3 Expansive Soil

Based on visual observations and the laboratory test results, it is our opinion that the majority of the on-site materials are considered to have very high expansion potential.

### 5.4 Earthwork

#### 5.4.1 General Requirements

The earthwork operations for the project should be performed in accordance with the approved plans and specifications for the project, the applicable provisions of the City of San Diego Grading Ordinance, and Section 300 of the latest edition of Standard Specifications for Public Works Construction (SSPWC, known as the "Green Book").

#### 5.4.2 Soil Excavation Characteristics

Based on our experience with similar geologic units, we anticipate that excavations in the on-site soil materials can be easily accomplished using conventional heavy-duty excavation equipment.

**5.4.3**      Fill Materials

Fill materials should be free of biodegradable materials, hazardous substance contamination, or other deleterious debris. If the fill materials contain rocks or hard lumps, at least 70 percent (by weight) of its particles shall pass a U.S. Standard  $3/4$ -inch sieve. Fill materials should consist of predominantly granular soil (less than 50 percent passing the U.S. Standard #200 sieve) with Expansion Index of less than 60. Concrete debris generated from onsite excavation may be reused as fill material provided they are crushed to 3 inches or smaller.

Soil materials generated from excavation in the Mudstone Unit are not considered suitable for use and placement as structural fill. Therefore, in the event that the Mudstone Unit is excavated during the subgrade preparation for the proposed pavement sections, we recommend that import materials which meet the criteria presented above be used to backfill the excavated area. Materials generated from excavation of the Mudstone Unit should be disposed off site or placed in landscaped/non-structural areas. It is noted that the existing fill materials may also contain highly expansive materials which may not be suitable for use as structural fill, and may necessitate the need to bring additional import materials.



### 5.4.4      Fill Placement and Compaction

The fill materials should be moisture-conditioned, placed and uniformly compacted in layers until final elevations are reached. Each layer should be no thicker than will allow for adequate bonding and compaction, but shall not exceed 8 inches in loose (uncompacted) thickness. Unless otherwise specified, all fills shall be compacted to at least 90 percent of maximum dry density as determined in the laboratory by the ASTM D1557 test method. All base materials shall be compacted to at least 95 percent of maximum dry density. Field density testing shall be performed in accordance with either the Sand Cone Method (ASTM D1556) or the Nuclear Gauge Method (ASTM D2922 and D3017).

### **5.5**      **Drainage Control**

Proper control and maintenance of site drainage is critical to the future performance of the project. Infiltration of irrigation and/or storm water into the subsurface soils could adversely affect the performance of the soils. No surface water should be allowed to collect or pond anywhere on or in the vicinity of the runway. Storm and surface run off should be collected in a system of subdrain pipes which carry the water directly into a suitable on-site drainage facility.

Landscape irrigation should be monitored and controlled to determine the appropriate amount of irrigation necessary to maintain the landscaping without overwatering.

**5.6 Environmental Considerations**

The authorized scope of our geotechnical investigation did not include the performance of a Phase I Environmental Site Assessment (Phase I ESA) to evaluate the possible presence of soil or groundwater contamination at the project site. Although we did not detect any visual or odoriferous indications of soil contamination during the field investigation, the potential presence of hazardous materials contamination cannot be totally precluded.

**6.0 LIMITATIONS**

This report has been prepared for the sole use of HNTB Corporation and the City of San Diego in their development of final design criteria for the project as described herein. This report is intended for design purposes only and may not provide sufficient data to prepare an accurate bid. The contractor should be required to perform an independent evaluation of the subsurface conditions at the project site prior to submitting his/her bid.

Our firm has observed and investigated the subsurface conditions at only specific locations within the project area. The findings presented in this report are based on the assumption that the subsurface conditions beneath the entire project area do not deviate substantially from those encountered in the exploratory borings.

The geotechnical field exploration and laboratory testing conducted by AGE for this project have been performed in accordance with generally accepted principles and practices of the local geotechnical profession at the time of report preparation. No other warranty, either expressed or implied, is made.

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**7.0 REFERENCES**

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## FIGURES



**LEGEND:**



NOT TO SCALE



Approximate Limit of Project Area

**SOURCE:**

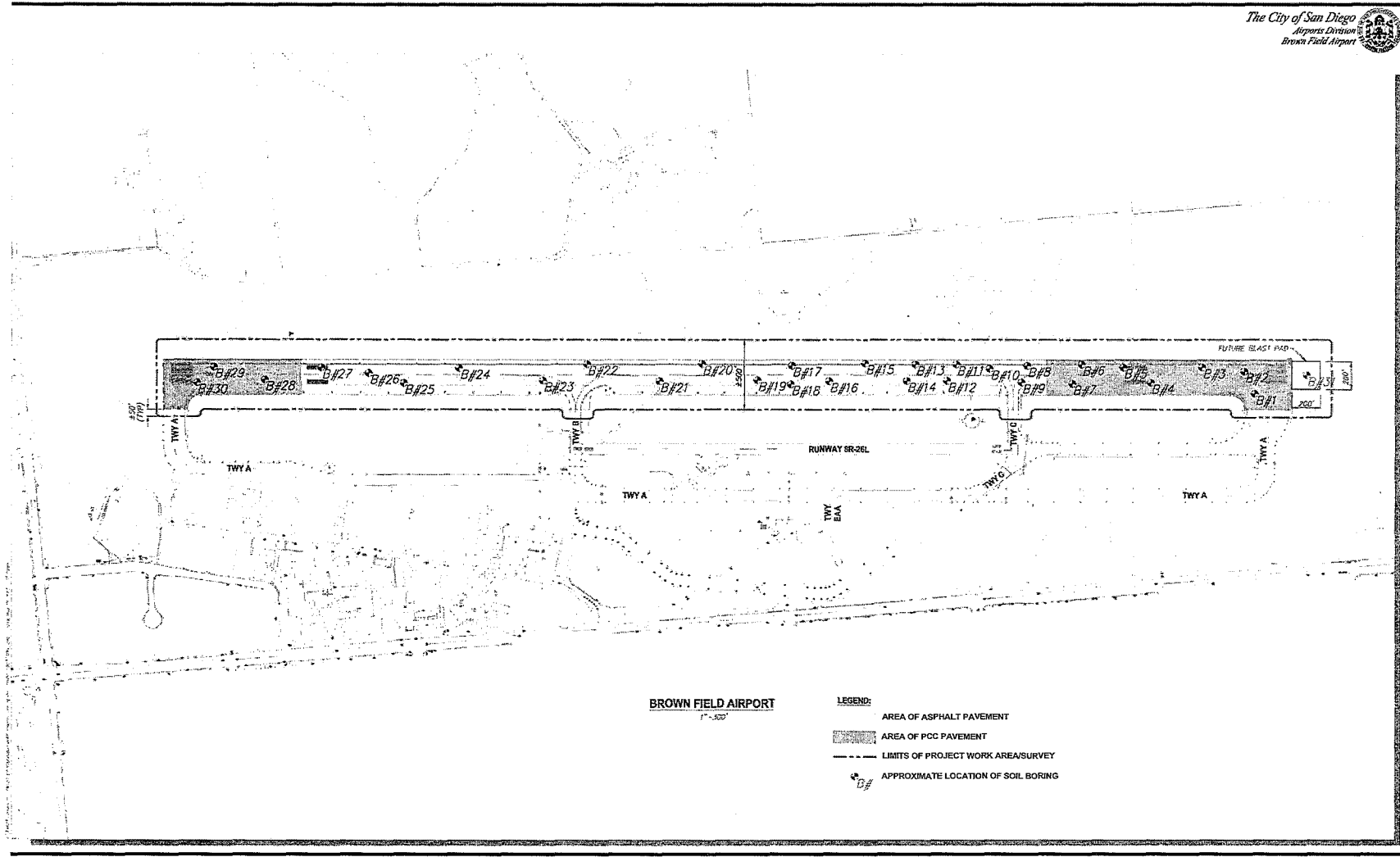
Google Earth, 2013

**LOCATION MAP  
BROWN FIELD AIRPORT RUNWAY 8L/26R PAVEMENT REHABILITATION**





**PROJECT NO.  
72<sub>N</sub>B5**

**ALLIED GEOTECHNICAL ENGINEERS, INC.**

**FIGURE 1**



**BROWN FIELD AIRPORT**  
 1" = 500'

- LEGEND:**
-  AREA OF ASPHALT PAVEMENT
  -  AREA OF PCC PAVEMENT
  -  LIMITS OF PROJECT WORK AREA/SURVEY
  -  APPROXIMATE LOCATION OF SOIL BORING



Scale: 1" = 500'  
 Contour: This Plan  
 may be Modified  
 0 1" 2"  
 5/10/13

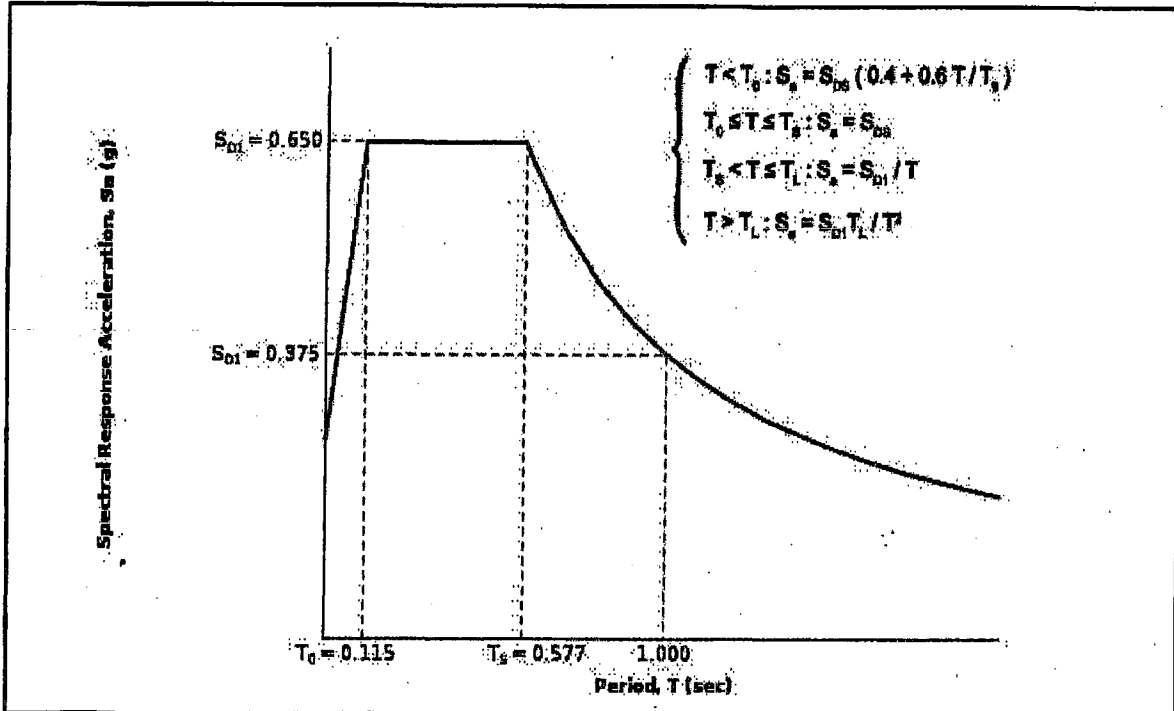
**SITE PLAN**  
**BROWN FIELD AIRPORT RUNWAY 8L/26R PAVEMENT REHABILITATION**

PROJECT NO.  
 72<sub>N</sub>B5

ALLIED GEOTECHNICAL ENGINEERS, INC.

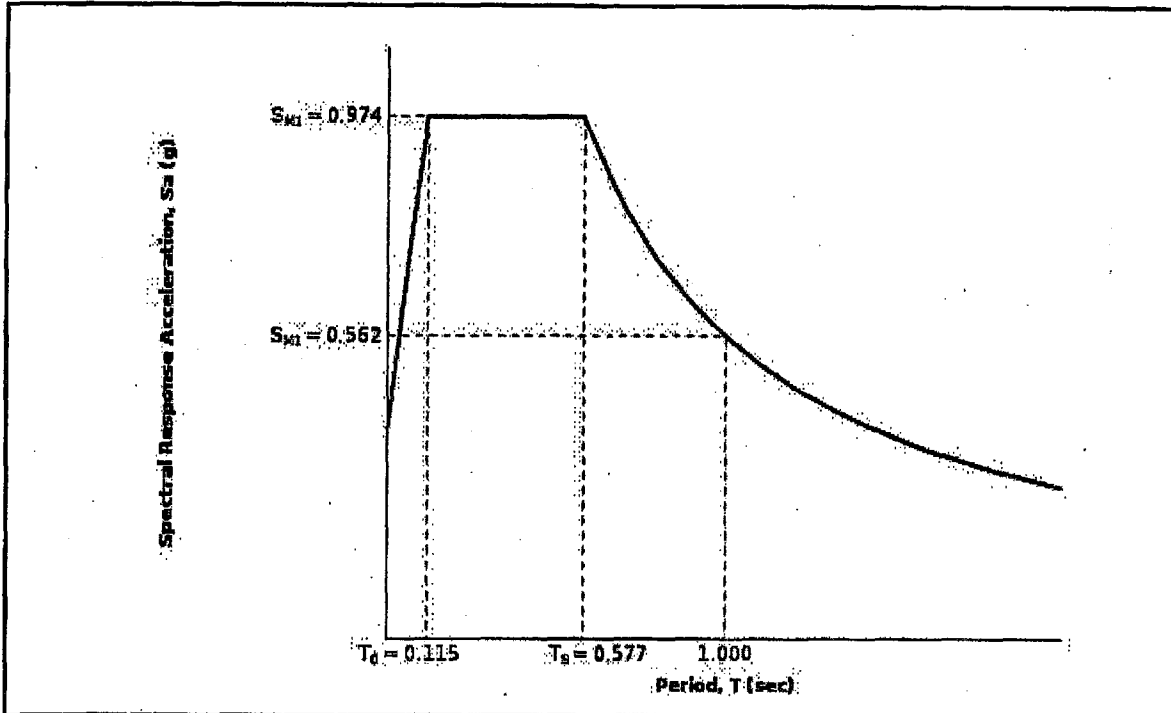
FIGURE 2





**DESIGN RESPONSE SPECTRUM  
BROWN FIELD AIRPORT RUNWAY 8L/26R PAVEMENT REHABILITATION**

<b>PROJECT NO.</b> 72 <sub>N</sub> B5	<b>ALLIED GEOTECHNICAL ENGINEERS, INC.</b>	<b>FIGURE 3</b>
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**RISK-TARGETED MAXIMUM CONSIDERED EARTHQUAKE (MCE<sub>R</sub>)  
BROWN FIELD AIRPORT RUNWAY 8L/26R PAVEMENT REHABILITATION**

**PROJECT NO.  
72<sub>N</sub>B5**

**ALLIED GEOTECHNICAL ENGINEERS, INC.**

**FIGURE 4**

**APPENDIX A**

**FIELD EXPLORATION PROGRAM**

## APPENDIX A

### FIELD EXPLORATION PROGRAM

A total of thirty (30) solid-stem and one (1) hollow-stem auger borings were performed during the period between June 3 and 7, 2013, at the approximate locations shown on the Site Plan (Figure 2). The borings were extended to the approximate depths ranging from 8 to 11.5 feet below the existing ground surface. All the borings were performed at night time between the hours of 8 pm and 4 am. The drilling services were provided by Tri-County Drilling, Inc. using a truck-mounted CME-75 drill rig.

The soils encountered in the borings were visually classified and logged by an experienced field geologist from AGE. Representative samples of the various soil types encountered in the borings were collected for laboratory testing and analysis. A Key to Logs is presented on Figures A-1 and A-2, and the boring logs are presented in Figures A-3 through A-33.

During drilling, Standard Penetration Tests (SPT) were performed at selected depth intervals. The SPT tests involve the use of a specially manufactured "split spoon" sampler which is driven into the soils at the bottom of the borehole by dropping a 140-pound weight from a height of 30 inches. The number of blows required to drive the sampler 18 inches into the soil was recorded. As the first 6-inch increment of penetration is considered to be a "seating interval" in disturbed soils at the bottom of the borehole, the corresponding blow count is not taken into consideration. The total number of blows for the last 12 inches of penetration are shown on the boring logs, and have been used to evaluate the relative density and consistency of the materials.

Relatively undisturbed samples were obtained by driving a 3-inch (OD) diameter modified California split-spoon sampler with a special cutting tip and inside lining of thin brass rings into the soils at the bottom of the borehole. The sampler is driven a distance of 12 inches into the soils at the bottom of the borehole by dropping a 140-pound weight from a height of 30 inches. A 6-inch long section of the soil samples that were retained in the brass rings were extracted from the sampling tube and transported to our laboratory in close-fitting, waterproof containers. In addition, loose bulk samples were also collected and stored in plastic sacks for transport to AGE's laboratory. Soil cuttings obtained from the samplers were field screened for the presence of volatile organics using a Thermo Environmental Model 580 organic vapor meter (OVM). The OVM readings are also indicated on the boring logs.

Following completion of the drilling and sampling activities, all boreholes were backfilled with sand mixed with bentonite chips, and capped with 24-inch thick rapid-set concrete mix to match the adjacent runway pavement.

# KEY TO LOG OF BORING

DEPTH (FEET)	SAMPLES	BLOW COUNTS (BLOWS/6 INCHES)	OVM READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE (% DRY WT.)	DRY DENSITY (PCF)	REMARKS	
1									
2	1				Sample Identification number				
3									
4	1				Approximate interval of bulk sample				
5									
6									
7	2								
8		16 18 20			Approximate interval of Standard California Sampler (SCS).				
9									
10					Number of blows required to advance sampler 6 inches, or distance indicated.				
11	3	18 20 30			Approximate interval of Standard Penetration Test (SPT).				
12									
13									
14									
15									
16									
17									
18									
19									
(KEY TO LOG OF BORING CONTINUED ON FIGURE A-2)									
<b>PROJECT NO. 72<sub>N</sub>B5</b>					<b>ALLIED GEOTECHNICAL ENGINEERS, INC.</b>			<b>FIGURE A-1</b>	

## KEY TO LOG OF BORING (CONTINUED)

DEPTH (FEET)	SAMPLES	BLOW COUNTS (BLOWS/FOOT)	OWM READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE (% DRY WT.)	DRY DENSITY (PCF)	REMARKS
1					-?-----?- APPROXIMATE GEOLOGIC CONTACT			
2				[Horizontal lines]	FILL			
3				[Dotted pattern]	SAND			
4				[Horizontal lines]	SILT			
5				[Diagonal lines]	CLAY			
6				[Circular patterns]	GRAVELS			
7								
8								
9								
10								
11								
12					<b><u>GENERAL NOTES</u></b>			
13					1. Approximate location and elevation of the borings are based on Preliminary Topographical Map provided by HNTB, undated.			
14					2. Soil descriptions are based on visual classification made during the field exploration and, where deemed appropriate, have been modified based on the results of laboratory tests.			
15					3. Description on the boring logs apply only at the specific boring locations and at the time the borings were performed. They are not warranted to be representative of subsurface conditions at other locations or times.			
16								
17								
18								
19								
<b>PROJECT NO. 72<sub>N</sub>B5</b>					<b>ALLIED GEOTECHNICAL ENGINEERS, INC.</b>			<b>FIGURE A-2</b>

BORING NO. B-1								
DATE OF DRILLING: JUNE 3, 2013				TOTAL BORING DEPTH: 11 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 506 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	OVM READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					EXISTING PAVEMENT SECTION 10.5" P.C.C.			
2			?		FILL Reddish orange, moist to wet, gravelly silty sand (SM) and olive gray sandy clay (CL)		?	?
3								
4								
5					MUDSTONE UNIT			
6	1	3	1		Olive gray, wet, stiff plastic clay with sand (CH) with traces of rounded gravel up to 1.5 inches in maximum dimension	29.6	93.0	
7	2	9						
8								
9								
10			?					?
11	3	26 50/1"	1		LINDAVISTA FORMATION Olive brown to yellowish red, moist to wet, very dense clayey sand & silty sand with angular gravel up to 1" in maximum dimension (GC-GM)	11.4		?
<p><b>NOTES:</b></p> <p>Bottom of borehole at 11 feet</p> <p>No seepage or groundwater encountered at time of drilling</p>								
PROJECT NO. 72 <sub>N</sub> B5		ALLIED GEOTECHNICAL ENGINEERS, INC.				FIGURE A-3		

BORING NO. B-2								
DATE OF DRILLING: JUNE 3, 2013				TOTAL BORING DEPTH: 11 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 508 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	QVM READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					<b>EXISTING PAVEMENT SECTION</b> 10" P.C.C.			
2					<b>FILL</b> Mixture of yellow brown, moist to wet, gravelly silty sand (SM) and greenish gray sandy clay (CL) and clayey sand (SC)			
3	1							
4			?				?	?
5					<b>MUDSTONE UNIT</b> Olive brown, moist to wet, medium stiff to stiff, highly plastic sandy clay (CH) with traces of gravel up to 0.5" in maximum dimension	25.7		
6	2	2	1					
7	3	3						
8			?				?	?
9					<b>LINDAVISTA FORMATION</b> Strong brown to reddish yellow, moist, dense to very dense, gravelly silty sand (GM)	7.1	115.7	
10		5						
11	4	50	1					
<p><b>NOTES:</b></p> <p>Bottom of borehole at 11 feet</p> <p>No seepage or groundwater encountered at time of drilling</p>								
PROJECT NO. 72 <sub>N</sub> B5			ALLIED GEOTECHNICAL ENGINEERS, INC.				FIGURE A-4	



BORING NO. B-3								
DATE OF DRILLING: JUNE 3, 2013				TOTAL BORING DEPTH: 11 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 509 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	OVM READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					EXISTING PAVEMENT SECTION 9.5" P.C.C.			
2					FILL Mixture of yellow brown, moist to wet, gravelly silty sand (SM) and greenish gray sandy clay (CL) and clayey sand (SC)			
3	1							
4			?					
5		4		MUDSTONE UNIT Light olive brown, wet, stiff, highly plastic clay (CH)				
6	2	6-10	1			31.2	90.0	
7	3							
8								
9			?					
10		24		LINDAVISTA FORMATION Yellowish brown to reddish yellow, moist, very dense, gravelly sand (GM) with gravels up to 2" in maximum dimension				
11	4	50	1			8.3		
<p><b>NOTES:</b></p> <p>Bottom of borehole at 11 feet</p> <p>No seepage or groundwater encountered at time of drilling</p>								
PROJECT NO. 72 <sub>N</sub> B5		ALLIED GEOTECHNICAL ENGINEERS, INC.				FIGURE A-5		

BORING NO. B-4								
DATE OF DRILLING: JUNE 4, 2013				TOTAL BORING DEPTH: 11 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 609 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	QVM READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					EXISTING PAVEMENT SECTION 10" P.C.C.			
2					FILL Gray brown, wet, sandy clay (CL) and clayey sand (SC) with traces of gravel up to 1" in maximum dimension			
3	1		?				?	?
4					MUDSTONE UNIT			
5	2	2			Light olive brown, wet, stiff, highly plastic clay with sand (CH)	30.9		
6		4	1					
7	3	6						
8								
9								
10		6	?				?	?
11	4	50/5"	6		LINDAVISTA FORMATION Yellowish brown to strong brown, moist, very dense, gravelly sand (GM) with trace of angular gravel up to 0.5" in maximum dimension	8.9	107.6	


**NOTES:**

- Bottom of borehole at 11 feet
- No seepage or groundwater encountered at time of drilling

PROJECT NO.  
72<sub>N</sub>B5

ALLIED GEOTECHNICAL ENGINEERS, INC.

FIGURE A-6

BORING NO. B-5								
DATE OF DRILLING: JUNE 4, 2013				TOTAL BORING DEPTH: 11.5 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 510 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	QVM READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					EXISTING PAVEMENT SECTION 9.5" P.C.C.			
2					FILL Mixture of medium gray, moist to wet, gravelly clayey sand (SC) and greenish gray sandy clay (CL)			
3	1							
4								
5			?					
6	2	4 6 9	1		MUDSTONE UNIT	33.4	94.3	
7	3				Light olive brown, wet, stiff, highly plastic sandy clay (CH)			
8								
9								
10		3						
11	4	4 7						No sample recovery
12	<p>NOTES:</p> <p>Bottom of borehole at 11.5 feet</p> <p>No seepage or groundwater encountered at time of drilling</p>							
PROJECT NO. 72 <sub>N</sub> B5		ALLIED GEOTECHNICAL ENGINEERS, INC.				FIGURE A-7		

BORING NO. B-6								
DATE OF DRILLING: JUNE 4, 2013				TOTAL BORING DEPTH: 11.5 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 510 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	QVM READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					EXISTING PAVEMENT SECTION 10" P.C.C.			
2					FILL Yellowish brown, wet, gravelly silty sand (SM) and medium gray to dark gray sandy clay (CL)			
3	1	2	?					
4		4	1		MUDSTONE UNIT	30.6	91.4	
5		8			Olive gray to brownish gray, wet, stiff, highly plastic sandy clay (CH)			
6	2							
7								
8								
9								
10								
11	3	1	1			35.4		
12		3						
		4						
<b>NOTES:</b> Bottom of borehole at 11.5 feet No seepage or groundwater encountered at time of drilling								
PROJECT NO. 72 <sub>N</sub> B5		ALLIED GEOTECHNICAL ENGINEERS, INC.				FIGURE A-8		

BORING NO. B-7								
DATE OF DRILLING: JUNE 4, 2013				TOTAL BORING DEPTH: 11.5 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 509 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	OVM READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1	1				EXISTING PAVEMENT SECTION 10" P.C.C.			
2					FILL Medium brown, wet, gravelly silty sand (SM) and gray brown clayey sand (SC)			
3		2	?					
4	2	2	1		MUDSTONE UNIT	33.9		
5		2			Olive brown, wet, medium stiff, highly plastic sandy clay (CH)			
6								
7	3							
8								
9								
10					Color becomes olive gray, and stiff consistency			
11	4	3	1			30.6	89.7	
		6	?			24.8	102.2	
		11			LINDAVISTA FORMATION Yellowish red, wet, stiff, highly expansive sandy clay (CH)			
12								
<p><b>NOTES:</b></p> <p>Bottom of borehole at 11.5 feet</p> <p>No seepage or groundwater encountered at time of drilling</p>								
PROJECT NO. 72 <sub>N</sub> B5		ALLIED GEOTECHNICAL ENGINEERS, INC.				FIGURE A-9		

BORING NO. B-8								
DATE OF DRILLING: JUNE 4, 2013				TOTAL BORING DEPTH: 11.5 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 509 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	QVM READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					EXISTING PAVEMENT SECTION			
2					9" A.C. over 9.5" P.C.C.			
3			?		FILL		?	?
4	1				Medium brown, wet, silty sand (SM) with gravel up to 1" in maximum dimension			
5					MUDSTONE UNIT			
6	2	2	1		Gray brown to olive brown, wet, medium stiff highly plastic sandy clay (CH)	27.5		
7		3						
8								
9								
10		7	?					
11	3	20	?		LINDAVISTA FORMATION	19.5	102.8	?
12		50/5"	1		Yellowish red, wet, very stiff clay (CL-CH), grading into very dense gravelly sand (GM) with angular and rounded gravel up to 2" in maximum dimension			
<p><b>NOTES:</b></p> <p>Bottom of borehole at 11.5 feet</p> <p>No seepage or groundwater encountered at time of drilling</p>								
PROJECT NO. 72 <sub>N</sub> B5		ALLIED GEOTECHNICAL ENGINEERS, INC.				FIGURE A-10		

BORING NO. B-9								
DATE OF DRILLING: JUNE 4, 2013				TOTAL BORING DEPTH: 11.5 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 509 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOW/FOOT	QVM READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					EXISTING PAVEMENT SECTION 9.5" A.C. over 10" P.C.C.			
2					FILL Medium brown, wet, silty sand (SM) with abundant sub-rounded to sub-angular gravel up to 3" in maximum dimension			
3	1		?				?	?
4								
5					MUDSTONE UNIT			
6	2	3 5 7	1		Light brownish gray to light olive brown, wet, stiff, highly plastic sandy clay (CL)	30.5	90.4	
7	3							
8								
9								
10								
11	4	3 4 7	?		LINDAVISTA FORMATION		?	?
12					Yellowish red, wet, very stiff clay (CL-CH), grading into very dense gravelly sand (GM)	20.4		
<p><b>NOTES:</b></p> <p>Bottom of borehole at 11.5 feet</p> <p>No seepage or groundwater encountered at time of drilling</p>								
PROJECT NO. 72_NB5		ALLIED GEOTECHNICAL ENGINEERS, INC.				FIGURE A-11		


BORING NO. B-10								
DATE OF DRILLING: JUNE 5, 2013				TOTAL BORING DEPTH: 11.5 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 609 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	QVM READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					EXISTING PAVEMENT SECTION 10" A.C. over 10" P.C.C.			
2					FILL			
3	1		?		Medium brown, wet, silty sand (SM) and clayey sand (SC) with angular and rounded gravel up to 2" in maximum dimension		?	?
4								
5	2	3	1		MUDSTONE UNIT	35.3	87.2	
6		3			Light olive brown to gray, wet, stiff highly plastic sandy clay (CH)			
7	3	5						
8								
9			?				?	?
10								
11	4	20 30 50/4"	2		LINDAVISTA FORMATION	6.1		
12					Yellowish brown to strong brown, moist, very dense gravelly sand (GM)			
<p><b>NOTES:</b></p> <p>Bottom of borehole at 11.5 feet</p> <p>No seepage or groundwater encountered at time of drilling</p>								
PROJECT NO. 72 <sub>N</sub> B5		ALLIED GEOTECHNICAL ENGINEERS, INC.				FIGURE A-12		



BORING NO. B-11								
DATE OF DRILLING: JUNE 5, 2013				TOTAL BORING DEPTH: 11.5 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 510 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	QVIR READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					EXISTING PAVEMENT SECTION 10" A.C. over 9.5" P.C.C.			
2					FILL			
3					Yellow brown, wet, silty sand (SM) and gray brown sandy clay (CL)			
4	1		?					
5								
6	2	2 3 6	1		MUDSTONE UNIT	23.4		
7					Olive brown, wet, stiff highly plastic sandy clay (CH)			
8								
9			?					
10								
11	3	15 26 47	1		LINDAVISTA FORMATION	5.8	131.7	
12					Strong brown to reddish yellow, moist, very dense gravely sand with abundant angular and rounded gravel up to 2" in maximum dimension (GM)			
<p><b>NOTES:</b></p> <p>Bottom of borehole at 11.5 feet</p> <p>No seepage or groundwater encountered at time of drilling</p>								
PROJECT NO. 72 <sub>N</sub> B5		ALLIED GEOTECHNICAL ENGINEERS, INC.				FIGURE A-13		

BORING NO. B-12								
DATE OF DRILLING: JUNE 5, 2013				TOTAL BORING DEPTH: 11 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 510 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	OVN READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					EXISTING PAVEMENT SECTION 6.5" A.C. over 10" P.C.C.			
2			?		FILL Medium brown, moist to wet, silty sand (SM) with gravel up to 2" in maximum dimension		?	?
3	1	3		[Graphic Log: Diagonal hatching pattern]				
4	2	5	2			25.6	98.1	
5					MUDSTONE UNIT			
6					Olive gray, wet, stiff, highly plastic sandy clay (CH)			
7								
8								
9								
10			?					
11	3	27 50/5"	1	[Graphic Log: Dotted pattern]	LINDAVISTA FORMATION	6.0		
12						Yellowish brown to strong brown, moist, very dense gravelly sand (GM)		
<p><b>NOTES:</b></p> <p>Bottom of borehole at 11 feet</p> <p>No seepage or groundwater encountered at time of drilling</p>								
PROJECT NO. 72 <sub>n</sub> B5		ALLIED GEOTECHNICAL ENGINEERS, INC.				FIGURE A-14		

BORING NO. B-13								
DATE OF DRILLING: JUNE 5, 2013				TOTAL BORING DEPTH: 11 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 511 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	OVM READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					EXISTING PAVEMENT SECTION 10" A.C. over 10" P.C.C.			
2					FILL			
3			?		Yellowish brown, moist to wet, silty sand (SM) with gravel up to 2" in maximum dimension		?	?
4	1							
5								
6	2	1	4		MUDSTONE UNIT	33.4	91.6	
7	3	6	1		Light olive gray to olive brown, wet, stiff highly plastic sandy clay (CH)			
8								
9								
10			?		LINDAVISTA FORMATION		?	?
11	4	23	2		Yellowish brown, moist, very dense silty sand (SM) with some gravels	5.9		
12		50/4"						
<p><b>NOTES:</b></p> <p>Bottom of borehole at 11 feet</p> <p>No seepage or groundwater encountered at time of drilling</p>								
PROJECT NO. 72_N B5		ALLIED GEOTECHNICAL ENGINEERS, INC.				FIGURE A-15		

BORING NO. B-14								
DATE OF DRILLING: JUNE 5, 2013				TOTAL BORING DEPTH: 8 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 511 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	QVM READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					EXISTING PAVEMENT SECTION 9" A.C. over 10" P.C.C.			
2					FILL Yellowish brown, moist to wet, gravelly silty sand (SM) and clayey sand (SC)			
3	1		?				?	?
4								
5								
6	2 3	1 3 4	2		MUDSTONE UNIT Light olive gray to olive brown, wet, medium stiff to stiff highly plastic sandy clay (CH)	31.3		
7								
8								
<p><b>NOTES:</b></p> <p>Bottom of borehole at 8 feet</p> <p>Refusal on large rock and/or cobbles (Lindavista Formation?)</p> <p>No seepage or groundwater encountered at time of drilling</p>								
PROJECT NO. 72 <sub>N</sub> B5			ALLIED GEOTECHNICAL ENGINEERS, INC.				FIGURE A-16	

BORING NO. B-15								
DATE OF DRILLING: JUNE 5, 2013				TOTAL BORING DEPTH: 11.5 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 513 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	QVM READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					EXISTING PAVEMENT SECTION 7" A.C. over 10" P.C.C.			
2					FILL			
3					Yellow brown, moist to wet, gravelly silty sand (SM) and clayey sand (SC)			
4	1	4	?					
5		4						
6	2	5				34.3	85.3	
7					MUDSTONE UNIT			
8	3				Light olive gray, wet, stiff, highly plastic sandy clay (CH)			
9								
10								
11	4	9	?		LINDAVISTA FORMATION	9.5		
12		43	1		Strong brown to yellowish red, moist, lean sandy clay (CL) grading downward into gravelly sand (GM)			
		50/4"						
<p><b>NOTES:</b></p> <p>Bottom of borehole at 11.5 feet</p> <p>No seepage or groundwater encountered at time of drilling</p>								
PROJECT NO. 72_N B5		ALLIED GEOTECHNICAL ENGINEERS, INC.				FIGURE A-17		

BORING NO. B-16								
DATE OF DRILLING: JUNE 5, 2013				TOTAL BORING DEPTH: 11.5 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 615 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	OVN READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					EXISTING PAVEMENT SECTION 9" A.C. over 10" P.C.C.			
2					FILL			
3			?		Yellow brown, wet, clayey sand (SC) with gravel		?	?
4	1 2	2 3 3	1			32.6		
5					MUDSTONE UNIT			
6	3				Light olive gray, wet, medium stiff, highly plastic sandy clay (CH)			
7								
8								
9								
10								
11	4	6 9 50/3"	1			21.2	105.4	?
12					LINDAVISTA FORMATION Reddish yellow, moist, very dense, gravelly sand (GM)			

**NOTES:**  
 Bottom of borehole at 11.5 feet  
 No seepage or groundwater encountered at time of drilling

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ALLIED GEOTECHNICAL ENGINEERS, INC.

FIGURE A-18

BORING NO. B-17								
DATE OF DRILLING: JUNE 6, 2013				TOTAL BORING DEPTH: 10.5 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 516 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOW/FOOT	QVM READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					EXISTING PAVEMENT SECTION 10" A.C. over 9.5" P.C.C.			
2					FILL			
3			?		Yellow brown, wet, silty sand (SM) and clayey sand (SC) with gravel up to 2" in maximum dimension	32.6	?	?
4	1							
5								
6	2	2	1		MUDSTONE UNIT			
7		3			Olive gray to olive brown, wet, medium stiff, highly plastic sandy clay (CH)			
8	3	3						
9								
10	4	50/5"	1		LINDAVISTA FORMATION	8.1		?
11					Strong brown to yellow brown, moist to wet, very dense silty sand (SM) and clayey sand (SC) with gravel			
<b>NOTES:</b> Bottom of borehole at 10.5 feet No seepage or groundwater encountered at time of drilling								
PROJECT NO. 72_NB5		ALLIED GEOTECHNICAL ENGINEERS, INC.				FIGURE A-19		

BORING NO. B-18								
DATE OF DRILLING: JUNE 6, 2013				TOTAL BORING DEPTH: 11.5 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 516 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	OVM READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					EXISTING PAVEMENT SECTION 9" A.C. over 10.5" P.C.C.			
2			?		FILL Yellow brown, moist to wet, silty sand (SM) and clayey sand (SC) with gravel up to 3" in maximum dimension	30.9	89.6	?
3	1	5	1					
4	2	5						
5					MUDSTONE Olive gray, wet, stiff, highly plastic sandy clay (CH)			
6	3							
7								
8								
9								
10		2						
11	4	4	1			20.9		?
12		14			LINDAVISTA FORMATION Reddish yellow, moist, dense, gravelly sand (GM)			

**NOTES:**  
 Bottom of borehole at 11.5 feet  
 No seepage or groundwater encountered at time of drilling

PROJECT NO. 72 <sub>n</sub> B5	ALLIED GEOTECHNICAL ENGINEERS, INC.	FIGURE A-20
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BORING NO. B-19								
DATE OF DRILLING: JUNE 6, 2013				TOTAL BORING DEPTH: 11.5 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 517 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	QVIM READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					EXISTING PAVEMENT SECTION 10" A.C. over 10" P.C.C.			
2					FILL			
3		1	?		Medium brown, wet, silty sand (SM) and clayey sand (SC) with gravel up to 2" in maximum dimension	31.8	89.5	?
4	1	2						
5	2	4			MUDSTONE UNIT			
6					Pale olive gray, wet, medium stiff, highly plastic sandy clay (CH) with some rounded gravel up to 1" in maximum dimension			
7	3							
8					Stiff in consistency			
9								
10		4	?		LINDAVISTA FORMATION	11.1		?
11	4	17	1		Brownish yellow to strong brown, moist, dense, gravelly sand (GM)			
12		20						

**NOTES:**  
 Bottom of borehole at 11.5 feet  
 No seepage or groundwater encountered at time of drilling

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ALLIED GEOTECHNICAL ENGINEERS, INC.

FIGURE A-21

BORING NO. B-20								
DATE OF DRILLING: JUNE 6, 2013				TOTAL BORING DEPTH: 11.5 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 518 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	QVM READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					EXISTING PAVEMENT SECTION 10" A.C. over 10" P.C.C.			
2					FILL Medium brown, wet, silty sand (SM) and clayey sand (SC) with gravel up to 2" in maximum dimension	31.9	89.6	?
3	1		?					
4								
5		3						
6	2	4	1					
7		8						
8	3				MUDSTONE UNIT Grayish brown, wet, stiff, highly plastic sandy clay (CH)			
9								
10		1						
11	4	3	12			40.1		
12		5						
<p><b>NOTES:</b></p> <p>Bottom of borehole at 11.5 feet</p> <p>No seepage or groundwater encountered at time of drilling</p>								
PROJECT NO. 72 <sub>n</sub> B5		ALLIED GEOTECHNICAL ENGINEERS, INC.				FIGURE A-22		

BORING NO. B-21								
DATE OF DRILLING: JUNE 6, 2013				TOTAL BORING DEPTH: 11.5 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 519 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	QVM READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY Wt.	DRY DENSITY LBS./CU. FT.	REMARKS
1					EXISTING PAVEMENT SECTION 10" A.C. over 10" P.C.C.			
2					FILL			
3			?		Yellow brown, wet, gravelly clayey sand (SC)			?
4	1	2	1					
5	2	3						
6		4			MUDSTONE UNIT	35.1		
7	3				Greenish gray, wet, medium stiff, highly plastic sandy clay (CH) with rounded gravel up to 2" in maximum dimension			
8								
9								
10					Becomes grayish brown, stiff, with gravel up to 0.5" in maximum dimension			
11	4	3	7			39.6	85.9	?
12		6			LINDAVISTA FORMATION			
		15			Strong brown, moist, dense, gravelly sand (GM)			
<b>NOTES:</b> Bottom of borehole at 11.5 feet No seepage or groundwater encountered at time of drilling								

PROJECT NO.  
72<sub>N</sub>B5

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FIGURE A-23

BORING NO. B-22								
DATE OF DRILLING: JUNE 6, 2013				TOTAL BORING DEPTH: 11.5 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 521 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	QVM READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					EXISTING PAVEMENT SECTION 8" A.C. over 10" P.C.C.			
2					FILL			
3	1		?		Medium brown, wet, gravelly clayey sand (SC)			?
4								
5					MUDSTONE UNIT			
6	2	2 4 7	2		Grayish brown, wet, stiff, highly plastic sandy clay (CH)	35.0	86.5	
7	3							
8								
9								
10					Becomes grayish brown in color and medium stiff in consistency	43.1		
11	4	1 3 4	1					
12								
<p><b>NOTES:</b></p> <p>Bottom of borehole at 11.5 feet</p> <p>No seepage or groundwater encountered at time of drilling</p>								
PROJECT NO. 72 <sub>N</sub> B5			ALLIED GEOTECHNICAL ENGINEERS, INC.			FIGURE A-24		

BORING NO. B-23								
DATE OF DRILLING: JUNE 6, 2013				TOTAL BORING DEPTH: 11.5 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 521 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	QVM READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					EXISTING PAVEMENT SECTION 10" A.C. over 9.5" P.C.C.			
2								
3	1		?		FILL Medium brown, wet, gravelly clayey sand (SC) and silty sand (SM)			?
4								
5								
6	2	2	2		MUDSTONE UNIT	38.9		
7		5			Grayish brown, wet, medium stiff, highly plastic sandy clay (CH)			
8	3							
9								
10								
11	4	4	1		Becomes light olive brown, and stiff to very stiff	37.4	83.1	
12		8						
		14						
<b>NOTES:</b> Bottom of borehole at 11.5 feet No seepage or groundwater encountered at time of drilling								
PROJECT NO. 72 <sub>N</sub> B5		ALLIED GEOTECHNICAL ENGINEERS, INC.				FIGURE A-25		

BORING NO. B-24								
DATE OF DRILLING: JUNE 6, 2013				TOTAL BORING DEPTH: 11.5 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 523 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	OVH READING (PPH)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					EXISTING PAVEMENT SECTION 9" A.C. over 10" P.C.C.			
2					FILL			
3	1		?		Medium brown, wet, gravelly clayey sand (SC) and silty sand (SM)			?
4								
5		3						
6	2	5	1		MUDSTONE UNIT	35.2	85.8	
7		8			Greenish gray, wet, stiff, highly plastic sandy clay (CH)			
8	3							
9								
10		2						
11	4	3	1		Color becomes olive	39.8		
12		7						
<p><b>NOTES:</b></p> <p>Bottom of borehole at 11.5 feet</p> <p>No seepage or groundwater encountered at time of drilling</p>								
PROJECT NO. 72 <sub>N</sub> B5		ALLIED GEOTECHNICAL ENGINEERS, INC.				FIGURE A-26		

BORING NO. B-25								
DATE OF DRILLING: JUNE 7, 2013				TOTAL BORING DEPTH: 11.5 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 522 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	QVM READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					EXISTING PAVEMENT SECTION 8" A.C. over 10" P.C.C.			
2					FILL			
3			?		Medium brown, moist to wet, gravelly clayey sand (SC) and silty sand (SM)			?
4	1	2						
5	2	6						
6					MUDSTONE UNIT	33.5		
7	3				Dark gray to dark olive, wet, stiff, highly plastic sandy clay (CH)			
8								
9								
10					Color becomes olive			
11	4	8	1			39.5	81.1	?
12		11			LINDAVISTA FORMATION Strong brown to reddish yellow, moist, dense, gravelly sand (GM)			
<b>NOTES:</b> Bottom of borehole at 11.5 feet No seepage or groundwater encountered at time of drilling								
PROJECT NO. 72 <sub>N</sub> B5		ALLIED GEOTECHNICAL ENGINEERS, INC.				FIGURE A-27		

BORING NO. B-26								
DATE OF DRILLING: JUNE 7, 2013				TOTAL BORING DEPTH: 11.5 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 523 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	QVM READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					EXISTING PAVEMENT SECTION 9" A.C. over 10" P.C.C.			
2					FILL Yellow brown to medium brown, moist to wet, gravelly clayey sand (SC) and silty sand (SM)			
3	1							
4								
5		4	?					
6	2	7	1		MUDSTONE UNIT	34.6	88.7	
7	3	11			Dark gray to dark olive, wet, stiff to very stiff, highly plastic sandy clay (CH)			
8								
9								
10		2						
11	4	5	1		Becomes olive colored with trace of gravel up to 1" in maximum dimension	37.7		
12		6						
<p><b>NOTES:</b></p> <p>Bottom of borehole at 11.5 feet</p> <p>No seepage or groundwater encountered at time of drilling</p>								
PROJECT NO. 72 <sub>N</sub> B5		ALLIED GEOTECHNICAL ENGINEERS, INC.				FIGURE A-28		



BORING NO. B-27								
DATE OF DRILLING: JUNE 7, 2013				TOTAL BORING DEPTH: 11.5 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 523 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	QVM READING (pFm)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					EXISTING PAVEMENT SECTION 8" A.C. over 10" P.C.C.			
2					FILL			
3	1	1	?		Medium brown, moist to wet, gravelly clayey sand (SC) and silty sand (SM)			?
4	2	4	1					
5					MUDSTONE UNIT	34.8		
6					Dark greenish gray, wet, medium stiff, highly plastic sandy clay (CH)			
7	3							
8								
9								
10		2						
11	4	6	2		Color becomes light olive brown, stiff consistency	40.4	83.3	
12		9						
<p><b>NOTES:</b></p> <p>Bottom of borehole at 11.5 feet</p> <p>No seepage or groundwater encountered at time of drilling</p>								
PROJECT NO. 72 <sub>N</sub> B5		ALLIED GEOTECHNICAL ENGINEERS, INC.				FIGURE A-29		

BORING NO. B-2B								
DATE OF DRILLING: JUNE 7, 2013				TOTAL BORING DEPTH: 11.5 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 523 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	QVM READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					EXISTING PAVEMENT SECTION 7" P.C.C. over 10" P.C.C.			
2					FILL			
3	1				Yellow brown, moist, gravelly clayey sand (SC) and silty sand (SM)			
4			?		?		?	?
5		5			MUDSTONE UNIT			
6	2	7	1		Dark greenish gray, moist to wet, very stiff, highly plastic sandy clay (CH)	30.4	90.1	
7	3	12						
8								
9								
10		2						
11	4	4	1		Color becomes olive to olive gray, stiff consistency	36.1		
12		5						
<p><b>NOTES:</b></p> <p>Bottom of borehole at 11.5 feet</p> <p>No seepage or groundwater encountered at time of drilling</p>								
PROJECT NO. 72 <sub>N</sub> B5		ALLIED GEOTECHNICAL ENGINEERS, INC.				FIGURE A-30		

BORING NO. B-29								
DATE OF DRILLING: JUNE 7, 2013				TOTAL BORING DEPTH: 11.5 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 524 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 6" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	QVM READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					EXISTING PAVEMENT SECTION 7" P.C.C. over 9.5" P.C.C.			
2					FILL			
3	1		?		Medium brown, moist to wet, gravelly clayey sand (SC) and silty sand (SM)			?
4								
5								
6	2	2	1		MUDSTONE UNIT	28.6		
7		4			Dark greenish gray, moist to wet, stiff, highly plastic sandy clay (CH)			
8		5						
9								
10								
11	4	3	1		Becomes light olive brown in color, wet and very stiff.	39.2	85.0	
12		8						
		12						
<p><b>NOTES:</b></p> <p>Bottom of borehole at 11.5 feet</p> <p>No seepage or groundwater encountered at time of drilling</p>								
PROJECT NO. 72 <sub>N</sub> B5		ALLIED GEOTECHNICAL ENGINEERS, INC.				FIGURE A-31		

BORING NO. B-30								
DATE OF DRILLING: JUNE 7, 2013				TOTAL BORING DEPTH: 11.5 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 524 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 8" SOLID-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	QVM READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					EXISTING PAVEMENT SECTION 8" P.C.C. over 10" P.C.C.			
2					FILL			
3					Yellow brown, moist to wet, gravelly clayey sand (SC) and silty sand (SM)			?
4	1		?					
5		5						
6	2	7	2		MUDSTONE UNIT	31.4	85.0	
7		19			Dark greenish gray, moist to wet, very stiff, highly plastic sandy clay (CH) with traces of rounded gravel up to 1" in maximum dimension			
8	3							
9								
10		2						
11	4	5	2		Color becomes light olive brown, stiff consistency	37.9		
12		6						
<p><b>NOTES:</b></p> <p>Bottom of borehole at 11.5 feet</p> <p>No seepage or groundwater encountered at time of drilling</p>								
PROJECT NO. 72 <sub>N</sub> B5			ALLIED GEOTECHNICAL ENGINEERS, INC.			FIGURE A-32		

BORING NO. B-31								
DATE OF DRILLING: JUNE 3, 2013				TOTAL BORING DEPTH: 11.5 FEET				
GENERAL LOCATION: REFER TO SITE PLAN								
APPROXIMATE SURFACE ELEV.: + 605 FEET MSL				DRILLING CONTRACTOR: TRI-COUNTY DRILLING, INC.				
DRILLING METHOD: 8" HOLLOW-STEM AUGER				LOGGED BY: NICK BARNES				
DEPTH (FEET)	SAMPLES	BLOW COUNTS BLOWS/FOOT	OMV READING (PPM)	GRAPHIC LOG	SOIL DESCRIPTION	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	REMARKS
1					FILL Olive brown, dry to damp, silty sand (SM) and clayey sand (SC) with angular gravel up to 3" in maximum dimension			
2			?				?	?
3					<b>MUDSTONE UNIT</b>			
4					Olive brown, moist to wet, stiff, highly plastic sandy clay (CH)			
5	1	4	1			26.6		
6		4						
7	2	7						
8			?				?	?
9					<b>LINDAVISTA FORMATION</b>			Gravelly zone between 8 - 8.5'
10					Strong brown to reddish yellow, moist, very dense silty sand (SM) with occasional gravel up to 0.5" in maximum dimension			
11	3	11	1			8.4	118.0	
		21						
		50						
12	<b>NOTES:</b> Bottom of borehole at 11.5 feet No seepage or groundwater encountered at time of drilling							

PROJECT NO.  
72<sub>N</sub>B5

ALLIED GEOTECHNICAL ENGINEERS, INC.

FIGURE A-33

**APPENDIX B**

**LABORATORY TESTING**

## APPENDIX B

### LABORATORY TESTING

Selected soil samples were tested in the laboratory to verify visual field classifications and to evaluate certain engineering characteristics. The testing was performed in accordance with the American Society for Testing and Materials (ASTM) or other generally accepted test methods, and included the following:

- Determination of in-place dry density and moisture content (ASTM D2937) based on relatively undisturbed drive samples. The final test results are presented on the boring logs;
- Compaction test (ASTM D1557-07) on representative bulk samples. The test results are presented on Figures B-1 through B-5;
- Mechanical and hydrometer analyses (ASTM D422), and the final test results are plotted as gradation curves on Figure B-6 and B-7;
- Atterberg Limits (ASTM D4318), and the final test results are presented in Table B-1;
- Direct shear tests (ASTM D3080). The final test results are presented on Figures B-8 through B-13; and
- Expansion Index (ASTM D4829). The final test results are presented in Table B-2.

In addition, representative samples of the soil materials encountered in the soil borings were delivered to Clarkson Laboratories, Inc. for chemical (analytical) testing to determine soil pH, resistivity, soluble sulfate and chloride concentrations, and Total Petroleum Hydrocarbon (TPH). Copies of Clarkson's laboratory test data reports are included in this appendix.

A total of fourteen (14) bulk samples were selected and delivered to Southern California Soil & Testing for California Bearing Ratio (CBR) testing. The laboratory testing is performed in accordance with the ASTM D1883 testing procedures. Copies of Southern California's laboratory test data reports are included in this appendix. It is noted that only ten (10) of the samples have been tested at the time of the preparation of this report. The test results from the remaining four (4) samples will be included in the final report.

**TABLE B-1  
 ATTERBERG LIMITS (ASTM D4318) TEST RESULTS**

Sample ID	Depth (feet)	Liquid Limit (%)	Plasticity Index (%)	Classification
B1-B2	2-8	72	49	CH
B5-B1	2-4	60	39	CH
B8-B1	2-5	59	39	CH
B14-B1	2-5	70	51	CH
B17-B1	3-5	67	45	CH
B23-B1	2-5	71	49	CH

**TABLE B-2  
 EXPANSION INDEX TEST (ASTM D4829) RESULTS**

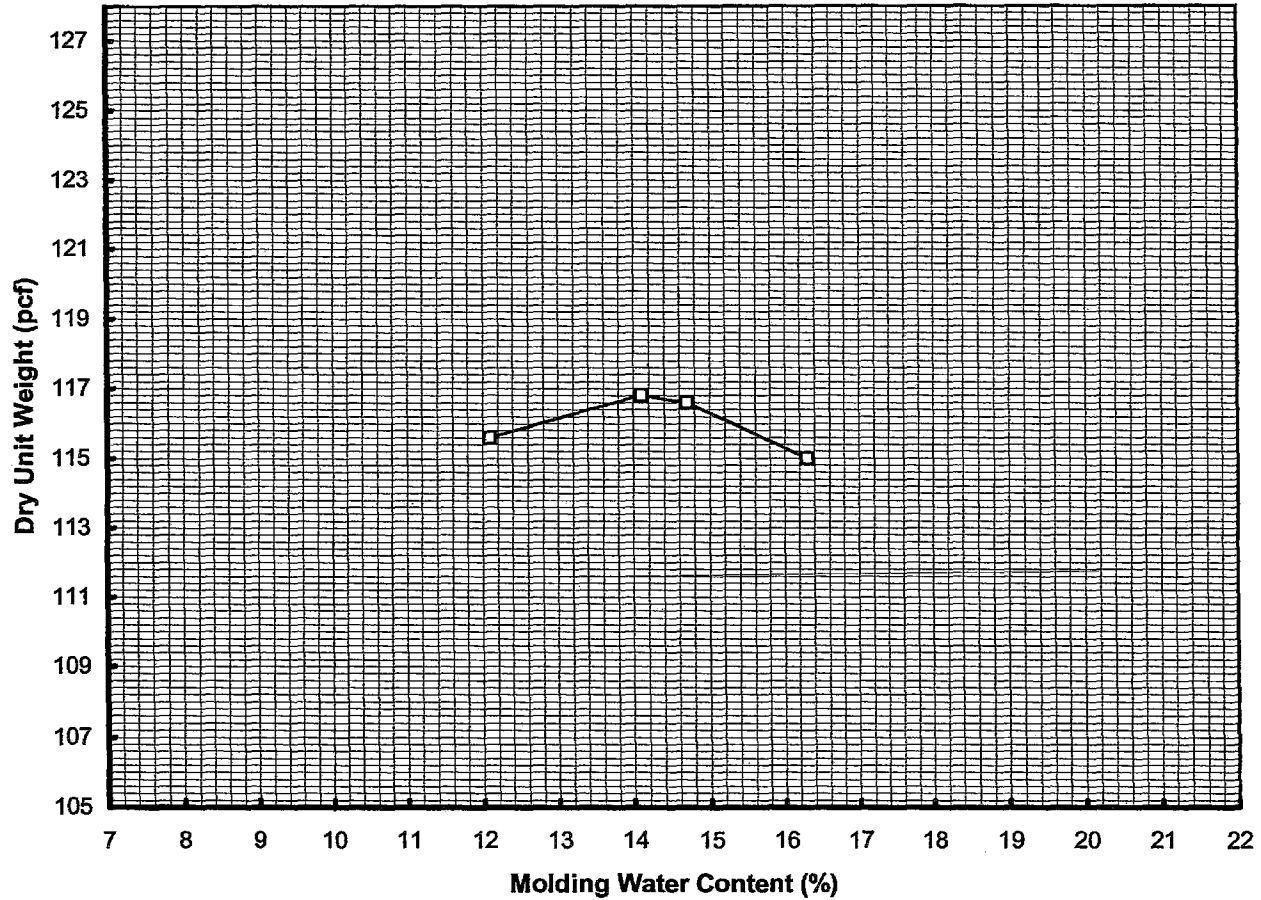
SAMPLE ID	EXPANSION INDEX
B1-B2@2'-8'	112
B5-B1@2'-4'	125
B8-B1@2'-5'	116
B14-B1@2'-5'	91
B17-1@3'-5'	91
B21-B3@6'-9'	123
B23-B1@2'-5'	85
B29-B3@6'-9'	97



### COMPACTION CURVE

Test Method: ASTM D 1557

Compaction Procedure:  A Specimen Preparation Method:  Moist or  Dry

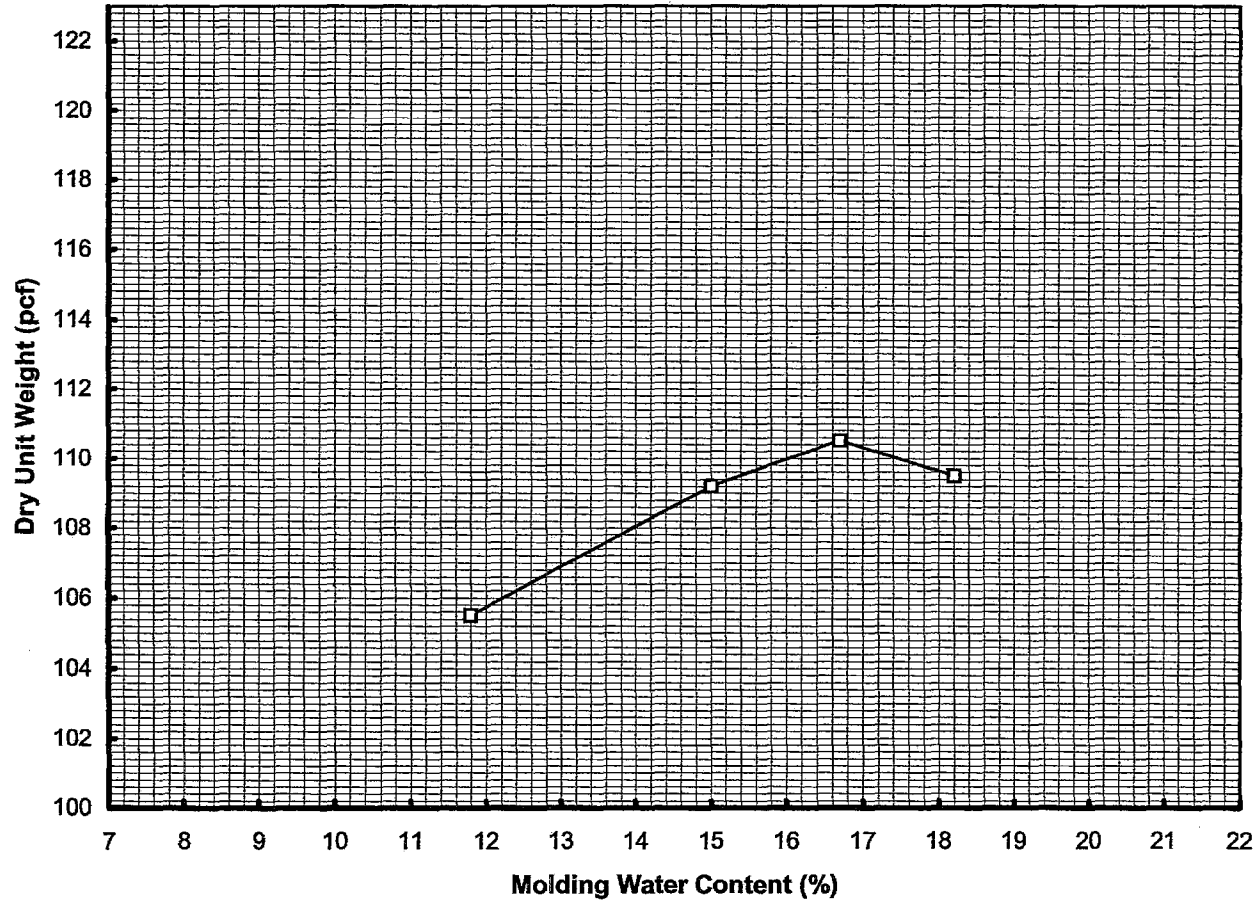


Sample No.	Sample Type	Depth (ft)	OPT. WC (%)	MAX. DUW (pcf)	LL	PI	Description and/or Classification
1-2	Bulk	2-8	14.1	116.8			Gray brown, sandy clay
<b>BROWN FIELD AIRPORT RUNWAY 8L/26R PAVEMENT REHABILITATION SAN DIEGO, CALIFORNIA</b>							
<b>PROJECT NO. 72NB5</b>			<b>ALLIED GEOTECHNICAL ENGINEERS, INC.</b>				<b>FIGURE B-1</b>

### COMPACTION CURVE

Test Method: ASTM D 1557

Compaction Procedure:  A Specimen Preparation Method:  Moist or  Dry



Sample No.	Sample Type	Depth (ft)	OPT. WC (%)	MAX. DUW (pcf)	LL	PI	Description and/or Classification
5-1	Bulk	2-4	16.7	110.5			Gray brown, sandy clay

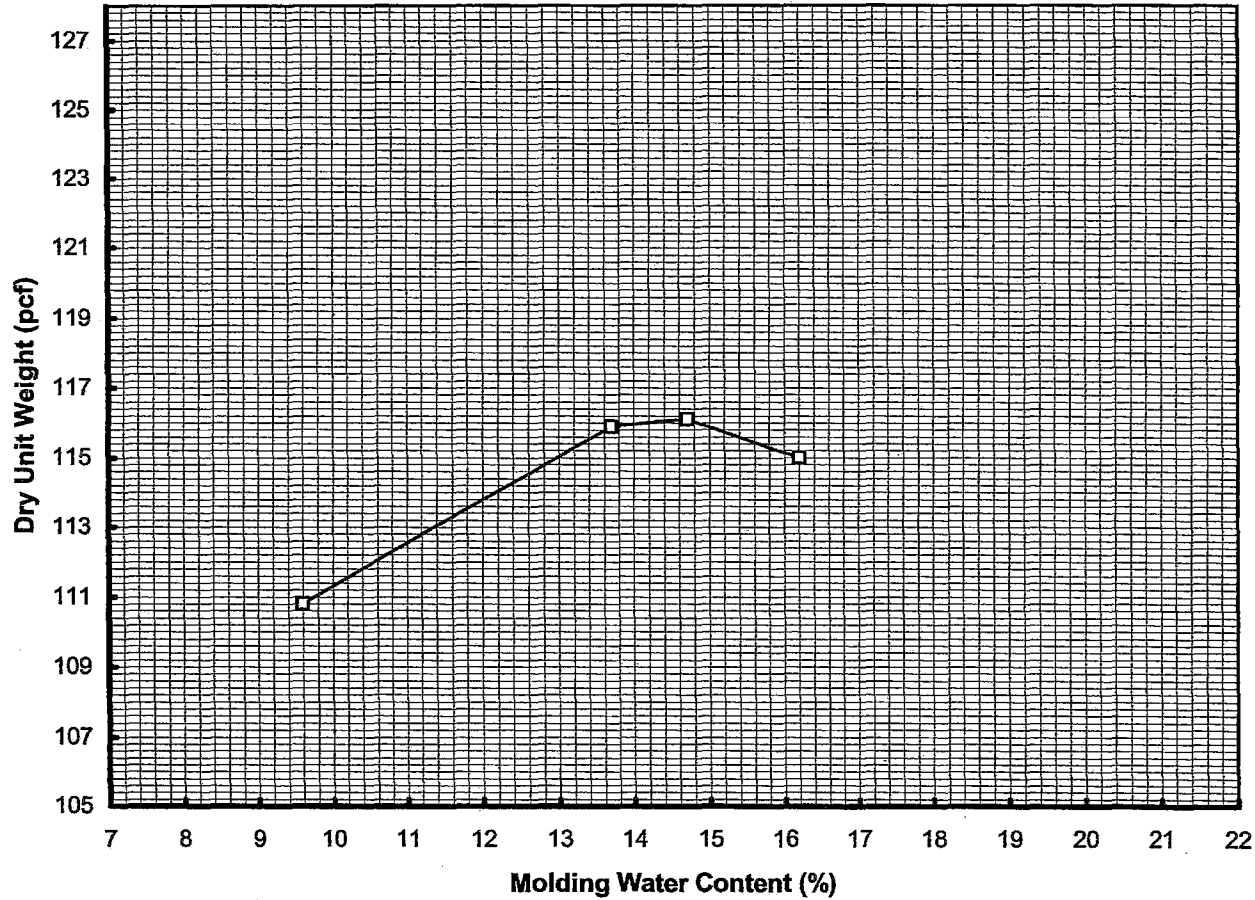
**BROWN FIELD AIRPORT RUNWAY 8L/26R PAVEMENT REHABILITATION  
SAN DIEGO, CALIFORNIA**

<b>PROJECT NO. 72NB5</b>	<b>ALLIED GEOTECHNICAL ENGINEERS, INC.</b>	<b>FIGURE B-2</b>
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### COMPACTION CURVE

Test Method: ASTM D 1557

Compaction Procedure:  A Specimen Preparation Method:  Moist or  Dry

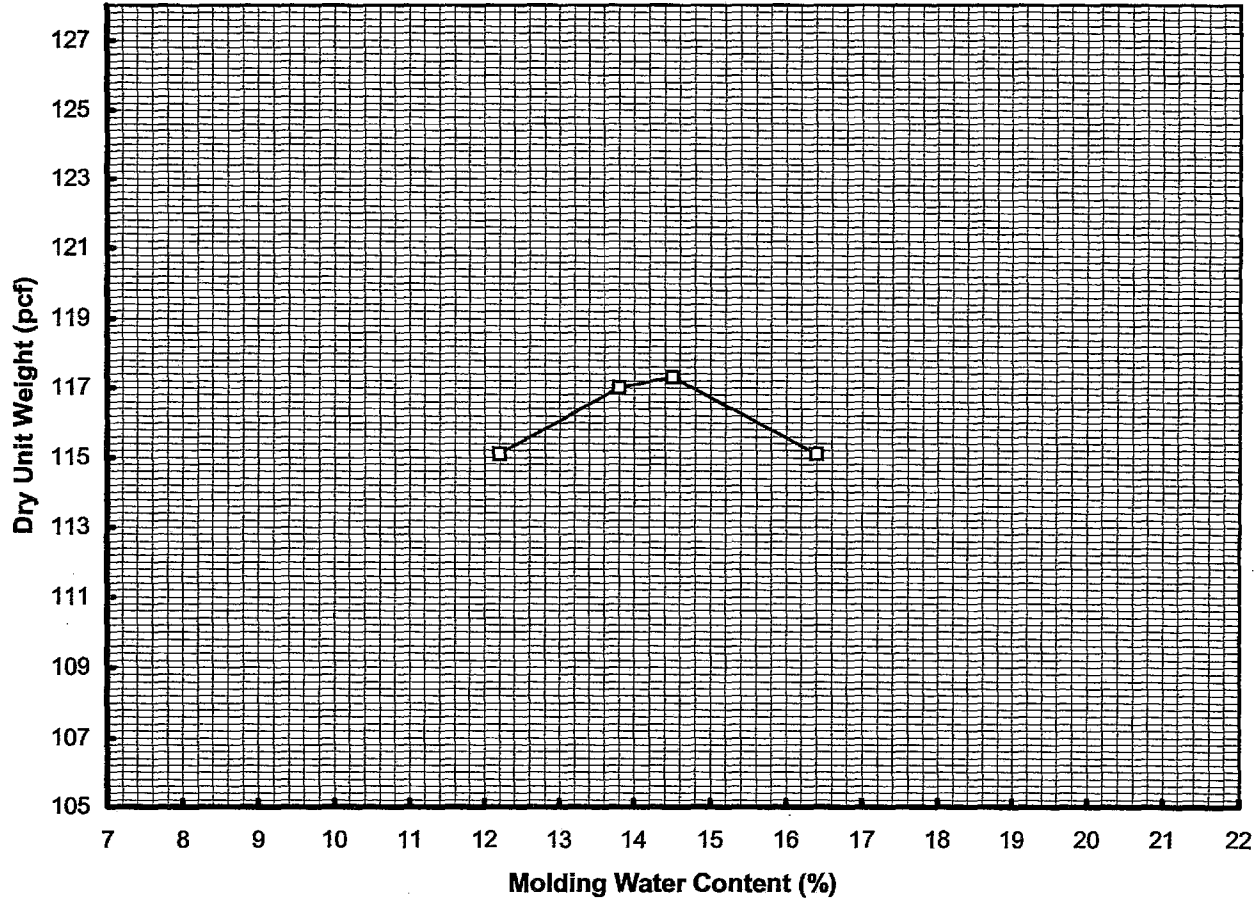


Sample No.	Sample Type	Depth (ft)	OPT. WC (%)	MAX. DUW (pcf)	LL	PI	Description and/or Classification
8-1	Bulk	2-5	14.7	116.1			Gray brown, sandy clay
<b>BROWN FIELD AIRPORT RUNWAY 8L/26R PAVEMENT REHABILITATION SAN DIEGO, CALIFORNIA</b>							
<b>PROJECT NO. 72NB5</b>			<b>ALLIED GEOTECHNICAL ENGINEERS, INC.</b>				<b>FIGURE B-3</b>

### COMPACTION CURVE

Test Method: ASTM D 1557

Compaction Procedure:  A Specimen Preparation Method:  Moist or  Dry

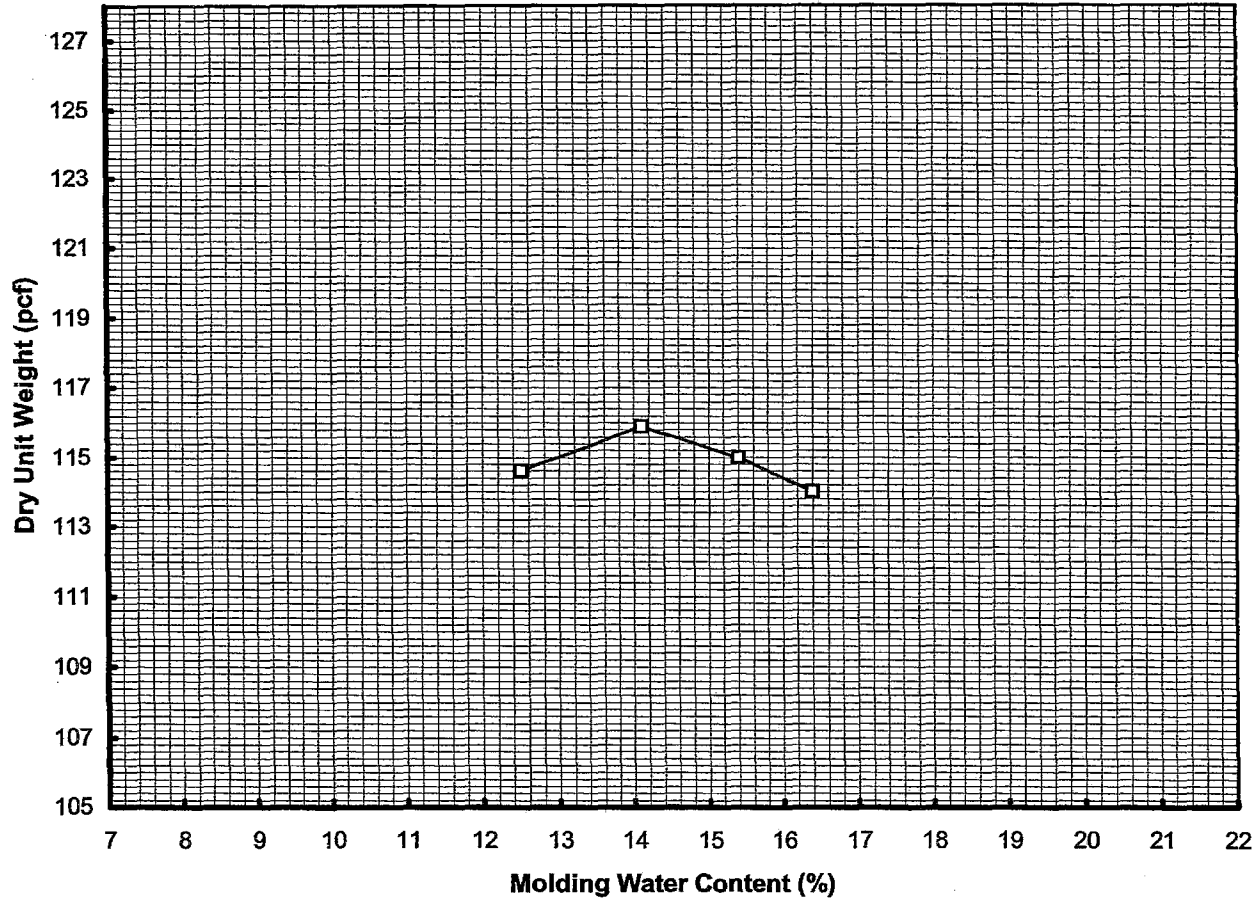


Sample No.	Sample Type	Depth (ft)	OPT. WC (%)	MAX. DUW (pcf)	LL	PI	Description and/or Classification
14-1	Bulk	2-5	14.5	117.3			Gray brown, sandy clay
<b>BROWN FIELD AIRPORT RUNWAY 8L/26R PAVEMENT REHABILITATION SAN DIEGO, CALIFORNIA</b>							
<b>PROJECT NO. 72NB5</b>			<b>ALLIED GEOTECHNICAL ENGINEERS, INC.</b>				<b>FIGURE B-4</b>

### COMPACTION CURVE

Test Method: ASTM D 1557

Compaction Procedure:  A Specimen Preparation Method:  Moist or  Dry

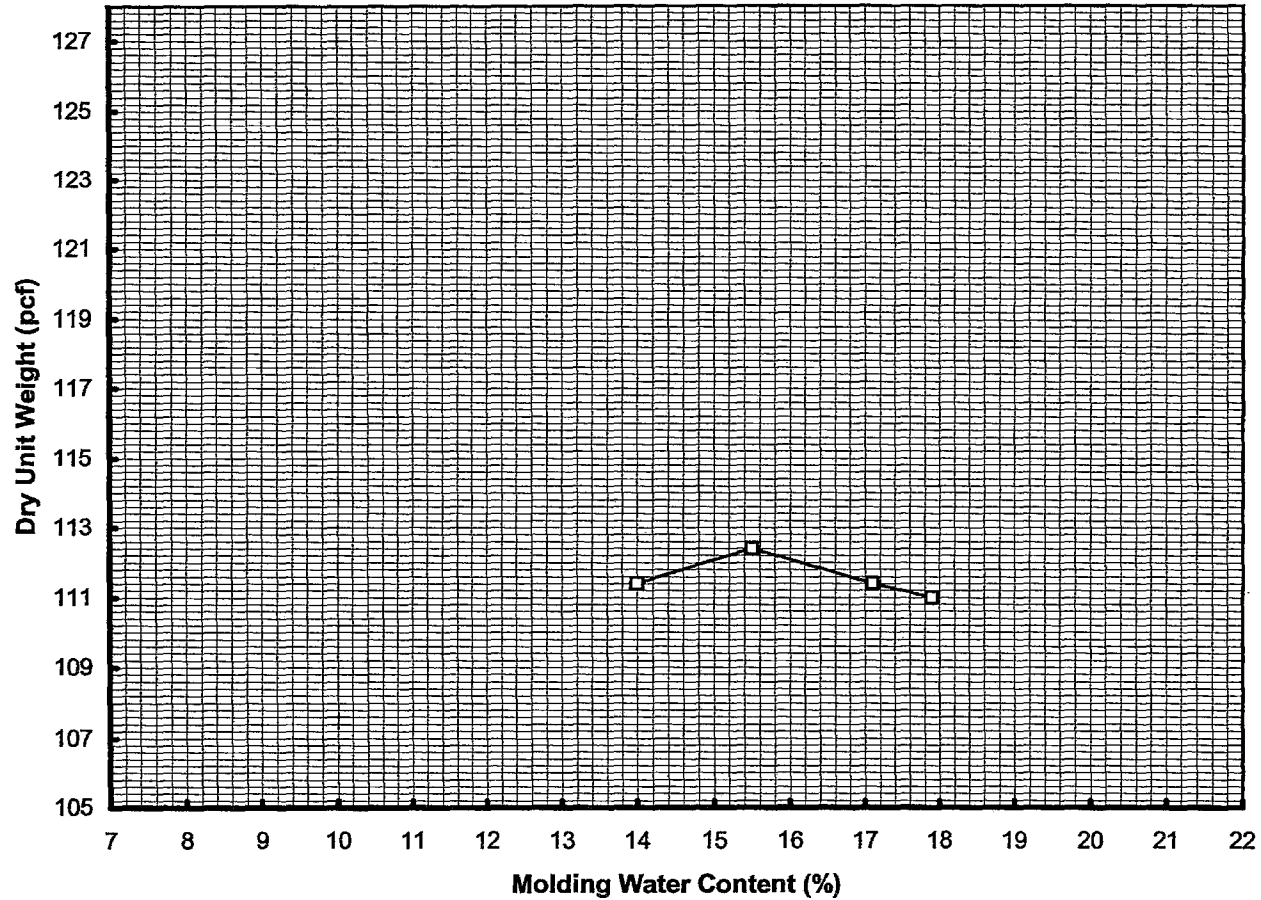


Sample No.	Sample Type	Depth (ft)	OPT. WC (%)	MAX. DUW (pcf)	LL	PI	Description and/or Classification
17-1	Bulk	3-5	14.1	115.9			Gray brown, sandy clay
<b>BROWN FIELD AIRPORT RUNWAY 8L/26R PAVEMENT REHABILITATION SAN DIEGO, CALIFORNIA</b>							
<b>PROJECT NO. 72NB5</b>			<b>ALLIED GEOTECHNICAL ENGINEERS, INC.</b>				<b>FIGURE B-5</b>

### COMPACTION CURVE

Test Method: ASTM D 1557

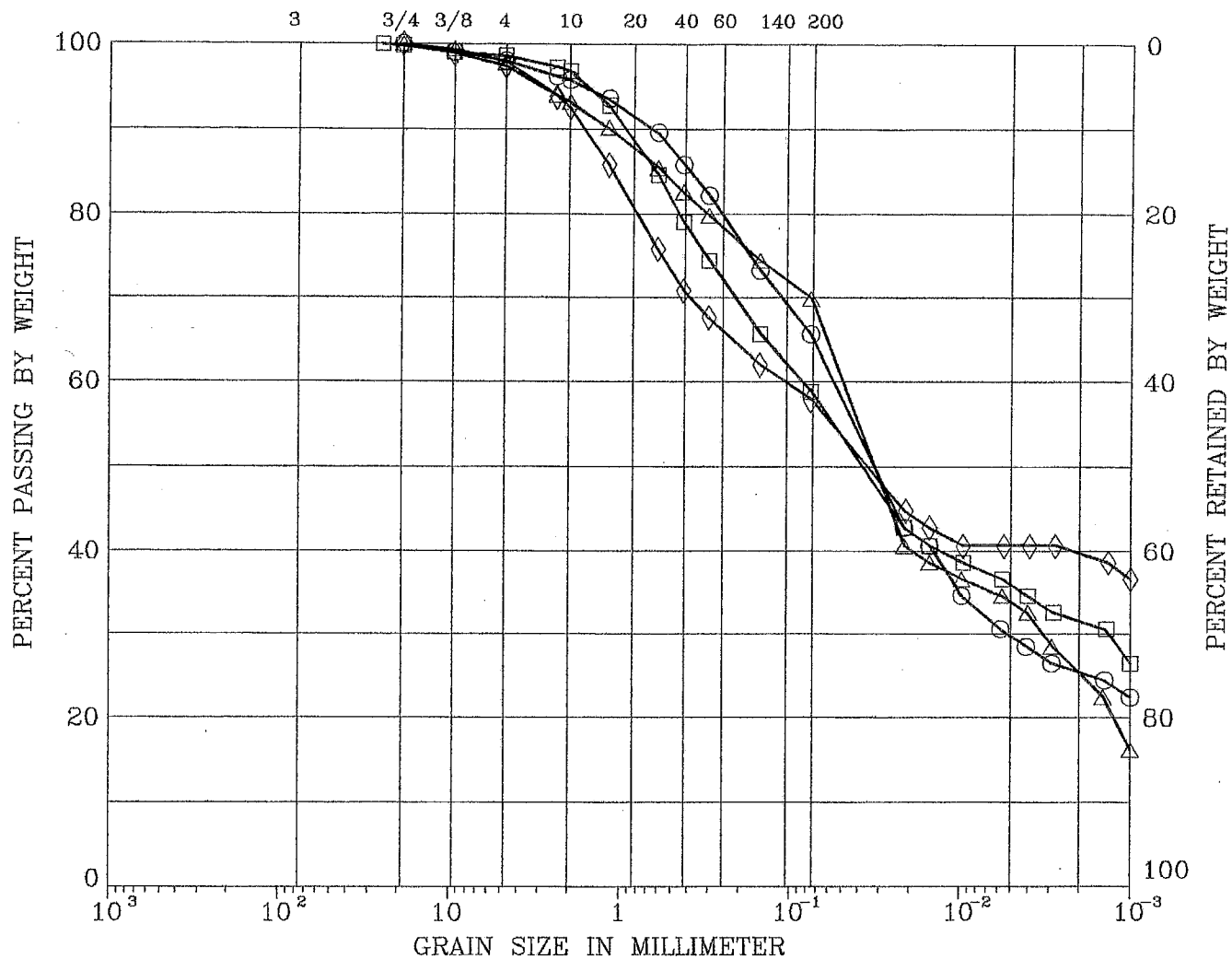
Compaction Procedure:  A Specimen Preparation Method:  Moist or  Dry



Sample No.	Sample Type	Depth (ft)	OPT. WC (%)	MAX. DUW (pcf)	LL	PI	Description and/or Classification
23-1	Bulk	2-5	15.5	112.4			Gray brown, sandy clay
<b>BROWN FIELD AIRPORT RUNWAY 8L/26R PAVEMENT REHABILITATION SAN DIEGO, CALIFORNIA</b>							
<b>PROJECT NO. 72NB5</b>			<b>ALLIED GEOTECHNICAL ENGINEERS, INC.</b>				<b>FIGURE B-6</b>

### UNIFIED SOIL CLASSIFICATION

<i>COBBLES</i>	<i>GRAVEL</i>		<i>SAND</i>			<i>SILT OR CLAY</i>
	COARSE	FINE	COARSE	MEDIUM	FINE	
U.S. SIEVE SIZE IN INCHES			U.S. STANDARD SIEVE No.			HYDROMETER



SYMBOL	BORING	DEPTH (ft)	LL (%)	PI (%)	DESCRIPTION
○	1-2	2-8	72	49	SANDY CLAY (CH)
□	8-1	2-5	59	39	SANDY CLAY (CH)
△	14-1	2-5	70	51	SANDY CLAY (CH)
◇	17-1	3-5	67	45	SANDY CLAY (CH)

Remark :

Project No. 72NB5

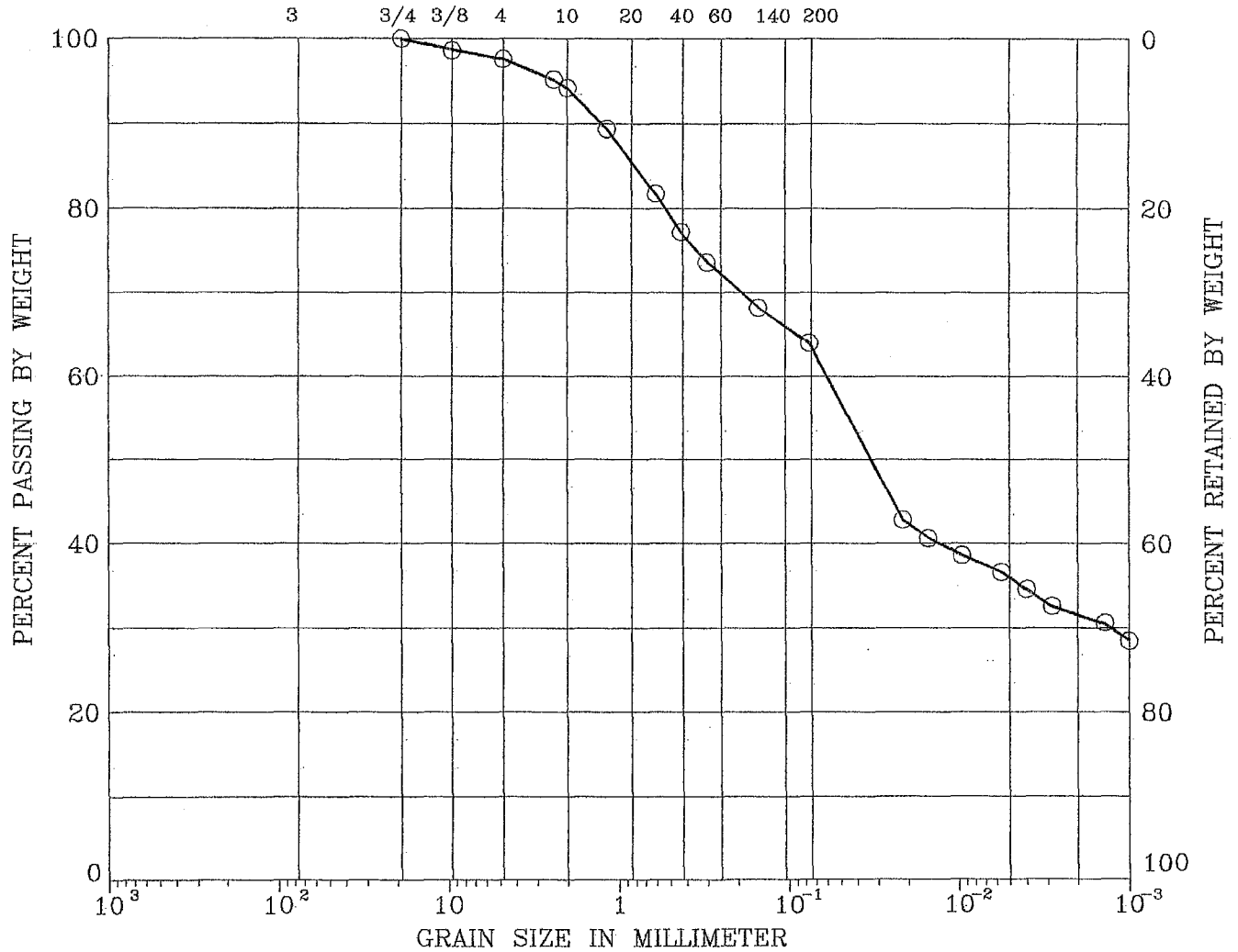
BROWN FIELD PAVEMENT REHABILITATION

ALLIED GEOTECHNICAL ENGINEERS, INC.

GRAIN SIZE DISTRIBUTION Figure B-7

UNIFIED SOIL CLASSIFICATION

COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	
U.S. SIEVE SIZE IN INCHES			U.S. STANDARD SIEVE No.			HYDROMETER

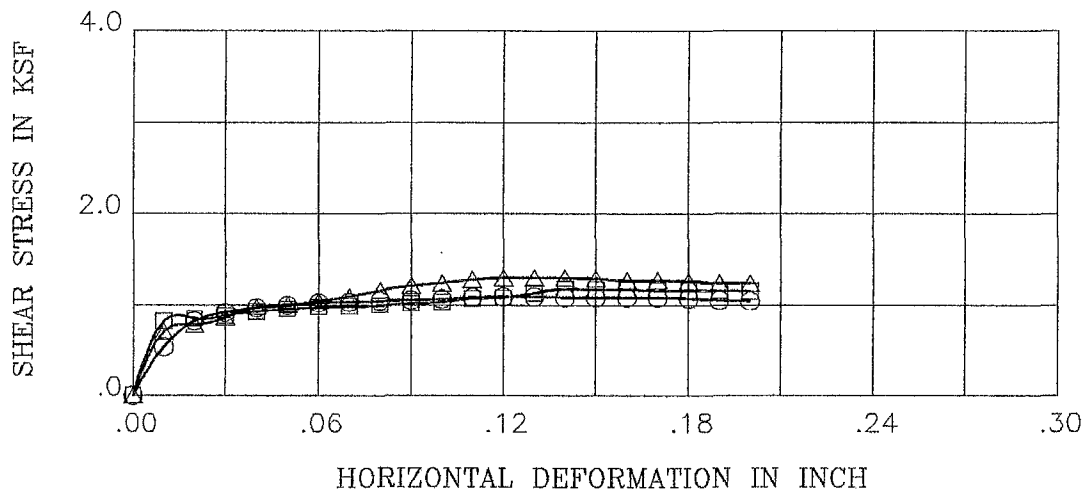
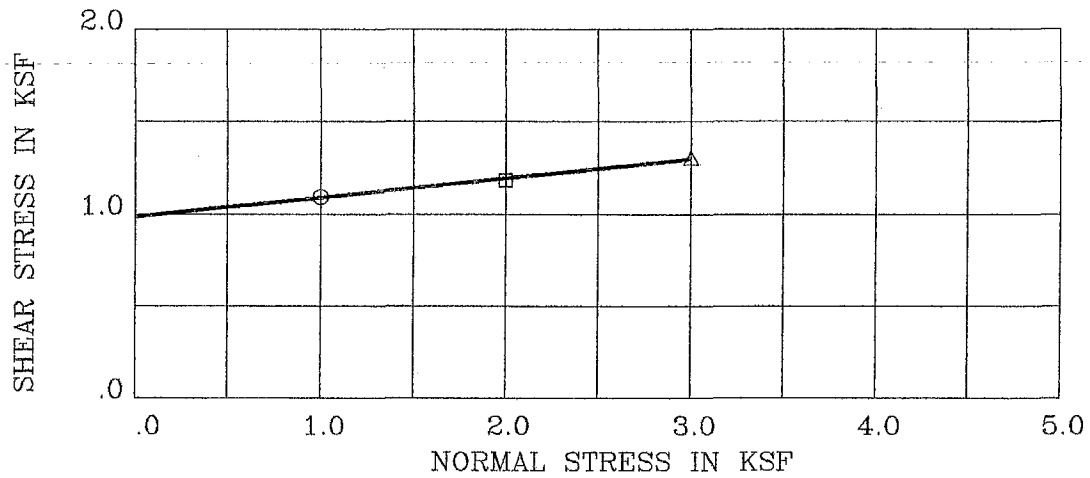


SYMBOL	BORING	DEPTH (ft)	LL (%)	PI (%)	DESCRIPTION
○	23-1	2-5	71	49	SANDY CLAY (CH)

Remark :

Project No. 72NB5	BROWN FIELD PAVEMENT REHABILITATION
ALLIED GEOTECHNICAL ENGINEERS, INC.	GRAIN SIZE DISTRIBUTION Figure B-8



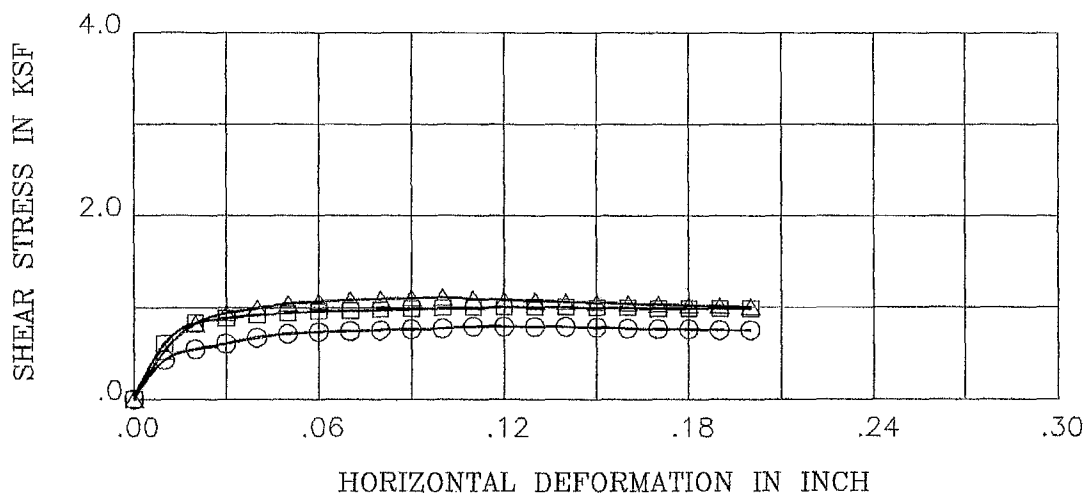
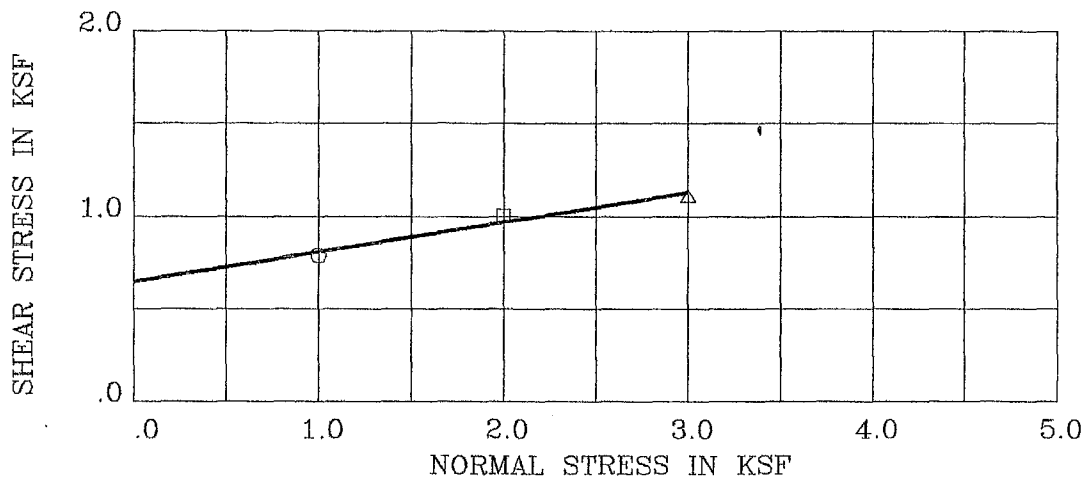


BORING/SAMPLE : 3-2                      DEPTH (ft) : 6-6.5  
 DESCRIPTION :  
 STRENGTH INTERCEPT (C) : .987    KSF                      (PEAK STRENGTH)  
 FRICTION ANGLE (PHI) : 5.9    DEG

SYMBOL	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	VOID RATIO	NORMAL STRESS (ksf)	PEAK SHEAR (ksf)	RESIDUAL SHEAR (ksf)
○	37.5	84.4	.923	1.00	1.10	1.04
□	32.6	87.0	.864	2.00	1.18	1.15
△	33.2	87.2	.861	3.00	1.30	1.24

Remark :

Project No. 70NB5	BROWN FIELD PAVEMENT REHABILITATION	
ALLIED GEOTECHNICAL ENGINEERS, INC.	DIRECT SHEAR TEST	Figure B-9

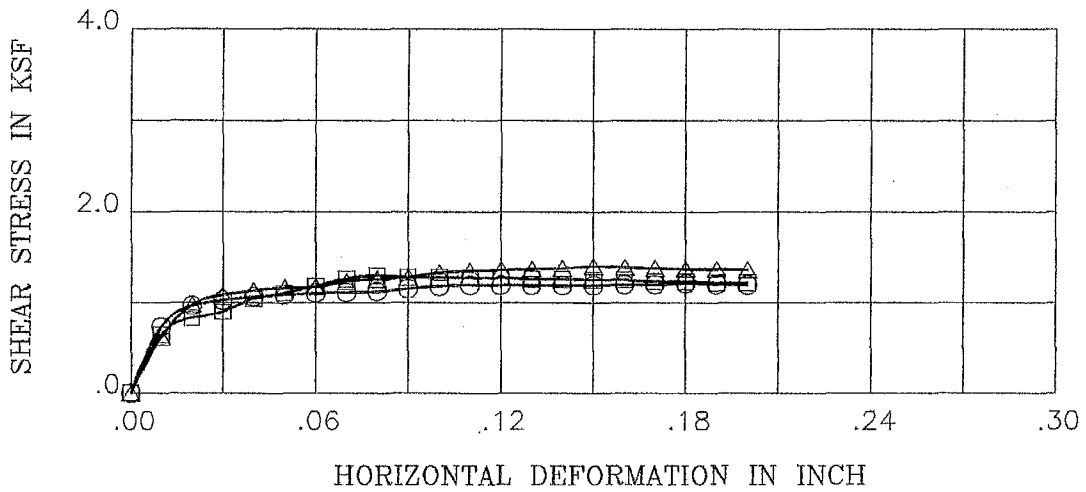
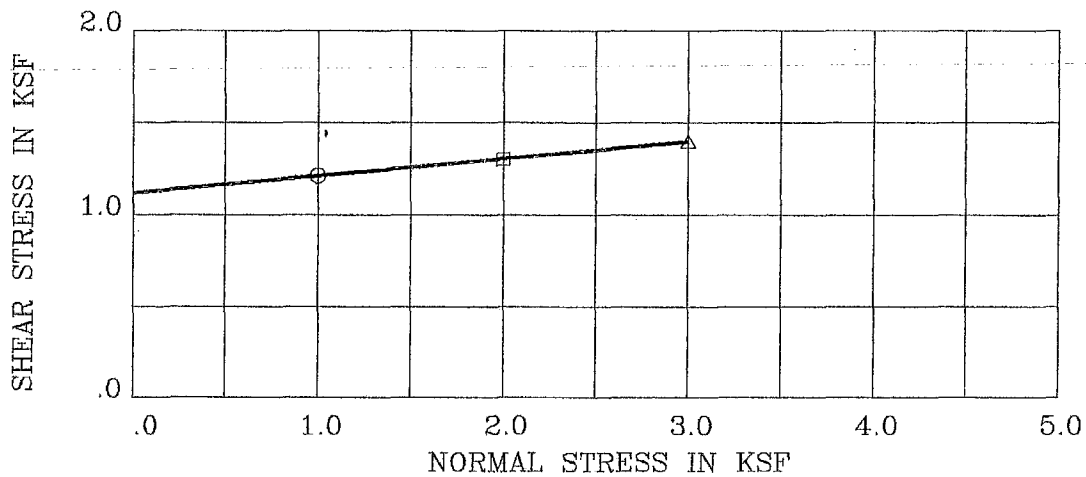


BORING/SAMPLE : 6-1                      DEPTH (ft) : 4-4.5  
 DESCRIPTION :  
 STRENGTH INTERCEPT (C) : .647    KSF                      (PEAK STRENGTH)  
 FRICTION ANGLE (PHI) : 9.2    DEG

SYMBOL	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	VOID RATIO	NORMAL STRESS (ksf)	PEAK SHEAR (ksf)	RESIDUAL SHEAR (ksf)
○	34.0	92.0	.763	1.00	.79	.75
□	39.2	87.0	.864	2.00	1.01	.98
△	34.1	92.4	.757	3.00	1.11	1.01

Remark :

Project No. 70NB5	BROWN FIELD PAVEMENT REHABILITATION
ALLIED GEOTECHNICAL ENGINEERS, INC.	<b>DIRECT SHEAR TEST</b> Figure B-10

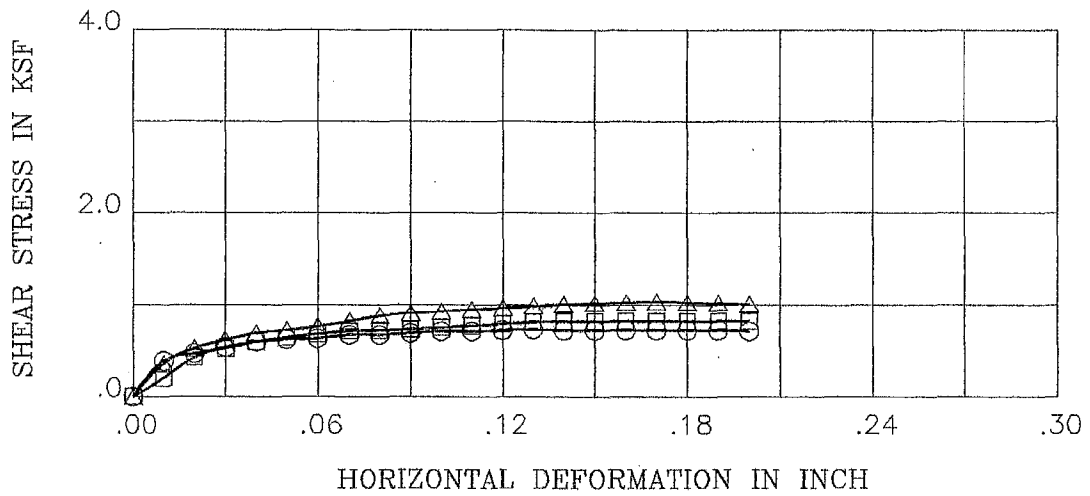
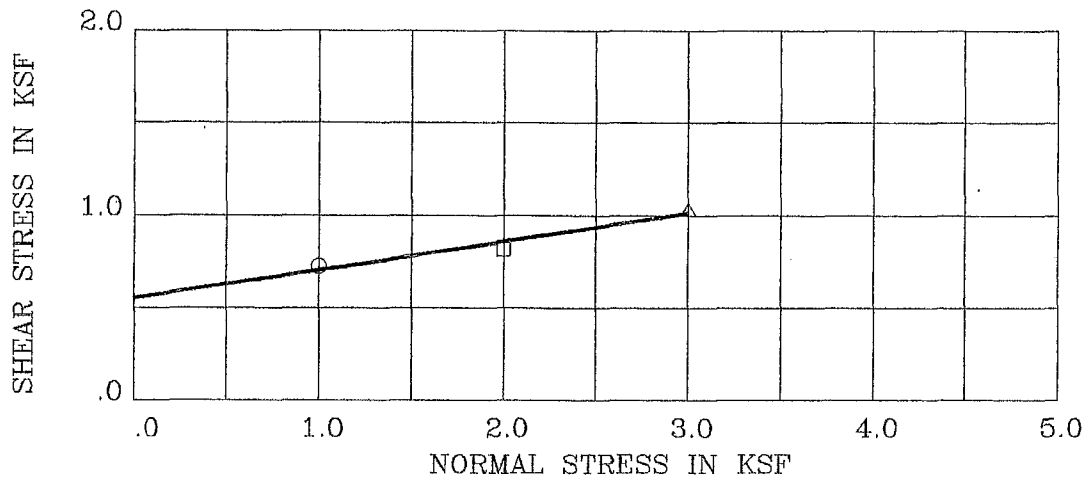


BORING/SAMPLE : 12-2                      DEPTH (ft) : 3.5-4  
 DESCRIPTION :  
 STRENGTH INTERCEPT (C) : 1.117    KSF                      (PEAK STRENGTH)  
 FRICTION ANGLE (PHI) : 5.3    DEG

SYMBOL	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	VOID RATIO	NORMAL STRESS (ksf)	PEAK SHEAR (ksf)	RESIDUAL SHEAR (ksf)
○	23.6	98.3	.651	1.00	1.21	1.19
□	25.0	97.3	.667	2.00	1.30	1.22
△	23.6	99.7	.626	3.00	1.40	1.36

Remark :

Project No. 70NB5	BROWN FIELD PAVEMENT REHABILITATION	
ALLIED GEOTECHNICAL ENGINEERS, INC.	DIRECT SHEAR TEST	Figure B-11

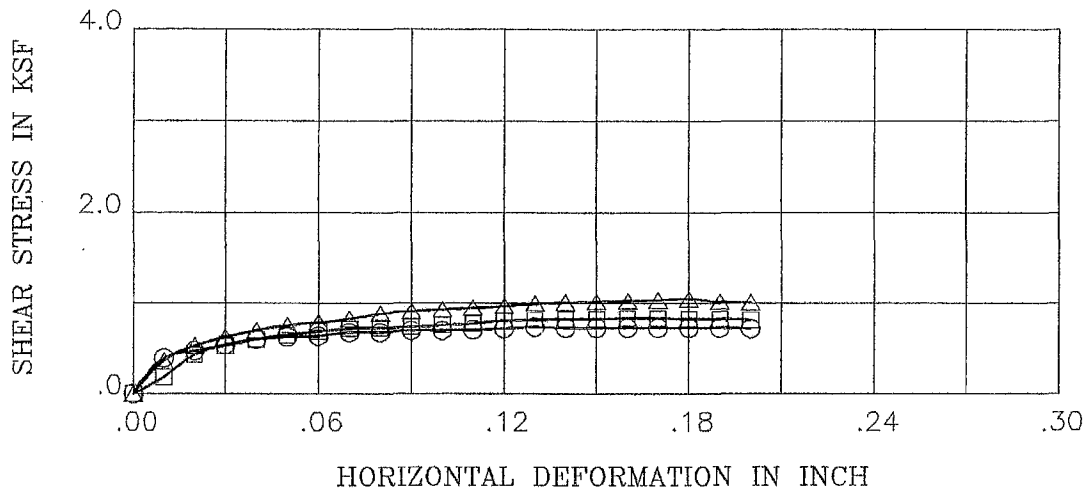
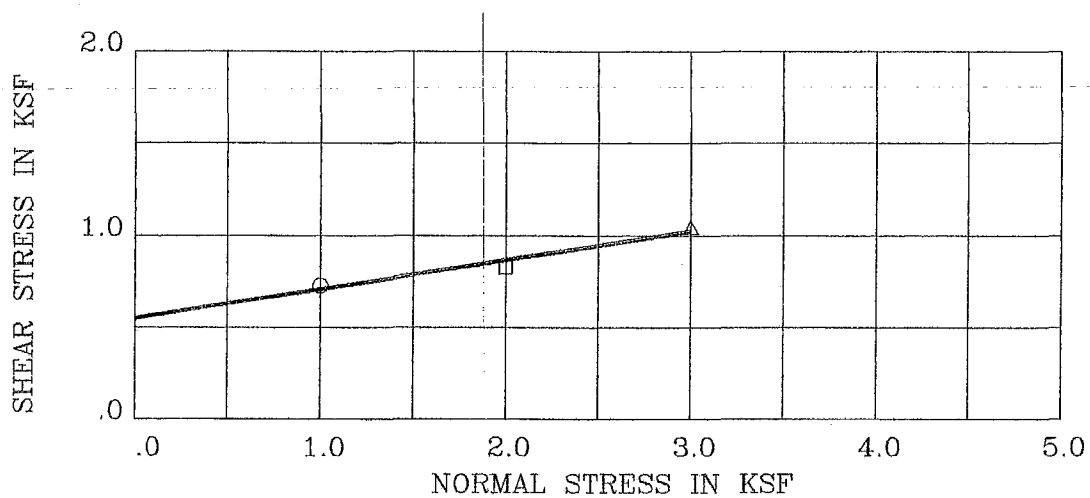


BORING/SAMPLE : 13-2                      DEPTH (ft) : 6-6.5  
 DESCRIPTION :  
 STRENGTH INTERCEPT (C) : .555    KSF                      (PEAK STRENGTH)  
 FRICTION ANGLE (PHI) : 8.7    DEG

SYMBOL	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	VOID RATIO	NORMAL STRESS (ksf)	PEAK SHEAR (ksf)	RESIDUAL SHEAR (ksf)
○	38.4	83.8	.935	1.00	.73	.71
□	33.9	88.5	.834	2.00	.82	.82
△	39.4	86.7	.872	3.00	1.03	1.01

Remark :

Project No. 70NB5	BROWN FIELD PAVEMENT REHABILITATION
ALLIED GEOTECHNICAL ENGINEERS, INC.	DIRECT SHEAR TEST      Figure B-12

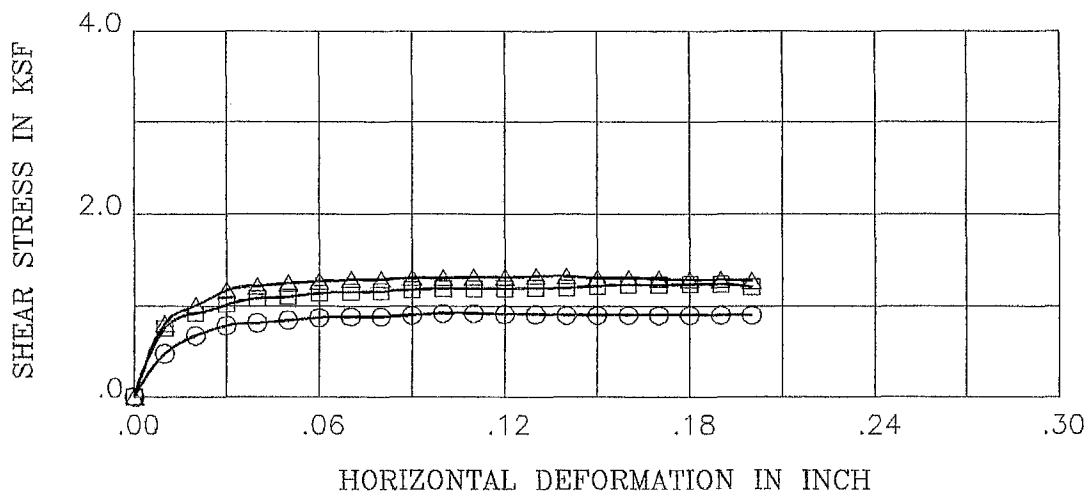
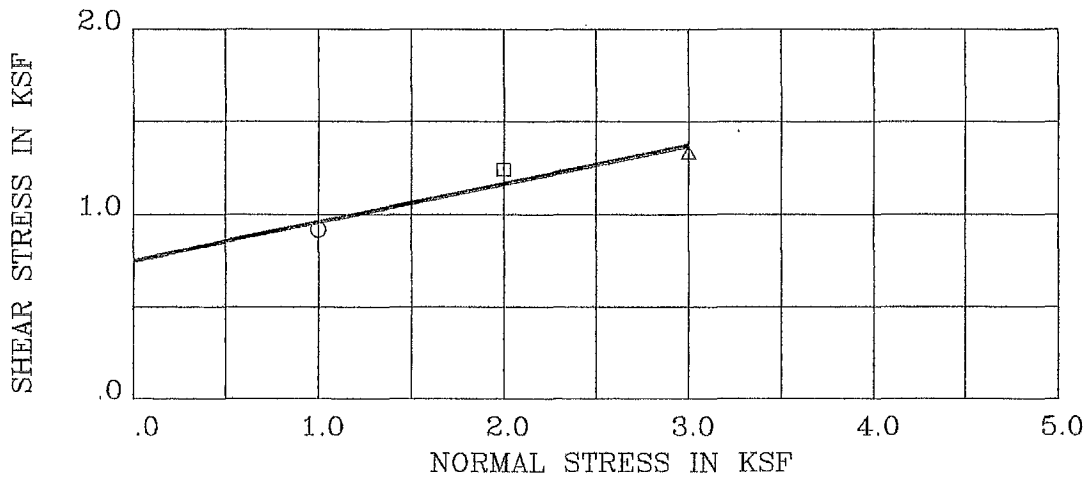


BORING/SAMPLE : 15-1                      DEPTH (ft) : 4-4.5  
 DESCRIPTION :  
 STRENGTH INTERCEPT (C) : .552 KSF                      (PEAK STRENGTH)  
 FRICTION ANGLE (PHI) : 9.0 DEG

SYMBOL	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	VOID RATIO	NORMAL STRESS (ksf)	PEAK SHEAR (ksf)	RESIDUAL SHEAR (ksf)
○	36.2	85.1	.906	1.00	.73	.71
□	37.9	82.9	.957	2.00	.83	.81
△	36.1	82.4	.969	3.00	1.05	1.01

Remark :

Project No. 70NB5	BROWN FIELD PAVEMENT REHABILITATION
ALLIED GEOTECHNICAL ENGINEERS, INC.	DIRECT SHEAR TEST      Figure B-13



BORING/SAMPLE : 19-1                      DEPTH (ft) : 4-4.5  
 DESCRIPTION :  
 STRENGTH INTERCEPT (C) : .751 KSF  
 FRICTION ANGLE (PHI) : 11.7 DEG                      (PEAK STRENGTH)

SYMBOL	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	VOID RATIO	NORMAL STRESS (ksf)	PEAK SHEAR (ksf)	RESIDUAL SHEAR (ksf)
○	35.3	83.4	.945	1.00	.92	.90
□	34.1	86.8	.870	2.00	1.24	1.21
△	31.6	86.7	.872	3.00	1.33	1.28

Remark :

Project No. 70NB5	BROWN FIELD PAVEMENT REHABILITATION
ALLIED GEOTECHNICAL ENGINEERS, INC.	DIRECT SHEAR TEST      Figure B-14

LABORATORY REPORT

Telephone (619) 425-1993 Fax 425-7917 Established 1928

CLARKSON LABORATORY AND SUPPLY INC.
350 Trousdale Dr. Chula Vista, Ca. 91910 www.clarksonlab.com
ANALYTICAL AND CONSULTING CHEMISTS

Date: June 26, 2013
Purchase Order Number: 72NB5
Sales Order Number: 18292
Account Number: ALLG
To:

Allied Geotechnical Engineers
1810 Gillespie Way Ste 104
El Cajon, CA 92020
Attention: Sani Sutanto

Laboratory Number: S05020-1 Customers Phone: 449-5900
Fax: 449-5902

Sample Designation:

One soil sample received on 06/13/13 at 1:35pm,
taken on 06/13/13 from Brown Field Airport Runway 8L/26R
Pavement Rehabilitation Proj#72NB5 marked as B3-B1 @ 2'-5'.

Analysis By California Test 643, 1999, Department of Transportation
Division of Construction, Method for Estimating the Service Life of
Steel Culverts.

pH 8.4

Table with 2 columns: Water Added (ml) and Resistivity (ohm-cm). Rows show values for 20ml, 5ml, and 5ml.

- 21 years to perforation for a 16 gauge metal culvert.
27 years to perforation for a 14 gauge metal culvert.
37 years to perforation for a 12 gauge metal culvert.
47 years to perforation for a 10 gauge metal culvert.
58 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 0.013%
Water Soluble Chloride Calif. Test 422 0.019%
Bicarbonate (as CaCO3) 110 ppm
(In a saturated soil paste extract)

Laura Torres (Signature)

LABORATORY REPORT

Telephone (619) 425-1993 Fax 425-7917 Established 1928

CLARKSON LABORATORY AND SUPPLY INC.
350 Trousdale Dr. Chula Vista, Ca. 91910 www.clarksonlab.com
ANALYTICAL AND CONSULTING CHEMISTS

Date: June 26, 2013
Purchase Order Number: 72NB5
Sales Order Number: 18292
Account Number: ALLG
To:

\*-----\*
Allied Geotechnical Engineers
1810 Gillespie Way Ste 104
El Cajon, CA 92020
Attention: Sani Sutanto

Laboratory Number: SO5020-2 Customers Phone: 449-5900
Fax: 449-5902

Sample Designation:
\*-----\*

One soil sample received on 06/13/13 at 1:35pm,
taken on 06/13/13 from Brown Field Airport Runway 8L/26R
Pavement Rehabilitation Proj#72NB5 marked as B5-B1 @ 2'-4'.

Analysis By California Test 643, 1999, Department of Transportation
Division of Construction, Method for Estimating the Service Life of
Steel Culverts.

pH 8.9

Table with 2 columns: Water Added (ml) and Resistivity (ohm-cm). Rows show values for 15ml, 5ml, and 5ml.

27 years to perforation for a 16 gauge metal culvert.
35 years to perforation for a 14 gauge metal culvert.
48 years to perforation for a 12 gauge metal culvert.
62 years to perforation for a 10 gauge metal culvert.
75 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 0.005%
Water Soluble Chloride Calif. Test 422 0.005%
Bicarbonate (as CaCO3) 100 ppm
(In a saturated soil paste extract)

Laura Torres (Signature)



LABORATORY REPORT

Telephone (619) 425-1993

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Established 1928

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ANALYTICAL AND CONSULTING CHEMISTS

Date: June 26, 2013
Purchase Order Number: 72NB5
Sales Order Number: 18292
Account Number: ALLG
To:

\*-----\*
Allied Geotechnical Engineers
1810 Gillespie Way Ste 104
El Cajon, CA 92020
Attention: Sani Sutanto

Laboratory Number: SO5020-3 Customers Phone: 449-5900
Fax: 449-5902

Sample Designation:
\*-----\*
One soil sample received on 06/13/13 at 1:35pm,
taken on 06/13/13 from Brown Field Airport Runway 8L/26R
Pavement Rehabilitation Proj#72NB5 marked as B8-B1 @ 2'-5'.

Analysis By California Test 643, 1999, Department of Transportation
Division of Construction, Method for Estimating the Service Life of
Steel Culverts.

pH 8.5

Table with 2 columns: Water Added (ml) and Resistivity (ohm-cm). Rows show values for 15ml, 5ml, and 5ml.

- 23 years to perforation for a 16 gauge metal culvert.
29 years to perforation for a 14 gauge metal culvert.
41 years to perforation for a 12 gauge metal culvert.
52 years to perforation for a 10 gauge metal culvert.
63 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 0.005%
Water Soluble Chloride Calif. Test 422 0.002%

Bicarbonate (as CaCO3) 100 ppm
(In a saturated soil paste extract)

Laura Torres (Signature)

LABORATORY REPORT

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Date: June 26, 2013  
Purchase Order Number: 72NB5  
Sales Order Number: 18292  
Account Number: ALLG  
To:

\*-----\*  
Allied Geotechnical Engineers  
1810 Gillespie Way Ste 104  
El Cajon, CA 92020  
Attention: Sani Sutanto

Laboratory Number: S05020-4 Customers Phone: 449-5900  
Fax: 449-5902

Sample Designation:  
\*-----\*  
One soil sample received on 06/13/13 at 1:35pm,  
taken on 06/13/13 from Brown Field Airport Runway 8L/26R  
Pavement Rehabilitation Proj#72NB5 marked as B11-B1 @ 2'-5'.

Analysis By California Test 643, 1999, Department of Transportation  
Division of Construction, Method for Estimating the Service Life of  
Steel Culverts.

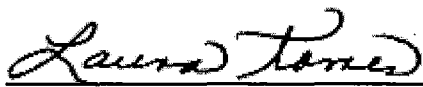
pH 8.4

Water Added (ml)	Resistivity (ohm-cm)
30	810
5	740
5	800
5	800
5	780
5	960
5	800
5	990
5	1100

27 years to perforation for a 16 gauge metal culvert.  
35 years to perforation for a 14 gauge metal culvert.  
49 years to perforation for a 12 gauge metal culvert.  
62 years to perforation for a 10 gauge metal culvert.  
76 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 0.011%  
Water Soluble Chloride Calif. Test 422 0.002%

Bicarbonate (as CaCO<sub>3</sub>) 80 ppm  
(In a saturated soil paste extract)

  
Laura Torres  
LT/ram  
Brown Field Airport (SDM) 8L/26R Runway Rehabilitation Phase III  
Appendix F - Report of Geotechnical Investigation

LABORATORY REPORT

Telephone (619) 425-1993 Fax 425-7917 Established 1928

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ANALYTICAL AND CONSULTING CHEMISTS

Date: June 26, 2013
Purchase Order Number: 72NB5
Sales Order Number: 18292
Account Number: ALLG
To:

Allied Geotechnical Engineers
1810 Gillespie Way Ste 104
El Cajon, CA 92020
Attention: Sani Sutanto

Laboratory Number: S05020-5 Customers Phone: 449-5900
Fax: 449-5902

Sample Designation:
One soil sample received on 06/13/13 at 1:35pm,
taken on 06/13/13 from Brown Field Airport Runway 8L/26R
Pavement Rehabilitation Proj#72NB5 marked as B14-B1 @ 2'-5'.

Analysis By California Test 643, 1999, Department of Transportation
Division of Construction, Method for Estimating the Service Life of
Steel Culverts.

pH 7.7

Table with 2 columns: Water Added (ml) and Resistivity (ohm-cm). Values range from 10 ml (3000 ohm-cm) to 5 ml (450 ohm-cm).

- 21 years to perforation for a 16 gauge metal culvert.
28 years to perforation for a 14 gauge metal culvert.
38 years to perforation for a 12 gauge metal culvert.
49 years to perforation for a 10 gauge metal culvert.
59 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 0.099%
Water Soluble Chloride Calif. Test 422 0.011%
Bicarbonate (as CaCO3) 70 ppm
(In a saturated soil paste extract)

Laura Torres (Signature)
Laura Torres

LABORATORY REPORT

Telephone (619) 425-1993 Fax 425-7917 Established 1928

CLARKSON LABORATORY AND SUPPLY INC.
350 Trousdale Dr. Chula Vista, Ca. 91910 www.clarksonlab.com
ANALYTICAL AND CONSULTING CHEMISTS

Date: June 26, 2013
Purchase Order Number: 72NB5
Sales Order Number: 18292
Account Number: ALLG
To:

\*-----\*
Allied Geotechnical Engineers
1810 Gillespie Way Ste 104
El Cajon, CA 92020
Attention: Sani Sutanto

Laboratory Number: SO5020-6 Customers Phone: 449-5900
Fax: 449-5902

Sample Designation:
\*-----\*
One soil sample received on 06/13/13 at 1:35pm,
taken on 06/13/13 from Brown Field Airport Runway 8L/26R
Pavement Rehabilitation Proj#72NB5 marked as B16-B1 @ 5'-8'.

Analysis By California Test 643, 1999, Department of Transportation
Division of Construction, Method for Estimating the Service Life of
Steel Culverts.

pH 6.5

Table with 2 columns: Water Added (ml) and Resistivity (ohm-cm). Rows show values for 10, 5, 5, 5, 5, 5, 5, 5 ml of water added, with corresponding resistivity values ranging from 4800 to 330 ohm-cm.

- 6 years to perforation for a 16 gauge metal culvert.
8 years to perforation for a 14 gauge metal culvert.
11 years to perforation for a 12 gauge metal culvert.
14 years to perforation for a 10 gauge metal culvert.
17 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 0.045%
Water Soluble Chloride Calif. Test 422 0.012%
Bicarbonate (as CaCO3) N/A
(In a saturated soil paste extract)

Note: N/A = Unable to determine due to the texture of the soil (Clay).

Laura Torres
Laura Torres
LT/ram

LABORATORY REPORT

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CLARKSON LABORATORY AND SUPPLY INC.  
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ANALYTICAL AND CONSULTING CHEMISTS

Date: June 26, 2013  
Purchase Order Number: 72NB5  
Sales Order Number: 18292  
Account Number: ALLG  
To:

\*-----\*  
Allied Geotechnical Engineers  
1810 Gillespie Way Ste 104  
El Cajon, CA 92020  
Attention: Sani Sutanto

Laboratory Number: SO5020-7 Customers Phone: 449-5900  
Fax: 449-5902

Sample Designation:  
\*-----\*  
One soil sample received on 06/13/13 at 1:35pm,  
taken on 06/13/13 from Brown Field Airport Runway 8L/26R  
Pavement Rehabilitation Proj#72NB5 marked as B19-B2 @ 3'-6'.

Analysis By California Test 643, 1999, Department of Transportation  
Division of Construction, Method for Estimating the Service Life of  
Steel Culverts.


pH 8.9

Water Added (ml)	Resistivity (ohm-cm)
10	3800
5	2100
5	1400
5	1000
5	1000
5	800
5	870
5	900

- 28 years to perforation for a 16 gauge metal culvert.
- 36 years to perforation for a 14 gauge metal culvert.
- 50 years to perforation for a 12 gauge metal culvert.
- 64 years to perforation for a 10 gauge metal culvert.
- 78 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 0.013%  
Water Soluble Chloride Calif. Test 422 0.002%

Bicarbonate (as CaCO<sub>3</sub>) 100 ppm  
(In a saturated soil paste extract)

  
\_\_\_\_\_  
Laura Torres  
LT/ram

LABORATORY REPORT

Telephone (619) 425-1993 Fax 425-7917 Established 1928

CLARKSON LABORATORY AND SUPPLY INC.
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ANALYTICAL AND CONSULTING CHEMISTS

Date: June 26, 2013
Purchase Order Number: 72NB5
Sales Order Number: 18292
Account Number: ALLG
To:

\*-----\*
Allied Geotechnical Engineers
1810 Gillespie Way Ste 104
El Cajon, CA 92020
Attention: Sani Sutanto

Laboratory Number: SO5020-8 Customers Phone: 449-5900
Fax: 449-5902

Sample Designation:
\*-----\*
One soil sample received on 06/13/13 at 1:35pm,
taken on 06/13/13 from Brown Field Airport Runway 8L/26R
Pavement Rehabilitation Proj#72NB5 marked as B21-B3 @ 6'-9'.

Analysis By California Test 643, 1999, Department of Transportation
Division of Construction, Method for Estimating the Service Life of
Steel Culverts.

pH 7.1

Table with 2 columns: Water Added (ml) and Resistivity (ohm-cm). Rows show values for 15ml, 5ml, and 5ml.

- 12 years to perforation for a 16 gauge metal culvert.
15 years to perforation for a 14 gauge metal culvert.
21 years to perforation for a 12 gauge metal culvert.
27 years to perforation for a 10 gauge metal culvert.
32 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 0.102%
Water Soluble Chloride Calif. Test 422 0.052%
Bicarbonate (as CaCO3) N/A
(In a saturated soil paste extract)

Note: N/A = Unable to determine due to the texture of the soil (Clay).

Laura Torres
Laura Torres

L A B O R A T O R Y   R E P O R T

Telephone (619) 425-1993      Fax 425-7917      Established 1928

C L A R K S O N   L A B O R A T O R Y   A N D   S U P P L Y   I N C.  
350 Trousdale Dr. Chula Vista, Ca. 91910 www.clarksonlab.com  
A N A L Y T I C A L   A N D   C O N S U L T I N G   C H E M I S T S

Date: June 26, 2013  
Purchase Order Number: 72NB5  
Sales Order Number: 18292  
Account Number: ALLG  
To:

\*-----\*  
Allied Geotechnical Engineers  
1810 Gillespie Way Ste 104  
El Cajon, CA 92020  
Attention: Sani Sutanto

Laboratory Number: S05020-9      Customers Phone: 449-5900  
Fax: 449-5902

Sample Designation:  
\*-----\*  
One soil sample received on 06/13/13 at 1:35pm,  
taken on 06/13/13 from Brown Field Airport Runway 8L/26R  
Pavement Rehabilitation Proj#72NB5 marked as B23-B1 @ 2'-5'.

Analysis By California Test 643, 1999, Department of Transportation  
Division of Construction, Method for Estimating the Service Life of  
Steel Culverts.


pH 8.4

Water Added (ml)	Resistivity (ohm-cm)
10	8300
5	3100
5	1200
5	710
5	560
5	580
5	590

- 24 years to perforation for a 16 gauge metal culvert.
- 31 years to perforation for a 14 gauge metal culvert.
- 43 years to perforation for a 12 gauge metal culvert.
- 55 years to perforation for a 10 gauge metal culvert.
- 67 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417	0.007%
Water Soluble Chloride Calif. Test 422	0.013%
Bicarbonate (as CaCO <sub>3</sub> ) (In a saturated soil paste extract)	N/A

Note: N/A = Unable to determine due to the texture of the soil (Clay).

  
Laura Torres  
LT/ram

LABORATORY REPORT

Telephone (619) 425-1993 Fax 425-7917 Established 1928

CLARKSON LABORATORY AND SUPPLY INC.
350 Trousdale Dr. Chula Vista, Ca. 91910 www.clarksonlab.com
ANALYTICAL AND CONSULTING CHEMISTS

Date: June 26, 2013
Purchase Order Number: 72NB5
Sales Order Number: 18292
Account Number: ALLG

To:
\*-----\*
Allied Geotechnical Engineers
1810 Gillespie Way Ste 104
El Cajon, CA 92020
Attention: Sani Sutanto

Laboratory Number: SO5020-10 Customers Phone: 449-5900
Fax: 449-5902

Sample Designation:
\*-----\*
One soil sample received on 06/13/13 at 1:35pm,
taken on 06/13/13 from Brown Field Airport Runway 8L/26R
Pavement Rehabilitation Proj#72NB5 marked as B27-B2 @ 2'-5'.

Analysis By California Test 643, 1999, Department of Transportation
Division of Construction, Method for Estimating the Service Life of
Steel Culverts.

pH 8.6

Table with 2 columns: Water Added (ml) and Resistivity (ohm-cm). Rows show values for 15ml, 5ml, and 5ml.

26 years to perforation for a 16 gauge metal culvert.
34 years to perforation for a 14 gauge metal culvert.
48 years to perforation for a 12 gauge metal culvert.
61 years to perforation for a 10 gauge metal culvert.
74 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 0.005%
Water Soluble Chloride Calif. Test 422 0.001%

Bicarbonate (as CaCO3) N/A
(In a saturated soil paste extract)

Note: N/A = Unable to determine due to the texture of the soil (Clay).

Laura Torres
Laura Torres
LT/ram



L A B O R A T O R Y   R E P O R T

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C L A R K S O N   L A B O R A T O R Y   A N D   S U P P L Y   I N C.  
350 Trousdale Dr. Chula Vista, Ca. 91910 www.clarksonlab.com  
A N A L Y T I C A L   A N D   C O N S U L T I N G   C H E M I S T S

Date: June 26, 2013  
Purchase Order Number: 72NB5  
Sales Order Number: 18292  
Account Number: ALLG  
To:

\*-----\*  
Allied Geotechnical Engineers  
1810 Gillespie Way Ste 104  
El Cajon, CA 92020  
Attention: Sani Sutanto

Laboratory Number: SO5020-11      Customers Phone: 449-5900  
Fax: 449-5902

Sample Designation:  
\*-----\*

One soil sample received on 06/13/13 at 1:35pm,  
taken on 06/13/13 from Brown Field Airport Runway 8L/26R  
Pavement Rehabilitation Proj#72NB5 marked as B29-B1 @ 2'-5'.

Analysis By California Test 643, 1999, Department of Transportation  
Division of Construction, Method for Estimating the Service Life of  
Steel Culverts.

pH 8.6

Water Added (ml)	Resistivity (ohm-cm)
10	10000
5	4200
5	1700
5	1100
5	930
5	890
5	900
5	950

29 years to perforation for a 16 gauge metal culvert.  
38 years to perforation for a 14 gauge metal culvert.  
52 years to perforation for a 12 gauge metal culvert.  
67 years to perforation for a 10 gauge metal culvert.  
82 years to perforation for a 8 gauge metal culvert.

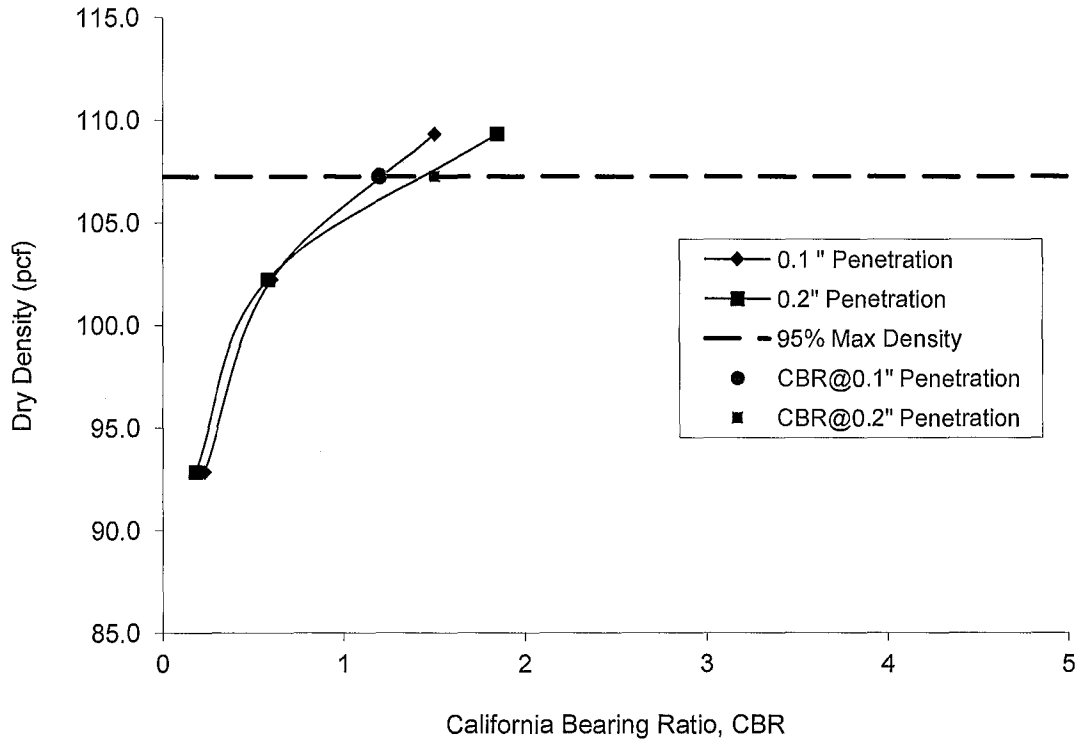
Water Soluble Sulfate Calif. Test 417      0.006%  
Water Soluble Chloride Calif. Test 422      0.001%

Bicarbonate (as CaCO<sub>3</sub>)      N/A  
(In a saturated soil paste extract)

Note: N/A = Unable to determine due to the texture of the soil (Clay).

  
Laura Torres  
LT/ram

**California Bearing Ratio of Laboratory-Compacted Soils**  
ASTM D1883



Sample Location	CBR at 0.1" penetration	CBR at 0.2" penetration
B2-B1@2-5	1.2	1.5

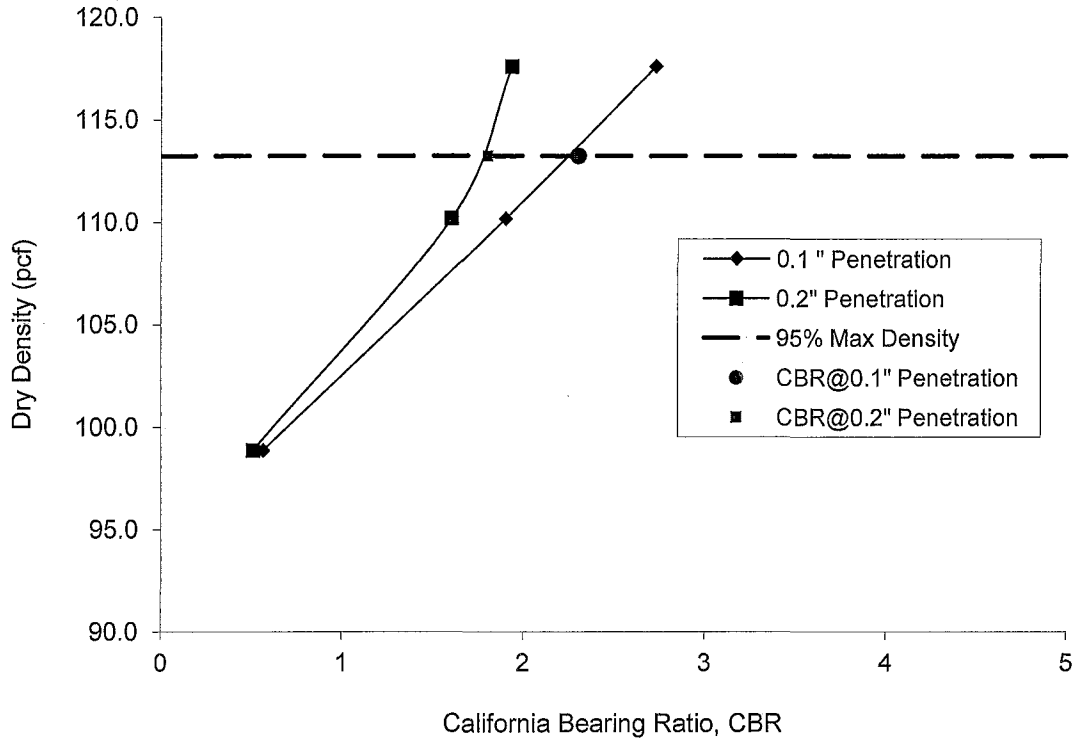


**SOUTHERN CALIFORNIA  
SOIL & TESTING, INC.**

Allied Geotechnical #72NB5

BY:	CA	DATE	7/11/2013
JOB No.:	1312035		

### California Bearing Ratio of Laboratory-Compacted Soils ASTM D1883



Sample Location	CBR at 0.1" penetration	CBR at 0.2" penetration
B4-B1@2-9	2.3	1.8

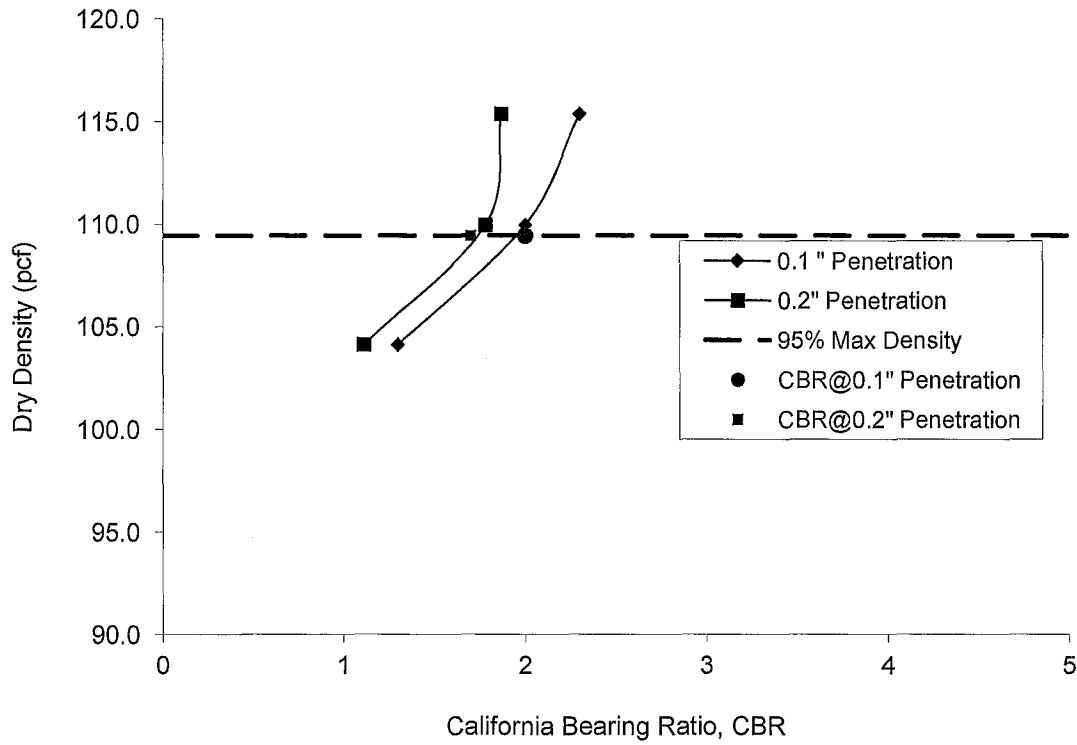


**SOUTHERN CALIFORNIA  
SOIL & TESTING, INC.**

Allied Geotechnical #72NB5

BY:	CA	DATE	7/15/2013
JOB No.:	1312035		

## California Bearing Ratio of Laboratory-Compacted Soils ASTM D1883



Sample Location	CBR at 0.1" penetration	CBR at 0.2" penetration
B7-B1@1-8	2	1.7

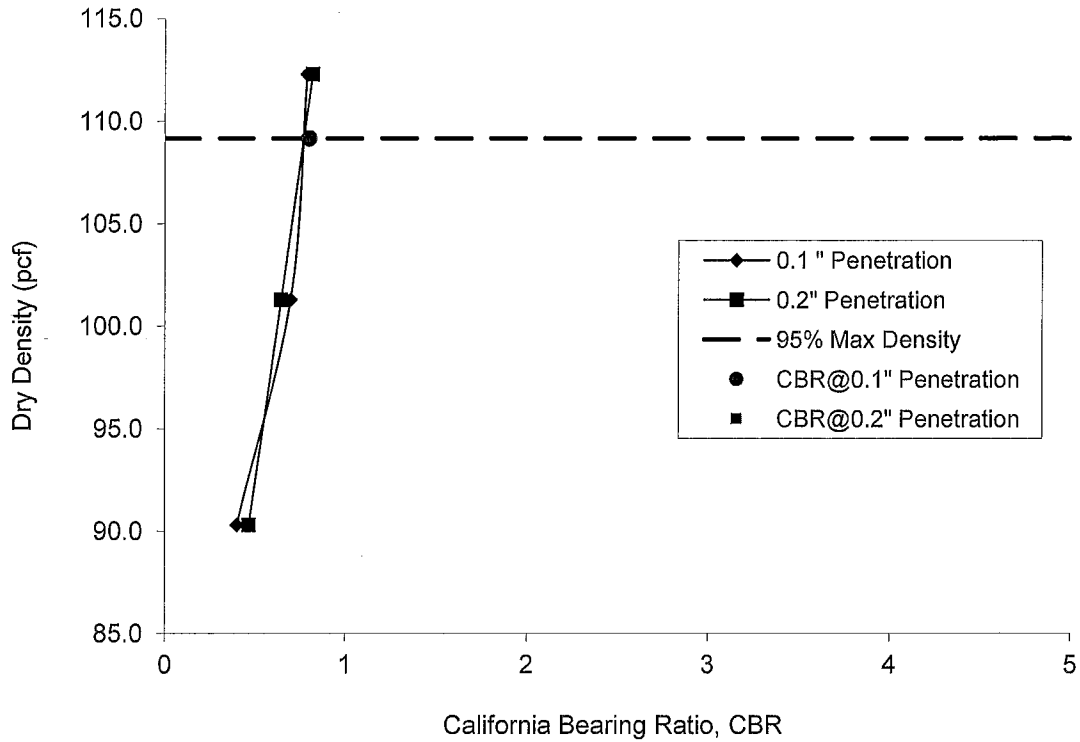


**SOUTHERN CALIFORNIA  
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Allied Geotechnical #72NB5

BY:	CA	DATE	7/15/2013
JOB No.:	1312035		

**California Bearing Ratio of Laboratory-Compacted Soils**  
ASTM D1883



Sample Location	CBR at 0.1" penetration	CBR at 0.2" penetration
B9-B1@3-10	0.8	0.8

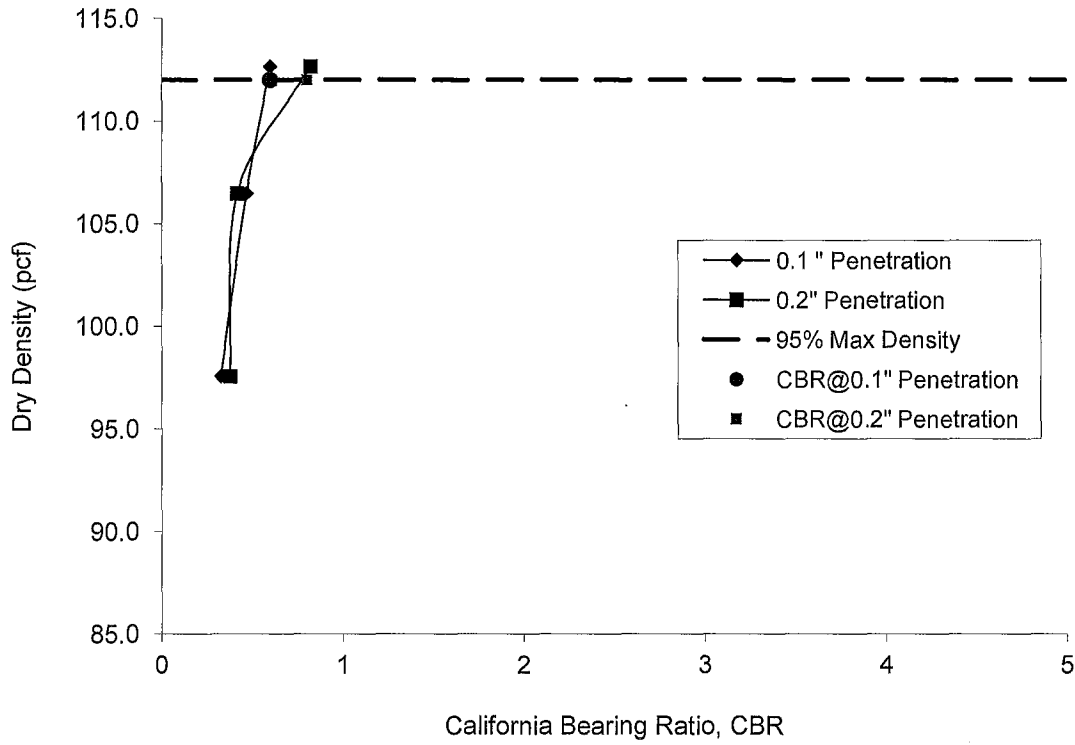


**SOUTHERN CALIFORNIA  
SOIL & TESTING, INC.**

Allied Geotechnical #72NB5

BY:	CA	DATE	7/3/2013
JOB No.:	1312035		

**California Bearing Ratio of Laboratory-Compacted Soils**  
ASTM D1883



Sample Location	CBR at 0.1" penetration	CBR at 0.2" penetration
B10-B1@2-9	0.6	0.8

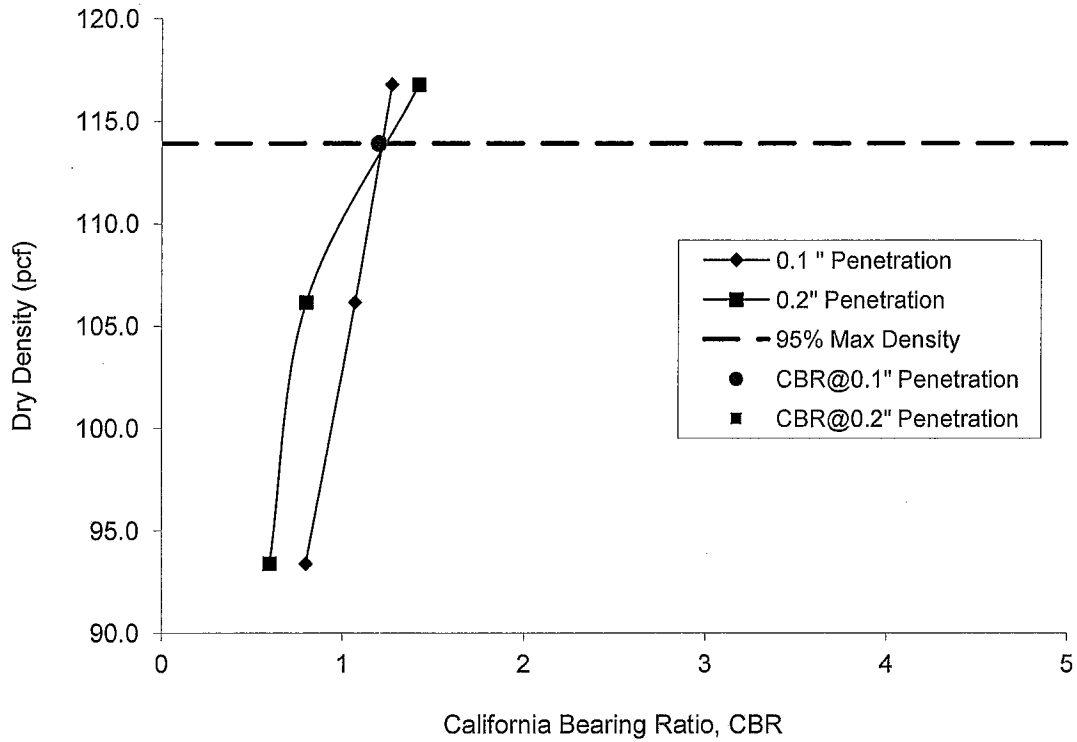


**SOUTHERN CALIFORNIA  
SOIL & TESTING, INC.**

Allied Geotechnical #72NB5

BY:	CA	DATE	7/11/2013
JOB No.:	1312035		

**California Bearing Ratio of Laboratory-Compacted Soils**  
ASTM D1883



Sample Location	CBR at 0.1" penetration	CBR at 0.2" penetration
B13-B1@2-8	1.2	1.2

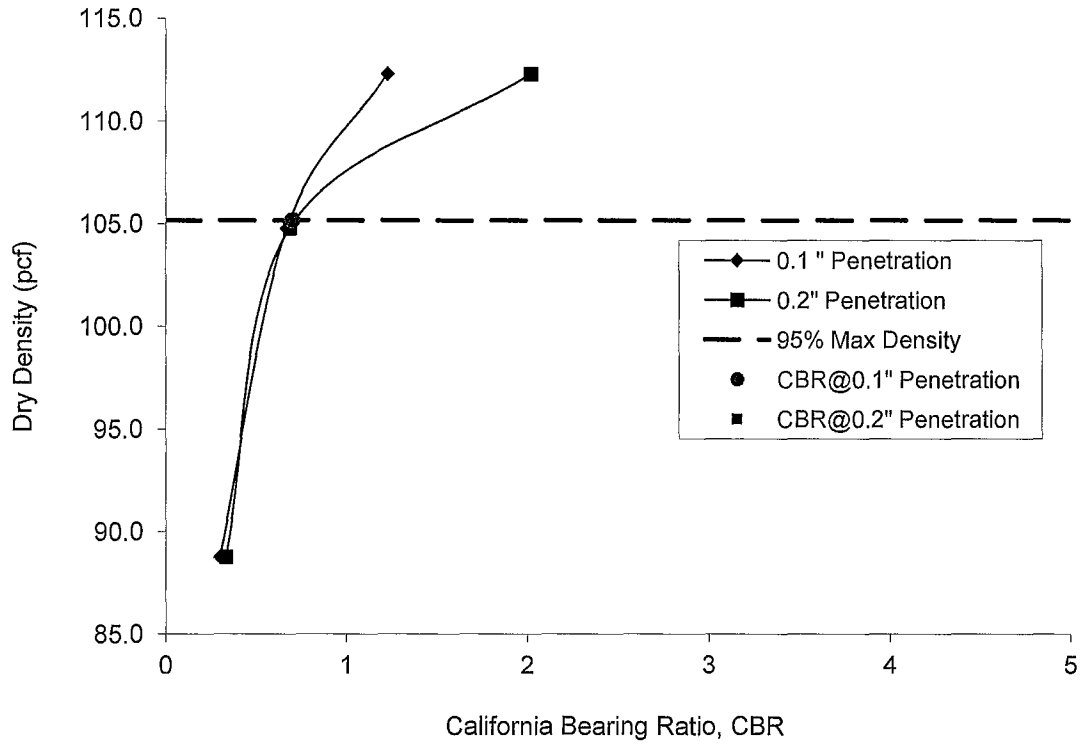


**SOUTHERN CALIFORNIA  
SOIL & TESTING, INC.**

Allied Geotechnical #72NB5

BY:	CA	DATE	7/11/2013
JOB No.:	1312035		

**California Bearing Ratio of Laboratory-Compacted Soils**  
ASTM D1883



Sample Location	CBR at 0.1" penetration	CBR at 0.2" penetration
B15-B2@5-9	0.7	0.7



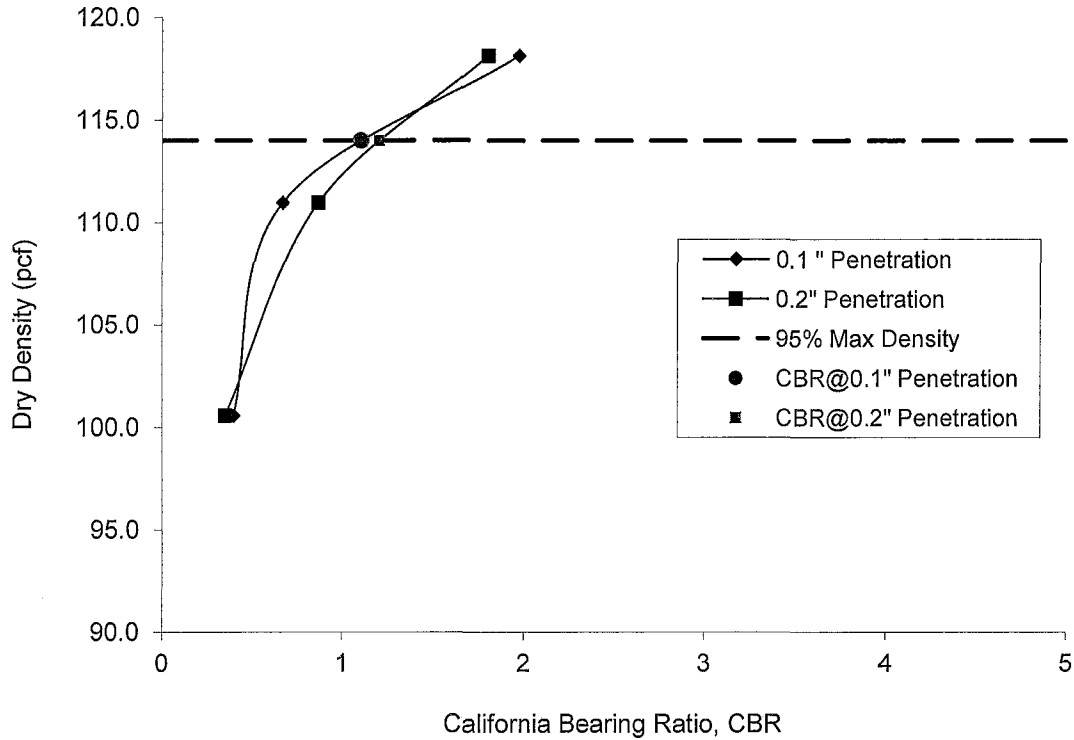
**SOUTHERN CALIFORNIA  
SOIL & TESTING, INC.**

Allied Geotechnical #72NB5

BY:	CA	DATE	7/3/2013
JOB No.:	1312035		



**California Bearing Ratio of Laboratory-Compacted Soils**  
ASTM D1883



Sample Location	CBR at 0.1" penetration	CBR at 0.2" penetration
B18-B2@2-8	1.1	1.2

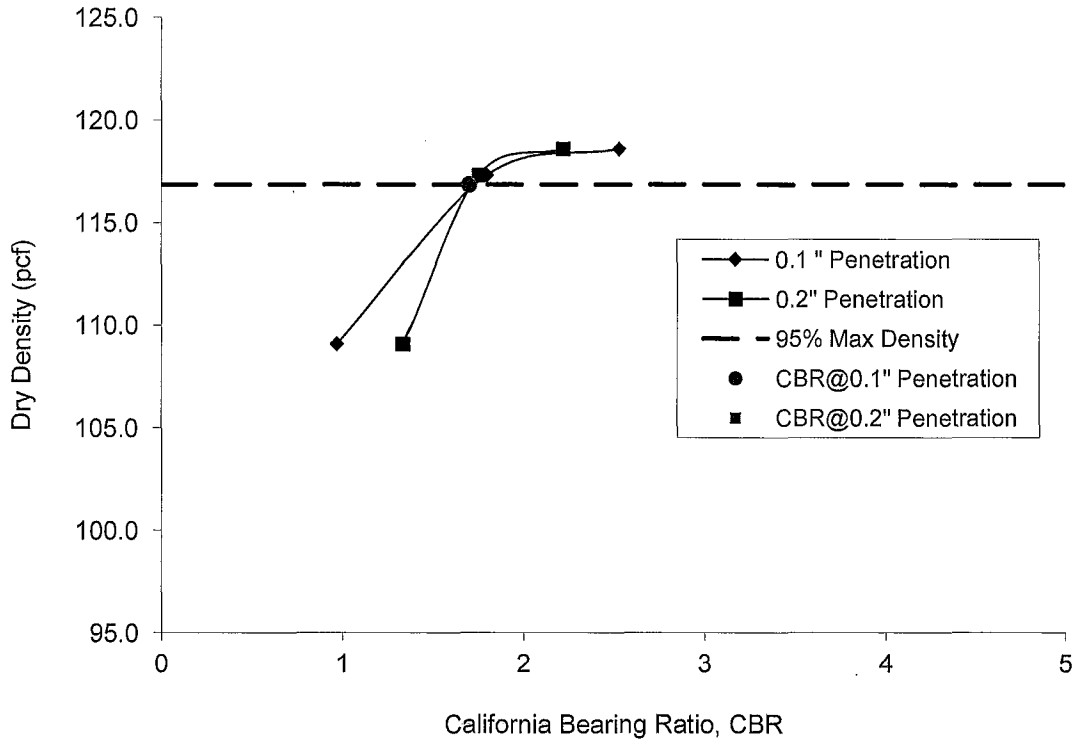


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Allied Geotechnical #72NB5

BY:	CA	DATE	7/15/2013
JOB No.:	1312035		

**California Bearing Ratio of Laboratory-Compacted Soils**  
ASTM D1883



Sample Location	CBR at 0.1" penetration	CBR at 0.2" penetration
B20-B1@2-9	1.7	1.7

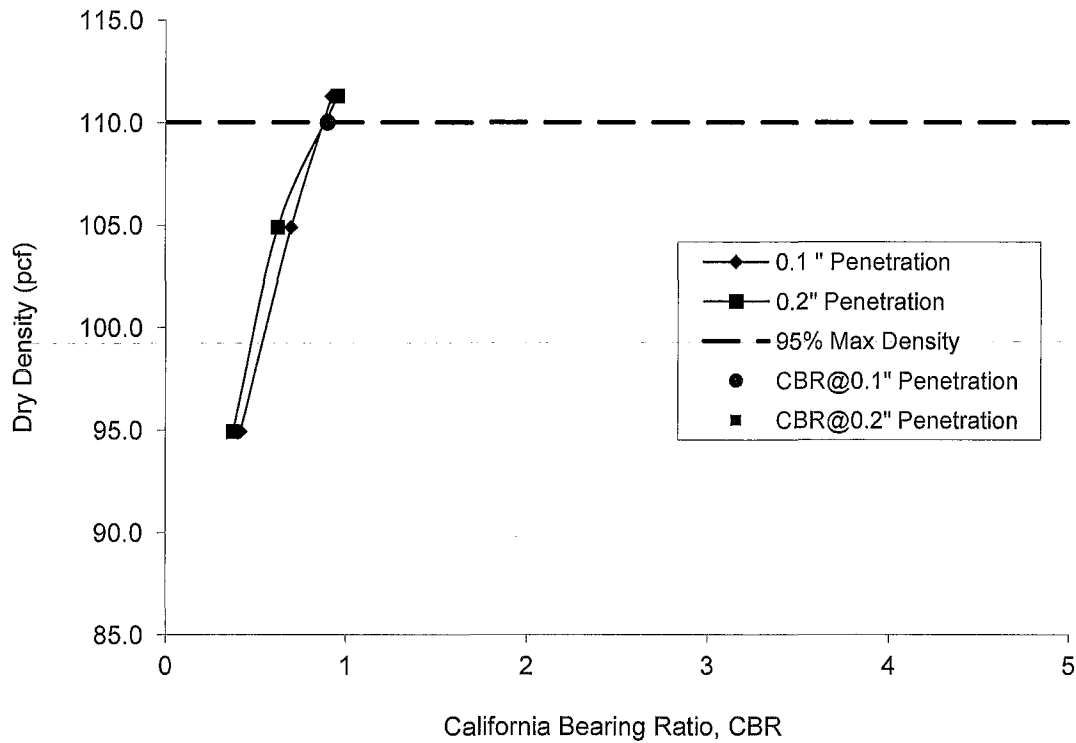


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Allied Geotechnical #72NB5

BY:	CA	DATE	7/15/2013
JOB No.:	1312035		

**California Bearing Ratio of Laboratory-Compacted Soils**  
ASTM D1883



Sample Location	CBR at 0.1" penetration	CBR at 0.2" penetration
B22-B1@2-9	0.9	0.9

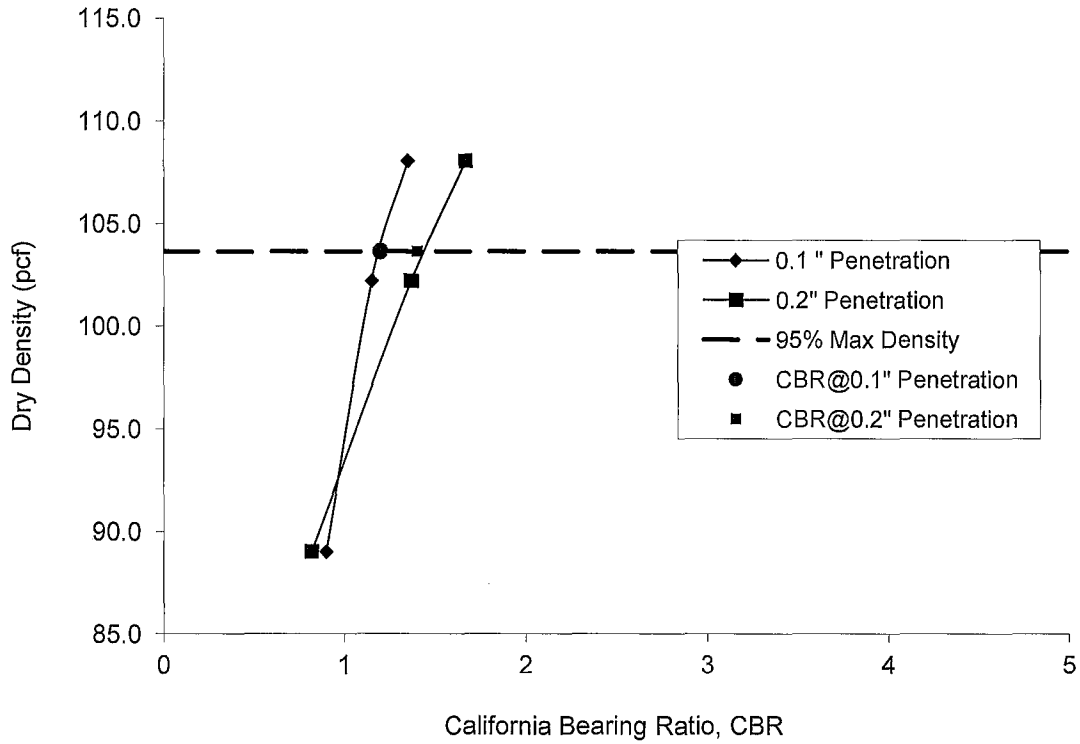


**SOUTHERN CALIFORNIA  
SOIL & TESTING, INC.**

Allied Geotechnical #72NB5

BY:	CA	DATE	7/3/2013
JOB No.:	1312035		

## California Bearing Ratio of Laboratory-Compacted Soils ASTM D1883



Sample Location	CBR at 0.1" penetration	CBR at 0.2" penetration
B24-B1@2-9	1.2	1.4



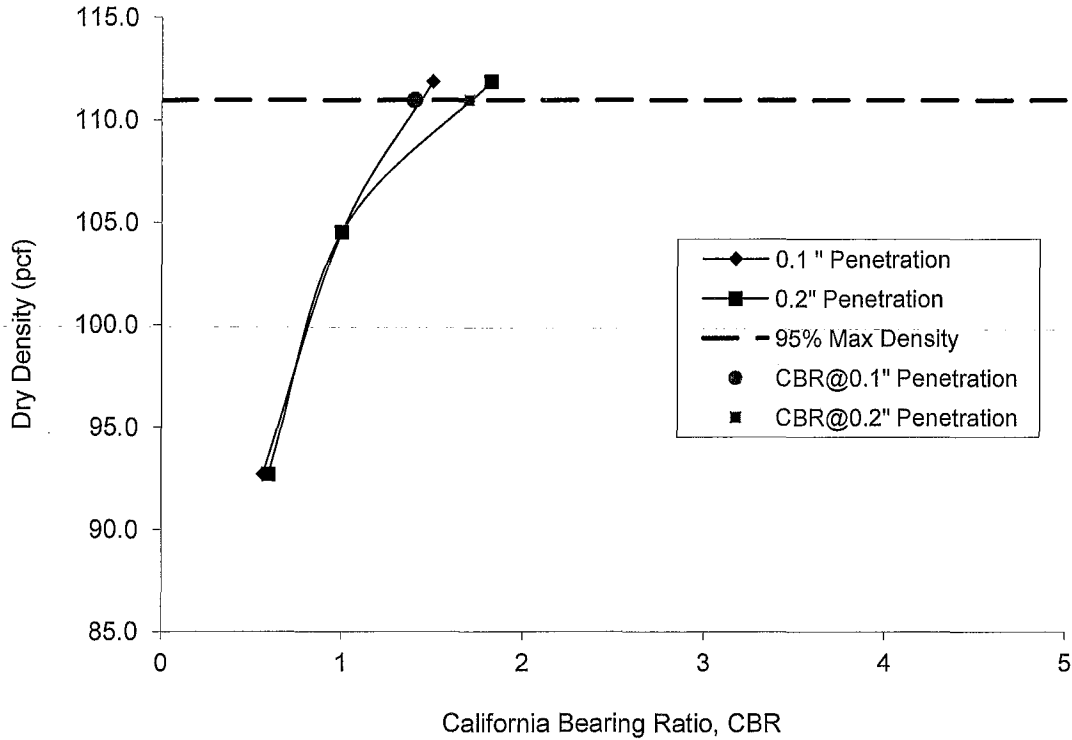
**SOUTHERN CALIFORNIA  
SOIL & TESTING, INC.**

Allied Geotechnical #72NB5

BY:	CA	DATE	7/3/2013
JOB No.:	1312035		

## California Bearing Ratio of Laboratory-Compacted Soils

ASTM D1883



Sample Location	CBR at 0.1" penetration	CBR at 0.2" penetration
B26-B1@2-9	1.4	1.7

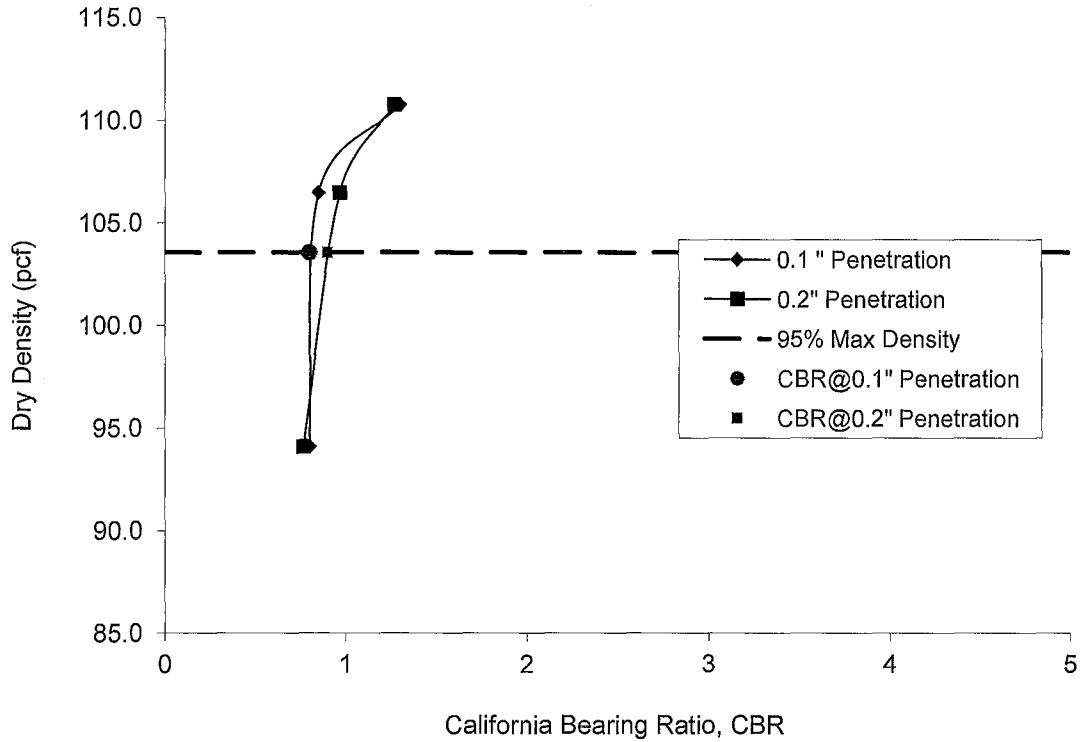


**SOUTHERN CALIFORNIA  
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Allied Geotechnical #72NB5

BY:	CA	DATE	7/11/2013
JOB No.:	1312035		

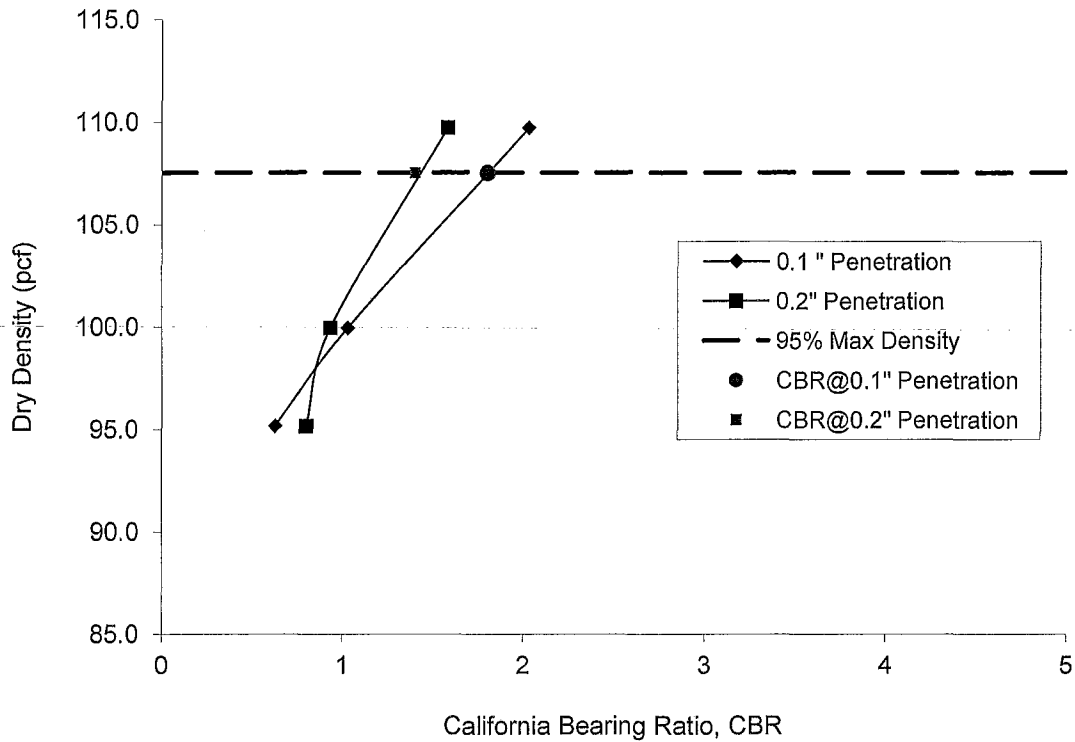
**California Bearing Ratio of Laboratory-Compacted Soils**  
ASTM D1883



Sample Location	CBR at 0.1" penetration	CBR at 0.2" penetration
B28-B1@2-9'	0.8	0.9

 <b>SOUTHERN CALIFORNIA SOIL &amp; TESTING, INC.</b>	Allied Geotechnical #72NB5			
	BY:	CA	DATE	7/3/2013
	JOB No.:	1312035		

### California Bearing Ratio of Laboratory-Compacted Soils ASTM D1883



Sample Location	CBR at 0.1" penetration	CBR at 0.2" penetration
B30-B1@2-9	1.8	1.4

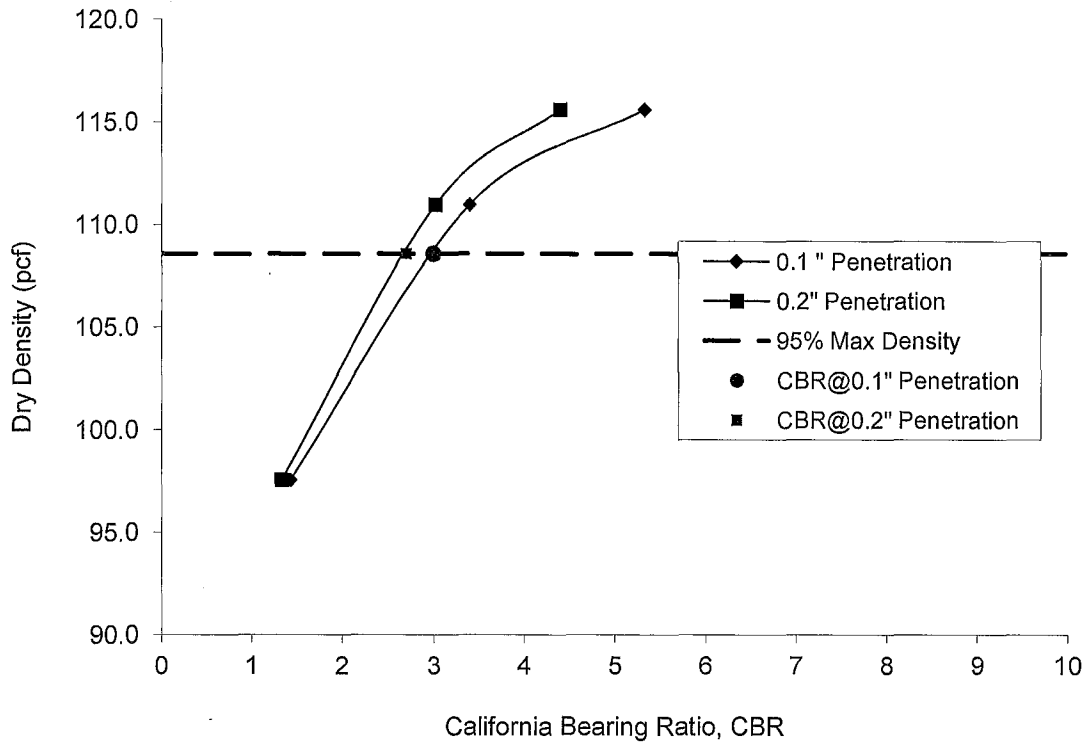


**SOUTHERN CALIFORNIA  
SOIL & TESTING, INC.**

Allied Geotechnical #72NB5

BY:	CA	DATE	7/11/2013
JOB No.:	1312035		

## California Bearing Ratio of Laboratory-Compacted Soils ASTM D1883



Sample Location	CBR at 0.1" penetration	CBR at 0.2" penetration
B-31-B2@2-8	3	2.7



**SOUTHERN CALIFORNIA  
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Allied Geotechnical #72NB5

BY:	CA	DATE	7/15/2013
JOB No.:	1312035		



**APPENDIX G**  
**CONSTRUCTION SAFETY PHASING PLAN**

# Construction Safety & Phasing Plan

Runway 8L-26R Rehabilitation Phase 3

AIP: 3-06-0213-019-2017

Brown Field Municipal Airport (SDM)  
San Diego, CA

Prepared For:

The City of  
**SAN DIEGO**  Public Works

The City of San Diego  
Public Works / Airports Division

Prepared By:

**HNTB**

The HNTB Companies  
Infrastructure Solutions

6033 W. Century Blvd, Suite 1050  
Los Angeles, CA 90278

5/24/2017 – Rev. 3

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## **I. Coordination**

### **A. Design/Pre-Construction**

Throughout the design of this project, the design engineer, HNTB Corporation, met with city and airport officials to develop a preferred phasing and construction approach. The preferred alternatives were discussed with local Airport and Stakeholders. The airport reviewed the proposed construction phasing and associated impacts to airport operations. No action items or revisions to the concept were developed as part of either of these reviews with the stakeholders.

A pre-bid conference will be held prior to accepting bids to explain the unique challenges and requirements associated with this project. At this meeting, the airport will explain in depth the phasing and safety requirements to the contracting community.

Prior to initiating construction, the contractor will be required to submit detailed safety plans, schedules, and quality control plans for review and approval by the engineer

### **B. Construction**

Coordination of airfield activities is an important component of a safe operating environment. During the construction of this project the following coordination meetings will be held to discuss airfield activities:

- Pre-construction meeting
- Weekly progress meetings
- Phase change-over coordination meetings
- Daily coordination will take place between all involved parties
- Daily airfield safety coordination meetings

All contractor personnel working on the AOA will receive a safety briefing approved by Airport operations prior to working on the AOA. The safety briefing will cover the following subjects:

- Aircraft jet blast
- Aircraft versus vehicles
- Airfield layout including signs, markings and lighting
- Closed or prohibited areas
- Foreign object damage
- Wildlife

### **C. FAA/ATCT**

FAA form 7460-1; will be filed for this project along with all crane activity associated with construction.

There will be a weekly coordination meeting with FAA and Air Traffic Control Tower (ATCT) to discuss:

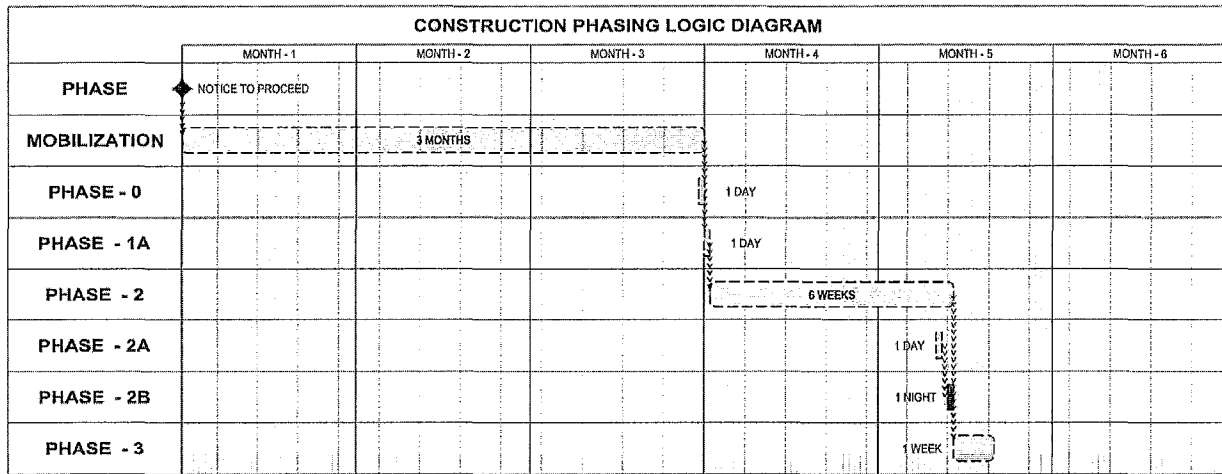
- Project progress

- Operational impacts and solutions
- Future schedule

## II. Phasing

### A. Sequence of Work

Figure 1 presents the assumed construction schedule for the subject project. This schedule may be updated during construction due to weather and or other unforeseen conditions. Airport users, tenants, and the FAA will be notified upon any schedule revisions. Changes in the scope or duration of the project may necessitate revisions to the CSPP and review and approval by the airport operator and the FAA.



PHASE	PREDECESSOR	SUCCESSOR	CONCURRENT	TEMPORARY WORK (SEE NOTE 2)	WORK HOURS	DURATION	TRAFFIC RESTRICTIONS
0	NONE	PHASE 1A	NONE	UTILITY CONNECTIONS, MOBILE TRAILERS, CONTRACTOR SIGNAGE, ENVIRONMENTAL, BARRICADES, TEMP LIGHTING, MARKING REMOVALS	MONDAY - SATURDAY (1-10 HOUR SHIFT MIN)	1 DAY	PORTIONS OF TAXIWAY A CLOSED RUNWAY 8R-28L CLOSED, RUNWAY 8L-26R CLOSED
1A	PHASE 0	PHASE 2, 2A AND 2B	NONE	BARRICADES, LIGHTED "X" CLOSURE MARKERS	MONDAY - SATURDAY (1-10 HOUR SHIFT MIN)	1 DAY	RWY 8R-28L CLOSED
2	PHASE 1A	PHASE 3	PHASE 2A & 2B	SIGNAGE, BARRICADES	MONDAY - SATURDAY (1-10 HOUR SHIFT MIN)	6 WEEKS	RWY 8L-26R CLOSED PORTIONS OF TAXIWAYS A, B, AND C CLOSED
2A	PHASE 1A	PHASE 3	PHASE 2 & 2B	BARRICADE INSTALLATION	MONDAY - SATURDAY (1-10 HOUR SHIFT MIN)	1 DAY	PORTIONS OF TAXIWAY A CLOSED
2B	PHASE 1A	PHASE 3	PHASE 2 & 2A	BARRICADE INSTALLATION	OFF-PEAK HOURS (10:00 PM - 6:00 AM)	1 NIGHT	PORTIONS OF TAXIWAYS A, B, AND C CLOSED
3	PHASE 2, 2A, 2B	NONE	NONE	PUNCH LIST, BARRICADE REMOVAL	MONDAY - SATURDAY (1-10 HOUR SHIFT MIN)	1 WEEK	RWY 8L-26R CLOSED PORTIONS OF TAXIWAYS A, B, AND C CLOSED

Figure 1: Assumed Construction Schedule

## **B. Phase Descriptions**

### **Phase 0 – Mobilization**

- *Description of Work:* Utility connections, mobile trailers, contractor signage, environmental.
- *Duration:* 60 working days
- *Work Hours:* Monday – Friday, 8:00AM – 5:00PM, (1) 8-hour shift minimum
- *Areas Closed to Aircraft Operations:* None
- *Contractor Access / Haul Routes:* Access AOA via gate and proceed along vehicle access road. No crossing of active taxiways required.
- *Lighting/Marking Changes:* No temporary airfield lighting or marking modifications.

### **Phase 1 – Runway 8L-26R**

- *Description of Work:* Installation of signage and barricades required to close Runway 8L-26R, AC overlay of existing runway, adjusting existing lights to grade as required, new marking and revised signage.
- *Duration:* 6 weeks
- *Work Hours:* Monday- Saturday, (1) 10-hour shift minimum
- *Areas Closed to Aircraft Operations:* Runway 8L-26R, Taxiway A East of Taxiway C, portions of Taxiway B and C north of Runway 8R-26L.
- *Contractor Access / Haul Routes:* Access AOA via gate and proceed along vehicle access road to contractor staging area. Construction traffic will travel along service roads to work site as shown on the plans.
- *Impacts to NAVAID's:* PAPI and REIL will be de-energized
- *Lighting/Marking Changes:* Installation of low profile barricades with red lights to close taxiway A, taxiway B and taxiway C. Black- out taxiway B and C centerline going into work zone. Cover airfield signs directing aircraft into the work zone.
- *Coordination Items:* Airport to issue appropriate NOTAMS

### **Phase 1A – Signage**

- *Description of Work:* Installation of new guidance sign panels.
- *Duration:* 1 Day
- *Work Hours:* Monday-Saturday, 1- 10-hour shift, (10:00 PM - 6:00 AM)
- *Areas Closed to Aircraft Operations:* Runway 8L-26R, Taxiway A East of Taxiway C, portions of Taxiway B and C north of Runway 8R-26L
- *Contractor Access / Haul Routes:* Access AOA via gate and proceed along vehicle access road to contractor staging area. Construction traffic will travel along service roads to work site as shown on the plans.
- *Lighting/Marking Changes:* Installation of low profile barricades with red lights to close taxiway A, taxiway B and taxiway C. Cover airfield signs directing aircraft into the work zone.
- *Coordination Items:* Airport to issue appropriate NOTAMS



**Phase 1B – Taxiway A Signage**

- *Description of Work:* Installation of new guidance sign panels along Taxiway A.
- *Duration:* 8 hours
- *Work Hours:* Monday- Saturday Off-Peak Hours, (10:00 PM- 6:00AM)
- *Areas Closed to Aircraft Operations:* Runway 8L-26R, Runway 8R-26L, Portions of Taxiway A, Taxiway B, and Taxiway C.
- *Contractor Access / Haul Routes:* Access AOA via gate and proceed along vehicle access road to contractor staging area. Construction traffic will travel along service roads to work site as shown on the plans.
- *Lighting/Marking Changes:* Installation of low profile barricades with red lights to close taxiway A, taxiway B and taxiway C. Cover airfield signs directing aircraft into the work zone.
- *Coordination Items:* Airport to issue appropriate NOTAMS

**Phase 2 – Punchlist items for Runway 8L-26R Reopening**

- *Description of Work:* Punch list items within Phase 1 area
- *Duration:* 1 week
- *Work Hours:* Monday- Saturday, (1) 10-hour shift minimum
- *Areas Closed to Aircraft Operations:* Runway 8L-26R, Taxiway A East of Taxiway C, portions of Taxiway B and C north of Runway 8R-26L.
- *Contractor Access / Haul Routes:* Access AOA via gate and proceed along vehicle access road to contractor staging area. Construction traffic will travel along service roads to work site as shown on the plans.
- *Impacts to NAVAID's:* PAPI and REIL remain de-energized
- *Lighting/Marking Changes:* No additional lighting/marking changes will be required to Phase 1, at the end of phase 2 all new marking, signage and lighting shall be operational.
- *Coordination Items:* Airport to issue appropriate NOTAMS

**III. Areas and Operations Affected by Construction Activity**

Table 1 on the following page summarizes the anticipated operational effects of the proposed construction. Areas and operations not identified in the table are anticipated to not be affected and remain unchanged throughout construction.

Operational Requirements	Normal (Existing/Final)	Phase 1/1A	Phase 1B	Phase 2
<b>Runway 8L/26R Status</b>	Open	Closed	Closed	Closed
<b>Runway 8L Declared Distances</b>	TORA: 7972' TODA: 7972' ASDA: 7972' LDA: 7972'	N/A	Normal, Full Length	N/A
<b>Runway 26R Declared</b>	TORA: 7972'			N/A

Operational Requirements	Normal (Existing/Final)	Phase 1/1A	Phase 1B	Phase 2
<b>Distances</b>	TODA: 7972' ASDA: 7972' LDA: 7972'	N/A	Normal, Full Length	
<b>Runway 8L Approach Procedures</b>	RNAV (GPS), VOR, GPS-A	N/A	No Change	N/A
<b>Runway 26R Approach Procedures</b>	VOR, GPS-A	N/A	No Change	N/A
<b>Runway 8L Visual Slope Indicator (VSI)</b>	4-light PAPI on left (3.00 degrees glide path)	N/A	No Change	N/A
<b>Runway 26R Visual Slope Indicator (VSI)</b>	4-light PAPI on left (4.00° glide path)	N/A	No Change	N/A
<b>Taxiway A</b>	Open	Closed East of TWY C	Closed East of TWY C	Closed East of TWY C
<b>Taxiway A1</b>	Open	Open	Closed	Open
<b>Taxiway B</b>	Open	Open	Closed	Open
<b>Taxiway C</b>	Open	Open	Closed North of Taxiway A	Open
<b>ATCT (hours open)</b>	08:00 – 20:00 local	No Change	Closed	No Change
<b>Runway 8R/26L Status</b>	Open	Open	Closed	
<b>Runway 8R Declared Distances</b>	TORA: 3180'; TODA: 3180'; ASDA: 3180'; LDA: 3180'	Normal, Full Length	Closed	Normal, Full Length
<b>Runway 26L Declared Distances</b>	TORA: 3180'; TODA: 3180'; ASDA: 3180'; LDA: 3180'	Normal, Full Length	Closed	Normal, Full Length
<b>Runway 8R Approach Procedures</b>	VOR, GPS-A	No Change	Closed	No Change
<b>Runway 26L Approach Procedures</b>	VOR, GPS-A	No Change	Closed	No Change
<b>Runway 8R Visual Slope Indicator</b>	N/A	N/A	Closed	No Change
<b>Runway 26L Visual Approach Procedures</b>	N/A	N/A	Closed	No Change

Table 1: Operational Effects

#### **IV. Protection of Navigation Aids**

There are no FAA owned NAVAIDs which will be impacted as part of this project.

The only Visual Aids impacted will be the 26R PAPI and REILs. At the start of Phase 1, the contractor will de-energize the 26R PAPI and REILs and surround the installations with low-level barricades to limit the chance of damage. Both facilities will remain de-energized for 3 months. During Phase 2, the PAPI and REILs will be reenergized and the surrounding barricades removed. At this point, a flight inspection will be performed to bring the PAPI back into service.

NOTAMs will be issued 7 days prior to the shutdown of the PAPI. NOTAMs shall be issued by the airport manager.

---

#### **V. Contractor Access**

##### **A. Location of Stockpiled Construction Materials**

Storage of equipment and materials outside of working hours shall be in the contractor staging area. The contractor shall be solely responsible for the security of the staging area and shall be liable for any damage caused to such premises. At no point shall equipment or material be permitted within the RSA, OFZ, or OFA of any active facility. Stockpiled material within the contractor laydown area shall be appropriately secured to avoid FOD and or dust propagation.

##### **B. Vehicle and Pedestrian Operations**

Contractor will be granted airfield access via an automated gate to the south east of the airport office buildings. All vehicles shall proceed via service road directly to the contractor laydown yard. Only vehicles with the appropriate marking and signage may proceed from the contractor's laydown yard to the work areas. This include but is not limited to vehicle markings, operational beacon, flag, and current driver training badge. Vehicles shall also be inspected to ensure their cargo is sufficiently secured to avoid the propagation of debris and or FOD. All private vehicles for employees shall be parked outside of the AOA and not within the contractor's laydown yard; private vehicles are not permitted within the AOA work areas unless they meet the aforementioned identification requirements.

Access to the work areas will be accomplished via established haul routes as shown per phase.

Acting supervisor of the contractor shall be in two-way radio communication with airport operations at all times. In the event of an emergency or other situation requiring action by the contractor, airport operations will notify the supervisor, and the contractor shall immediately respond with the appropriate actions. In the event of an emergency requiring evacuation from the work site, the contractor shall remove all men from the work site and evacuate to the laydown yard. As practicable, construction equipment should be vacated from the work area as well during times of emergency evacuation.

## **VI. Wildlife Management**

This project site is in the vicinity of environmentally sensitive areas populated by Borrowing Owls and San Diego Fairy Shrimp. The limits and schedule of construction have been designed to avoid impacts to either population. The contractor will be required to work within the prescribed limits and schedule and advised of any other necessary precautions.

All project personnel working on the AOA will receive an airfield safety briefing that will include information on the dangers of wildlife and aircraft operations. Contractor will be advised to collect all food trash in secure containers to avoid FOD and attracting birds. Standing water shall be minimized at all times to avoid attracting wildlife.

Inspection of the construction area will be conducted on a daily basis by Airport Operations personnel. Any unusual wildlife activity will be noted on the airfield inspection check list. Notifications will be made to the USDA staff wildlife biologist and airport operation wildlife superintendent and the air traffic control tower. All personnel shall take immediate action to eliminate wildlife hazards whenever they are detected. The project engineer, in consultation with airport operations and the USDA wildlife biologist will develop and implement corrective measures to eliminate any wildlife threat.

## **VII. Foreign Object Debris (FOD) Management**

All aircraft movement areas will be under constant surveillance by all parties to ensure they are acceptable for aircraft operations.

No loose material or waste (FOD), capable of causing damage to aircraft or capable of being ingested into jet engines may be left in the working area on or next to runways, taxiways, ramps, or aprons. The contractor shall direct special attention to all areas which are operational to aircraft during construction. These shall be kept clean and clear of all materials or debris at all times.

FOD located on aircraft movement areas shall be reported to the inspectors immediately. The inspectors shall coordinate with airport operations to close the area to aircraft traffic until cleanup is accomplished.

Trucks and equipment shall have all accumulated dirt, mud, rocks and debris removed before accessing the AOA and when leaving the work areas. Loads shall be struck flush and secured to prohibit loss of material. If spillage occurs, such roadways shall be swept clean immediately after such spillage to allow for safe operation of vehicles.

The contractor shall keep an operational vacuum sweeper and at least two (2) water trucks on site and operational at all times during working and non-working hours and shall maintain the sites free from dust and objectionable debris. During the period of time that there is no construction activity (between work shifts), the vacuum sweeper trucks and water trucks must be ready and on-site with contractor's personnel available by phone to respond immediately to a dust or debris problem as identified by airfield operations staff or the engineer. At no time shall there be more than a 10 minute response time

to calls concerning dust/debris problems during work hours and a 60 minute response time at all other times on a 24-hour per day basis.

The contractor shall provide truck washes, rumble strips, shakers and or other means as necessary to prevent the creation of FOD in the AOA. If the contractor's method does not remove debris adequately to meet safety requirements, the contractor may be shut down and will be required to utilize other methods at no additional cost to the airport.

### **VIII. Hazardous Material Management**

Contractors operating construction vehicles and equipment on the airport must be prepared to expeditiously contain and clean-up spills resulting from fuel or hydraulic fluid leaks. No fuel, oil, grease, flammable liquids, or contaminants of any kind, including detergents, shall be allowed to flow into or be placed in any sewer system or open water areas.

All construction activity involved with the handling of hazardous materials must provide the project engineer with a hazardous materials removal plan. The plan will include the name of the company used for removal of hazardous materials and the names and 24-hour telephone numbers of staff authorized to handle such removals.

### **IX. Notification of Construction Activities**

Airport Operations will make notifications to airport users through existing distribution methodologies and a pre-construction meeting. No ramp, apron, taxiway runway or Visual Aid shall be closed to aircraft without approval of airport operations and the engineer. This will enable notices to airmen (NOTAMS), or other advisory communications to be issued. A minimum of 72 hours of advanced notice will be provided for all closures.

Contractor will be responsible for issuing FAA form 7460-1, Notice of Proposed Construction or Alteration, to the governing FAA Office during mobilization. Contractor will not be authorized to initiate work within the AOA until such form has been submitted and determination has been issued by the FAA.

### **X. Inspection Requirements**

Airport operations and City personnel will conduct continual inspections of the construction site to ensure that areas surrounding the sites are safe for aircraft operations. Airport Operations personnel will note any discrepancies on the daily inspection checklist.

Frequent inspections will be made by Airport Operations and the engineer or his authorized representative during the critical phases of the work to insure that the contractor is following the recommended safety procedures. The inspector shall report any violations or potential safety hazards to the engineer who will in turn advise the contractor of the concern for immediate correction by the contractor.

## **XI. Underground Utilities**

The contractor will be required to mark all FAA utility lines prior to any work in a given area. Marking shall consist of a 36-inch high lathe, placed 10 feet on center. Lathe shall be marked with the words danger - FAA or equivalent, and shall be affixed with red or orange surveyor tape to enhance visibility. Additionally, the contractor shall expose and verify (by survey) the depth and alignment of all underground utilities in the construction site. The contractor shall pothole and survey all utilities within a five foot distance of any work prior to excavation.

The contractor shall contact utility owners after the i.d. number is obtained from the underground service alert [USA] (phone: 1-800-227-2600) but not less than fourteen (14) days before excavation work is started, to mark or identify existing utilities. If the utility owner is the city, a confirmation number indicating that the city has been notified shall be obtained by USA or the contractor from the appropriate city department. The i.d. number together with the date acquired shall be reported to the engineer when calling for inspection.

All utilities encountered along the line of the work shall be maintained in service during all operations under the contract, unless other arrangements satisfactory to the utility owner, the affected agency, and the engineer are made in advance. Utilities shall include, all above or below ground conduit, pipes, wet wells, ducts, cables, and appurtenances associated with oil, gas, water, steam, irrigation, sewer, storm drain, wastewater, air, electrical, power, instrumentation, communication, telephone, tv, and lighting systems, whether or not owned by the city. All valves, switches, vaults, and meters shall be maintained and readily accessible for emergency shutoff.

Any utility that is damaged by the contractor shall be immediately reported to the engineer and airport operations and immediately repaired to a condition equal to, or better than, the condition they were in prior to such damage. Repair work shall be continuous until the utility or improvement is placed back in service. The contractor shall be responsible for and repair at its own expense any damages resulting from his/her failure to locate utilities as specified.

All existing utilities within the construction areas or the staging area that are designated to remain in place shall be maintained, accessible, and protected at all times (i.e., waterlines, fire hydrants, valves, drainage structures, electrical & FAA cables/equipment, etc.)

Exercise extreme care when using any equipment to prevent contact with any nearby power lines and power sources. Safe working clearances shall conform to the national electrical code.

The contractor may make certain temporary connections to the existing airfield lighting system only if it is associated with keeping the required lighting systems operational and approved by the resident engineer. The contractor shall provide a separate power source for other construction related power

Power and control cables for airfield lighting and navigational aids are located in the construction areas. The contractor's personnel shall be familiar with these cable locations and keep vehicles and equipment clear of any cables at all times. Mark/delineate the surface for each utility in a manner acceptable to the

engineer. As indicated on the phasing plans and the specifications, the contractor shall locate all utilities (operational and abandoned) prior to starting any excavation, demolition or earthwork.

High voltage lines are within the project limits. All work shall be performed in conformance with all federal, state, and local utility and contract requirements. Sequencing of work and safety practices used in, on or around high voltage lines or other utility structures are the responsibility of the contractor, except where electrical distribution and transmission lines have been deenergized and visibly grounded at the point of work. Assume that all such lines are energized and the contractor shall conform his operations to (among other requirements) Title 29 of the code of Federal Regulations Part 1926, "Safety and Health Regulations for Construction," Section 1926.550(a)(19).

## **XII. Penalties**

In the event an employee of the contractor violates a safety provision, they shall be prohibited from returning to work on the AOA without remedial safety training and the approval of the engineer. Violations may be deemed as just and sufficient cause to require the employee be permanently removed from the job site. The contractor shall be responsible for all costs and delays caused by an employee's safety violation.

Due to the impacts to airport operations, it is critically important that the contractor remain on schedule. As such, this project will employee liquidated damages to recoup the costs of the contractor's inability to meet the agreed upon schedule. As specified in the contract, for every unit of time a facility remains closed or otherwise impacted, the contractor shall be assessed an appropriate fee that represents the cost of having that facility impacted.

## **XIII. Special Conditions**

This project requires the contractor to work directly beneath aircraft operations. It is of paramount importance that all equipment stays clear of the prescribed approach and departure surfaces. In addition, adequate marking and signage shall be maintained on all vehicles at all times to ensure pilots are aware of any potential hazard posed by construction equipment operations.

In case of an emergency caused by an accident, fire, or personal injury or illness, airport operations are to be immediately notified. Operations will coordinate with other emergency agencies as necessary. The contractor shall also notify the engineer so that any coordination or closures that may be required can be addressed immediately.

Construction may also be stopped or suspended by airport operations, in consultation with the engineer during periods of inclement weather, such as low visibility, or when it is necessary to provide an extra margin of safety to aircraft operations, or reduce other activities to keep the airport operational.

#### **XIV. Runway and Taxiway Visual Aids**

Airport Operations will be responsible to ensure all marking and lighting meet appropriate standards.

The phasing plans and specifications for this project detail the specific lighting and signage requirements for each phase. At no time will a closed facility provide visual guidance to pilots. All markings entering work areas will be removed. All lighting within closed facilities will be denergized and associated signs will be covered or otherwise modified. During runway closures, lighted X's will be placed on the current runway identifiers to signal a closed runway to approaching pilots.

All existing pavement markings requiring removal shall be obliterated in a manner that will not leave marking shadows. Blacking out of existing markings will only be employed when the presence of black markings is unlikely to produce confusion for pilots. All permanent pavement markings shall be restored at project completion.

Every effort possible will be made to construct temporary lighting to conform to the runway or taxiway safety area frangibility and height restrictions as specified in the Federal Aviation Administration (FAA) Advisory Circular 150/5370-2, latest edition, entitled Operational Safety on Airports During Construction.

Temporary light plants used in conjunction with nighttime work will not be located in such a manner as to be an obstruction or hazard. In addition, these light plants will not be located where the glare of the light will cause visual or physical interference to operating aircraft, vehicle traffic and the FAA air traffic control tower and will be located outside of any movement area or taxiway safety areas unless approved by the engineer or Airport Operations.

#### **XV. Marking and Signs for Access Routes**

The access routes for this project will be segregated from active aircraft areas and will employ low level barricades to direct traffic in the appropriate direction. Refer to the associated phasing plans for additional detail. No crossing of active facilities will be required as part of this project.

#### **XVI. Hazard Marking and Lighting**

Every excavation or hazard on or adjacent to airfield areas shall be marked. The contractor shall completely fence or barricade all excavations, to the satisfaction of airport operations and the engineer to provide protection against anyone falling into the excavation. The fencing and or barricades shall be in place at all times except when workers are present and actual construction operations are in progress.

Continuous burning red light hazard devices stipulated on the phasing plans shall be operative at all times while in place. It shall be the contractor's responsibility to immediately repair or replace any light or flasher that is not operating.



Barricades shall be in place prior to commencing construction operations, and shall be maintained for the life of the contract. To delineate work areas and avoid contractor personnel from entering critical areas, barricades and or safety fences shall be installed per plan. Contractor shall continually inspect and maintain all construction barriers, fencing, and gates in good condition.

In the event that airport operations deem a hazard insufficiently marked, the contractor shall be notified and take immediate action to rectify the situation.

## **XVII. Protection**

No work will occur within any active RSA or OFA. As previously stated, construction barricades signs and lighting will be employed to segregate construction and airport traffic. In accordance with AC 150/5370-2F, construction activities are prohibited in the runway safety area, taxiway safety area, and taxiway object free area while the associated runway or taxiway is open to aircraft operations. In addition to personnel, material, and/or equipment may not penetrate the obstacle free zone while the runway is open for aircraft operations.

## **XVIII. Other Limitations on Construction**

Contractor must provide notice to the FAA for temporary project construction objects (work area, equipment, haul roads, cranes, concrete pumps, stockpiles etc.) by submitting form FAA form 7460-1 on-line through the FAA Obstruction Evaluation / Airport Airspace Analysis (OE/AAA) system.

Contractor shall submit a separate study for each construction object. Note that each object may require the submittal of multiple "points-of-interest" in order to define the object and facilitate the FAA aeronautical study. The study of construction objects and the associated points-of-interest allows the FAA to determine whether or not there will be an adverse effect to navigable airspace or air navigation facilities.

No open flames, welding, or torching may be employed unless fire safety precautions have been implemented and airport operations has been notified

No blasting of any sort will be permitted on this project.

# Appendix A

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Excerpt from Runway 8L-26R Rehabilitation- Phase 3 – Final Plans, Dated  
04/27/2017

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**ABBREVIATIONS**

A	AMPERE	HV	HIGH VOLTAGE	PROVIDE	FURNISH, INSTALL, CONNECT, TEST AND PUT INTO OPERATION
AIC	AMP INTERRUPTING CAPACITY	JB	JUNCTION BOX	PSI	POUNDS PER SQUARE INCH
AF	AMPERE FRAME, AMPERE FUSE	JCAN	JUNCTION CAN	PT	POINT
ALC	AIRFIELD LIGHTING CABLE	KVA	KILOVOLT AMPERES	PVC	POLYVINYL CHLORIDE
ALCMS	AIRFIELD LIGHTING CONTROL & MONITORING SYSTEM	KW	KILOWATT	PWR	POWER
ALV	AIRFIELD LIGHTING VALVE	KWY	KILOWATT	RCVR	RECEIVER
ADA	AIRPORT OPERATIONS AREA	LIR	LOW IMPACT RESISTANCE	RCRS	RUNWAY DISTANCE REMAINING SIGN
AS	AMPERE SWITCH	LTG	LIGHTING	RCRPT	RECEPTACLE
ASDS	AIRPORT SURFACE OBSERVATION SYSTEM	LTS	LIGHTS	REF	REFERENCE, REFER
ATCT	AIR TRAFFIC CONTROL TOWER	MDSS	MAIN DISTRIBUTION SWITCH BOARD	REIL	RUNWAY END IDENTIFIER LIGHTS
ATS	AUTOMATIC TRANSFER SWITCH	MAX	MAXIMUM	RELOC	RELOCATE
AWG	AMERICAN WIRE GAUGE	MFR	MANUFACTURER	RQCD	REQUIRED
BC	BARE COPPER	MH	MANHOLE	RGL	RUNWAY GUARD LIGHT
BLDG	BUILDING	MIRL	MEDIUM INTENSITY RUNWAY LIGHT	RGS	RIGID GALVANIZED STEEL
BFVP	BROWN FIELD VERNAL POOL	MIN	MINIMUM	RM	ROOM
C	CONDUIT	MM	MILTIMODE	RMC	RIGID METAL CONDUIT
CB, CB	CIRCUIT BREAKER	MTD	MOUNTED	RSA	RUNWAY SAFETY AREA
CCR	CONSTANT CURRENT REGULATOR	(N), N	NEW	RWY	RUNWAY
CKT	CIRCUIT	NEC	NATIONAL ELECTRICAL CODE	RX	RELOCATED LOCATION
CLMS	CONTROL LOW STRENGTH MATERIAL	NF	NON FUSED	SCH	SCHEDULE
COMM	COMMUNICATIONS	NIC	NOT IN CONTRACT	SDSGE	SAN DIEGO GAS & ELECTRIC
COND	CONDUCTOR	NO	NUMBER	SWBD	SWITCHBOARD
CONN	CONNECTION, CONNECT	NTS	NOT TO SCALE	TCH	TOUCHSCREEN ASSEMBLY
CO	CONDUIT ONLY W/PLC WIRE	OCM	OPERATIONS AND MAINTENANCE	TEL	TELEPHONE
CSR	CURRENT SENSING RELAYS	OC	ON CENTER	TSA	TAXIWAY SAFETY AREA
CJ	COPPER	OD	OUTER DIAMETER	TSS	THRESHOLD SIGHTING SURFACE
DOA	DEPARTMENT OF AIRPORTS	OFL	OPTICAL FIBER LOSS (dB/KM)	TWR	TOWER PLC ENCLOSURE
DIA	DIAMETER	OFNR	NON-CONDUCTIVE OPTICAL FIBER	TWY	TAXIWAY
DWG	DRAWING	OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION	TYP	TYPICAL
(E), EX	EXISTING	OTDR	OPTICAL TIME DOMAIN REFLECTOMETER	UN	UNLESS OTHERWISE NOTED
ELEC	ELECTRIC	P	POLE	UG	UNDERGROUND
EMERG	EMERGENCY	(P)	PROPOSED	UL	UNDERWATERS LABORATORIES
EMT	ELECTRICAL METALLIC TUBING	PAP	Precision APPROACH PATH INDICATOR	UPS	UNINTERRUPTIBLE POWER SUPPLY
ESA	EXPERIMENTAL AIRCRAFT ASSOCIATION	PB	PULL BOX	V	VOLTAGE, VOLTS
FAA	FEDERAL AVIATION ADMINISTRATION	PC	PERSONAL COMPUTER	VA	VOLT-AMPERES
FDR	FEEDER	PCC	PORTLAND CEMENT CONCRETE	VAC	VOLT ALTERNATING CURRENT
FLA	FULL LOAD AMPS	PE	POLYETHYLENE CABLE JACKET	VLT	VAULT TOUCHSCREEN PLC ENCLOSURE
FLEX	FLEXIBLE	PH	PHASE	VP	VERNAL POOL
FS	FAIL SAFE	PLC	PROGRAMMABLE LOGIC CONTROLLER	W	WIRE, WATTS
G, GND	GROUND	PNL	PANEL	W	WITH
GEN	GENERATOR	PR	PANEL PAIR	WP	WEATHER PROOF
HRL	HIGH INTENSITY RUNWAY LIGHT			X	EXISTING TO BE REMOVED
HME	HUMAN MACHINE INTERFACE			XTR	TRANSFORMER
				XTR	TRANSMITTER
				XTR	EXISTING TO BE RELOCATED

**LEGEND**

<b>EXISTING:</b>	<b>EXISTING CONTINUED:</b>	<b>PROPOSED:</b>
NORTH ARROW	STORM MANHOLE	REMOVE
UNDEVELOPED UTILITY	STORM DRAIN INLET	CAP
BUILDING OUTLINE	ROADWAY SIGN	SPOT ELEVATION
ROADWAY EDGE OF PAVEMENT	GUARD POST	PAVEMENT JOINT
TREES AND TREE LINES	RUNWAY CHEVRONS MARKING	TYPE
TELEPHONE/COMMUNICATIONS	RUNWAY CENTERLINE MARKING	ELECTRICAL MANHOLE
ELECTRICAL POWER	RUNWAY DESIGNATION MARKING	ELECTRICAL MANHOLE
FIBER OPTIC	RUNWAY EDGE MARKING	ELECTRICAL POWER
SANITARY SEWER	RUNWAY TOUCH DOWN ZONE MARKING	RWY, TWY, TXL
DOMESTIC WATER	TAXIWAY CENTERLINE MARKING	FINISHED GRADE MAJOR CONTOUR
STORM WATER	TAXIWAY EDGE MARKING	FINISHED GRADE MINOR CONTOUR
MAJOR CONTOUR	TAXIWAY HOLDING POSITION MARKING	ELECTRICAL POWER
MINOR CONTOUR	TAXIWAY SHOULDER MARKING	RWY, TWY, TXL
SPOT ELEVATION	ROADWAY MARKING	TEMPORARY CONSTRUCTION FENCE
FENCE	AIRFIELD ELECTRICAL SIGN	SAFETY FENCE
GUARDRAIL	ELECTRICAL HANDHOLE	DETAIL IDENTIFICATION
MISCELLANEOUS MARKING	ELECTRICAL MANHOLE	DETAIL IDENTIFICATION
ELECTRICAL PULL BOX	RUNWAY EDGE LIGHT	SECTION IDENTIFICATION
ELECTRICAL JUNCTION CAN	TAXIWAY EDGE LIGHT	SECTION IDENTIFICATION
ELECTRICAL DUCT MARKER	IN-PAVEMENT LIGHT	SECTION IDENTIFICATION
	RUNWAY THRESHOLD LIGHT	SECTION IDENTIFICATION
	RUNWAY END IDENTIFIER LIGHT (REIL)	SECTION IDENTIFICATION
	RUNWAY HOLDBAR LIGHT	SECTION IDENTIFICATION
	ABANDONED LIGHT CAN / HANDHOLE	SECTION IDENTIFICATION

**CONSTRUCTION CHANGE / ADDENDUM**

CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

**WARNING**

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

The City of  
**SAN DIEGO** Public Works

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75	C311	RUNWAY AND TAXIWAY GUIDANCE SIGN SCHEDULE

**CONSULTANT**

**HNTB**

The HNTB Companies  
Infrastructure Solutions  
6033 W Century Blvd, Suite 1050  
Los Angeles, CA 90045  
Phone: 310-417-8900  
Fax: 310-417-2899

PROFESSIONAL ENGINEER  
ANTONIO T. FERRAJOLA  
No. 55543  
Exp. 12/31/18

CONTRACTOR  
DATE COMPLETED

**T002**

PLANS FOR THE CONSTRUCTION OF:  
**BROWN FIELD AIRPORT  
RUNWAY 8L-26R REHABILITATION - PHASE 3**

**INDEX TO SHEETS, ABBREVIATIONS AND LEGEND**

CITY OF SAN DIEGO, CALIFORNIA  
PUBLIC WORKS DEPARTMENT  
SHEET 2 OF 75 SHEETS

WBS 8-18150

FOR CITY MANAGER: \_\_\_\_\_ DATE: \_\_\_\_\_  
FOR CITY ENGINEER: \_\_\_\_\_ DATE: \_\_\_\_\_

DESIGNER: \_\_\_\_\_ DATE: \_\_\_\_\_  
CHECKED: \_\_\_\_\_ DATE: \_\_\_\_\_  
DRAWN: \_\_\_\_\_ DATE: \_\_\_\_\_

PROJECT ENGINEER: **JAMES BOTICHA**  
PROJECT NO: **146-1767**  
COST NUMBER: **1788-6336**  
CDD# 00000000

CONTRACTOR: \_\_\_\_\_ DATE COMPLETED: \_\_\_\_\_

SCALE: \_\_\_\_\_ NTS

**GENERAL PHASING REQUIREMENTS**

- NO WORK ON THE ADA SHALL START BEFORE THE NOTICE TO PROCEED (NTP). THE PHASING PLANS FOR EACH PORTION OF WORK SPECIFICALLY OUTLINE CONSTRUCTION TIME PERIODS AND ADDITIONAL PHASING REQUIREMENTS ASSOCIATED WITH THOSE ITEMS OF WORK. SCHEDULING AND DAILY OPERATIONS. ALL WORK HOURS WILL BE SUBJECT TO WRITTEN APPROVAL OF THE ENGINEER AND IN ACCORDANCE WITH THE APPROVED WORK SCHEDULE. THE CONTRACTOR SHALL ALLOW ENOUGH TIME IN THE DAILY WORK PLANS PRIOR TO THE END OF EACH WORK SHIFT, THE CONTRACTOR SHALL ARRANGE BY WAY OF THE RESIDENT ENGINEER TO HAVE AIRPORT OPERATIONS INSPECT THE SITE TO CONFIRM IT MEETS CFR 14 FAR PART 139 CRITERIA AND AGREE THAT THE SITE IS BEING LEFT IN AN OPERATIONALLY SAFE MANNER. THE CONTRACTOR SHALL ALLOW ENOUGH TIME IN THE DAILY WORKING SCHEDULE SUCH THAT ANY CORRECTIONS/CLEANUP ITEMS FOUND CAN BE MADE PRIOR TO THE REQUIRED OPENING TIMES LISTED. ANY AIRCRAFT MOVEMENT SURFACES OR ADJOINING AREAS WITHIN A RUNWAY, TAXIWAY OR TAXILANE SAFETY AREA THAT DOES NOT PASS THE INSPECTION SHALL REMAIN CLOSED UNTIL THE CLEANUP IS COMPLETE AND APPROVED. DAMAGES WILL BE ASSESSED FOR ANY LATE OPENINGS AS DEFINED IN THE SPECIFICATIONS.
- CONDITIONS REQUIRED TO START: THE CONTRACTOR MUST HAVE THE FOLLOWING PRIOR TO STARTING ANY WORK ON THE ADA:
  - AN ACCEPTED WORK SCHEDULE.
  - ON-SITE CABLE LOCATING COMPANY AVAILABLE.
  - APPROVED FAA CABLE SPLICING EQUIPMENT/MATERIALS AND CERTIFIED CABLE SPLICERS AVAILABLE ON A 24-HOUR/DAY BASIS FOR EMERGENCY REPAIRS.
  - AN APPROVED WPCP.
  - AIRCRAFT AND VEHICLE MOVEMENTS ON TEMPORARY ROUTES ESTABLISHED (SEE OPERATING CONDITIONS).
  - NOTICE TO AIRMEN (NOTAM) FILED BY BROWN FIELD AIRPORT.
  - 48 HOURS NOTICE PRIOR TO ANY CLOSURE OF RUNWAYS.
  - 48 HOURS NOTICE PRIOR TO REQUIRING ANY LOCKUP OR REROUTING OF TAXIWAYS OR TAXILANES.
- THE CONTRACTOR MUST HAVE THE FOLLOWING PRIOR TO STARTING ON THE SPECIFIC ITEMS OF WORK LISTED:
  - LIGHTED CLOSURE MARKERS ON SITE AND OPERATIONAL PRIOR TO ANY RUNWAY CLOSURES.
  - LIGHT CANS AND CONDUIT AVAILABLE AND ON SITE BEFORE STARTING IN ANY WORK AREA WHERE LIGHTING IS TO BE INSTALLED.
- CLOSURE RESTRICTIONS: TO MAINTAIN ACCEPTABLE OPERATION LEVELS AND SAFETY, THE FOLLOWING RESTRICTIONS ARE MANDATORY:
  - FOR CLOSURE OF A RUNWAY, THE CONTRACTOR SHALL SET UP THE PORTABLE LIGHTED CLOSURE MARKERS ON THE RUNWAY PAINTED NUMBERS AT EACH END OF THE RUNWAY AS SOON AS THE RUNWAY IS CLOSED. THE CONTRACTOR SHALL REMOVE THE CLOSURE MARKERS JUST PRIOR TO THE RUNWAY OPENING. SEE SPECIFICATIONS SECTIONS P-20 FOR CLOSURE MARKER REQUIREMENTS.
  - PRIOR TO STARTING WORK WITHIN A PHASE, ALL BARRICADES SHALL BE IN PLACE AND HAVE OPERABLE LIGHTS. CONTRACTOR SHALL MAINTAIN BARRICADES THROUGHOUT THE DURATION OF THE PHASE INSURING THEY REMAIN ADEQUATELY FILLED WITH WATER AND THE LIGHTS REMAIN OPERATIONAL. BARRICADES SHALL ONLY BE REMOVED ONCE ALL OTHER WORK HAS BEEN COMPLETED WITHIN THE PHASE.
  - ALL EXISTING MARKING PROVIDING AIRCRAFT GUIDANCE INTO THE WORK AREA SHALL BE BLACKED OUT OR REMOVED PRIOR TO STARTING WORK WITHIN A PHASE. MARKING OUTSIDE OF THE WORK AREA LIMITS SHALL BE COORDINATED WITH AIRPORT OPERATIONS AND MAY REQUIRE PULL-BACK OPERATIONS. FINAL MARKINGS PROVIDING GUIDANCE INTO A WORK AREA SHALL BE COMPLETED IMMEDIATELY PRIOR TO VACATING THE WORK AREA.
  - TEMPORARY ELECTRICAL MODIFICATIONS INCLUDING PICTURE REMOVALS AND SIGN COVERS SHALL BE COMPLETED IMMEDIATELY PRIOR TO VACATING THE WORK AREA.
  - THE ABOVE RESTRICTIONS MUST BE SCHEDULED WITH ANY CLOSURES REQUIRED BY OTHER CONTRACTORS COMPLETING WORK WITHIN THE AIRFIELD AREA. SEE "WORK BY OTHERS" FOR ADDITIONAL RESTRICTIONS. SEE THE SPECIFIC PHASING PLANS.
- ALL UNAFFECTED LIGHTS AND EQUIPMENT WITHIN THE WORK AREAS, SAFETY AREAS AND ON THE AIRPORT OPERATIONAL AREA SHALL BE PROTECTED AT ALL TIMES. THE CONTRACTOR SHALL PROTECT THESE LIGHTS AND EQUIPMENT FROM DAMAGE WHILE WORKING AT THE WORKSITE. WHEN A RUNWAY/TAXIWAY IS CLOSED, THE LIGHTS ARE TURNED OFF. THE CONTRACTOR SHALL PLACE BARRICADES AROUND ANY ELEVATED LIGHTS AND EQUIPMENT THAT MAY BE IN THE WORK AREA TO CONFINED AND PROTECT THEM. ANY DAMAGE SHALL BE REPAIRED IMMEDIATELY. DAMAGE DUE TO THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- UTILITIES: EXISTING UTILITY LINES IN THE WORK AREAS SHALL REMAIN IN OPERATION EXCEPT THOSE DESIGNATED AS ABANDONED OR INDICATED FOR REPLACEMENT ON THE PLANS. THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES (OPERATIONAL AND ABANDONED) 14 DAYS PRIOR TO STARTING WORK IN AN AREA.
- OPERATING CONDITIONS AND SAFETY: REFER TO "CLOSURE RESTRICTIONS" ABOVE. AT THE START OF CONSTRUCTION, ESTABLISH THE CONTINUOUS BARRICADE LINES TO PROVIDE A CLEAR DELINEATION BETWEEN WORK AREA AND OPERATIONAL AREA. THE CONTRACTOR SHALL ACCESS THE WORK AREAS THROUGH THE ACCESS ROUTES PROVIDED AND AS DEPICTED IN THE DRAWINGS. CONTRACTOR SHALL NOT CROSS OR TRAVERSE ANY TAXIWAYS/TAXILANES AND/OR RUNWAYS OTHER THAN THOSE DEEMED CLOSED AND WITHIN THE WORK AREAS.
- NO HOLES OR OPEN DITCHES MAY BE LEFT IN THE RUNWAY, TAXIWAY OR TAXILANE SAFETY

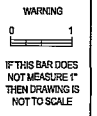
- AREA. ALL AREAS WITHIN THE SAFETY AREAS SHALL BE MAINTAINED AS SMOOTH SURFACES AT ALL TIMES (FAR 139) WHEN THE RUNWAY, TAXIWAY OR TAXILANE IS IN OPERATION TO ALLOW SAFE PASSAGE OF AIRCRAFT WITHOUT CAUSING STRUCTURAL DAMAGE TO THE AIRCRAFT OR LOSS OF AIRCRAFT CONTROL. DESIGN PARAMETERS SHALL BE IN ACCORDANCE WITH FAA ADVISORY CIRCULAR AC 150-520-6, APPENDIX 3.
- WORK BY OTHERS: THE CONTRACTOR SHALL CLOSELY COORDINATE AND SCHEDULE WORK WITH OTHER CONTRACTORS COMPLETING WORK ON THE AIRFIELD. PRIOR TO PREPARING THE CONSTRUCTION SCHEDULE AND REGULARLY DURING THE CONSTRUCTION, THE CONTRACTOR SHALL MEET WITH THE RESIDENT ENGINEER AND BE UPDATED ON OTHER WORK OCCURRING ON THE AIRFIELD. THE CONTRACTOR SHALL INCORPORATE IN THE CONSTRUCTION SCHEDULE ANY REQUIRED RESTRICTIONS OR DATES REQUIRED TO MAKE SURE THAT NO CONFLICTS WITH OTHER CONTRACTORS OCCUR.
- BARRICADES: BARRICADES PER DETAIL 1, SHEET G201 ARE REQUIRED TO PROVIDE A CLEAR SEPARATION LINE BETWEEN ACTIVE AIRCRAFT OPERATING AND AREAS THE CONTRACTOR WORK AREA OR TO PROTECT ELEVATED LIGHTS/EQUIPMENT. WHENEVER A TAXIWAY/TAXILANE IS CLOSED AND AN ADJACENT RUNWAY OR TAXIWAY IS OPERATIONAL, THE CONTRACTOR SHALL PROVIDE A BARRICADE LINE ACROSS THE TAXIWAY OR TAXILANE LOCATED JUST OUTSIDE, WITHIN 5 FEET, OF THE OPERATIONAL RUNWAY/TAXIWAY SAFETY AREA.
- THE CONTRACTOR MAY BE REQUIRED TO PROVIDE BARRICADES AT OTHER LOCATIONS WHEN REQUESTED BY THE RESIDENT ENGINEER. INSTALL BARRICADES AT THE BEGINNING OF THE PHASE TO PROVIDE A SAFE OPERATING AREA FOR BOTH THE CONTRACTOR AND THE AIRPORT. REMOVE AT THE END OF THE PHASE. AT NO TIME SHALL A BARRICADE BE PLACED WITHIN A RUNWAY, TAXIWAY OR TAXILANE SAFETY AREA EXCEPT DURING CLOSURE OF THAT RUNWAY, TAXIWAY OR TAXILANE.

**SAFETY NOTES**

- IN ADDITION TO THE FOLLOWING REQUIREMENTS, ALSO REFER TO SPECIFICATION REGARDING OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION, AIRPORT PERSONNEL ACCESS CONTROL, FOR SECURITY REQUIREMENTS, TEMPORARY FACILITIES AND CONTROLS. WHERE CONFLICTS OCCUR BETWEEN THE REQUIREMENTS ON THE SAFETY AND PHASING PLANS AND THOSE INDICATED IN THE SPECIFICATIONS, THE MORE STRINGENT SHALL APPLY.
- FAA ADVISORY CIRCULAR 150/5370-26 OR MOST CURRENT VERSION, OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION, IS INCORPORATED INTO THE ABOVE SPECIFICATIONS.
- THE CONTRACTOR SHALL ALSO BE FAMILIAR WITH AND COMPLY WITH FAA ADVISORY CIRCULAR 707460-2L "OBSTRUCTION MARKING AND LIGHTING", FAA ADVISORY CIRCULAR 150/5210-5D APPENDIX 1, "PAINTING, MARKING, LIGHTING OF VEHICLES USED ON AIRFIELD", CFR 14 FAR PART 71, "OBJECTS AFFECTING NAVIGABLE AIRSPACE" AND CFR 14 FAR PART 139 "CERTIFICATION AND OPERATIONS: LAND AIRPORT SERVING CAB-CERTIFIED SCHEDULED AIR CARRIERS OPERATING LARGE AIRCRAFT" (OR MOST CURRENT VERSIONS).
- ALL CONSTRUCTION WORK IN THIS PROJECT WILL OCCUR WITHIN THE AIR OPERATIONS AREA, AND IS SUBJECT TO THE OPERATIONAL, SAFETY, AND SECURITY REQUIREMENTS OF THE ABOVE REFERENCES AND ANY ADDITIONAL REQUIREMENTS AS REQUIRED BY THE FEDERAL GOVERNMENT, STATE, COUNTY, CITY OR AS MAY BE DEEMED NECESSARY BY BROWN FIELD AIRPORT (BFA).
- EACH CONTRACTOR, INCLUDING EACH CONTRACTOR'S/CONTRACTOR EMPLOYEE, WHO OPERATES A GROUND VEHICLE ON ANY PORTION OF THE AIR OPERATIONS AREA AT SDM MUST COORDINATE OPERATIONS WITH SDM.
- VEHICLES DELIVERING MATERIALS TO OR HAULING MATERIAL FROM THE CONTRACTOR'S STAGING AREA SHALL USE THE ROUTE SHOWN ON PLAN.
- THE ROADS DESIGNATED AS CONTRACTOR ROUTES WILL BE USED BY OTHER AIRPORT VEHICLES, CONTRACTORS AND THE GENERAL PUBLIC (ALONG PUBLIC ROADS). THE CONTRACTOR SHALL NOT INTERFERE WITH OTHER VEHICLE TRAFFIC AND SHALL YIELD TO EMERGENCY VEHICLES ALONG ANY OF THE AIRPORT OR PUBLIC ROADS. THE CONTRACTOR SHALL PROVIDE ALL FLAGGING, SIGNING, LIGHTING, ETC. REQUIRED BY THE CITY, THE AIRPORT, COUNTY OR THE STATE TO PROVIDE ALL REASONABLE SAFETY MEASURES TO PROTECT ALL PERSONS UTILIZING THE ADA PERIMETER ROAD, THE HAUL ROAD OR ALL PUBLIC ROADS USED BY THE CONTRACTOR. THE CONTRACTOR SHALL OBEY ALL VEHICLE WEIGHT AND SPEED LIMITS ESTABLISHED IN THE SPECIFICATIONS OR AS POSTED ON AIRPORT PROPERTY OR PUBLIC STREETS. THE CONTRACTOR SHALL CONTINUOUSLY SWEEP AND WASH/DOWN ALL ACCESS ROUTES TO THE CONSTRUCTION AREAS AND EXISTING ADJACENT PAVED AREAS AND ADA PAVEMENTS. THESE AREAS SHALL BE KEPT FREE OF DEBRIS AT ALL TIMES. CONTRACTOR SHALL STAY OFF ADA PAVEMENTS, EXCEPT AS PERMITTED HEREIN. ANY DAMAGE ALONG THE CONTRACTOR ACCESS/HAUL ROUTES DUE TO THE CONTRACTOR'S USE SHALL BE REPAIRED IMMEDIATELY. AT THE COMPLETION OF THE PROJECT, ALL PAVEMENTS AND SURFACES ALONG THE ACCESS ROUTES THAT WERE EXISTING AT THE START OF THE PROJECT SHALL BE RESTORED TO THE ORIGINAL CONDITIONS. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO THE HAUL ROAD DUE TO HIS/HER OPERATIONS. THE CONTRACTOR SHALL COORDINATE AND MEET THE CLEANING AND REPAIR REQUIREMENTS SET BY OTHER PUBLIC AGENCIES FOR USE OF THEIR ROADS FOR CONSTRUCTION RELATED WORK.
- CONTRACTOR EMPLOYEES' PERSONAL VEHICLES AND FOOD VENDORS ARE ONLY PERMITTED WITHIN THE STAGING AREA. AFOREMENTIONED VEHICLES ARE NOT PERMITTED WITH THE OTHER WORK AREAS OR ELSEWHERE IN THE ADA.
- THE CONTRACTOR SHALL KEEP A VACUUM SWEEPER TRUCK AND WATER TRUCK ON SITE AT ALL TIMES DURING WORKING AND NON-WORKING HOURS AND SHALL MAINTAIN THE SITES FREE FROM DUST AND OBJECTIONABLE DEBRIS. DURING THE PERIOD OF TIME THAT THERE IS NO CONSTRUCTION ACTIVITY (BETWEEN WORKSHIFTS), THE VACUUM SWEEPER TRUCK AND WATER TRUCK MUST BE READY AND ON-SITE WITH CONTRACTOR'S PERSONNEL AVAILABLE BY PHONE TO RESPOND IMMEDIATELY TO A DUST OR DEBRIS PROBLEM AS IDENTIFIED BY AIRPORT OPERATIONS STAFF OR THE ENGINEER. AT NO TIME SHALL THERE BE MORE THAN A 10 MINUTE RESPONSE TIME TO CALLS CONCERNING DUST/DEBRIS PROBLEMS DURING WORK HOURS AND A 90 MINUTE RESPONSE TIME AT ALL OTHER TIMES ON A 24-HOUR PER DAY BASIS. THE CONTRACTOR SHALL PROVIDE WHATEVER MEANS ARE NECESSARY TO PREVENT FOREIGN OBJECT DEBRIS (FOD) IN AIRCRAFT MOVEMENT AREAS AND PROVIDE CONSTRUCTION AREA GENERATED DUST CONTROL ON A 24 HOUR BASIS. TRUCKS AND EQUIPMENT SHALL HAVE ALL LOOSE DIRT, ROCKS AND OTHER MATERIALS REMOVED WHEN ACCESSING THE ADA OR WHEN LEAVING A WORK AREA. THE CONTRACTOR SHALL PROVIDE TRUCK WASHERS, RUMBLE STRIPS, SHAKERS OR WHATEVER MEANS ARE NECESSARY TO PREVENT FOD IN AIRCRAFT MOVEMENT AREAS. THIS WILL BE CONTINUOUSLY MONITORED BY THE AIRPORT AND IF THE CONTRACTOR'S METHOD IS NOT REMOVING THE DEBRIS ADEQUATELY TO MEET SAFETY REQUIREMENTS, THE CONTRACTOR WILL BE REQUIRED TO IMPROVE HIS/HER METHOD OR UTILIZE A NEW METHOD AT NO ADDITIONAL COST TO THE CITY.
- ALL VEHICLES AND EQUIPMENT SHALL BE KEPT WITHIN THE WORK AREAS ESTABLISHED FOR THAT WORKSHIFT UNLESS TRAVELING TO OR FROM THE SITE. UNDER NO CIRCUMSTANCES SHALL VEHICLES BE PARKED OR EQUIPMENT BE STORED OUTSIDE OF THESE AREAS.
- POWER AND CONTROL CABLES FOR AIRFIELD LIGHTING AND NAVIGATIONAL AIDS ARE LOCATED IN THE

- CONSTRUCTION AREAS. THE CONTRACTOR'S PERSONNEL SHALL BE FAMILIAR WITH THESE CABLE LOCATIONS AND KEEP VEHICLES AND EQUIPMENT CLEAR OF ALL TIMES. AS INDICATED ON THE PHASING PLANS AND THE SPECIFICATIONS, THE CONTRACTOR SHALL LOCATE ALL UTILITIES (OPERATIONAL AND ABANDONED) PRIOR TO STARTING ANY EXCAVATION, DEMOLITION OR EARTHWORK.
- ALL EXISTING UTILITIES WITHIN THE CONSTRUCTION AREAS OR THE STAGING AREA SHALL REMAIN ACTIVE, ACCESSIBLE, AND PROTECTED AT ALL TIMES (I.E. WATERLINES, FIRE HYDRANTS, VALVES, DRAINAGE STRUCTURES, ELECTRICAL, & FAA CABLES/EQUIPMENT) REFER TO THE SPECIFICATIONS, PHASING PLANS, AND DEMOLITION PLANS FOR ADDITIONAL REQUIREMENTS THAT ARE ASSOCIATED WITH THIS PROJECT.
- ALL CONSTRUCTION VEHICLES OR EQUIPMENT OPERATING WITHIN THE ADA SHALL BE EQUIPPED WITH YELLOW FLASHING BEACONS AND A STAFF MOUNTED 3 X 3 INTERNATIONAL ORANGE AND WHITE CHECKERED FLAG. CHECKERED PATTERN TO BE ONE FOOT SQUARE. THE BEACONS ON THE EQUIPMENT AND VEHICLES SHALL BE ON AND OPERATIONAL AT ALL TIMES WHILE WITHIN THE ADA.
- LIGHTING PROVIDED FOR ANY NIGHT WORK SHALL NOT INTERFERE WITH AIR NAVIGATION. LIGHTS SHALL BE TRANSPORTED TO THE WORK AREAS WITH THE LIGHTS POINTED DOWN OR OFF.
- THE CONTRACTOR'S STAGING AREA IS SHOWN ON THE PLANS. THE CONTRACTOR PROJECT OFFICE MAY BE SET UP AT THIS LOCATION, BUT THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITTING AND UTILITY CONNECTIONS REQUIRED TO OPERATE OUT OF THIS LOCATION. PARKING OF EMPLOYEES PRIVATE VEHICLES IS RESTRICTED TO PUBLIC AREAS/FACILITIES ONLY AND WILL NOT BE ALLOWED WITHIN ANY OF THE SECURED AREAS OR AT THE PROJECT OFFICE SITE. NO EQUIPMENT/MATERIAL STORAGE WILL BE ALLOWED AT THE INDIVIDUAL WORK AREAS DURING NON-WORKING HOURS, INCLUDING BARRICADES. EQUIPMENT/MATERIAL STORAGE FOR ALL WORK SHALL BE LOCATED AT THE CONTRACTOR'S STAGING AREA ONLY. ANY EQUIPMENT TEMPORARILY PARKED AT A WORKSITE FOR USE DURING THE CURRENT WORKSHIFT SHALL BE PROPERLY MARKED, PARKED OUTSIDE ALL SAFETY AREAS AND WITHIN THE BARRICADED WORKSITE. IT SHALL NOT EXCEED 15 FEET IN HEIGHT AND SHALL BE LEFT IN THE LOWEST POSSIBLE PROFILE POSITION.

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.



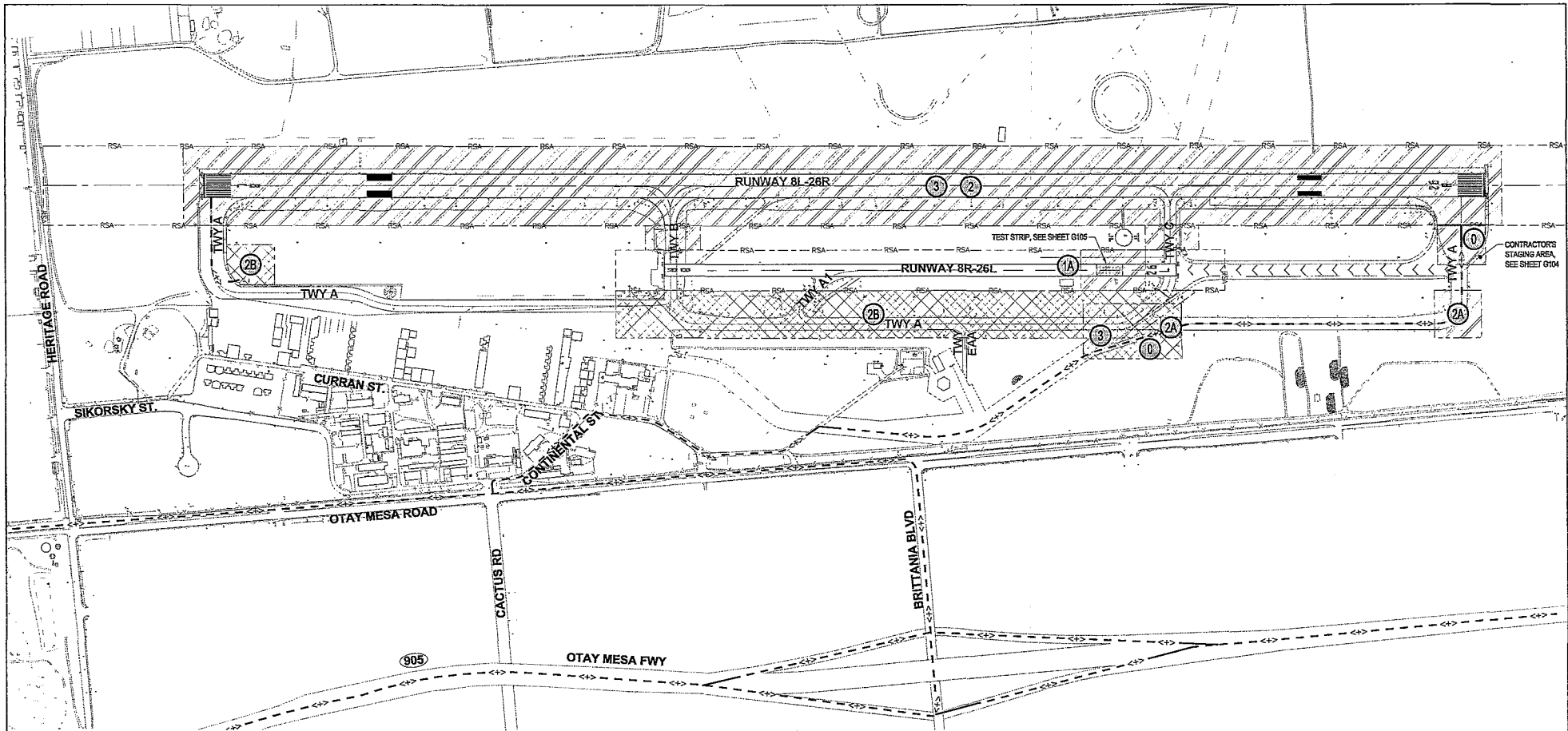
The City of **SAN DIEGO** Public Works

**G100**

PLANS FOR THE CONSTRUCTION OF:  
**BROWN FIELD AIRPORT**  
**RUNWAY 8L-26R REHABILITATION - PHASE 3**  
**CONSTRUCTION PHASING AND SAFETY NOTES**

<b>CONSULTANT</b>	SPEC. NO. 1575	WSS B-1615D
 The HNTB Companies Infrastructure Solutions 6033 N. Century Blvd., Suite 1050 San Diego, CA 92121 Phone: 619-417-9972 Fax: 619-417-9989	CITY OF SAN DIEGO CALIFORNIA PUBLIC WORKS DEPARTMENT SHEET 12 OF 75 SHEETS	SUBMITTED BY: BRAD SLEMAN PROJECT MANAGER CHECKED BY: JAMES BOTICA PROJECT ENGINEER 146-1767 COST ESTIMATE: 1788-6336 DATE SUBMITTED: 08/25/2011 DATE REVISED: DATE COMPLETED:
		APPROVED FOR CITY ENGINEER: _____ DATE: _____ PROJECT ENGINEER: _____ DATE: _____ DESCRIPTION: _____ BY: _____ APPROVED: _____ DATE: _____

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PHASING MAP  
SCALE: 1:500

LEGEND

- CONTRACTORS ACCESS/HAUL ROUTE
- PHASE NUMBER
- UNRESTRICTED WORK HOURS
- NIGHTTIME WORK HOURS (2200 - 0500 LOCAL)



G101

PLANS FOR THE CONSTRUCTION OF:  
BROWN FIELD AIRPORT  
RUNWAY 8L-26R REHABILITATION - PHASE 3  
OVERALL CONSTRUCTION SEQUENCING PLAN

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

WARNING  
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The City of  
**SAN DIEGO** Public Works

CONSULTANT

**HNTB**  
The HNTB Companies  
Infrastructure Solutions  
6000 N. Central Exp., Suite 1000  
San Antonio, TX 78215  
Phone: 214-717-8777  
Fax: 214-417-3369

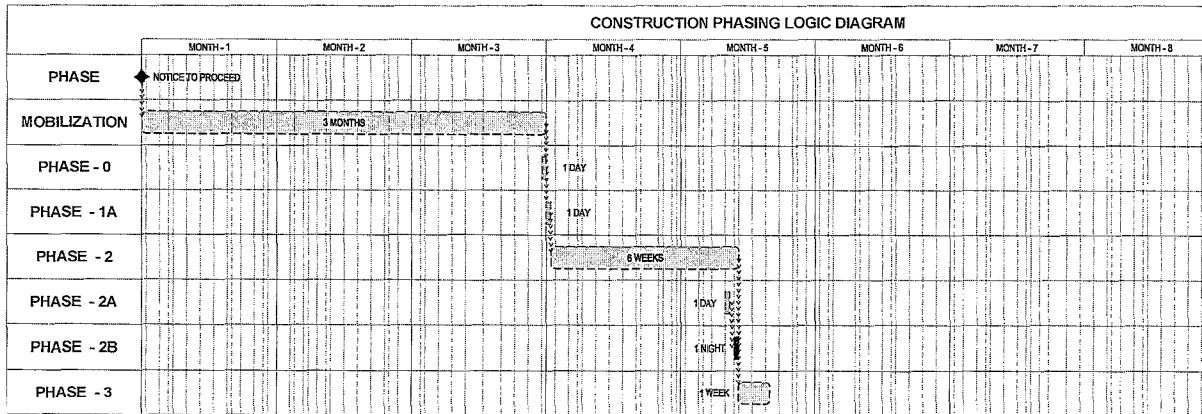
SPEC. NO. 1575

CONTRACTOR  
MERCATOR

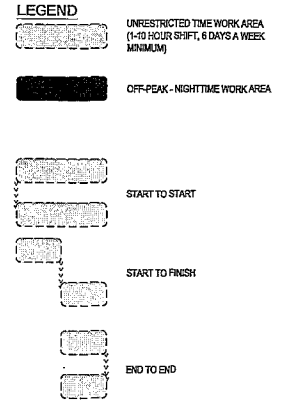
CITY OF SAN DIEGO, CALIFORNIA PUBLIC WORKS DEPARTMENT SHEET 13 OF 75 SHEETS		WBS B-1615D
APPROVED FOR CITY ENGINEER	DATE	DESIGNED BY: JIMMIE SLEMAN PROJECT MANAGER
PROJECT NAME	DESCRIPTION	DRAWN BY: JAMES BOTICA PROJECT ENGINEER
BY	APPROVED	DATE
DATE STARTED	DATE COMPLETED	COST CODE: 146-1767 1788-6336

0 150 300 600 SCALE  
1" = 300'-0"

Appendix G - Construction Safety Phasing Plan



- NOTES:**
- UNLESS OTHERWISE NOTED, WORK HOURS DENOTED AS NIGHTTIME WILL OCCUR FROM THE HOURS OF 10:00 PM-6:00AM.
  - THE TEMPORARY WORK LISTED IS FOR REFERENCE ONLY AND SHALL NOT BE CONSTRUED AS AN ALL INCLUSIVE LIST. ADDITIONAL TEMPORARY WORK MAY BE REQUIRED, CONTRACTOR TO SEE INDIVIDUAL PHASING SHEETS.



PHASE	PREDECESSOR	SUCCESSOR	CONCURRENT	TEMPORARY WORK (SEE NOTE 2)	WORK HOURS	DURATION	TRAFFIC RESTRICTIONS
0	NONE	PHASE 1A	NONE	UTILITY CONNECTIONS, MOBILE TRAILERS, CONTRACTOR SIGNAGE, ENVIRONMENTAL BARRICADES, TEMP LIGHTING, MARKING REMOVALS	MONDAY - SATURDAY (1-10 HOUR SHIFT MIN)	1 DAY	PORTIONS OF TAXIWAY A CLOSED RUNWAY 6R-26L CLOSED, RUNWAY 8L-26R CLOSED
1A	PHASE 0	PHASE 2, 2A AND 2B	NONE	BARRICADES, LIGHTED "X" CLOSURE MARKERS	MONDAY - SATURDAY (1-10 HOUR SHIFT MIN)	1 DAY	RWY 8R-26L CLOSED
2	PHASE 1A	PHASE 3	PHASE 2A & 2B	SIGNAGE, BARRICADES	MONDAY - SATURDAY (1-10 HOUR SHIFT MIN)	6 WEEKS	RWY 8L-26R CLOSED PORTIONS OF TAXIWAYS A, B, AND C CLOSED
2A	PHASE 1A	PHASE 3	PHASE 2 & 2B	BARRICADE INSTALLATION	MONDAY - SATURDAY (1-10 HOUR SHIFT MIN)	1 DAY	PORTIONS OF TAXIWAY A CLOSED
2B	PHASE 1A	PHASE 3	PHASE 2 & 2A	BARRICADE INSTALLATION	OFF-PEAK HOURS (10:00 PM - 6:00 AM)	1 NIGHT	PORTIONS OF TAXIWAYS A, B, AND C CLOSED
3	PHASE 2, 2A, 2B	NONE	NONE	PUNCH LIST, BARRICADE REMOVAL	MONDAY - SATURDAY (1-10 HOUR SHIFT MIN)	1 WEEK	RWY 8L-26R CLOSED PORTIONS OF TAXIWAYS A, B, AND C CLOSED

**G102**

PLANS FOR THE CONSTRUCTION OF:  
**BROWN FIELD AIRPORT**  
RUNWAY 8L-26R REHABILITATION - PHASE 3  
**CONSTRUCTION SEQUENCING LOGIC DIAGRAM**

SPEC. NO. 1575

CITY OF SAN DIEGO, CALIFORNIA  
PUBLIC WORKS DEPARTMENT  
SHEET 14 OF 75 SHEETS

WBS 15-16150

APPROVED: \_\_\_\_\_ DATE \_\_\_\_\_

FOR CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

PROJECT NO. \_\_\_\_\_

DESCRIPTION \_\_\_\_\_ BY \_\_\_\_\_ APPROVED \_\_\_\_\_ DATE \_\_\_\_\_ FILED \_\_\_\_\_

DESIGNED BY \_\_\_\_\_ PROJECT ENGINEER \_\_\_\_\_

146-1767

1788-6336

DATE STARTED \_\_\_\_\_ DATE COMPLETED \_\_\_\_\_

CONTRACTOR \_\_\_\_\_ INSPECTOR \_\_\_\_\_

**CONSTRUCTION CHANGE / ADDENDUM**

CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

WARNING

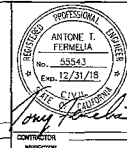
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The City of **SAN DIEGO** Public Works

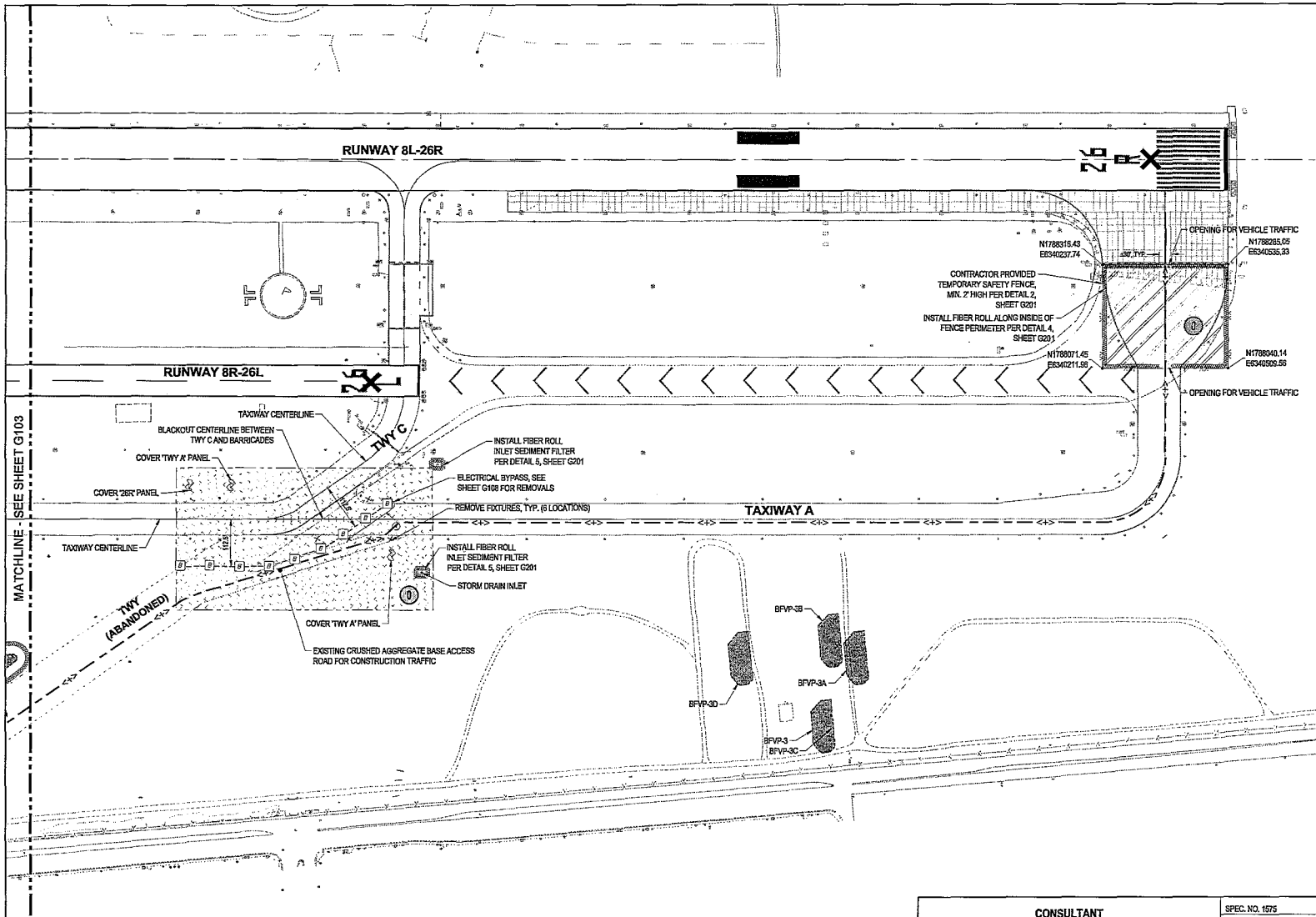
**HNTB**

The HNTB Companies  
Infrastructure Solutions  
6333 W. Century Blvd., Suite 1000  
Los Angeles, CA 90045  
Phone: 310-417-8777  
Fax: 310-417-5368





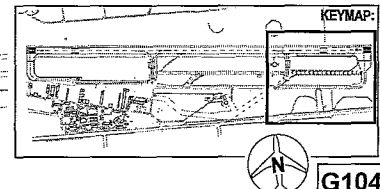




- LEGEND:**
- >--- CONTRACTORS ACCESS / HAUL ROUTE
  - SAFETY FENCE, SEE DETAIL 2, SHEET G201
  - ⊙ PHASE NUMBER
  - ▨ PHASE LIMITS - UNRESTRICTED WORK HOURS
  - ▨ PHASE LIMITS - NIGHT TIME WORK HOURS (2200-0600 LOCAL)
  - BLACK OUT EXISTING MARKING
  - INSTALL LOW-LEVEL WATER FILLED BARRICADES PER DETAIL 1, SHEET G201, WITH 10' SPACING
  - ✕ AIRPORT PROVIDED LIGHTED X RUNWAY CLOSURE MARKER, CONTRACTOR TO PLACE AND MAINTAIN DURING THE DURATION OF THE PHASE
  - INLET PROTECTION, SEE DETAIL 5, SHEET G201
  - FIBER ROLL, SEE DETAIL 4, SHEET G201
  - STRAW BALE EROSION CONTROL BARRIER PER DETAIL 6, SHEET G201
  - ⊙ BURROWING OWL ACTIVE BURROW, CONTRACTOR'S LAYDOWN YARD MUST BE 500' MIN. AWAY FROM ACTIVE BURROW. CONTRACTOR TO VERIFY BEFORE PLACING SAFETY FENCE.

- TEMPORARY ELECTRICAL LEGEND**
- ✕ REMOVE EXISTING FIXTURE, BASE PLATE, AND ASSOCIATED TRANSFORMERS AND STORE FOR REINSTALLATION. INSTALL TEMPORARY BASE PLATE. MAINTAIN CIRCUIT CONTINUITY WITH A BYPASS SPLICE.

- TEMPORARY ELECTRICAL NOTES**
1. INSTALL TEMPORARY TAXIWAY LIGHTING BYPASS IN SURFACE MOUNTED CONDUIT PER DETAIL 2, G202. PROVIDE 2-8" 5KV CABLE AND 1-#6 GROUND TO MAINTAIN TAXIWAY CIRCUIT CONTINUITY. CONNECT TO BASE CANS SHOWN WITH LB FITTING.



PLANS FOR THE CONSTRUCTION OF:  
**BROWN FIELD AIRPORT**  
**RUNWAY 8L-26R REHABILITATION - PHASE 3**  
**CONTRACTOR'S STAGING AREA PLAN 2 - PHASE 0**

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

**The City of SAN DIEGO Public Works**

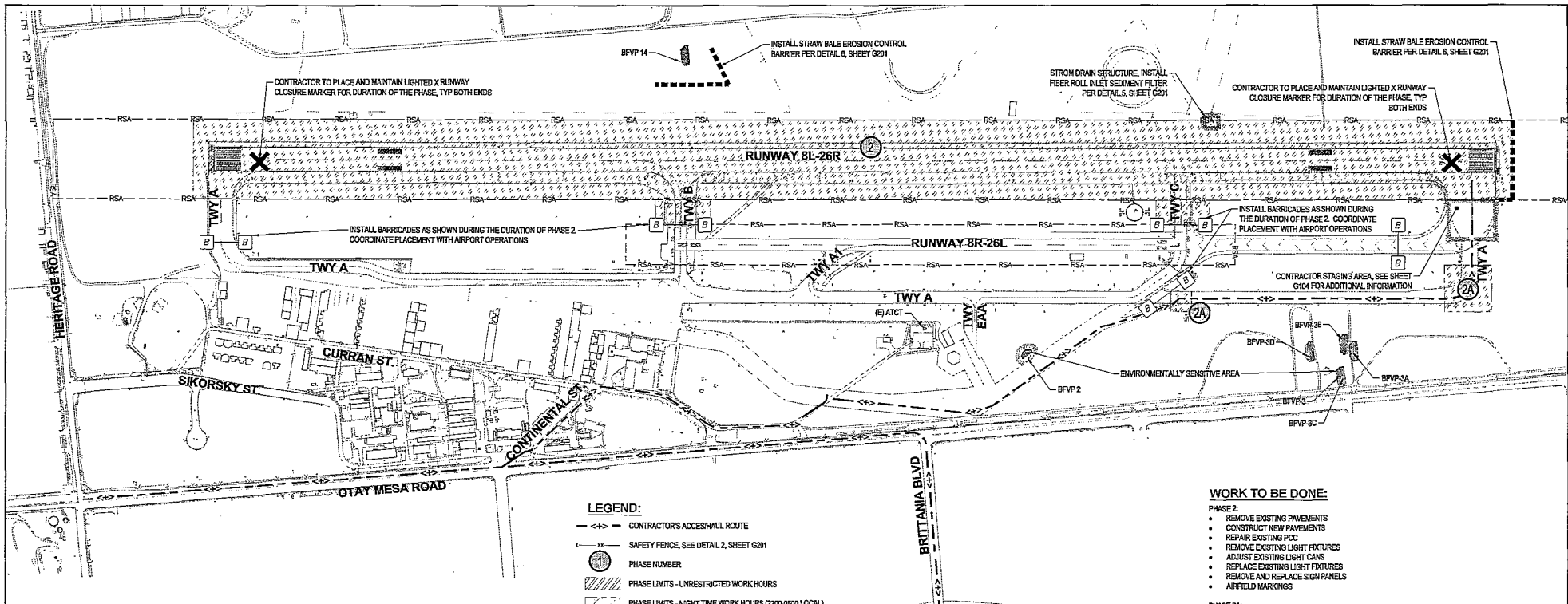
**CONSULTANT**  
  
 The HNTB Companies  
 Infrastructure Solutions  
 6215 N. DeSoto Street, Suite 1000  
 Los Angeles, CA 90045  
 Phone: 310-412-2577  
 FAX: 310-417-0388

SPEC. NO. 1575

CITY OF SAN DIEGO, CALIFORNIA PUBLIC WORKS DEPARTMENT SHEET 16 OF 75 SHEETS		WBS B-16150
APPROVAL	DATE	SUBMITTED BY
FOR CITY ENGINEER		PHILIP SLEMAN PROJECT MANAGER
PROJECT DATE		FORWARDED BY
		JAMES BOTICA PROJECT ENGINEER
		146-1767 CITY OF SAN DIEGO
		1788-6336 CITY OF SAN DIEGO
		3885-16-D CITY OF SAN DIEGO

Appendix C - Construction Safety Planning Plan  
 10/1/2018 10:00 AM





**LEGEND:**

- <->- CONTRACTOR'S ACCESS/HAUL ROUTE
- X- SAFETY FENCE, SEE DETAIL 2, SHEET G201
- PHASE NUMBER
- ▨ PHASE LIMITS - UNRESTRICTED WORK HOURS
- ▤ PHASE LIMITS - NIGHT TIME WORK HOURS (2200-0600 LOCAL)
- BLACK OUT EXISTING MARKINGS
- INSTALL LOW-LEVEL WATER FILLED BARRICADES PER DETAIL 1, SHEET G201. WITH 10' SPACING
- ✕ AIRPORT PROVIDED LIGHTED X RUNWAY CLOSURE MARKER, CONTRACTOR TO PLACE AND MAINTAIN DURING THE DURATION OF THE PHASE
- ▭ FIBER ROLL, SEE DETAIL 5, SHEET G201
- ▭ FIBER ROLL, SEE DETAIL 4, SHEET G201
- STRAW BALE EROSION CONTROL BARRIER PER DETAIL 6, SHEET G201
- BURROWING OWL ACTIVE BURROW, CONTRACTOR'S LAYDOWN YARD MUST BE 500' MIN. AWAY FROM ACTIVE BURROW. CONTRACTOR TO VERIFY BEFORE PLACING SAFETY FENCE.

**WORK TO BE DONE:**

- PHASE 2:**
- REMOVE EXISTING PAVEMENTS
  - CONSTRUCT NEW PAVEMENTS
  - REPAIR EXISTING PCC
  - REMOVE EXISTING LIGHT FIXTURES
  - ADJUST EXISTING LIGHT GANS
  - REPLACE EXISTING LIGHT FIXTURES
  - REMOVE AND REPLACE SIGN PANELS
  - AIRFIELD MARKINGS
- PHASE 2A:**
- REMOVE AND REPLACE SIGN PANELS

**GENERAL NOTES:**

1. SEE SHEET G102 FOR PHASE DURATION AND CONSTRUCTION SEQUENCING LOGIC DIAGRAM.
2. SEE SHEETS C501 - C511 FOR AIRFIELD RUNWAY AND TAXIWAY GUIDANCE SIGN MODIFICATIONS.



**G106**

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

**WARNING**

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The City of **SAN DIEGO** Public Works

**CONSULTANT**

**HNTB**  
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Fax: 310.412.2289

SPEC. NO. 1576

CITY OF SAN DIEGO, CALIFORNIA  
PUBLIC WORKS DEPARTMENT  
SHEET 18 OF 75 SHEETS

WBS B-18150

APPROVED BY: JIMMIE T. FERRIELLA  
DATE: 12/31/18  
EXPIRES: 12/31/18

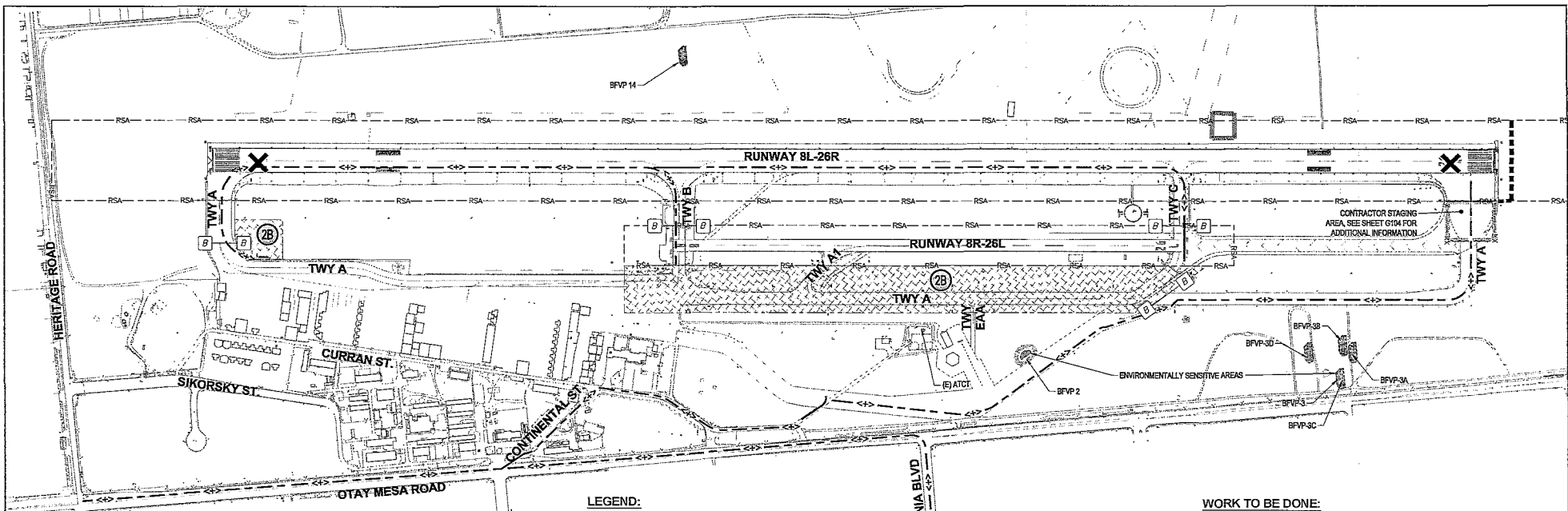
FOR CITY ENGINEER: \_\_\_\_\_ DATE: \_\_\_\_\_  
PROJECT NO.: \_\_\_\_\_  
DESCRIPTION: \_\_\_\_\_ BY: \_\_\_\_\_ APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_ FILED: \_\_\_\_\_

DESIGNED BY: JIMMIE T. FERRIELLA  
DRAWN BY: JAMES BOTICA  
PROJECT NUMBER: 146-1767  
CITY COORDINATOR: 1788-6336  
CITY ENGINEER: \_\_\_\_\_

DATE PRINTED: \_\_\_\_\_ DATE COMPLETED: \_\_\_\_\_ SHEET NO.: 38885-18-D



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- LEGEND:**
- CONTRACTOR'S ACCESS/HAUL ROUTE
  - SAFETY FENCE, SEE DETAIL 2, SHEET G201
  - PHASE NUMBER
  - PHASE LIMITS - UNRESTRICTED WORK HOURS
  - PHASE LIMITS - NIGHT TIME WORK HOURS (2200-0600 LOCAL)
  - BLACK OUT EXISTING MARKING
  - INSTALL LOW-LEVEL WATER FILLED BARRICADES PER DETAIL 1, SHEET G201, WITH 10' SPACING
  - AIRPORT PROVIDED LIGHTED X RUNWAY CLOSURE MARKER, CONTRACTOR TO PLACE AND MAINTAIN DURING THE DURATION OF THE PHASE
  - FIBER ROLL, SEE DETAIL 5, SHEET G201
  - FIBER ROLL, SEE DETAIL 4, SHEET G201
  - STRAW BALE EROSION CONTROL BARRIER PER DETAIL 6, SHEET G201
  - BURRING OWL ACTIVE BURROW, CONTRACTOR'S LAYDOWN YARD MUST BE 500' MIN. AWAY FROM ACTIVE BURROW, CONTRACTOR TO VERIFY BEFORE PLACING SAFETY FENCE.

- WORK TO BE DONE:**
- PHASE 2B:
- REMOVE AND REPLACE SIGN PANELS

- GENERAL NOTES:**
1. SEE SHEET G102 FOR PHASE DURATION AND CONSTRUCTION SEQUENCING LOGIC DIAGRAM.
  2. SEE SHEETS C501 - C511 FOR AIRFIELD RUNWAY AND TAXIWAY GUIDANCE SIGN MODIFICATIONS.



PLANS FOR THE CONSTRUCTION OF:  
**BROWN FIELD AIRPORT**  
**RUNWAY 8L-26R REHABILITATION - PHASE 3**  
**CONSTRUCTION SEQUENCING - PHASE 2B**

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

**WARNING**

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

The City of  
**SAN DIEGO** Public Works

CONSULTANT

**HNTB**

The HNTB Companies  
 Infrastructure Solutions  
 6025 N. Gorgey Blvd., Suite 1000  
 San Diego, CA 92121  
 Phone: 313-417-8777  
 Fax: 313-417-5269

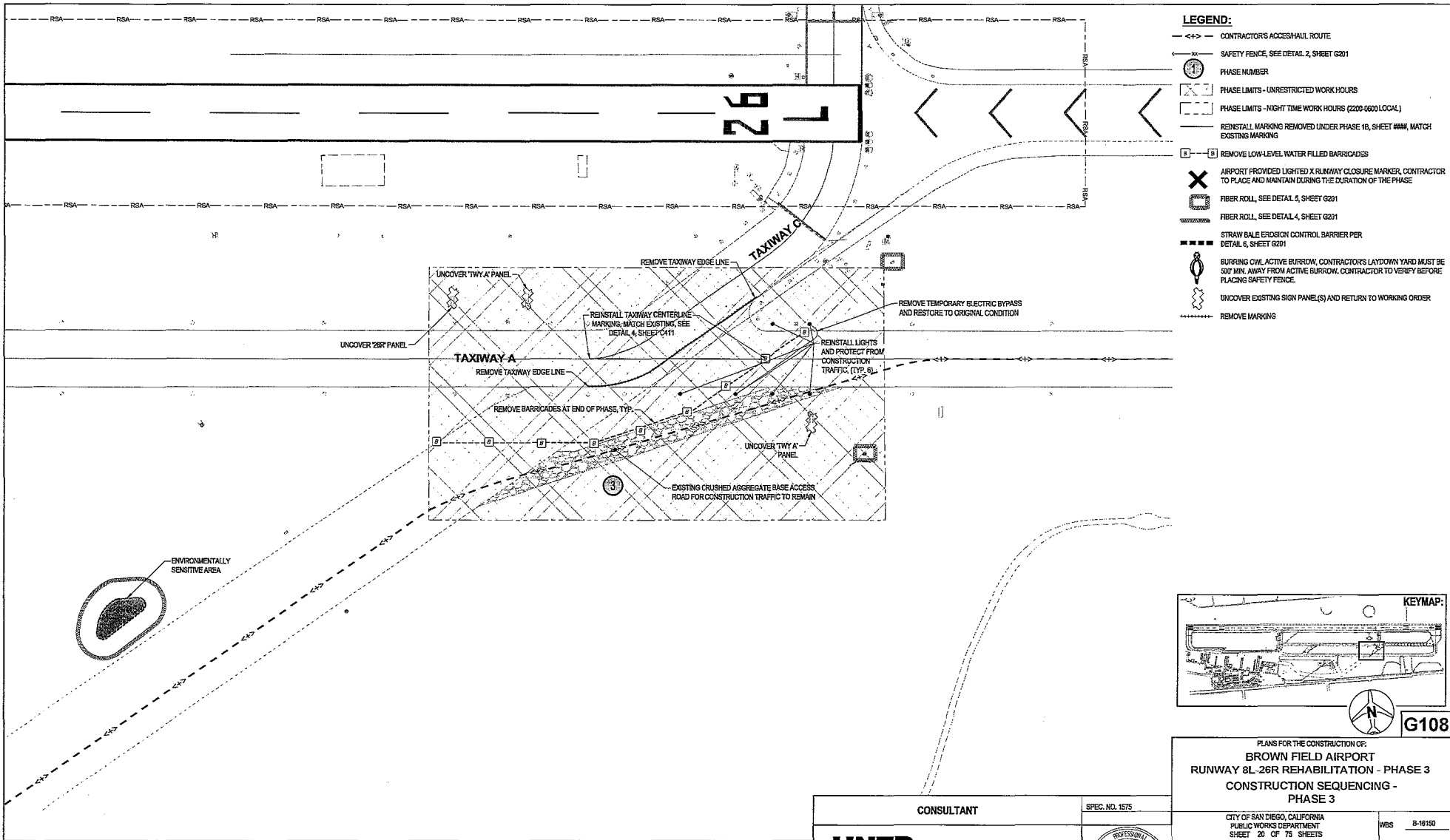
SPEC. NO. 1575

CONTRACTOR INSPECTOR

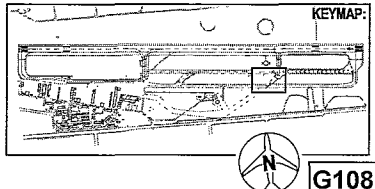
CITY OF SAN DIEGO, CALIFORNIA PUBLIC WORKS DEPARTMENT SHEET 19 OF 75 SHEETS		WBS B-16150
APPROVED BY:	DATE: _____	DESIGNED BY:
PROJECT NUMBER: _____	BY: _____	PROJECT NUMBER: <b>146-1767</b>
DESCRIPTION: _____	APPROVED: _____	DATE: _____
DATE STARTED: _____	DATE COMPLETED: _____	PROJECT NUMBER: <b>1768-6336</b>
DATE STARTED: _____		DATE COMPLETED: _____

0 150' 300' 600' SCALE  
 1" = 300'-0"

Small text at the bottom left corner, likely a reference to a specific drawing or project file.



- LEGEND:**
- CONTRACTOR'S ACCESS ROUTE
  - SAFETY FENCE, SEE DETAIL 2, SHEET G201
  - PHASE NUMBER
  - PHASE LIMITS - UNRESTRICTED WORK HOURS
  - PHASE LIMITS - NIGHT TIME WORK HOURS (2200-0600 LOCAL)
  - REINSTALL MARKING REMOVED UNDER PHASE 1B, SHEET ###, MATCH EXISTING MARKING
  - REMOVE LOW-LEVEL WATER FILLED BARRICADES
  - AIRPORT PROVIDED LIGHTED X RUNWAY CLOSURE MARKER, CONTRACTOR TO PLACE AND MAINTAIN DURING THE DURATION OF THE PHASE
  - FIBER ROLL, SEE DETAIL 4, SHEET G201
  - FIBER ROLL, SEE DETAIL 4, SHEET G201
  - STRAW BALE EROSION CONTROL BARRIER PER DETAIL 6, SHEET G201
  - BURRING C/WL ACTIVE BURROW, CONTRACTORS LAYDOWN YARD MUST BE 507 MIN. AWAY FROM ACTIVE BURROW, CONTRACTOR TO VERIFY BEFORE PLACING SAFETY FENCE.
  - UNCOVER EXISTING SIGN PANEL(S) AND RETURN TO WORKING ORDER
  - REMOVE MARKING



CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

WARNING  
  
 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

The City of **SAN DIEGO** Public Works

**HNTB**  
 The HNTB Companies  
 Infrastructure Solutions  
 6033 W. Century Blvd., Suite 1050  
 Los Angeles, CA 90045  
 Phone: 310-417-3777  
 Fax: 310-417-3160

CONSULTANT  
 SPEC. NO. 1575

PLANS FOR THE CONSTRUCTION OF:  
**BROWN FIELD AIRPORT**  
**RUNWAY 8L-26R REHABILITATION - PHASE 3**  
**CONSTRUCTION SEQUENCING - PHASE 3**

CITY OF SAN DIEGO, CALIFORNIA  
 PUBLIC WORKS DEPARTMENT  
 SHEET 20 OF 75 SHEETS

WBS 8-16150

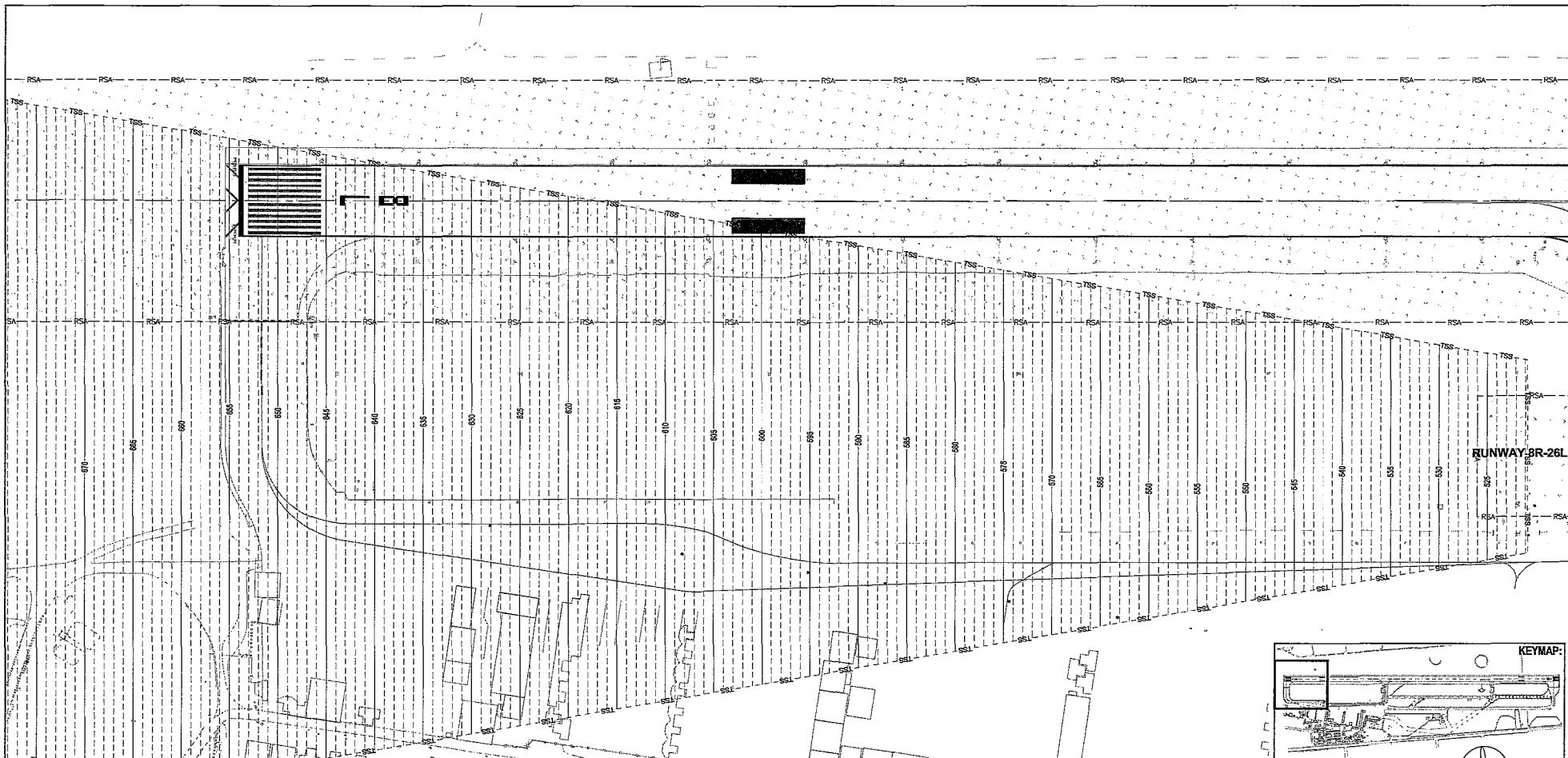
APPROVED: \_\_\_\_\_ DATE \_\_\_\_\_  
 FOR CITY ENGINEER

PROJECT MANAGER: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 PROJECT ENGINEER: \_\_\_\_\_  
**146-1767**  
 COST CODE: \_\_\_\_\_  
**1788-6336**  
 CADD COORDINATOR: \_\_\_\_\_

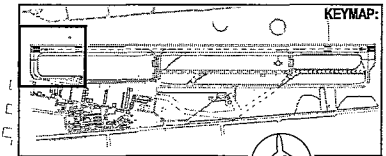
DATE BY/REV: \_\_\_\_\_  
 CONTRACTOR: \_\_\_\_\_  
 INSPECTOR: \_\_\_\_\_  
 38865-20-D  
 6/5/18

Appendix C - Construction Safety Phasing Plan





RUNWAY 8L-26R



G132

**LEGEND**

- RUNWAY SAFETY AREA - CONTRACTOR MUST REMAIN CLEAR AT ALL TIMES WHEN RUNWAY IS OPEN
- DEPARTURE SURFACE ELEVATION - CONTRACTOR MUST KEEP ALL EQUIPMENT BELOW DEPARTURE SURFACE DURING RUNWAY OPERATION

**NOTES:**

1. ALL EQUIPMENT, NO MATTER HEIGHT, SHALL BE SUFFICIENTLY MARKED PER THE REQUIREMENTS OF THIS CONTRACT.
2. UNDER NO CIRCUMSTANCES WILL EQUIPMENT BE ALLOWED TO PENETRATE THE DEPARTURE SURFACE. ANY EQUIPMENT OVER 15' IN HEIGHT WILL REQUIRE THE ISSUANCE OF A TAGS.

**CONSTRUCTION CHANGE / ADDENDUM**

CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

**WARNING**

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

The City of **SAN DIEGO** Public Works

CONSULTANT



SPEC. NO. 1575

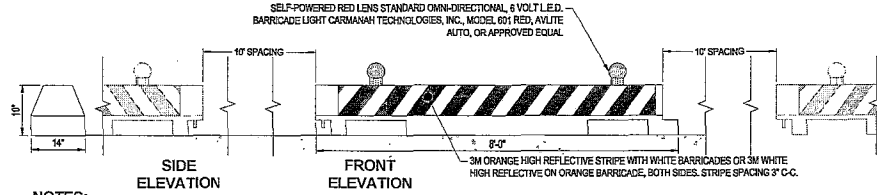


PLANS FOR THE CONSTRUCTION OF:  
**BROWN FIELD AIRPORT  
RUNWAY 8L-26R REHABILITATION - PHASE 3  
RUNWAY 8L-26R HEIGHT  
RESTRICTION PLAN - WEST END**

CITY OF SAN DIEGO, CALIFORNIA PUBLIC WORKS DEPARTMENT SHEET 22 OF 75 SHEETS	WBS B-1815D
APPROVED FOR CITY ENGINEER: _____ DATE: _____ PROJECT NAME: _____ RFP: _____ DESCRIPTION: _____ BY: _____ APPROVED: _____ DATE: _____ FILED: _____	DESIGNED BY: JIMMIE S. ELMAN PROJECT MANAGER DRAWN BY: JAMES BOTICA PROJECT ENGINEER <b>146-1767</b> CITY OF SAN DIEGO <b>1788-6336</b> CONTRACT NO. 38655-22-D
CONTRACTOR: _____ INSPECTOR: _____	DATE PREPARED: _____ DATE COMPLETED: _____

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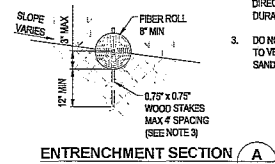
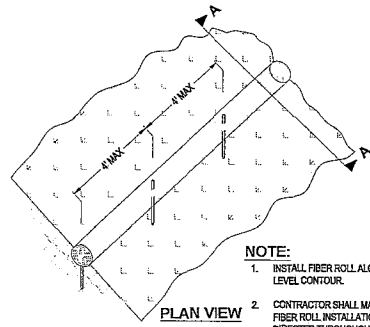




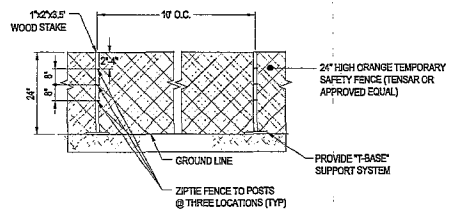
**NOTES:**

1. USE RED LIGHTS, STEADY BURN MEETING THE LUMINANCE REQUIREMENTS OF THE CALIFORNIA HIGHWAY DEPARTMENT; BARRICADES WITH DIAGONAL ALTERNATING ORANGE AND WHITE AND REFLECTIVE MARKERS TO SEPARATE ALL THE CONSTRUCTION MARKED AREAS FROM AIRCRAFT MOVEMENT AREAS. ALL BARRICADES MUST BE AS LOW AS POSSIBLE TO THE GROUND; OF LOW MASS, EASILY COLLAPSIBLE UPON CONTACT WITH ANY AIRCRAFT OR ANY OF ITS COMPONENTS AND STURDILY ATTACHED TO THE SURFACE TO PREVENT DISPLACEMENT FROM PROP WASH, JET BLAST, WIND VORTEX OR OTHER SURFACE WIND CURRENTS.
2. BARRICADES SHALL DELINEATE THE AREA TO BE PROTECTED AS SHOWN ON THE PHASING PLANS.
3. CONTRACTOR SHALL USE BARRICADES IN ACCORDANCE WITH FAA AC 150/5360-1 AND 150/5370-2F LATEST EDITION, CONSTRUCTED OF HIGH IMPACT, UV-RESISTANT POLYETHYLENE, WATER FILLED TYPE, AS MANUFACTURED BY "OFF THE WALL" (TYPE MULTIBARRIER MODEL R4710) OR APPROVED EQUAL.
4. BARRICADES MAY ALSO BE USED TO ALIGN TEMPORARY SERVICE ROADS DURING CONSTRUCTION. PLACE BARRICADES AT 20' C-C FOR ROAD ALIGNMENT.
5. ALL BARRICADES THAT ARE LEAKING (NOT HOLDING WATER) SHALL BE REMOVED AND REPLACED.

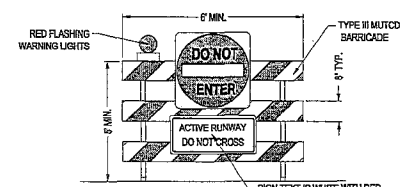
**1 LOW-LEVEL BARRICADE**  
G104 - G107 SCALE: NTS



**4 TYPICAL FIBER ROLL INSTALLATION**  
G101 - G107 SCALE: NTS



**2 CONSTRUCTION SAFETY FENCE**  
G104 - G108 SCALE: NTS

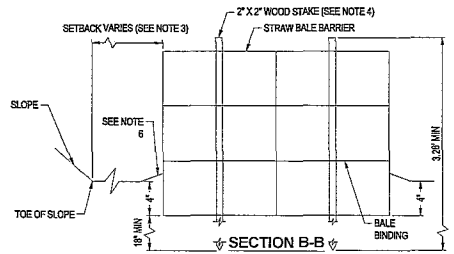


**NOTE:** MUTCD IS THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, PUBLISHED BY THE U.S. FEDERAL HIGHWAY ADMINISTRATION.

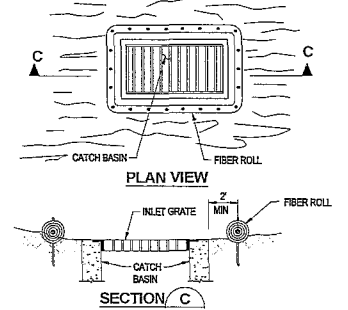
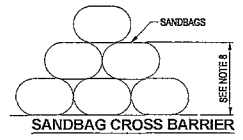
**3 ACTIVE RUNWAY SIGN**  
G101 - G132 SCALE: NTS

**SEDIMENT BARRIER NOTES:**

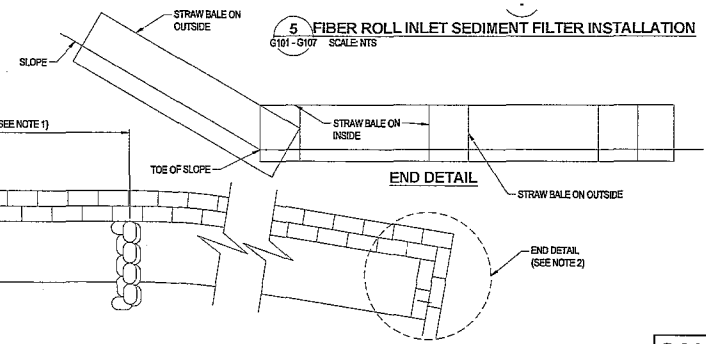
1. CONSTRUCT THE LENGTH OF EACH REACH SO THAT THE CHANGE IN BASE ELEVATION ALONG THE REACH DOES NOT EXCEED 1/2 THE HEIGHT OF THE LINEAR BARRIER. IN NO CASE SHALL THE REACH LENGTH EXCEED 6'.
2. THE END OF BARRIER SHALL BE TURNED UP SLOPE.
3. DIMENSION MAY VARY TO FIELD CONDITION.
4. STAKE DIMENSIONS ARE NOMINAL.
5. PLACE STRAW BALES TIGHTLY TOGETHER.
6. TAMP EMBEDMENT SPOILS AGAINST SIDES OF INSTALLED BALES. DRIVE ANGLED WOOD STAKE BEFORE VERTICAL STAKE TO ENSURE TIGHT ABUTMENT TO ADJACENT BALE.
7. CROSS BARRIERS SHALL BE MIN 1/2 AND A MAX OF 2/3 THE HEIGHT OF THE LINEAR BARRIER.
8. SANDBAG ROWS AND LAYERS SHALL BE OFFSET TO ELIMINATE GAPS.



**6 TEMPORARY LINER SEDIMENT BARRIER (TYPE STRAW BALE)**  
G101 - G107 SCALE: NTS



**5 FIBER ROLL INLET SEDIMENT FILTER INSTALLATION**  
G101 - G107 SCALE: NTS



**G201**

PLANS FOR THE CONSTRUCTION OF:  
**BROWN FIELD AIRPORT  
RUNWAY 8L-26R REHABILITATION - PHASE 3**  
CONSTRUCTION SEQUENCING DETAILS 1

<b>CONSULTANT</b>		SPEC. NO. 1575		CITY OF SAN DIEGO, CALIFORNIA PUBLIC WORKS DEPARTMENT SHEET 23 OF 75 SHEETS		WBS B-16150	
<b>HNTB</b> The HNTB Companies Infrastructure Solutions 6023 R Century Blvd., Suite 1050 San Diego, CA 92121 Phone: 313-477-0777 Fax: 313-477-0269		APPROVED BY: ANYONE L. FERRELLA No. 525543 Exp. 12/31/18 CIVIL STATE OF CALIFORNIA		APPROVED BY: JAMES BOTICA PROJECT ENGINEER 146-1767 0230 COORDINATOR 1788-6336 0230 COORDINATOR 38865-23-D		DESIGNED BY: JIMMY SLEIMAN PROJECT MANAGER CHECKED BY: JAMES BOTICA PROJECT ENGINEER 146-1767 0230 COORDINATOR 1788-6336 0230 COORDINATOR 38865-23-D	
		APPROVED BY: JAMES BOTICA PROJECT ENGINEER 146-1767 0230 COORDINATOR 1788-6336 0230 COORDINATOR 38865-23-D		APPROVED BY: JAMES BOTICA PROJECT ENGINEER 146-1767 0230 COORDINATOR 1788-6336 0230 COORDINATOR 38865-23-D		APPROVED BY: JAMES BOTICA PROJECT ENGINEER 146-1767 0230 COORDINATOR 1788-6336 0230 COORDINATOR 38865-23-D	
CHANGE / DATE / AFFECTED OR ADDED SHEET NUMBERS / APPROVAL NO.		WARNING IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE		SCALE AS NOTED		DATE STARTED / DATE COMPLETED	

The City of **SAN DIEGO** Public Works



**ATTACHMENT F**  
**INTENTIONALLY LEFT BLANK**

**ATTACHMENT G**  
**CONTRACT AGREEMENT**

## CONTRACT AGREEMENT

---

### CONSTRUCTION CONTRACT

This contract is made and entered into between THE CITY OF SAN DIEGO, a municipal corporation, herein called "City", and Hazard Construction Company, herein called "Contractor" for construction of **Brown Field Airport (SDM) 8L/26R Runway Rehabilitation Phase III**; Bid No. **K-17-1575-DBB-3**; in the amount of **Five Million Eighty Nine Thousand Five Hundred Five Dollars and Thirty Cents (\$5,089,505.30)**, which is comprised of the Base Bid.

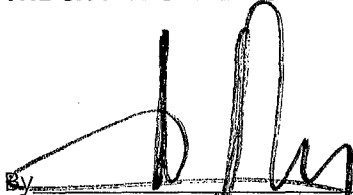
IN CONSIDERATION of the payments to be made hereunder and the mutual undertakings of the parties hereto, City and Contractor agree as follows:

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 Instruction to Bidders and the Supplementary Special Provisions (SSP).
  - (d) That certain documents entitled **Brown Field Airport (SDM) 8L/26R Runway Rehabilitation Phase III**, on file in the office of the Public Works Department as Document No. **B-16150**, 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 **Brown Field Airport (SDM) 8L/26R Runway Rehabilitation Phase III**, Bid Number **K-17-1575-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 AGREEMENT (continued)

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 522.3102 authorizing such execution.


THE CITY OF SAN DIEGO

By   
Albert P. Rechany  
Deputy Director  
Print Name: Public Works Department  
Mayor or designee

Date: 12/4/17

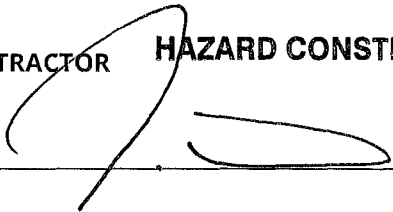
APPROVED AS TO FORM

Mara W. Elliott, City Attorney

By   
Print Name: Pedro De Lara, Jr.  
Deputy City Attorney

Date: 12/5/17

CONTRACTOR **HAZARD CONSTRUCTION COMPANY**

By   
Print Name: JASON A. MORDHORST, PRESIDENT

Title: \_\_\_\_\_

Date: 10/4/17

City of San Diego License No.: B1998008961

State Contractor's License No.: 750542

DEPARTMENT OF INDUSTRIAL RELATIONS (DIR) REGISTRATION NUMBER: 1000022121

## CERTIFICATIONS AND FORMS

**The Bidder, by submitting its electronic bid, agrees to and certifies under penalty of perjury under the laws of the State of California, that the certifications, forms and affidavits submitted as part of this bid are true and correct.**

## **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



**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

County of San Diego

The bidder, being first duly sworn, deposes and says that he or she is authorized by 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.

## CONTRACTOR CERTIFICATION

---

### DRUG-FREE WORKPLACE

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;

This company 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.

## CONTRACTOR CERTIFICATION

---

### AMERICAN WITH DISABILITIES ACT (ADA) COMPLIANCE CERTIFICATION

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:

This company 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

## CONTRACTOR CERTIFICATION

---

### CONTRACTOR STANDARDS – PLEDGE OF COMPLIANCE

I declare under penalty of perjury that I am authorized to make this certification on behalf of the company submitting this bid/proposal, that as Contractor, I am familiar with the requirements of City of San Diego Municipal Code § 22.3004 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 § 22.3004.

## CONTRACTOR CERTIFICATION

---

### Equal Benefits Ordinance Certification

I declare under penalty of perjury that I am familiar with the requirements of and in compliance with the City of San Diego Municipal Code § 22.4300 regarding Equal Benefits Ordinance

**AFFIDAVIT OF DISPOSAL**

(To be submitted upon completion of Construction pursuant to the contracts Certificate of Completion)

**WHEREAS**, on the \_\_\_\_\_ DAY OF \_\_\_\_\_, 2\_\_\_\_ the undersigned entered into and executed a contract with the City of San Diego, a municipal corporation, for:

**Brown Field Airport (SDM) 8L/26R Runway Rehabilitation Phase III**  
(Name of Project)

as particularly described in said contract and identified as Bid No. **K-17-1575-DBB-3**; SAP No. (WBS/IO/CC) **B-16150**; 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 \_\_\_\_\_, \_\_\_\_\_.

By: \_\_\_\_\_  
Contractor

**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

**LIST OF SUBCONTRACTORS**

**\*\*\* PROVIDED FOR ILLUSTRATIVE PURPOSES ONLY \*\*\* TO BE SUBMITTED IN ELECTRONIC FORMAT ONLY \*\*\* SEE INSTRUCTIONS TO BIDDERS, FOR FURTHER INFORMATION**

In accordance with the requirements of the "Subletting and Subcontracting Fair Practices Act", Section 4100, of the California Public Contract Code (PCC), the Bidder is to list below the name, address and license number of each Subcontractor who will perform work, labor, render services or specially fabricate and install a portion [type] of the work or improvement, in an amount of or in excess of 0.5% of the Contractor's total Bid. Failure to comply with this requirement may result in the Bid being rejected as non-responsive. The Contractor is to list only one Subcontractor for each portion of the Work. The Bidder's attention is directed to the Special Provisions - General; Paragraph 2-3 Subcontracts, which stipulates the percentage of the Work to be performed with the Bidder's own forces. The Bidder is to also list all SLBE, ELBE, DBE, DVBE, MBE, WBE, OBE, SDB, WoSB, HUBZone, and SDVOSB Subcontractors for which the Bidders are seeking recognition towards achieving any mandatory, voluntary, or both subcontracting participation percentages.

NAME, ADDRESS AND TELEPHONE NUMBER OF SUBCONTRACTOR	CONSTRUCTOR OR DESIGNER	SUBCONTRACTOR LICENSE NUMBER	TYPE OF WORK	DOLLAR VALUE OF SUBCONTRACT	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB <sup>ⓐ</sup>	WHERE CERTIFIED <sup>ⓑ</sup>	CHECK IF JOINT VENTURE PARTNERSHIP
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____							
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____							

- ⓐ 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 |  |         |
- ⓑ 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   |  |          |
| 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**

\*\*\* PROVIDED FOR ILLUSTRATIVE PURPOSES ONLY \*\*\* TO BE SUBMITTED IN ELECTRONIC FORMAT ONLY \*\*\* SEE INSTRUCTIONS TO BIDDERS FOR FURTHER INFORMATION

NAME, ADDRESS AND TELEPHONE NUMBER OF VENDOR/SUPPLIER	MATERIALS OR SUPPLIES	DOLLAR VALUE OF MATERIAL OR SUPPLIES	SUPPLIER (Yes/No)	MANUFACTURER (Yes/No)	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB①	WHERE CERTIFIED②
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____						
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		
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.**



## **ELECTRONICALLY SUBMITTED FORMS**

### **THE FOLLOWING FORMS MUST BE SUBMITTED IN PDF FORMAT WITH BID SUBMISSION**

The following forms are to be completed by the bidder and submitted (uploaded) electronically with the bid in PlanetBids.

- A. BID BOND – See Instructions to Bidders, Bidders Guarantee of Good Faith (Bid Security) for further instructions**
- B. CONTRACTOR'S CERTIFICATION OF PENDING ACTIONS**
- C. LOBBY PROHIBITION, CERTIFICATION AND DISCLOSURE**
- D. Instructions for Completion of SF-LLL, Disclosure of Lobbying Activities**
- E. Disclosure of Lobbying Activities**
- F. Debarment & Suspension Certificate Title 49, Code of Federal Regulations, Part 29**
- G. Certification with Regard to the Performance of Previous Contracts or Subcontracts Subject to the Equal Opportunity Clause and the filing of Required Reports To the Equal Opportunity Clause and the Filing of Required Reports**
- H. Public Contract Code Section 10162 Questionnaire**
- I. Non-Lobbying Certification**

**Bids will not be accepted until ALL forms are submitted as part of the bid submittal**

**BID BOND**

**See Instructions to Bidders, Bidder Guarantee of Good Faith  
(Bid Security)**

KNOW ALL MEN BY THESE PRESENTS,

That HAZARD CONSTRUCTION COMPANY as Principal, and Nationwide Mutual Insurance Company 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

Brown Field Airport (SDM) 8L/26R Runway Rehabilitation Phase III

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 6<sup>th</sup> day of July, 20 17  
HAZARD CONSTRUCTION COMPANY Nationwide Mutual Insurance Company  
\_\_\_\_\_  
(Principal) (SEAL) (Surety) (SEAL)

By: JASON A. MORDHORST, PRESIDENT By: KYLE KING  
(Signature) (Signature)  
ATTORNEY-IN-FACT

(SEAL AND NOTARIAL ACKNOWLEDGEMENT OF SURETY)

Power of Attorney

KNOW ALL MEN BY THESE PRESENTS THAT:

Nationwide Mutual Insurance Company, an Ohio corporation hereinafter referred to as the "Company" and does hereby make, constitute and appoint:

Minna Huovila, Tara Bacon, Kyle King, Dale Gene Harshaw

each in their individual capacity, its true and lawful attorney-in-fact, with full power and authority to sign, seal, and execute on its behalf any and all bonds and undertakings, and other obligatory instruments of similar nature, in penalties not exceeding the sum of

UNLIMITED

and to bind the Company thereby, as fully and to the same extent as if such instruments were signed by the duly authorized officers of the Company; and all acts of said Attorney pursuant to the authority given are hereby ratified and confirmed.

This power of attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the board of directors of the Company:

"RESOLVED, that the president, or any vice president be, and each hereby is, authorized and empowered to appoint attorneys-in-fact of the Company, and to authorize them to execute and deliver on behalf of the Company any and all bonds, forms, applications, memorandums, undertakings, recognizances, transfers, contracts of indemnity, policies, contracts guaranteeing the fidelity of persons holding positions of public or private trust, and other writings obligatory in nature that the business of the Company may require; and to modify or revoke, with or without cause, any such appointment or authority; provided, however, that the authority granted hereby shall in no way limit the authority of other duly authorized agents to sign and countersign any of said documents on behalf of the Company."

"RESOLVED FURTHER, that such attorneys-in-fact shall have full power and authority to execute and deliver any and all such documents and to bind the Company subject to the terms and limitations of the power of attorney issued to them, and to affix the seal of the Company thereto; provided, however, that said seal shall not be necessary for the validity of any such documents."

This power of attorney is signed and sealed under and by the following bylaws duly adopted by the board of directors of the Company.

Execution of Instruments. Any vice president, any assistant secretary or any assistant treasurer shall have the power and authority to sign or attest all approved documents, instruments, contracts, or other papers in connection with the operation of the business of the company in addition to the chairman of the board, the chief executive officer, president, treasurer or secretary; provided, however, the signature of any of them may be printed, engraved, or stamped on any approved document, contract, instrument, or other papers of the Company.

IN WITNESS WHEREOF, the Company has caused this instrument to be sealed and duly attested by the signature of its officer the 1st day of May, 2017.

[Signature]
Antonio C. Albanese, Vice President of Nationwide Mutual Insurance Company



ACKNOWLEDGMENT

STATE OF NEW YORK, COUNTY OF NEW YORK: ss
On this 1st day of May, 2017, before me came the above-named officer for the Company aforesaid, to me personally known to be the officer described in and who executed the preceding instrument, and he acknowledged the execution of the same, and being by me duly sworn, deposes and says, that he is the officer of the Company aforesaid, that the seal affixed hereto is the corporate seal of said Company, and the said corporate seal and his signature were duly affixed and subscribed to said instrument by the authority and direction of said Company.

BARRY T. BASSIS
Notary Public, State of New York
No. 02BA4656400
Qualified in New York County
Commission Expires April 30, 2019

[Signature]
Notary Public
My Commission Expires
April 30, 2019

CERTIFICATE

I, Laura B. Guy, Assistant Secretary of the Company, do hereby certify that the foregoing is a full, true and correct copy of the original power of attorney issued by the Company; that the resolution included therein is a true and correct transcript from the minutes of the meetings of the boards of directors and the same has not been revoked or amended in any manner; that said Antonio C. Albanese was on the date of the execution of the foregoing power of attorney the duly elected officer of the Company, and the corporate seal and his signature as officer were duly affixed and subscribed to the said instrument by the authority of said board of directors; and the foregoing power of attorney is still in full force and effect.

IN WITNESS WHEREOF, I have hereunto subscribed my name as Assistant Secretary, and affixed the corporate seal of said Company this 6 day of July, 2017.

[Signature]
Assistant Secretary

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document, to which this certificate is attached, and not the truthfulness, accuracy or validity of that document.

State of California

County of San Diego

On July 6, 2017 before me, Apryle M. Briede, Notary Public  
Date NAME, TITLE OF OFFICER - E.G. AJANE DOE, NOTARY PUBLIC

personally appeared Kyle King  
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.

Apryle M. Briede  
NOTARY PUBLIC SIGNATURE



**CONTRACTOR'S CERTIFICATION OF PENDING ACTIONS**

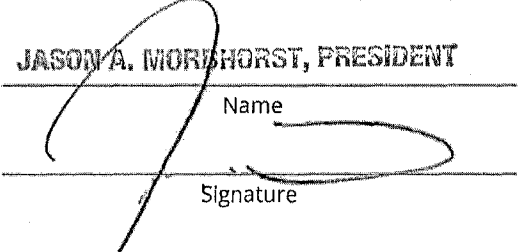
As part of its bid or proposal (Non-Price Proposal in the case of Design-Build contracts), the Bidder shall provide to the City a list of all instances within the past 10 years where a complaint was filed or pending against the Bidder in a legal or administrative proceeding alleging that Bidder discriminated 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
		SEE ATTACHED			

Contractor Name: **HAZARD CONSTRUCTION COMPANY**

Certified By **JASON A. MORSEHORST, PRESIDENT** Title \_\_\_\_\_  
 Name \_\_\_\_\_  
 Signature  Date **7/5/17**

**USE ADDITIONAL FORMS AS NECESSARY**

## **HAZARD CONSTRUCTION COMPANY**

### **CONTRACTORS CERTIFICATION OF PENDING ACTIONS**

In March 2013, a lawsuit was filed against Hazard Construction Company by a former employee, Kenneth McDonald, in the Superior Court of California, County of San Diego. McDonald was laid off by Hazard as part of a company-wide labor force reduction in December 2011. The lawsuit stated various allegations of discrimination, harassment, and retaliation against McDonald by Hazard and/or its employees. Hazard's management believed the lawsuit was without merit and vigorously defended against the allegations. This matter was mediated and settled in January 2014 without any admission of wrongdoing or fault by Hazard.

In May 2016, a lawsuit was filed against Hazard Construction Company by a former employee, Trinidad Davalos, in the Superior Court of California, County of San Diego. Davalos was terminated earlier in 2016. The lawsuit stated a claim for wrongful termination due to disability discrimination against Davalos. Hazard's management believes the lawsuit is without merit and has vigorously defended against the allegation. This matter was settled in January 2017 without any admission of wrongdoing or fault by Hazard.

**DEBARMENT AND SUSPENSION CERTIFICATION**

**TITLE 49, CODE OF FEDERAL REGULATIONS, PART 29**

The Bidder, under penalty of perjury, certifies that, except as noted below, he/she or any person associated therewith in the capacity of owner, partner, director, officer, manager:

- Is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any Federal agency;
- has not been suspended, debarred, voluntarily excluded or determined Ineligible by any Federal agency within the past 3 years;
- does not have a proposed debarment pending; and
- has not been indicated, convicted, or had a civil judgment rendered against it by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past 3 years.

If there are any exceptions to this certification, insert the exceptions in the following space.

NONE

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Exceptions will not necessarily result in denial of award, but will be considered in determining bidder responsibility. For any exception noted above, indicate below to whom it applies, initiating agency, and dates of action.

**NOTE:** Providing false information may result in criminal prosecution or administrative sanctions. The above certification is part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Certification.

**CERTIFICATION WITH REGARD TO THE PERFORMANCE OF PREVIOUS  
CONTRACTS OR SUBCONTRACTS SUBJECT TO THE EQUAL OPPORTUNITY  
CLAUSE AND THE FILING OF REQUIRED REPORTS**

The Bidder  **HAZARD CONSTRUCTION COMPANY**  
proposed Subcontractor \_\_\_\_\_

, hereby certifies that he has , has not \_\_\_\_\_, participated in a previous contract or subcontract subject to the equal opportunity clause, as required by Executive Orders 10925, 11114, or 11246, and that, where required, he has , filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

**HAZARD CONSTRUCTION COMPANY**

\_\_\_\_\_  
Company  
By \_\_\_\_\_  
**JASON A. MORDHORST, PRESIDENT**  
\_\_\_\_\_  
Title

Date: 7/5/17

NOTE: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7(b) (1), and must be submitted by bidders and proposed Subcontractors only in connection with contracts and subcontracts which are subject to the equal opportunity clause as set forth in 41 CFR 601.5 (Generally only contracts or subcontracts of \$10,000 or under are exempt).

Currently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders or their implementing regulations.

Proposed prime Contractors and Subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 601.7(b)(1) prevents the award of contracts and subcontracts unless such Contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.



**PUBLIC CONTRACT CODE SECTION 10162 QUESTIONNAIRE**

In accordance with Public Contract Code Section 10162, the Bidder shall complete, under penalty of perjury, the following questionnaire:

Has the bidder, any officer of the bidder, or any employee of the bidder who has a proprietary interest in the bidder, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of a violation of law or a safety regulation?

YES \_\_\_\_\_

NO   X  

If the answer is yes, explain the circumstances in the following space:

**PUBLIC CONTRACT SECTION 10232 STATEMENT**

In accordance with Public Contract Code Section 10232, the Contractor hereby states under penalty of perjury, that no more than one (1) final unappealable finding of contempt of court by a federal court has been issued against the Contractor within the immediately preceding two (2) year period because of the Contractor's failure to comply with an order of a federal court which orders the Contractor to comply with an order of the National Labor Relations Board.

**PUBLIC CONTRACT CODE SECTION 10285.1 STATEMENT**

In accordance with Public Contract Code Section 10285.1 (Chapter 376, Stats. 1985), the bidder, hereby declares under penalty of perjury under the laws of the State of California that the bidder has   , has not   X  , been convicted within the preceding three years of any offenses referred to in that section, including any charge of fraud, bribery, collusion, conspiracy, or any other act in violation of any state or federal antitrust law in connection with the bidding upon, award of, or performance of, any public works contract, as defined in Public Contract Code Section 1101, with any public entity, as defined in Public Contract Code Section 1100, including the Regents of the University of California or the Trustees of the California State University. The term "bidder" is understood to include any partner, member, officer, director, responsible managing officer, or responsible managing employee thereof, as referred to in Section 10285.1.

**NOTE: THE BIDDER MUST PLACE A CHECK MARK AFTER "HAS" OR "HAS NOT"**

**IN ONE OF THE BLANK SPACES PROVIDED.**

THE ABOVE STATEMENTS ARE PART OF THE PROPOSAL. SIGNING THIS PROPOSAL ON THE SIGNATURE PORTION THEREOF SHALL ALSO CONSTITUTE SIGNATURE OF THESE STATEMENTS.

BIDDERS ARE CAUTIONED THAT MAKING A FALSE CERTIFICATION MAY SUBJECT THE CERTIFIER TO CRIMINAL PROSECUTION.

By my signature on this Proposal I certify, under penalty of perjury under the laws of the State of California, that the foregoing questionnaire and statements of Public Contract Code Sections 10162, 10232 and 10285.1 are true and correct and that the bidder has complied with the requirements of Section 8103 of the Fair Employment and Housing Commission Regulations (Chapter 5, Title 2 of the California Administrative Code). By my signature on this Proposal I further certify, under penalty of perjury under the laws of the State of California and the United States of America, that the Title 23 United States Code, Section 112, Non-Collusion Affidavit," and the Title 49 Code of Federal Regulations, Part 29, "Debarment and Suspension Certification," are true and correct.

## **NON-LOBBYING CERTIFICATION**

(FOR FEDERAL-AID CONTRACTS)

The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

- (1) No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal amendment, or modification of any federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities", in accordance with its instructions.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontractors, which exceed \$100,000 and that all such subrecipients shall certify and disclose accordingly.

## 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 this report 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 (item 1). 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 (item 4) to the lobbying entity (item 10). 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.



Reporting Entity: \_\_\_\_\_ Page \_\_\_\_\_ of \_\_\_\_\_

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Authorized for Local Reproduction  
Standard Form - LLL-A

# City of San Diego

CITY CONTACT: Michelle Muñoz, Contract Specialist, Email: MichelleM@sandiego.gov  
Phone No. (619) 533-3482, Fax No. (619) 533-3633

## ADDENDUM "B"



**FOR**

### **BROWN FIELD AIRPORT (SDM) 8L/26R RUNWAY REHABILITATION PHASE III**

BID NO.:	<u>K-17-1575-DBB-3</u>
SAP NO. (WBS/IO/CC):	<u>B-16150</u>
CLIENT DEPARTMENT:	<u>2111</u>
COUNCIL DISTRICT:	<u>8</u>
PROJECT TYPE:	<u>AA</u>

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**BID DUE DATE:**

**2:00 PM**

**JULY 11, 2017**

**CITY OF SAN DIEGO**

**PUBLIC WORKS CONTRACTS**

**1010 SECOND AVENUE, 14<sup>th</sup> 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. CERTIFICATIONS AND FORMS**

1. To Item E, Disclosure of Lobbying Activities, page 713, **DELETE** in its entirety and **SUBSTITUTE** with page 3 of this Addendum.

James Nagelvoort, Director  
Public Works Department

Dated: *July 10, 2017*  
San Diego, California

JN/RWB/Lad

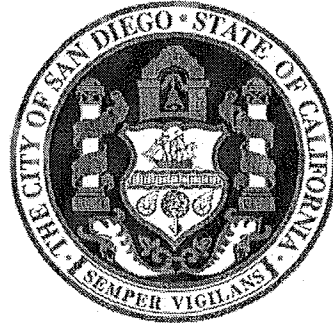




# City of San Diego

CITY CONTACT: Michelle Muñoz, Contract Specialist, Email: MichelleM@sandiego.gov  
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## ADDENDUM "A"



**FOR**

### **BROWN FIELD AIRPORT (SDM) 8L/26R RUNWAY REHABILITATION PHASE III**

BID NO.:	<u>K-17-1575-DBB-3</u>
SAP NO. (WBS/IO/CC):	<u>B-16150</u>
CLIENT DEPARTMENT:	<u>2111</u>
COUNCIL DISTRICT:	<u>8</u>
PROJECT TYPE:	<u>AA</u>

**BID DUE DATE:**

**2:00 PM  
JULY 11, 2017  
CITY OF SAN DIEGO  
PUBLIC WORKS CONTRACTS  
1010 SECOND AVENUE, 14<sup>th</sup> FLOOR, MS 614C  
SAN DIEGO, CA 92101**

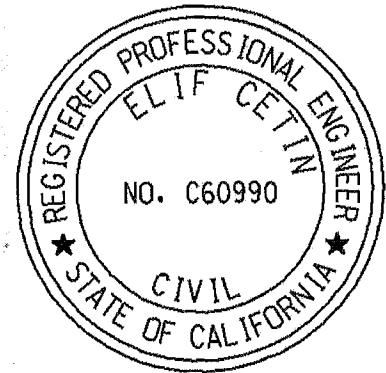
# ENGINEER OF WORK

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

Antone T. Fermella      06-26-2017      Seal:  
1) Registered Engineer      Date



Elif Cetin      6/26/2017      Seal:  
2) For City Engineer      Date



**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. Section 401-4.2 & P-403-4.2 HMA Plant, b. Testing Facilities: The contractor shall provide a fully equipped asphalt laboratory located at the plant. It is our understanding at least one other recent P-401 bid contained same criteria in the specification, but did not actually implement all lab requirements when the project was built. The majority of requirements under this section 401-4.2b & 403-4.2b will require a new lab to be built at the asphalt producer's plant, for most if not all asphalt suppliers in SD County, should the requirements of this section be enforced. This could have a serious impact to the test strip period and start date for this contract as it could take a long duration to have a lab in place to adhere to all requirements currently stated.

If these requirements are to be included in this contract, how will the Airport Authority enforce?

Will the samples taken at the plant for acceptance testing be allowed to be transported to a local lab for testing if the lab at the plant cannot fulfill all testing requirements and not meet the requirement of ASTM D3666 certified?

A1. Testing facilities shall meet all requirements of Sections 401-4.2 and 403-4.2. Testing Facilities Certification is required to be submitted per Section 2.1-F of P-401 and P-403. Additionally, the City will also enforce the requirements per Sections 401-4.2.c, Inspection of Plant. Project delays in an effort to meet these requirements are subject to liquidated damages, see section G-100.

Q2. Section 401-6.2 Contractor Testing Laboratory: We understand per Section 401-5.1 para.2 & 403-5.1 para.2, the testing organizations performing acceptance testing shall be an accredited lab in accordance with ASTM D3666.

However, please clarify under Section 401-4.2b & 403-4.2b, is the lab at the plant required to be accredited in accordance with ASTM D3666?

Will the accreditation of D3666 for the lab at the plant need to be active at

time of bid or upon submittal of JMF / QC Plan?

Will the samples taken at the plant for acceptance testing be allowed to be transported to a local lab for testing if the lab at the plant cannot fulfill the requirement of ASTM D3666 certified?

How will the Airport Authority enforce the accreditation of D3666?

- A2. Testing facilities shall meet all requirements of Sections 401-4.2 and 403-4.2, including ASTM D3666. Testing Facilities Certification is required to be submitted per Section 2.1-F of P-401 and P-403. Lab certifications can be submitted with the JMF.
- Q3. Section 401-2.1 & 403-2.1 Aggregates: A majority of the aggregate sources in San Diego County are mined in the San Diego conglomerate geological vein. The aggregates in this vein contain popouts also known as soft particles. The City of San Diego has dealt with this issue for quite some time. Being the P-401 and P-403 will be used on airport runways and taxiways, not a typical street, we understand this section of the specifications identifying the aggregates as sound, tough, and durable. However, could you please clarify if the San Diego Conglomerate be acceptable or will aggregates need to be mined and crushed from a blast quarry?
- A3. Aggregate sources must meet the requirements of Sections 401-2.1.d and 403-2.1.d, Sources of Aggregates. Approval of the source of aggregate does not relieve the Contractor in any way of the responsibility for delivery at the job site of aggregates that meet the requirements specified in P401-2.1 and P-403-2.1.

## C. ATTACHMENTS

1. To Attachment D, FAA Funding Agency Provisions, pages 37 through 64, Section 9, Wage Rates, **DELETE** in their entirety and **SUBSTITUTE** with pages 11 of 38 of this Addendum.
2. To Attachment D, FAA Funding Agency Provisions, page 86, Section 13 FORMS through Section 13. FORMS and Section 14 APPENDIX, **DELETE** in their entirety and **SUBSTITUTE** with the following:

### 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.** The following forms shall be completed and submitted within **4 Working Days of the Bid opening** by 4:00 PM. 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. Form AA62 Summary of Bids Received
3. Form AA63 Good Faith Effort List of Subcontractors Solicited
4. DBE Commitment Form

**13.3.** The following are additional forms to Section 11, "**AGENCY SPECIFIC PROVISIONS**", that shall be submitted with the Bid Proposal:

1. Buy American Certification. (See CERTIFICATIONS AND FORMS)
3. To Attachment D, Funding Agency Provisions Appendix, Buy American Certification Form, pages 95 through 98, **DELETE** in its entirety.

#### **D. SUPPLEMENTARY SPECIAL PROVISIONS**

1. To Attachment E, Supplementary Special Provisions, Technical Specifications, pages 130-132, Section G-50, Control of Work, Subsection 50-6, Construction Layout and Stakes, **DELETE** in its entirety and **SUBSTITUTE** with the following:

**50-6 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 Surveyor 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 Surveyor must give copies of survey notes to the Engineer for each area of construction and for each placement of material as specified to allow the Engineer to make periodic checks for conformance with plan grades, alignments, grade tolerances required by applicable material specifications. All surveys must be provided to the Engineer prior to commencing work items that will cover or disturb the survey staking as set by the surveyor. Survey(s) and notes shall be provided in the following format(s): hard copy and electronic files. In case of error on the part of the Surveyor, or his/her employees or subcontractors, 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.

Survey service will be provided by the City. No direct payment will be made, unless otherwise specified in contract documents, for this labor, materials, or other expenses therewith. The Contractor shall submit survey requests to the Surveyor at least 5 working days prior to staking.

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
  - e. Fence lines at 100 foot stations.
  - f. 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.
  - g. Drain lines, cut stakes and alignment on 25-foot stations, inlet and manholes.



- h. 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)
- i. 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).

The establishment of Survey Control and/or reestablishment of survey control shall be by a State Licensed Land Surveyor.

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.

- 2. To Attachment E, Supplementary Special Provisions, Technical Specifications, pages 193-200, Section P-154, Subbase Course, **DELETE** in its entirety.
- 3. To Attachment E, Supplementary Special Provisions, Technical Specifications, page 304, Section P-620, Painting and Marking, Part 1 - General, Subsection 620-3.3, Preparation of Surface, **DELETE** in its entirety and **SUBSTITUTE** with the following:

#### **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 waterblasting, shotblasting, grinding or by other methods as required to remove all contaminants without damage to the pavement surface. Use of any chemicals or impact abrasives during surface preparation shall be approved in advance by the Engineer. After the cleaning operations, sweeping, blowing, or rinsing with pressurized water shall be performed to ensure the surface is clean and free of grit or other debris left from the cleaning process.

At least 24 hours prior to remarking existing markings, the existing markings shall be removed such that 90% of the existing markings are removed with low (3,500-10,000 psi) waterblaster. After

waterblasting, the surface shall be cleaned of all residue or debris either with sweeping or blowing with compressed air or both.

Prior to the initial application of markings, the Contractor shall certify in writing that the surface has been prepared in accordance with the paint manufacturer's requirements, that the application equipment is appropriate for the type of marking paint and that environmental conditions are appropriate for the material being applied. This certification along with a copy of the paint manufacturer's surface preparation and application requirements must be submitted and approved by the Engineer prior to the initial application of markings.

4. To Attachment E, Supplementary Special Provisions, Technical Specifications, page 336, Section L-125, Airfield Electrical Work, Part 3 - Method of Measurement, Subsection 3.1, **DELETE** in its entirety and **SUBSTITUTE** with the following:

- 3.1 Removal of Existing and Abandoned Jcan and Concrete Foundation and Backfill shall be measured and paid for each unit in place performed in accordance with the specifications and accepted by the Engineer.

5. To Attachment E, Supplementary Special Provisions, Technical Specifications, page 336, Section L-125, Airfield Electrical Work, Part 4 - Basis of Payment, Subsections 4.1 and 4.2, **DELETE** in their entirety and **SUBSTITUTE** with the following:

- 4.1 Removal of Existing and Abandoned Jcan and Concrete Foundation and Backfill payment shall be made at the contract unit price per each unit measured in place. The prices shall be full compensation for furnishing all labor, supervision, materials, layout, equipment, tools, and incidentals, including coring and slurry backfill necessary to complete the item as specified herein and pursuant to the contract documents.

- 4.2 Adjust Edge Light Base or Junction Can payment shall be made at the contract unit price per each unit measured in place. The prices shall be full compensation for furnishing all labor, supervision, materials, layout, equipment, tools, and incidentals, including Adhesive Compounds, (FAA P-606) necessary to complete the item as specified herein and pursuant to the contract documents.

**E. CERTIFICATION AND FORMS**

1. To Electronically Submitted Forms, page 704, **ADD** the following:
  - J. Buy American Certification
2. To Certification and Forms, **ADD** Buy American Certification Form, pages 38 through 41 of this Addendum

James Nagelvoort, Director  
Public Works Department

Dated: *June 27, 2017*  
San Diego, California

JN/RWB/Lad

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

General Decision Number: CA170001 06/09/2017 CA1

Superseded General Decision Number: CA20160001

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)

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.20 for calendar year 2017 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.20 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2017. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at [www.dol.gov/whd/govcontracts](http://www.dol.gov/whd/govcontracts).

Modification Number	Publication Date
0	01/06/2017
1	01/27/2017
2	02/17/2017
3	02/24/2017
4	03/03/2017
5	03/10/2017
6	03/24/2017
7	05/05/2017
8	05/12/2017
9	05/26/2017
10	06/09/2017

ASBE0005-002 07/04/2016

	Rates	Fringes
Asbestos Workers/Insulator (Includes the application of all insulating materials, protective coverings, coatings, and finishes to all types of mechanical systems).....	\$ 38.37	20.13
Fire Stop Technician (Application of Firestopping Materials for wall openings and penetrations in walls, floors, ceilings and curtain walls).....	\$ 26.15	17.31

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ASBE0005=004 07/04/2016

	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)....	\$ 18.38	10.82

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BOIL0092-003 10/01/2012

	Rates	Fringes
BOILERMAKER.....	\$ 41.17	28.27

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BRCA0004-008 11/01/2016

	Rates	Fringes
BRICKLAYER; MARBLE SETTER.....	\$ 35.30	17.35

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BRCA0018-004 06/01/2016

	Rates	Fringes
MARBLE FINISHER.....	\$ 29.20	12.93
TILE FINISHER.....	\$ 24.53	11.08
TILE LAYER.....	\$ 35.89	16.24

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BRCA0018-010 09/01/2016

	Rates	Fringes
TERRAZZO FINISHER.....	\$ 28.53	12.27

TERRAZZO WORKER/SETTER.....\$ 35.57 13.14

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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

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CARP0409-008 08/01/2010

	Rates	Fringes
Modular Furniture Installer.....	\$ 17.00	7.41

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CARP0547-001 07/01/2016

	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.....	\$ 40.70	17.03
PILEDRIVERMAN.....	\$ 37.28	10.58

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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

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\* ELEC0569-001 06/05/2017

	Rates	Fringes
Electricians (Tunnel Work)		
Cable Splicer.....	\$ 49.41	3%+12.63
Electrician.....	\$ 46.97	3%+12.63

Electricians: (All Other  
Work, Including 4 Stories  
Residential)

Cable Splicer.....	\$ 44.00	3%+12.63
Electrician.....	\$ 43.25	3%+12.63

\* ELEC0569-004 06/05/2017

	Rates	Fringes
ELECTRICIAN (Sound & Communications Sound Technician).....	\$ 31.00	3%+11.53
SOUND TECHNICIAN: Terminating, operating and performing final check-out		

\* ELEC0569-005 06/05/2017

	Rates	Fringes
Sound & Communications Sound Technician.....	\$ 31.00	3%+11.53
SOUND TECHNICIAN: Terminating, operating and performing final check-out		

ELEC0569-006 02/27/2017

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.....	\$ 30.48	3%+7.70
Utility Technician #2.....	\$ 25.45	3%+7.70

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.

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\* ELEC0569-008 06/05/2017

	Rates	Fringes
ELECTRICIAN (Residential, 1-3 Stories).....	\$ 32.81	3%+6.61

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ELEC1245-001 06/01/2015

	Rates	Fringes
LINE CONSTRUCTION		
(1) Lineman; Cable splicer..	\$ 52.85	15.53
(2) Equipment specialist (operates crawler tractors, commercial motor vehicles, backhoes, trenchers, cranes (50 tons and below), overhead & underground distribution line equipment).....	\$ 42.21	14.32
(3) Groundman.....	\$ 32.28	14.03
(4) Powderman.....	\$ 47.19	14.60

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 01/01/2017

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 52.21	31.585

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.

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ENGI0012-003 07/01/2016

	Rates	Fringes
OPERATOR: Power Equipment (All Other Work)		
GROUP 1.....	\$ 39.95	23.35
GROUP 2.....	\$ 40.73	23.35
GROUP 3.....	\$ 41.02	23.35
GROUP 4.....	\$ 42.51	23.35
GROUP 5.....	\$ 41.86	23.35
GROUP 6.....	\$ 41.83	23.35



GROUP 8.....	\$ 42.84	23.35
GROUP 9.....	\$ 42.19	23.35
GROUP 10.....	\$ 42.96	23.35
GROUP 11.....	\$ 42.31	23.35
GROUP 12.....	\$ 43.13	23.35
GROUP 13.....	\$ 43.23	23.35
GROUP 14.....	\$ 43.26	23.35
GROUP 15.....	\$ 43.34	23.35
GROUP 16.....	\$ 43.46	23.35
GROUP 17.....	\$ 43.63	23.35
GROUP 18.....	\$ 43.73	23.35
GROUP 19.....	\$ 43.84	23.35
GROUP 20.....	\$ 43.96	23.35
GROUP 21.....	\$ 44.13	23.35
GROUP 22.....	\$ 44.23	23.35
GROUP 23.....	\$ 44.34	23.35
GROUP 24.....	\$ 44.46	23.35
GROUP 25.....	\$ 44.63	23.35

OPERATOR: Power Equipment  
(Cranes, Piledriving &  
Hoisting)

GROUP 1.....	\$ 43.20	22.15
GROUP 2.....	\$ 43.98	22.15
GROUP 3.....	\$ 44.27	22.15
GROUP 4.....	\$ 44.41	22.15
GROUP 5.....	\$ 44.63	22.15
GROUP 6.....	\$ 44.74	22.15
GROUP 7.....	\$ 44.86	22.15
GROUP 8.....	\$ 45.03	22.15
GROUP 9.....	\$ 45.20	22.15
GROUP 10.....	\$ 46.20	22.15
GROUP 11.....	\$ 47.20	22.15
GROUP 12.....	\$ 48.20	22.15
GROUP 13.....	\$ 49.20	22.15

OPERATOR: Power Equipment  
(Tunnel Work)

GROUP 1.....	\$ 41.80	23.35
GROUP 2.....	\$ 42.58	23.35
GROUP 3.....	\$ 42.87	23.35
GROUP 4.....	\$ 43.01	23.35
GROUP 5.....	\$ 43.23	23.35
GROUP 6.....	\$ 43.34	23.35
GROUP 7.....	\$ 43.46	23.35

PREMIUM PAY:

\$3.75 per hour shall be paid on all Power Equipment Operator work on the following 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 bending 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, PILEDIVING 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, 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, SBM 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 which 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 08/01/2015

	Rates	Fringes
OPERATOR: Power Equipment (DREDGING)		
(1) Leverman.....	\$ 49.50	23.60
(2) Dredge dozer.....	\$ 43.53	23.60
(3) Deckmate.....	\$ 43.42	23.60
(4) Winch operator (stern winch on dredge).....	\$ 42.87	23.60
(5) Fireman-Oiler, Deckhand, Bargeman, Leveehand.....	\$ 42.33	23.60
(6) Barge Mate.....	\$ 42.94	23.60

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IRON0377-002 07/01/2016

	Rates	Fringes
Ironworkers:		
Fence Erector.....	\$ 28.33	20.64
Ornamental, Reinforcing and Structural.....	\$ 34.75	29.20

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

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LABO0089-001 07/18/2016

	Rates	Fringes
LABORER (BUILDING and all other Residential Construction)		
Group 1.....	\$ 29.42	19.78

Group 2.....	\$ 30.10	19.78
Group 3.....	\$ 30.81	19.78
Group 4.....	\$ 31.61	19.78
Group 5.....	\$ 33.54	19.78

LABORER (RESIDENTIAL

CONSTRUCTION - See definition

below)

(1) Laborer.....	\$ 27.32	18.11
(2) Cleanup, Landscape, Fencing (Chain Link & Wood).	\$ 26.03	18.11

RESIDENTIAL DEFINITION: Wood or metal frame construction of single family residences, apartments and condominiums - 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 men 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, vibrating 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 including rubber gasket joints, pointing and any and all other services; Rotary Scarifier or multiple head concrete chipping scarifier; Steel header board man and guideline setter; Tampers, Barko, Wacker and similar type; Trenching machine, handpropelled

GROUP 4: Asphalt raker, luterman, ironer, asphalt 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 operation, 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 powder 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.

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LABO0089-002 11/01/2016

	Rates	Fringes
LABORER (MASON TENDER).....	\$ 29.62	15.89

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LABO0089-004 07/03/2016

HEAVY AND HIGHWAY CONSTRUCTION

	Rates	Fringes
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Laborers:

Group 1.....	\$ 30.54	17.89
Group 2.....	\$ 31.00	17.89
Group 3.....	\$ 31.41	17.89
Group 4.....	\$ 32.25	17.89
Group 5.....	\$ 36.37	17.89

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.

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LABO0300-005 01/01/2017

	Rates	Fringes
Asbestos Removal Laborer.....	\$ 31.88	16.82

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.

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LABO1184-001 07/04/2016

	Rates	Fringes
Laborers: (HORIZONTAL DIRECTIONAL DRILLING)		
(1) Drilling Crew Laborer...	\$ 33.65	13.95
(2) Vehicle Operator/Hauler.	\$ 33.82	13.95
(3) Horizontal Directional Drill Operator.....	\$ 35.67	13.95
(4) Electronic Tracking Locator.....	\$ 37.67	13.95
Laborers: (STRIPING/SLURRY SEAL)		
GROUP 1.....	\$ 34.86	17.03
GROUP 2.....	\$ 36.16	17.03
GROUP 3.....	\$ 38.17	17.03
GROUP 4.....	\$ 39.91	17.03

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 08/03/2016

Rates                      Fringes

LABORER

PLASTER CLEAN-UP LABORER....\$ 31.60	19.28
PLASTER TENDER.....\$ 34.15	19.28

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.

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PAIN0036-001 08/01/2016

	Rates	Fringes
Painters: (Including Lead Abatement)		
(1) Repaint (excludes San Diego County).....\$ 27.59		13.24
(2) All Other Work.....\$ 31.12		13.24

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.

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PAIN0036-010 10/01/2015

	Rates	Fringes
DRYWALL FINISHER/TAPER		
(1) Building & Heavy Construction.....\$ 27.84		15.20
(2) Residential Construction (Wood frame apartments, single family homes and multi-duplexes up to and including four stories).....\$ 21.00		13.91

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PAIN0036-012 10/01/2016

	Rates	Fringes
GLAZIER.....\$ 41.55		11.93

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PAIN0036-019 01/01/2017

Rates	Fringes
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SOFT FLOOR LAYER.....\$ 28.77 13.31

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PLAS0200-005 08/06/2015

	Rates	Fringes
PLASTERER.....	\$ 38.44	13.77

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

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PLAS0500-001 07/01/2016

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER		
GROUP 1.....	\$ 23.84	21.17
GROUP 2.....	\$ 25.49	21.17
GROUP 3.....	\$ 27.57	21.17

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 07/01/2016

	Rates	Fringes
PLUMBER, PIPEFITTER, STEAMFITTER		
Camp Pendleton.....	\$ 51.69	21.41
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.....	\$ 47.19	21.41
Work ONLY on new additions and remodeling of commercial buildings,		

bars, restaurants, and stores not to exceed 5,000 sq. ft. of floor space.....\$ 45.73	20.43
Work ONLY on strip malls, light commercial, tenant improvement and remodel work.....\$ 35.69	18.76

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 PLUM0016-011 07/01/2016

	Rates	Fringes
PLUMBER/PIPEFITTER Residential.....\$ 38.17	38.17	17.33

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 PLUM0345-001 07/01/2014

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

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 ROOF0045-001 07/01/2014

	Rates	Fringes
ROOFER.....\$ 27.73	27.73	8.12

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 SFCA0669-001 04/01/2017

	Rates	Fringes
SPRINKLER FITTER.....\$ 39.17	39.17	15.84

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 SHEE0206-001 07/01/2015

	Rates	Fringes
SHEET METAL WORKER Camp Pendleton.....\$ 37.55	37.55	23.23
Except Camp Pendleton.....\$ 35.33	35.33	23.23
Sheet Metal Technician.....\$ 25.22	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 07/04/2016

	Rates	Fringes
Truck drivers:		
GROUP 1.....	\$ 15.90	30.69
GROUP 2.....	\$ 23.49	30.69
GROUP 3.....	\$ 23.69	30.69
GROUP 4.....	\$ 23.89	30.69
GROUP 5.....	\$ 24.09	30.69
GROUP 6.....	\$ 24.59	30.69
GROUP 7.....	\$ 26.09	30.69

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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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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at [www.dol.gov/whd/govcontracts](http://www.dol.gov/whd/govcontracts).

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)).

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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 a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

#### Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 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. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate

changes in the collective bargaining agreement (CBA) governing this classification and rate.

#### Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

#### Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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#### 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

### A4.3.2 Certificate of Buy American Compliance – Total Facility

#### CERTIFICATE OF BUY AMERICAN COMPLIANCE FOR TOTAL FACILITY

As a matter of bid responsiveness, the bidder or offeror must complete, sign, date, and submit this certification statement with their proposal. The bidder or offeror must indicate how they intend to comply with 49 USC § 50101 by selecting one of the following certification statements. These statements are mutually exclusive. Bidder must select one or the other (i.e. not both) by inserting a checkmark (✓) or the letter "X".

- Bidder or offeror hereby certifies that it will comply with 49 USC. 50101 by:
- a) Only installing steel and manufactured products produced in the United States; or
  - b) Installing manufactured products for which the FAA has issued a waiver as indicated by inclusion on the current FAA Nationwide Buy American Waivers Issued listing; or
  - c) Installing products listed as an Excepted Article, Material or Supply in Federal Acquisition Regulation Subpart 25.108.

By selecting this certification statement, the bidder or offeror agrees:

1. To provide to the Owner evidence that documents the source and origin of the steel and manufactured product.
  2. To faithfully comply with providing US domestic products.
  3. To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.
- The bidder or offeror hereby certifies it cannot comply with the 100% Buy American Preferences of 49 USC § 50101(a) but may qualify for either a Type 3 or Type 4 waiver under 49 USC § 50101(b). By selecting this certification statement, the apparent bidder or offeror with the apparent low bid agrees:
1. To submit to the Owner within 15 calendar days of the bid opening, a formal waiver request and required documentation that support the type of waiver being requested.
  2. That failure to submit the required documentation within the specified timeframe is cause for a non-responsive determination that may result in rejection of the proposal.
  3. To faithfully comply with providing US domestic products at or above the approved US domestic content percentage as approved by the FAA.
  4. To furnish US domestic product for any waiver request that the FAA rejects.
  5. To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.

#### Required Documentation

**Type 3 Waiver** - The cost of components and subcomponents produced in the United States is more than 60% of the cost of all components and subcomponents of the "facility". The required documentation for a type 3 waiver is:

- a) Listing of all manufactured products that are not comprised of 100% US domestic content (Excludes products listed on the FAA Nationwide Buy American Waivers Issued listing and

products excluded by Federal Acquisition Regulation Subpart 25.108; products of unknown origin must be considered as non-domestic products in their entirety)

- b) Cost of non-domestic components and subcomponents, excluding labor costs associated with final assembly and installation at project location.
- c) Percentage of non-domestic component and subcomponent cost as compared to total "facility" component and subcomponent costs, excluding labor costs associated with final assembly and installation at project location.

**Type 4 Waiver** – Total cost of project using US domestic source product exceeds the total project cost using non-domestic product by 25%. The required documentation for a type 4 of waiver is:

- a) Detailed cost information for total project using US domestic product
- b) Detailed cost information for total project using non-domestic product

**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.

\_\_\_\_\_

Date

\_\_\_\_\_

Signature

\_\_\_\_\_

Company Name

\_\_\_\_\_

Title



### A4.3.3 Certificate of Buy American Compliance – Manufactured Product

#### Certificate of Buy American Compliance for Manufactured Products

As a matter of bid responsiveness, the bidder or offeror must complete, sign, date, and submit this certification statement with their proposal. The bidder or offeror must indicate how they intend to comply with 49 USC § 50101 by selecting one on the following certification statements. These statements are mutually exclusive. Bidder must select one or the other (not both) by inserting a checkmark (✓) or the letter “X”.

- Bidder or offeror hereby certifies that it will comply with 49 USC § 50101 by:
- a) Only installing steel and manufactured products produced in the United States, or;
  - b) Installing manufactured products for which the FAA has issued a waiver as indicated by inclusion on the current FAA Nationwide Buy American Waivers Issued listing, or;
  - c) Installing products listed as an Excepted Article, Material or Supply in Federal Acquisition Regulation Subpart 25.108.

By selecting this certification statement, the bidder or offeror agrees:

1. To provide to the Owner evidence that documents the source and origin of the steel and manufactured product.
2. To faithfully comply with providing US domestic product
3. To furnish US domestic product for any waiver request that the FAA rejects
4. To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.

- The bidder or offeror hereby certifies it cannot comply with the 100% Buy American Preferences of 49 USC § 50101(a) but may qualify for either a Type 3 or Type 4 waiver under 49 USC § 50101(b). By selecting this certification statement, the apparent bidder or offeror with the apparent low bid agrees:

1. To the submit to the Owner within 15 calendar days of the bid opening, a formal waiver request and required documentation that support the type of waiver being requested.
2. That failure to submit the required documentation within the specified timeframe is cause for a non-responsive determination may result in rejection of the proposal.
3. To faithfully comply with providing US domestic products at or above the approved US domestic content percentage as approved by the FAA.
4. To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.

#### Required Documentation

**Type 3 Waiver** - The cost of the item components and subcomponents produced in the United States is more that 60% of the cost of all components and subcomponents of the “item”. The required documentation for a type 3 waiver is:

- a) Listing of all product components and subcomponents that are not comprised of 100% US domestic content (Excludes products listed on the FAA Nationwide Buy American

Waivers Issued listing and products excluded by Federal Acquisition Regulation Subpart 25.108; products of unknown origin must be considered as non-domestic products in their entirety).

- b) Cost of non-domestic components and subcomponents, excluding labor costs associated with final assembly at place of manufacture.
- c) Percentage of non-domestic component and subcomponent cost as compared to total "item" component and subcomponent costs, excluding labor costs associated with final assembly at place of manufacture.

**Type 4 Waiver** – Total cost of project using US domestic source product exceeds the total project cost using non-domestic product by 25%. The required documentation for a type 4 of waiver is:

- a) Detailed cost information for total project using US domestic product
- b) Detailed cost information for total project using non-domestic product

**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.

_____	_____
Date	Signature
_____	_____
Company Name	Title

**Bid Results**

**Bidder Details**

**Vendor Name** Hazard Construction Company  
**Address** 6465 Marindustry Drive  
 San Diego, CA 92121  
 United States

**Respondee** Jason A. Mordhorst  
**Respondee Title** President  
**Phone** 858-587-3600 Ext. 112  
**Email** jmordhorst@hazardcon.com

**Vendor Type** CAU,MALE,PQUAL,CADIR,Local  
**License #** 750542  
**CADIR** 1000022121

**Bid Detail**

**Bid Format** Electronic  
**Submitted** July 11, 2017 1:34:52 PM (Pacific)  
**Delivery Method**  
**Bid Responsive**  
**Bid Status** Submitted  
**Confirmation #** 109657  
**Ranking** 0

**Respondee Comment**

**Buyer Comment**

**Attachments**

File Title	File Name	File Type
B	B Contractors Certification of Pending Actions.pdf	B. Contractor's Certification Of Pending Actions
C	C Lobby Prohibition, Certification and Disclosure.pdf	C. Lobby Prohibition, Certification and Disclosure
D	D Instruction for Completion of SF-LLL Disclosure.pdf	D. Instructions for Completion of SF-LLL, Disclosure of Lobbying Activities
E	E Disclosure of Lobbying Activities.pdf	E. Disclosure of Lobbying Activities
F	F Debarment and Suspension Certificate.pdf	F. Debarment & Suspension Certificate Title 49, Code of Federal Regulations, Part 29
G	G Cert W/Regard to Performance of Previous.pdf	G. Cert. W/Regard to Performance of Previous Contracts
H	H Public Contract Code Section 10162 Questions.pdf	H. Public Contract Code Section 10162 Questionnaire
I	I Non-Lobbying Certification.pdf	I. Non-Lobbying Certification
J	J Buy American Certification.pdf	J. Buy American Certification
A	Brown Field Bid Bond.pdf	Bid Bond

**Line Items**

Type	Item Code	UOM	Qty	Unit Price	Line Total	Comment
	Main Bid					

**Bid Results**

Type	Item Code	UOM	Qty	Unit Price	Line Total	Comment	Ref
1	Bonds (Payment and Performance)						
	524126	LS	1	\$35,000.00	\$35,000.00		2-4.1
2	Biological Resources						
	541330	LS	1	\$18,500.00	\$18,500.00		M-100-2.2-2
3	Historical Resources						
	541330	LS	1	\$12,500.00	\$12,500.00		M-100-2.2-3
4	WPCP Development						
	541330	LS	1	\$1,000.00	\$1,000.00		7-8.6.4.2
5	WPCP Implementation						
	237310	LS	1	\$35,000.00	\$35,000.00		7-8.6.4.2
6	Video Recording of Existing Conditions						
	238990	LS	1	\$1,000.00	\$1,000.00		7-9.1.1
7	Qualified Safety Representative						
	238990	LS	1	\$20,000.00	\$20,000.00		7-10.4.2.3
8	Mobilization						
	237310	LS	1	\$255,000.00	\$255,000.00		M-100-2.2-1
9	Field Orders (EOC Type II)						
		AL	1	\$200,000.00	\$200,000.00		9-3.5
10	Construction Barricades, Fencing, Markers and Signs						
	237310	LS	1	\$100,000.00	\$100,000.00		G-101-3.2-1
11	Asphalt Crack Sealing						
	237310	LF	72800	\$0.75	\$54,600.00		P-101-5.1-1
12	Cold Milling of AC Pavement						
	237310	SY	121132	\$1.00	\$121,132.00		P-101-5.1-2
13	Weed Control						
	237310	AC	4.25	\$1,000.00	\$4,250.00		P-101-5.1-3
14	Marking Removal						
	237310	SF	469	\$2.50	\$1,172.50		P-150
15	Bituminous Surface Course						
	237310	TON	16261	\$145.00	\$2,357,845.00		P-401-8.1-1
16	Bituminous Base Course						
	237310	TON	20506	\$79.00	\$1,619,974.00		P-403-8

**Bid Results**

Type	Item Code	UOM	Qty	Unit Price	Line Total	Comment	Ref
17	Concrete Joint Resealing 237310	LF	13972	\$6.00	\$83,832.00		P-600-5.3-1
18	Concrete Spall Repair - Small 237310	EA	40	\$300.00	\$12,000.00		P-600-5.3-2
19	Concrete Spall Repair - Large 237310	EA	35	\$600.00	\$21,000.00		P-600-5.2-3
20	Runway and Taxiway Markings 237310	SF	63658	\$0.60	\$38,194.80		P-620-4.2-1
21	Emulsified Asphalt Slurry Seal 237310	SY	2011	\$5.00	\$10,055.00		P-626
22	Remove Existing JCAN and Concrete Foundation and Backfill 238210	EA	9	\$1,800.00	\$16,200.00		L-125-1
23	Adjust Existing Edge Light Cans to Grade 238210	EA	33	\$600.00	\$19,800.00		L-125-2
24	Replace Existing Sign Panels 238210	EA	32	\$1,200.00	\$38,400.00		L-125-3
25	Remove and Reinstall Existing Light Fixtures 238210	EA	29	\$450.00	\$13,050.00		L-125-4
<b>Subtotal</b>					<b>\$5,089,505.30</b>		
<b>Total</b>					<b>\$5,089,505.30</b>		

**Subcontractors**

Name & Address	Description	License Num	CADIR	Amount	Type
<b>G&amp;F Concrete Cutting</b> PO Box 10215 Santa Ana, CA 92711 United States	Sawcutting AC	590310	1000001776	\$51,434.00	DBE,MBE,CADIR,SD B,WOSB
<b>Statewide Stripes Inc.</b> PO Box 600710 San Diego, CA 92160 United States	Marking Removals / Runway & Taxiway Markings	788286	1000001334	\$39,320.00	DBE
<b>Terra West, Inc</b> 591 Telegraph Canyon Rd #713 Chula Vista, CA 91910 United States	Water Pollution Control Plan	N/A	N/A	\$600.00	ELBE,DBE
<b>Global Road Sealing Inc</b> 10832 Dorothy Ave Garden Grove, CA 92843 United States	AC Crack Sealing and Concrete Joint Resealing	757584	1000007714	\$156,632.00	
<b>Cindy Bales Enigneering, Inc</b> 1828 Shady Lane Big Bear City, CA 92314 United States	Electrical and Signs	815095	1000010938	\$101,080.00	DBE
<b>J. MCBRIDE TRUCKING SERVICES, INC.</b> 9914 Cleary Street Santee, CA 92071 United States	Trucking for AC Grinding Disposal and AC Haul	N/A	N/A	\$125,940.00	

Brown Field Airport (SDM) 8L/26R Runway Rehabilitation Phase III (K-17-1575-DBB-3), bidding on July 11, 2017 2:00 PM

Printed 07/17/2017

**Bid Results**

<b>Name &amp; Address</b>	<b>Description</b>	<b>License Num</b>	<b>CADIR</b>	<b>Amount</b>	<b>Type</b>
<b>Sequoia Consultants</b> 361 W. Grove Avenue Orange, CA 92865 United States	QC Testing	N/A	N/A	\$101,050.00	
<b>LMS Transport</b> 3810 Wacker Dr Mira Loma, CA 91752 United States	Paving Grade Oil Supply to Asphalt Concrete Supplier	N/A	N/A	\$1,120,028.00	
<b>Cindy Trump Inc., DBA Lindys Cold Planing</b> 625 W. ountain View Ave La Habra, CA 90631 United States	Cold Plane AC & Haul Offsite	754500	1000008423	\$70,424.00	
<b>Barrett's Biological Surveys, GP</b> 2035 Forrester Road El Centro, CA 92243 United States	Biological Services	N/A	N/A	\$18,955.00	