

CITY OF PHOENIX, ARIZONA  
OFFICE OF THE CITY ENGINEER



PROJECT SPECIFICATIONS AND CONTRACT DOCUMENTS  
GRAND CANAL BIKE AND PEDESTRIAN IMPROVEMENTS  
PROJECT NO. ST87600114-3  
FEDERAL AID NO.: PHX-0(BFG)F

**MAYOR GREG**  
**STANTON**

**CITY COUNCIL**

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**CITY MANAGEMENT**

**CITY MANAGER**  
**CITY ENGINEER**

**ED ZUERCHER**  
**KINI L. E. KNUDSON, PE**



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# CALL FOR BIDS

**GRAND CANAL BIKE AND PEDESTRIAN IMPROVEMENTS  
ALONG THE GRAND CANAL BETWEEN APPROXIMATELY INTERSTATE 17 (I-17)  
AND CITY OF PHOENIX/CITY OF TEMPE BORDER NEAR PRIEST DRIVE  
DESIGN-BID-BUILD  
CITY OF PHOENIX PROJECT NO.: ST87600114-3  
FEDERAL AID NO.: PHX-0(BFG)F**

**BIDS WILL BE DUE: TUESDAY, SEPTEMBER 19, 2017 AT 2:00 P.M., LOCAL TIME  
PHOENIX CITY HALL  
200 WEST WASHINGTON STREET, 6<sup>th</sup> FLOOR  
PHOENIX, AZ. 85003-1611**

The City of Phoenix is seeking a qualified contracting firm to perform the project listed below.

## **SCOPE OF WORK**

At a minimum, the Contractor will be expected to successfully perform the following construction services, including but not limited to construction of a 10-foot wide concrete pathway along the north bank of the Grand Canal between the existing pedestrian bridge located south of Indian School Road and 23<sup>rd</sup> Avenue and 15<sup>th</sup> Avenue; between 16<sup>th</sup> Street and 36<sup>th</sup> Street; and between 40<sup>th</sup> Street and 44<sup>th</sup> Street; along the south bank of the Grand Canal between 44<sup>th</sup> Street and the Union Pacific Railroad crossing east of 44<sup>th</sup> Street; and along the north bank of the Grand Canal between the Union Pacific Railroad crossing and the Phoenix/Tempe border at the 56<sup>th</sup> Street alignment. Other pathway elements include lighting, landscape and irrigation, site furnishings such as seating nodes and gabion trail markers; two pedestrian bridges – one at the 36<sup>th</sup> Street alignment and one east of 44<sup>th</sup> Street to connect the new pathway to the back gate at the Pueblo Grande Museum; traffic signals, HAWKS, and Rapid Flashing Beacons; and new railroad crossing at the intersection of the Grand Canal with the Union Pacific Railroad tracks east of 44<sup>th</sup> Street.

This is a Federal-aid project. The prevailing basic hourly wage rates and fringe benefit payments, as determined by the Secretary of Labor pursuant to the provisions of the Davis-Bacon Act, shall be the minimum wages paid to the described classes of laborers and mechanics employed, or working on the site, to perform the contract.

A Disadvantaged Business Enterprise goal has not been established for this project.

This project will utilize federal funds and is subject to the requirements of 49 Code of Federal Regulations Part 26 and the U.S. Department of Transportation DBE Program.

## **PRE-BID CONFERENCE**

A pre-bid conference will be held on **Friday, September 8, 2017**, at 10:30 a.m., local time, at Design and Construction Management Building, Gecko Conference Room, located at 1034 E. Madison Street, Phoenix, AZ. At this meeting, staff will discuss the scope of work, general contract issues and respond to questions from the attendees. As City staff will not be available to respond to individual inquiries regarding the project scope outside of this pre-bid conference, it is strongly recommended that interested firms send a representative to the pre-bid conference.

## **REQUEST FOR BID PACKET**

The bid packet will be available for download from the City of Phoenix Street Transportation Department web page as of Thursday, August 24, 2017. The web address is:

<https://www.phoenix.gov/streets/procurement>

Firms receiving a copy of the bid packet through any other means must download the bid packet from the City web page in order to register as a plan holder for the project. The plan holder list is available for viewing within the project folder.

## **GENERAL INFORMATION**

The City reserves the right to award the contract to the lowest responsible responsive bidder or all bids will be rejected, as soon as practicable after the date of opening bids.

The City of Phoenix will provide reasonable accommodations for alternate formats of the bid packet by calling George Goodale at (602) 534-8352 or calling TTY System (602) 256-4286. Requests will only be honored if made within the first week of the advertising period. Please allow a minimum of seven calendar days for production.

Questions pertaining to process or contract issues should be directed to George Goodale, Contracts Specialist at [george.goodale@phoenix.gov](mailto:george.goodale@phoenix.gov).

Published: Arizona Business Gazette  
Date: Thursday, August 24, 2017  
Date: Thursday, August 31, 2017  
(Districts 4 and 8)

ED ZUERCHER  
City Manager

KINI L. E. KNUDSON, PE  
City Engineer

## INFORMATION FOR BIDDERS

1. **102 BIDDING REQUIREMENTS AND CONDITIONS**, Add the following to **MAG and COP Supplement to MAG Section 102 BIDDING REQUIREMENTS AND CONDITIONS**:

### INFORMATION FOR BIDDERS

#### A. **QUESTIONS ON PLANS AND SPECIFICATIONS**

**Neither the Engineer nor the City of Phoenix shall be held responsible for any oral instructions. Any changes to the plans and specifications will be in the form of an addendum. All Addenda will be posted online within the project folder at the following website:**

<https://www.phoenix.gov/streets/procurement/current-opportunities>

A Planholder List is available within the project folder on the Street Transportation Department website under "Current Opportunities". The web address is:

<https://www.phoenix.gov/streets/procurement/current-opportunities>

For additional information prior to submitting your bid, contact:

Plans, Technical/Special Provisions, Proposal or Specifications:

NAME: George Goodale, Contracts Specialist, Contract Procurement Section

ADDRESS: 200 W. Washington Street, 6<sup>th</sup> Floor, Phoenix, AZ 85003-1611

PHONE: (602) 534-8352 E-MAIL: [George.Goodale@phoenix.gov](mailto:George.Goodale@phoenix.gov)

DBE Utilization contact:

Equal Opportunity Department: (602) 262-6790

**All questions regarding the plans and specifications must be received (in writing) at a minimum 7 calendar days prior to bid opening. Questions received after that time may not be given any consideration.**

#### B. **REQUEST FOR SUBSTITUTIONS**

Paragraph A, B, and C of MAG Section 106.4 are deleted and the following paragraphs substituted:

1. The Engineer will consider written request(s), by a prime bidder only, for substitution(s) which is/are considered equivalent to the item(s) specified in the Contract documents. The written request will be considered only if it is received at least twelve (12) calendar days prior to the established bid date. Notification of acceptable substitutions will be made by addendum issued no fewer than 7 calendar days prior to the established bid date. (A.R.S. 34-104)
2. The prime bidder, at his own expense, shall furnish the necessary data of substitution and validate that the physical, chemical, and operational qualities of each substitute item is such that this item will fulfill the originally specified required function.
3. The substitution, if approved, will be authorized by a written addendum to the Contract documents and will be made available to all bidders. The bid date and the scheduled completion time will not be affected by any circumstances developing from this substitution.
4. The request will be submitted to the Street Transportation Department Contract Procurement Section, Attention Contracts Specialist, Sixth Floor, Phoenix City Hall, 200 W. Washington

Street, Phoenix, Arizona 85003-1611 or via email.

C. **BID BOND**

Bidders must submit a properly completed proposal guarantee, certified check, cashier's check or on the surety bond provided, for an amount not less than ten (10) percent of the total amount bid included in the proposal as a guarantee that the contractor will enter into a contract to perform the proposal in accordance with the plans and specifications. Surety bonds submitted for this project shall be provided by a company which has been rated "A- or better for the prior four quarters" by the A.M. Best Company. ***A bid will be deemed non-responsive if not accompanied by this guarantee.***

The surety bond shall be executed solely by a surety company or companies holding a certificate of authority to transact surety business in the State of Arizona, issued by the Director of the Department of Insurance pursuant to Title 20, Chapter 2, Article 1. The surety bond shall not be executed by an individual surety or sureties even if the requirements of Section 7-101 are satisfied. The City Clerk will return the certified check, cashier's check, or surety bond to the contractors whose proposals are not accepted, and to the successful contractor upon the execution of a satisfactory bond and contract.

When providing a Surety Bond, ***failure to provide an "A- or better for the prior four quarters" bond will result in bid rejection.***

D. **LIST OF MAJOR SUBCONTRACTORS AND SUPPLIERS & LIST OF ALL SUBCONTRACTORS AND SUPPLIERS**

***A bid shall be deemed non-responsive if not accompanied by a properly completed and signed "List of Major Subcontractors and Suppliers" form.***

To assist in eliminating the practice of bid shopping on City construction projects, the bidder shall list all Major Subcontractors and Suppliers (including DBE) to whom the bidder intends to contract with that are equal to or greater than 5% of the base bid. The list of major subcontractors and suppliers shall be provided on the "List of Major Subcontractors" form. ***Failure to properly complete and sign this form will result in bid rejection.*** This form is due with the bid.

If substantial evidence exists that bid shopping occurred on this project, the Bidder will be ineligible to bid on City construction projects for a period of one year.

The list of All Subcontractors and Suppliers shall be provided on the "**List of All Subcontractors and Suppliers**" form. ***Failure to properly complete and sign this form will result in bid rejection. This form is due 5 days after bid opening by 4:00 p.m.*** A bid shall be deemed non-responsive if a properly completed and signed "**List of All Subcontractors and Suppliers**" form is not submitted.

E. **BID SUBMITTAL**

The properly completed bid documents along with the ten (10) percent bid guarantee shall be submitted in a sealed envelope. The outside of the envelope shall be marked as follows:

Bid of (Firm's Name, Address and Phone Number) \_\_\_\_\_  
For: **Grand Canal Bike and Pedestrian Improvements Project**  
City of Phoenix Project Number: **ST87600114-3**  
Federal Aid Project Number: **PHX-0(BFG)F**

Sealed bids shall be submitted to the bid box located by the Street Transportation

Department Reception Desk located on the Sixth Floor of the Phoenix City Hall Building, 200 W. Washington Street, Phoenix, Arizona, 85003 prior to the time and date specified for bid opening.

F. **BID WITHDRAWALS**

MAG Section 102-10, Withdrawal or Revision of Proposal, is hereby deleted and the following paragraph is submitted:

“No bidder may withdraw or revise a proposal after it has been deposited with the City except as provided in Phoenix City Code Chapter 2, Section 190.2. Proposals, read or unread, will not be returned to the bidders until after determination of award has been made.

G. **ADDENDA**

***Acknowledge all addenda; a bid will be deemed non-responsive if all issued addenda for this project are not acknowledged in writing on Page P. -1.***

The City of Phoenix shall not be responsible for any oral responses or instructions made by any employees or officers of the City of Phoenix regarding bidding instructions, plans, drawings, specifications or contract documents. A verbal reply to an inquiry does not constitute a modification of the Invitation for Bid (IFB). Any changes to the plans, drawings and specifications will be in the form of an addendum.

It shall be the responsibility of the prospective bidder to determine, prior to the submittal of its bid, if any addenda to the project have been issued by the Street Transportation Department Contract Procurement Section. All addenda issued shall be acknowledged by the bidder on Page P-1. All addenda (if any) will be available online within each project's folder at the following website:

<https://www.phoenix.gov/streets/procurement/current-opportunities>

**The contractors and/or consultants are responsible for ensuring they have all addenda and/or notifications for all projects they are submitting on. Prospective bidders are strongly encouraged to check the Street Transportation Department Contract Procurement website in order to ascertain if any addenda have been issued for the project.**

H. **BID SUBMITTAL CHECKLIST**

BID SUBMITTAL CHECKLIST

This checklist is provided to remind bidders of several of the required elements of the bid packages. It is not intended to be a comprehensive list of all of the contract documents. Bidders are encouraged to review all of the Bid Instructions to determine compliance therein.

**ALL FIRMS MUST BE REGISTERED IN THE CITY'S VENDOR MANAGEMENT SYSTEM PRIOR TO SUBMITTING A PROPOSAL. FOR NEW FIRMS - THE CITY WILL SEND AN EMAIL TO YOUR FIRM WITH A VENDOR NUMBER WITHIN TWO DAYS OF SUBMITTING THE REQUEST. THE VENDOR NUMBER NEEDS TO BE INCLUDED ON THE COVER OF THE STATEMENT OF QUALIFICATIONS OR ON THE BID PROPOSAL PACKAGE/ENVELOPE. INFORMATION ON HOW TO REGISTER WITH THE CITY IS AVAILABLE AT:**

<https://www.phoenix.gov/finance/vendorsreg>

- Acknowledge all addenda? (Page P-1)
- Completed all of the Bid Proposal forms? (Pages P-1 to P-6 and P.S.-1)
- Included your Bid Bond (rated A- or better for the prior four quarters) or Guarantee Cashier's Check? (Page S.B.-1)
- Completed List of Major Subcontractors and Suppliers form? (Page L.O.S.-1)
- Buy American Certificate? (Page B.A.C. – 1)
- No Collusion Affidavit? (Page N.C.A. – 1)

**PLEASE DO NOT SUBMIT THE ENTIRE SPECIFICATION BOOK WHEN SUBMITTING YOUR BID. INCLUDE ONLY THE REQUIRED BIDDING DOCUMENTS.**

#### POST-BID SUBMITTAL CHECKLIST

All bidders wishing to remain in contention for award of the contract must submit completed contracts documents listed below. The documents must be submitted to the Street Transportation Department Contract Procurement Section, 6th Floor, or can be sent by email to [George.Goodale@phoenix.gov](mailto:George.Goodale@phoenix.gov) **within 5 calendar days after bid opening by 4:00 p.m.**

- Completed List of All Subcontractors and Suppliers form (L.O.S.-2) (5 days after bid opening by 4:00 p.m.)
- Bidders Disclosure Statement (Pages B.D.S.-1 to 4) (5 days after bid opening by 4:00 p.m.)
- Submit Affidavit of Identity (if you are a sole proprietor) (Page A.O.I.-1) (5 days after bid opening by 4:00 p.m.)

I. **WAGE DETERMINATION (THE LATEST WAGE RATE PUBLICATION, OBTAINED FROM STR LABOR COMPLIANCE SECTION, MUST BE IN CONTRACT DOCUMENTS AT TIME OF BID OPENING - ADD BY ADDENDUM IF NECESSARY.)**

In the event that the wage determination decision of the Secretary of Labor is required for a project (attached hereto on pages G.W.D. – 1 to 7 and made a part hereof) and has been superseded by any subsequent wage determination decision(s) published up to and including ten (10) days prior to bid opening, the most recent applicable wage decision shall be incorporated by reference, and the successful bidder agrees to be bound by it, regardless of what is contained in the specifications. State or local wage rates will not apply if the state or local wage rate exceeds the corresponding Federal Wage Determination rate.

J. **WORKFORCE REPORTING REQUIREMENTS – For Federal Projects with Davis Bacon**

The contractor shall submit payrolls electronically through the internet to the City of Phoenix web-based certified payroll tracking system. The City of Phoenix uses the "LCP Tracker" web-site to track the certified payroll information. Additional information regarding the use of this system is available at <https://lcptracker.net>. This requirement shall also apply to every lower-tier subcontractor that is required to provide weekly certified payroll reports.

K. **PAYMENT WITHHOLDING – For Federal Projects with Davis Bacon**

Payrolls, including subcontractor's payrolls, must be submitted weekly no later than seven (7) days after each pay period ending date. Payments may be withheld in part or in full until payrolls are received and reviewed to assure compliance with the Federal Labor Standards.

Failure to clarify, when requested, discrepancies between hourly wages paid individual workers and the minimum hourly wages required by the Federal Wage Decisions contained in the contract documents may affect the complete or timely release of payments.

L. **LABOR COMPLIANCE PRECONSTRUCTION CONFERENCE**

On all federally assisted projects, a Labor Compliance Conference must be held after project award and prior to the established Notice to Proceed. This meeting is separate from and in addition to the pre-construction conference.

The successful bidder shall schedule the conference by calling the Labor Compliance Office, (602) 261-8287. Minimum attendance shall be a corporate officer, who is authorized to execute and sign documents for the firm and the payroll representative of the prime, sub and lower-tier Contractors.

M. **DBE PARTICIPATION**

See DBE – DBB Contract Clause.

N. **BUSINESS AND OPERATION LICENSES, PERMITS AND CERTIFICATIONS REQUIRED**

Prior to bidding on this project, the bidder must possess the correct license to perform the work described in the plans and specifications. Prior to award of the contract, the successful bidder must provide to the Contract Procurement Section its Contractor's License Classification and number, its City of Phoenix Privilege License number and Federal Tax Identification number.

Bidder shall submit the Bidder's Disclosure Statement as set forth in Pages B.D.S. - 1 to B.D.S. - 4 within 5 days of bid opening by 5:00 p.m.

Unless provided otherwise in this solicitation, Bidder will be deemed non-responsive and the bid rejected if Bidder fails to possess the proper Contractor's and Business Licenses at the time of bid or fails to submit a substantially completed Bidder's Disclosure Statement as specified above.

O. **TAX LIABILITIES: DISCLOSURE OF CONVICTIONS AND BREACH(ES) OF CONTRACT**

On or before the award of the contract for this project, the successful bidder shall: (i) file all applicable tax returns and shall make payment for all applicable State of Arizona and Maricopa County Transaction Taxes (ARS Sec. 41-1305) and City of Phoenix Privilege License Taxes (Phoenix City Code Sec.14-415); (ii) disclose any civil fines, penalties or any criminal convictions, other than for traffic related offenses, for violation of federal, state, county or city laws, rules or regulations including, but not limited to, environmental, OSHA, or

labor compliance laws (collectively "Laws") by Bidder, Bidder's directors, managing members, responsible corporate officers or party who will be responsible for overseeing and administering this project (collectively "Bidder"); and (iii) disclose any material breach(s) of an agreement with the City of Phoenix, any termination for cause or any litigation involving the City of Phoenix occurring within the past three calendar years. Unless provided otherwise in this solicitation, the successful bidder shall be deemed non-responsible and the bid rejected for any of the following: (i) Bidder's civil or criminal conviction, other than for traffic related offenses, for a violation of Laws within the past three calendar years; (ii) liability or culpability resulting in payment of fines or penalties in the cumulative total amount of \$100,000 or greater for a violation of "Laws" within the past three calendar years; (iii) material breach of a City of Phoenix agreement, termination for cause or litigation with the City of Phoenix within the past three calendar years; and (iv) Bidder's failure to disclose the information as required by this provision. Further, after award of contract, in addition to any other remedy, Bidder's failure to remit proper taxes to the City of Phoenix may result in the City withholding payment pursuant to Phoenix City Charter Chapter XVIII, Section 14 until all delinquent taxes, interest, and penalties have been paid.

State and Local Transaction Privilege Taxes:

In accordance with applicable state and local law, transaction privilege taxes may be applicable to this transaction. The state and local transaction privilege (sales) tax burden is on the person who is conducting business in Arizona and the City of Phoenix. The legal liability to remit the tax is on the person conducting business in Arizona. Any failure by the Contractor to collect applicable taxes from the City shall not relieve the Contractor from its obligation to remit taxes.

It is the responsibility of the prospective bidder to determine any applicable taxes. The City will look at the price or offer submitted and will not deduct, add or alter pricing based on speculation or application of any taxes, nor will the City provide advice or guidance.

If you have questions regarding your tax liability, please seek advice from a tax professional prior to submitting your bid. You may also find information at <https://www.phoenix.gov/finance/pli> or <https://www.azdor.gov/Business.aspx>. Once your bid is submitted, the Offer is valid for the time specified in this Solicitation, regardless of mistake or omission of tax liability.

If the City finds over payment of a project due to tax consideration that was not due, the Contractor will be liable to the City for that amount, and by contracting with the City agrees to remit any overpayments back to the City for miscalculations on taxes included in a bid price.

Tax Indemnification:

Contractor shall, and require the same of all subcontractors, pay all federal, state and local taxes applicable to its operation and any persons employed by the Contractor. Contractor shall, and require the same of all subcontractors, hold the City harmless from any responsibility for taxes, damages and interest, if applicable, contributions required under federal, and/or state and local laws and regulations and any other costs including transaction privilege taxes, unemployment compensation insurance, Social Security and Worker's Compensation.

Tax Responsibility Qualification:

Contractor may be required to establish, to the satisfaction of City, that any and all fees and taxes due to the City or the State of Arizona for any License or Transaction Privilege taxes, Use Taxes or similar excise taxes, are currently paid (except for matters under legal protest).

Contractor agrees to a waiver of the confidentiality provisions contained in the City Finance Code and any similar confidentiality provisions contained in Arizona statutes relative to State Transaction Privilege Taxes or Use Taxes.

Contractor agrees to provide written authorization to the City Finance Department and to the Arizona State Department of Revenue to release tax information relative to Arizona Transaction Privilege Taxes or Arizona Use Taxes in order to assist the Department in evaluating Contractor's qualifications for and compliance with contract for duration of the term of contract.

**P. STANDARD SPECIFICATIONS AND DETAILS**

Except as otherwise required in these specifications, bid preparation and construction of this project shall be in accordance with all applicable Maricopa Association of Governments' (MAG) Uniform Standard Specifications and Uniform Standard Details, latest edition, and the City of Phoenix Supplements to the MAG Uniform Standard Specifications and Details, latest edition.

**Q. PRECEDENCE OF CONTRACT DOCUMENTS**

In case of a discrepancy or conflict, the precedence of contract documents is as follows:

1. Change Orders or Supplemental Agreements
2. Addenda
3. Contract Specifications/Special Provisions/Technical Provisions
4. The Plans
5. COP Supplement to MAG Standard Specifications and Details, latest edition
6. MAG Standard Specifications and Details, latest edition

The precedence of any Addenda falls within the category of which it represents.

**R. CONFIDENTIALITY OF PLANS & SPECIFICATIONS**

Any plans generated for this project must include the following statement in the Title Block on every page: "Per City of Phoenix City Code Chapter 2, Section 2-28, these plans are for official use only and may not be shared with others except as required to fulfill the obligations of Contractor's contract with the City of Phoenix."

**S. AUDIT AND RECORDS**

Records of the Contractor's direct personnel payroll, bond expenses, and reimbursable expenses pertaining to this Project, and records of accounts between the City and Contractor shall be kept on the basis of generally accepted accounting principles and must be made available to the City and its auditors for up to three years following Final Acceptance of the Project.

The City, its authorized representative, and/or any federal agency, reserves the right to audit the Contractor's records to verify the accuracy and appropriateness of all cost and pricing data, including data used to negotiate the Contract and any change orders.

The City reserves the right to decrease Contract price and/or payments made on this Contract and/or request reimbursement from the Contractor following final contract payment on this Contract if, upon audit of the Contractor's records, the audit discloses the Contractor has provided false, misleading, or inaccurate cost and pricing data.

The Contractor shall include a similar provision in all of its Agreements with subcontractors and suppliers providing services or supplying materials under the Contract Documents to ensure that the City, its authorized representative, and/or the appropriate federal agency has access to the Subcontractor's and Supplier's records to verify the accuracy of all cost and pricing data.

The City reserves the right to decrease the Contract price and/or payments made on this Contract and/or request reimbursement from the Contractor following final contract payment on this Contract if the above provision is not included in the Subcontractor's and Supplier's contracts, and one or more Subcontractors or Suppliers refuse to allow the City to audit their records to verify the accuracy and appropriateness of cost and pricing data.

If, following an audit of this Contract, the audit discloses the Contractor has provided false, misleading or inaccurate cost and pricing data, and the cost discrepancies exceed 1% of the total Contract billings, the Contractor shall be liable for reimbursement of the reasonable, actual cost of the audit.

T. **IMMIGRATION REFORM AND CONTROL ACT**

Compliance with Federal Laws Required. Contractor understands and acknowledges the applicability of the Immigration Reform and Control Act of 1986 and the Drug Free Workplace Act to it. Contractor agrees to comply with these Federal Laws in performing under this Agreement and to permit City inspection of its personnel records to verify such compliance.

U. **LEGAL WORKER REQUIREMENTS**

The City of Phoenix is prohibited by A.R.S. § 41-4401 from awarding a contract to any contractor who fails, or whose subcontractors fail, to comply with A.R.S. § 23-214(A). Therefore, Contractor agrees that:

1. Contractor and each subcontractor it uses warrants their compliance with all federal immigration laws and regulations that relate to their employees and their compliance with § 23-214, subsection A.
2. A breach of a warranty under paragraph 1 shall be deemed a material breach of the contract that is subject to penalties up to and including termination of the contract.
3. The City of Phoenix retains the legal right to inspect the papers of any Contractor or subcontractor employee who works on the contract to ensure that the Contractor or subcontractor is complying with the warranty under paragraph 1.

V. **CONTRACTOR AND SUBCONTRACTOR WORKER BACKGROUND SCREENING**

Background Screening Requirements and Criteria

The City has established levels of risk and associated Background Screening. For Contractor services in the right-of-way, the risk level and Background Screening required is Minimum Risk. **The risk level and background screening required for this project is Minimum.**

Terms of This Section Applicable to all of Contractor's Contracts and Subcontracts  
Contractor shall include the terms of this Section for Contract Worker Background Screening in all contracts and subcontracts for services furnished under this Agreement including, but not limited to, supervision and oversight services.

Contract Worker Background Screening

Contractor agrees that all contract workers and subcontractors (collectively "Contract Worker(s)") that Contractor furnishes to the City pursuant to this Agreement shall be subject to background and security checks and screening (collectively "Background Screening") at Contractor's sole cost and expense as set forth in this Section. The Background Screening provided by Contractor shall comply with all applicable laws, rules and regulations. Contractor further agrees that the Background Screening required in this

Section is necessary to preserve and protect public health, safety and welfare. The Background Screening requirements set forth in this Section are the minimum requirements for this Agreement. The City in no way warrants that these minimum requirements are sufficient to protect Contractor from any liabilities that may arise out of Contractor's services under this Agreement or Contractor's failure to comply with this Section. Therefore, in addition to the specific measures set forth below, Contractor and its Contract Workers shall take such other reasonable, prudent and necessary measures to further preserve and protect public health, safety and welfare when providing services under this Agreement. The City may, in its sole discretion, accept or reject any or all of the Contract Workers proposed by Contractor to perform work under this Agreement, as well those Contract Workers actually providing services during the term of this Agreement.

Minimum Risk Background Screening requirements include the following:

A Minimum Risk Background Screening shall be performed when the Contract Worker: (i) will not have direct access to City facilities or information systems; or (ii) will not work with vulnerable adults or children; or (iii) when access to City facilities is escorted by City workers. The Background Screening for minimum risk shall consist of the screening required by Arizona Revised Statutes §§ 41-4401 and following to verify legal Arizona worker status.

Standard Risk Background Screening requirements include the following:

A Standard Risk Background Screening shall be performed when the Contract Worker's work assignment will: (i) require a badge or key for access to City facilities; or (ii) allow any access to sensitive, confidential records, personal identifying information or restricted City information; or (iii) allow unescorted access to City facilities during normal and non-business hours. The Background Screening for this standard risk level shall include the Background Screening required for the Minimum Risk level and a background check for real identity/legal name, and shall include felony and misdemeanor records from any county in the United States, the state of Arizona, plus any other jurisdiction where the Contract Worker has lived at any time in the preceding seven (7) years from the Contract Worker's proposed date of hire.

Maximum Risk Background Screening requirements include the following:

A Maximum Risk Background Screening shall be performed when the Contract Worker's work assignment will: (i) have any contact with vulnerable people such as children, youth, elderly, or individuals with disabilities; or (ii) have any responsibility for the receipt or payment of City funds or control of inventories, assets, or records that are at risk of misappropriation; or (iii) have unescorted access to City data centers, money rooms, or high-value equipment rooms; or (iv) have access to private residences; or (v) have access to Homeland Defense Bureau identified critical infrastructure sites/facilities. The Background Screening for this maximum risk level shall include the Background Screening required for the Standard Risk level, plus a sexual offender search, a credit check, and driving record search for the preceding seven (7) years from the Contract Worker's proposed date of hire. Contract Workers who work directly with children or vulnerable adults are also subject to fingerprint verification through the Arizona Department of Public Safety as mandated by Phoenix City Code, § 2-45.6.

Contractor Certification; City Approval of Maximum Risk Background Screening

By executing this Agreement, Contractor certifies and warrants that Contractor has read the Background Screening requirements and criteria in this Section, understands them and that all Background Screening information furnished to the City is accurate and current. Also, by executing this Agreement, Contractor further certifies and warrants that

Contractor has satisfied all such Background Screening requirements for the Minimum Risk and Standard Risk Background Screenings as required. In addition, for Maximum Risk Background Screening, Contractor shall furnish to [insert department contact information] for the City's review and approval such Background Screenings for any Contract Worker considered for performing services under this Agreement where human safety or facility security is classified as a Maximum Risk level. The subject Contract Worker shall not apply for the appropriate City of Phoenix identification and access badge or keys until Contractor has received the City's written acceptance of the subject Contract Worker's Maximum Risk Background Screening. A Contract Worker rejected for work at a Maximum Risk level under this Agreement shall not be proposed to perform work under other City contracts or engagements without City's prior written approval.

Materiality of Background Screening Requirements; Indemnity

The Background Screening requirements of this Section are material to City's entry into this Agreement and any breach of this Section by Contractor shall be deemed a material breach of this Agreement. In addition to the indemnity provisions set forth in Supplementary Conditions Section 7.G of this Agreement, Contractor shall defend, indemnify and hold harmless the City for any and all Claims (as defined in Supplementary Conditions Section 7.G arising out of this Background Screening Section including, but not limited to, the disqualification of a Contract Worker by Contractor or the City for failure to satisfy this Section.

Continuing Duty; Audit

Contractor's obligations and requirements that Contract Workers satisfy this Background Screening Section shall continue throughout the entire term of this Agreement. Contractor shall notify the City immediately of any change to a Maximum Risk Background Screening of a Contract Worker previously approved by the City. Contractor shall maintain all records and documents related to all Background Screenings and the City reserves the right to audit Contractor's compliance with this Section pursuant to Information for Bidders Section 1.M.

W. **LAWFUL PRESENCE REQUIREMENT**

Pursuant to A.R.S. §§ 1-501 and 1-502, the City of Phoenix is prohibited from awarding a contract to any natural person who cannot establish that such person is lawfully present in the United States. To establish lawful presence, a person must produce qualifying identification and sign a City-provided affidavit affirming that the identification provided is genuine. This requirement will be imposed at the time of contract award. This requirement does not apply to business organizations such as corporations, partnerships or limited liability companies.

X. **LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN (LEED)**

If practical, the contractor shall provide an easily accessible area to serve the construction site that is dedicated to the separation, collection and storage of materials for recycling including (at a minimum) paper, glass, plastics, metals, and designate an area specifically for construction and demolition waste recycling. The contractor must provide documentation that the materials have been taken to a Maricopa County approved recycling facility.

Y. **CITY OF PHOENIX EQUAL EMPLOYMENT OPPORTUNITY REQUIREMENT**

1. In order to do business with the City, Contractor must comply with Phoenix City Code, 1969, Chapter 18, Article V, as amended, Equal Employment Opportunity Requirements. Contractor will direct any questions in regard to these requirements to the Equal Opportunity Department, (602) 262-6790.

2. Any Contractor in performing under this Contract will not discriminate against any worker, employee or applicant, or any member of the public, because of race, color, religion, sex, national origin, age, or disability, nor otherwise commit an unfair employment practice. The Contractor will ensure that applicants are employed, and employees are dealt with during employment without regard to their race, color, religion, sex, national origin, age, or disability, and will adhere to a policy to pay equal compensation to men and women who perform jobs that require substantially equal skill, effort, and responsibility, and that are performed within the same establishment under similar working conditions. Such action will include but not be limited to the following: employment, promotion, 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 further agrees that this clause will be incorporated in all subcontracts with all labor organizations furnishing skilled, unskilled and union labor, or who may perform any such labor or services in connection with this contract.

If the Contractor employs more than thirty-five employees, the following language shall apply as the last paragraph to the clause above:

The Contractor further agrees not to discriminate against any worker, employee or applicant, or any member of the public, because of sexual orientation or gender identity or expression and shall ensure that applicants are employed, and employees are dealt with during employment without regard to their sexual orientation or gender identity or expression.

3. *Documentation.* Contractor may be required to provide additional documentation to the Equal Opportunity Department affirming that a nondiscriminatory policy is being utilized.
4. *Monitoring.* The Equal Opportunity Department shall monitor the employment policies and practices of suppliers and lessees subject to this article as deemed necessary. The Equal Opportunity Department is authorized to conduct on-site compliance reviews of selected firms, which may include an audit of personnel and payroll records, if necessary.

Z. **PROTEST PROCEDURES**

Any bidder who has any objections to the awarding of a contract to any bidder by the City of Phoenix, pursuant to competitive bidding procedures, shall comply with Phoenix City Code Chapter 2, Section 188.”

AA. **DATA CONFIDENTIALITY**

As used in the Contract, “data” means all information, whether written or verbal, including plans, photographs, studies, investigations, audits, analyses, samples, reports, calculations, internal memos, meeting minutes, data field notes, work product, proposals, correspondence and any other similar documents or information prepared by, obtained by, or transmitted to the Contractor or its subcontractors in the performance of this Contract.

The parties agree that all data, regardless of form, including originals, images, and reproductions, prepared by, obtained by, or transmitted to the Contractor or its subcontractors in connection with the Contractor’s or its subcontractor’s performance of this Contract is confidential and proprietary information belonging to the City.

Except as specifically provided in this Contract, the Contractor or its subcontractors shall not divulge data to any third party without prior written consent of the City. The Contractor or its subcontractors shall not use the data for any purposes except to perform the services required under this Contract. These prohibitions shall not apply to the following data provided the Contractor or its subcontractors have first given the required notice to the City:

1. Data which was known to the Contractor or its subcontractors prior to its performance under this Contract unless such data was acquired in connection with work performed for the City;
2. Data which was acquired by the Contractor or its subcontractors in its performance under this Contract and which was disclosed to the Contractor or its subcontractors by a third party, who to the best of the Contractor's or its subcontractor's knowledge and belief, had the legal right to make such disclosure and the Contractor or its subcontractors are not otherwise required to hold such data in confidence; or
3. Data which is required to be disclosed by virtue of law, regulation, or court order, to which the Contractor or its subcontractors are subject.

In the event the Contractor or its subcontractors are required or requested to disclose data to a third party, or any other information to which the Contractor or its subcontractors became privy as a result of any other contract with the City, the Contractor shall first notify the City as set forth in this section of the request or demand for the data. The Contractor or its subcontractors shall give the City sufficient facts so that the City can be given an opportunity to first give its consent or take such action that the City may deem appropriate to protect such data or other information from disclosure.

The Contractor, unless prohibited by law, within ten calendar days after completion of services for a third party on real or personal property owned or leased by the City, the Contractor or its subcontractors shall promptly deliver, as set forth in this section, a copy of all data to the City. All data shall continue to be subject to the confidentiality agreements of this Contract.

The Contractor or its subcontractors assume all liability for maintaining the confidentiality of the data in its possession and agrees to compensate the City if any of the provisions of this section are violated by the Contractor, its employees, agents or subcontractors. Solely for the purposes of seeking injunctive relief, it is agreed that a breach of this section shall be deemed to cause irreparable harm that justifies injunctive relief in court. Contractor agrees that the requirements of this Section shall be incorporated into all subcontracts entered into by Contractor. A violation of this Section may result in immediate termination of this Contract without notice.

#### Personal Identifying Information-Data Security

Personal identifying information, financial account information, or restricted City information, whether electronic format or hard copy, must be secured and protected at all times. At a minimum, Contractor must encrypt and/or password protects electronic files. This includes data saved to laptop computers, computerized devices or removable storage devices.

When personal identifying information, financial account information, or restricted City information, regardless of its format, is no longer necessary, the information must be redacted or destroyed through appropriate and secure methods that ensure the information cannot be viewed, accessed, or reconstructed.

In the event that data collected or obtained by Contractor or its subcontractors in connection with this Contract is believed to have been compromised, Contractor or its subcontractors shall immediately notify the Project Manager and City Engineer. Contractor agrees to reimburse the City for any costs incurred by the City to investigate potential breaches of this data and, where applicable, the cost of notifying individuals who may be impacted by the breach.

Contractor agrees that the requirements of this Section shall be incorporated into all subcontracts entered into by Contractor. It is further agreed that a violation of this Section

shall be deemed to cause irreparable harm that justifies injunctive relief in court. A violation of this Section may result in immediate termination of this Contract without notice.

The obligations of Contractor or its subcontractors under this Section shall survive the termination of this Contract.

**BB. PROJECT MANAGEMENT INFORMATION SYSTEM (PROMIS)**

The Street Transportation Department's Design and Construction Management (DCM) Project Manager may determine that use of PROMIS will be required during this contract. The following information provides a guideline for utilization. Any questions related to the requirements of PROMIS should be directed to the DCM Project Manager.

1. The contractor will be required to maintain all project records in electronic format. The City provides an Application Service Provider (ASP) web based project management database which the contractor will be required to utilize in the fulfillment of the contract requirements. Although this electronic platform does not fulfill this requirement in its entirety, the contractor will be required to utilize this platform as the basis for this work.
2. The contractor can expect to use this ASP to process all primary level tri-partite contract documents related to the design or construction phase of the Project including but not limited to: requests for interpretation/information, potential Change Orders, construction meeting minutes, Submittals, Design Professional's supplemental instructions, and Payment Requests.
3. The contractor will be required to process information into electronic digital form. In order to fulfill this requirement, the contractor shall provide all necessary equipment to perform the functions necessary to generate, convert, store, maintain, connect to web based ASP and transfer electronic data.
4. The contractor shall provide a computerized networked office platform with broadband internet connectivity. Wired or wireless is acceptable. This platform shall function well in a web based environment utilizing an internet browser compatible with the City PROMIS ASP system.

PROMIS training will be provided through the City of Phoenix. Contact information will be provided to the firms under contract, to establish the set up with a log-in and password.

**CC. NO ISRAEL BOYCOTT**

By entering into this contract, the Engineer/Contractor certifies that they are not currently engaged in, and agrees for the duration of the Contract to not engage in, a boycott of Israel, as defined in the state statute.

## SUPPLEMENTARY CONDITIONS

1. 103 AWARD AND EXECUTION OF CONTRACT, Add the following to Subsection 103.3 AWARD OF CONTRACT:

Contract award will be made to a responsive and responsible bidder based on the low total base bid or on the low combination of the total base bid and any selected alternate(s), whichever is in the best interest of the City. If unit pricing is required in the proposal, the extensions and additions will be verified to assure correctness. Award will be based on the revised total if any errors are found. Additionally, the Contractor shall comply with the DBE requirements as detailed in the DBE clause. The City expressly reserves the right to cancel this agreement without recourse or prejudice to Contractor until all parties have executed the agreement in full.

Any bidder that currently contracts with the City must be in good standing for its proposal to be considered responsive. For the purpose of this Invitation to Bid, good standing means compliance with all contractual provisions, including payment of financial obligations.

2. 103 AWARD AND EXECUTION OF CONTRACT, Add the following to Subsection 103.5, REQUIREMENT OF CONTRACT BONDS:

1. PERFORMANCE BOND AND LABOR AND MATERIAL BOND

Prior to the execution of a contract, the successful bidder must provide a performance bond and a labor and material bond, each in an amount equal to the full amount of the contract. Each such bond shall be executed by a surety company or companies holding a certificate of authority to transact surety business in the State of Arizona issued by the Director of the Department of Insurance. A copy of the Certificate of Authority shall accompany the bonds. The Certificate shall have been issued or updated within two years prior to the execution of the Contract. The bonds shall be made payable and acceptable to the City of Phoenix. The bonds shall be written or countersigned by an authorized representative of the surety who is either a resident of the State of Arizona or whose principal office is maintained in this state, as required by law, and the bonds shall have attached thereto a certified copy of Power of Attorney of the signing official. If one Power of Attorney is submitted, it shall be for twice the total contract amount. If two Powers of Attorney are submitted, each shall be for the total contract amount. Personal or individual bonds are not acceptable. Failure to comply with these provisions will be cause for rejection of the bidder's proposal.

2. BONDING COMPANIES

All bonds submitted for this project shall be provided by a company which has been rated "A- or better for the prior four quarters" by the A. M. Best Company. **Failure to provide an "A- or better for the prior four quarters" bond will result in bid rejection.**

3. 103 AWARD AND EXECUTION OF CONTRACT, Delete Subsection 103.6, CONTRACTOR'S INSURANCE in its entirety and substitute the following:

### **103.6.1 General:**

Contractor and subcontractors must procure insurance against claims that may arise from or relate to performance of the work hereunder by Contractor and its agents, representatives, employees and subconsultants. Contractor and subcontractors must maintain that insurance until all of their obligations have been discharged, including any warranty periods under this Contract.

These insurance requirements are minimum requirements for this Contract and in no way limit the indemnity covenants contained in this Contract.

The City in no way warrants that the minimum limits stated in this section are sufficient to protect the Contractor from liabilities that might arise out of the performance of the work under this Contract by the Contractor, its agents, representatives, employees, or subcontractors. Contractor is free to purchase such additional insurance as may be determined necessary.

1. MINIMUM SCOPE AND LIMITS OF INSURANCE

Contractor must provide coverage with limits of liability not less than those stated below. An excess liability policy or umbrella liability policy may be used to meet the minimum liability requirements provided that the coverage is written on a "following form" basis:

1. **Commercial General Liability – Occurrence Form**

Policy must include bodily injury, property damage, broad form contractual liability and XCU coverage.

General Aggregate	\$2,000,000
Products – Completed Operations Aggregate	\$1,000,000
Personal and Advertising Injury	\$1,000,000
Each Occurrence	\$1,000,000

a. The policy must be endorsed to include the following additional insured language: "The City of Phoenix is named as an additional insured with respect to liability arising out of the activities performed by, or on behalf of the Contractor, including completed operations".

2. **Automobile Liability**

Bodily injury and property damage for any owned, hired, and non-owned vehicles used in the performance of this Contract.

Combined Single Limit (CSL)	\$1,000,000
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a. The policy must be endorsed to include the following additional insured language: "The City of Phoenix is named as an additional insured with respect to liability arising out of the activities performed by, or on behalf of the Contractor, including automobiles owned, leased, hired or borrowed by the Contractor."

3. **Worker's Compensation and Employers' Liability**

Workers' Compensation	Statutory
Employers' Liability	
Each Accident	\$100,000
Disease – Each Employee	\$100,000
Disease – Policy Limit	\$500,000

- a. Policy must contain a waiver of subrogation against the City of Phoenix.
- b. This requirement does not apply when a Contractor or subcontractor is exempt under A.R.S. §23-902(E), **AND** when such Contractor or subcontractor executed the appropriate sole proprietor waiver form.

4. **No Builders' Risk Insurance required.**

2. ADDITIONAL INSURANCE REQUIREMENTS

The policies must include, or be endorsed to include, the following provisions:

1. On insurance policies where the City of Phoenix is named as an additional insured, the City of Phoenix must be an additional insured to the full limits of liability purchased by the Contractor even if those limits of liability are in excess of those required by this Contract.
2. The Contractor's insurance coverage must be primary insurance and non-contributory with respect to all other available sources.
3. With regard to general liability, the City of Phoenix is named as an additional insured for both products completed operations and premises operations.

3. NOTICE OF CANCELATION

For each insurance policy required by the insurance provisions of this Contract, the Contractor must provide to the City, within 2 business days of receipt, a notice if a policy is suspended, voided or cancelled for any reason. Such notice must be sent directly to the City of Phoenix Contract Specialist listed on Page I.B.-1 of these specifications and must be sent by certified mail, return receipt requested.

4. ACCEPTABILITY OF INSURERS

Insurance is to be placed with insurers duly licensed or approved unlicensed companies in the state of Arizona and with an "A.M. Best" rating of B+VI. The City in no way warrants that the above-required minimum insurer rating is sufficient to protect the Contractor from potential insurer insolvency.

5. VERIFICATION OF COVERAGE

Contractor must furnish the City with certificates of insurance (ACORD form or equivalent approved by the City) as required by this Contract. The certificates for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. *Any policy endorsements that restrict or limit coverage shall be clearly noted on the certificate of insurance.*

All certificates and any required endorsements are to be received and approved by the City before work commences. Each insurance policy required by this Contract must be in effect at or prior to commencement of work under this Contract and remain in effect for the duration of the project. Failure to maintain the insurance policies as required by this Contract or to provide evidence of renewal is a material breach of contract.

All certificates required by this Contract must be sent directly to the City of Phoenix Contract Specialist listed on Page I.B. - 1 of these specifications. The City project/contract number and project description shall be noted on the certificate of insurance. The City reserves the right to require complete, certified copies of all insurance policies required by this Contract, at any time. **DO NOT SEND CERTIFICATES**

## **OF INSURANCE TO THE CITY'S RISK MANAGEMENT DIVISION.**

**If the Certificate of Insurance reflecting policy coverage and cancellation notice does not conform to the City's requirements, the contractor must:**

- **Submit a current insurance certificated (dated within 15 days of the payment request submittal) with each payment request form. The payment request will be rejected if the insurance certificate is not submitted with the payment request.**

### **6. SUBCONTRACTORS**

Contractors' certificate(s) must include all subcontractors as additional insured under its policies or subcontractors must maintain separate insurance as determined by the Contractor, however, subcontractors limits of liability must not be less than \$1,000,000 per occurrence / \$2,000,000 aggregate.

### **7. APPROVAL**

Any modification or variation from the insurance requirements in this Contract will be made by the Law Department, whose decision is final. Such action will not require a formal Contract amendment, but may be made by administrative action.

### **103.6.2 Indemnification of City Against Liability**

Contractor agrees to indemnify, defend, save and hold harmless the City of Phoenix and its officers, agents and employees (and any jurisdiction or agency issuing permits for any work included in the project, and its officers, agents and employees), ("Indemnitee") from all claims, actions, liabilities, damages, losses or expenses, (including court costs, attorney's fees and costs of claim processing, investigation and litigation) ("Claims") caused or alleged to be caused, in whole or in part, by the wrongful, negligent or willful acts, or errors or omissions of Contractor or any of its owners, officers, directors, agents, employees, or subcontractors in connection with this Contract. This indemnity includes any Claim or amount arising out of or recovered under workers' compensation law or on account of the failure of Contractor to conform to any federal, state or local law, statute, ordinance, rule, regulation, or court decree. Contractor must indemnify Indemnitee from and against any and all Claims, except those arising solely from Indemnitee's own negligent or willful acts or omissions. Contractor is responsible for primary loss investigation, defense and judgment costs where this indemnification applies. In consideration of the City's award of this Contract, Contractor agrees to waive all rights of subrogation against Indemnitee for losses arising from or related to this Contract. The obligations of Contractor under this provision survive the termination or expiration of this Contract.

### **4. 104 SCOPE OF WORK, Add the following to Section 104.1.1 WORK TO BE DONE:**

**The project mitigation measures are not subject to change without written approval from the Federal Highway Administration.**

#### **City of Phoenix Responsibilities**

- All disturbed soils not paved that will not be landscaped will be stabilized by seeding with species native to the project vicinity, decomposed granite, or other methods to achieve permanent stabilization.

- If any archaeological materials are encountered during ground-disturbing activities, the City of Phoenix Project Manager will ensure the contractor has ceased all ground-disturbing activities within 10 meters of the discovery and the City of Phoenix Archaeology Office (602-495-0901) and City of Phoenix Street Transportation Department Environmental Quality Specialist (602-377-8943 or 602-534-6030) will be notified immediately and allowed time to properly assess the materials.
- The Migratory Bird Treaty Act and Western burrowing owl flyers will be included in the bid documents and provided to the contractor, subcontractors, and all field personnel at the preconstruction meeting.
- If trees or shrubs will be trimmed or removed between February 1 and August 31, the City of Phoenix Project Manager will contact the City of Phoenix Street Transportation Department Environmental Quality Specialist (602-534-6030) to arrange a survey for active bird nests at least 2 weeks prior to the start of any work that will disturb trees or shrubs.
- A survey for Western burrowing owls must be completed by a certified burrowing owl surveyor. The City of Phoenix Project Manager will contact the City of Phoenix Street Transportation Department Environmental Quality Specialist (602-377-8943 or 602-534-6030) approximately 2 weeks prior to any ground-disturbing activities to arrange for the survey to be completed.
- The City of Phoenix Project Manager will ensure that the contractor: coordinates with the archaeological monitor provided by the City of Phoenix Street Transportation Department; advises the archaeological monitor of the construction schedule and planned construction activities at least 48 hours prior to starting any ground-disturbing activities in sensitive areas; and communicates with the archaeological monitor until a letter indicating *Substantial Completion* is issued.
- The City of Phoenix Project Manager will ensure all construction will comply with the cultural resources stipulations contained in the approved *Memorandum of Agreement among Federal Highway Administration, Arizona State Historic Preservation Office, City of Phoenix Street Transportation Department, City of Phoenix Archaeology Office, City of Phoenix Historic Preservation Office, City of Phoenix Aviation Department, City of Phoenix Office of the Arts and Culture, United States Bureau of Reclamation, Arizona State Land Department, Arizona Department of Transportation, Salt River Project, Arizona State Museum, Union Pacific Railroad, Ak-Chin Indian Community, Fort McDowell Yavapai Nation, Gila River Indian Community, the Hopi Tribe, Salt River Pima-Maricopa Indian Community, Tohono O'odham Nation, and the Yavapai-Prescott Indian Tribe Regarding the Grand Canalscape Phase II (TIGER) Shared-Use Pathway Project, Phoenix, Maricopa County, Arizona.*

### **Contractor Responsibilities**

- All disturbed soils not paved that will not be landscaped shall be stabilized by seeding with species native to the project vicinity, decomposed granite, or other methods to achieve permanent stabilization.
- To prevent the introduction of invasive species seeds, the contractor shall inspect all earthmoving and hauling equipment at the equipment storage facility and the equipment shall be washed prior to entering the work site.

- To prevent invasive species seeds from leaving the site, the contractor shall inspect all work equipment and remove all attached plant/vegetation and soil/mud debris prior to leaving the work site.
- No unique or impaired waters are located within 0.25-mile of the project area. More than 1 acre of ground-disturbing activities will occur during construction; therefore, an Arizona Pollutant Discharge Elimination System construction general permit shall be required. The contractor shall prepare a Stormwater Pollution Prevention Plan and submit the Notice of Intent and Notice of Termination to the Arizona Department of Environmental Quality.
- If trees or shrubs will be trimmed or removed between February 1 and August 31, the contractor shall immediately notify the City of Phoenix Project Manager to arrange a survey for active bird nests at least 2 weeks prior to the start of any work that will disturb trees or shrubs.
- The contractor, subcontractors, and all field personnel shall adhere to the attached Migratory Bird Treaty Act flyer. If an active bird nest is present in the work area, work shall cease within 100 feet and the City of Phoenix Street Transportation Department Environmental Quality Specialist (602-377-8943 or 602-534-6030) shall be notified immediately.
- The contractor, subcontractors, and all field personnel shall adhere to the attached Western burrowing owl flyer. If burrowing owls or potentially active burrows (natural or man-made holes 3 inches in diameter or greater) are observed during work, work shall cease within 100 feet and the City of Phoenix Street Transportation Department Environmental Quality Specialist (602-377-8943 or 602-534-6030) shall be notified immediately.
- If any archaeological materials are encountered during ground-disturbing activities, the contractor shall cease all ground-disturbing activities within 10 meters of the discovery and the City of Phoenix Project Manager, the City of Phoenix Archaeology Office (602-495-0901), and the City of Phoenix Street Transportation Department Environmental Quality Specialist (602-377-8943 or 602-534-6030) shall be notified immediately and allowed time to properly assess the materials.
- The contractor shall coordinate with the archaeological monitor provided by the City of Phoenix Street Transportation Department. The contractor shall advise the archaeological monitor of the construction schedule and planned construction activities at least 48 hours prior to starting any ground-disturbing activities in sensitive areas. The contractor shall continue communicating with the archaeological monitor until the City of Phoenix issues a letter indicating *Substantial Completion*.
- Access to adjacent businesses and residences shall be maintained throughout construction.
- If suspected hazardous materials are encountered during work, work shall cease at that location and the City of Phoenix Project Manager shall be notified immediately to make arrangements for proper treatment or disposal of those materials.
- The contractor shall comply with all local air quality and dust control rules, regulations and ordinances which apply to any work performed pursuant to the contract.

5. **104 SCOPE OF WORK**, Add the following to **Section 104.1.2 WORK TO BE DONE**:

**SRP CONSTRUCTION NOTES**

1. The following notes apply to the construction of the pedestrian bridge:

- Elevations of the proposed bridge floor and underside of the bridge deck shall be verified by the SRP Engineer prior to placing concrete.
  - No concrete shall be placed without prior approval of the SRP Engineer.
  - All concrete, plaster, or headwalls shall be sprayed with a white pigment curing compound immediately after finishing or form removal.
  - Any abandoned structures found within the zone of construction shall be completely removed to the SRP Engineer's satisfaction.
  - Any material placed in the canal or in the canal right-of-way shall be completely removed to the SRP Engineer's satisfaction.
  - All backfill shall be carefully placed in 8-inch uncompacted lifts and compacted to a minimum of 95 percent standard Proctor density, ASTM D698.
  - All damage to SRP facilities shall be repaired by the Licensee or his contractor to the SRP Engineer's satisfaction. If emergency repair work is necessary or the Licensee fails to complete all work covered by this License in a reasonable time as determined by the SRP Engineer, the work may be performed by SRP forces, and the Licensee shall pay the full cost of said work.
  - Through traffic on both canal roads, or on detours approved by SRP, shall be provided and maintained by Licensee at all times for the full duration of bridge construction for SRP operations and maintenance equipment.
  - The contractor is responsible for handling storm flows, return flows and other nuisance water in the canals.
2. The approach ramp material shall consist of a well-graded aggregate base in accordance with MAG Specifications Section 702, or a similar material approved by the SRP Engineer, thoroughly mixed with a minimum of 20 percent to a maximum of 40 percent fines (material that will pass that #200 sieve).
  3. Realignment of the canal bank from the existing canal bank to the tie-in to the wing wall of the bridge shall not exceed a 4 to 1 taper.
  4. The exact length and alignment of retaining walls or wing walls will be determined in the field at the time of construction by the SRP Engineer prior to setting the forms.
  5. If the canal lining is disturbed during installation of the bridge or associated structures, it shall be reshaped, compacted, and lined, as directed by the SRP Engineer in accordance with the following SRP Standard Drawings and Specifications:
    - WES-FRCANLNG - "Standard Drawing for Fiber-Reinforced Canal Lining Section"
    - WTR 02490 - "Standard Specification for Preparation of Subgrade For Canal Lining"

- WTR 03364 - "Standard Specification for Fiber Reinforced Shotcrete for Canal Bank Lining"
  - WTR 03361 - "Standard Specification for Placement of Canal Bottom Concrete"
  - WTR 03300 - "Standard Specification for Concrete"
  - If the existing bottom and bank lining does not meet the above requirements, it shall be removed and replaced as specified herein. All bottom and bank preparation shall conform to the minimum standard as stipulated in SRP Standard Drawings and Specifications above.
6. Canal bottom and bank lining shall be shaped, compacted, and lined, as directed by the SRP Engineer in accordance with the following SRP Standard Drawings and Specifications:
- WES-FRCANLNG - "Standard Drawing for Fiber-Reinforced Canal Lining Section"
  - WTR 02490 - "Standard Specification for Preparation of Subgrade For Canal Lining"
  - WTR 03364 - "Standard Specification for Fiber Reinforced Shotcrete for Canal Bank Lining"
  - WTR 03361 - "Standard Specification for Placement of Canal Bottom Concrete"
  - WTR 03300 - "Standard Specification for Concrete"
7. Any damage done to the lining as a result of construction shall be the responsibility of the Licensee. If any repairs or modifications to the canal lining are required, the work shall be performed as soon as possible by, and at the expense of, the Licensee.
- At no time will any obstruction to the flow of the canal be allowed. This includes deck support timbers, and any soil or rubble that may enter the canal. If material does enter the canal, the contractor shall remove it at his expense immediately. If the contractor does not remove the material when notified, SRP may remove the debris at the Licensee's expense.
  - No excavation will be permitted across the full width of the canal bank and maintenance road, which would, at bank-to-bank flow, create a conduit for flow out of the canal, or across the maintenance roads.

6. **104 SCOPE OF WORK.** Add the following to **Subsection 104.1.2 MAINTENANCE OF TRAFFIC:**

**ADA AND ANSI ACCESS OF PREMISES DURING CONSTRUCTION**

Contractor shall maintain existing ADA and ANSI accessibility requirements during construction activities in an occupied building or facility. ADA and ANSI accessibility requirements shall include, but not be limited to, parking, building access, entrances, exits, restrooms, areas of refuge, and emergency exit paths of travel. Contractor shall be responsible for the coordination of all work to minimize disruption to building occupants and facilities.

## UTILITY PROVIDER ACCESS OF PREMISES DURING CONSTRUCTION

Contractor shall maintain safe and adequate access during construction activities for utility providers along the Grand Canal including, but not limited to: APS, City of Phoenix and SRP.

7. **104 SCOPE OF WORK**, Add the following to **Subsection 104.1.4 CLEANUP AND DUST CONTROL**:

The Contractor shall use a power pick-up broom as part of the dust control effort. No separate measurement or payment will be made for cleanup or dust control, or for providing a power pick-up broom on the job.

8. **105 CONTROL OF WORK**, Add the following to **Subsection 105.1, AUTHORITY OF THE ENGINEER**:

1. CONTRACT ADMINISTRATION

The definition of "Engineer" shall read as follows:

"Engineer": All references to "Engineer" in these contract bid documents, including the MAG Specifications, shall mean City Engineer.

2. PRECONSTRUCTION CONFERENCE

After completion of the contract documents, to include bonds, insurance and signatures and prior to the commencement of any work on the project, the Street Transportation Department, DCM Division, (telephone 602-495-2050), will schedule a Pre-Construction Conference. This will be held at 1034 East Madison Street, Phoenix, Arizona.

Construction administration will be provided by City of Phoenix, Street Transportation Department, Design & Construction Management Division (DCM).

The purpose of this conference is to establish a working relationship between the Contractor, utility firms and various City agencies. The agenda will include critical elements of the work schedule, submittal schedule, cost breakdown of major lump sum items, payment application and processing, coordination with the involved utility firms, emergency telephone numbers for all representatives involved in the course of construction and establishment of the notice to proceed date. The Contractor shall also provide copies of all purchase orders and/or contracts with DBE subcontractors and suppliers used to meet the subcontract goal programmed for this project.

Minimum attendance by the Contractor shall be a responsible company/corporate official, who is authorized to execute and sign documents on behalf of the firm, the job superintendent and the Contractor's safety officer.

3. AUTHORIZATION OF THE ENGINEER

The City may, at its discretion and without cause, order the Contractor in writing to stop and suspend work. Immediately after receiving such notice, the Contractor shall discontinue advancing the work specified under this Agreement.

Such suspension shall not exceed one hundred and eighty (180) consecutive days during the duration of the project.

The Contractor may seek an adjustment of the contract price and time, if the cost or time to perform the work has been adversely impacted by any suspension or stoppage of work by the City.

9. **105 CONTROL OF WORK**, Add the following to **Subsection 105.2 PLANS AND SHOP DRAWINGS**:

The Contractor shall submit as many of the required shop drawings and product data submittals at the Pre-Construction meeting as practical and possible. All shop drawings and product data submittals shall be submitted sufficiently in advance to allow adequate time for City review(s) and approval. The Contractor shall submit early enough to allow enough time for reviews based on the assumption that a submittal may be marked "Revise and Resubmit" or "Rejected", requiring the Contractor to modify the submittal and resubmit for additional review(s) until acceptance.

A separate transmittal shall be used for each specific item type, class of material or equipment for which a submittal is required. Multiple items under one transmittal will only be allowed when the items taken together constitute a complete manufacturer's package, or are so functionally related that the entire package should be reviewed as a whole. The contractor shall submit six (6) hard copies of each shop drawing for review. **Email or FAX submittals will not be accepted.**

The Contractor shall allow up to four (4) weeks for City review for each submittal. Some submittals may be simple and straightforward and may not require the full four (4) weeks, but other more complex submittals may take the full four (4) weeks.

10. **105 CONTROL OF WORK**, Add the following to **Subsection 105.7 COOPERATION BETWEEN CONTRACTORS**

Other Contractors are expected to be working in or near the area of this contract. The Grand Canalscape Phase I project between 15<sup>th</sup> Avenue and 16<sup>th</sup> Street and between 36<sup>th</sup> Street and 40<sup>th</sup> Street will be under construction while this project is being constructed. The Contractor shall conduct his work as specified in MAG Section 105.7.

11. **105 CONTROL OF WORK**, Delete **Subsection 105.8 CONSTRUCTION STAKES, LINES AND GRADES** and substitute the following

**Description**

The work under this section shall consist of furnishing all materials, personnel and equipment necessary to perform all surveying, staking and verification of the accuracy of all points which have been provided by the Engineer.

Included in this work shall be all calculations required for the satisfactory completion of the project in conformance with the plans and specifications. The work shall be done under the direction of a registered professional surveyor employed by the Contractor.

Measurements of all removals and pay quantity items will be the responsibility of the Engineer.

When utility adjustments are a part of the contract, the Contractor shall perform and be responsible for locating, tying and untying all manholes and valves that are discovered during the course of the contract. The Contractor shall set all survey points, stakes and references necessary for carrying out all such adjustments.

The Contractor shall furnish all traffic control, including flagging for survey and staking operations. Traffic control shall be in accordance with the requirements of the City of Phoenix Barricade Manual.

The Contractor will keep field notes in bound field books. These books will be available for inspection by City personnel at all times and shall become the property of the City of Phoenix upon completion of the project.

### **Construction Staking Requirements**

Staking will be performed in accordance with the City of Phoenix's Survey Section Standard Requirements for Staking, As-Builts and Quantity Calculations, plus any special addenda provided by the Engineer. The Contractor will provide to the Engineer in writing, for the Engineer's approval, any special procedures that will be used for construction survey staking completion.

The Engineer will provide control points for establishing an accurate construction centerline and will establish bench marks adjacent to this line for the proper layout of the work. Control points will be located on monument line and/or construction centerline at the beginning and ending points of the project. Control points will also be located on the appropriate centerline at all point of curve (PC), points of tangent (PT), and angle points. No less than three (3) bench marks will be provided; one (1) at the beginning of the project, one (1) at the midpoint, and one (1) at the end of the project. Additional bench marks may be provided at other convenient locations, but no more than one (1) additional bench mark will be provided for each 1,320 feet of the project length. Control points set by the Engineer will be identified in the field to the Contractor.

After the Contractor has verified the accuracy of the control points established by the City, the Contractor shall set all stakes necessary for construction in accordance with the City of Phoenix Survey Section Standard Requirements.

If errors are discovered during the verification process and control points do not agree with the geometrics shown in the plans, the Contractor shall promptly notify the Engineer in writing, and explain the problem in detail. The Engineer will advise the Contractor of any corrective actions which may be necessary.

The Contractor shall exercise care in the preservation of stakes, references, bench marks and shall reset them when they are damaged, lost, displaced or removed.

Any discrepancies in grade, alignment, locations or dimensions detected by the Contractor shall be brought to the attention of the Engineer by letter. No changes in the project plans will be allowed without the approval of the Engineer.

The Engineer reserves the right to make inspections and random checks of any portion of the staking and layout procedure. If, in the Engineer's opinion, the work is not being performed in the manner that will assure proper control and accuracy, the Engineer will order any or all of the staking and layout work redone at no additional cost.

If any portion of the Contractor's staking and layout work is ordered redone, resulting in additional rechecking by the Engineer, the City shall be reimbursed for all costs for such additional checking. The amount of such costs will be deducted from the Contractor's progress payment.

Inspection of the Contractor's layout by the Engineer and the acceptance of all or any part of it shall not relieve the Contractor of their responsibility to secure the proper dimensions, grades and elevations for the work.

### **Record Drawings**

The Contractor shall maintain a record set of plans at the job site. These shall be kept legible and current and shall show all changes or work added in a contrasting, reproducible color. Two weeks prior to issuance of

substantial completion, the Contractor shall submit, prior to final inspection, corrected landscape drawings showing the location of all utility services, controller, pipe, valves and wiring. The Engineer shall be the sole judge as to the acceptability of the record plans and receipt of an acceptable set is a pre-requisite for final payment.

### **Measurement**

Construction surveying and layout will be measured as a single complete unit of work.

Two (2) person survey party will be measured by the hour to the nearest half (1/2) hour.

### **Payment**

Payment for construction surveying and layout will be by the lump sum and will be made as follows:

The item of two (2) person survey party is a contingent item and is established for the purpose of compensating the Contractor for additional staking and layout required as a result of extra work ordered by the Engineer. Payment will be made at the predetermined unit price shown on the bidding schedule for the survey party or parties used. The Engineer will be the sole judge as to whether the additional work shall be performed by the Contractor or by Department forces.

The amount per hour for a two (2) person survey party includes the cost of all work necessary to complete the extra work.

No payment will be made for the resetting of stakes, references, bench marks and other survey control.

12. **105 CONTROL OF WORK**, Add the following to **Subsection 105.15 ACCEPTANCE, paragraph (B) Final Acceptance**:

1. **SUBSTANTIAL COMPLETION**

The work may be judged substantially complete when all construction has been completed with the possible exception of final inspection punch list work. The purpose of granting or acknowledging substantial completion is to stop contract time. This is particularly important to the Contractor if contract time is exhausted or nearly so and/or punch list work is anticipated to extend beyond the allotted time. Granting of substantial completion will eliminate the possibility of incurring liquidated damages or additional liquidated damages beyond the substantial completion date, whichever case may apply.

In the event that the Engineer grants substantial completion, the Contractor shall have thirty (30) days thereafter to complete punch list work, unless additional time is granted--in writing--by the Engineer. In no case shall a Contractor be granted more than thirty (30) days to complete punch list work, unless there are extenuating circumstances such as delay in shipment of a specialized piece of equipment, labor strike, or other circumstances beyond the Contractor's control which would necessitate a further time extension.

2. **PENALTY FOR FAILURE TO COMPLETE PUNCH LIST WORK WITHIN SPECIFIED TIME**

In the event the Contractor fails to complete the punch list work within thirty (30) days following the contract completion date, or in the case of specialized situations within the additional time allotted by the Engineer, the Contractor may be declared in default, and the Engineer may order the work completed by others.

In the event of default, as described herein, the Engineer shall withhold from the Contractor's final payment, an amount equal to at least twice the estimated cost of the remaining work. In addition, the Engineer shall withhold the retention deducted from contract progress payments until all punch list work has been satisfactorily completed, whereupon twice the amount of the actual cost of completing the work shall be deducted from the Contractor's final payment and the remaining funds, if any, including the contract retention, shall be released in accordance with the conditions set forth in contract retention.

**3. CONTRACT RETENTION**

This project shall not be considered complete until all work has been completed, including punch list work. Under no circumstances shall a Contractor receive any portion of the legally retained progress payments until the City has granted a final acceptance and/or acknowledged substantial completion. The following conditions shall apply to each case:

1. Substantial Completion: The Engineer may reduce outstanding contract retention to not less than one (1) percent of the total contract amount, upon granting substantial completion, if the value of the punch list work is estimated to be less than one (1) percent of the total contract.
2. Project Acceptance: Project acceptance implies that all punch list work is done and the improvements have been accepted by the City. Under these conditions, the retention will be fully released to the Contractor subject only to the signing of the standard claims affidavit and hold harmless clause required for all contracts.
3. Final Release of Contract Retention and/or Release of More Than Ninety (90) Percent of the Contract Funds: Prior to final payment and release of monies retained and/or in the case of substantial completion where the Contractor has requested a reduction in contract retention, the Contractor will be required to sign a claims affidavit agreeing to hold the City harmless from any and all claims arising out of the contract.

**13. 107 LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC, Add the following to Subsection 107.1, LAWS TO BE OBSERVED, paragraph (C):**

While every effort has been made to Blue Stake all known utilities, and to research and show on the plans all existing underground utilities based on the best available information, it shall be the Contractor's responsibility to locate and pothole all existing utilities sufficiently in advance of anticipated new underground construction to identify any potential conflicts and allow reasonable time for the Engineer to determine solutions. Any claims for additional compensation or work required due to the Contractor's non-compliance with this provision shall not be considered for payment by the City.

**14. 107 LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC, Add the following new paragraphs to Subsection 107.1, LAWS TO BE OBSERVED:**

**(A) FAIR TREATMENT OF WORKERS**

The Contractor shall keep fully informed of all Federal and State laws, County and City ordinances, regulations, codes and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any way affect the conduct of the work. He shall at all times observe and comply with all such laws, ordinances, regulations, codes, orders and decrees; this includes, but is not limited to laws and regulations ensuring fair and equal treatment for all employees and against unfair employment practices, including OSHA and the Fair Labor Standards Act (FLSA). The Contractor shall protect and indemnify the Contracting Agency and its representatives against any claim or liability arising from or based on the violation of such, whether by

himself or his employees.

(B) DESERT TORTOISE MITIGATION

As stated in the Arizona Interagency Desert Tortoise Team (AIDTT) Management Plan (1996), if a desert tortoise is found in a project area, activities should be modified to avoid injuring or harming it. If activities cannot be modified, tortoises in harm's way should be moved in accordance with Arizona Game and Fish Department's "Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects", revised October 23, 2007 (or the latest revision), included in these contract provisions. Taking, possession, or harassment of a desert tortoise is prohibited by State law, unless specifically authorized by Arizona Game and Fish Department.

(C) BURROWING OWLS MITIGATION – MIGRATORY BIRD TREATY ACT OF 1918

The contractor, subcontractors, and all field personnel shall adhere to the attached Western burrowing owl flyer. If burrowing owls or potentially active burrows (natural or man-made holes 3 inches in diameter or greater) are observed during work, work shall cease within 100 feet and the City of Phoenix Street Transportation Department Environmental Quality Specialist (602-377-8943 or 602-534-6030) shall be notified immediately.

15. **107 LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC**, Add the following to **Subsection 107.2, PERMITS**:

1. **HAUL PERMIT**

On any project, when the quantity of fill or excavation to be hauled exceeds 10,000 C.Y. or when the duration of the haul is for more than twenty (20) working days, the Contractor shall:

- A. Obtain approval of the proposed haul route, number of trucks, etc., by the Street Transportation Department, and then;
- B. Submit the proposed haul route plan to the Planning and Development Department and pay the appropriate plan-review fee (contact Planning and Development Department at 602-534-5933 for current plan review fee, the cost of which shall be considered incidental to the project), and after their approval;
- C. Obtain the written haul permit from the Planning and Development Department.

**NOTE:** Obtaining the haul permit and the approval by Street Transportation does not release the Contractor from strict compliance with MAG Subsection 108.5, Limitation of Operations.

2. **STORM WATER POLLUTION PREVENTION PLAN AND AZPDES PERMIT**

Any project that disturbs 1 acre or more of the ground surface requires the Contractor to obtain an AZPDES permit and prepare a SWPPP. This project does require an AZPDES permit and SWPPP.

3. **DUST PERMIT**

Any project that disturbs more than 1/10 acre of soil requires an earthmoving permit from Maricopa County. Information and forms can be found at:

[www.maricopa.gov/aq/divisions/permit\\_engineering/applications/Default.aspx](http://www.maricopa.gov/aq/divisions/permit_engineering/applications/Default.aspx)

To facilitate and encourage strict compliance with the Maricopa County Air Pollution Control Regulations pertaining to fugitive dust control, the Contractor shall submit the following documentation to the Engineer at the Pre-Construction meeting prior to conducting any earth moving or dust generating activities under the Contract.

- a. Copy of a valid Maricopa County Earth Moving (Dust Control) Permit applicable to the work or services under the Contract.
- b. Copy of the Dust Control Plan applicable to the work or services under the Contract.
- c. Documentation that all of the Contractor's on-site project managers have received the Comprehensive or Basic dust control training as required by Maricopa County Rule 310 based on project disturbed acres.

For construction sites where 5-acres or more are disturbed, the Contractor shall designate and identify to the City an individual who has completed the dust control training as required for the site Dust Control Coordinator. The Dust Control Coordinator shall be present on-site all times that earth moving or dust generating activities are occurring and until all ground surfaces at the site have been stabilized.

For construction sites less than 1-acre, the Contractor shall designate an individual who has completed Basic Training to be on site at all times that earth moving or dust generating activities are occurring.

The Contractor shall notify the Engineer within twenty-four (24) hours of any inspection, Notice of Violation, or other contact by the Maricopa County Air Quality Department with it or any of its subcontractors regarding the work or services under the Contract. A copy of any written communications, notices or citations issued to Contractor or any of its subcontractors regarding the work or services under the Contract shall likewise be transmitted to the Engineer within twenty-four (24) hours.

The Contractor shall prevent any dust nuisance due to construction operations in accordance with MAG Specifications, Section 104.1.3, Cleanup and Dust Control. The Contractor shall use a power pick-up broom as part of the dust control effort. No separate measurement or payment will be made for cleanup or dust control, or for providing a power pick-up broom on the job.

The Contractor agrees to indemnify and reimburse the City for any fine, penalty, fee or monetary sanction imposed on the City by Maricopa County arising out of, or caused by the performance of work or services under the Contract. The Contractor shall remit payment of the reimbursable sum to the City within thirty (30) days of being presented with a demand for payment from the City.

#### 4. **TEMPORARY RESTRICTION AND CLOSURE SYSTEM (TRACS) PERMIT**

The Contractor shall obtain a TRACS permit for any construction that restricts access (partial or complete closures) on Major/Collector public streets, or complete closures on Local streets, sidewalks, bike lanes and alleys. The Contractor shall obtain this permit in accordance with the City of Phoenix Traffic Barricade Manual, latest edition. The Contractor shall follow all requirements of the TRACS permit during construction. The Contractor shall obtain this permit before the Notice to Proceed date. Any construction delays caused by non-compliance with the TRACS permit or the City of Phoenix Traffic Barricade Manual requirements shall be the responsibility of the Contractor.

5. **DEMINIMUS DISCHARGE PERMIT**

As required, if the Contractor anticipates the discharge of any amount of water from the City water or wastewater system during construction, the Contractor will be responsible for obtaining a DeMinimus Permit from the Arizona Department of Environmental Quality (ADEQ) for any discharge that will reach "waters of the U.S.", either directly or indirectly, and complying with all requirements of that permit. This includes all compliance reporting required by the permit. No separate payment will be made for obtaining or complying with this permit.

6. **SALT RIVER PROJECT CONSTRUCTION CLEARANCE AGREEMENT**

The Contractor shall execute a construction clearance agreement with Salt River Project (SRP) prior to performing any work within SRP's right-of-way. A blank copy of the "Construction Clearance Agreement" is provided. The Contractor shall read and abide by the terms and conditions of this agreement when working on or near SRP facilities.

7. **OTHER PERMITS**

The Contractor may be required to obtain other permits from other agencies, such as the Arizona Department of Transportation (ADOT) or the Flood Control District of Maricopa County (FCDMC) before beginning work or restricting traffic in their right-of-way. The Contractor will be required to obtain these permits and comply with their requirements.

8. **UNION PACIFIC RAILROAD CONTRACTOR'S RIGHT-OF-ENTRY AGREEMENT**

The Contractor must be Railroad Training Certified on Union Pacific Projects. The Contractor shall execute contractors Right-of-Entry Agreement with Union Pacific Rail Road (UPRR) prior to performing any work within Union Pacific Rail Road right-of-way. The Contractor shall be railroad contractor training certified and abide by the terms and conditions of contractors right-of-entry agreement when working on Union Pacific Rail Road right of way before beginning work or restricting traffic in their right-of-way. The Contractor will be required to obtain these permits and comply with their requirements.

All workers, including those employed by subcontractors, shall complete the Union Pacific Railroad Contractor Safety Orientation Program prior to entering railroad property. All workers will be required to have, in their possession, the registration card indicating that the worker has taken and passed the course. The course may be taken via the Internet at [www.contractororientation.com](http://www.contractororientation.com).

There shall be no separate measurement or payment for costs associated with obtaining the required permits, the cost being considered incidental to the cost of contract items.

16. **107 LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC**, Revise the title of **Subsection 107.4 ARCHAEOLOGICAL REPORTS** to **107.4 ARCHAEOLOGICAL MONITORING AND DISCOVERIES**, and add the following:

If any archaeological materials are encountered during ground-disturbing activities, the contractor shall cease all ground-disturbing activities within 10 meters of the discovery and the City of Phoenix Project Manager, the City of Phoenix Archaeology Office (602-495-0901), and the City of Phoenix Street Transportation Department Environmental Quality Specialist (602-377-8943 or 602-534-6030) shall be notified immediately and allowed time to properly assess the materials.

The contractor shall coordinate with the archaeological monitor provided by the City of Phoenix Street Transportation Department. The contractor shall advise the archaeological monitor of the construction schedule and planned construction activities at least 48 hours prior to starting any ground-disturbing activities in sensitive areas. The contractor shall continue communicating with the archaeological monitor until the City of Phoenix issues a letter indicating *Substantial Completion*.

17. Add the following to **MAG Subsection 107.5, SAFETY, HEALTH AND SANITATION PROVISIONS:**

1. **ARSENIC**

The Contractor shall inform all parties responsible for potentially exposed workers to disturbed soils along the canal banks that exposure to inorganic arsenic may occur during construction activities involving significant soil disturbance. Potentially exposed workers shall be provided a copy of Attachment 1, EXAMPLE OF OCCUPATIONAL HEALTH HANDOUT TO CONSTRUCTION WORKER – ARSENIC.

18. **107 LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC, Modify Subsection 107.8, USE OF EXPLOSIVES** as follows:

Replace the words "Uniform Fire Code" with "Phoenix Fire Code".

19. **107 LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC, Add the following to Subsection 107.11, CONTRACTOR'S RESPONSIBILITY FOR UTILITY PROPERTY AND SERVICES:**

1. **UNDERGROUND FACILITIES**

The Contractor will make whatever investigation it deems necessary to verify the location of underground utility facilities. If such facilities are not in the location shown in the drawings, then (regardless of whether this is discovered prior to or during construction) the contractor's remedies, if any, pursuant to Art. 6.3, Chapter 2, Title 40, A.R.S. (A.R.S. 40-360.21 through 40-360.32, "Underground Facilities"), shall be the contractor's sole remedy for extra work, delays and disruption of the job, or any other claim based on the location of utility facilities. Locations of utility facilities shown on drawings furnished by the City are to be regarded as preliminary information only, subject to further investigation by the contractor. The City does not warrant the accuracy of these locations, and the contractor, by entering into this contract, expressly waives and disclaims any claim or action against the City under any theory for damages resulting from location of utility facilities.

The Contractor shall be responsible for obtaining all Blue Stake utility location information, and for performing all requirements as prescribed in A.R.S. 40-360.21 through .29, for all underground facilities, including those that have been installed on the current project, until the project is accepted by the City.

At least two (2) working days prior to commencing any excavation, the Contractor shall call the BLUE STAKE CENTER, between the hours of 7:00 a.m. and 4:30 p.m., Monday through Friday for information relative to the location of buried utilities. The number to be called is as follows:

Maricopa County (602) 263-1100

2. **UTILITY-RELATED CONSTRUCTION DELAY DAMAGES CLAIM PROCEDURES**

The following procedure is intended to provide a fair and impartial process for the settlement of

construction delay claims associated with unknown or improperly located utility facilities.

The Contractor shall immediately notify, in writing, the Project Engineer of any potential utility-related delay claim.

The Contractor shall immediately notify the appropriate liaison of the affected utility verbally, followed by a written notification.

The Contractor shall coordinate an investigation of the situation with the affected utility and the City's Utility Coordinator. After resolution, the Contractor will provide written notification of the settlement of the claim to all affected parties. If the affected utility makes a decision to handle negotiations for a claim, their personnel will be responsible for monitoring the project and all negotiations with the Contractor regarding the claim.

The Contractor shall determine to document requirements of the affected utility for their acceptance of responsibility for the claims. The Contractor shall provide four (4) copies of the required documentation to the utility involved and two (2) copies of this documentation to the Project Engineer. The Contractor shall obtain written confirmation from the utility company involved of their documentation requirements.

3. **ARIZONA PUBLIC SERVICE CLEARANCES**

The Contractor shall meet with Arizona Public Service (APS) Leader Public Safety, Randy Boles, prior to any construction activities to review safety requirements related to APS utility poles. The Contractor shall maintain clearance from Arizona Public Service facilities in accordance with APS Company T&D Construction Standards 1124 and 1136, found on pages APS-1, APS-2, APS-3 and APS-4. No additional compensation will be made for compliance with these clearance requirements

20. **108 COMMENCEMENT, PROSECUTION AND PROGRESS** Add the following to **Subsection 108.2, SUBLETTING OF CONTRACT:**

(F) **PROMPT PAYMENT**

1. **Contractor Payment to Subcontractor or Supplier**

Contractor shall pay its subcontractors or suppliers within seven (7) calendar days of receipt of each progress payment from the City. The Contractor shall pay for the amount of work performed or materials supplied by each subcontractor or supplier as accepted and approved by the City with each progress payment. In addition, any reduction of retention by the City to the Contractor shall result in a corresponding reduction to subcontractors or suppliers who have performed satisfactory work. Contractor shall pay subcontractors or suppliers the reduced retention within fourteen (14) days of the payment of the reduction of the retention to the Contractor. No Contract between Contractor and its subcontractors and suppliers may materially alter the rights of any subcontractor or supplier to receive prompt payment and retention reduction as provided herein. If the Contractor fails to make payments in accordance with these provisions, the City may take any one or more of the following actions and Contractor agrees that the City may take such actions: (1) to hold the Contractor in default under this agreement; (2) withhold future payments including retention until proper payment has been made to subcontractors or suppliers in accordance with these provisions; (3) reject all future bids from the Contractor for a period not to exceed one year from substantial completion date of this project; or (4) terminate agreement.

2. **Alternative Dispute Resolution Between Contractor and Subcontractor or Supplier**

If Contractor's payment to a subcontractor or supplier is in dispute, Contractor and subcontractor or supplier agree to submit the dispute to any one of the following dispute resolution processes within fourteen (14) calendar days from the date that any party involved gives written notice to the other party(ies): (1) binding arbitration; (2) a form of alternative dispute resolution (ADR) agreeable to all parties; or (3) a City of Phoenix facilitated mediation. When disputed claim is resolved through ADR or otherwise, the Contractor and subcontractor or supplier agree to implement the resolution within seven (7) calendar days from the resolution date.

3. **Inspection and Audit**

Contractor, its subcontractors and suppliers shall comply with A.R.S. 35-214 and the City shall have all rights and remedies to inspect and audit the records and files of Contractor, subcontractor or supplier, as afforded the State of Arizona in accordance with the provisions of A.R.S. Section 35-214.

4. **Non-Waiver**

Should the City fail or delay in exercising or enforcing any right, power, privilege, or remedy under this Section, such failure or delay shall not be deemed a waiver, release, or modification of the requirements of this Section or of any of the terms or provisions thereof.

5. **Inclusion of provisions in Subcontracts**

Contractor shall include these prompt payment provisions in every subcontract, including procurement of materials and leases of equipment for this Agreement.

6. **No Third Party Benefits or Rights**

Nothing contained in this Agreement is intended to benefit or confer any rights on any person or entity not a party to this Agreement, and no such person or entity, including but not limited to other Contractors, subcontractors or suppliers, may assert any claim, cause of action, or remedy against the City hereunder.

21. **108 COMMENCEMENT, PROSECUTION AND PROGRESS, Add the following to Subsection 108.4, CONTRACTOR'S CONSTRUCTION SCHEDULE:**

No later than one (1) week after the Pre-Construction meeting (or one week after the Notice to Proceed date is firmly established), the Contractor shall submit to the Engineer, two (2) copies of a detailed Critical Path Model (CPM) chart outlining the detailed progress of all major and critical elements of the project by weeks, from beginning of project to end. The chart shall begin at the established Notice to Proceed date and progress on a calendar basis, week by week, to the end of the project.

The Contractor shall submit updated CPM charts as required by the Engineer. This shall typically be on a monthly basis. The required submittals of updated CPM charts may be less frequent than monthly, if approved by the Engineer.

Neither the City nor the Engineer shall accept liability or responsibility for the reasonable or workable nature of the CPM schedules prepared and submitted by the Contractor—that responsibility shall remain with the Contractor.

22. **108 COMMENCEMENT, PROSECUTION AND PROGRESS**, Add the following to **Subsection 108.5, LIMITATION OF OPERATIONS:**

1. **WORK HOURS**

Regular working hours shall be defined as one 8-1/2 hour shift per day, Monday through Friday, exclusive of City holidays.

Work in excess of regular working hours shall be defined as overtime. For overtime which becomes necessary, the Contractor shall make a written request to the Engineer at least eight (8) calendar days before the desired overtime. The request shall include the duration, dates, times, reason for overtime, and a statement of the consequences if overtime is not approved.

The Contractor shall not schedule any overtime work which requires inspection or material testing without written permission from the Engineer two (2) working days before the proposed overtime work. The Engineer reserves the right to deny the requested overtime. If an overtime request is denied, the Engineer may extend the contract time at no additional cost to the City, including extended overhead costs.

Unscheduled Overtime

Overtime that is not requested and approved in accordance with the above procedure shall be defined as unscheduled overtime. All costs (including appropriate overhead) shall be paid by the Contractor by deduction from the contract.

Emergency Overtime

An emergency is defined as work required for a situation that is not within the Contractor's control.

With the Engineer's approval, the Contractor will be permitted to work overtime without being responsible for paying the City's costs.

2. **COORDINATION WITH UNION PACIFIC RAILROAD**

The Contractor is hereby notified that there may take several weeks to obtain an executed Crossing Right-of-Entry agreement. The contractor shall notify the UPRR representative once the contractor has been awarded the contract. This will allow the contractor to start the Crossing Right-of-Entry Agreement is processed, coordinate their work with the UPRR and request railroad flagging and track work windows. This Crossing Right of Entry Agreement will include insurance, indemnification, notification, safety practices, etc. The contractor will not be allowed into UPRR right of way until this Crossing Right of Entry Agreement is executed.

There shall be no separate measurement or payment for work related to this item, the cost being considered incidental to the cost of contract items

Before beginning work adjacent to Union Pacific Railroad tracks, the Contractor shall perform the following:

Complete and submit a Union Pacific Railroad Contractor's Right-of Entry Agreement.

Submit a certificate of insurance to Union Pacific Railroad for their approval which provides limits not less than the following:

Commercial Liability insurance, including but not limited to public liability, personal injury liability, property damage with coverage of at least \$5,000,000.00 per occurrence and \$10,000,000.00 in aggregate.

Business Liability insurance, including bodily injury and property damage with coverage of at least \$5,000,000.00 combined single limit.

Workers Compensation and Employers Liability insurance with coverage of at least \$500,000.00 each accident, \$500,000.0. disease policy limit \$500,000.00 each employee.

Railroad Protective Liability insurance stating Union Pacific Railroad is the named insured with coverage of at least \$2,000,000.00 per occurrence and \$6,000,000.00 in aggregate.

Pollution Liability insurance with coverage of at least \$5,000,000.00 per occurrence and \$10,000,000.00 in aggregate.

In addition, the Contractor shall save harmless the City against all claims, suits, or judgments arising because of, or resulting from, the operations, actions or omission of the Contractor, sub-contractor and/or agents or employees.

There shall be no separate payment for providing this additional insurance coverage. It shall be considered incidental to the cost of the project.

Notify Union Pacific Railroad a minimum of 3-weeks prior to the start of construction. The Contractor shall notify:

Alexander Popovici  
Manager Industry & Public Projects - UPRR  
631 S. 7 St.  
Phoenix AZ, 85034  
Office 602 322 2510

NOTE: It is the contractor's responsibility to coordinate effectively his operations to minimize, if not eliminate, any impact of the project upon UPRR operations. Any loss of service or revenue to UPRR, beyond that covered by these specifications, that is in any way caused by the contractor's actions shall be the sole responsibility of the contractor, at no cost to the project.

### **UNION PACIFIC RAILROAD FLAGMAN**

The work under this item consists of coordination with Union Pacific Railroads to provide Flaggers. UPRR will furnish all flagging services required by the Railroad for the Contractor's work within the UPRR Crossing right-of-way. The Contractor shall reimburse UPRR for Railroad-provided flaggers. The City of Phoenix will reimburse the Contractor for such costs as specified below. The Contractor shall provide written notice to UPRR Manager when flagging services are no longer needed.

Pursuant to FRA Regulation 49 CFR Part 214, flagging protection is required in accordance with the railroad's standard safety procedures. The necessity for flagging protection is determined by the railroad and, when necessary, the railroad may require one, or more, flaggers to be present when the contractor is on the railroad property. The contractor shall inform UPRR of any activities that may affect safety or railroad operations. Any work to be performed by the contractor that requires flagging

protection shall be deferred until flagging protection is available at the job site. The contractor shall coordinate with UPRR in respect to construction schedule and work-related items for the safe and effective progress of the work. If the railroad determines that flagging protection is necessary, reimbursement to the contractor for railroad-provided flaggers will be in accordance with these Special Provisions. The contractor shall notify UPRR Manager of Track Maintenance, or a designated representative, a minimum of fifteen (15) calendar days in advance of commencing work on UPRR property or near their tracks, or when requesting a UPRR Flagger in accordance with the requirements of the Crossing Right of Entry Agreement. Excavation, within UPRR crossing right-of-way, shall not be performed without approval by the railroad.

When the contractor receives executed Crossing Right of Entry Agreement from UPRR, the contractor shall begin a dialog with the UPRR Manager Track Maintenance to mutually schedule and coordinate their respective work. UPRR may require portions of the contractor's work that may affect railroad operations to be performed during designated hours. The contractor shall coordinate any construction activities that may affect UPRR operations, with UPRR. The contractor's construction schedule shall identify the time frames for the completion of the contractor's and UPRR's activities, always recognizing that the contractor's activities shall be scheduled around train movements.

Railroad-provided flagging service will be required during construction of any element of the project, either temporary or permanent, that occurs when contractor personnel or equipment will be within 25-feet of the track centerline, if bucket truck or similar equipment are positioned outside of 25-foot horizontally from track centerline but could tip and foul the track, or as specified in the Crossing Right of Entry Agreement. There is a minimum 12-foot horizontal clearance requirement for any temporary construction. Temporary vertical clearances as measured from the top of the highest rail shall not be less than 21-feet. The contractor shall be required to notify the Track Supervisor and the Engineer whenever the 25-foot horizontal and 21-foot vertical clearances would be violated. Notification of such work must be made at least 15 business days in advance of the date the work is to be performed.

The contractor is required to communicate his or his subcontractor's activities to the Track Supervisor that may affect safety or railroad operations. Any work to be performed by the contractor, which requires flagging protection, shall be deferred until flagging protection is available at the job site.

#### **Measurement and Payment:**

For all flaggers provided by UPRR, the Contractor will be reimbursed for the actual cost of work by submitting the invoice provided by the railroad plus overhead and markup costs per MAG section 109.5. The UPRR estimated daily flat rate for flagging is \$1000 for a ten-hour weekday. The Contractor will not exceed the total amount established in the allowance account for flagging unless approved in writing by the Engineer. The Contractor shall provide copies of all invoices to the Engineer. No additional payment will be made for coordination with the Union Pacific Railroad, the costs being considered as included in contract items. The City of Phoenix has estimated ten (10) working days as the number of days flagging may be required for the work within the UPRR Railroad right of way. The Contractor shall coordinate with the Engineer when ordering flagging service. The Contractor shall schedule his work such that all work within the Railroad right-of-way may be completed safely within the allotted ten day limit. Should the Contractor desire additional flagging days over and above the ten (10) days it shall be at the expense of the Contractor unless approved in writing by the Engineer.

Payment for this work will be made under the bid item "Railroad Flagger and right of Entry Permit".

23. **108 COMMENCEMENT, PROSECUTION AND PROGRESS**, Add the following to **Subsection 108.10, FORFEITURE AND DEFAULT OF CONTRACT:**

**City's Right to Perform and Terminate for Convenience**

If the City provides the Contractor with a written order to provide adequate maintenance of traffic, adequate cleanup, adequate dust control or to correct deficiencies or damage resulting from abnormal weather conditions, and the Contractor fails to comply in a time frame specified, the City may have work accomplished by other sources at the Contractor's expense.

If Contractor persistently fails to (i) provide a sufficient number of skilled workers, (ii) supply the materials required by the Contract Documents, (iii) comply with applicable Legal Requirements, (iv) timely pay, without cause, Sub-consultants and/or Subcontractors, (v) prosecute the Contract Services with promptness and diligence to ensure that the Contract Services are completed by the Contract Time, as such times may be adjusted, or (vi) perform material obligations under the Contract Documents, then the City, in addition to any other rights and remedies provided in the Contract Documents or by law, shall have the rights set forth below.

Upon the occurrence of an event set forth above, City may provide written notice to Contractor that it intends to terminate the Agreement unless the problem cited is cured, or commenced to be cured, within seven (7) days of Contractor's receipt of such notice.

If Contractor fails to cure, or reasonably commence to cure, such problem, then City may give a second written notice to Contractor of its intent to terminate within an additional seven (7) day period.

If Contractor, within such second seven (7) day period, fails to cure, or reasonably commence to cure, such problem, then the City may declare the Agreement terminated for default by providing written notice to Contractor of such declaration.

Upon declaring the Agreement terminated pursuant to the above, City may enter upon the premises and take possession, for the purpose of completing the Work, of all materials, equipment, scaffolds, tools, appliances and other items thereon, which have been purchased or provided for the performance of the Work, all of which Contractor hereby transfers, assigns and sets over to City for such purpose, and to employ any person or persons to complete the Work and provide all of the required labor, services, materials, equipment and other items.

In the event of such termination, Contractor shall not be entitled to receive any further payments under the Contract Documents until the Work shall be finally completed in accordance with the Contract Documents. At such time, the Contractor will only be entitled to be paid for Work performed and accepted by the City prior to its default.

If City's cost and expense of completing the Work exceeds the unpaid balance of the Contract Price, then Contractor shall be obligated to pay the difference to City. Such costs and expense shall include not only the cost of completing the Work, but also losses, damages, costs and expense, including attorneys' fees and expenses, incurred by the City in connection with the re-procurement and defense of claims arising from Contractor's default.

If the City is found to have improperly terminated the Agreement for cause or default, the termination shall be converted to a termination for convenience in accordance with the provisions of this Agreement.

24. **108 COMMENCEMENT, PROSECUTION AND PROGRESS, TERMINATION OF CONTRACT:** Add the following to **Subsection 108.11,**

**TERMINATION FOR CONVENIENCE**

The Owner for its own convenience has the right for any reason and at any time to terminate the contract and require the Contractor to cease work hereunder. Such termination shall be effective at the time and in the manner specified in the notification to the Contractor of the termination. Such termination shall be without prejudice to any claims which the Owner may have against the Contractor. In the event of a termination for convenience, the Contractor shall be paid only the direct value of its completed work and materials supplied as of the date of termination, and Contractor shall not be entitled to anticipated profit or anticipated overhead or any other claimed damages from the Owner, Architect or the Engineer. If the City is found to have improperly terminated the Agreement for cause or default, the termination shall be converted to a termination for convenience in accordance with the provisions of this Agreement.

**CANCELLATION OF CONTRACT FOR CONFLICT OF INTEREST**

All parties hereto acknowledge that this agreement is subject to cancellation by the City of Phoenix pursuant to the provisions of Section 38-511, Arizona Revised Statutes.

25. **109 MEASUREMENTS AND PAYMENTS, PAYMENT:** Add the following to **Subsection 109.2, SCOPE OF**

1. **PARTIAL PAYMENTS**

The contracting agency will make a partial payment to the Contractor on the basis of an approved estimate prepared by the Engineer or the Contractor for work completed and accepted through the preceding month. The notice to proceed date, which is designated for the specific project involved, will be used as the closing date of each partial pay period. Payment will be made no later than fourteen (14) days after the work is certified and approved. City shall review payment requests and make recommendation of approval or denial within seven (7) calendar days.

2. **PAYMENT RETENTION**

At the start of construction, ten percent of all pay requests shall be retained by the City to guarantee complete performance of the contract. When the work is fifty percent complete, this amount may be reduced to five percent providing that construction progress and quality of work is acceptable to the City. Any funds which are withheld from the contractor will be paid no later than sixty days after completion of the contract and settlement of all claims.

In lieu of retention, the contractor may provide as a substitute, an assignment of time certificates of deposit (CDs) from a bank licensed by Arizona, securities guaranteed by the United States, securities of the United States, the State of Arizona, Arizona counties, Arizona municipalities, Arizona school districts, or shares of savings and loan institutions authorized to transact business in Arizona.

Securities deposited in lieu of retention must be deposited into a separate account with a bank having a branch located in the City of Phoenix and be assigned exclusively for the benefit of the City of Phoenix pursuant to the City's form of escrow agreement

CDs assigned to the City must be maintained in the form of time deposit receipt accounts. CDs shall be assigned exclusively for the benefit of the City of Phoenix pursuant to the City's form of escrow agreement.

Escrow Agreement forms may be obtained from the Contract Specialist assigned to the project.

26. **109 MEASUREMENTS AND PAYMENTS**, Add the following to **Subsection 109.4.3, DUE TO EXTRA WORK**:

**ALLOWANCE FOR EXTRA WORK**

Contract allowance items are provided for the purpose of encumbering funds to cover the costs of possible change order work. The amount of the allowance item is determined by the Engineer and is not subject to individual bid pricing. All bidders shall incorporate the amount pre-entered in the bid proposal and shall reflect the same in the total amount bid for this project.

This allowance item provides an estimated funding to cover unforeseen changes that may be encountered and corresponding extra work needed to complete the contract per plan. Unforeseen extra work, if any, shall be as approved by the Engineer; for example, extension of unit bid prices, negotiated price or time and material, in accordance with MAG Specification Section 109.4 and 109.5.

It shall be understood that this allowance item is an estimate only and is based on change order history of similar projects. It shall not be utilized without an approved contract change order. It is further understood that authorized extra work, if any, may be less than the allowance item.

27. **109 MEASUREMENTS AND PAYMENTS**, Add the following to **Subsection 109.4 COMPENSATION FOR ALTERATION OF WORK**:

109.4.7 CHANGE ORDERS

Owner reserves the right to decrease adjustments made in any change order if, upon audit of Contractor's records, the audit discloses contractor provided false or inaccurate cost and pricing data in negotiating the change order. In enforcing this provision, the parties shall follow the procedure provided in the Federal Acquisition Regulation (FAR) clause 52.214-27, found in 48 CFR Part 52.

28. **109 MEASUREMENTS AND PAYMENTS**, Delete Table 109-1 in **Subsection 109.9, DOLLAR VALUE OF MAJOR ITEM**, and substitute the following:

<u>CONTRACT AMOUNT</u>	<u>MAJOR ITEM IS DEFINED AS ANY ITEM EQUAL TO OR GREATER THAN THE FOLLOWING</u>
Up to \$1 million	\$15,000 or 3%, whichever is greater
\$1 million to \$3 million	3% of the original contract amount to a maximum of \$75,000.00
\$3 million to \$5 million	2.5% of the original contract amount to a maximum of \$90,000.00
Over \$5 million	1.5% of the original contract amount to a maximum of \$125,000.00

**CONTINGENCY ITEMS**

Contingency items which fall under the definition of a major item are subject to negotiation if decreased by more than twenty (20) percent.

Contingency items shall not increase more than twenty (20) percent without being subject to renegotiation, regardless of the percentage of that item relative to the total contract amount.

29. **110 NOTIFICATION OF CHANGED CONDITIONS AND DISPUTE RESOLUTION**, Add the following to **Subsection 110.1 GENERAL:**  
**SOILS INFORMATION**

The material boring logs shown on the plans or included in these specifications are included for the Contractor's convenience only. It is not intended to imply that the character of materials shown in the logs is representative throughout the project. **The soil borings are indicative of the soil characteristics only at the location and to the depth of each of the borings.**

Even if not specifically shown in the geotechnical information provided, the Contractor may encounter large cobbles, boulders, caliche, conglomerate, hard rock, perched groundwater, historic or prehistoric cultural resources, or other differing site conditions on this project. **No additional compensation will be made for any differing site condition that may be encountered.**

## SPECIAL PROVISIONS

1. 201 CLEARING AND GRUBBING, Add the following new Subsection 201.8, DEMOLITION OF BUILDING:

### **Description**

The Contractor shall remove overgrown vegetation and other debris as needed to construct improvements per the plans.

### **Measurement and Payment**

Measurement and payment shall be by the job.

2. 206 STRUCTURE EXCAVATION AND BACKFILL, Add the following to Section 206 STRUCTURE EXCAVATION AND BACKFILL:

### **Description**

The work under this item consists of performing Structure Excavation and furnishing Structural Backfill at the locations and in conformance with the details on the Project Plans, in accordance with these special provisions and as directed by the Engineer. Structural Backfill shall consist of furnishing, placing and compacting backfill around the structure to the level designated. All work under this Section shall conform to SECTION 203 – EARTHWORK of the Arizona Department of Transportation Standard Specifications for Road and Bridge Construction, 2008 Edition, except as herein noted and on the Project Plans.

### **Measurement and Payment**

No measurement or direct payment shall be made for Structure Excavation or Structural Backfill. No measurement or payment will be made for the hauling and disposal of surplus and/or waste material. The cost for Structure Excavation and Structural Backfill shall be considered included in the structure being constructed.

3. 211 FILL CONSTRUCTION, Add the following to Section 211 FILL CONSTRUCTION:

### **GRADED MAINTENANCE ROADS**

#### **Description**

The graded maintenance roads shown on the plans shall be constructed to the lines and grades shown on the plans for maintenance access to the pedestrian bridge.

#### **Construction Requirements**

The surface of the maintenance roads shall consist of 6" of ABC, compacted to minimum 95% density.

#### **Measurement and Payment**

Payment for the ABC maintenance road surface will be made at the contract unit bid price for the item "AGGREGATE BASE COURSE".

Payment for grading, excavating and/or filling for the maintenance roads will be made at the contract unit bid price for the item "FILL CONSTRUCTION".

4. Add the following new Section, 232 STORM WATER POLLUTION PREVENTION – BEST MANAGEMENT PRACTICES:

## Description

Implementation of "Best Management Practices" (B.M.P.'s) to reduce stormwater pollution shall be undertaken by the Contractor on a multi-tiered, most cost-effective approach. The Contractor shall utilize the lowest-cost acceptable B.M.P. available to address each type of potential stormwater pollution situation encountered on the project. Should this prove ineffective in resolving the stormwater pollution problem, additional, higher-cost B.M.P.'s may need to be employed, upon approval by the City.

## Construction Requirements

Typical multi-tiered B.M.P. approaches to construction operations may include:

### A. ROADWAY SUBGRADE EXCAVATION:

1. Tier I - The excavated area will create, in effect, a temporary retention area. This may provide adequate control of storm runoff to prevent sediment from leaving the site. Pumping or other methods utilized to drain the excavation shall employ filter fabric or other filtering method to remove sediment before leaving the site or entering the storm drain system.
2. Tier II - Catch basin inlet protection (utilizing filter fabric, gravel, etc.) may be necessary should Tier I controls prove inadequate. Care shall be exercised to ensure that Tier II B.M.P.'s do not result in blockage of drainage and resultant flooding of adjacent properties.

### B. OPEN PIPELINE TRENCHES:

1. Tier I - The open trench itself will act as a temporary retention area. The Contractor shall provide a low-cost, readily-installed/removed temporary device on the open end of the pipe to prevent sediment-laden stormwater from entering the pipe. This may consist of a temporary "plug" incorporating filter fabric, a temporary weir, or other device capable of removing sediment before allowing stormwater to enter the pipe. Care must be taken to prevent damming of floodwaters in the excavation that could result in "floating" the pipe.
2. Tier II - If Tier I protection does not prove satisfactory, the Contractor may need to install straw bales, sandbag berms, or temporary diversion dikes around the perimeter of the open excavation to prevent sediment-laden stormwater from entering the open excavation. Due to installation/removal time, such devices need only be installed during periods of likely precipitation and runoff. Earthen dikes are the preferred alternate, due to ease of installation and removal. Care must be taken to assure that runoff is not blocked to the extent that flooding of adjacent properties will result.

### C. BACKFILLED PIPELINE TRENCHES:

1. Tier I - As with roadway subgrade excavations, pipeline trenches which have been backfilled but not yet paved will be several inches lower than adjacent pavement areas, and will therefore act as temporary retention areas.
2. Tier II - If the "retention" provided by the backfilled area does not prevent sediment-laden runoff from leaving the excavated area, perimeter controls such as silt fence, straw bales, sandbag berms, or gravel filter berms may need to be installed around the downstream

edge(s) of the backfilled area. As with open trenches, the selection of the appropriate measure, extent of its application, and time period during which it is needed will be dependent upon cost, site conditions, ease of installation/removal, and likelihood of precipitation/runoff. Again, care must be taken to ensure that diversion of stormwater onto adjacent properties does not result from these installations.

Another stormwater control method, which the Contractor may need to consider, is limiting the amount of area disrupted and therefore subject to sediment-laden stormwater runoff at any one time. Should such project phasing prove necessary due to the failure of other B.M.P.'s, the Contractor shall revise his construction activities accordingly, at no additional cost to the City.

Standards for installation of the above B.M.P.'s are provided in the Flood Control District of Maricopa County's "Drainage Design Manual for Maricopa County, Arizona, Volume III, Erosion Control". Installation and operation of B.M.P.'s shall be in accordance with that manual.

There shall be no separate measurement or payment for preparing or developing Storm Water Pollution Prevention Plans, or for preparing NOI's or NOT's or obtaining an AZPDES Permit, all these costs being considered incidental to the cost of the project.

Use of individual BMP items shall conform to the Contractor's approved Storm Water Pollution Prevention Plan (SWPPP).

### **Measurement and Payment**

This project includes a pay item "ALLOWANCE FOR STORMWATER POLLUTION PREVENTION BEST MANAGEMENT PRACTICE (BMP'S)". The amount of this allowance is determined by the Engineer, and is not subject to individual bid pricing. All bidders shall incorporate the amount pre-entered in the bid proposal and shall reflect the same in the total amount bid for this project.

Payment for various types of necessary BMP's shall be made from this allowance based on approved invoiced cost of the materials only, plus taxes, and a maximum 15 percent markup for overhead and profit. There will be no separate measurement or payment for the preparation or development of the Storm Water Pollution Prevention Plan; labor or equipment necessary to install, maintain or remove the BMP materials; moving existing BMP materials from one location to another on the same project; or constructing BMP swales or berms, all of these costs being considered incidental to the cost of the project.

5. **301 SUBGRADE PREPARATION**: Add the following to **Subsection 301.1, DESCRIPTION**:

The work under Subgrade Preparation consists of all excavating and grading work necessary to bring the existing surface to the section specified on the plans prior to the covering of the prepared subgrade with pavement base materials.

6. **301 SUBGRADE PREPARATION**, Delete **Subsections 301.7, MEASUREMENT, and 301.8, PAYMENT**, and substitute the following:

**301.7 MEASUREMENT:**

Measurement for subgrade preparation shall be made by the square yard of the roadway areas excavated and graded and subsequently covered with pavement base materials. Payment for necessary grading for items outside of the lip of gutter shall be included in the cost of those items.

### 301.8 PAYMENT

Payment will be made at the unit price quoted in the bid proposal for the bid item "SUBGRADE PREPARATION".

6. **340 CONCRETE CURB, GUTTER, SIDEWALK RAMPS, DRIVEWAY AND ALLEY ENTRANCE**, Add the following to **Subsection 340.2.1 Detectable Warnings; Subsection 340.3.1 Detectable Warnings; Subsection 340.5 MEASUREMENT; and Subsection 340.6 PAYMENT**:

Add the following to **MAG Subsection 340.2.1 Detectable Warnings**:

Detectable warning material shall meet the latest ADA requirements and be cast iron with natural finish. Approved detectable warning material manufacturers include the following or approved equal:

- a. Neenah Foundry;
- b. Deter Foundry
- c. US Foundry

Add the following to **MAG Subsection 340.3.1 Detectable Warnings**:

Detectable warning plates shall be installed per manufacturer's recommended specifications. The layout of plates shall be determined by the Contractor, and if necessary, pre-cut as needed prior to beginning the installation process. Plates shall not be cut to less than half their size. Plates shall be cut as recommended by the manufacturer.

Add the following to **MAG Subsection 340. 5 MEASUREMENT and 340.6 PAYMENT**:

#### **Driveway Entrance and Sidewalk Ramps Measurement and Payment**

Concrete sidewalks, driveways, curbs, and gutters will be measured to the nearest square foot complete in place.

Sidewalk ramps shall be constructed in accordance with Phoenix Standard Details or special details called out on the plans.

Payment will be made under the bid items for "SIDEWALK" and "DRIVEWAY ENTRANCE" and shall include all cost for forming and finishing. The cost of the curb and gutter within the sidewalk ramp and driveway areas will be measured and paid for under the bid items for "SIDEWALK" and "DRIVEWAY ENTRANCE". The cost of the special curb at the back of sidewalk ramps shall also be measured and paid for as "SIDEWALK".

Measurement and payment for this work shall be made per square foot complete and in place for the appropriate pay item for "SIDEWALK" or "DRIVEWAY ENTRANCE".

Measurement and payment for installation of detectable warning plates will be made per square foot complete and in place for the pay item "TRUNCATED DOMES FOR SIDEWALK RAMPS".

Add the following new Subsection, **MAG Subsection 340.3.11 Sandblast Street Names**:

Street names will be sandblasted into the concrete sidewalk per the plans. Payment for sandblasting street names will be made under the bid item for "ART WORK".

**Mountable Curb and Gutter, Measurement and Payment**

Mountable curb and gutter shall be constructed in accordance with MAG Detail 220-2, Type E, where shown on the plans.

Measurement shall be made per linear foot complete in place, and payment will be made under the bid item for "COMBINED CONCRETE CURB AND GUTTER, STD. DETAIL 220, TYPE 'A', H=6".

**7. ADD THE FOLLOWING NEW SECTION 343 BENCH SEATS:**

**General:**

Bench seats, supports and hardware as shown on drawings and as specified herein. Contractor shall submit one (1) set of shop drawings for selected bench seats and supports and hardware installation on this project. Shop drawings to include all means and materials, sealants, attachment mechanisms, hardware, and fillers. Drawings shall be reviewed by engineer and landscape architect prior to purchase and installation.

Manufacturer Qualifications: Minimum 10 years manufacturing experience. Materials and fabrication: Made in the USA. Installer qualifications: Ten years' minimum experience installing Bench seats and support supports and hardware, leveling, corrections and connections to adjacent materials as indicated on project plans.

Store product in manufacturer's packaging in contractor provided, secure location until ready to install.

**Materials:**

Bench shall be ADA compliant and made in the USA from non-rusting materials: non-alloy, steel, aluminum, two step powder coat paint 7-15 mil thickness min., or HDPE. Benches shall be in-ground mount with concrete footing, minimum 4' in length with anti-vagrant dividers.

Bench seats and supports and hardware shall be provided from same supplier and be warranted by the manufacturer against defects in materials and workmanship for a minimum of three (3) years. Installation of Bench seats and supports and hardware shall be warranted by installer against detachment from supports, rust, and failure of installation for a minimum of (5) years.

Color options to be provided to Engineer for approval by Engineer at time of submittal review.

All bench seats shall be manufactured true to pattern and align with installation hardware, and fit together in a quality workmanship manner.

Finish: Bench seats, supports and hardware are to be supplied from manufacturer as complete painted, and in finish condition with no additional need for field preparation.

Matching hardware provided by bench manufacturer model shall be provided with installation detail(s) per plans.

Provide pilfer proof screws per manufacturer's standard.

**Construction Procedures:**

Do not begin installation until site is properly prepared. If substrate preparation is the responsibility of another installer, notify Engineer of unsatisfactory preparation before proceeding.

Clean surfaces thoroughly prior to installation. Prepare surfaces using the methods commended by the manufacturer for achieving the best result for the substrate under the project conditions.

Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.

Assure surfaces of adjacent concrete, and hardscape areas relative to bench are level, complete, and walkable prior to installation of benches. Install benches, supports and hardware where indicated on plans to a level position. Install steel angle frame flush and level with surrounding paving surface, maintain flush and level at all times. Coordinate with other subcontractors at time of adjacent pavements installation to make any necessary adjustments.

Use sealants to fill voids surrounding hardware attachments to prevent moisture/water intrusion into surfaces which intersect or adjoin bench hardware.

Protect installed product until completion of project from all construction related activities by any contractor. Clean surfaces and bench installation upon completion and for final acceptance by owner. Touch up, repair or replace damaged products.

**Approved Manufacturers and Models for Bench seats, Supports and Hardware:**

1. Brasco International, Inc .  
32400 Industrial Dr.  
Madison Heights, MI 48071  
Phone: 313 393 0393  
Email: [sales@brasco.com](mailto:sales@brasco.com)  
Model: BE-EC-6-HD

2. Keystone Ridge Designs  
670 Mercer Road  
Butler, PA 16001-1840  
Phone 800 284 8208  
Website: keystoneridgedesigns.com  
Model: VT14

3. Landscape Forms  
7800 E. Michigan Ave.  
Kalamazoo, MI 49048  
800.430.6209  
Presidio-Backless-With End Arms-Ground Mount in Concrete Footing per manufacturer

4. Or Approved Equal

## Measurement and Payment

This work shall consist of preparing the site, furnishing, and installing Bench Seats at the locations shown and shall conform to the installation details. Measurement and payment for this work shall be made per each, complete and in place, for the appropriate pay item, Bench Seat, with supports and hardware per manufacturer.

8. **345 ADJUSTING FRAMES, COVERS, VALVE BOXES, AND WATER METER BOXES**, Revise **Subsection 345.1 DESCRIPTION**, **Subsection 345.5 MEASUREMENT**, and **Subsection 345.6 PAYMENT** as follows:

Delete **Subsection 345.1 DESCRIPTION** in its entirety, and substitute the following:

Adjustment of manhole frames, covers, clean outs, valve boxes, survey monument boxes (and water meter boxes if located in the pavement) to finish grade shall be done AFTER placement of the final surface course pavement.

Any missing manhole frames or covers and water valve or survey monument box hardware (such as lids, for example) shall be reported in writing to the Engineer during the initial lowering process to allow arrangements to be made to obtain replacement hardware. Missing hardware that is properly reported to the Engineer will be supplied to the Contractor by the City of Phoenix or the appropriate private utility company.

Replacement of any missing hardware that was not reported to the Engineer initially as specified, that comes up missing later when these facilities are brought back up to finish grade, shall be the full responsibility of the Contractor, at no additional cost to the City.

In addition, all manhole frames and covers, water valve and survey monument boxes or other related hardware removed by the Contractor during the lowering process shall be maintained in a secure area, and the Contractor shall bear full responsibility for this hardware material. Any hardware lost by the Contractor shall be replaced in-kind, at no additional cost to the City.

All areas of existing pavement removed for adjustments that will be subjected to traffic prior to placement of final concrete collar rings shall be temporarily filled with hot-mix Type D-1/2 asphalt and roller-compacted flush with the adjacent pavement. There shall be no separate measurement or payment for this temporary hot-mix asphalt or placement or subsequent removal, the cost being considered incidental to the cost of the adjustment.

After removal of asphalt pavement in the area of adjustment, and prior to placement of the final concrete collar ring around the frame or valve box (as shown on City of Phoenix Detail P-1391 and MAG Detail 422), the asphalt pavement in proximity of the adjustment shall be rolled with a self propelled, steel wheel roller.

The concrete collar ring around the frame or valve box shall be circular, and shall be a minimum of eight (8) inches thick, placed flush with the adjacent new pavement surface. At a minimum, concrete shall be MAG Class 'AA' on all paved streets. All concrete shall be obtained from plants approved by the Engineer.

A single No. 4 rebar hoop shall be placed in each adjustment collar. The hoop diameter shall be such that its placement is centered between the edge of the manhole frame or valve box, and the outside edge of the concrete collar. The depth of the hoop shall be such that it is centered in the thickness of the collar. Each concrete ring shall be scored radially at quarter-circle points. Score lines shall be 1/4-inch wide by 1/2-inch deep. The concrete collar surface shall be rough broom-finished. All pavement removed for adjustments shall be replaced with concrete.

Traffic shall not be allowed on the collars until the concrete has reached a minimum compressive strength of 2500 psi on residential streets, and 3000 psi on collector and major streets. On major streets, the Contractor shall use "high-early" cement in the concrete mix, approved by the Engineer, to minimize delay in re-opening the street to traffic.

Prior to commencing work on the adjustments, the Contractor shall submit a written adjustment plan and schedule to the Engineer for approval.

Sewer manhole frames and covers shall be matched, kept together, and replaced to their original locations. The Contractor shall remove existing asphalt, chip seal, or other materials from all sewer manhole covers and water valve box lids to be adjusted on this project. The Contractor's method for removal shall be approved by the Engineer prior to actual work. Cover cleaning shall be completed prior to adjustment of frames. Also, all water valve risers shall be thoroughly cleaned to fully expose the valve operating nut.

#### QUARTER SECTION MAPS FOR WATER AND SEWER LINES

The Contractor may obtain up to three sets of waterline and sewerline quarter section maps for the streets included in this project after the contract is awarded and issued. To order the maps, the Contractor shall bring an official contract specification book and a list of desired quarter section maps to the Technical Support Services counter on the 8<sup>th</sup> Floor of City Hall, 200 W. Washington Street. Up to three sets of maps will be provided at no cost to the Contractor. If more than three sets are requested, the Contractor shall purchase the additional sets.

#### WATER VALVE AS-BUILTS

Upon completion of water valve box adjustments, the Contractor shall provide one complete accurate and clearly legible set of as-built waterline Quarter Section maps to the Engineer. The Contractor shall mark and color code all water valves on the maps as follows:

Blue- All valves shown on the Q.S. map found and adjusted.

Yellow- All valves shown on the Q.S. map but not found in the field.

Red- Any valve not shown on the Q.S. maps but discovered and adjusted. (Draw valve symbol on map at appropriate location and provide offset and location dimensions for valves in this category.)

Delete **MAG Subsections 345.5 MEASUREMENT and 345.6 PAYMENT** and substitute the following:

#### **345.5 MEASUREMENT**

Measurement for adjustments shall be per each respective item.

#### **345.6 PAYMENT**

Payment for the appropriate item will be made at the unit price bid for 'ADJUST EXISTING MANHOLE FRAME AND COVER, STANDARD DETAIL 422'; 'ADJUST EXISTING TYPE 'A' WATER VALVE, STANDARD DETAIL P-1391 AND P-1391-1'; 'ADJUST EXISTING SEWER CLEAN-OUT FRAME & COVER, STANDARD DETAIL P-1270'; 'ADJUST SURVEY MONUMENT HANDHOLE FRAME AND COVER, STD DET P-1270'; or ADJUST EXISTING WATER METER BOX & COVER. Payment will include all labor, materials, and equipment necessary to satisfactorily clean and make complete adjustments.

There will be no separate measurement or payment for adjusting NEW manhole frame & covers, valve boxes, sewer clean-out frame & covers or water meter boxes constructed with the project. Payment for adjusting these new facilities is considered included in the price bid for the appropriate new item.

9. **350 REMOVAL OF EXISTING IMPROVEMENTS** Add the following to **MAG Subsection 350.3 MISCELLANEOUS REMOVAL AND OTHER WORK:**

- A. Remove and Relocate Existing Traffic Sign
- B. Remove and Reset Safety Post/Bollard

These items include furnishing all labor, material, tools and equipment to complete the removal and reinstallation of items as specified on the plans, listed in MAG Section 350 and City of Phoenix Supplement thereto and other work of a minor nature which may develop during course of construction.

Payment for removal and relocate/reinstall/reset of items shall be full compensation for the items complete, including removal, relocation, reinstallation, and reset of foundations, excavation, and backfill, and other items of work incidental to complete the work.

10. Add the following new **Section 363 PEDESTRIAN LIGHTING INSTALLATION** as follows:

**363 PEDESTRIAN LIGHTING INSTALLATION**

**Description**

The Contractor will furnish and install the pedestrian lighting system, complete and in place including conduit, conductors and bond wires in accordance with the plans.

The Contractor will submit shop drawings for review and approval by the Engineer on all pedestrian light equipment to be provided by the Contractor.

The Contractor will coordinate pedestrian light equipment installation efforts to avoid any damage to other elements of project construction, and will provide a complete, connected system installation ready for the Power Company to energize the pedestrian light system.

**Measurement and Payment**

Measurement will be per each complete pedestrian light installed, and payment will be at the unit price bid per each for "FURNISH AND INSTALL LED POLE MOUNTED AREA LIGHT, 12' MOUNTING"; "FURNISH AND INSTALL LED POLE MOUNTED AREA LIGHT, 15' MOUNTING"; "FURNISH AND INSTALL CONCRETE BOLLARD WITH LED LIGHT AND FOUNDATION"; "FURNISH AND INSTALL LED ACCENT LIGHT"; "FURNISH AND INSTALL CONDUCTORS AND BOND WIRES"; "FURNISH AND INSTALL CONDUIT"; "JUNCTION BOX"; "BORING FOR CONDUIT"; and "ELECTRICAL POWER SERVICE PEDESTAL CABINET" and will be compensation in full for all labor, equipment and materials necessary for the satisfactory installation of pedestrian light equipment, including furnishing and installing pedestrian light poles, luminaire arms, luminaires, photocells, and all other related equipment items in accordance with the plans, Standard Specifications and these Special Provisions.

11. **401 TRAFFIC CONTROL**, Add the following to **Subsection 401.4 TRAFFIC CONTROL MEASURES:**

## **SEQUENCE OF CONSTRUCTION**

The sequence of construction shall conform to the requirements of the Special Traffic Regulations.

The project shall follow a phasing plan approved by the Engineer. All lanes shall be maintained on a paved surface at all times during construction. This may be accomplished by using existing, new, or temporary asphalt pavement. Trenches shall be completely backfilled and either paved with temporary asphalt pavement, or covered with metal plating as necessary to comply with this requirement and the "Special Traffic Regulations".

Night work will **not** be allowed on this project.

The right to direct the sequence of construction is a function vested solely with the Engineer. Prior to commencement of the work, the Contractor shall prepare and submit to the Engineer, a written phasing plan and work schedule for the project. This plan and work schedule shall be submitted to the Engineer at the Preconstruction Conference for review.

When approved, the phasing plan and work schedule shall not be changed without the written consent of the Engineer. Orderly procedure of all work to be performed under this contract shall be the full responsibility of the Contractor. The work schedule shall include the hours per day and the days per week that the Contractor plans to work on the project site.

12. **401 TRAFFIC CONTROL**, add the following to **Subsection 401.5 GENERAL TRAFFIC REGULATION**:

### **TRAFFIC REGULATIONS**

- A. The following shall be considered arterial streets:

Indian School Road

19<sup>th</sup> Avenue

Osborn Road

Thomas Road

24<sup>th</sup> Street

McDowell Road

32<sup>nd</sup> Street

44<sup>th</sup> Street

48<sup>th</sup> Street

- B. The following shall be considered collector streets:

15<sup>th</sup> Avenue

23<sup>rd</sup> Avenue

Glenrosa Avenue

Osborn Road

20<sup>th</sup> Street

Oak Street

- C. All traffic and/or traffic control devices on this project shall be provided, maintained and/or controlled as specified in the City of Phoenix Traffic Barricade Manual, 2007 edition and addendums thereof.
- D. Permission to restrict City streets, sidewalks and alleys (street closure permits) shall be requested as specified in Chapter 3 of the City of Phoenix Traffic Barricade Manual, 2007 edition and addendums thereof.
- E. Unless otherwise provided for in the following "Special Traffic Regulations", all traffic on this project shall be regulated as specified in Chapter 4 of the City of Phoenix Traffic Barricade Manual, 2007 edition and addendums thereof.
- F. No deviation from the "Special Traffic Regulations" will be allowed or implemented unless submitted to the Engineer for review and approval at least 14 days prior to proposed work.
- G. Only City of Phoenix certified contractors can set, move or remove temporary traffic control devices (signs, barricades, etc.). This annual certification can be scheduled by calling 602-262-6235.
- H. Civil sanctions for temporary traffic control violations apply as follows:

Civil Sanction Per Day	Violation Description
\$1,500	Creating an eminent risk of death or injury to the public within the public right-of-way
\$1,000	Restricting the right-of-way without proper certification or a right-of-way temporary use permit
\$1,000	Restricting traffic during peak traffic hours as described in the <u>Traffic Barricade Manual</u> without authorization
\$1,000	Failing to correct or cure a violation, as listed in this table, within the time period stated on the warning notice
\$1,000	Restricting traffic at signalized intersections without any work occurring
\$500	Closing a sidewalk improperly or closing a sidewalk without proper certification or closing a sidewalk without a right-of-way temporary use permit
\$500	Violating the restriction limits, times and locations, of the right-of-way temporary use permit

\$500	Missing or improper use of advance warning signs
\$500	Missing or improper use of barricades and channelizing devices
\$250	Leaving advanced warning signs facing traffic after restriction has been removed – per one traffic direction
\$250	Leaving traffic control devices in the right-of-way twenty-four hours after right-of-way temporary use permit expires, unless a request for a permit extension is received by the City prior to the expiration of such permit
\$250	Use of “unacceptable” quality traffic control devices as described in the <u>Traffic Barricade Manual</u>
\$250	Rendering a bus stop inaccessible without relocating it or making other accommodations

- I. The City has the authority to remove and store temporary traffic control devices in emergency situations or as a last resort if the barricade owner will not pick them up. The City will assess removal and storage fees accordingly.

13. **401 TRAFFIC CONTROL**, Add the following to **Subsection 401.5 GENERAL TRAFFIC REGULATION**:

**SPECIAL TRAFFIC REGULATIONS**

**Arterial Streets**

Arterial streets may be reduced when construction requires during the times indicated:  
 Maintain four lanes (two each way) plus left-turn lanes at signalized intersections from 8:30 a.m. to 4:00 p.m. weekdays, 2 lanes (1 each direction) weekends or nights 7 p.m. to 6 a.m.

**Collector Streets**

Can be reduced, when construction requires, during the times indicated:  
 Two lanes (one each way) plus left-turn lanes at signalized intersections from 8:30 a.m. to 4:00 p.m. weekdays and 2 lanes (1 each direction) weekends or nights 7 p.m. to 6 a.m.

**Portable Variable Message Boards (VMB)**

If significant work (24 hour restrictions, long term restrictions, or left turn restrictions) is expected at arterial intersections, the use of VMB’s on all legs approaching the intersection shall be provided on this project at the following locations, 24 hours per day, from at least seven (7) days prior to any roadway restrictions until all roadway traffic restrictions are removed.

**Police Officer Requirements**

The Contractor shall provide one off-duty police officer, as defined in the City of Phoenix Traffic Barricade Manual, latest edition, at signalized intersections affected from 6:00 a.m. to 7:00 p.m. weekdays, and during working hours nights and weekends when traffic is restricted (as described in the City of Phoenix Traffic Barricade Manual, latest edition).

When construction activities do not restrict traffic through the intersections, police officer hours may be

reduced or suspended at the direction of the Engineer.

### **Signalized Intersection Requirements**

The Contractor shall notify the Engineer and the City Traffic Signal Shop BY EMAIL AT PHXTMC@PHOENIX.GOV at least 72 hours prior to the start of any construction in the vicinity of a signalized intersection where traffic signals may be affected.

The Contractor shall provide the Engineer and the Traffic Signal Shop a written schedule indicating days, times and specific locations where traffic signals will be interrupted or modified. **When work has been completed, the Contractor shall immediately notify the Traffic Signal Shop.**

### **Local Access Requirements**

The Contractor shall maintain local access to all side streets, access roads driveways, alleys, and parking lots at all times and shall notify residents 72 hours in advance of any restrictions which will affect their access. The Contractor shall restore the access as soon as possible. If the primary access cannot be restored in a timely manner, the Contractor shall provide an alternative which shall be pre-determined with the residents prior to imposing any restrictions. Any local street restrictions imposed shall be such that local area traffic circulation is maintained.

### **Business Access Requirements**

Access shall be maintained to adjacent businesses at all times during their hours of operation. Access may be maintained by such measures as constructing driveways in half sections, or by providing bridging over new concrete. Properties with multiple driveway access shall not have more than one driveway access restricted at any given time. While the one driveway is restricted, access to the other adjacent driveways shall be maintained and unrestricted. Each individual driveway access restriction shall be no more than fourteen (14) calendar days. Any business restrictions shall be coordinated with the affected business in writing at least fourteen (14) days prior to imposing restrictions.

### **Frontage Road Access Requirements**

Local access shall be maintained at all times on frontage roads. Frontage roads shall not be used for through traffic, equipment parking, material storage, or spoil stockpile area. Frontage road closures shall follow the same special provisions as described in "Local Access Requirements".

### **School Access Requirements**

The Contractor shall provide clean and safe school zones, crosswalks, and walkways for students attending nearby schools during all hours of school use.

This may require backfilling trenches, temporary pavement, shoring, plating, or pedestrian bridges with handrails across open trenches.

In addition to school zones and crosswalks, the Contractor shall maintain accessibility to all school bus routes during all hours of school use. The Contractor shall notify the school principal(s) and the school Transportation Director at least fourteen (14) days prior to any restrictions, and shall restore access as soon as possible.

### **Church Access Requirements**

The Contractor shall maintain a high level of access to churches during all hours of church use. The Contractor shall coordinate any access restrictions with the clergy at least fourteen (14) days prior to any restrictions, and shall restore access as soon as possible.

### **Hospital Access Requirements**

The Contractor shall maintain the Emergency entrance to any hospital affected by way of a paved lane for emergency vehicles at all times for the duration of the project. The Contractor shall coordinate any access restrictions with the hospital administrator at least fourteen (14) days prior to any restrictions, and shall restore access as soon as possible.

### **Fire Station and Police Station Access Requirements**

The Contractor shall maintain paved emergency vehicle access to and from all fire stations and police stations at all times. The Contractor shall coordinate with the Fire Station and/or Police Station Commander at least fourteen (14) calendar days prior to any restrictions, and again at least 72 hours prior to any restrictions, and shall restore full access as soon as possible.

### **City Park Access Requirements**

The Contractor shall maintain access to any Park affected during park hours. Any restrictions shall be coordinated with the appropriate Parks District Supervisor at least fourteen (14) days in advance, and full access shall be restored as soon as possible.

### **Recreational Trail Crossing**

The Contractor shall maintain any currently signed trail crossing affected by this project. Trail crossings must remain safely open at all times, and shall maintain all special trail signs required.

### **Canal Access Road Requirements**

SRP canal access and maintenance roads shall remain open at all times.

### **Coordination With Other Agency Projects**

The Contractor shall coordinate and schedule work to minimize disruption or conflicts with the following other Agency projects:

- VALLEY METRO LIGHT RAIL STATION - 50<sup>TH</sup> STREET & WASHINGTON, UTILITY RELOCATE 48<sup>TH</sup> ST & GRAND CANAL.
- WATER SERVICES DEPARTMENT 12" MAIN REPLACEMENT - WASHINGTON & 40<sup>TH</sup> STREET TO 32<sup>ND</sup> STREET
- THE ARIZONA DEPARTMENT OF TRANSPORTATION

Any work that may affect this project shall be coordinated with the appropriate Agency contact at least fourteen (14) days in advance.

### **Sanitation Pick-up**

The Contractor shall provide sanitation pick-up for affected residents by relocating trash containers, or by providing alternative measures acceptable to the Public Works Department, Sanitation Division (602) 256-

3310.

### **Special Events**

There are special events scheduled to take place during the construction of this project. The Contractor shall coordinate these events with the construction schedule. No additional compensation for delays associated with special events will be considered.

PHOENIX 10K  
ROCK AND ROLL MARATHON  
PRIDE RUN PHOENIX  
VETERANS DAY PARADE  
ELECTRIC LIGHT PARADE  
FIESTA BOWL PARADE

### **Special Sign Requirements**

The Contractor shall provide, install and maintain advance notification; public informational; and directional access signs (for businesses, churches, hospitals, schools, etc.) that may be required by the Engineer. The cost shall be included in the bid item for Traffic Control Devices.

### **Bus Stops**

The Contractor shall maintain all existing bus stop locations on this project in a safe manner, or provide alternate bus stop locations and related directional signage as required by the Engineer. Not fulfilling this requirement can lead to civil sanctions.

### **Flagging of Traffic**

No flagging of traffic will be permitted during the peak traffic hours of 6:00 a.m. to 8:30 a.m. and 4:00 p.m. to 7:00 p.m. weekdays. If construction requires, intermittent flagging will be allowed from 8:30 a.m. to 4:00 p.m. if approved by the Engineer, to facilitate access for heavy construction equipment.

### **Traffic Control Plan**

The Contractor shall submit a traffic control plan for approval, showing placement of all traffic control devices, including all conflicting signs to be covered/removed or relocated, or other features that may conflict with the placement of temporary signage. This plan shall be professionally drawn and shall be submitted to the Engineer at the Pre-Construction meeting or before. The Contractor shall allow the Engineer fourteen (14) calendar days for review and approval of an acceptable plan.

### **Temporary Traffic Control Zone and Safety**

At the Pre-Construction conference, the Contractor shall designate an employee, other than the Project Superintendent, who is knowledgeable in the principles and methods of proper traffic control and safety. This employee shall be available on the project site during all periods of construction to coordinate and maintain safe, acceptable and effective temporary barricading whenever construction affects traffic. This person shall be authorized to receive and fulfill instructions from the Engineer and shall supervise and direct traffic control. Instructions and information given by the Engineer to this person shall be considered as having been given to the Contractor.

**Failure to maintain temporary traffic control devices in accordance with the City of Phoenix Traffic Barricade Manual, 2007 edition, the approved Traffic Control Plan, and directives by the Engineer shall result in suspension of work and/or civil sanctions until deficiencies are corrected to the satisfaction of the Engineer.**

#### **Safety Fencing Requirement for Trenches and Excavations**

The Contractor shall provide safety construction fencing around all open trenches and excavations during all non-working hours.

The Contractor shall provide for the safety and welfare of the general public by adequately fencing all excavations and trenches that are permitted by the Engineer to remain open when construction is not in progress.

Fencing shall be securely anchored to approved steel posts located six (6) feet on centers, having a minimum height of six (6) feet, and shall consist of wire mesh fabric of sufficient weight and rigidity to adequately span a maximum supporting post separation of six (6) feet.

The fencing, when installed about the periphery of excavations and trenches, shall form an effective barrier against intrusion by the general public into areas of construction. Fencing shall not create sight distance restrictions or visual obstructions. At all times when construction is not in progress, the Contractor shall be responsible for maintaining the fencing in good repair, and upon notification by the Engineer, shall take immediate action to rectify any deficiency. Prior to the start of any excavating or trenching required for the execution of the proposed work, the Contractor shall submit to the Engineer for approval, detailed plans showing types of materials and methods of fabrication for the protective fencing.

There will be no separate measurement or payment for furnishing, installing, or maintaining protective fencing. The cost shall be considered incidental to the cost of the pipe and/or structures.

14. **401 TRAFFIC CONTROL**, Add the following to **Subsection 401.10 PAYMENT**:

#### **ALLOWANCE FOR UNIFORMED, OFF-DUTY LAW ENFORCEMENT OFFICER**

This project includes a lump sum "ALLOWANCE FOR UNIFORMED, OFF-DUTY LAW ENFORCEMENT OFFICER. The amount of this allowance is determined by the Engineer, and is not subject to individual bid pricing. All bidders shall incorporate the amount pre-entered in the bid proposal and shall reflect the same in the total amount bid for this project.

Payment for uniformed, off-duty law enforcement officers shall be made from this allowance based on approved invoiced cost plus taxes, and a maximum 10 percent markup for overhead and profit.

#### **TRAFFIC CONTROL**

Payment for traffic control will be on a lump sum basis for Traffic Control Devices.

15. Add the following new **Section 402 ADDITIONAL CONSTRUCTION REQUIREMENTS** as follows:

#### **402.1 FIELD DOCUMENTATION**

The Contractor shall document existing conditions within the project area prior to construction. Documentation shall be video tape. The video tape shall not be made from a moving vehicle. One copy of the video tape shall be furnished to the City prior to the start of construction. The cost of the video taping shall be considered

incidental to the cost of the project. No separate measurement or payment shall be made for this item.

#### **402.2 CONTRACTOR COMMUNICATION INFORMATION**

The Contractor shall provide a pager and mobile phone to his on-site Project Superintendent to ensure that the Engineer can reach the Contractor's Superintendent. This pager and mobile phone must be accessible by local land-line telephone service. The Superintendent's pager and mobile phone shall remain in service for the duration of the project, and these phone numbers shall be included on the Contractor's list of emergency phone numbers submitted at the pre-construction conference.

#### **402.3 TRENCH PLATING**

In paved areas where vehicles will be driving over trench plating, the plates shall be set to match flush with existing pavement on all sides. Setting plates on top of the pavement surface and installing temporary asphalt ramps around them will not be allowed.

#### **402.4 TRENCHING IN RIGHT OF WAY**

The Contractor shall not be allowed to stockpile trench material or store any equipment other than the mainline track hoe within the right-of-way. The Contractor shall secure temporary 6' chain link fence around the track hoe during non-working hours.

#### **402.9 PUBLIC INFORMATION SERVICES**

The City of Phoenix shall provide a public information specialist for the community relations program on this project.

The Contractor shall cooperate with the City's public information specialist firm in the preparation of newsletters, advanced notification for service disruptions, answering questions from the public, etc. He shall also provide schedule update information to the specialist.

The Contractor shall provide representatives as needed for all meetings with the public through out the contract period.

The City will pay public information service costs associated with approved contract time extensions; however, if the Engineer determines that delays were caused by the Contractor, the additional costs for public information services shall be deducted from the Contractor's final pay request.

#### **402.11 POLLUTION AWARENESS MARKERS**

Pollution Awareness Markers (PAM's) shall be installed by the Contractor for all new catch basins and for each existing catch basin within the project limits that does not have a PAM. The PAM's will be supplied to the Contractor by the City. PAM's shall be installed at the location identified by the Engineer. For existing catch basins, flat PAM's will be supplied, and the contractor shall clean the surface with a wire brush, apply appropriate adhesive to the back of the marker, and apply the marker to the clean surface. For new catch basins, PAM's with feet will be supplied, and the Contractor shall install them as the catch basin is cast.

16. Add the following new **Section 403 SPECIAL TRAFFIC SIGNALS AND STREET LIGHTING INFORMATION** as follows:

#### **403.1 TYPE "SM" AND "SR" SIGNAL POLES AND MAST ARMS**

The Contractor is hereby notified that there may be a long lead time required for manufacturing and shipping the Type "SM" and "SR" signal pole foundation cage, poles and signal and luminaire mast arms. The Contractor shall, therefore, order these items as early as possible. In the event there is a delay in delivery, the Contractor shall install a temporary signal. The signal shall be a box span with two (2) 12-inch signal heads per direction with pedestrian heads in all four (4) directions. The Contractor shall coordinate the location and size of the wood poles, heads, etc., with the Street Transportation Department, Traffic Signal Systems Supervisor at 262-4690.

There will be no separate measurement or payment for temporary signals. The cost being considered incidental to the cost of contract items.

#### **403.2 MULTI-USE SIGNAL POLE**

Arizona Public Service Company will install multi-use poles as shown on the plans for traffic signals. The Contractor will pay APS for this work upon presentation of their invoice. No Contractor mark-ups will be allowed on this item.

17. **430 LANDSCAPING AND PLANTING**, Add the following to **Subsection 430.3 PLANT ESTABLISHMENT GUARANTEE AND MAINTENANCE** and **Subsection 430.15 MEASUREMENT AND PAYMENT**:

#### **430.3 PLANT ESTABLISHMENT GUARANTEE AND MAINTENANCE**

Prior to final acceptance of the landscaping, the Contractor shall provide the City of Phoenix Street Maintenance Division a record of all water and electrical account numbers and billing information. Final acceptance will not be granted until this information is given to the Aaron Romero of Street Maintenance Division at 200 West Washington Street in Phoenix, (602) 495-0317.

#### **430.15 MEASUREMENT AND PAYMENT**

Measurement and payment for plant establishment guarantee and maintenance shall be on a monthly basis for acceptable landscape maintenance under the bid item "PLANT ESTABLISHMENT GUARANTEE AND MAINTENANCE". No payment shall be made for unacceptable maintenance. When acceptable corrections have been made for the monthly inspection, the monthly payment will be released. Upon final acceptance, the final monthly payment will be made.

18. Add the following new **Section 433 NATIVE PLANT HYDROSEEDING** as follows:

#### **SUMMARY**

Native seeding shall be done in areas indicated on landscape plans. Seeding consists of preparing the seed bed, furnishing and applying chemical fertilizer, seed, and applying and affixing mulch and tackifier.

The areas to be seeded include areas identified on the Drawings. The Engineer may designate for seeding additional areas that may include areas affected by the landscape construction or other areas disturbed within the project.

Related Work shall include but is not necessarily limited to:

General Requirements of the Contract  
Work by Other Contractors

Earthwork and Grading per Civil drawings  
Landscaping-Refer to landscape plans  
Underground Irrigation-Refer to Irrigation plans

These specifications provide direction for two methods of native seeding. The contractor shall select one of these methods, and provide a corresponding submittal for review and approval by the owner:

SEEDING Method 1: Hydraulic Mulching Method

SEEDING Method 2: Hydro-seeding and Straw Mulch Method

The Contractor shall review and determine the most appropriate method for this site based on soil types and conditions, slopes, lab test results and recommendations made by personnel who are knowledgeable regarding local conditions, actual site conditions, having experience (10 years minimum), and familiarity with both methods.

Correlate with specified maintenance periods to provide maintenance from installation through substantial completion.

Once accepted, revise dates only as approved in writing, after documentation of reasons for delays.

At least 45 days prior to initiating work, submit proposed planting schedule, indicating dates for seeding. Submittal shall include description of criteria for making the selection, the proposed method, materials, equipment, and information to completely describe the process, equipment, and all materials. The Contractor shall coordinate work with the work of other trades and installation of the irrigation system. Provide a color coded schedule of the site indicating proposed dates and sequence of areas to be seeded. Seeding shall not occur until the irrigation system has been installed, tested, and approved, including power to controller and water meters. The City of Phoenix shall review and approve the selected method.

## **QUALITY ASSURANCE**

Native Seeding work is to be performed by single firm specializing in revegetation installation and maintenance.

Regulatory Requirements: Perform work in accordance with all applicable laws, codes, and regulations required by authorities having jurisdiction over such work and provide for all inspections and permits required by Federal, State and local authorities in furnishing, transporting and installing materials as shown or for completing the work identified herein.

Source Quality Control:

Ship landscape material with certificates of inspection required by governing authorities.

Comply with regulations applicable to landscape materials.

Substitution requests must be submitted for review for approval prior to purchase of materials.

If specified seeding material is not obtainable, submit proof of non-availability from five sources to Engineer, together with proposal for use of equivalent material.

Submit data and information for each of the following in accordance with Conditions of Contract:

- Plant and material certifications: Certificates of inspection as required by governmental authorities. Source, contact personnel, address, and schedule for tagging plant materials at the source of purchase.
- Manufacturer or vendor's certified analysis for all soil amendments and native seed mixes.
- A certificate of compliance for the proposed tackifier.
- Seed vendor's certified statement for each seed mixture required, stating botanical and common name, net weight, percentages by weight, and percentages of purity, germination, and weed seed for each seed species.
- Fertilizers and their components
- Amendments
- Additional amendments as determined necessary by the soils test results and recommendation
- Wood Cellulose
- Tackifiers
- Straw Mulch

## **SITE EVALUATION AND SOIL TESTING**

Soils to receive native seeding shall be tested by approved independent laboratories for 1) biological activity (microorganisms), and 2) chemical and physical characteristics. Soils testing shall occur after excavation operations are complete. Soils test results shall be provided to the City of Phoenix for review and discussion regarding recommended practices.

The site shall be evaluated prior to seeding operations to determine biotic potential and limiting growth factors.

Testing will be used to determine quantities of organic and chemical amendments needed for optimum growth. This will supersede the standard fertilizer section specified herein. For sites deemed low in biotic potential such as sterile cuts and fills, an organic amendment requirement shall be determined as an optional supplement (see optional materials).

## **SOIL PREPARATION**

### **Description**

Create a natural appearing, evenly roughened, fertile and friable seedbed to capture and retain water, establish micro habitat for seed germination and seedling establishment. Slopes shall be tilled on the contour leaving furrows and berms where practicable to reduce erosion and improve water capture and retention.

### **Soil Amendments**

Apply pre-plant soil amendments prior to tillage operations (refer to site evaluation and soil test).

### **Tillage**

Soil shall be contour tilled 6 inches minimum depth by ripping, disking, or other approved methods to break up compacted soil and leave a roughened, friable surface.

Using sufficiently sized machinery rip soil along natural site contours to a minimum depth of 6 inches. Ripper shanks shall be placed from 10- 24 inches apart to give maximum effective contour furrows and berms. As directed break up large clods and fill soil voids if needed. Do not pulverize the soil. Leave contour furrows, do not smooth finish. Remove obtrusive and hazardous rocks and debris as needed.

**Imprinting**

As an alternative to contour ripping, the contractor may elect to use an imprint roller to prepare the soil. Hard or compact soils shall be tilled to facilitate its use. A waffle impression consisting of V-shaped troughs shall remain as the finished surface. The imprint shall be an alternating offset pattern of troughs configured to reduce continuous run of water. The single imprint mark consisting of a trough and the checks between imprints shall be from 1 to 4 square feet in area. The imprint roller shall be capable of making a 4 inch (minimum) depth trough.

**MATERIALS**

Materials shall reflect evidence of proper storage and handling. Any materials with indications of improper storage and handling, (water, heat, chemical damage and the like), will be removed from the site and replaced by the contractor. All materials shall be fresh and delivered in unopened containers. All materials shall be labeled or supplied with test information concerning the analysis of the various components. All work shall be performed in a professional manner. Workmanship shall be performed to the best industry standards. Care shall be taken to avoid drift and displacement of material or any damage to structures and landscape. Protective covering shall be used where material would be objectionable. Clean up shall be done daily. Seeded areas shall be protected from traffic and construction activities.

**Wood Cellulose Fiber (Hydromulch)**

Cellulose fiber mulch shall consist of at least 70% specially prepared virgin cellulose fiber, which has been thermo-mechanically processed for specific use as hydromulch. It shall contain no growth inhibiting factors. It shall have the following properties:

- Virgin Wood Cellulose Fiber..... 70% (minimum)
- Recycled Cellulose Fiber..... 30% (maximum)
- Ash Content.....7% + / - 3% (maximum)
- pH.....4.5 - 7.5
- Water Holding Capacity.....10:1
- Ratio; water: fiber

**Tacking Agent**

The tackifier shall be a naturally occurring organic compound and be non-toxic. It shall be a product typically used for binding soil and mulch in erosion control and seeding operations. It shall consist of mucilage by dry weight as active ingredient obtained from Indian Wheat (psyllium) *Plantago spp.* The tackifier shall be labeled including swell volume, which will be used as the indicator for mucilage content.

Swell volume shall be tested by an independent laboratory using the USP method. A swell volume of 30 milliliters/gram shall be considered as the standard swell volume. Tackifier rates shall be adjusted for variation in swell volume. Tested material with lesser swell volume will have tackifier rates increased by the same percentage of decrease in swell volume from the standard 30 ml/gm. Tested material with greater swell volume can have rates decreased by the same percentage of increase in swell volume from the standard 30 ml/gm. The tackifier shall not be cut with starch or any other compound that would appreciably alter the swell

volume or properties of the plantago mucilage.

Use of other tacking agents will be considered provided they meet or exceed the performance standards in the monitoring and maintenance section.

### **Seed**

Seed shall be the specified site-specific seed mix applied at pure live seed (PLS) rates.

All seed used shall be clearly tagged or labeled showing the type of seed, purity, germination, test date, origin, and weed content. It shall conform to State and Federal seed laws. Seed shall be tested within 9 months prior to application not including the month tested. Tetrazolium (TZ) staining shall be acceptable for germination and hard seed. Cut or fill testing will not be allowed. Certificates of Analysis from a legitimate seed testing laboratory shall be provided in addition to seed tags. Seed shall contain no more than 0.5% common weed seed and no noxious weed. For purposes of this specification, weed shall be designated as all other seed including other crop not specified for seeding purposes. Other crop seed specifically considered (but not limited to) as weed, shall be bermuda grass, Cynadon dactylon, the lovegrasses, Eragrostis spp., of African origin, and buffleggrass, Pennisetum ciliare.

### **Fertilizer**

A blended fertilizer (24-18-2) shall be added at 200 lbs per acre during soil preparation or in the hydroseed slurry.

This rate of fertilizer shall be added as a standard nutrient supplement. It shall contain a minimum of 40 % of equal parts slow release nitrogen in the form of methylene urea and sulfur coated urea (SCU). Soil tests shall be used to determine a variance in these quantities and type (see site evaluation and soil tests).

### **Straw Mulch**

Straw mulch shall be from wheat or barley crops of the latest seasons harvest. It shall be fresh, clean, substantially free of weed seed, dirt, mold or other objectionable contaminants. It shall be in compliance, certified and identified through an approved agency such as the North American Weed Management Association (NAWMA) or the Arizona Crop Improvement Association (ACIA) as noxious weed free.

## **OPTIONAL MATERIALS**

Additional materials shall be added based upon site evaluation and soil testing. The following types and quantities of materials are added as standard supplements. Professional site evaluation and soil testing shall determine the specific types and quantities to be used.

### **Organic Amendment**

Based upon site evaluation and soil testing organic soil amendments may need to be added. These materials are added to improve soil fertility and biotic potential on sites severely deficient in these factors such as deep cuts and sterile fills. Use well composted natural organic materials high in humus, soil microbes, and plant nutrients. Mature, stable, finished compost is given as the standard. Other materials may be considered.

Natural organic compost at 15 cubic yards per acre shall be dry applied as practicable using mechanical broadcast methods during soil preparation and tilled into the soil. Where mechanical broadcast application is not practicable, such as steep slopes and detail areas, compost shall be evenly applied at a rate of no less than 1,500 lbs/acre as a hydraulic slurry.

Compost shall be free of weeds and weed seeds and contain no plant growth inhibiting factors. This material shall be tested and meet the following minimum requirements:

Maturity Index (full strength extract)	50% minimum on Maturity Index at a 10:1 ratio
Stability	less than 100 mg O/KG compost dry solids-hr
Conductivity EC mmhos/cm	less than 8
Exchangeable Sodium Percentage	less than 15
Carbon/Nitrogen Ratio	less than 20:1
Total Nitrogen (not added)	1% minimum
PH range of extract	5.5 - 8.5
Organic matter percent	25% minimum
Humic acid	5% minimum
Cation Exchange Capacity	50 meq/100g(minimum)

### **Slow Release Nitrogen**

Slow release nitrogen fertilizer shall be applied when required at 25 to 50 lbs per acre total N as water insoluble nitrogen such as methylene urea (38-0-0) or equivalent.

This material shall be added to the hydromulch slurry to extend nitrogen availability on sites where long-term nitrogen availability is a limiting factor.

### **Phosphoric Acid**

Phosphoric acid (6H<sub>3</sub>PO<sub>4</sub>) shall be applied when required at 5 – 15 gallons per acre.

Soils significantly deficient in available phosphorus, as determined from the soils test, will require the addition of phosphoric acid.

### **Activated Charcoal**

Activated charcoal shall be added when required at 50 - 100 lbs /acre to the seeding hydraulic slurry.

*Activated charcoal is used to boost seed germination during cold weather and as a seed protector in contaminated soils*

## **EQUIPMENT**

### **Hydroseeder/Hydromulcher**

Equipment used for hydroseeding and mulching shall be manufactured for the purpose of hydroseeding and hydromulching. It shall be equipped with a tank capable of continuous agitation, suspension, and blending of the slurry components. It shall be equipped with a pumping system capable of maintaining a continuous spray. It shall be equipped with nozzles and hoses to obtain a uniform application and reach all designated areas. The tank and accessories shall be cleaned and be free of contaminants prior to seeding and mulching operations.

### **Straw Mulcher**

Straw mulching equipment shall be specifically designed for mechanically or pneumatically placing straw mulch. Machinery shall be adequately equipped and adjustable for the even application of straw mulch.

**Option 1 SEEDING (Class 1): Hydraulic Mulching Method**

This method is used for direct seeding for plant establishment. It is a one step method following soil preparation using wood fiber as the primary surface mulch treatment. This method is designed for many applications, both rural and urban, irrigated and non irrigated situations.

**Description Hydroseeding**

The hydroseeding method shall be used to apply an aqueous slurry of seed, mulch, tackifier, fertilizer, soil conditioners, and other specified materials evenly on the prepared site. The slurry shall be applied to the freshly prepared soil blending materials with the surface soil creating a stable matrix resistant to erosion and conducive to seed germination. Hydroseeding shall commence as soon as possible after the soil has been prepared in order to place seed and other materials into a loose and friable surface.

Prepare soil as specified

Hydroseed an even application of uniform non-toxic aqueous slurry consisting of the following materials:

Specified Seed Mix

Wood cellulose fiber mulch @ 1,500 lbs per acre for slopes up to 3:1 (run: rise), at 2,000 lbs per acre for slopes exceeding 3:1 (run: rise), and up to 3,000 lbs per acre for extremely erosive slopes.

Tackifier shall be added to the hydraulic slurry at 50 lbs per acre for slopes less than 3:1 (run: rise), at 100 lbs per acre for slopes exceeding 3:1 (run: rise), and at 150 lbs /acre for extremely erosive slopes.

Soil amendments specified (fertilizer, compost, etc.) if not applied during soil preparation.

**Option 2 SEEDING (Class 2): Hydroseeding and Straw Mulching Method**

This method is used for direct seeding for plant establishment following soil preparation, and is implemented by hydro-seeding for planting seed followed with an application of affixed straw mulch as the primary surface cover.

**Description Seeding**

**Hydroseeding**

Prepare soil as specified

Hydroseed an evenly applied slurry of the following materials:

Specified seed mix (es)

Wood cellulose fiber @ 200 lbs/acre

Tacking agent at 50 lbs/acre

Soil amendments specified (fertilizer, compost, etc.) if not applied during soil preparation

## **Straw Mulching**

Within 48 hours after seeding, or prior to weathering and following seeding operations, straw mulch shall be evenly applied and affixed over all seeded areas.

Dry, pneumatically or mechanically placed straw, shall be evenly applied at a rate of 2.0 - 2.5 tons/acre. Care shall be taken to prevent drift or displacement of straw. All dry applied straw shall be affixed prior to any appreciable loss due to wind, traffic, or other factors. Affixing shall be accomplished using an evenly applied hydraulic slurry consisting of 500 lbs/acre wood cellulose fiber, 150 lbs/acre tacking agent, and sufficient water for an adequate application.

Hydraulically applied straw can be used as an option to dry applied straw. It shall be applied at 1.0 – 1.5 tons/acre with up to 20% by weight added wood cellulose fiber. Tacking agent shall be added to the straw slurry at a rate of 100 lbs/acre for slopes up to 2.5:1 (run:rise), and 150 lbs/acre for slopes exceeding 2.5:1.

## **MAINTENANCE AND MONITORING OF NATIVE SEEDING**

**The native seed mix areas shall be maintained and monitored for a minimum of SIX MONTHS.**

From the time the seeding is installed until completion of the Establishment and Maintenance Period, the Contractor shall take all reasonable measure to protect the seeding installation and to ensure that 100 percent of the seed/mulch remains in place. The Contractor shall weed, water, reseed, fertilize, repair erosion, remove trash and spray or dust appropriate insecticides, miticides and fungicides as required to provide favorable conditions for the germination of seeds and to protect and maintain any germinated plants in a healthy growing condition.

The Engineer shall approve the extent and methods for weeding proposed by the Contractor.

Chemicals shall be applied by licensed applicators as required by authorities having jurisdiction over such activities.

Excessive quantities of weeds will be removed and/or treated during the establishment period to reduce competition and allow seeded species to become established.

The Contractor shall monitor the site and treat for a period of six months after application.

The Engineer shall approve the chemicals treatments for weed control prior to use on the Project.

If weed competition is such that establishment of target seeded species does not occur, the Contractor shall remove or treat the weeds, retil if needed, reseed and re-mulch the affected areas.

In no case shall weeds be allowed to grow at excessively competitive densities and in all cases removal or treatment of weeds shall be done prior to their seed formation.

Provide a schedule of maintenance activities to the Engineer prior to starting work.

Provide the Engineer monthly reports summarizing maintenance activities completed by the Contractor, including person hours expended to complete the tasks.

## **MEASUREMENT AND PAYMENT**

Measurement and payment shall be made at the unit price bid per acre for the item 'Tilling, soil prep and Native Seed Mix/Hydroseed Type B Non Woody Plant Material'.

19. Add the following new **Section 434 ADDITIONAL LANDSCAPING REQUIREMENTS** as follows:

#### **434.1 TREE STAKING**

Prior to staking trees, the Contractor shall have a representative sample of tree staking inspected and approved by the Engineer and Landscape Architect for conformance with project plans and specifications.

There will be no separate measurement or payment for staking. The cost shall be considered incidental to the cost of the plant materials.

#### **434.2 TRIMMING NEWLY PLANTED TREES**

The Contractor shall trim all newly planted trees as necessary prior to staking so that low branches are removed where standard trees are required. Trees shall be trimmed so that the tree is balanced and a central leader is maintained. When necessary, excess branching shall be thinned so that a strong branching structure will develop. The Contractor shall trim with a hand-held pruner. Trimming shall be done to the satisfaction of the Engineer and the Landscape Architect.

There will be no separate measurement or payment for trimming new trees. The cost of the work shall be considered incidental to the cost of furnishing and/or installing new trees.

#### **434.3 TRIMMING EXISTING TREES AND/OR SHRUBS IN PLACE**

Where there are existing trees to remain in place, the Contractor is to perform any trimming operation required to maintain pedestrian clearance to a height of 7' and to maintain sight visibility. Trimming which involves removal of branches over 3" in diameter or removal of branches which will alter the structure of the trees shall be done by a person trained and Certified in the Practice of Arboriculture. The arborist shall present certification papers to the Engineer and Landscape Architect for approval upon request. If the tree(s) become damaged or disfigured as a result of the trimming, the Engineer and Landscape Architect may require that the tree(s) be removed and replaced in size and kind by the Contractor. Removal and replacement shall be done at the Contractor's expense.

Trimming existing trees and shrubs in place includes trimming of branches or foliage which overhang existing walls or fences where the branches create a problem for pedestrian clearance or for visibility. Trimming of existing trees shall be done according to plans as noted and as directed by the Engineer and Landscape Architect.

There will be no separate measurement or payment for trimming existing trees in place. The cost of the work shall be considered incidental to the cost of the project.

#### **434.4 PRUNING ROOTS OF EXISTING TREES**

If construction impacts the roots, trunk or branches of existing trees that are designated to remain in place, the Contractor shall take all necessary precautions to ensure the survival and protection of the tree. The Contractor shall hire a Certified Arborist to investigate the areas surrounding existing trees to be saved in place, and locate existing roots. Existing roots shall be excavated by hand, and hand-pruned as necessary to where the root is healthy. The Arborist shall also make necessary recommendations for care of the tree(s) with respect to root feeding, fertilizing, or any other items required to ensure survival.

The Arborist shall present certification papers for approval by the Engineer and Landscape Architect upon request.

There will be no separate measurement or payment for root pruning. The cost shall be considered incidental to the cost of the project.

#### **434.5 PROVIDE PROTECTION FOR EXISTING TREES**

The Contractor shall be responsible for protecting existing trees to remain in place as tagged in the field and/or as noted on the plans. The Contractor shall provide fencing around all trees and plants which are to remain in place that could be damaged by construction activity or equipment. A minimum area shall be established around each plant based on its trunk caliper size. The minimum area shall be one (1) foot of radius for each inch of caliper. For example, if a tree has a 6" caliper, there shall be a minimum 6' radius area around the tree that shall be considered a protected zone, and a fence shall be placed at that location. The fencing shall provide protection to the trunks and limbs from damage that could be caused by construction activity or equipment.

Any trimming that is necessary to prevent construction damage to existing trees shall be pre-approved by the Landscape Architect. If the roots of existing trees could be affected in any way by construction they shall be hand excavated and trimmed as described in the Special Provision, "PRUNING ROOTS OF EXISTING TREES". Root pruning shall also be pre-approved by the Landscape Architect.

The Contractor shall be responsible for all costs associated with protection of existing trees in place. If any damage occurs to trees or other plants to remain that, in the opinion of the Engineer and Landscape Architect, destroys, aesthetically disfigures, or threatens the plant's future survival, the Contractor shall be responsible for replacing the tree in kind. Replacement trees shall be the same size as the damaged tree. Prior to selection of any replacement tree, the Contractor shall obtain approval of the size, type and purchase source from the Engineer and Landscape Architect.

There will be no separate measurement or payment for providing protection for existing trees and plants in place. The cost shall be considered incidental to the cost of the project.

#### **434.7 TRIMMING EXISTING PALM TREES**

Existing palm trees in the right-of-way shall be trimmed so that all dead fronds are removed completely. Washingtonia filifera and robusta shall have trunk bark removed so a smooth trunk remains. Phoenix dactylifera shall be trimmed with a 'diamond cut' on the entire trunk and all dead fronds removed.

Measurement and payment for trimming existing palm trees shall be per each under the bid item, "TRIM EXISTING PALM TREES", and shall be full compensation for all tools, labor and equipment necessary to complete the work as described.

20. Add the following new **Section 470 GENERAL REQUIREMENTS FOR TRAFFIC SIGNAL AND INTERSECTION LIGHTING SYSTEMS** as follows:

##### **470.1 DESCRIPTION:**

It is the purpose of this section to provide general information necessary for completion of the installation of traffic signals, High Intensity Activated Crosswalk (HAWK) Pedestrian Beacon systems and intersection lighting in accordance with the details shown on the Approved Traffic Signal Plan, requirements of these specifications, and City of Phoenix Specifications for Public Works Construction, latest version; which is a

combination of the Phoenix Supplement to the MAG Specifications in concert with the MAG Specifications.. All electrical systems and appurtenances shall be complete, functional and in operating condition at the time of acceptance.

**470.2 DEFINITIONS:**

The words defined in the following section shall for the purpose of these specifications have the meanings ascribed to them pertaining to signals and lighting.

**470.2.1 Actuation:** The operation of any type of controller initiated by a detector.

**470.2.2 Back Plate:** A thin metal strip extending outward parallel to the signal face on all sides of a signal housing to provide suitable background for the signal indications.

**470.2.3 Controller:** That part of the controller assembly, which performs the basic timing and logic functions for the operation of the traffic signal.

**470.2.4 Controller Assembly:** The complete assembly for controlling the operation of a traffic signal, consisting of a controller unit, and all auxiliary and external equipment housed in a weatherproof cabinet.

**470.2.5 Coordinated Traffic Signal System:** A group of signals timed together to provide a specific relationship among signal phases.

**470.2.6 Cycle:** A complete sequence of signal indications.

**470.2.7 Detector:** A device for indicating the passage or presence of vehicles or pedestrians.

**470.2.7.1 Inductive Loop Detector:** A detector capable of sensing the passage or presence of a vehicle (or bicycle for loop placed in an exclusive bike lane) by a change in the inductance characteristics of the wire loop.

**470.2.7.2 Pedestrian Detector (Pedestrian Push Button):** A detector for pedestrians, usually of the push button type.

**470.2.7.3 Accessible Pedestrian Signal Detector (APS Push Button):** A pedestrian detector that has added capabilities to meet the requirements of the MUTCD Section 4E.

**470.2.7.4 Video Detector:** Video Camera capable of detecting the presence or passage of vehicles or pedestrians.

**470.2.7.5 Other Detector:** A combination of a sensor and system processor capable of detecting the presence or passage of vehicles, bicycles, or pedestrians. Examples of such detection systems include, but are not limited, to a wireless embedded detector in pavement, infrared camera images, radar detection, or other detection devices used in concert with system processors.

**470.2.8 Flasher:** A device used to open and close signal circuits at a repetitive rate.

**470.2.9 Flashing Feature:** This feature, when operated, discontinues normal signal operation and causes a predetermined combination of flashing signal lights.

**470.2.10 Interval:** The part or parts of the signal cycle during which signal indications do not change.

**470.2.11 Luminaire:** The assembly, which houses the light source and controls the light emitted from the light source. Luminaires consist of a housing, lamp socket, reflector, lamp, photo cell, and glass globe or refractor when specified.

**470.2.12 Manual Operation:** The operation of a signal controller unit by means of a hand-operated switch.

**470.2.13 Mounting Assembly:** The framework and hardware required to mount the signal face(s) and pedestrian signal(s) to the pole.

**470.2.14 Pedestrian Signal:** A traffic control signal for the exclusive purpose of directing pedestrian traffic at signalized locations.

**470.2.15 Pre-timed Controller Assembly:** A controller assembly for operating traffic signals in accordance with a predetermined fixed-time cycle.

**470.2.16 Red Clearance Interval:** A clearance interval, which follows the yellow, change interval displaying a red indication to both the terminating phase and all conflicting phases prior to display of green for the next right-of-way phase.

**470.2.17 Signal Face:** An assembly controlling traffic in a single direction and consisting of one or more signal sections. Circular and arrow indications may be included in a signal assembly. The signal face assembly shall include back plate and visors.

**470.2.18 Signal Indication:** The illumination of a signal section or other device, or of a combination of sections or other devices at the same time.

**470.2.19 Signal Section:** A complete unit for providing a signal indication, consisting of a housing, lens, reflector, lamp receptacle and lamp, or LED unit.

**470.2.20 Traffic Phase:** A part of the time cycle allotted to any traffic movement or combination of movements receiving the right-of-way during one or more intervals.

**470.2.21 Traffic-Actuated Controller Assembly:** A controller assembly for operating traffic signals in accordance with the varying demands of traffic as registered with the controller unit by detectors.

**470.2.22 Vehicle:** Any motor vehicle normally licensed for highway use.

**470.2.23 Yellow Change Interval:** The first interval following the green right-of-way interval in which the signal indication for the phase is yellow.

#### **470.3 REGULATIONS AND CODES:**

All electrical equipment shall conform to the current standards of the National Electrical Manufacturers Association (NEMA), National Electric Safety Code (NESC), Underwriters' Laboratory Inc. (UL), when applicable. All material and workmanship shall conform to the requirements of the National Electric Code (NEC), Illumination Engineers Society (IES), Standards of the American Society for Testing and Materials (ASTM), American Association of State Highway and Transportation Officials (AASHTO), requirements of the Approved Traffic Signal Plan, these specifications, the special provisions, and to any other codes, standards, or ordinances which may apply. Whenever references are made to any of the standards mentioned, the reference shall be interpreted to mean the code, ordinance, or standard that is in effect at the time of the bid advertisement.

#### **470.4 SOURCE OF SUPPLY:**

The Contractor shall furnish all traffic signal material and equipment required to complete the work except as noted on the Foundation Sheet of the Approved Traffic Signal Plan.

**470.4.1 Quality Requirements:** Only materials and equipment conforming to the requirements of these specifications shall be incorporated into the work. Material and equipment shall be new except as may be provided in the special provisions.

City of Phoenix reserves the right to reject proposed traffic signal material or equipment if, in the judgment of the Engineer or designee any or all the following may apply:

- 1) The equipment does not meet the requirements of the specifications.
- 2) The material or equipment's past field performance has been unsatisfactory.

In addition, City of Phoenix reserves the right to pre-approve traffic signal material and equipment by brand name model or part number which in the judgment of the Engineer or designee meets the intended purpose of these specifications.

Deviations from the pre-approved materials list, if any, will be listed in the project special provisions or construction plans.

**470.4.2 Approval of Material and Equipment:** All traffic signal materials and equipment shall be approved by the Engineer or designee prior to incorporation in the work. Any work in which materials or equipment not previously approved are used shall be performed at the Contractor's risk and may be considered as unauthorized and unacceptable and not subject to the payment provisions of the contract. Such materials or equipment may be subject to removal at the discretion of the Engineer or designee.

The Contractor shall obtain the Engineer's or designee's approval before ordering or installing any material or equipment. The Contractor shall submit three (3) copies of each proposed material and/or equipment list, including shop drawings. Each set shall include a three ring binder with section tabs separating the documentation for each major item being submitted. Submittal shall be to the City prior to or at the pre-construction conference. Allow two (2) weeks for the City to review the submitted documentation for each submittal. To be acceptable, the list shall be complete and comprehensive containing all items to be supplied on the project by the Contractor, including pre-approved items. COP reserves the right to reject any incomplete or unclear material submittal. All items on the list shall be identified by manufacturer's part number, model, accessories, specification, or other pertinent catalogue information. The materials from any catalog cuts shall be clearly indicated by the contractor. If standard manufacturer documentation does not specifically address all the product requirements that are required, then the Contractor shall obtain a letter from the manufacturer certifying compliance with each referenced requirement that is not indicated on the standard documentation. One (1) copy will be returned to the Contractor for further action.

All equipment or material specified or shown on approved signal plans, or other drawings, by brand name, part number, or model number is intended to be descriptive of the type and quality of material or equipment desired. Another equal brand name, part number, or model number may be substituted so long as it is in accordance with these specifications and is equal in form, fit, function, performance, reliability, and is approved by the Engineer.

The contractor shall provide complete wiring diagrams for controller assemblies and auxiliary controller cabinets at the time of delivery for testing. Four (4) sets of prints shall be provided with each controller assembly. The wiring diagram shall illustrate all circuits and components in detail. All components shall be

identified by name or number so as to be clearly noted in the drawings.

Final approval, in writing by the COP Traffic Signal Engineer or designee, on all items within the submitted documentation is required to be obtained by the Contractor.

It is the Contractor's responsibility to ensure adequate lead time in ordering signal equipment to prevent project delay. The Contractor shall notify the Engineer or designee in the event signal equipment is not received in a timely manner.

**470.4.3 Warranties and Guaranties:** In addition to the requirements of Section 108.8, the following is required by the City of Phoenix for traffic signal related items. The warranty period will begin the day the Work of this Section is accepted by the City of Phoenix. Submit all manufacturer warranties to the City of Phoenix prior to installation. Expiration of the contractor's warranty under this section does not relieve the manufacturer should the manufacturer warranties exceed that of the contractor. The warranty period for the following items are extended beyond the Section 108.8 one year requirement as noted herein.

470.4.3.1 LED Indications **Warrant all LED indication modules furnished by the Contractor for five years following commencement of the warranty period against manufacturing and installation defects.**

470.4.3.2 Pedestrian Signal Heads **Warrant the entire pedestrian signal head assemblies, including the housing, doorframe, and visor for two years from the date of acceptance by the COP against defects in workmanship and/or Material.**

470.4.3.3 Traffic Signal Heads **Warrant the entire traffic signal head assembly, including the housing, doorframe, and visor for two years from the date of acceptance by the COP against defects in workmanship and/or Material.**

470.4.3.4 Detectors **Warrant all detectors, including loops, video detection cameras, pedestrian buttons and APS Pushbuttons for two years from the date of acceptance by the COP against defects in workmanship and/or Material.**

**470.5 CITY OF PHOENIX FURNISHED MATERIAL AND EQUIPMENT:**

Traffic signal material and equipment furnished by City of Phoenix or tested by City of Phoenix that is to be installed by the contractor will be made available at the following address:

City of Phoenix Traffic Signal Shop  
2141 E. Jefferson St.  
Phoenix, Arizona 85034

The Contractor shall contact the City of Phoenix Traffic Signal Supervisor (602) 262-6733 five working days prior to desired pick-up date to confirm the item list, availability, date and time. Warehouse hours for pick-up and delivery are 8:00 am – 2:00 pm Monday through Friday.

The cost of handling and placing all material and equipment, including pick-up by the Contractor is included in the contract price of the associated pay item. The Contractor using the Contractor's equipment shall load the furnished materials (poles, mast arms, etc.) onto the Contractor's vehicle for transportation to the project site. COP personnel shall not load the materials. The Contractor shall be responsible for any damage that occurs during the loading process.

The Contractor will be held responsible for all material and equipment received. The Traffic Signal Supervisor

or designee will issue a receipt for the materials provided. All materials will be issued in serviceable condition; the Contractor will note any exceptions on the receipt. The receipt will be placed in the project file and a copy given to the Contractor. The cost to make good any shortages or deficiencies, from any cause whatsoever and for any damage which may occur after receipt will be deducted from any monies due or becoming due to the Contractor.

#### **470.6 INSTALLATION OF TRAFFIC SIGNALS AND RELATED ITEMS:**

**470.6.1 General:** The Contractor shall furnish labor and supervision with experience in the construction of the traffic signals and all materials, equipment, tools, transportation, and supplies required to complete the work in an acceptable manner; within the time specified, and in full compliance to these specifications, terms of the contract, the Approved Traffic Signal Plan and COP Traffic Signal Details.

The contractor shall have a competent supervisor capable of reading and thoroughly understanding the plans and specifications and thoroughly experienced in the construction of traffic signals assigned to the project. The Contractor's supervisor shall possess a current International Municipal Signal Association (IMSA) Level II Traffic Signal Electrician Certification. The Contractor shall have a complete set of construction drawings including current City of Phoenix standards and Traffic Signal Details on site at all times during signal & lighting systems construction.

**A Level II IMSA certified Technician/Electrician must be on each Work Site at all times while work is being performed on traffic signal and other traffic control systems installed within the City of Phoenix.**

Conductor splices and terminations may only be made by a qualified Journeyman Electrician, who has successfully completed a recognized four (4) year electrical apprenticeship program or equivalent training, or by a person enrolled in a recognized four (4) year electrical apprenticeship program, while under the direct supervision of a Journeyman Electrician

**470.6.2 Traffic Signal Plan:** The Approved Traffic Signal Plan graphically describes the location of signal component parts, the equipment and materials to be used, and the standards for construction. The plans shall be supplemented by City of Phoenix Traffic Signal Standard Details or other drawing(s) deemed necessary for the acceptable completion of the work.

After completion of the project, the Contractor shall provide the Engineer with a set of as-built drawings on clean prints of the original drawings. The as-built drawing shall indicate in a neat and accurate manner all changes and revisions in the original design. As-built drawings shall be submitted before final payment for completed work will be made.

#### **470.7 MAINTENANCE OF TRAFFIC SIGNALS AND RELATED ITEMS DURING CONSTRUCTION:**

Unless otherwise specified, the City of Phoenix will operate and maintain the existing traffic signal equipment during construction. Once new traffic signal equipment is in place and accepted, the City of Phoenix will assume operation and maintenance responsibilities.

Unscheduled traffic signal work or maintenance calls performed by the City caused by contractor damage or negligence to an existing signalized intersection will be billed directly to the contractor.

21. Add the following new **Section 471 ELECTRICAL UNDERGROUND INSTALLATION** as follows:

#### **471.1 DESCRIPTION:**

The work under this section shall consist of furnishing and installing electrical conduit, and pull boxes for traffic signals and intersection lighting including jacking, drilling, excavating, placing, and compacting backfill material in accordance with the locations shown on the Approved Traffic Signal Plan.

#### **471.2 MATERIALS:**

**471.2.1 Electrical Conduit:** All conduit and conduit fittings shall be listed by UL, and conform to NEC standards. Except as specified below, all conduit to be installed underground or in concrete structures shall be rigid polyvinyl chloride (PVC) conforming to the requirements of UL 651 for Rigid Nonmetallic Conduit. PVC conduit and conduit fittings shall be Schedule 40, heavy wall, manufactured from high impact material and shall be rated for use at 90° C.

All exposed conduit and conduit fittings to be installed above ground shall be rigid metallic type manufactured of galvanized steel conforming to requirements of UL 6 for Rigid Metallic Conduit and to NEC standards.

**471.2.2 Pull Boxes:** Pull boxes, pull box covers, and pull box extensions shall be constructed of polymer concrete with reinforced heavy-weave fiberglass. Pull boxes and covers shall be concrete gray color, rated for and meet AASHTO H-20 specifications. Pull boxes shall be stackable for extra depth. Box sizes shall be acceptable industry standard and use nominal lid sizes of:

- #3.5 Junction box 10" x 15"
- # 5 Junction box 13" x 24"
- #7 Junction box 17" x 30"

Additionally, boxes shall be a minimum of 12" in depth, and have no floors or mouse holes.

Covers shall be cast to allow securing with two (2) corrosion resistant metallic hex bolts with corrosion resistant metallic washers and nuts. Covers shall also be cast with a non skid resistant surface and have a nominal thickness of two inches and meet AASHTO H-20 specifications.

The words "TRAFFIC SIGNAL" shall be cast in the pull box covers in 1-inch high letters. At the request of the Engineer, the Contractor shall furnish pull box plans and specifications.

Chipped or cracked pull boxes, covers, and extensions will not be accepted.

Metal covers are **NOT** acceptable.

**471.2.3 Detectable Mule Tape:** A detectable mule tape is a flat, woven, polyester tape with an insulated locating conductor. The conductor shall be a metallic 22 gauge insulated wire. The mule tape shall be a minimum ¼" width with a pull strength of 400 pounds.

#### **471.3 CONSTRUCTION REQUIREMENTS:**

**471.3.1 General Requirements for Installation of Electrical Conduit:** Conduit shall be furnished and installed at the locations and of the sizes shown on the Approved Traffic Signal Plan. Unless changes are necessary to avoid underground obstructions all underground conduit shall be installed in a straight line from pull box to pull box and/or from foundation to pull box and shall be of one continuous size. Any change in conduit routing must be approved by the Engineer and documented by the Contractor on as-built traffic signal plans.

Conduit will be placed in a variety of locations such as under existing pavement or sidewalk, under sod or

other pervious surface, under new pavement or attached to a structure such as a bridge pier, metal or wood pole. Conduit under existing pavement or sidewalk requires additional labor and materials over that which would be required under new pavement, sod, or other pervious surface. The payment for this section will be divided into three categories, Under Existing Pavement, Under New Pavement or Landscaping, and Attached to Structure. The contractor can choose the method of construction for each type.

All PVC conduits shall be stored and handled in an approved manner to minimize ultraviolet deterioration due to exposure to sunlight.

The PVC conduit shall be cut square and trimmed to remove all rough edges. PVC conduit connections shall be of the solvent weld type. Purple primer conforming to the requirements of ASTM F 656 shall be applied to the joined surfaces prior to use of cement. The joint cement shall be the gray PVC cement conforming to the requirements of ASTM D 2564. Where a connection is made to rigid metallic conduit, the coupling used shall be a PVC female adapter.

All existing conduits and conduit embedded in concrete structures shall be cleaned out with a mandrel and blown out with compressed air.

Field PVC conduit bends shall be made without crimping or flattening, using the longest radius practical but not less than specified by the NEC. Collapsed conduit, no matter how small, is not acceptable. The number of bends between pull boxes or between pull box and foundations shall not contain more than equivalent of two quarter bends (180 degrees, total), including the bends at the pull boxes or foundations, unless authorized by the Engineer.

Conduit entering a pull box or foundation shall be fitted with a factory made 90 degree elbow with a minimum sweep radius per the table below:

<u>Conduit Size</u>	<u>Sweep Radius</u>
2 inches	15 inches
2 ½ inches	18 inches
3 inches	21 inches

Conduit entering pull boxes shall terminate a minimum of 3” inside the box wall. The conduit shall be between 2” and 4” above the bottom. Conduit entering through the bottom of a pull box shall be located near the sides and ends and extend no more than 4” above the bottom of the pull box including the length of the conduit bell end in order to leave the major interior portion clear. At all outlets, conduits shall enter from the direction of the run and allow for expansion and contraction.

Conduit for future use shall have a detectable mule tape. All conduits shall have a No. 10 AWG bare copper wire installed that extends 36 inches beyond each end of the PVC conduit run between pull boxes and foundations. The pull rope, if needed, and bond wire shall be coiled and inserted into the conduit so as to be easily recovered from either end. Conduit ends shall be capped with conduit end cap fittings after the pull rope is installed. Conduit end cap shall remain in place until wiring is started. When end caps are removed, PVC ends shall be provided with an approved conduit end bell. End bells shall be installed prior to the installation of the conductors. Approved insulated grounding bushings shall be used on steel conduit ends.

The Contractor shall place a warning tape in all open trenches in which conduit is placed. All warning tape shall be buried at a depth of 6” to 8” below final grade.

Where conduit is to be installed under existing roadway pavement by jacking or drilling methods, the jacking and/or drilling pits shall be kept 2 feet clear of the edge of the pavement.

Conduit stub-outs under curbs or roadway edges for loop detection lead-in conductors shall conform to the requirements of COP Standard Details

Installation of conduit for underground electrical service shall be in accordance with the Standard Details, as shown on the Approved Traffic Signal Plan and in accordance with the requirements of the utility company providing electrical service. Conduit installed in railroad right-of-way shall be installed in accordance with the requirements of the railroad company.

**471.3.2 Conduit Depth Requirements:** Conduits installed in protected areas such as behind curbs, under sidewalks, etc. that are not subject to any vehicular traffic shall be at a minimum depth of 24 inches below final grade. Conduits installed under roadways, driveways, or any open area where there is the possibility of vehicular traffic, shall be installed at a minimum depth of 24 inches below final grade. Unless otherwise stated on the plans, conduit depths shall not exceed 40 inches. When conduit cannot be installed at the minimum depth, it shall be completely encased in 4" of class C concrete in accordance with Section 725.

**471.3.3 Trenching, Backfilling, and Compaction:** Trenches shall not be excavated wider than necessary for the proper placement of conduit and pull boxes. Trenching shall be done in accordance with Section 601. Backfilling, compaction, and bedding of conduit runs shall be in accordance with Section 601.4.9.

Open trench excavation across any existing paved areas, shall have two (2) parallel cuts made at a distance not to exceed 16 inches. All removal and replacement of existing paved areas shall be in accordance with Section 336.

Open trench excavation across an existing Portland concrete area shall have two (2) parallel cuts made at a distance not to exceed 16 inches. All removal and replacement of existing Portland concrete areas shall be done in accordance with Section 336.

After each excavation is complete and materials in place, the Contractor shall notify the Engineer for inspection, and under no circumstances shall any underground material or equipment be covered with fill without proper approval.

**471.3.4 Installation of Pull Boxes:** Pull boxes of the type specified on the Approved Traffic Signal Plan shall be furnished and installed at the locations shown on the Plan. Pull boxes shall be installed in accordance with COP Traffic Signal Standard Details. All relocation of pull boxes to avoid driveways and/or other structures shall be approved by the Engineer and documented by the Contractor on the as-built traffic signal plans.

Pull boxes shall be set and adjusted so that they are flush at curb or sidewalk grade. When no grade is established, pull boxes shall be set as requested by the Engineer. All pull box covers shall be secured with the required bolts and washers before final acceptance of the project. All pull boxes shall be left in a clean condition, free of dirt and debris upon completion of the work. Drainage sump 18" required as per COP Traffic Signal Detail Sheet.

22. Add the following new **Section 472 TRAFFIC SIGNAL FOUNDATIONS** as follows:

**472.1 DESCRIPTION:**

The work under this section shall consist of furnishing all materials and constructing all traffic signal foundations and other designated pole foundations including signal poles, as well as cabinet and electrical service pedestal foundations for the traffic signals in accordance with the locations and details designated on

the Foundation Sheet of the Approved Traffic Signal Plan. Pole foundations shall include all conduits, conduit elbows, anchor bolts, re-bar cages, grounding electrode, and forms required for construction of the foundation. The traffic signal pole foundations shall conform to the requirements of COP Traffic Signal Details or ADOT Standards for ADOT approved poles and related pole foundations.

The controller and power service pedestal cabinet foundations shall conform to the requirements of COP Traffic Signal Details.

#### **472.2 MATERIALS:**

**472.2.1 Excavation and Backfill:** Trenches shall not be excavated wider than necessary for the proper placement of conduit and pull boxes. Trenching, backfilling, and compaction shall be done in accordance with Section 601.

All excavations within the roadway shall be backfilled and compacted in accordance with Section 211.

**472.2.2 Concrete:** Concrete used for all foundations shall be class 'A', 3000 psi concrete with a 5" slump and shall be in accordance with the requirements of MAG Section 725.

**472.2.3 Anchor Bolts:** All anchor bolts shall be in accordance with referenced details, for the relevant traffic signal foundations.

All anchor bolts shall be threaded at the top and conform to the plans.

**472.2.4 Rebar Cage:** All rebar cages shall be in accordance with referenced details.

**472.2.5 Electrical Conduit:** All electrical conduit and conduit fittings shall be sized as per the plans sheets and in accordance with these specifications. All foundation conduits shall be grey Schedule 40 PVC.

**472.2.6 Grounding Electrode:** The grounding electrode shall be in accordance with these specifications and COP Traffic Signal Details.

A 25 foot coil of #4 AWG stranded bare copper grounding electrode shall be installed at the base of the signal pole foundations and extend centered, two feet above the top of the foundation.

Traffic signal controller and power service pedestal foundations shall have a 1 inch PVC ground rod sleeve and a 5/8 inch x 8 foot bonded copper grounding rod installed.

#### **472.3 CONSTRUCTION REQUIREMENTS:**

The excavations required for the installation of foundations and other items shall be performed in such a manner as to avoid any unnecessary damage to streets, sidewalks, landscaping and other improvements. Any damage by the contractor's operation shall be replaced or reconstructed where determined by the Engineer or designee at the expense of the contractor. The trenches shall not be excavated wider than necessary for the proper construction of the foundations and other equipment. Excavation shall not be performed until immediately before construction of foundations. The material from the excavation shall be placed in a position that will minimize obstructions to traffic and interference with surface drainage.

All surplus excavated material shall be removed and properly disposed of within 48 hours by the contractor, as directed by the Engineer or designee. After each excavation is completed, the contractor shall notify the Engineer for inspection. Under no circumstances shall any underground materials or equipment be covered with fill without the approval of the Engineer or designee.

At the end of each working period, all excavations shall be barricaded or covered, or both, to provide safe passage for pedestrian and vehicular traffic.

Excavations in the street or highway shall be performed in such a manner that not more than one traffic lane is restricted at any time, unless otherwise provided in the Special Provisions.

Sidewalk and pavement excavations shall be kept well covered and protected to provide safe passage for pedestrian and vehicular traffic until permanent repairs are made.

The elevation of signal pole foundations shall be set as follows unless otherwise noted within the construction plans or special provisions. Signal pole foundations shall be set flush ( $\pm \frac{1}{2}$ " ) with the existing or new sidewalk when sidewalk is present. Where curb exists without sidewalk, the foundations shall be set flush with a surface defined by a 1.5% upward slope from the top of curb ( $\pm \frac{1}{2}$ " ). Where there is no curb or sidewalk pole foundations shall be as shown on the project plans. The dimensions and locations of foundations shall be as specified on the project plans; however, the Engineer or designee may direct that changes be made in locations due to obstructions or other existing conditions. Any change in locations shall be documented by the contractor on as-built traffic signal plans. The contractor shall verify top of foundation elevations with the Engineer or designee prior to foundation construction.

Prior to pouring concrete, the grounding electrode shall be placed at least 6" below the required depth of the foundation and covered with 6" of soil.

Concrete shall be placed in holes which have been augured against undisturbed earth. If the material in the bottom of the hole is not firm and stable, it shall be compacted or treated as directed by the Engineer or designee. The walls and the bottoms of the holes shall be thoroughly moistened prior to placing concrete.

If the soil is not stable, a deeper foundation than specified may be required or forms shall be used as determined by the Engineer or designee. The forms shall be of the proper size and dimensions and shall be rigid and securely braced.

Foundation forming material shall extend no more than 20 inches below the foundation final grade and shall be removed after placement and curing of concrete.

Anchor bolts shall be oriented such that the bolt pattern sides are both parallel and perpendicular to the roadway centerlines unless otherwise specified on the Approved Traffic Signal Plan. A 25-foot coil of No. 4 AWG bare copper conductor shall be installed 4" below the foundation and covered with 4" of fill material such that no part of the coils will be in contact with the concrete foundation. An extension of the No. 4 AWG bare copper wire shall extend into the pole. Anchor bolts, conduit, and rebar cage shall be centered within the foundation, set at the specified height and plumb within  $\pm 1/2$  degree. During placement of concrete, anchor bolts shall be securely held in proper alignment, position, and height with a suitable template.

After excavations are completed and anchor bolts and conduit installed, the Contractor shall notify the Engineer or designee for inspection. Under no Circumstances shall concrete be placed without approval of the Engineer or designee.

The concrete pour shall be continuous and consolidated by means of vibrators. All exposed surfaces of the foundation shall receive a finish that is smooth, level, and free of form marks.

Type 'A' and 'Pedestrian' pole foundations, cabinet foundation, and service pedestal foundation shall set for a minimum of five (5) days prior to installation of poles and/or cabinets. Type 'LM', 'SM', 'SR', 'SQ' and standard

ADOT pole foundations shall set for ten (10) days prior to installation of poles.

23. Add the following new **Section 473 DETECTORS** as follows:

**473.1 DESCRIPTION:**

The work under this section shall consist of furnishing and installing vehicular and pedestrian detectors at the locations and sizes shown on the Approved Traffic Signal Plan and in accordance with the requirements of these specifications and the COP Traffic Signal Details. Shielded Loop Detector Cable shall be installed and paid for under Electrical Conductors.

**473.2 MATERIALS:**

**473.2.1 Loop Detector Sensor Wire:** Loop detector sensors shall be of the size and type specified on the Traffic Signal Plan and shall conform to the requirements of COP Traffic Signal Details. Roadway loop detector sensor wire shall conform to IMSA specification 51-5 with orange jacket and installed in accordance with the requirements of these specifications and COP Traffic Signal Details.

**473.2.3 Cold Applied Emulsion Sealant:** The loop sealant shall be a single component asphaltic emulsion sealant designed to fill and seal inductive loop saw cuts. Loop sealant shall be "Tri-American TA-500" or approved equal.

**SPECIFICATIONS**

TEST PARAMETER	LIMITS	TEST METHOD
Residue by evaporation, weight percent	70 min	ASTM D 2939
Ash content, weight percent	50 min	ASTM D 2939
Firm set time, hours	4 max	ASTM D 2939
Brookfield viscosity, Poise RVT Spindle #3, 10 RPM at 75 ± 2 ° F	50 to 125 °F	
Tensile strength, psi	20 min	ASTM D 2523
Elongation, %	2.0 min	ASTM D 2523
Flexibility	No full depth cracks	ASTM D 2939 SEE NOTE BELOW
Resistance to water	No blistering, re-emulsification or loss of adhesion	ASTM D 2939, Alternative B

**NOTE:** Flexibility: Except air-dry specimens to constant weight at 75° ± 5° F and 50° ± 10° F relative humidity. Condition the mandrel and specimens for 2 hours at 75° ± 2° F before test.

**473.2.4 Pedestrian Detectors (Pedestrian Push Buttons):** All pedestrian detectors shall be in accordance with the Americans with Disabilities Act Accessibility Guidelines (latest revision). Pedestrian Push buttons shall be installed as per COP Traffic Signal Details, and meet the following specifications:

1. Body and cover shall be cast aluminum using four (4) brass or stainless steel Phillips head screws, #8 x 3/2 x 1", for securing the cover to the body.

2. Body and cover must have an industry standard bolt pattern and design to allow for retrofit of existing units in the field.
3. Body shall be without a sign mount and approximately three (3) inches in diameter.
4. Operation button shall be stainless steel two (2) inches in diameter, (large ADA), with a tamper-proof vandal resistant housing.
5. Operating switch shall be mechanical (no exceptions).
6. The switch shall be the phenolic-enclosed SPST-type with momentary contacts.
7. The switch shall operate in the normally open position.
8. The switch shall have screw-type terminals and shall have a rated life of not less than one million operations.
9. The contacts shall be rated at 15 amps and 125 volts AC.
10. Cover and body will be painted black. Powder coated will be accepted.
11. The body of each pedestrian push button assembly shall have a  $\frac{1}{2}$ " to  $\frac{3}{4}$ " hole located in the center of the base assembly. There shall also be two (2)  $\frac{5}{16}$ " holes in the base assembly 1" above and 1" below the center point in the back of the housing.
12. Each base assembly shall have a curved back or be supplied with a "U" channel mounting bracket to facilitate the mounting of the assembly on round pole surfaces.
13. The mounting bracket shall be 2  $\frac{1}{2}$ " long and 1  $\frac{1}{8}$ " wide with  $\frac{3}{8}$ " flanges on each side. Each mounting bracket shall have a  $\frac{7}{8}$ " hole in the center of the bracket and  $\frac{5}{16}$ " holes located 1" above and 1" below the center of the  $\frac{7}{8}$ " hole.

#### **473.2.5 Accessible Pedestrian Signal Detector (APS Push Buttons):**

##### **A. General:**

1. Conform to applicable sections of the current MUTCD Chapter 4E, Pedestrian Control Features as specified herein.
2. All features fully operational when the traffic signal is in stop-and-go mode.
3. All features non-operational when the traffic signal is in flash mode.
4. Interchangeable with a non-accessible type pedestrian pushbutton with no modifications to the Controller Assembly (CA) or Controller Unit.
5. Audible transducer integral with the APS&D housing, adjacent to the pushbutton.

##### **B. Electrical:**

1. Metallic components either grounded or insulated to preclude an electrical hazard to pedestrians under all weather conditions.
2. All features powered by the 110VAC Walk signal and the 110VAC Don't Walk signal so that additional conductors from the CA are not needed.

##### **C Audible Pushbutton Locator**

1. Frequency: repeating tone at one (1) cycle per second
2. Tone duration:  $\leq$  0.15 seconds
3. Volume:
  - a. Minimum setting of zero
  - b. Manually adjustable initial setting
  - c. Automatically adjusted after initial setting. Volume increased in response to a temporary increase in ambient noise and subsequently decreased with a decrease in ambient noise.
  - d. Maximum volume: 100 dBA which is the approximate sound pressure of a gasoline powered lawn mower nearby.
  - e. Automatic volume adjustment independent of other APS&Ds at the intersection.
  - f. May be disabled without affecting operation of audible pedestrian signal.
4. Silent only during walk interval. Active all other times.

#### D. Vibratory Tactile Arrow Pushbutton

1. Pushbutton contained in a circular assembly which fits inside the housing and is attached to the housing with 4 screws.
2. ADA compliant: Size:  $\geq 2.0$ " (50) diameter, Actuation force:  $\leq 5$  ft-lb (22.2 N)
3. Shape: Circular, raised slightly above housing so that it may be actuated with the back of a hand
4. Tamper-proof, vandal-proof, weatherproof, freeze-proof, impact-resistant design and construction.
5. Actuation method: Piezo technology. Mechanical not allowed.
6. Operation: Vibrates only when walk signal is displayed. Inactive all other times
7. Tactile Arrow:
  - a. Attached to surface of the button assembly by a tamperproof method that allows direction of arrow to be field adjusted left or right to be parallel to the corresponding crosswalk.
  - b. Raised slightly above surface of pushbutton, minimum 0.125" (0.3).
  - c. Size: Length  $\geq 1.5$ " (38), Height  $\geq 1.0$ " (25)
  - d. Color: Sharp contrast to background color of pushbutton and housing
  - e.

#### E. Audible Walk Interval

##### General:

1. Operation independent of other APS&Ds at intersection.
2. Active only during the walk interval (when the walk signal is displayed).
3. Volume:
  - a. Minimum setting of zero
  - b. Manually adjustable initial setting
  - c. Automatically adjusted after initial setting. Volume increased in response to a temporary increase in ambient noise and subsequently decreased with a decrease in ambient noise.
  - d. Automatic volume adjustment independent of other APS&Ds at the intersection.
  - e. Maximum volume: 100 dBA which is the approximate sound pressure of a gasoline powered lawn mower nearby.
4. Duration:
  - a. Default method: Automatically set by the duration of the visual walk signal display.
  - b. When selected: Manually set when rest-in-walk is used for a concurrent pedestrian movement.
5. Audible sounds that mimic any bird call are not allowed.

#### F. Type A, Percussive Tone:

1. Repeating tone at eight (8) to ten (10) ticks per second.
2. Tone frequency: Multiple frequencies with a dominant component at 880 Hz which creates a "tick - tick - tick..." sound.

#### G. Pushbutton Housing/Sign Frame/Sign

1. One piece die cast aluminum meeting requirements of ASTM B85.
2. Sign frame designed to accept 9" x 12" (230 x 300) four-hole advisory sign.
3. Flat back to facilitate surface mount.
4. Available brackets to either pedestal top-mount or pole side-mount on pole diameter range of 3½" (89) to 15" (380).
5. Available brackets to allow mounting two (2) APS&Ds to the same 3½" (89) pole, facing  $\geq 60$  degrees apart, at the same height.
5. Wire entrance through the rear.
6. Stainless steel mounting hardware.
7. Color: Dark Green, Federal No 14056, Federal standard No. 595
  - a. Finish: Housing/Frame and all mounting brackets either:
    1. Painted with 3 coats of infrared oven-baked paint before assembly.
    2. Primer: Baked iron oxide which meets or exceeds FS TT-P-636.

3. Second coat: Exterior-baking enamel, light gray, which meets or exceeds FS TT-E-527.
  4. Third coat: Exterior-baking enamel, which meets or exceeds FS TT-E-489.
  5. Electrostatic powder coated after chemically cleaned.
8. Sign: CT DOT Sign No. 31-0845

**473.2.6 Camera Detection System:** Each intersection shall be equipped with a camera detection system installed in accordance with the manufacturer's installation instructions and requirements of these specifications.

- A. As a minimum, the camera shall be capable of capturing vehicles and bicycles in up to four vehicle lanes and one bicycle lane per approach.
- B. The camera detection system shall be capable of emulating the current third car detection system used by Phoenix in signalized left turn lanes.
- C. No more than four (4) camera detection processor cards shall be required for a standard 4 legged intersection.
- D. The camera detection equipment shall be compatible with standard TCP/IP Ethernet communication protocols and have the ability to be configured remotely from the Traffic Management Center. It shall be compatible with Tropos Communications routers and be able to transmit data through a Tropos Mesh network, fiber communications network and P2P wireless radios.
- E. The camera detection processor(s) shall have an Ethernet RJ45 interface and have the ability to be configured remotely via web interface or client software. Client software shall be compatible with Win7/Win8/Winx.x future operating systems and Firefox, Internet Explorer and Chrome latest version browsers.
- F. The camera detection processor shall be capable of remote access for all of the cameras attached to that processor at the same time.
- G. Camera detection systems shall have the ability to transmit MPEG4, MJPEG or H.264 video compression over TCP/IP network. The TMC client software shall have the ability to configure detection zones within the selected camera view, and have the ability to upload /download the current configuration to the camera detector processor.
- H. Camera detection shall have the ability to detect and ignore vehicle shadows traversing the detection zones.
- I. The video encoding and transmission system shall have the ability to stream video from all cameras at the intersection simultaneously without adverse effects to the detection or the video stream.
- J. Client software and detection firmware updates shall be provided and have the ability to be upgraded by the City of Phoenix signal technician staff at no cost to the City.
- K. Detection cards shall be compatible with the Econolite TS/2 Cabinet, ASC/2 or ASC/3 controllers.
- L. Detection equipment and power supplies shall be rated to operate properly at minimum between -34°C and +74°C, (-30°F and +165°F).

- M. Camera Detection equipment shall be an Aldis GridSmart System, Flir Thermal Imaging Camera System, PEEK Video TrakIQ detection system meeting the above requirements; or approved equal.

### **473.3 CONSTRUCTION REQUIREMENTS:**

#### **473.3.1 Vehicular/Bike Loop Detector Sensors:**

**473.3.1.1 General:** Vehicular loop detector sensors of the size and type specified on the Approved Traffic Signal Plan shall be installed in accordance with the locations shown on the Approved Traffic Signal Plan and the requirements of these specifications. Any change in loop detector sensor location or deviation in loop detector sensor installation not in accordance with these specifications must be approved by the Engineer or designee and documented by the Contractor on as-built signal plans. The installation of the detectors shall be such that the operation shall not be affected by temperature changes, water, ice, rain, snow, chemicals, or electromagnetic noise.

#### **473.3.1.2 Loop Detector Sensor Conductor Installation:**

1. Loop placement will be as shown on the plans. The Contractor will mark loops in the field and the locations approved in writing by the COP before work on the loop may begin.
2. Slots and cores are to be saw cut and drilled into the final asphalt/concrete base course lift as shown in the COP Traffic Signal Standard Details.
3. To insure that all saw cuts are true and straight a loop sensor layout shall first be made on the pavement surface.
4. Slots are to be ½" (one-half inch) wide and of sufficient depth to allow 2" (two inches) of sealant coverage.
5. Drill cores, located in corners and ends of center cuts, are to be 2 ½" (two and one-half inches) in diameter and 2 ½" (two and one-half inches) deep.
6. The sawed slot shall extend to the curbside PVC conduit for each loop sensor.
7. Separate lead-in sawed slots extending from the loop to the stub-out conduit shall be cut for each loop sensor.
8. Slots are to be blown out and dried before installation of wires.
9. Loop conductors are to be installed ONLY in the presence of the COP's representative.
10. Loop detector conductors will not be spliced.
11. Each loop is to be wound in the direction and number of turns indicated on the City of Phoenix Traffic Signal Details.
12. Loop lead-ins from the loop to the junction box are to be wound at three turns per foot. Twisted pairs will be taped full length from the exit of the sawed loop slot in the roadway to the connection with the shielded loop detector cable in the junction box.
13. The beginning conductor will be banded in the junction with the symbol "S", and the loop identified by a number of taped rings as shown on the Plans.

14. Each loop will be provided with a minimum of 6' (six feet) of slack in the twisted pair of conductors at the junction box when measured from the top of the junction box.
15. Loops are to be sealed only after completion of successful testing.
16. Testing may be conducted ONLY in the presence of the COP's representative. Tests are to include the following:  
 Meggar Test – A 600 volt meggar test will show not less than 10 (ten) megohms resistance to ground.  
 Continuity – Loop circuit resistance is not to exceed 2 (two) ohms.
17. Successful completion of tests will be documented in writing by the COP.
18. After completion of successful testing, the loops are to be sealed.
19. Sealant is to be poured into the slots and drill cores and struck flush with the roadway surface. Excess sealant will be removed from the surface of the roadway.
20. The conduit entrance to the roadway will be sealed in accordance with the COP Traffic Signal Details.

**473.3.1.3 Sawcut Sealant:** The loop sensor conductors shall be permanently anchored in the sawed slot using the cold applied single component emulsion sealant as specified. The sealant shall completely surround the loop sensor conductors and fill the sawed slot to within 1/8 inch of the pavement surface. Surplus sealant shall be removed from the road surface without the use of solvents. Traffic lane closure shall remain in place until the sealant is set up; Contractor shall cleanup sealant tracking problems at no additional cost to the City.

The emulsion sealant shall be thoroughly mixed per the manufacturer's recommendations. The emulsion sealant may be poured directly from container or any other suitable applicator, applied into saw cuts.

**473.3.1.4 Loop Detector Sensor Connection:** Each pair of loop sensor conductors entering the curb-side pull box shall be identified as to which loop it represents (i.e. inside lane, outside lane, through lane, or left turn lane) as per COP Traffic Signal Standard Details. Each conductor pair shall also be marked to signify its winding direction, "S" for start and "F" for finish.

Up to three loop detector sensors can be connected to one shielded loop detector cable per curb-side pull box at a corner of an intersection. Shielded loop detector cable shall run continuous and unspliced from curb-side pull box to the controller cabinet. The loop sensor conductors shall be spliced to the shielded loop detector cables in the adjacent curb-side pull box with each loop having its own splice to an individual twisted pair in the shielded loop detector cable. Shielded Loop Detector Cable is paid for under separate item.

**473.3.2 Pedestrian Push Button:** Drill appropriate size hole for wire entrance and tap screws as provided by manufacturer's installation instructions at the appropriate height. Mount push buttons to the pole using the hardware as specified by the manufacturer.

Pedestrian push buttons will be wired from the terminal block in the push button to the point of connection in the hand hole at the base of the traffic signal pole plus an additional 16 inches beyond the hand hole with continuous lengths of single conductor wire of the appropriate color. Pedestrian push button wires will not be taped together except at the hand hole in the pole base as shown on the Plans and through drilled pole wire entrance as described herein.

**473.3.3 APS Push Button:** Drill appropriate size hole for wire entrance and tap screws as provided by

manufacturer's installation instructions at the appropriate height. Mount APS push buttons to the pole using the hardware as specified by the manufacturer. Install APS controller unit in the appropriate pedestrian signal head.

APS Pedestrian push buttons will be wired from the terminal block in the push button to the point of connection in the hand hole at the base of the traffic signal pole plus an additional 16 inches beyond the hand hole with continuous lengths of single conductor wire of the appropriate color. Pedestrian push button wires will not be taped together except at the hand hole in the pole base as shown on the Plans and through drilled pole wire entrance as described herein. APS push buttons have a four conductor cable that is to be installed in the pole to connect with the APS Controller Unit. If the cable provided is of insufficient length, splice a four conductor cable with the same color conductors as recommended by the manufacturer to complete the circuit.

**473.3.4 Camera Detection System:** Mount the camera detector to the pole or mast arm using the hardware and installation instructions as specified by the manufacturer. Provide and run the manufacturer's specified wire from the camera detector from the mount through the mast arm or pole at the point of attachment down the pole, through the conduit and junction boxes to the signal control cabinet. Install the camera detection processor in the signal control cabinet, connect lead-ins from camera. A Traffic Signal Inspector must be present when working on or in traffic signal equipment including poles, mast arms, cabinets, conduits, and junction boxes. Work within the cabinet will require coordination with the Traffic Signal Shop and at least a 48 hour notice to have a technician open the cabinet and be present while the cabinet is open. Call can be made to City of Phoenix Traffic Signal Supervisor (602) 262-6733 to make arrangements for both the inspector and technician.

The traffic signal technician will install the processor within the cabinet. The contractor shall make the termination of the field wires to the camera detection processor. The traffic signal technician will make any additional connections needed in the cabinet between the camera detection processor and any existing equipment within the cabinet required by the manufacturer.

24. Add the following new **Section 474 TRAFFIC SIGNAL POLES AND ACCESSORIES** as follows:

**474.1 DESCRIPTION:**

The work under this section shall consist of furnishing and installing traffic signal poles, extensions, and mast arms in accordance with the Equipment Sheet of the Approved Traffic Signal Plans, the COP Traffic Signal Standard Details, and ADOT Standards.

Poles shall include a shaft, mast arms (if required), extensions and hardware required to construct an integral shaft and mast arm(s) and attach it to the base.

**474.2 GENERAL STANDARD:**

Steel poles for traffic signals and lighting shall include pole shafts, mast arms, and extension. Materials supplied shall conform to the requirements of the COP Standard Details.

**474.3 TYPES OF POLES:**

Types of poles to be furnished are as follows:

1. Type 'A'
2. Type 'PB'
3. Type 'LM'
4. Type 'SM'

5. Type 'SR'
6. Type 'SQ'
7. ADOT Type 'J', 'K', 'R', and 'Q' – uses a Type 'SR' foundation
8. ADOT Type 'V' and 'W' – uses foundation as shown on ADOT Drawing TS4-18&19

**474.3.1 Pole Shafts:** Pole shafts shall be fabricated according to the requirements shown on the COP Traffic Signal Standard Details for Types 1 through 6 and ADOT Standards for Type 7 and 8. An 'LM' pole shall come with a 5' extension unless otherwise noted to come with a longer extension (paid for separately). Types 4 through 6 shall be supplied with a 5' extension unless noted on the plans to exclude the extension. A blank plate shall be required when riser is excluded on the plans.

Hand holes in the base of the poles shall conform to the details shown on the Traffic Signal Standard Details. All welds shall be continuous and any exposed welds, except fillet welds, shall be ground flush with the base metal.

A metal tag shall be permanently attached to the pole above the hand hole stating the manufacturer's name, pole type per the Department's approved traffic signal plan, pole drawing number, shaft length, and inches of material thickness.

**474.3.2 Mast Arms:** Mast arms shall be fabricated according to the requirements shown on the COP Traffic Signal Standard Details for Types 4 through 6 and on ADOT Standards for Type 7 and 8.

**474.3.3 Luminaire Mast Arms:** The mast arms for the luminaires shall be fabricated as per COP Traffic Signal Standard Details for Types 4 through 6. All bolts, washers, and nuts for luminaire mast arms Types 4 through 6 shall conform to the requirements of the COP Traffic Signal Standard Details. For ADOT Type 7 and 8, the mast arms for the luminaires shall be fabricated as per ADOT Standards. All bolts, washers, and nuts for luminaire mast arms for Type 7 and 8 shall conform to the requirements of ADOT Standards.

**474.3.4 10' and 20' Extensions:** The extensions for the LM pole shaft to accommodate luminaire mast arms, LED illuminated street signs, wireless mesh radios, CCTV, or devices shall be fabricated as per COP Traffic Signal Standard Details. All hardware to attach the extensions to the pole shafts shall conform to the requirements of the COP Traffic Signal Standard Details.

**474.3.5 Finish:** Pole shafts, mast arms, extensions, and luminaire mast arms shall be finished with a 2.5 mil powder coat (color will be confirmed by the Traffic Signal Shop). The visual appearance of the finish shall be uniform. Discoloration of the finish such as dark areas, dark streaks, dark rings, or transportation handling marks, which are considered excessive by the Engineer or designee, shall not be allowed. Pole shafts, mast arms, and luminaire mast arms that have a finish unacceptable to the Engineer or designee shall either be repaired or replaced to the satisfaction of the Engineer or designee at no additional cost to the Department.

#### **474.4 CONSTRUCTION REQUIREMENTS:**

**474.4.1 Base Plates and Poles:** High strength bolts, nuts, and washers for bases shall be assembled as specified in the COP Traffic Signal Standard Details and shall be torqued as required by the COP Traffic Signal Standard Details. Anchor bolts, washers, and nuts required for relocating existing poles shall be furnished by the contractor.

Poles shall be drilled and tapped for mounting hardware as shown on the COP Traffic Signal Standard Details.

Poles will be installed and assembled in accordance with the manufacturer's specifications and as show on the Equipment Sheet of the Approved Traffic Signal plans and COP Traffic Signal Standard Details.

All scratches, mars, or abrasions to the finish of poles and mast arms will be repaired satisfactory to the COP Traffic Signal Engineer or designee prior to acceptance.

After erection and wiring, all of the pole types will be grouted to seal the gap between the pole base and the foundation or sidewalk. Grout material will be 12:1 sand /cement mix.

Sidewalks, curbs, gutters, pavement, base material, lawns, plants, and any other improvements removed, broken, or damaged by the contractor's operations shall be replaced or reconstructed with materials in accordance with these specifications. The replaced or reconstructed improvements shall be left in a serviceable condition satisfactory to the Engineer or designee, and conform to these specifications where applicable.

Where existing pole installations are to be modified, materials and equipment shall be used, salvaged, or disposed of as specified in Section 479 or as directed by the Engineer or designee.

If any poles are damaged by the contractor's operations, such repairs or replacements shall be at no additional cost to the Department.

New poles that are damaged by improper drilling of holes will be rejected.

**474.4.2 Signal Poles and Mast Arms:** Poles, mast arms, extensions and luminaire mast arms shall be of the type shown on the Equipment Sheet of the Approved Traffic Signal Plan and shall be installed in accordance with the COP Traffic Signal Standard Details for types 1 through 6, ADOT Standards for Type 7 and 8, and these specifications.

All poles shall be plumbed to the vertical with all mast arms, signal heads, extensions, luminaires, and other devices indicated on the plans to be on the pole have been installed. When mast arms are bolted to the pole shaft, the mast arm end over the roadway shall adjust to the horizontal.

Poles shall be drilled and tapped for mounting of signal equipment. The use of a welding torch is not authorized.

**474.4.3 Drilling of Poles:**

**474.4.3.1** Wire entrance holes may be drilled for pole-mounted signals when a coupling is not available.

**474.4.3.2** Wire entrance holes will be drilled to provide connection to the traffic signal head through the lower bracket arm.

**474.4.3.3** Where drilling is required, the hole will be angled downward in poles.

**474.4.3.4** Drilled holes will be de-burred and all sharp edges removed.

25. Add the following new **Section 475 ELECTRICAL POWER SERVICE AND CONTROLLER CABINET** as follows:

**475.1 DESCRIPTION:**

The Electrical Power Service, foundation, related conduit and conductors are not part of this contract and shall be supplied and installed by others. The work under this section shall consist of furnishing and installing the

controller cabinet in accordance with the location and details on the Equipment Sheet of the Approved Traffic Signal Plan, COP Traffic Signal Standard Details, and the requirements of these specifications.

#### **475.2 MATERIALS:**

**475.2.1 Controller Cabinet Assembly:** Cabinet types and configurations shall be supplied as specified on the Approved Traffic Signal Plans, COP Traffic Signal Standard Details, and in accordance with these specifications.

The Contractor shall supply the following traffic signal controller:

Econolite Controller and Integrated Ancillary Equipment:

1. Cobalt Classic NEMA Controller (Includes Ethernet Module & USB port)
2. TS2/Type 1 "P" Plug-N-Go Cabinet 8 phase Cabinet with two fans (Includes flasher, flash transfer relay, jumpers, detectors and all necessary equipment). The exterior of the cabinet shall be finished with a 2.5 mil high gloss white powder coating.
3. EDI Bus Interface Unit - Part # - EDI-BIU700 (3 per cabinet)
4. EDI Malfunction Management Unit Smart Monitor – Part # - EDI MMU16LE (1 per cabinet)

The local representative for the above cabinet and integrated equipment is Lori MacIntyre, Cell – (714)-392-2318, e-mail: [lmacintyre@econolite.com](mailto:lmacintyre@econolite.com).

Other Equipment:

1. Ruggedcom RS900-HI-D-TX-TX-TX Non-Fiber Network Switch - Switch must be a “Managed” switch, At least three levels of security, has to be IP addressable, minimum of (9) Ethernet ports, must have serial and Ethernet interface access ports, must be AC+ powered, and must meet the same temperature specs as the controller 160 degree operating range.

The local representative for this equipment is Lain Mohn with L4 Technologies, Phone – (602)-768-2033, e-mail: [lmohn@layer4tech.com](mailto:lmohn@layer4tech.com).

The Contractor shall deliver the signal controller and controller cabinet assembly to Traffic Signal Shop, 2141 E. Jefferson Street for final configuration testing and programming. The Contractor shall coordinate the proposed delivery date and time with the Traffic Signal Warehouse (602) 495-2083 at least 3 weeks prior to the Contractor’s anticipated installation date.

A 12” high cabinet extension ring shall be provided for each cabinet. Extension ring shall be bolted to the cabinet during installation in the field. The ring shall be made of 10 Ga. aluminum sheeting and finished with a 2.5 mil high gloss white powder coating.

#### **475.3 CONSTRUCTION REQUIREMENTS:**

**475.3.1 Controller Cabinet Assembly:** The Contractor is only responsible to deliver the controller cabinet and all related electronics to the City as noted above.

The contractor shall adhere to the minimum cabinet foundation curing times (NO EXCEPTIONS) of seven (7) days when installing the controller cabinet extension ring and scheduling the City to install the controller cabinet.

Controller cabinet extension rings will be secured to the foundation with ½"-13 x 5" masonry stud anchors at a minimum. Masonry stud anchors are to be installed in accordance with the product manufacturer's instructions. Three inches of threaded stud will extend above the finished grade of the Controller Cabinet foundation.

City of Phoenix shall install the controller cabinet to the controller cabinet extension ring previously installed by the contractor to the cabinet foundation. City of Phoenix will terminate field wiring after all field circuits have been proofed for proper operation.

26. Add the following new **Section 476 SIGNAL INDICATIONS AND MOUNTINGS** as follows:

**476.1 DESCRIPTION:**

The work under this section shall consist of furnishing and installing vehicular and pedestrian traffic signal indications and mounting assemblies in accordance with the types and locations shown on the Equipment Sheet of the Approved Traffic Signal Plan, COP Traffic Signal Standard Details, and the requirements of these specifications. Traffic Signals, except pedestrian type, for newly signalized intersections, shall be of the same manufacturer and material.

**476.2 MATERIALS:**

**476.2.1 Banding:** Banding employed for mounting traffic signals, pedestrian signals and other traffic control equipment for mast arm or pole mounted devices is to be of stainless steel a minimum of .030 inch thick by 1/2 inch wide.

**476.2.2 Vehicular Traffic Signal Heads:** Vehicular traffic signal heads shall be assembled of standard 12 inch (300mm) lens size signal sections with the number of sections or combination of sections specified on the Equipment Sheet of the Approved Traffic Signal Plan, COP Traffic Signal Standard Details and the requirements of the Manual on Uniform Traffic Control Devices.

The optical performance and design of traffic signal heads shall conform to the requirements of the Institute of Transportation Engineers Standards for Vehicular Traffic Control Signal Heads (VTCSH).

**476.2.2.1 Traffic Signal Head Assemblies:** Provide twelve inch traffic signal head assemblies consisting of Light Emitting Diode (LED) vehicle signal display sections and associated mounting hardware for pole or mast arm mounting, as required.

Fasten signal head assemblies together to form a complete signal face so that any section may be rotated about a vertical axis and oriented at any angle with respect to an adjacent section.

A) Traffic signal heads:

1. Assemble each traffic signal head from one or more individual Light Emitting Diode (LED) vehicle signal display sections put together to create a one-way signal face with multiple possible industry standard configurations of red, yellow, and green ball or arrow sections equipped with a back plate.
2. Provide 12-inch traffic signal head assemblies that consist of individual sections of the number and configuration shown on the Plans, fastened together to produce a single unit.
3. Provide 12-inch signal heads with a 7 to 10 inch tunnel visor, a one-piece 5-inch aluminum non-louvered back plate, and an LED module for each section.
4. Fit the sections securely together to prevent the entrance of dirt and moisture.

B) Section housing:

1. Provide one-piece, polycarbonate housings for each section complete with a top, a bottom, and sides, and with black color impregnated into the material.
2. Equip each section housing with a rectangular polycarbonate door meeting the minimum requirements of ASTM B 85.
3. Provide two hinge lugs on the left of each housing section and with latch screw lugs on the right side of the housing.
4. Provide openings in both the top and bottom of the housing to accommodate standard 1-1/2 inch pipe fittings.
  - a. Provide a Shurlock boss in the bottom opening having 72 clean, sharp teeth that provide full engagement, angled at 90 degrees, and having a depth of 5/64 inch.
  - b. Provide two indentations in the top opening designed to receive a Shurlock ring to provide positive positioning of the head when mounted from a mast arm or span wire hanger.
  - c. Provide a means of positive alignment when indexing each section by using mating bosses and recesses.
  - d. When used with Shurlock fittings, the radial angular grooves of the Shurlock boss, must provide positive positioning of the entire signal head and eliminate rotation or misalignment of the signal.
5. Provide each housing section with a minimum of four mounting points, two on each side, to secure the back plate to the signal head.
6. Housing door:
  - a. Provide housing doors consisting of a one piece, polycarbonate housing door for each signal section with black color impregnated into the material.
  - b. Provide two hinge lugs on the left of each door and latch paws on the right side of each door.
  - c. Provide hinge pins that are easily removable without the need for special tools.
  - d. Provide a corrosion resistant, stainless steel latch screw and wing nut on the right side of the housing to allow opening and closing the signal door without the use of any tools.
  - e. Form the inside of the door with a gasket groove and provide a weather-proof and mildew resistant resilient polyethylene gasket which seats against a raised bead on the housing when the door is closed to make a positive weather proof and dustproof seal.
  - f. On the outer face of the door and equally spaced about the circumference of the lens opening, provide four tapped holes to accommodate the signal head visor.
  - g. Provide four 18-8 Type 304 stainless steel truss head screws to attach the signal head visor.

C) Signal Head Visors:

1. Equip each signal place with a tunnel style (open bottom) visor that is approximately 7 to 10 inches long. Tunnels requiring Louvers shall have a full tunnel.
2. Provide visors blanked, formed, and welded from .050 inch thick 3105-H25 aluminum alloy or polycarbonate.
3. Design and fabricate the visors with attaching ears (slotted tabs) to facilitate installation.
  - a. Construct the visor so it can be installed or removed from the signal head without removing the attaching screws or opening the housing door.
  - b. Construct the visor so the axis of the visor does not deviate more than 3.5 degrees or less than 3 degrees downward from horizontal.

D) Directional Louvers:

1. Where shown on the plans, directional louvers with a 3 degree cutoff shall be furnished and installed in signal visors. Directional louvers shall be so constructed as to have a snug fit in the signal visors. The cylinder and vanes shall be fabricated from 5052-H32 aluminum alloy. The outer cylinder and the vanes shall be 0.032 inches minimum thickness, and the vanes shall be 0.016 inches minimum thickness.
2. Tunnels requiring Louvers shall have a full tunnel.

E) Light Emitting Diode Vehicle Signal Display Sections:

Equip each signal section with an LED vehicle signal module for each signal head section, including balls and arrows.

1. Provide LED traffic signal modules meeting all the requirements identified in the 1998 Interim LED Purchase Specification of the Institute of Transportation Engineers, except as may be herein listed.
  - a. Provide single, self-contained LED signal module devices with an integral power supply in the sealed LED module.
  - b. Affix a manufacturer's label that includes all of the information listed in Section 3.6 of the ITE Interim LED Specification and the date of manufacture to each LED module.
  - c. Construct the LED's with an AlInGaP substrate
2. Provide a weather tight module that fits securely in the housing and connects to the traffic signal head wiring terminal block.
  - a. Design LED traffic signal modules to fit traffic signal housings that meet the specifications established herein.
  - b. Design the terminal block only for crimped on terminal connectors.
3. LED Environmental Requirements - If not indicated on the plans, the LED module shall be rated for the -40° C (-40° F) to +74° C (164° F) temperature range.
4. LED Module Photometric Requirements - The AGENCY requires the light output of the LED modules supplied by the Contractor and covered by the ITE Purchase Specification referenced meet the requirements

of Section 4 of that ITE Interim LED Purchase Specification, the 44-point test identified in paragraph 6.4.2.1 and the single point test identified in paragraph 6.4.2.2.

5. LED Module Electrical Requirements - The LED module is to be connected to the terminal block using two color-coded copper wires. The wire is to be No. 20 AWG with 30 mill jacketed insulation. The wire is to be rated for 600 volt AC. The insulation is to be rated for 105° C (220° F).

6. LED Dimming - All LED modules are not to be equipped with dimming circuitry.

7. Failed State Impedance – The module is to be equipped as provided in Section 5.8 of the ITE Interim LED Purchase Specification.

8. LED Module Compatibility - The recommendation stated in Technical Note #2 of the Institute of Transportation Engineers 1998 Interim LED Purchase Specification is adopted. All LED are to be compatible with approved load switches and conflict monitors. The Contractor will include in the material submittal a list of all control equipment known to be incompatible with the submitted LED module. This list is to include all known equipment as well as that employed in this contract

9. Wiring: Each LED module is to have wiring color coded. The color code will relate to the display provided by the module as follows:

<u>Function</u>	<u>Color</u>
Common (Neutral)	White
Red Ball or Arrow Driver	Red
Yellow Ball or Arrow Driver	Yellow
Green Ball or Arrow Driver	Green

F) Terminal blocks:

1. Each complete signal head will be equipped with a six position, twelve terminal, barrier type strip terminal block phenolic terminal block.

2. The terminal blocks are to be located in the in the bottom section of vertically arrayed signal head assemblies and in the red ball section of 5 section mast arm mounted side by side arrayed signal head assemblies.

3. The white, red, yellow, and green signal section leads will be attached to the same side of the terminal strip.

G) Colors and finishes:

1. Signal Head Color: All Vehicle signal heads are to be color impregnated Impregnate a black color into the material of all polycarbonate surfaces, including the inside and outside of the signal housing, the door, and the visors.

2. Back Plate Finish: The back plates are to be finished with a low gloss two-part high solids enamel paint with ultraviolet inhibitors. Powder coating is an acceptable alternative.

H) Mounting Hardware:

1. For mast arm mounted signal head assemblies, install an elevator plumbizer below the red section of the signal head as shown on the Traffic Signal Standard Details.
  - a. When signal head assemblies are equipped with an elevator plumbizer, provide the top and bottom sections of the assemblies with a gasketed closure in the 1 ½ " openings.
  - b. Cast elevator plumbizers from bronze, and provide smooth castings or machine the plumbizer to remove all sharp edges.
  - c. When required, equip the signal head with a mast arm mounting bracket assembly consisting of a banded pole plate and a 2-inch support tube designed for rigidly mounting a signal head equipped with an elevator plumbizer on a mast arm.
2. For pole mounted signal heads, provide each signal head assembly with a set of mounting brackets consisting of the following:
  - a. Two 1 1/2 inch pipe elbows each with a serrated surface having 72 teeth.
  - b. Two 1 1/2 inch chase nipples with 2 1/2-inch hex heads.
  - c. Two 12 inch Schedule 40 pipe arms.
  - d. Two band-on style pole brackets.
  - e. Include additional nipples and steel lock nuts as necessary to complete the assembly as shown on the Traffic Signal Details.
3. Finish the mounting hardware for mast arm or pole mounting with paint or powder coating in a high gloss black.

I) Wiring:

1. Traffic signal heads will be wired from the terminal block in the signal head to the point of connection in the hand hole at the base of the traffic signal pole plus an additional 16 inches beyond the hand hole with a continuous length of IMSA 19-1 cable. For size and number of conductors see wire code tables in Standard detail.
2. The white conductor inside the IMSA cable from each signal head shall be connected to the white #10 neutral conductor in the hand hole at the base of the traffic signal of the pole.
3. Connections to the terminal block in the signal heads will be made with a hand formed "J" hook for solid conductors. Provide manufactured crimp on connector of appropriate size when stranded conductors are used.
4. Cables for mast arm signal heads will pass through de-burred 1" installer drilled cable entrances. All others installer drilled de-burred cable entrance holes will be ½".

**476.2.3 Pedestrian Signal Head:**

The optical performance and design of pedestrian signal heads shall conform to the requirements of the Institute of Transportation Engineers Standards for Pedestrian Traffic Control Signal Indications (PTCSI).

**476.2.3.1 Pedestrian Signal Head Assembly:** Provide pedestrian signal head assemblies consisting of a signal housing with a door assembly and visor, a Countdown Light Emitting Diode (LED) pedestrian display module, and associated mounting hardware.

1. When the housing, door assembly and visor, and LED display module are fully assembled, they must provide a weatherproof and dustproof enclosure that meets or exceeds current ITE standards.
2. Signal Housing:
  - a. Provide a single section aluminum pedestrian signal housing.
  - b. Signal Housing Dimensions (Nominal): 19 inches wide by 18 1/2 inches high by 8 1/2 inches deep.
    - i) Tolerance: Plus or minus 1/2 inch.
    - ii) Dimensions include the visor and door.
  - c. Integrally cast two equally spaced mounting lugs into the top and bottom of the housing with stainless steel pins and wing nut assemblies to serve as the door hinges and latches.
  - d. Cast standard 1-1/2 inch openings, complete with reinforcing ribs for transferring stress
  - e. Cast a standard signal hardware configuration having 72 serrated teeth for maintaining a positive orientation of the signal face into the bottom opening.
3. Door Assembly:
  - a. Provide a door assembly consisting of a die cast, one piece, corrosion resistant aluminum alloy frame with two cast lugs on the bottom and two cast latch slots on the top of each door.
  - b. Attach the door to the housing using stainless steel detent spring pins on the bottom and stainless steel captive wing nut and eyebolt assemblies that drop into the latch slots on the top.
  - c. Design the door assembly to open from the top and hinge down for servicing without the use of any tools.
4. Visor:
  - a. Equip the door with an integral blank out egg crate visor fabricated from black impregnated ultra violet stabilized and flame retardant polycarbonate.
  - b. Design the egg crate to consist of a series of nominally 0.030-inch thick material formed into one-inch squares rotated 45 degrees to form diamonds and which are also bisected by 1-1/2 inches deep horizontal louvers.
  - c. Provide a substantial exterior framework that allows the visor to be securely attached to the doorframe with stainless steel screws.
5. Light Emitting Diode (LED) Pedestrian Display Module:
  - a. Provide a Light Emitting Diode (LED) pedestrian display module with 9" numerals as per MUTCD, capable of displaying international symbols with count down capabilities.

- b. Provide LED international symbols of a "Hand", a "Man", and Countdown numerals, sized and colored to conform to the latest ITE (PTCSI) standards.
  - i) Provide filled symbols, and not outlined symbols.
  - ii) Blackout the entire area around the legend so that light does not project through any area other than the legend.
- c. Construct the LED's with an AlInGaP substrate.
- d. Provide an LED countdown timer that detects the "DON'T WALK" cycle and begins its countdown based on that duration and that blanks out the countdown display when a timing change occurs.
- e. Fit the module lens with a one-piece EPDM gasket to provide a waterproof and dustproof seal when the door assembly is closed.across the housing surface, into the top and bottom of the housing.
- f. Optically, the pedestrian signal head shall display brightly and uniformly, the alternate symbol messages "HAND" in Portland orange, "**COUNTDOWN NUMERALS**" **IN Portland orange** and "WALKING PERSON" in lunar white under all ambient light conditions. The message symbols shall not be seen (blank-out) when the message symbol is not energized.
- g. The lunar white and Portland orange LED, solid state controls, and transformers for energizing the LED shall be encased in a plug-in module. The HAND and WALKING PERSON symbol message lens shall be ultraviolet stabilized polycarbonate. The HAND and WALKING SYMBOL message shall be full indications only.

6. Mounting Hardware:

- a. For each pedestrian signal head assembly, provide a set of mounting brackets consisting of the following:
  - i) Two 1 1/2 inch pipe elbows each with a serrated surface having 72 teeth.
  - ii) Two 1 1/2 inch chase nipples with 2 1/2-inch hex heads.
  - iii) Two 12 inch Schedule 40 pipe arms.
  - iv) Two band-on style pole brackets.
  - v) Include additional nipples and steel lock nuts as necessary to complete the assembly as shown on the Plans.
- b. Pole Plates:
  - i) Provide 3-inch wide by 5 3/8-inch long band-on style pole plates with a 1 1/2-inch NPT center hole.
  - ii) Provide the pole side of the plate with a curvature of approximately 2 3/16 inches and a chord length of approximately 3 inches.
  - iii) Machine, ream, or cast the inside and outside of each pole plate, elbow, chase nipple, and pipe arm to remove all sharp edges.

7. Finish:

a. Prior to applying an electrostatic, oven cured powder coat finish, sandblast, clean, and chemically seal all exterior surfaces of the pedestrian head housing, door frame, and the side of the pole mounting hardware.

b. Finish the housing, door frame, and mounting hardware with a high gloss black, and the visor frame with a low luster flat black.

8. Wiring:

a. Pedestrian signal heads will be wired from the terminal block in the pedestrian signal head to the point of connection in the hand hole at the base of the traffic signal pole plus an additional 16 inches beyond the hand hole with a continuous length of 3 conductor IMSA 19-1 cable. For size and number of conductors see wire code tables in standard details.

b. The white conductor inside the IMSA cable from the pedestrian head shall be connected to the white #10 neutral conductor in the hand hole at the base of the traffic signal pole.

c. Connections to the terminal block in the signal heads will be made with a hand formed "J" hook for solid conductors. Provide manufactured crimp on connector of appropriate size when stranded conductors are used.

d. Cable from pedestrian signal heads will pass through a de-burred ½" installer drilled cable entrance hole.

27. Add the following new **Section 478 ELECTRICAL CONDUCTORS** as follows:

**478.1 DESCRIPTION:**

The work under this section shall consist of furnishing and installing electrical conductors for traffic signals and intersection lighting in accordance with the Equipment Sheet of the Approved Traffic Signal Plan and requirements of these specifications.

**478.2 MATERIALS:**

**478.2.1 Electrical Conductors:** The wire shall be annealed copper and shall be uncoated unless otherwise specified. Unless otherwise indicated, the wire shall be solid for number 10, 12, 14, and 16 AWG and smaller diameter wire, conforming to the latest requirements of ASTM B 3 for annealed bare copper wire. Conductors for sizes number 8 AWG and larger diameter wire shall be stranded and shall conform to ASTM B 8 for Class B stranding, unless otherwise specified, the conductors shall be insulated with THW grade thermoplastic compound and shall meet the requirements of UL 83. Insulation colors shall be permanent and an integral part of the insulation and shall not be applied as a surface treatment or coating. The insulation thickness shall conform to the requirements of the NEC. Conductor insulation shall be a solid color unless otherwise specified. The color shall be continuous over the entire length of the conductor.

Wire and cable shall be UL listed and rated at 600 volts unless otherwise specified. The UL label shall be present on each reel, coil, or container of wire or cable. When requested, the Contractor shall submit to the Engineer or designee the manufacturer's written certification that the product conforms to the requirements of these specifications.

Conductor colors and sizes for use in traffic signal and intersection lighting shall be as specified on the Wiring Sheet of the Approved Traffic Signal Plan, and the COP Traffic Signal Standard Details.

**Wire Tagging:** Individual conductors for each vehicular and pedestrian phase group shall be secured together by two layers of plastic electrical tape and tagged with an approved wire I.D. marker as shown on the COP Traffic Signal Standard Details. Cables for each vehicular and pedestrian phase group shall be wrapped with two layers of plastic electrical tape and tagged with an approved wire I.D. marker as shown on the COP Traffic Signal Standard Details. Wires and cables shall be individually marked in all cabinets, pole hand holes and in pull boxes as per COP Traffic Signal Standard Details.

**Shielded Loop Detector Cables:** Loop detector lead-in shielded cables shall be six conductor A.W.G. #18, stranded, twisted, three pair, tinned copper, polyethylene insulated cable with a polyethylene jacket, rated at 600 volts and 140 degrees Fahrenheit and shall be in conformance with IMSA Specification 50-2.

**IMSA Cables:** IMSA cable shall be used when specified on the plans. IMSA cables shall be polyethylene insulated copper conductors, polyvinyl chloride jacketed, rated at 600 volts for use in underground conduit or as aerial cable conforming to IMSA Specification 19-1. Wire insulation color assignment shall be in accordance with COP Traffic Signal Standard Details.

The IMSA 19-1 cable shall be provided with the number and size of conductors as specified on the plans. All cable with less than 42 conductors shall be solid or stranded copper as specified on the plans. All 42 conductor IMSA Spec 19-1 cable shall be constructed as follows: Two (2) layers of 21 conductors A.W.G. #16 stranded. Each layer will contain 21 color conductors per IMSA Spec 19-1, Table 5.1 and separated by a clear Mylar tape. The colors and tracers shall be permanent and an integral part of the insulation and shall not be painted, surface coated, or adhered to surface. Ink strips are unacceptable. Conductor insulation colors shall be standard IMSA colors (as shown by the following table). Cable conductor color, phase, and interval assignments shall be in accordance with COP Traffic Signal Standard Details.

Conductor Number	Insulation Color	Stripe Color	Conductor Number	Insulation Color	Stripe Color
1	Black	---	11	Blue	Black
2	White	---	12	Black	White
3	Red	---	13	Red	White
4	Green	---	14	Green	White
5	Orange	---	15	Blue	White
6	Blue	---	16	Black	Red
7	White	Black	17	White	Red
8	Red	Black	18	Orange	Red
9	Green	Black	19	Blue	Red
10	Orange	Black	20	Red	Green
			21	Orange	Green

Note: Only first 20 are used in a 20 Conductor cable. Conductor color schedule will repeat for the second set of 21 conductors in an IMSA 42 conductor cable.

**Single Conductor Wire:** Wire under this specification shall be composed of a solid or stranded copper conductor as noted above and insulated by a polyvinyl chloride compound. The insulated conductor shall be completely enclosed in a nylon jacket. The conductor shall be copper and shall, before insulating, conform to the requirements of ASTM B-3, latest revision. Stranded conductors may be either concentric or bunch stranding and shall conform to the circular mil area and physical requirements specified in ASTM Designation B-8, latest revision, for concentric stranding or ASTM Designation B-174, latest revision, for bunch stranding. The insulating compound shall be polyvinyl chloride. The insulation shall be applied concentrically about the

conductor. The thickness of the insulation shall not be less than specified in Table 1. The method of measurement for thickness and the apparatus used shall be in accordance with Underwriters Laboratory, Inc. Standard UL 62 (ANSI C33.1).

TABLE 1 INSULATION THICKNESS		
Conductor Size, AWG	Minimum Acceptable Average Thickness	Minimum Acceptable Thickness at any Point
20-12	15 mils	13 mils
10	20 mils	18 mils
8	30 mils	27 mils

The insulation after application to the conductor shall comply with the requirements specified in accordance with Underwriters Laboratory, Inc. Standard UL 62 (ANSI C33.1). The insulation of the finished conductor before the jacket is applied shall withstand, without breakdown, the application of a 60 Hertz or 3,000 Hertz, 7,500 volt essentially sinusoidal spark test potential (RMS) in accordance with the method and using equipment specified in Underwriters Laboratory, Inc. Standard UL 83 (ANSI C33.8). The insulation color shall be specified by COP Traffic Signal Standard Details. A tight fitting nylon compound jacket shall be applied over the conductor and comply with the requirements specified in ASTM D-4066, latest revision. The thickness of the jacket shall be as specified in Table 2. The method of measurement for thickness and apparatus used shall be in accordance with Underwriters Laboratory, Inc. Standard UL 62 (ANSI C33.1).

TABLE 2 INSULATION JACKET THICKNESS		
Conductor Size, AWG	Minimum Acceptable Average Thickness	Minimum Acceptable Thickness at any Point
20-10	0.004 inches	0.003 inches

All single conductors shall have plain, distinctive, and permanent markings on the outer surface throughout their entire length showing the manufacturer's name or trademark, insulation type, conductor size, voltage rating and the number of conductors in the cable. Insulation colors shall be permanent and an integral part of the insulation and shall not be applied as a surface treatment coating.

**EVP Detector Cable:** The EVP Detector Cable shall be a three conductor A.W.G. #20 stranded, tinned copper insulated wires with an A.W.G. #20 tinned copper uninsulated drain wire. The insulation for the three wires shall be PVC, of the following colors, blue, orange and yellow. The cable shall have a black PVC outer jacket rated for 600 Volts.

**EVP Confirmation Light Cable:** The EVP Confirmation Light Cable shall be a two conductor A.W.G. #18 stranded, tinned copper insulated wires. The insulation for the two wires shall be color coded PVC. The cable shall have a gray PVC outer jacket rated for 300 Volts.

**478.3. WIRING PROCEDURES:**

**478.3.1 General Requirements:** All wiring shall be in conformance with the NEC and the requirements of these specifications. All wire nuts and other wiring devices shall be UL listed. Conductor sizes and colors shall be as specified on the Wiring Sheet of the Approved Traffic Signal Plan. Conductors shall be pulled into runs in a smooth continuous manner, avoiding contact with sharp objects that might damage the insulation. Approved lubricants shall be used for inserting conductors in conduit. Before installation, conductors' ends shall be taped for moisture protection until connections are made. Approved splices are permitted in pull boxes, pedestals, pole hand holes, and cabinets.

Conductors shall have a minimum of 36 inches of slack above the top of the pull box.

All phase wiring shall be boxed at the intersection, terminated and spliced in the junction boxes.

**478.3.2 Conductor Splices:** Splices shall be made utilizing wire nut connectors (Ideal underground model numbers 60, 64, and 66, or approved equal). Wire nut shall be pre-filled with Silicone-based sealants for moisture and corrosion, UL listed to 486D for direct burial, and a shell rated for 105 C. Wire stripping length and wire size combinations shall be in accordance with the manufacturer's instructions supplied with the wire nut connector. Soldered connections will not be permitted. All phases shall be spliced in all pull boxes and unused phase wiring shall be covered with insulating tape.

**478.3.3 Bonding and Grounding:** All metallic enclosures such as cabinets, pedestals, poles, conduit, and cable sheaths shall be bonded to form a continuous grounded system. Non-metallic portions of the system, such as PVC conduit, shall have a No. 10 AWG bare solid copper bond wire installed with suitable connections to form a continuous grounded system.

At each service disconnect, cabinet foundation, or where otherwise specified, an approved copper-plated ground rod shall be installed. Each ground rod shall be a one-piece solid rod of the copper weld type or approved equal and shall be a minimum of 5/8 inch in diameter and 8.0 feet long. The rod shall be driven vertically into the ground to a minimum 7.5 feet below the surface. If the rod cannot be driven vertically, it shall be installed in accordance with article 250-83 of the NEC. The ground rod may be located in a pull box. The service equipment neutral (grounded conductor) and the system grounding conductor (No. 10 AWG bond, solid) shall be connected to the ground rod with a copper-plated bolt or a brass bolt on the ground clamp.

The grounding electrode system shall be in accordance with articles 250-81 and 250-83 of the NEC.

Pole foundations shall have 25 feet of number 4 AWG bare copper conductor coiled and placed at the bottom of the excavation before concrete is poured. Pole foundation grounding electrodes shall be connected to the pole grounding screw in the hand hole with an approved lug connector.

A ground resistance test shall be performed for each installed ground rod prior to final connection of the utility service. Pole foundation coil grounds shall be tested as determined by the Engineer or designee in the field.

The ground resistance shall be measured with a three terminal, fall of potential, direct reading, battery powered earth tester with a 0.50 to 500 ohm scale or digital read-out. The 25 ohm reading shall be approximately at mid scale.

The test shall be performed according to the manufacturer's instructions and OSHA requirements. Two auxiliary copper clad ground rods shall be driven into the ground a minimum of 3 feet. The lateral spacing for each test rod shall be given in writing on the test report form and the spacing shall be approved by the Engineer or designee.

All tests shall be performed in the presence of the Engineer or designee and the test results shall be written down, dated, and given to the Engineer or designee for approval.

Each ground rod or foundation ground shall be isolated with the bond wires disconnected when the test is being performed. The resistance to ground shall be 25 ohms or less. If it is not, additional ground rods shall be installed as required at least 15 feet from the original ground and shall be bonded to it. The test shall then be repeated for multiple grounds as necessary to achieve proper grounding below 25 ohms. As many additional ground rods shall be installed as is necessary to achieve proper grounding of 25 ohms or less.

The test shall be performed when the soil is dry. The contractor shall not add any chemical or salt solutions to any portion of the grounding system. All grounding rods and foundation grounds to be tested shall be installed a minimum of ten days prior to testing unless otherwise determined by the Engineer or designee in the field.

28. **505 CONCRETE STRUCTURES**, Add the following to **Section 505 CONCRETE STRUCTURES**:

**DRILLED SHAFTS**

**Description**

The work under this item consists of furnishing all labor and materials to construct drilled shafts within drilled excavations. Each drilled shaft shall consist of a shaft section as shown on the Project Plans, and shall be constructed in reasonable close conformity with the details and dimensions shown on the Project Plans and these specifications. All work under this Section shall conform to SECTION 609 – DRILLED SHAFT FOUNDATIONS of the Arizona Department of Transportation Standard Specifications for Road and Bridge Construction, 2008 Edition, except as herein noted and shown on the Project Plans.

Section 609-1.01 of the ADOT Standard Specifications is modified to add:

**609-3.05 Integrity Testing:** of the ADOT Standard Specifications is revised to read:

**(A) General:**

Whether completed by wet or dry excavation method, or a temporary or permanent casing method, each drilled shaft foundation completed shall be inspected by means of a cross-hole sonic logging survey and a gamma-gamma logging survey. The drilled shaft Contractor shall furnish and install 2-inch internal diameter Schedule 80 PVC pipes for the surveys. The number of pipes equals the shaft diameter, measured in feet, and rounded-up to the next whole integer, but not less than four, or as specified in the plans. The inspection tubes shall be uniformly distributed along the outside circumference of the reinforcing steel cage. The pipes shall be joined to provide a clean, watertight, and unobstructed opening as specified in Subsection 609-3.05(B). The contractor shall be responsible for ensuring that the tubes remain undamaged during installation and testing. Remedial measures and any repairs due to damaged tubes shall be implemented at the contractor's cost. If testing cannot be performed because of blockage of the tubes, the Contractor shall core drill or otherwise determine the extent of any potential anomalies in the concrete, as approved by the Engineer, at no additional cost to the Department.

Cross-hole sonic log testing and gamma-gamma log testing shall be performed by a qualified subcontractor selected by the Contractor and approved by the Engineer. The subcontractor shall provide the equipment meeting the minimum requirements listed herein and shall have at least one year experience in cross-hole sonic logging survey and gamma-gamma logging survey evaluation. The subcontractor performing the gamma-gamma logging shall provide proof that it is licensed to possess and use radioactive material in accordance with the Arizona Radiation Regulatory Agency. Recorded measurements shall be interpreted and the required reports shall be prepared and sealed by a licensed professional engineer, registered in the State of Arizona, with at least three years of experience in cross-hole sonic logging survey and gamma-gamma logging survey evaluation. Resumes of proposed personnel shall be submitted to the Engineer for approval at least four weeks prior to commencement of work.

Integrity testing shall be performed no sooner than 48 hours after placement of the concrete. Cross-hole sonic logging tests shall be completed within four days after concrete placement, and gamma-gamma tests shall be completed within seven days of concrete placement.

The cross-hole sonic logging survey and the gamma-gamma survey requirements shall be as specified in Subsection 609-3.05(B). Inspection reports containing the acquired raw data, and evaluation reports, shall be provided as specified in Subsection 609-3.05(B). All reports shall be provided to the Engineer within three days of test completion.

If the testing indicates the presence of anomalies, as defined herein, or the Engineer determines that construction defects may have occurred, the Contractor shall conduct remedial testing and make repairs, as specified in Subsection 609-3.05(B)(4), at no additional cost to the Department.

Concrete volumetric charts shall be completed for every drilled shaft. A copy shall be delivered to the Engineer within three days of the completion of the associated drilled shaft.

After all inspection has been completed and a given shaft has been accepted, all holes and test pipes in the accepted shaft shall be filled with an approved grout from the bottom up.

**(B) Testing Requirements:**

**(1) General:**

The inspection tubes shall have a round, regular, internal diameter free of defects or obstructions, including at any pipe joints, in order to permit the free, unobstructed passage of source and receiver probes from top to bottom. The tubes shall be watertight and free from corrosion, with clean internal and external faces, to ensure passage of the probes and to ensure a good bond between the concrete and the tubes. Standard glue-on PVC couplings shall be used. No compression, rubber, or clamp fittings will be allowed. Care shall be taken during reinforcement installation operations to not damage the tubes or break the fasteners of the tubes. Before placement of concrete, pipes shall be checked to ensure they are free from blockages, bends, crimps or other impediments to the free passage of the testing probes. The tubes' exterior surfaces shall be roughened by abrasion prior to installation to ensure a good bond between the tube surface and surrounding concrete.

Each pipe shall be fitted with a watertight shoe on the bottom and a removable cap on the top. The bottom cap of each tube shall be adequately secured such that it can withstand the hydrostatic pressure for the full depth of the shaft without water leakage. The pipes shall be securely attached to the exterior of the reinforcement cage in a straight line, and in a regular, symmetrical pattern. The Contractor shall submit placement drawings for the testing tubes with the shop drawings for the shaft reinforcement for Engineer review and approval prior to fabrication of the shaft reinforcing cage. The tubes shall be adequately secured to the reinforcing cage such that the tubes stay in position during placement of the rebar cage and concrete placement. At a minimum, the tubes shall be securely fastened to the reinforcing cage at least every 10 feet vertically. The tubes shall be as near to vertical and parallel as possible. Plastic roller centralizers shall be used to provide a minimum 6-inch clearance (for concrete cover). Centralizers shall be placed on the cage so that the cage is centered in the hole. Dobies (wood or concrete) or bent rebar shall not be used as centralizers.

The tubes shall extend from one-half foot above the as-drilled bottom of the shaft to at least four feet above the shaft top, or approximately two feet above the top of the rebar cage if above the ground. The bottom of the cage and/or testing tubes shall be adjusted to ensure that the bottom of the testing tubes are not more than six (6) inches above the as-drilled and cleaned bottom of shaft. Under no circumstance shall the tubes be allowed to rest on the bottom of the drilled excavation. If lowering the cage with the tubes is necessary to meet the requirement of the location of the bottom of the tubes with respect to the as-drilled bottom of shaft, then the Contractor shall be responsible for appropriate adjustment of the top of the cage or other reinforcing adjustments to meet structural requirements as approved by the Engineer and at the sole expense of the

Contractor. If the shaft top is subsurface, the tubes shall extend at least two feet above the ground surface. Any joints required to achieve full length tubes shall be made watertight. Care shall be taken to not damage the tubes during reinforcement installation operations in the drilled shaft hole.

The tube tops shall be bare clean pipe (no pipe joints), level cut, and capped to keep debris out of the tubes. If the rebar cage extends above the top of the tubes, the circular or spiral tie-raps shall temporarily be cleared away from one foot below the tube top to approximately three feet above. After placement of the reinforcement cage, the tubes shall be filled with clean water as soon as possible, immediately before or after concrete placement, but not later than one hour after placement. Care shall be exercised in the removal of caps or plugs from the pipes after installation so as to not apply excess torque, hammering, or other stresses which could break the bond between the tubes and the concrete.

Before the start of testing, the Contractor shall:

- Run a 1.5" diameter six-foot long rigid cylinder through the complete length of each access tube to check for tube blockage.
- Clean the top of the shaft. The shaft top shall serve as the reference zero depth for all cross-hole sonic and gamma-gamma testing. Therefore, the shaft top must be level and, if mud covered, be cleaned before testing.
- Provide proper access to the shafts so that the testing subcontractor can park their logging truck within two to three feet of each access tube.
- Provide any special safety equipment required.
- Make sure the access tubes extend at least four feet above the top of the concrete and are capped and filled with water all the way to the top.
- Make sure each access tube is bare (no pipe joints) clean pipe (grind edges and concrete residue), level cut, and capped.
- Provide an independent and stable source of 110 Volt, 1000 Watt power.
- Using a permanent pen marker, mark each access tube with the shaft designation and tube number. For example, P2S3-T4 denotes Pier 2 Shaft 3 Tube 4. By definition, Tube 1 is the northernmost tube, with other tubes referenced in a clockwise direction from Tube 1. Tube 1 shall also be marked in the field with paint. The Contractor shall also provide documentation that the testing equipment has been calibrated and is functioning properly.

**(2) Requirements for Cross-hole Sonic Logging (CSL) Tests:**

The minimum equipment requirements for cross-hole sonic logging shall be as follows:

- (a) The ultrasonic source and receiver probes shall be capable of producing records with good signal amplitude and energy through uniform, good quality concrete. The probes shall be of a diameter and have cabling such that they descend freely through the two-inch internal diameter Schedule 80 PVC pipe for the full depth of the shafts shown on the plans. Probes shall allow a generated or detected pulse within four inches of the bottom of the access tubes, and the transmitter probe shall generate an ultrasonic pulse with a minimum pulse frequency of 40,000 Hz. The weight of each probe shall in all cases be sufficient to allow it to sink under its own weight in the access tubes. The probe housing shall be waterproof to at least 1.5 times the maximum depth of the testing. The receiver probe shall be of a similar size and compatible design to the transmitter probe, and be used to detect the arrival of the ultrasonic pulse generated by the transmitter probe.
- (b) The depth of the probes shall be recordable with a measurement wheel or other suitable measuring device.

- (c) The cross-hole sonic logging equipment shall include a microprocessor-based system for analog to digital conversion and recording of data, for display of individual records, and for analysis of receiver responses and printing of logs.
- (d) The cross-hole sonic logging system shall have an appropriate filter for amplification of data and cable systems.
- (e) Synchronized triggering of the recording system with the ultrasonic pulse shall be a feature of the cross-hole sonic logging system.
- (f) The system shall be able to indicate zero depth at the shaft top and not at the bottom of access tubes. In addition, the system shall be able to log both from the top of the shaft to the bottom as well as from the bottom to the top.
- (g) The winch unit shall be motorized and capable of recording logging speed in the data records.

The minimum testing procedure requirements for cross-hole sonic logging shall be as follows:

- (a) **Preparation of the tubes for Cross-hole Sonic Logging Tests:** All inspection tubes shall be filled with water prior to testing. During testing, the water level in any tube shall not drop below the top of the tube.
- (b) **Cross-hole Sonic Logging Procedure:** Information on the shaft bottom and top elevations, tube lengths and position, along with construction dates, shall be provided by the contractor to the cross-hole sonic logging subcontractor prior to the logging being performed.

All possible tube pairs shall be tested. The tests shall be carried out with the source and receiver probes in the same horizontal plane unless test results indicate potential defects, in which case the questionable zone shall be further evaluated with angled tests (source and receiver vertically offset in the tubes).

The electronic circuit shall be thoroughly checked. The choice of time base will be such that the "zero signal" and first arrival time are 2-3 divisions apart on the horizontal axis. Amplitude shall be such that the signal fills 2/3 to 3/4 of the screen vertically.

Once the slack is taken up out of the cables to provide accurate depth measurements of the logs, the probes shall be pulled simultaneously and uniformly with a motorized winch from the bottom of the tubes over the depth wheel or other measuring device. All slack shall be taken out of the cables before the analyzer is switched on. The speed of ascent should be less than 20 to 25 feet per minute. The cross-hole sonic measurements shall be taken at two-inch intervals or less from the bottom to top of shaft.

- (c) **Anomaly Identification:** Anomaly in a drilled shaft shall be determined by evaluating the pulse arrival times and amplitude/energy signals. Zones where the measured sonic velocity is 10 percent or more lower than the local mean measured sonic velocity within a five-foot interval above and below the suspected anomalous zone shall be reported to the Engineer. The Engineer may require further tests such as offset elevation cross-hole sonic logging or tomographic testing to evaluate the extent of such defects. Any such additional testing shall be considered as included in the contract item for drilled shafts.
- (d) **Cross-hole Sonic Logging Results:** Results of the cross-hole sonic logging completed at a given substructure element shall be submitted to the Engineer in a report(s) within three working days of completion of testing at that given substructure element. The Engineer will review the report within three working days of the contractor's submittal. The report shall include:

1. Dates of shaft construction; shaft diameters; shaft lengths; shaft tip elevations; shaft cutoff elevations; type and size of drilling equipment; type of slurry if used; description of concrete mix; reinforcement details; inspection tube placement; concrete placement method; shaft layout with shaft numbers.
2. Dates of logging; brief description of the testing equipment; number of shafts logged; location of obstructions in PVC tubes; location of PVC couplers; calibration date, data and plot; summary of any unusual occurrences during testing; description and explanation of adjustments made to instrumentation or data (if any); identification of anomalies using the criteria described herein; delineation of affected tubes; vertical location and extent of anomalies; and estimated percentage of anomalous cross-sectional area.
3. The cross-hole sonic logs expressing the results in terms of velocity and pulse amplitude/energy versus depth. The cross-hole sonic logs shall be presented for each tube pair with all anomalous zones indicated on the logs.
4. Analyses of the initial pulse arrival time versus depth, velocity versus depth, and pulse amplitude/energy versus depth.
5. Appropriate discussion of the results in the text of the report shall be included.
6. Tomography of anomalous zones.

**(3) Requirements for Gamma-Gamma Logging (GGL) Tests:**

The minimum equipment requirements for gamma-gamma logging shall be as follows:

- (a) The gamma-gamma probe shall consist of a rigid cylinder containing a gamma particle emitting source and a gamma particle detector. The probe shall be suspended by a cable of sufficient design and length that it is safely capable of raising and lowering the gamma-gamma probe within a two-inch internal diameter Schedule 80 PVC inspection pipe to the desired test depths.
- (b) The cables affixed to the probe shall be of sufficient strength and durability to raise and lower the probe safely and at a controlled rate of speed. The winch mechanism shall be such that it does not damage the cables or compromise data collected in the test. A means of determining and recording probe depth shall be provided.
- (c) The gamma particle emitting source shall be Cesium-137 in a sealed source form.
- (d) The gamma-gamma probe detector shall consist of a proven method of gamma detection, such as Geiger Mueller or scintillation-based counters.
- (e) The detector shall be connected to a readout device that is capable of displaying and/or recording counts, densities, and sampling duration or probe speed.
- (f) The gamma-gamma probe shall possess a minimum density precision of 1.0 pounds per cubic foot.
- (g) The gamma-gamma probe shall have a minimum radius of detection of 4.0 inches in concrete with density between 140 and 160 pounds per cubic foot. The probe shall have the capability of varying the radius of detection up to seven inches in concrete with density between 140 and 160 pounds per cubic foot.
- (h) Prior to use for gamma-gamma logging, the contractor shall provide the Engineer with the calibration of the gamma-gamma probe and readout unit to correlate count rate and concrete density. The calibration shall not be more than one year old, and shall be performed using the same source and detector combination as that

proposed for the GGL testing on the project. Furthermore, the calibration shall have been conducted in an environment (e.g., water-filled, Schedule 80 PVC pipes) similar to the shafts being tested for the project. Gamma-gamma logging shall not be performed until the Engineer has approved the calibration records. Upon approval, the contractor shall perform the gamma-gamma tests exactly in the manner as the calibration of the probe and readout unit was performed.

The minimum testing procedure requirements for gamma-gamma logging shall be as follows:

- (a) **Preparation of Gamma-Gamma Logging Access Tubes:** A gamma-gamma logging survey may be performed by an experienced subcontractor using inspection tubes completely filled with water only if the gamma-gamma probe has been calibrated in concrete calibration samples that contained inspection tubes filled with water, and the radius of detection and density precision calibration have been performed under water and found to be within the prescribed limits. In the event of gamma-gamma testing in water filled tubes, the water level during testing in any tube shall not drop below the top of the tube.
- (b) **Gamma-Gamma Logging Procedure.** Information on the shaft bottom and top elevations, tube lengths and position, along with construction dates shall be provided by the contractor to the gamma-gamma logging subcontractor prior to the logging being performed.

The test shall be started by lowering the probe to the bottom of the access tube. When extracting the probe, the readings shall be taken at depth intervals not exceeding 1.5 inches and within the density precision of 1.0 pounds per cubic foot. The probe shall be extracted at a rate of between 8 to 10 feet per minute, and recorded.

To evaluate the repeatability of the GGL tests, the contractor shall perform one repeat log for each shaft in which GGL tests have been performed. After all the tubes in a given shaft have been GGL tested, the repeat log shall be performed in the first tube that was tested.

- (c) **Gamma-Gamma Logging Data Analysis:** The following steps shall be used in the analysis of the gamma-gamma logging data:
  1. Apply the approved calibration parameters from the concrete calibration samples to the raw count readings and obtain bulk concrete densities. Verify that the data set contains no logging errors, duplicated data or skipped data points.
  2. Determine the arithmetic mean of a set of bulk densities and record it on each log. A set shall consist of data collected from a single inspection pipe, using the same equipment, within the same time period. Data that shall not be included in the calculation of the mean density are: (1) repetitive data points collected at a single depth, (2) data collected at the top of the drilled shaft where the reading(s) were influenced by the gamma detector component exiting the shaft concrete, (3) data collected in the access tube above the top of the drilled shaft, (4) data affected by the anomalous zones of concrete, and (5) data that cause the population distribution to be statistically non-normal.
  3. In the event that a known difference in the steel reinforcement layout (e.g., splices using overlapping bars) exists in a segment of a drilled shaft that affects the apparent mean, a separate mean shall be generated and utilized as the mean for that portion of the data.
  4. Subtract the mean from each data point in the set to obtain a data set that reflects the variation from the mean.
  5. Repeat the above 4 steps for all inspection tubes contained within an individual shaft and plot and present that

data as (1) a single plot from all tubes, and (2) an individual plot for each tube.

**(d) Gamma-Gamma Logging Standard Deviation Analysis:** The following steps shall be used in the standard deviation analysis of the gamma-gamma logging data:

1. Determine the standard deviation (SD) of a compilation of bulk densities. A compilation shall consist of data collected from the test drilled shaft using the same equipment, within the same time period. Data that shall not be included in the calculation of the mean density are: (1) repetitive data points collected at a single depth, (2) data collected at the top of the drilled shaft where the reading(s) were influenced by the gamma detector component exiting the shaft concrete, (3) data collected in the access tube above the top of the drilled shaft, (4) data affected by the anomalous zones of concrete, and (5) data that cause the population distribution to be statistically non-normal.
2. The SD value that is used in step 3 shall be between 2.5 pounds per cubic foot and 3.75 pounds per cubic foot. If the calculated value is below 2.5 pounds per cubic foot, then 2.5 pounds per cubic foot shall be used in step 3. If the calculated value is above 3.75 pounds per cubic foot, then 3.75 pounds per cubic foot shall be used in step 3.
3. Multiply the value obtained for SD from the above step by -2.0 and -3.0 to obtain values of "Minus Two Standard Deviations" (-2SD) and "Minus Three Standard Deviations" (-3SD), respectively.

**(e) Anomaly Identification:** Anomaly in a drilled shaft shall be determined by evaluating the data points developed by the above processes to the -3SD deviation criterion as follows:

1. In a single inspection tube over any 0.5-foot or greater depth interval, all of the density readings have a value less than the determined value for -3SD.
2. In the same inspection tube identified anomalous by the above step, any data point that falls below the value for -3SD within a one-foot vertical extent immediately above or below, then that depth shall be considered as anomalous in addition to the depth identified in the previous step.
3. In all inspection tubes adjacent to inspection tubes already identified as anomalous, if at least one data point within two feet vertically above or below the adjacent tube anomaly falls below the value for the -3SD, then the depth in that tube at which the anomaly is found is also anomalous, in addition to the depths identified in the previous two steps.

**(f) Gamma-Gamma Logging Results:** Results of the gamma-gamma logging completed at a given substructure element shall be submitted to the Engineer in a report(s) within three working days of completion of testing at that given substructure element. The Engineer shall review the reports within three working days of the contractor's submittal. The report shall include:

1. Dates of shaft construction; shaft diameters; shaft lengths; shaft tip elevations; shaft cutoff elevations; type and size of drilling equipment; type of slurry if used; description of concrete mix; reinforcement details; inspection tube placement; concrete placement method; shaft layout with shaft numbers.
2. Dates of logging; brief description of the testing equipment; number of shafts logged; location of obstructions in PVC tubes; location of PVC couplers; calibration date, data and plot; summary of any unusual occurrences during testing; description and explanation of adjustments made to instrumentation or data (if any); identification of anomalies using the criteria described herein; delineation of affected tubes; vertical location and extent of anomalies; and estimated percentage of anomalous cross-sectional area.

3. Plots of each individual tube with the data points and the values of -2SD and -3SD. The plots shall indicate these points and values at all depths. Utilize symbols or line formats that permit lines corresponding to -2SD and -3SD to be distinguishable from data points.
4. Appropriate discussion of the results in the text of the report shall be included.

**(4) Procedures in Case of Anomalies:**

If the testing indicates the presence of anomalous zones, as identified by the sonic cross-hole and gamma-gamma tests, in the drilled shaft foundation, or if the Engineer determines that construction defects may have occurred, the contractor shall conduct three-dimensional tomographic surveys of the anomalies, at no additional cost to the Department. The results of the tomographic surveys shall be presented in the form of concrete velocity images in two-dimensions (2-D) between each pair of tubes, and in three-dimensions (3-D) for the whole shaft. The costs for any analysis and design required by the Department as a result of anomalous zones shall be deducted from monies due the contractor. Should the Engineer determine that the anomalous zones reveal defects, the contractor shall submit a plan to repair, replace, or supplement the defective work in a manner approved by the Engineer, which may include constructing one or more additional drilled shafts at the locations directed by the Engineer. After review and acceptance by the Engineer, the contractor shall perform the work specified in the approved plan at no additional cost to the Department.

**609-3.07(A) General:** the first sentence of the first paragraph of the ADOT Standard Specifications is revised to read:

The reinforcing cage shall be placed in the drilled shaft within one (1) hour after the shaft bottom has been cleaned. The shaft bottom shall be inspected immediately prior to lifting the cage and re-cleaned if deemed necessary by the Engineer. The Contractor shall begin placement of concrete within 24 hours after the completion of the drilled shaft excavation and within one (1) hour after placement of the reinforcing cage.

Section 609-1.01 of the ADOT Standard Specifications is modified to add:

**Certification**

The Contractor shall be responsible for reviewing all available geotechnical investigation reports. See report included in this Section.

**Measurement**

Section 609-4 of the ADOT Standard Specification is modified to read:

Drilled shafts shall be measured by the linear foot from the actual bottom of the shaft, to the elevation of the top of the shaft as indicated on the Project Plans. The confirmation shaft, as accepted by the Engineer, will be measured by the lineal foot of embedment from the completed bottom of the shaft as established by the Engineer to the top of the shaft as completed.

**Payment**

Section 609-5 of the ADOT Standard Specifications is revised to read:

The accepted quantities of drilled shafts and rock sockets, measured as provided above, will be paid for at the contract unit price per lineal foot for the diameter designated in the bidding schedule, complete in place, including excavation and disposal of spoils; drilling slurry; metal casing; steel reinforcing within the shaft

between the bottom of shaft and the drilled shaft cut-off elevation; Portland cement concrete; any needed forming, curing and finishing; exposing of concrete and the subsequent repair of foundations; furnishing all materials, equipment, and labor for splicing of reinforcing steel; all labor, conduit, and equipment for sonic cross-hole logging and gamma-gamma logging; and all required testing and test reports. No additional payment will be made for metal casing that is to remain in place. No additional payment will be made for providing a manufacturer's representative for the drilling slurry, the costs considered to be included in the cost of constructing the drilled shaft foundation.

29. **505 CONCRETE STRUCTURES**, Add the following to **Section 505 CONCRETE STRUCTURES**:

**CLASS 'S' CONCRETE, f'c=3000 psi**

The work under this item consists of furnishing all materials and constructing structures, parts of structures and forms, in conformance with the shapes and dimensions detailed on the Project Plans, in accordance with these special provisions and as directed by the Engineer. All work under this section shall conform to SECTION 601 – CONCRETE STRUCTURES of the Arizona Department of Transportation Standard Specifications for Road and Bridge Construction, 2008 Edition, except as herein noted and shown on the Project Plans.

**Measurement**

Class S Concrete shall be measured as specified in Section 601 of the ADOT Standard Specifications.

**Payment**

Payment for Class 'S' Concrete shall be made at the contract unit price for each strength of concrete, including all hardware, equipment and labor as described herein and on the plans.

30. **505 CONCRETE STRUCTURES**, Add the following to **Section 505 CONCRETE STRUCTURES**:

**ELASTOMERIC BEARING PADS**

**Description**

Elastomeric Bearing Pads shall be constructed in conformance with the details shown on the Project Plans; provisions of the ADOT Standard Specifications for Road and Bridge Construction, 2008 Edition, Section 1013 Bearing Pads; and in accordance with these special provisions; and as directed by the Engineer.

The fourth and fifth paragraphs of Section 1013-2.01 General, of the ADOT Standard Specifications are revised to read:

The elastomeric bearing pads shall be reinforced with steel laminates and shall conform to AASHTO M 215.

Bearing pads shall be furnished with the dimensions, material properties and elastomer grade required by the plans and these special provisions. Unless otherwise specified on the plans, bearing pads that have thicknesses greater than 1/2 inch shall be reinforced with steel laminates. The design method and the design load shall also be shown on the plans, and testing shall be performed accordingly.

**Measurement**

Elastomeric Bearing Pads will be measured as a unit for each bearing furnished.

## Payment

The accepted quantities of Elastomeric Bearing Pads, measured as provided above, will be paid for at the contract unit price per each for the bid item "ELASTOMERIC BEARING PADS per PLANS", complete-in-place, including, as applicable, elastomeric pads, testing, and certification.

### 31. 505 CONCRETE STRUCTURES, Add the following to Section 505 CONCRETE STRUCTURES:

#### APPROACH SLAB

##### Description

The work under this item consists of furnishing all materials and constructing approach slabs at the locations and in conformance with the details on the Project Plans, these special provisions and as directed by the Engineer. All work under this section shall conform to SECTION 601 – CONCRETE STRUCTURES of the Arizona Department of Transportation Standard Specifications for Road and Bridge Construction, 2008 Edition, except as noted herein and on the Project Plans.

##### Measurement

Concrete approach slabs shall be measured to the nearest square foot.

##### Payment

Approach slabs will be paid for at the contract unit price under the bid item "CONCRETE APPROACH SLAB" and shall be full compensation for furnishing all labor, material, tools, equipment, incidentals, and for doing all work involved in constructing the approach slabs, including reinforcing steel, edge angles, concrete and dowels to provide approach slabs complete-in-place.

### 32. 515 STEEL STRUCTURES, Add the following to Section 515 STEEL STRUCTURES:

#### PREFABRICATED STEEL BRIDGE

The work under this section shall include furnishing and installing a truss bridge superstructure at the location shown on the Project Plans, including open steel grate decking, anchor bolts, deck joints, handrails, welded wire fabric for safety fence, and miscellaneous related items complete-in-place, as shown on the Project Plans and as specified herein. All work materials under this section shall conform to SECTION 604 – STEEL STRUCTURES of the Arizona Department of Transportation Standard Specifications for Road and Bridge Construction, 2008 Edition, except as noted herein and on the Project Plans.

##### Prefabricated Steel Truss Bridge

The work under this section shall include constructing a steel truss bridge in accordance with the details shown on the Project Plans, complete-in-place, as specified herein, and according to the manufacturer's installation requirements. The work shall include fabricating, furnishing, delivering, and erecting the truss, including the open steel grate decking, anchor bolts, deck joints, handrails, welded wire fabric for safety fence, testing welds, and performing all work required to complete the steel truss bridge. All work under this section shall conform to Section 604 of the ADOT Standard Specifications for Road and Bridge Construction, 2008 Edition.

The Prefabricated Steel Bridge fabricator shall have at least five (5) years of experience designing and

fabricating steel truss structures and a minimum of five (5) successful bridge projects, of similar construction, each of which has been in service at least three (3) years.

The steel truss bridges shall be fabricated as a complete unit with the exception that the open steel grate decking, which may be installed at the project site. The Contractor shall transport, and erect the steel truss bridge at the project site as complete unit.

The inside clear width between trusses shall be 10'-6". The span length, from centerline of bearing to centerline of bearing shall be as shown on the plans. The top of the top chord shall not be less than 4'-6" above the top of the deck, measured from the high point of the riding surface.

The steel trusses shall be cambered to offset the dead load deflection. The fabricator shall determine the amount of camber required to compensate for the dead load deflection.

All members of the vertical trusses (top and bottom chords, verticals, and diagonals) shall be fabricated from square and/or rectangular structural steel tubing. Other structural members and bracing shall be fabricated from structural steel shapes or square and rectangular structural steel tubing.

The steel truss bridge shall be designed according to the latest editions of the AASHTO LRFD Bridge Design Specifications, the AASHTO LRFD Guide Specifications for the Design of Pedestrian Bridges and the AASHTO/AWS D1.5 Bridge Welding Code. All applicable requirements of these design specifications must be met, in addition to the requirements specified herein.

The live loading shall be the greater of 90 pounds per square foot pedestrian loading without dynamic loads allowance or an H5-44 maintenance vehicle without dynamic load allowance. The steel truss bridge shall be designed for Seismic Performance Zone 1 (Site Class D) with a Peak ground Acceleration of 0.13g,  $S_s = 0.115g$  and  $S_1 = 0.039g$ .

The steel truss bridge shall be designed for wind load as specified in AASHTO Signs, Articles 3.8 and 3.9. The Wind Importance Factor,  $I_r$ , shall be taken as 1.15. The wind load shall be applied over the exposed area in front elevation including enclosures. In addition to the wind load specified above, a vertical uplift line load as specified in AASHTO LRFD Article 3.8.2 and determined as the force caused by a pressure of 0.020 ksf over the full deck width, shall be applied concurrently. This loading shall be applied at the windward quarter point of the deck width.

The steel truss bridge shall be designed for fatigue loading as specified in Section 11 of AASHTO Signs. The analysis and design of the steel truss bridges shall account for moments induced in members due to joint fixity where applicable. Moments due to both truss deflection and joint eccentricity must be considered.

The truss shall be investigated at the service limit state for deflection using load combination Service I in Table 3.4.1-1 of AASHTO LRFD. Pedestrian live load deflection shall not exceed 1/360 of the span length. Horizontal deflections under unfactored wind loading shall not exceed 1/360 of the span length. The deflection of the floor system members (floor beams and stringers) shall not exceed 1/360 of their respective span length. Deflections due to the maintenance vehicle need not be limited.

#### 1. Handrails

The work under this section shall include furnishing all materials, equipment and labor for fabricating, and installing handrails attached to the trusses, complete in place as shown on the Project Plans and as specified herein. The bridges shall be provided with a continuous 1 1/4" schedule 40 galvanized steel pipe handrail along each truss. Handrails shall be provided with a minimum 1 1/2" knuckle space between the railing and the truss verticals. The handrails shall be located 3'-0" above the deck surface. The handrails shall be

secure and shall not rotate within their fittings. The mounting of the handrails shall be such that the completed handrail and supports are capable of withstanding a load of 200 pounds applied in any direction at any point on the rail. The handrail shall deflect no more than 1/4" under this loading. The ends of the handrails shall be turned down and welded to the end posts of the trusses. The pipe handrails shall be attached to the brackets from underneath with two self-tapping hex head tek screws at each bracket. All fabricated items with joints shall be tightly fitted and secure. Exposed welds shall be ground flush and smooth with adjacent finished surfaces. Exposed joints shall be tight and flush, and gaps shall be hairline thin.

2. **Welded Wire Fabric for Safety Fence**

The work under this section shall include furnishing all materials, equipment and labor for fabricating, and installing safety fence attached to the trusses, complete in place as shown on the Project Plans and as specified herein. Safety fence shall be placed on the structure and shall extend to a height of 4'-6" above the deck surface. Safety fence shall consist of a top rail, intermediate rails, a bottom rail, and welded wire fabric so as to prevent a 4" sphere from passing through. Safety fence shall be placed on the inside of the structure and shall have the ends of the top and bottom rails sealed and ground smooth so as to produce no sharp edges. The safety fence system shall be designed for an infill loading of 200 pounds, applied horizontally at right angles, to a one square foot area at any point in the system.

3. **Open Steel Grate Decking**

The work under this section shall include furnishing and installing the open steel grate decking for the bridge deck in accordance with the details shown on the Project Plans, as specified herein, and according to the manufacturer's installation requirements. The work shall include furnishing and installing the deck panels, including erection, welding, saddle clips, and miscellaneous items complete-in-place as shown on the plans. The metal decking shall be attached using saddle clips. The saddle clips shall be screwed to the stringers and floor beams in such a way that the flooring panels can be removed if necessary in the future for maintenance purposes.

**Materials**

The welded wire fabric for safety fence shall conform to ASTM 588, A242 or A606. If the contractor is able to demonstrate that this material is not available in weathering steel, then the welded wire fabric shall be carbon steel with a brown vinyl or powder coated finish to match the look of weathering steel.

Open Steel Grate Decking shall conform to ASTM A709 Grade 50W Weathering Steel.

All structural steel tubes and connection plates shall conform to ASTM A709 Grade 50W Weathering Steel. Bolts and anchor bolts shall conform to ASTM A325.

All truss members shall be considered Fracture Critical Members (FCM) for the purposes of fabrication and welding requirements. All welding shall conform to the latest AASHTO/AWS D1.5 Bridge Welding Code. All welds shall be ground smooth.

**Shop Drawings**

Prior to fabrication, the Contractor shall submit shop drawings for the open steel grate decking, steel truss, anchor bolts, welded wire fabric for safety fence, and miscellaneous items to the Engineer for review and approval. Shop drawings for steel structures shall show complete fabrication and erection details including fully detailed dimensions and sizes of component parts of the structure and details of miscellaneous parts.

The Contractor shall submit seven (7) full size copies of each set of shop drawings to the Engineer. Approval of the submittals shall not relieve the Contractor of responsibility of the correctness of the shop drawings.

## Measurement

The steel truss bridge, handrails, safety fence and open steel grate decking shall be considered incidental to the lump sum item.

## Payment

The steel truss bridge will be paid at the contract lump sum price under the bid item "PREFABRICATED STEEL BRIDGE". Payment shall be for the fabricating, furnishing, delivering, and erecting the truss bridge, including the anchor bolts, testing of welds, and performing all work required to complete the steel truss bridge. No additional payment for materials, shipping, etc. will be considered. The bid amount specified is for the prefabricated steel truss bridge superstructure, complete in place.

33. **515 STEEL STRUCTURES**, Add the following to **Section 515 STEEL STRUCTURES**:

### Colorant for Galvanized Metal

#### General:

This work consists of preparing, staining, and/or finishing all visible galvanized surfaces and appurtenances to achieve a rustic brown color with a matte finish.

#### Materials:

Metal Stain (or approved alternative)

The stain must consist of a clear soluble solution of soft buffered organic acids that accelerates the oxidization process without compromising the protective qualities of the galvanized surfacing. No pigment based colorants should be added to achieve the desired color. The stain must react with the target surface over a period of 14 days to produce a rustic brown color with a matte finish. The stain must be resistant to fading in the sun.

For alternative materials, provide a methods and materials for the selected alternative as part of the initial submittal.

#### Submittal:

A submittal for the selected material shall be provided and include:

A copy of the manufacturer's product Material Safety Data Sheet together with instructions for application of product 5 days before application.

Proposed methods to control overspray, spillage and protection of adjacent surfaces for approval by the State Representative. No application of any material will be allowed prior to approval.

Independent lab tests showing that the product materials are environmentally safe.

Apply product and all preparation or primer products to a minimum 24-inch length of sample section of metal of the type used on the project. Sample shall not be installed as part of permanent installation. Notify owner's representative not less than 7 days before application of products to sample section. The applied material must be allowed to cure for a minimum of 14 days before the owner representative's inspection. Prepare

and apply approved products, to include all preparation products, primers, cleaners, and other applications to be used to the sample section with the same materials, tools, equipment and methods to be used in the final material surfaces. Contractor shall include the cost for up to three samples as part of submitted unit pricing. Use the owner representative's approved sample as the standard of comparison in determining acceptability of staining. Document dates of application, cure time and subsequent inspections.

Construction Procedures:

### **Preparation**

Target surfaces to be colored must be free of excessive oils, dirt, and other contaminants. All surfaces must be dry before application of stain.

### **Application:**

After items to be colored have been prepared as directed herein or per recommendations by selected manufacturer, and the sample approved, apply colorant to all existing galvanized surfaces and appurtenances required to be stained. Apply stain according to the manufacturer's instructions to achieve a color consistent with the approved sample. Minimize overspray if field applied. Spray application should not be performed under windy or rainy conditions.

Contractor is responsible to protect all adjacent surfaces and materials in the event that work is done on site. In the event that overspray is found on any adjacent surface or material, the contractor shall be responsible for the cost and labor to restore to previous condition.

Colorant must be applied uniformly. Irregularities must be corrected according to owner or manufacturer's recommendations.

Stained surfaces must be kept dry for a period of 5 days following the application of stain.

Final approval of product samples shall be made by the owner.

No work shall proceed until written approval is received for the product approved for use on project.

### **APPROVED PRODUCTS:**

1. Natina Steel, Natina Products, LLC  
PO Box 4563  
Palm Desert, CA 92261  
877 762 8462
2. Prismatic Powder Coat  
866 774-7628  
Submit color, process, and materials
3. TCI Powder Coatings  
300 Martin Marietta Drive,  
Americus, GA 31719  
800-533-9067  
Submit color, process, and materials

4. Or Approved Equal

34. **601 TRENCH EXCAVATION, BACKFILLING AND COMPACTION**, Add the following to **Subsection 601.2.6 Grading and Stockpiling** after the first paragraph:

During excavation, material suitable for backfilling shall be piled in an orderly manner, a sufficient distance back from the edges of trenches, to avoid overloading and to prevent slides or cave-ins. Material unsuitable for backfilling, or excess material, shall be hauled from the job site and disposed of by the Contractor.

35. **601 TRENCH EXCAVATION, BACKFILLING AND COMPACTION**, Add the following to **Subsection 601.2.7 Shoring and Sheeting**:

The Contractor shall do such trench bracing, sheathing or shoring necessary to perform and protect the excavation as required for safety and conformance to governing laws. The bracing, sheathing or shoring shall not be removed in one operation, but shall be done in successive stages as determined by the Engineer to prevent overloading of the pipe during backfilling operations. The cost of the bracing, sheathing or shoring and the removal of same shall be included in the unit price for the pipe.

36. **601 TRENCH EXCAVATION, BACKFILLING AND COMPACTION**, Add the following to **Subsection 601.2.8 Open Trench**:

Except where otherwise noted in the special provisions, or approved in writing by the Engineer, the maximum length of open trench, where the construction is in any stage of completion (excavation, pipe laying or backfilling), shall not exceed 1,320 feet in the aggregate at any one location.

Any excavated area shall be considered open trench until all ABC for pavement replacement has been placed and compacted. With the approval of the Engineer, pipe laying may be carried on at more than one separate location, the restrictions on open trench applying to each location. Trenches across streets shall be completely backfilled as soon as possible after pipe laying.

Substantial steel plates with adequate trench bracing shall be used to bridge across trenches at street crossings where trench backfill and temporary patches have not been completed during regular work hours. Safe and convenient passage for pedestrians shall be provided. The Engineer may designate a passage to be provided at any point he deems necessary.

37. **601 TRENCH EXCAVATION, BACKFILLING AND COMPACTION**, Add the following new **Subsection 601.2.9 Pavement and Concrete Cutting and Removal**:

**601.2.9 Pavement and Concrete Cutting and Removal:** Where trenches lie within the Portland cement concrete section of streets, alleys, driveways or sidewalks, etc., such concrete shall be sawcut to neat, vertical, true lines in such a manner that the adjoining surface will not be damaged. The minimum depth of cut shall be 1 ½ inches or ¼ of the thickness, whichever is greater.

Asphalt pavement shall be clean-cut with approved equipment and by approved methods in accordance with the requirements of Section 336.

No ripping or rooting will be permitted outside limits of cuts. Surfacing materials removed shall be hauled from the job site immediately, and will not be permitted in the backfill.

38. **601 TRENCH EXCAVATION, BACKFILLING AND COMPACTION**, Add the following to **Subsection 601.3.3**

**Bedding for Storm Sewers Maintained by the City of Phoenix:**

All Controlled Low Strength Material (CLSM) shall be provided by a commercial-source. No on-site mixing or addition of cement to aggregate base course slurry in transit mixers will be allowed.

39. **601 TRENCH EXCAVATION, BACKFILLING AND COMPACTION**, Add the following to **Subsection 601.3.4 Backfill:**

**BACKFILL TYPE REQUIREMENTS FOR PIPE TRENCHES**

Type "B" backfill, as shown on City of Phoenix Detail P1200, shall be used for all mainline pipe installations across major, collector, or other signalized intersections. At a minimum, the extent of the Type "B" backfill shall be from curb-return-to-curb-return through the intersection, unless noted otherwise on the plans or in the special provisions. Type "B" backfill shall also be used for all lateral pipe connections in ALL streets. Type "A-Modified" backfill (suitable native material as specified in City of Phoenix Supplement to MAG Specification Section 601.3.2, except that no piece larger than 3 inches will be allowed), as shown on City of Phoenix Detail P1200, may be used at all other locations, from the top of bedding to the specified pavement subgrade level, unless noted otherwise on the plans or in the special provisions. There is no separate measurement or payment for pipe backfill. The cost is considered included in the bid price for furnishing and installing the pipe. The pavement replacement section shall be as specified on the plans or in the special provisions, and shall be paid for by the square yard or by the ton, whichever is indicated in the special provisions and on the bid proposal.

40. **601 TRENCH EXCAVATION, BACKFILLING AND COMPACTION**, Add the following new **Subsection 601.4.5 Cutting Newly Placed Pavement for Pipe Installation:**

**601.4.5 Cutting Newly Placed Pavement for Pipe Installation:** In the event temporary or base course pavement must be cut in order to install pipe, the cost of sawcutting, removing and replacing the asphalt shall be considered incidental to the cost of the pipe.

41. **601 TRENCH EXCAVATION, BACKFILLING AND COMPACTION**, Add the following new **Subsection 601.6 PROTECTION OF EXISTING UTILITIES:**

**601.6.1 Utilities:** Unless otherwise shown on the plans or stated in the specifications, all utilities, underground or overhead, shall be maintained in continuous service throughout the entire contract period. The Contractor shall be responsible and liable for any damages to or interruption of service caused by the construction.

If the Contractor desires to simplify his operation by temporarily or permanently relocating or shutting down any utility or appurtenance, he shall make the necessary arrangements and agreements with the owner and shall be completely responsible for all costs concerned with the relocation or shutdown and reconstruction. All property shall be reconstructed in its original or new location as soon as possible and to a condition at least as good as its previous condition. This cycle of relocation or shutdown and reconstruction shall be subject to inspection and approval by both the Engineer and the owner of the utility.

The Contractor shall be entirely responsible for safeguarding and maintaining all conflicting utilities that are shown on the plans (Sections 107 and 105 apply). This includes overhead wires and cables and their supporting poles whether they are inside or outside of the open trench. If, in the course of work, a conflicting utility line that was not shown on the plans is discovered, the Contracting Agency will either negotiate with the owner for relocation, relocate the utility, change the alignment and grade of the trench or as a last resort, declare the conflict as "extra work" to be accomplished by the Contractor in accordance with Section 104.

**601.6.2 Irrigation Ditches, Pipes and Structures:** The Contractor shall contact the owners of all irrigation facilities, and make arrangements for necessary construction clearances and/or dry-up periods.

All irrigation ditches, dikes, headgates, pipe, valves, checks, etc., damaged or removed by the Contractor, shall be restored to their original condition or better, by the Contractor at no additional cost to the Contracting Agency.

**601.6.3 Building, Foundations and Structures:** Where trenches are located adjacent to building, foundations and structures, the Contractor shall take all necessary precaution against damage to them. The Contractor shall be liable for any damage caused by the construction.

Except where authorized in the special provisions or in writing by the Engineer, water settling of backfill material in trenches adjacent to structures will not be permitted.

There will be no separate measurement or payment for this work. The Contractor will include all associated costs in the unit bid price for the pipe installation.

**601.6.4 Permanent Pipe Support Options and Encasements:** Where 18-inch or larger mainline pipes (or other pipes as directed by the Engineer) cross under existing sanitary sewerlines (vitrified clay pipe 12-inches or smaller), the Contractor shall permanently support the sanitary sewerline per MAG Detail 403-1, 403-2 or 403-3. If the ductile iron pipe replacement option is used (403-3), and the required crossing length is more than one joint of pipe, concrete pipe supports as detailed in MAG Details 403-1 or 403-2 shall be used in addition to the ductile iron pipe. For a single joint of standard 20-foot-long ductile iron pipe replacement, the maximum trench width allowed at the point of the sewer line crossing shall be 9-feet, unless otherwise directed by the Engineer. Mechanical or restrained joints shall be required on all multiple-joint ductile iron pipe crossings.

Where waterlines, reclaimed waterlines or sanitary sewer lines (new or existing) cross over or under each other, pipeline encasements shall be provided as necessary in accordance with MAG Detail 404.

When the ductile iron pipe replacement option is used for the sewer lines, the new pipe shall be properly blocked at each end with one or more bricks resting on undisturbed or 95% compacted soil haunches outside the trench walls to prevent differential settlement.

The interior of all ductile iron pipe used for sewer lines shall be coated per the specification, "LINING FOR DUCTILE IRON PIPE USED FOR SEWER LINES" in these Special Provisions.

Upon completion of a sanitary sewer line support or encasement, including backfilling and compacting, but prior to permanent pavement replacement, the Contractor shall request, through the Engineer, a televising of the line by the City Water Services Department to ensure proper line and grade of the sanitary sewer pipe. If the pipe is out of alignment, it shall be the Contractor's responsibility to remedy the situation at no cost to the City.

If the sanitary sewer line is less than 8-inches in diameter, the Contractor shall provide the necessary equipment and televise the line to determine proper pipe alignment. The Engineer shall be present during the televising, and a video tape of the televising shall be made for the City Water Services Department for confirmation that the pipe is properly aligned. The cost of televising the line and preparing the video tape shall be included in the bid price paid for the pipe support or encasement.

Permanent pipe supports shall be paid for at the unit price bid for each unit installed regardless of type.

Encasements shall be paid for at the unit price bid per linear foot installed regardless of type. The unit price bid for either item of work shall be compensation in full for providing complete and satisfactory permanent pipe supports or encasements, including ductile iron pipe and fittings, concrete, reinforcing steel, forming, vibrating, any required earthwork, televising and videotaping, and any other incidental items necessary.

**601.6.5 Electronic, Telephonic, Telegraphic, Electrical, Oil and Gas Lines:** During trenching operations, underground facilities such as electronic, telephonic, telegraphic, electrical, oil and gas lines shall be supported and protected by the Contractor. Support for plastic pipes shall be continuous along the bottom of the pipe. Support for metal pipe and electrical conduit may be continuous or nylon webbing may be used for suspension at no greater than ten-foot intervals.

The Contractor shall avoid damaging any pipes, conduits or duct bank facilities during excavation, foundation and bedding placement, and trench backfilling and compaction.

**601.6.6 Measurement and Payment:**

There will be no measurement or payment for this work. The Contractor will include all associated costs in the unit bid price for the pipe installation.

42. **601 TRENCH EXCAVATION, BACKFILLING AND COMPACTION**, Add the following new **Subsection 601.7 CONTRACTOR CERTIFICATION OF INSTALLATION PROCEDURES**:

**601.7 CONTRACTOR CERTIFICATION OF INSTALLATION PROCEDURES**

When requested in the Special Provisions or by the Engineer prior to installation, the Contractor shall furnish to the Contracting Agency an affidavit (certification) from the pipe manufacturer (or his designee) stating that the Contractor is familiar with the manufacturer's suggested installation methods and procedures and the installation complies with those procedures and is consistent with MAG requirements.

Also, when required in the Special Provisions or requested by the Engineer, the pipe manufacturer or his designee will review the Contractor's methods and procedures for pipe installation in the field. The Contractor will make any adjustments in the installation as recommended by the manufacturer or his representative. If necessary, the Contractor may be required to reinstall or provide corrections to pipe installed prior to the field review at no cost to the Agency. Once the manufacturer or his representative has reviewed the Contractor's installation methods and the Contractor has adjusted his installation methods as recommended by the same, the manufacturer or his representative shall furnish to the Contracting Agency an affidavit (certification) that the Contractor's installation methods and procedures, at the time of the review, complied with the manufacturer's installation practices. The affidavit must provide the name of the manufacturer's representative witnessing the pipe installation.

43. **620 STORM SEWER CONSTRUCTION WITH CAST-IN-PLACE CONCRETE PIPE**:

Revise all references to the term "storm sewer" to read "storm drain."

44. **625 MANHOLE CONSTRUCTION AND DROP SEWER CONNECTIONS**, Add the following to **Subsection 625.3.1, MANHOLES**:

**SANITARY SEWER MANHOLE ADJUSTMENTS**

On all existing sewer manholes adjusted to new finish grade, the entire new portion of the adjusted manhole shall be seal coated in accordance with COP Supplement to MAG Specification Sections 626 and 627.

45. **631 WATER TAPS AND METER SERVICE CONNECTIONS, Excavation and Backfill:** Add the following **Subsection 631.3**

Bedding and backfill shall be full depth ABC for water services installed under pavement using open trench method. The cost of the ABC material, labor and compaction shall be included in the cost of the water service work.

46. **631 WATER TAPS AND METER SERVICE CONNECTIONS, REPLACEMENT, EXTENSION AND RELOCATION OF EXISTING WATER SERVICES AND METERS** Add the following new **Subsection 631.9** as follows:

**631.9 REPLACEMENT, EXTENSION AND RELOCATION OF EXISTING WATER SERVICES AND METERS**

**Extension or Replacement of Existing Water Service Lines**

The Contractor shall replace or/and extend existing water service lines at the stations listed in these specifications or on the plans in accordance with Detail P-1342. The Engineer will determine when the existing lines are unsatisfactory and must be replaced. Generally, existing copper in good condition with sufficient cover will be extended. Water service lines other than copper shall be replaced.

The water service shall include, but is not limited to, locating the present tap, trenching, bedding, backfilling, disconnecting the existing service pipe from the corporation stop, furnishing and installing new service pipe, new appurtenant fittings, new curb stop and new meter coupling, and re-connection to the meter. The existing tapping saddle and corporation stop shall remain, but the Contractor shall not use any other salvaged service connection components. If the saddle is a single strap, the saddle shall be replaced with a double strap saddle. In the event there is no tapping saddle, The Contractor shall install one. The cost of the saddle and reinstallation of the corporation stop shall be considered incidental to the water service replacement.

Inserts or adapters required to connect to the corporation stop are available at the Water Services Department yard at no cost to the Contractor. The Contractor must obtain a written order (AVO) from the Engineer before picking up said items.

Bedding and backfill shall be full depth aggregate base course. Payment for furnishing and compacting the aggregate base course shall be included in the bid item for replacing or extending existing water services.

The Contractor shall schedule his work so that no open trenches are left overnight.

Materials for water service connections shall conform to MAG Section 754 and City of Phoenix Supplement 610.4.4 and 610.4.5. Joints in the copper tubing shall be made by the use of approved fittings, properly soldered or by means of approved compression fittings such as flared joints or pack joints.

**Water Meter Relocation**

Water meter relocation consists of disconnecting the meter, moving the meter, meter box and cover from the existing location to the new location and reconnecting in accordance with Details P-1342 and P-1363. The meter box and cover shall be set to match the grade at the new location.

Any water meter boxes and/or covers damaged by the Contractor during course of construction shall be replaced in kind at the Contractor's expense.

It is anticipated that some water meter boxes and/or covers may require replacement due to prior damages not due to the fault of the Contractor. The Water Services Department will furnish replacement water meter boxes and covers at no cost; however, the Contractor must first obtain a written order (Field Directive) from the Engineer. Then, at no additional cost to the City, the Contractor shall pick up the specified number of units from the Water Distribution Warehouse located at 2500 S. 22<sup>nd</sup> Avenue.

Water meter boxes and covers shall be Type 1, 2 or 3 in accordance with MAG Details 310, 311, 312, and 320 and P-1315.

All materials and fittings shall conform to the requirements of Section 610 and 754. No salvaged service connection components shall be used.

### **Measurement and Payment**

Measurement for extending and/or replacing water services will be made to the nearest linear foot from the point of connection to the existing line or corporation stop, whichever is applicable, to the curb stop.

Payment for extending and/or replacing water services will be made at the unit price bid per linear foot under the proposal items "3/4-INCH AND 1-INCH WATER SERVICE REPLACEMENT PER SPECIAL PROVISIONS"; and "1 1/2" AND 2" WATER SERVICE REPLACEMENT PER SPECIAL PROVISIONS".

Measurement for water meter relocation will be made per each water meter regardless of size up to and including 2-inch. Payment for water meter relocation will be made at the unit price bid per each under the proposal item "RELOCATE WATER METER" which shall include all sizes encountered on the project up to and including 2-inch.

47. **631 WATER TAPS AND METER SERVICE CONNECTIONS**, Add the following new **Subsection 631.10 NEW WATER METER SERVICES** as follows:

#### **631.10 NEW WATER METER SERVICES**

##### **Description**

The Contractor shall install new water service lines, meters and boxes at the locations listed in these specifications or on the plans in accordance with Detail P1342.

The work shall include locating the new or existing water main, furnishing and installing a new saddle and corporation stop, tapping the main, furnishing and installing new copper water service pipe from the water main to the meter, connecting the water service pipe to the corporation stop, furnishing and installing a curb stop at the meter box, furnishing and installing a meter box, connecting the water service pipe to the curb stop, connecting the curb stop to the meter, furnishing and installing necessary fittings and couplings, and all trenching, backfill, compaction and surface/pavement restoration necessary for a complete new water meter service.

The Contractor shall not use any salvaged service connection components.

The Contractor shall schedule his work so that no open trenches are left overnight.

To install a new tap, the Contractor shall install a new corporation stop utilizing an all-bronze double-strap tapping saddle.

All water service connections shall be made using Type K copper tubing and fittings which conform to Sections 610 and 754. Joints in the copper tubing shall be made by means of approved compression fittings such as flared joints or pack joints.

Sawcutting of the curb and gutter and sidewalk within the City right of way for installing water service pipe will not be allowed. Either jacking or boring methods are required. There will be no additional payment for jacking or boring of the water service, the cost will be included in the cost of the connection.

### **Measurement and Payment**

The work required to install new water meter services will be measured per each for new complete water services and corresponding new meter boxes installed.

Payment shall be made under the bid items, "WATER SERVICE CONNECTION (MAIN TO METER)" and "NEW WATER METER BOX AND COVER, FURNISH AND INSTALL".

48. **631 WATER TAPS AND METER SERVICE CONNECTIONS**, Add the following new **Subsection 631.11 WATER MAIN SHUTDOWN FEES** as follows:

#### **631.11 WATER MAIN SHUTDOWN FEES**

All water main shutdown fees for installation of new water services, extension or replacement of existing water service lines, and relocation of existing water meter boxes will be waived. When it becomes necessary to shut down existing water mains and services to install water service extensions or replacements, no main shall be left out of service for more than one (1) hour, and no individual service will be disrupted for more than five (5) continuous hours. Main valves shall be operated by representatives of the City's Water Services Department. Shutdowns will not begin before 8:00 a.m. and will not extend past 4:00 p.m. It shall be the Contractor's responsibility to notify all customers in advance that the water service will be turned off. The customers shall be notified in writing at least 24-hours in advance and also verbally the day of the shutdown. Initial notification shall include the reason for the shutdown, the date, the time and duration the water service will be shut off. A copy of the notification shall be given to the Engineer.

49. **702 BASE MATERIALS** Add the following to **MAG Section 702 BASE MATERIALS**:

All Select Material specified on the plans and Standard Details shall be Type "A" in accordance with Table 702-1.

50. **727 STEEL REINFORCEMENT**, Add the following to **Section 727 STEEL REINFORCEMENT**:

#### **Description**

The work under this item consists of fabrication, furnishing and placing steel reinforcement of the quality, grade, type, size and quantity designated, in conformance with the details on the Project Plans, and in accordance with these special provisions and as directed by the Engineer. All work under this Section shall conform to SECTION 605 – STEEL REINFORCEMENT of the Arizona Department of Transportation Standard Specifications for Road and Bridge Construction, 2008 Edition, except as noted herein and on the Project Plans.

#### **Construction Requirements**

Section 605-3 of the ADOT Standard Specifications of modified to add:

605-3.05 Shop Drawings:

The Contractor shall submit shop drawings and lists showing the bending of reinforcement bars, splice locations and details and complete manufacturer's information on proprietary splices to the Engineer for review and approval prior to proceeding with the work. Approval of the submittal shall not relieve the Contractor of responsibility for the correctness of the shop drawings and lists.

51. Add the following new **Section 471 ELECTRICAL UNDERGROUND INSTALLATION** as follows:

**901.1 DESCRIPTION:**

The work under this section shall consist of furnishing and installing a wireless network radio at designated signalized intersections as shown on the Equipment Sheet of the Approved Traffic Signal Plans.

**901.2 MATERIALS:**

Provide Tropos Model 7320 with a weatherized gateway plate. Each radio shall come with a Tropos Control Server License.

**CAT 5e Cable:**

1. Conductor Material: BC - Bare Copper
2. Insulation Material: PO - Polyolefin
3. Outer Shield Material : Foil
4. Outer Shield Material: Aluminum Foil-Polyester Tape/TC - Tinned Copper
5. TC Braided Stainless Steel Shield
6. Outer Jacket Material: Industrial Grade PVC - Polyvinyl Chloride Plenum (Y/N): N
7. Outer Jacket Color – Teal

**Power Connector and Cable:**

1. 3-wire, watertight female Remke PVC mini-link plug compatible with male connector on radio
2. IMSA 19-1, 3 conductor #16 cable

**901.3 CONSTRUCTION REQUIREMENTS:**

Install the wireless mesh radio on the horizontal portion of the luminaire mast arm adjacent to the luminaire. The radio should be installed as level as possible using the leveling instrument on the radio with the antennas in the vertical position. Install female mini-link plug to 3 conductor power cable in accordance with manufacturer requirements to ensure watertight connection, or use manufacturer supplied plug with 3' cord and provide a weatherproof connection between the supplied 3' cord and the IMSA 19-1 conductor cable. Connect watertight plug to the radio and install supplied 3 wire power cable continuous without splice from the radio (or weatherproof splice at end of 3' cord) to the junction box located below traffic signal pole as shown on the Traffic Signal Plans and COP Standard Details. Leave a 5' coil of spare cable.

Install CAT 5e cable from the radio to the controller cabinet as shown on the Wiring Sheet of the Approved Traffic Signal Plans and COP Traffic Signal Standard Details continuous without splice. On the controller cabinet end, leave a 10' coil of spare cable.

# Categorical Exclusion – CE Checklist

## For Actions Listed Under 23 CFR 771.117(c) & (d)



U.S. Department of Transportation  
**Federal Highway Administration**

**Project Information:**

<p>Project Name: Grand Canalscape Phase II (TIGER) Shared-Use Path</p> <p>City of Phoenix Project Number: ST87600114</p> <p>Federal-Aid Number: PHX-0(BFG)F</p> <p>STIP/TIP ID Number: PHX18-413</p> <p>Estimated Project Construction Cost: \$10,330,000</p> <p>CE Start Date: May 2016</p>	<p>ADOT Project <input type="checkbox"/> / Local Public Agency Project <input checked="" type="checkbox"/></p> <p>Categorical Exclusion Approval (FMIS):</p> <p>2A – ADOT Approved (c-list) <input type="checkbox"/></p> <p>2B – ADOT Approved (d-list) <input type="checkbox"/></p> <p>2C – FHWA Approved <input checked="" type="checkbox"/></p>
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**Re-evaluation:**

<input type="checkbox"/>	<p><u>Re-evaluation:</u> This project has been re-evaluated pursuant to 23 CFR 771.129, and in accordance with the FHWA-ADOT Programmatic CE Agreement, due to a change in the project scope, location, or termini or because of the need to evaluate new impacts not previously considered, or because three years have passed since the date of the CE Approval. The information on this form reflects all updates to the project information.</p>
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**Location and Limits:**

The City of Phoenix, in cooperation with the Federal Highway Administration (FHWA), will construct a shared-use path and amenities along the Grand Canal between Interstate 17 (I-17) and the Phoenix/Tempe border near the 56th Street alignment. The path will be approximately eight miles long and occur in 3 discontinuous segments from approximately I-17 to 15th Avenue (Segment 1), 16th Street to 36th Street (Segment 2), and 40th Street to the 56th Street alignment (Segment 3). Within segments 1, 2, and 3, the path will be constructed on top of the north canal bank and within Segment 3, the path will also be constructed on top of the south canal bank. These improvements, along with a separately funded first phase, will create a continuous path along Grand Canal. All project activities are within Phoenix, Maricopa County, Arizona (Figure 1 and Figure 2). The project area includes one-eighth mile on each side of the canal in these three segments.

**Purpose and Description (scope of work):**

The project is needed because canal users navigate a travel surface that is inconsistent, uneven, and not compliant with the Americans with Disabilities Act (ADA). In numerous locations, canal users must either traverse busy roads without a designated crossing or travel to a signalized intersection and then return to the canal, resulting in out-of-direction travel. Additionally, the project is needed to reintegrate the canal into surrounding neighborhoods. This will be accomplished by incorporating public art, landscaping, and neighborhood access points to the path to provide greater visibility, and ultimately a higher appreciation of the canal system in Phoenix. The purpose of this project is to encourage an alternative mode of transportation by defining a convenient and ADA-compliant route; improve crossing conditions by minimizing potential motorist-pedestrian conflicts; and foster neighborhood continuity and cohesiveness. The scope of work includes:

- Constructing an ADA-accessible path up to 10 feet wide and ADA transitions at intersections and between roadways and the path
- Constructing pedestrian bridges across the canal
- Constructing new pedestrian hybrid beacon signals, also known as High-intensity Activated crossWalk signals, or other enhanced pedestrian crossing treatments, at roadway intersections
- Constructing at-grade improvements across Union Pacific Railroad tracks
- Relocating/adjusting utilities to accommodate the path and amenities
- Installing path lighting, pedestrian amenities (e.g., benches and shade structures), landscaping/irrigation, and public art
- Infilling an existing undersized drainage ditch and constructing new drainage solutions to convey and better control stormwater

Type of CE - Choose one from (c) or (d) drop-down lists:

(c) - list: (c)(3) Construction of bicycle and pedestrian lanes, paths, and facilities.

(d) - list:

(c)(1) Non-Construction Project: If the project qualifies for a (c)(1) CE then no Threshold Criteria or Technical Sections review is required. Proceed to ADOT Approved in the CE Checklist.

CE Checklist - Threshold Criteria:	Yes	No
1. Does the project involve an acquisition of permanent easement of tribal or federal lands?	<input type="checkbox"/>	<input type="checkbox"/>
2. Does the project involve the permanent acquisition of more than a minor amount of right-of-way?	<input type="checkbox"/>	<input type="checkbox"/>
3. Does the project involve any residential or non-residential displacements?	<input type="checkbox"/>	<input type="checkbox"/>
4. Does the project require a bridge permit from the U.S. Coast Guard?	<input type="checkbox"/>	<input type="checkbox"/>
5. Does the project require an Individual Permit under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act?	<input type="checkbox"/>	<input type="checkbox"/>
6. Does the project have a finding of "Adverse Effect" on historic properties protected by Section 106 of the NHPA by FHWA?	<input type="checkbox"/>	<input type="checkbox"/>
7. Does the project involve the use of a resource protected under Section 4(f) of the USDOT Act except for actions resulting in de minimis impacts?	<input type="checkbox"/>	<input type="checkbox"/>
8. Does the project have a finding of "may affect, likely to adversely affect" threatened or endangered species or critical habitat under the Endangered Species Act?	<input type="checkbox"/>	<input type="checkbox"/>
9. Does the project involve construction of temporary access, or the closure of an existing road, bridge, or ramp, that would result in major traffic disruptions?	<input type="checkbox"/>	<input type="checkbox"/>
10. Does the project involve a change in access control on a controlled access highway?	<input type="checkbox"/>	<input type="checkbox"/>
11. Does the project involve a floodplain encroachment for other than functionally dependent uses (e.g. bridges, wetlands) or actions that facilitate open space use (e.g. recreational trails, bicycle and pedestrian paths)?	<input type="checkbox"/>	<input type="checkbox"/>
12. Does the project involve construction activities in, across, or adjacent to a river component designated or proposed for inclusion in the National System of Wild and Scenic Rivers?	<input type="checkbox"/>	<input type="checkbox"/>

**Technical Sections and Environmental Commitments:**

*(Checking the boxes below acknowledges that the resource has been evaluated)*

- [g] Cultural Resources
- [g] Biology
- [g] Hazardous Materials
- [g] Air
- [g] Noise
- [g] Water Resources
- [g] Public Involvement
- [g] Environmental Commitments

ADOT Approved <u>or</u> FHWA Approved	
	<p><b>ADOT Approved:</b> This project meets the definition for a Categorical Exclusion under 23 CFR 771.117(a), does not involve unusual circumstances as defined under 23 CFR 771.117 (b), does not require preparation of an Environmental Impact Statement or Environmental Assessment, qualifies for a Categorical Exclusion under 23 CFR 771.117(c) or (d), and does not exceed the Threshold Criteria listed in the FHWA/ADOT Programmatic CE agreement.</p>
	<p><b>FHWA Approved:</b> This project meets the definition for a Categorical Exclusion under 23 CFR 771.117(a), but involves unusual circumstances as defined under 23 CFR 771.117(b), exceeds the Threshold Criteria that is listed in the FHWA/ADOT Programmatic CE agreement, or is a project listed under (c)(26), (c)(27) or (c)(28) that does not meet the constraints listed under 23 CFR 771.117(e) and is therefore listed under (d)(13). The project requires FHWA approval. <i>{Ensure that the appropriate "Type of CE" box on page one is checked}</i></p>

City of Phoenix Approval			
 Reviewed By: <b>Greta Halle</b> Environmental Quality Specialist Street Transportation Department	3/30/17 Date:	 Approved By: <b>Mark Melnychenko</b> Deputy Street Transportation Director Street Transportation Department	5-30-17 Date:

FHWA Approved Categorical Exclusion	
_____ Approved By: <b>Jennifer Brown</b> System Performance	04/05/2017 Date:

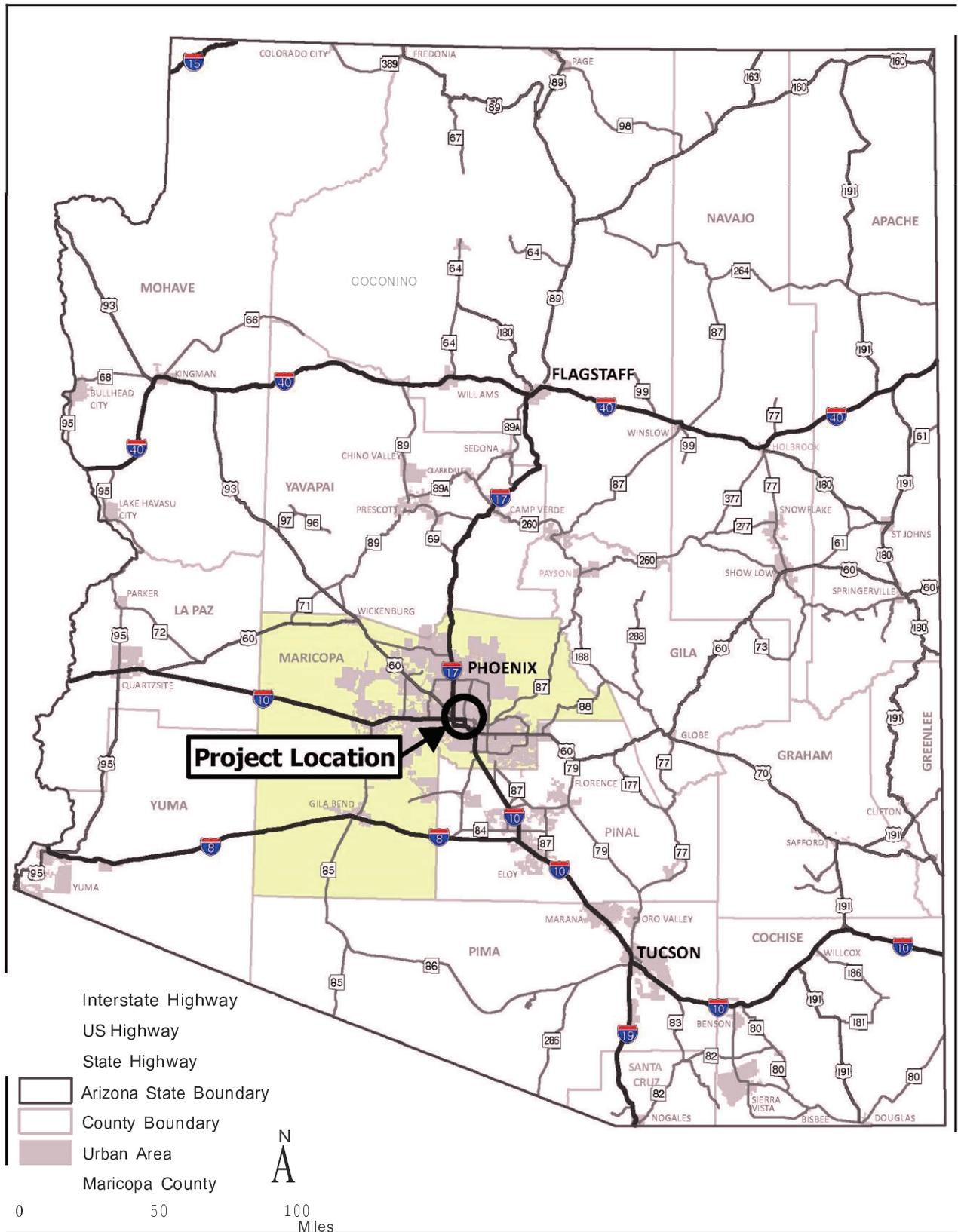


Figure 1. State location map  
 Grand Canalscape Phase II (TIGER) Shared-Use Path Project  
 City of Phoenix project number: ST87600114  
 Federal project number: PHX-O(BFG)F

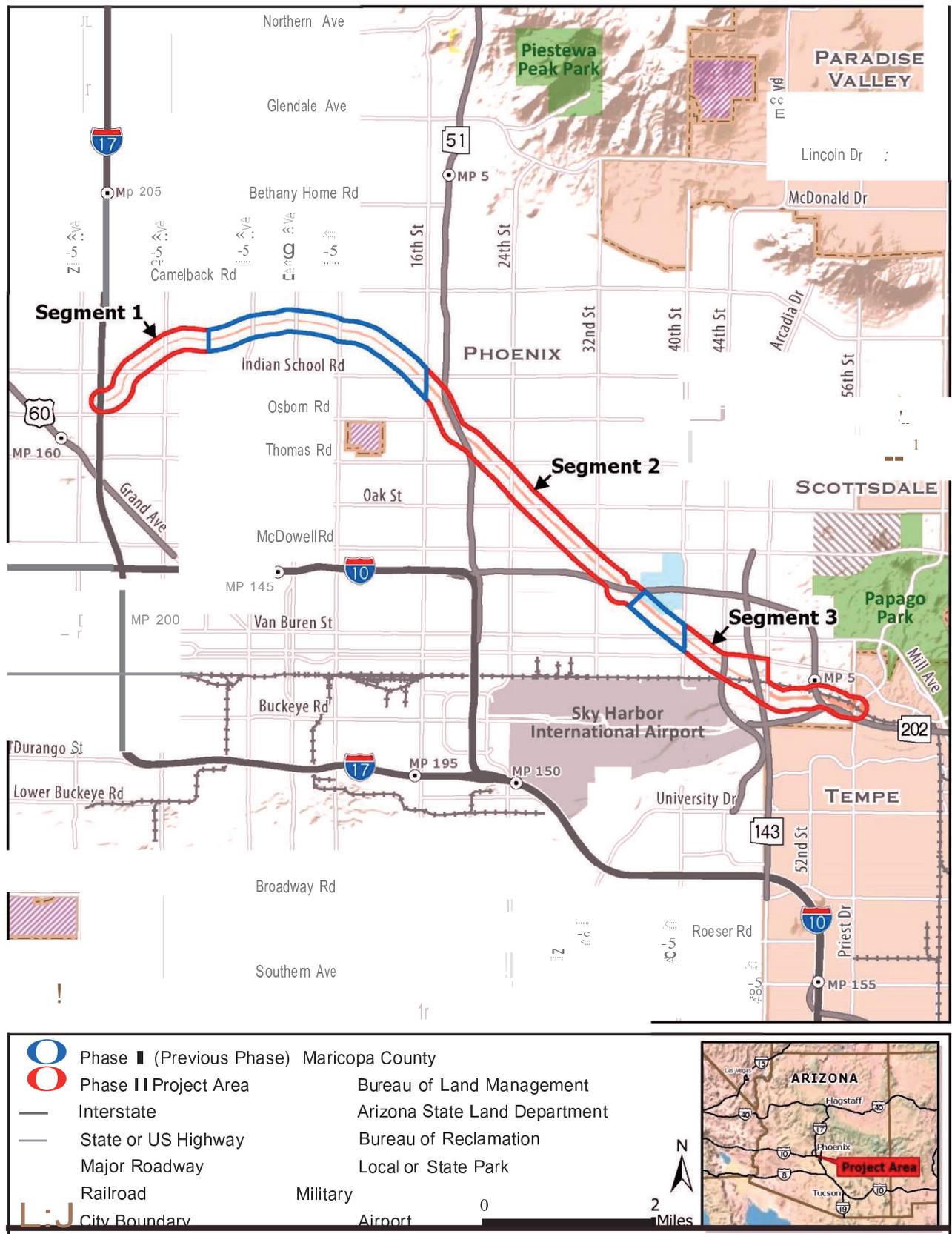


Figure 2. Project vicinity map  
 Grand Canalscape Phase II (TIGER) Shared-Use Path Project  
 City of Phoenix project number: ST87600114  
 Federal project number: PHX-O(BFG)F

## Summary of Section 106 Consultation

Initial Consultation			
Letters	Date Sent	Consulting Parties	Response
Agency	06/20/2016	U.S. Bureau of Reclamation	06/27/2016, concurred
		National Park Service	07/25/2016, concurred
		State Historic Preservation Office	07/01/2016, concurred
		Arizona State Land Department	06/29/2016, concurred
		City of Phoenix Archaeology Office	06/23/2016, concurred
		City of Phoenix Historic Preservation Office	07/08/2016, concurred
		City of Phoenix Office of Arts and Culture	07/12/2016, concurred
		City of Phoenix Aviation Department	No response received
		City of Tempe Development Services Department	06/24/2016, concurred
		Arizona State Museum	No response received
		Salt River Project	No response received
		Union Pacific Railroad	No response received
		06/22/2016	Arizona Department of Transportation
	Tribes	06/20/2016	Ak-Chin Indian Community
Fort McDowell Yavapai Nation			No response received
Gila River Indian Community			08/11/2016, concurred
Hopi Tribe			06/27/2016, concurred
Salt-River Pima-Maricopa Indian Community			No response received
Tohono O'odham Nation			06/28/2016, concurred
Yavapai-Prescott Indian Tribe			No response received

Notification of Adverse Effect to Property or Properties Listed or Eligible for Listing on the National Register of Historic Places			
Letter	Date Sent	Agency	Response
e106	07/27/2016	Advisory Council on Historic Preservation	8/10/2016, declined to participate

Continuing Consultation – Programmatic Agreement			
Letters	Date Sent	Consulting Parties	Response
Agency	08/24/2016	U.S. Bureau of Reclamation	08/30/2016, concurred
		National Park Service	09/21/2016, concurred and subsequently requested to be included in the PA as a concurring party rather than invited signatory
		State Historic Preservation Office	09/15/2016, provided comments
		Arizona Department of Transportation	08/29/2016, concurred
		Arizona State Land Department	09/02/2016, concurred
		City of Phoenix Archaeology Office	09/13/2016, concurred
		City of Phoenix Historic Preservation Office	09/28/2016, concurred
		City of Phoenix Office of Arts and Culture	08/29/2016, concurred
		City of Phoenix Aviation Department	09/01/2016, concurred
		City of Tempe Development Services Department	08/31/2016, concurred
		Arizona State Museum	09/19/2016, concurred
		Salt River Project	No response received
		Union Pacific Railroad	No response received
		Tribes	08/24/2016
Fort McDowell Yavapai Nation	No response received		
Gila River Indian Community	No response received		
Hopi Tribe	08/30/2016, deferred concurrence on the PA to SHPO and other interested tribes but requested to be included in continued consultation		

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## Summary of Section 106 Consultation

continued from previous page

		Salt-River Pima-Maricopa Indian Community	No response received
		Tohono O'odham Nation	09/05/2016, concurred and asked that tribes should be invited signatories not just concurring parties
		Yavapai-Prescott Indian Tribe	09/13/2016, deferred concurrence to the Fort McDowell Yavapai Nation

Continuing Consultation – Revised Memorandum of Agreement			
Letters	Date Sent	Consulting Parties	Response
Agency	11/16/2016	U.S. Bureau of Reclamation	12/05/2016, requested a minor text change and to call the document final
		National Park Service	11/28/2016, concurred
		Federal Highway Administration	11/22/2016, signed draft MOA
		State Historic Preservation Office	No response received
		Arizona Department of Transportation	12/08/2016, concurred and signed draft MOA
		Arizona State Land Department	11/22/2016, concurred and signed draft MOA
		City of Phoenix Archaeology Office	11/23/2016, concurred and signed draft MOA
		City of Phoenix Historic Preservation Office	11/30/2016, concurred and signed draft MOA
		City of Phoenix Office of Arts and Culture	No response received
		City of Phoenix Aviation Department	No response received
		City of Phoenix Street Transportation Department	11/29/2016, signed draft MOA
		City of Tempe Development Services Department	11/22/2016, concurred and signed draft MOA
		Arizona State Museum	No response received
		Salt River Project	11/30/2016, concurred
		Union Pacific Railroad	No response received
Tribes	11/16/2016	Ak-Chin Indian Community	12/20/2016, deferred comments to SRPMIC
		Fort McDowell Yavapai Nation	No response received
		Gila River Indian Community	No response received
		Hopi Tribe	11/21/2016, deferred to SHPO and interested tribes requested inclusion in continuing consultation
		Salt-River Pima-Maricopa Indian Community	No response received
		Tohono O'odham Nation	No response received
		Yavapai-Prescott Indian Tribe	No response received

Continuing Consultation – No Adverse Effect on Three Sites and Section 4(f) de minimis Finding			
Letters	Date Sent	Consulting Parties	Response
Agency	12/01/2016	U.S. Bureau of Reclamation	12/07/2016, concurred and no comment regarding Section 4(f) de minimis finding
		National Park Service	12/02/2016, concurred and no comment regarding Section 4(f) de minimis finding
		State Historic Preservation Office	12/07/2016, concurred and no comment regarding Section 4(f) de minimis finding
		Arizona Department of Transportation	12/08/2016, concurred
		Arizona State Land Department	No response received

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## Summary of Section 106 Consultation

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		City of Phoenix Archaeology Office	12/07/2016, concurred and no comment regarding Section 4(f) de minimis finding
		City of Phoenix Historic Preservation Office	12/16/2016, concurred and no comment regarding Section 4(f) de minimis finding
		City of Phoenix Office of Arts and Culture	No response received
		City of Phoenix Aviation Department	No response received
		City of Tempe Development Services Department	12/05/2016, concurred
		Arizona State Museum	No response received
		Salt River Project	No response received
		Union Pacific Railroad	No response received
Tribes	12/01/2016	Ak-Chin Indian Community	01/23/2017 deferred comments on project finding to Salt River Pima-Maricopa Indian Tribe
		Fort McDowell Yavapai Nation	12/22/2016, concurred
		Gila River Indian Community	12/14/2016, concurred
		Hopi Tribe	12/06/2016, concurred
		Salt-River Pima-Maricopa Indian Community	No response received
		Tohono O'odham Nation	No response received
		Yavapai-Prescott Indian Tribe	01/05/2017, concurred

Continuing Consultation – Final Memorandum of Agreement			
Letters	Date Sent	Consulting Parties	Response
Agency	12/16/2016	U.S. Bureau of Reclamation	02/02/2017, signed
		National Park Service	No response received
		Federal Highway Administration	12/16/2016, signed
		State Historic Preservation Office	01/26/2017, signed
		Arizona Department of Transportation	12/23/2016, signed
		Arizona State Land Department	12/28/2016, signed
		City of Phoenix Archaeology Office	12/21/2016, signed
		City of Phoenix Historic Preservation Office	01/18/2017, signed
		City of Phoenix Office of Arts and Culture	No response received
		City of Phoenix Aviation Department	No response received
		City of Phoenix Street Transportation Department	01/09/2017, signed
		City of Tempe Development Services Department	No response received
		Arizona State Museum	No response received
		Salt River Project	No response received
		Union Pacific Railroad	No response received
Tribes	12/16/2016	Ak-Chin Indian Community	No response received
		Fort McDowell Yavapai Nation	No response received
		Gila River Indian Community	No response received
		Hopi Tribe	No response received
		Salt-River Pima-Maricopa Indian Community	No response received
		Tohono O'odham Nation	No response received
		Yavapai-Prescott Indian Tribe	No response received

Continuing Consultation – Scope change within APE and National Register of Historic Places ineligibility recommendation for drainage ditch			
Letters	Date Sent	Consulting Parties	Response
Agency	02/28/2017	U.S. Bureau of Reclamation	03/06/2017, concurred
		National Park Service	
		State Historic Preservation Office	03/06/2017, concurred

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## Summary of Section 106 Consultation

continued from previous page

		Arizona Department of Transportation	03/01/2017, concurred
		Arizona State Land Department	03/03/2017, concurred
		City of Phoenix Archaeology Office	03/07/2017, concurred
		City of Phoenix Historic Preservation Office	03/30/2017, concurred
		City of Phoenix Office of Arts and Culture	
		City of Phoenix Aviation Department	
		City of Tempe Development Services Department	
		Arizona State Museum	
		Salt River Project	
		Union Pacific Railroad	03/14/2017, concurred
Tribes	02/28/2017	Ak-Chin Indian Community	03/09/2017, deferred all comments to and concur with the Salt River Pima-Maricopa Indian Community Tribal Historic Preservation Office
		Fort McDowell Yavapai Nation	
		Gila River Indian Community	
		Hopi Tribe	03/07/2017, concurred
		Salt-River Pima-Maricopa Indian Community	
		Tohono O'odham Nation	
		Yavapai-Prescott Indian Tribe	03/21/2017, concurred

Filing of Final Memorandum of Agreement			
Letter	Date Sent	Agency	Response
e106	03/06/2017	Advisory Council on Historic Preservation	No response received

City of Phoenix Project Number ST87600114  
Federal-Aid Number PHX-0(BFG)F  
Grand Canalscape Phase II (TIGER) Shared-Use Path Project

## ENVIRONMENTAL COMMITMENTS

The following sentence, contractor's mitigation measures, permits and guidelines (as applicable) shall be included in the project special provisions:

- I. The project mitigation measures are not subject to change without written approval from the Federal Highway Administration.
  
- II. Project Mitigation Measures

### CityofPhoenixResponsibilities

- All disturbed soils not paved that will not be landscaped will be stabilized by seeding with species native to the project vicinity, decomposed granite, or other methods to achieve permanent stabilization.
- If any archaeological materials are encountered during ground-disturbing activities, the City of Phoenix Project Manager will ensure the contractor has ceased all ground-disturbing activities within 10 meters of the discovery and the City of Phoenix Archaeology Office (602-495-0901) and City of Phoenix Street Transportation Department Environmental Quality Specialist (602-377-8943 or 602-534-6030) will be notified immediately and allowed time to properly assess the materials.
- The Migratory Bird Treaty Act and Western burrowing owl flyers will be included in the bid documents and provided to the contractor, subcontractors, and all field personnel at the preconstruction meeting.
- If trees or shrubs will be trimmed or removed between February 1 and August 31, the City of Phoenix Project Manager will contact the City of Phoenix Street Transportation Department Environmental Quality Specialist (602-534-6030) to arrange a survey for active bird nests at least 2 weeks prior to the start of any work that will disturb trees or shrubs.
- A survey for Western burrowing owls must be completed by a certified burrowing owl surveyor. The City of Phoenix Project Manager will contact the City of Phoenix Street Transportation Environmental Quality Specialist (602-377-8943 or 602-534-6030) approximately 2 weeks prior to any ground-disturbing activities to arrange for the survey to be completed.
- The City of Phoenix Project Manager will ensure that the contractor: coordinates with the archaeological monitor provided by the City of Phoenix Street Transportation Department; advises the archaeological monitor of the construction schedule and planned construction activities at least 48 hours prior to starting any ground-disturbing activities in sensitive areas; and communicates with the archaeological monitor until a letter indicating Substantial Completion is issued.

- The City of Phoenix Project Manager will ensure all construction will comply with the cultural resources stipulations contained in the approved Memorandum of Agreement among Federal Highway Administration, Arizona State Historic Preservation Office, City of Phoenix Street Transportation Department, City of Phoenix Archaeology Office, City of Phoenix Historic Preservation Office, City of Phoenix Aviation Department, City of Phoenix Office of the Arts and Culture, United States Bureau of Reclamation, Arizona State Land Department, Arizona Department of Transportation, Salt River Project, Arizona State Museum, Union Pacific Railroad, Ak-Chin Indian Community, Fort McDowell Yavapai Nation, Gila River Indian Community, the Hopi Tribe, Salt River Pima-Maricopa Indian Community, Tohono O'odham Nation, and the Yavapai-Prescott Indian Tribe Regarding the Grand Canalscape Phase II (TIGER) Shared-Use Pathway Project, Phoenix, Maricopa County, Arizona.

### Contractor Responsibilities

- All disturbed soils not paved that will not be landscaped shall be stabilized by seeding with species native to the project vicinity, decomposed granite, or other methods to achieve permanent stabilization.
- To prevent the introduction of invasive species seeds, the contractor shall inspect all earthmoving and hauling equipment at the equipment storage facility and the equipment shall be washed prior to entering the work site.
- To prevent invasive species seeds from leaving the site, the contractor shall inspect all work equipment and remove all attached plant/vegetation and soil/mud debris prior to leaving the work site.
- No unique or impaired waters are located within 0.25-mile of the project area. More than 1 acre of ground-disturbing activities will occur during construction; therefore, an Arizona Pollutant Discharge Elimination System construction general permit shall be required. The contractor shall prepare a Stormwater Pollution Prevention Plan and submit the Notice of Intent and Notice of Termination to the Arizona Department of Environmental Quality.
- If trees or shrubs will be trimmed or removed between February 1 and August 31, the contractor shall immediately notify the City of Phoenix Project Manager to arrange a survey for active bird nests at least 2 weeks prior to the start of any work that will disturb trees or shrubs.
- The contractor, subcontractors, and all field personnel shall adhere to the attached Migratory Bird Treaty Act flyer. If an active bird nest is present in the work area, work shall cease within 100 feet and the City of Phoenix Street Transportation Department Environmental Quality Specialist (602-377-8943 or 602-534-6030) shall be notified immediately.
- The contractor, subcontractors, and all field personnel shall adhere to the attached Western burrowing owl flyer. If burrowing owls or potentially active burrows (natural or man-made holes 3 inches in diameter or greater) are observed during work, work shall cease within 100 feet and the City of Phoenix Street Transportation Department Environmental Quality Specialist (602-377-8943 or 602-534-6030) shall be notified immediately.
- If any archaeological materials are encountered during ground-disturbing activities, the contractor shall cease all ground-disturbing activities within 10 meters of the discovery and the City of Phoenix Project Manager, the City of Phoenix Archaeology Office (602-495-0901), and the City of Phoenix Street Transportation Department Environmental Quality Specialist (602-377-8943 or 602-534-6030) shall be notified immediately and allowed time to properly assess the materials.

- The contractor shall coordinate with the archaeological monitor provided by the City of Phoenix Street Transportation Department. The contractor shall advise the archaeological monitor of the construction schedule and planned construction activities at least 48 hours prior to starting any ground-disturbing activities in sensitive areas. The contractor shall continue communicating with the archaeological monitor until the City of Phoenix issues a letter indicating Substantial Completion.
- Access to adjacent businesses and residences shall be maintained throughout construction.
- If suspected hazardous materials are encountered during work, work shall cease at that location and the City of Phoenix Project Manager shall be notified immediately to make arrangements for proper treatment or disposal of those materials.
- The contractor shall comply with all local air quality and dust control rules, regulations and ordinances which apply to any work performed pursuant to the contract.

Attachments:

Western burrowing owl flyer

Migratory Bird Treaty Act flyer



City of Phoenix  
STREET TRANSPORTATION DEPARTMENT

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## Western Burrowing Owl

(*Athene cucularia*)

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The purpose of this flyer is to provide City of Phoenix employees and contractors working on City projects with basic knowledge to reduce the risk of impacting western burrowing owls.

### Legal Status:

The western burrowing owl is protected under the Migratory Bird Treaty Act of 1918, as amended. All migratory birds and their parts (including eggs, feathers, and nests) are fully protected. They are also protected under Arizona State Law, Title 17-101, Title 17-235, and Title 17-236.

### Species Description:

- Small, ground-dwelling owl (mass of approx. 5 oz.)
- Length: 7.6-9.9 inches, with long legs
- Wingspan: approx. 23 inches
- Round head, lacks ear tufts
- Distinct oval facial ruff, framed by a broad, puffy white eyebrow
- Bright yellow iris

### Where are they found?

- Dry, open, short grass, treeless plains
- Human dominated landscapes such as:
  - Golf courses, airports
  - Agricultural fields, vacant lots
- Depends on other animals to construct burrows

### Identifying an active burrow

- Western burrowing owls use burrows constructed by ground squirrels, badgers, coyotes, tortoises, etc, or may use pipes, culverts, and ditches.
- They may “decorate” the entrance to a burrow with cow, horse, or dog manure, feathers, vegetation, and trash items
- An active burrow may (not always) have owl excrement (“whitewash”) and/or pellets near the entrance

### How to avoid impacting western burrowing owls:

- Scan ahead as you work
- If western burrowing owls or potentially active burrows observed, STOP WORK and MOVE at least 100 feet away from the owl or occupied burrow before resuming work
  - Do not harass or “shoo” the owl away
- If the project cannot avoid or stay outside 100 feet of the owl or active burrow, call contact listed below

Questions? Need to work within 100 feet of a western burrowing owl or active burrow? Contact a City of Phoenix Street Transportation Department Environmental Quality Specialist:

Ed Checkley (602) 534-3366, (602) 377-8943 (cell), [ed.checkley@phoenix.gov](mailto:ed.checkley@phoenix.gov)

Greta Halle (602) 534-6030, (602) 628-7607 (cell), [greta.halle@phoenix.gov](mailto:greta.halle@phoenix.gov)

Sources: Arizona Department of Transportation Environmental Planning Group Western Burrowing Owl Awareness Flyer  
Arizona Game and Fish Department Animal Abstract: Western Burrowing Owl. Heritage Data Management System

Updated March 2, 2016



Credit: DesertUSA.com/animals/cliff-swallow.html



City of Phoenix  
STREET TRANSPORTATION DEPARTMENT

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## Migratory Bird Treaty Act

(Applies to many birds in Phoenix)

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The purpose of this flyer is to provide City of Phoenix employees and contractors with basic knowledge to reduce the risk of impacting species protected by the Migratory Bird Treaty Act.

### Migratory Bird Treaty Act (MBTA)

Under the Migratory Bird Treaty Act of 1918, as amended, listed birds and their parts (including eggs, feathers, and nests) are fully protected. They are also protected under Arizona State Law, Title 17-101, Title 17-235, and Title 17-236. The MBTA states that it is illegal to:

- Pursue, hunt, take, capture, kill, possess, sell, purchase, barter, import, export, or transport any migratory bird, or any part, nest, or egg of any such bird.
  - 'Take' is defined as to "pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect."

More information regarding the MBTA can be found at:

- <http://www.fws.gov/birds/policies-and-regulations/laws-legislations/migratory-bird-treaty-act.php>
- <https://www.fws.gov/laws/lawsdigest/migtrea.html>

### Where/When are they active?

- The nests of birds protected by the MBTA can be found in many places, including trees, shrubs, cacti, cattails, on the ground, in holes in the ground and on man-made structures including culverts, bridges, buildings, etc.
- The breeding cycle of most birds in Phoenix occurs between February 1 and August 31, although there are a few species that may nest outside that period. Some birds may be present year-round and others migrate, often during the late summer/early autumn period.

### How to avoid impacting birds protected by the MBTA:

- If your project might impact active bird nests/burrows, work with one of the contacts below during the design process to make appropriate arrangements before the project activity begins. Necessary actions may include active nest surveys, seasonal restrictions, or obtaining a project-specific relocation permit from the U.S. Fish and Wildlife Service.
- When actively working, be aware of your surroundings. If you see a nest that appears active (chirping, aggressive or distracting adult bird behavior, eggs present, etc.) STOP WORK within 30 feet of the area and call one of the contacts below.

Questions? Work may impact birds protected by the MBTA? Contact a City of Phoenix Street Transportation Department Environmental Quality Specialist:

Ed Checkley – desk: 602-534-3366 – cell: 602-377-8943 – [ed.checkley@phoenix.gov](mailto:ed.checkley@phoenix.gov)

Greta Halle – desk: 602-534-6030 – cell: 602-628-7607 – [greta.halle@phoenix.gov](mailto:greta.halle@phoenix.gov)

Updated November 2, 2016



## City of Phoenix

### Disadvantaged Business Enterprise Program

### DBE –Design Bid Build (DBB) Contract Clause Race & Gender-Neutral – Non-Negotiated

**PROJECT #: ST87600114**

**CONTRACT #: TBD**

#### **PROJECT NAME: Grand Canalscape TIGER Project**

The City of Phoenix Disadvantaged Business Enterprise (DBE) Program is administered by the Equal Opportunity Department, Contract Compliance Division. Phoenix is one of the fastest growing, multicultural cities in the country and has shown a historical commitment to business diversity. The City strives to advance the economic growth of local businesses through its Disadvantaged Business Enterprise (DBE) Program.

Through a coordinated effort among several city departments, the DBE Program provides DBE certification, procurement opportunities, construction subcontracting utilization, small business management, technical assistance, educational services and networking opportunities.

#### **SECTION I DEFINITIONS**

**Agency** means the City of Phoenix for purposes of this Contract.

**Arizona Unified Certification Program (AZUCP)** means a consortium of government agencies organized to provide reciprocal DBE certification within Arizona pursuant to 49 Code of Federal Regulations (CFR) Part 26. The official DBE database containing eligible DBE firms certified by AZUCP can be accessed at: <https://adot.dbesystem.com/>. The certification system is called the Arizona Unified Transportation Registration and Certification System (AZ UTRACS).

**Bidder** means an individual, partnership, Joint Venture (JV), corporation or firm that tenders a bid to the Agency to perform services requested by a solicitation or procurement. The bid may be direct or through an authorized representative.

**Commercially Useful Function** means that a DBE is responsible for executing the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. If a DBE does not perform or exercise responsibility for at least 30% of the total cost of its contract with its own work force, or if the DBE subcontracts a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involved, the DBE is presumed not to be performing a Commercially Useful Function.

**Contract** means a legally binding relationship obligating a seller to furnish supplies or services (including construction and professional services) and the buyer to pay for them.

**DBE** stands for Disadvantaged Business Enterprise. In this context, DBE means a Small Business Concern that has successfully completed the DBE certification process and has been granted DBE status by an AZUCP member pursuant to the criteria contained in 49 CFR Part 26.

**DBE Compliance Specialist** means an Agency employee responsible for compliance with the DBE contract clause and contract monitoring.

#### **Equal Opportunity Department**

200 W. Washington St., 15th Floor, Phoenix, AZ 85003  
602-262-7716/Voice | 602-534-1124/Fax | 602-534-1557/TTY



## City of Phoenix

### Disadvantaged Business Enterprise Program

**EOD** means the City of Phoenix Equal Opportunity Department.

**Joint Venture (JV)** means an association between two or more persons, partnerships, corporations, or any combination thereof, formed to carry on a single business activity. The JV is limited in scope and duration to this Contract. The resources, asset and labor of the participants must be combined in an effort to accrue profit.

**Outreach Efforts** means the diligent and good-faith efforts demonstrated by a Submitter to solicit participation from interested and qualified DBEs and other Small Businesses. Submitter shall identify and document potential business opportunities for DBEs and other Small Businesses, describe what efforts were undertaken to solicit DBE and Small Business participation, disclose results of negotiations with DBEs and Small Businesses, communicate and record Submitter's selection decisions relating to DBE and Small Business participants.

**Race and Gender-Neutral (RGN) Measures** means a measure or program that is, or can be, used to assist all Small Businesses.

**Small Business** means, with respect to firms seeking to participate in contracts funded by the U.S. Department of Transportation (US DOT), a Small Business Concern as defined in section 3 of the Small Business Act and Small Business Administration regulations implementing the Act (13 CFR part 121), which Small Business Concern does not exceed the cap on average annual gross receipts specified in 49 CFR § 26.65(b). "Small Business" and "Small Business Concern" are used interchangeably in this DBE Contract Clause.

**Subcontract** means a contract at any tier below the prime contract, including a purchase order.

**Subcontractor** means an individual, partnership, JV, corporation or firm that holds a contract at any tier below the prime contract, including a vendor under a purchase order.

**Successful Bidder** means a firm that has been selected by the Agency to perform services or furnish supplies requested by a solicitation or procurement.

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## City of Phoenix

### Disadvantaged Business Enterprise Program

## SECTION II GENERAL REQUIREMENTS

### A. Applicable Federal Regulations

This Contract is subject to DBE requirements issued by USDOT in 49 CFR Part 26. Despite the lack of a race- and gender-conscious DBE participation goal for this Contract, the Agency must track and report DBE participation that occurs as a result of any procurement, JV, goods/services, or other arrangement involving a DBE. For this reason, the Successful Bidder shall provide all relevant information to enable the required reporting.

### B. DBE Participation

For this solicitation, the Agency has *not* established a race- or gender-conscious DBE participation goal. The Agency extends to each individual, firm, vendor, supplier, contractor, and subcontractor an equal economic opportunity to compete for business. The Agency uses race- and gender-neutral measures to facilitate participation by DBEs and Small Businesses. The Agency *encourages* each Bidder to voluntarily subcontract with DBEs and Small Businesses to perform part of the work—a Commercially Useful Function—that Bidder might otherwise perform with its own forces.

### C. Counting DBE Participation

The Agency will count DBE participation as authorized by federal regulations. A summary of these regulations can be found at [www.phoenix.gov/eod](http://www.phoenix.gov/eod).

### D. DBE Certification

*Only* firms (1) certified by the Agency or another AZUCP member, and (2) contracted to perform a Commercially Useful Function on scopes of work for which they are certified, may be considered to determine DBE participation resulting from RGN measures on this Contract. This DBE determination affects the Agency's tracking and reporting obligations to USDOT.

### E. Civil Rights Assurances

As a recipient of USDOT funding, the Agency has agreed to abide by the assurances found in 49 CFR Parts 21 and 26. Each Contract signed by the Agency and the Successful Bidder, and each Subcontract signed by the Successful Bidder and a Subcontractor, must include the following assurance *verbatim*:

"The contractor, subrecipient, or subcontractor shall not discriminate on the basis of race, color, national origin, sex, or creed in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Parts 21 and 26 in the award and administration of USDOT-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 City of Phoenix deems appropriate."

Note: For purposes of the required Contract and Subcontract language above, Successful Bidder is the "contractor."

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## City of Phoenix

### Disadvantaged Business Enterprise Program

## SECTION III REQUIRED OUTREACH EFFORTS

The Agency has implemented outreach requirements for this Contract. Specifically, Bidders shall: (1) identify small-business-participation opportunities, including Commercially Useful Functions; (2) actively solicit proposals from small businesses; (3) evaluate small-business proposals; and (4) communicate selection decisions to small businesses, including each rejection of a small-business proposal. If a Bidder fails to conduct these Outreach Efforts or fails to submit the required documentation of Bidder's Outreach Efforts as indicated in Section IV, Parts A and B below, the Agency may determine that the Bidder is nonresponsive. A determination of non-responsiveness *disqualifies* Bidder from further consideration for the Contract award.

## SECTION IV. BID REQUIREMENTS

### A. Documentation due at time of bid:

All required Outreach Efforts documentation due with the bid must be submitted in a separate sealed envelope with the bid submittal.

#### 1. Attachment A (Outreach Efforts)

Each Bidder shall submit **Attachment A with Columns A through D** completed to document their diligent and earnest Outreach Efforts.

a. Each Bidder shall list in **Attachment A** all Small Businesses, including DBEs, contacted by Bidder in preparing its bid. Each Bidder shall also provide the following minimum information to document its Outreach Efforts. The DBE Compliance Specialist will consider this information to determine whether Bidder has demonstrated the required Outreach Efforts:

- 1) Each business's full legal name and contact information;
- 2) Business status (DBE, Small Business, SBE, or unknown);
- 3) Scope of work solicited (brief description, percentage of contract value); and
- 4) Solicitation method (personal contact, telephone, fax, e-mail, other).

b. Each Bidder shall complete **Columns A through D on Attachment A** in accordance with the following instructions:

- 1) Each Bidder shall actively contact Small Businesses for each scope of work or business opportunity selected for Outreach Efforts (**Columns A and C**).
- 2) Bidder's contacts with Small Businesses should occur well before the deadline for the bid to afford the firms contacted a reasonable opportunity to prepare a proposal and participate in the Contract.
- 3) Bidder shall ask each firm to indicate the number of its employees (**Column A**).
- 4) For each Small Business's annual gross receipts, Bidder shall ask the firm to indicate the gross-receipts bracket into which it fits (e.g., less than \$500,000; \$500,000 – \$1 million; \$1 – 2 million; \$2 – 5 million; etc.) rather than requesting an exact figure (**Column A**).

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## City of Phoenix

### Disadvantaged Business Enterprise Program

#### **B. Documentation due within THREE (3) BUSINESS DAYS of the Bid Deadline**

All required Outreach Efforts documentation is due within the three (3) business days of the bid deadline must be submitted in a sealed envelope.

##### **1. Attachment A (Outreach Efforts)**

Each Bidder shall submit **Attachment A with Columns E and F** completed to document its diligent, earnest Outreach Efforts.

- a. Each Bidder shall add the following to a copy of the **Attachment A** submitted with the bid. The DBE Compliance Specialist will consider this information to determine whether Bidder has demonstrated the required Outreach Efforts:
  - 1) Selection process; and
  - 2) Communication of selection outcome to each participant.\*  
*\*Bidder shall provide supporting documentation that shows Bidder has communicated its final selection decisions and outcomes to **all** Small Businesses, including those **not** selected to participate in this Contract.*
- b. Each Bidder shall complete **Attachment A** in accordance with the following instructions.
  - 1) If Bidder does not select a Small Business to participate in the Contract, Bidder shall explain the reason why (**Column E**).
  - 2) Bidder shall notify each Small Business contacted whether or not Bidder selected the firm. Bidder shall notify all firms not selected, and Bidder shall state when (date) and how (method) the selection outcome was communicated to each firm (**Column F**).

##### **2. Attachment A Supporting Documentation**

Each Bidder shall complete and submit supporting documentation of its Outreach Efforts related to **Attachment A – as specifically related to Columns D & F**.

- a. Within THREE (3) Business Days of the Bid Deadline, Bidder shall submit all supporting documentation of Bidder's contacts with Small Businesses for each scope of work or business opportunity in regards to their Outreach Efforts.
- b. This documentation must include: (1) descriptions of scopes of work and business opportunities identified for Small Business participation, and (2) a copy of the actual solicitation sent to interested Small Businesses. The solicitation may be in the form of a letter, attachment to an e-mail, advertisements in newspapers and trade papers, or written communications with chambers of commerce.
- c. For all of the above documentation, if Bidder uses a blast e-mail or fax format, the documentation submitted must include a copy of the e-mail or fax, and Bidder must disclose all e-mail addresses and fax numbers to which the solicitation or outcome notification was sent and the date and time of the transmission. For telephone contacts, Bidder shall document the date and time of the call and the names of the respective persons representing Bidder and the Small Business.

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## City of Phoenix

### Disadvantaged Business Enterprise Program

- d. Bidder shall submit documentation that establishes how Bidder communicated its selection decisions and outcomes to each Small Businesses **SELECTED OR NOT SELECTED** for this Contract. This documentation may be in the form of a letter, e-mail, or a telephone log and must show the name of the person contacted and date.
- e. For all of the above documentation, if Bidder uses a blast e-mail or fax format, the documentation submitted must include a copy of the e-mail or fax, and Bidder must disclose all e-mail addresses and fax numbers to which the solicitation or outcome notification was sent and the date and time of the transmission. For telephone contacts, Bidder shall document the date and time of the call and the names of the respective persons representing Bidder and the Small Business.

### 3. **Attachment B (Small Business Utilization Commitment)**

Bidder shall sign and submit **Attachment B**, which commits Bidder to the Agency as follows:

- a. **The firms indicated as “selected” in Attachment A** will participate in the Contract;
- b. Bidder will comply with the Race- and Gender-Neutral post-award requirements as stated in Sections V and VI below;
- c. Any and all changes or substitutions will be authorized by the Compliance Specialist before implementation; and
- d. The proposed total Small Business participation percentage is true and correct.

Bidder shall ensure that the percentages proposed for Small Business participation on **Attachment A** equal the total percentage proposed in **Attachment B**.

### C. **Failure To Meet Outreach Requirements**

The DBE Compliance Specialist will determine, in writing, whether the Bidder has satisfied all outreach requirements. If the DBE Compliance Specialist determines the Bidder failed to satisfy the outreach requirements (specified in Sections III and IV), then the DBE Compliance Specialist may determine the bid is nonresponsive. A determination of non-responsiveness *disqualifies* Bidder from further consideration for the Contract award. The Agency shall send written notice to Bidder stating the basis for the DBE Compliance Specialist’s decision.

### D. **Administrative Reconsideration**

If the DBE Compliance Specialist determines the Bidder failed to submit required documentation, the Bidder may request EOD’s reconsideration of this determination. In its request for reconsideration, Bidder may *clarify* its bid but may *not* submit or refer to new or revised documents or information. EOD will only reconsider the original bid as clarified in the request for reconsideration.



**City of Phoenix**

**Disadvantaged Business Enterprise Program**

If Bidder requests EOD to reconsider the DBE Compliance Specialist's determination of non-responsiveness based on insufficient demonstration of outreach efforts or good faith efforts in its waiver request, Bidder must provide written notice to EOD within three (3) business days of the Agency's notice of disqualification to Bidder. The request for reconsideration should be addressed to:

City of Phoenix Equal Opportunity Department  
Business Relations Division-Contract Compliance Section  
200 West Washington Street, Fifteenth Floor  
Phoenix, AZ 85003

With a *copy* e-mailed to the Procurement Officer and the DBE Compliance Specialist.



## City of Phoenix

### Disadvantaged Business Enterprise Program

## SECTION VI POST-AWARD COMPLIANCE REQUIREMENTS

### A. Subcontracting Commitment

Within 30 days after Contract award and prior to each GMP, the Successful Bidder shall submit to Agency a list of all subcontractors and copies of all executed contracts, purchase orders, subleases, JV agreements, and other arrangements formalizing agreements between Successful Bidder and any Small Business.

The Successful Bidder shall not terminate any Small Business Subcontracts, and the Successful Bidder shall not alter the scope of work or reduce the Subcontract amount, without the DBE Compliance Specialist's prior written approval. Any request to alter a Small Business Subcontract must be submitted in writing to the DBE Compliance Specialist before any change is made. If the Successful Bidder fails to do so, the Agency may declare Successful Bidder in breach of contract.

### B. Post-Award Relief From DBE Requirements

After Contract award, the Agency will not grant relief from the proposed Small Business utilization except in extraordinary circumstances. The Successful Bidder's request to modify Small Business participation must be in writing to the DBE Compliance Specialist, which has final discretion and authority to determine if the request should be granted.

The Successful Bidder's waiver request must contain the amount of relief being sought, evidence demonstrating why the relief is necessary, and any additional relevant information the DBE Compliance Specialist should consider. The Successful Bidder shall include with the request all documentation of its attempts to subcontract with the Small Business and any other action taken to locate and solicit a replacement Small Business.

If an approved DBE allows its DBE status to expire or its DBE certification is removed during the course of the subcontract, the Agency will consider all work performed by the DBE under the original contract to count as DBE participation. No increased scopes of work negotiated after expiration or revocation of the DBE's certification may be counted. Likewise, any work performed under a Contract extension granted by the Agency may not be counted as DBE participation.

### C. Substitutions

If a DBE was approved by the Agency, but the firm subsequently loses its DBE status before execution of a contract, the DBE Compliance Specialist will consider whether or not the Successful Bidder has exercised diligent and good-faith efforts to find another DBE as a replacement. The Successful Bidder shall notify the DBE Compliance Specialist in writing of the necessity to substitute a DBE or Small Business and provide specific reason(s) for the substitution or replacement. Actual substitution or replacement of a DBE or Small Business may not occur before the DBE Compliance Specialist's written approval has been obtained.

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## City of Phoenix

### Disadvantaged Business Enterprise Program

#### **D. Prompt Payment of Subcontractors**

The Successful Bidder must promptly pay its subcontractors, subconsultants, or suppliers within 30 calendar days of receipt of each progress payment from the Agency. **For projects governed by Title 34 of the Arizona Revised Statutes, payment must be made within seven (7) calendar days.** If the Successful Submitter diverts any payment received for a DBE's, Small Business's, or other Subcontractor's work performed on the Contract or fails to reasonably account for the application or use of the payment, the Agency may declare the Successful Submitter in breach of contract.

Under the prompt-payment provisions of 49 CFR Part 26, the Successful Bidder must ensure prompt and full release of retentions to Subcontractors and suppliers when their scope of work is complete, the Agency has accepted the work, and the Agency has paid Successful Submitter for the work. The Successful Bidder shall pay each Subcontractor's and supplier's retention no later than 30 days after the Agency has accepted and paid for the scope(s) of work, regardless if there's outstanding retention held against the Successful Bidder. If the Agency reduces the Successful Bidder retention, the Successful Bidder shall correspondingly reduce the retentions of Subcontractors and suppliers that have performed satisfactory work.

Nothing in this section prevents the Successful Bidder from enforcing its Subcontract with a Subcontractor or supplier for defective work, late performance, and other claims arising under the Subcontract.

#### **E. Sanctions and Penalties**

If the Successful Submitter fails to comply with these contract provisions and the requirements set forth in 49 CFR Part 26, the Agency may take any one or more of the following actions:

1. Withholding from the contractor ten percent (10%) of all future payments on the involved eligible project until it is determined that the contractor is in compliance;
2. Withholding from the contractor all future payments on the involved project until it is determined that the contractor is in compliance

Failure to cure a non-compliance status within the time frame provided by the City may result in further action, including but not limited to imposing any or all of the following sanctions:

1. Rejection of all future bids or offers from the contractor for any eligible project with the City or any of its departments or divisions for a period of (1) year after substantial completion of the contract.
2. Cancellation of the contract.



## City of Phoenix

### Disadvantaged Business Enterprise Program

## SECTION VII RECORDS & REPORTING REQUIREMENTS

### A. Records

During performance of the Contract, the Successful Bidder shall keep all records necessary to document DBE and Small Business participation. The Successful Bidder shall provide the records to the Agency within 72 hours of the Agency's request and at final completion of the Contract. The Agency will prescribe the form, manner, and content of reports. The required records may include but not limited to:

1. A complete listing of all Subcontractors and suppliers on the project;
2. Each Subcontractor's and supplier's scope performed;
3. The dollar value of all subcontracting work, services, and procurement;
4. Copies of all executed Subcontracts, purchase orders, and invoices; and
5. Copies of all payment documentation.

### B. Reports

At the beginning of *each* month, the Successful Bidder must enter payment information and the following documentation into the Agency's web-based Certification and Compliance System.

1. The total of all payments received from the City during the previous month.
2. The first two pages of each payment application submitted for those payments.
3. All payments made to Subcontractors during the previous month.

The reporting system can be found at <https://phoenix.diversitycompliance.com>.

Before the Agency processes the Successful Bidder's final payment and/or outstanding retention held against the Successful Bidder, the Successful Bidder shall submit to the Agency a final certification of full and final payment to each Subcontractor in the form prescribed by the Agency. The form must be completed and certified by the Successful Bidder's and each Subcontractor's duly authorized agents.

**EQUAL EMPLOYMENT OPPORTUNITY  
COMPLIANCE REPORTS**

(Project, Training and Annual)

Federal-Aid Projects

February 1, 1977; Revised July 1, 1978; Revised November 3, 1980  
Revised April 15, 1981; Revised September 7, 1983; Revised October 15, 1998;  
Revised August 1, 2005; Revised March 1, 2015;  
Revised October 20, 2015

**ANNUAL REPORT:**

For each contract in the amount of \$10,000 or more, and for each subcontract regardless of tier not including material suppliers, in the amount of \$10,000 or more, the contractor and each subcontractor regardless of tier shall submit an annual Equal Employment Opportunity (EEO) Report containing all the information required on Form FHWA -1391.

The staffing figures to be reported should represent the project workforce on board in all or any part of the last payroll period preceding the end of July.

The report shall be submitted no later than September 1 to the agency (contract owner) compliance officer.

**City of Phoenix**  
**Title VI Assurances**

The **City of Phoenix** (herein referred to as the "Recipient"), HEREBY AGREES THAT, as a condition to receiving any Federal financial assistance from the U.S. Department of Transportation (DOT), through *Federal Highway Administration and Arizona Department of Transportation*, is subject to and will comply with the following:

**Statutory/Regulatory Authorities**

- 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);
- 49 C.F.R. Part 21 (entitled *Non-discrimination In Federally-Assisted Programs Of The Department Of Transportation--Effectuation Of Title VI Of The Civil Rights Act Of 1964*);
- 28 C.F.R. section 50.3 (U.S. Department of Justice Guidelines for Enforcement of Title VI of the Civil Rights Act of 1964);
- 23 C.F.R. Part 200 Subchapter C-Civil Rights (Title VI program implementation and related statutes)

The preceding statutory and regulatory cites hereinafter are referred to as the "Acts" and "Regulations," respectively.

**General Assurances**

In accordance with the Acts, the Regulations, and other pertinent directives, circulars, policy, memoranda and/or guidance, the Recipient hereby gives assurances that it will promptly take any measures necessary to ensure that:

*"No person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity," for which the Recipient receives Federal financial assistance from DOT, including the Federal Highway Administration.*

The Civil Rights Restoration Act of 1987 clarified the original intent of Congress, with respect to Title VI and other Non-discrimination requirements (The Age Discrimination Act of 1975, and Section 504 of the Rehabilitation Act of 1973L by restoring the broad, institutional-wide scope and coverage of these non-discrimination statutes and requirements to include all programs and activities of the Recipient, so long as any portion of the program is Federally assisted.

**Specific Assurances**

More specifically, and without limiting the above general Assurance, the Recipient agrees with and gives the following Assurances with respect to its *Federal Aid Highway Program*.

1. The Recipient agrees that each "activity/" "facility," or "program," as defined in §§ 21.23 (b) and 21.23 (e) of 49 C.F.R. § 21 will be (with regard to an "an "activity") facilitated, or will be (with regard to a "facility") operated, or will be (with regard to a "program") conducted in compliance with all requirements imposed by, or pursuant to the Acts and the Regulations.

2. The Recipient will insert the following notification in all solicitations for bids, Requests For Proposals for work, or material subject to the Acts and the Regulations made in connection with all *Federal Aid Highway Program* and, in adapted form, in all proposals for negotiated agreements regardless of finding source:

*"The **City of Phoenix**, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 {78 Stat. 252.42 U.S.C. §§ 2000d-4) and the Regulations, hereby notifies all advertisement, disadvantaged business enterprises wif/ be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award."*

3. The Recipient will insert the clauses of Appendix A and E of this Assurance in every contract or agreement subject to the Acts and the Regulations.

4. The Recipient will insert the clauses of Appendix B of this Assurance, as a covenant running with the land, in any deed from the United States effecting or recording a transfer of real property, structures, use, or improvements thereon or interest therein to a Recipient.

5. That where the Recipient receives Federal financial assistance to a construct a facility or part of a facility, the Assurance will extend to the entire facility and facilities operated in connection therewith.

6. That where the Recipient receives Federal financial assistance in the form, or for the acquisition of real property or an interest in real property, the Assurance will extend to rights to space on, over, or under such property.

7. That the Recipient will include the clauses set forth in Appendix C and Appendix D of this Assurance, as a covenant running with the land, in any future deeds, leases, licenses, permits, or similar instruments entered into by the Recipient with other parties:

- a. for the subsequent transfer of real property acquired or improved under the applicable activity, project, or program; and
- b. for the construction or use of, or access to, space on, over, or under real property acquired or improved under the applicable activity, project or program.

8. That this Assurance obligates the Recipient for the period during which Federal financial assistance is extended to the program, except where the Federal financial assistance is to provide, or is in the form of, personal property, or real property, or interest therein, or structures or improvements thereon, in which case the Assurance obligates the Recipient, or any transferee for the longer of the following periods:

- a. the period during which the property is used for a purpose for which the Federal financial assistance is extended, or for another purpose involving the provision of similar services or benefits; or
- b. the period during which the Recipient retains ownership or possession of the property.

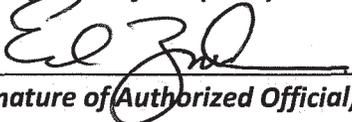
9. The Recipient will provide for such methods of administration for the program as are found by the Secretary of Transportation or the official whom he/she delegates specific authority to give reasonable guarantee that it, other recipients, sub-recipients, sub-grantees, contractors, subcontractors, consultants, transferees, successors in interest, and other participants of Federal financial assistance under such program will comply with all requirements imposed or pursuant to the Acts, the Regulations, and this Assurance.

10. The Recipient agrees that the United States has a right to seek judicial enforcement with regard to any matter arising under the Acts, the Regulations, and this Assurance.

By signing this ASSURANCE, *City of Phoenix* also agrees to comply (and require any sub-recipients, sub-grantees, contractors, successors, transferees, and/or assignees to comply) with all applicable provisions governing *Federal Highway Administration or Arizona Department of Transportation* access to records, accounts, documents, information, facilities, and staff. You also recognize that you must comply with any program or compliance reviews, and/or complaint investigations conducted by the *Federal Highway Administration or Arizona Department of Transportation*. You must keep records, reports, and submit the material for review upon request to *Federal Highway Administration\_ Arizona Department of Transportation*, or its designee in timely, complete, and accurate way. Additionally, you must comply with all other reporting, data collection, and evaluation requirements, as prescribed by law or detailed in program guidance.

**City of Phoenix** gives this ASSURANCE in consideration of and for obtaining any Federal grants, loans, contracts, agreements, property, and/or discounts, or other Federal-aid and Federal financial assistance extended after the date hereof to the recipients by the U.S. Department of Transportation under the *Federal Highway Administration and Arizona Department of Transportation*. This ASSURANCE is binding on Arizona, other recipients, sub-recipients, sub-grantees, contractors, subcontractors and their subcontractors', transferees, successors in interest, and any other participants in the *Federal Aid Highway Program* the person(s) signing below is authorized to sign this ASSURANCE on behalf of the Recipient.

**City of Phoenix**  
***(Name of Recipient)***

by   
***(Signature of Authorized Official)***

DATED 10 } 13 - -----

## APPENDIX A

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 Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, *Federal Highway Administration or the Arizona Department of Transportation*, 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 performance 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 Acts and the Regulations, 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 Acts and Regulations relative to Non-discrimination 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 Recipient, the *Federal Highway Administration or Arizona Department of Transportation* to be pertinent to ascertain compliance with such Acts, Regulations, 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 Recipient, the *Federal Highway Administration, or Arizona Department of Transportation*, 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 Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the *Federal Highway Administration or Arizona Department of Transportation*, 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 request to any subcontract or procurement as the Recipient, the *Federal Highway Administration, or Arizona Department of Transportation* 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 Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

## APPENDIX B

### CLAUSES FOR DEEDS TRANSFERRING UNITED STATES PROPERTY

The following clauses will be included in deeds effecting or recording the transfer of real property, structures, or improvements thereon, or granting interest therein from the United States pursuant to the provisions of Assurance 4:

NOW, THEREFORE, the U.S. Department of Transportation as authorized by law and upon the condition that *City of Phoenix* will accept title to the lands and maintain the project constructed thereon in accordance with Title 23, United States Code the Regulations for the Administration of *Federal Aid for Highways*, and the policies and procedures prescribed by the *Arizona Department of Transportation*, *Federal Highway Administration* and the U.S. Department of Transportation in accordance and in compliance with all requirements imposed by Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation pertaining to and effectuating the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252; 42 U.S.C. § 2000d to 2000d-4), does hereby remise, release, quitclaim and convey unto the *City of Phoenix* all the right, title and interest of the U.S. Department of Transportation in and to said lands described in Exhibit A attached hereto and made a part hereof.

#### (HABENDUM CLAUSE)

TO HAVE AND TO HOLD said lands and interests therein unto *City of Phoenix* and its successors forever, subject, however, to the covenants, conditions, restrictions and reservations herein contained as follows, which will remain in effect for the period during which the real property or structures are used for a purpose for which Federal financial assistance is extended or for another purpose involving the provision of similar services or benefits and will be binding on the *City of Phoenix*, its successors and assigns.

The *City of Phoenix*, in consideration of the conveyance of said lands and interests in lands, does hereby covenant and agree as a covenant running with the land for itself, its successors and assigns, that (1) no person will on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination with regard to any facility located wholly or in part on, over, or under such lands hereby conveyed [.] [and]\* (2) that the *City of Phoenix* will use the lands and interests in lands and interests in lands so conveyed, in compliance with all requirements imposed by or pursuant to Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, Effectuation of Title VI of the Civil Rights Act of 1964, and as said Regulations and Acts may be amended[, and (3) that in the event of breach of any of the above-mentioned non-discrimination conditions, the Department will have a right to enter or re-enter said lands and facilities on said land, and that above described land and facilities will thereon revert to and vest in and become the absolute property of the U.S. Department of Transportation and its assigns as such interest existed prior to this instruction].\*

\*Reverter clause and related language to be used only when it is determined that such a clause is necessary in order to make clear the purpose of Title VI.

## APPENDIX C

### CLAUSES FOR TRANSFER OF REAL PROPERTY ACQUIRED OR IMPROVED UNDER THE ACTIVITY, FACILITY, OR PROGRAM

The following clauses will be included in deeds, licenses, leases, permits, or similar instruments entered into by the ***City of Phoenix*** pursuant to the provisions of Assurance 7(a):

A. The (grantee, lessee, permittee, etc. as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree [in the case of deeds and leases add "as a covenant running with the land"] that:

1. In the event facilities are constructed, maintained, or otherwise operated on the property described in this (deed, license, lease, permit, etc.) for a purpose for which a U.S. Department of Transportation activity, facility, or program is extended or for another purpose involving the provision of similar services or benefits, the (grantee, licensee, lessee, permittee, etc.) will maintain and operate such facilities and services in compliance with all requirements imposed by the Acts and Regulations (as may be amended) such that no person on the grounds of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities,

B. With respect to licenses, leases, permits, etc., in the event of breach of any of the above Non-discrimination covenants, ***City of Phoenix*** will have the right to terminate the (lease, license, permit, etc.) and to enter, re-enter, and repossess said lands and facilities thereon, and hold the same as if the (lease, license, permit, etc.) had never been made or issued.\*

C. With respect to licenses, leases, permits, etc., in the event of breach of any of the above Non-discrimination covenants, ***City of Phoenix*** will have the right to enter or re-enter the lands and facilities thereon, and the above described lands and facilities will there upon revert to and vest in and become the absolute property of the ***City of Phoenix*** and its assigns\*.

\*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.

## APPENDIXD

### CLAUSES FOR CONSTRUCTION/USE/ACCESS TO REAL PROPERTY ACQUIRED UNDER THE ACTIVITY, FACILITY OR PROGRAM

The following clauses will be included in deeds, licenses, permits, or similar instruments/agreements entered into by **City of Phoenix** pursuant to the provisions of Assurance 7(b):

A. The (grantee, licensee, permittee, etc., as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree (in the case of deeds and leases add, "as a covenant running with the land") that (1) no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities, (2) that in the construction of any improvements on, over, or under such land, and the furnishing of services thereon, no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or otherwise be subjected to discrimination, (3) that the (grantee, licensee, lessee, permittee etc.) will use the premises in compliance with all other requirements imposed by or pursuant to the Acts and Regulations, as amended set forth in this Assurance.

B. With respect to (licenses, leases, permits, etc.), in the event of breach of any of the above Non-discrimination covenants, **City of Phoenix** will have the right to terminate the (license, permit, etc., as appropriate) and to enter or re-enter or re-enter and repossess said land and the facilities thereon, and hold the same as if said (license, permit, etc., as appropriate) had never been made or issued.\*

C. With respect to deeds, in the event of breach of any of the above Non-discrimination covenants, **City of Phoenix** will there upon revert to and vest in and become the absolute property of **City of Phoenix** and its assigns.\*

Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.

## APPENDIX E

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 non-discrimination statutes and authorities; including but not limited to:

### **Pertinent Non-Discrimination Authorities:**

- 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); and 49 CFR Part 21.
- 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);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 *et seq.*), (prohibits discrimination on the basis of sex);
- 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;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq.*), (prohibits discrimination on the basis of age);
- 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);
- 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, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, 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 C.F.R. parts 37 and 38;
- 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);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures 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;
- 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);
- 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. 1687 *et seq.*)

## FEDERAL REQUIREMENTS

### **SPECIFICATIONS:**

All work shall also be performed in accordance with the following additional documents:

Required Contract Provisions for Federal-Aid Construction Contracts (Form FHWA 1273 Revised May 1, 2012)

Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246), July 1, 1978, Revised November 3, 1980 and Revised April 15, 1981,

Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246), July 1, 1978, Revised November 3, 1980 and Revised April 15, 1981,

Equal Employment Opportunity Compliance Reports, Federal-Aid Projects, February 1, 1977, Revised July 1, 1978, Revised November 3, 1980, Revised April 15, 1981, Revised September 7, 1983, Revised October 15, 1998, and Revised January 1, 2005,

Federal-Aid Proposal (Notices to Prospective Federal-Aid Construction Contractors), September 29, 1975 Wage

Determination Decision

Cargo Preference Act of 1954

### **BID SUBMISSION:**

**In submitting a bid, the holder of a Bid Proposal Pamphlet shall completely execute the following documents:**

Bid Proposal;  
Proposal Submittal;  
Surety (Bid) Bond;  
DBE Assurance Form 3102C;  
Bidder's List Form 3104C;  
DBE Intended Participation Affidavit: Individual Form 3105C;  
DBE Intended Participation Affidavit Summary for Prime Form 3106C;  
List of Major Subcontractors and Suppliers;  
Non-Collusion Affidavit;  
Buy America Certificate

**REQUIRED CONTRACT PROVISIONS  
FEDERAL-AID CONSTRUCTION CONTRACTS**

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

#### ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

##### I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

##### II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

**1. Equal Employment Opportunity:** Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: 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, pre-apprenticeship, and/or on-the-job training."

**2. EEO Officer:** The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

**3. Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

**4. Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

**5. Personnel Actions:** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

**6. Training and Promotion:**

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

**7. Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

**8. Reasonable Accommodation for Applicants / Employees with Disabilities:** The contractor must be familiar

with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

**9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:** The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

**10. Assurance Required by 49 CFR 26.13(b):**

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. 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 contracting agency deems appropriate.

**11. Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

### III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

### IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA- 1273 format and FHWA program requirements.

#### 1. Minimum wages

a. 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 1(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 paragraph 1.d. of this section; 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 paragraph 1.b. of this section) 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.

b.(1) The contracting officer shall require that 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 contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

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

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

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

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer 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, DC 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.

(3) 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 Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination 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.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) 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.

c. 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.

d. 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 contracting agency 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 contracting agency may, after written notice to the contractor, 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

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three 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.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee ( e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA 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 section 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 contracting agency..

(2) 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:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) 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 Regulations, 29 CFR part 3;

(iii) 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.

(3) 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 paragraph 3.b.(2) of this section.

(4) 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.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, 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, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, 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

##### a. Apprentices (programs of the USDOL).

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.

##### b. Trainees (programs of the USDOL).

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 classification of 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.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

- d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

**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 shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 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.**

a. 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).

b. 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).

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

**V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT**

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

**1. Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty 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 forty hours in such workweek.

**2. Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor 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 paragraph (1.) of this section, 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 forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

**3. Withholding for unpaid wages and liquidated damages.** The FHWA or the contracting agency 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 contractor, 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 paragraph (2.) of this section.

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

## VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;

(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is

evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

## VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

## VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

#### **IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

#### **X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION**

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

##### **1. Instructions for Certification – First Tier Participants:**

- a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.
- b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this

covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

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

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

\* \* \* \* \*

## **2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:**

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

### **2. Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which

this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

h. 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 clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

\* \* \* \* \*

**Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:**

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

\* \* \* \* \*

**XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. 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.

b. 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 Form to Report Lobbying," in accordance with its instructions.

2. 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 31 U.S.C. 1352. 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.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS  
PREFERENCE FOR APPALACHIAN DEVELOPMENT  
HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS  
ROAD CONTRACTS**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

**REQUIRED CONTRACT PROVISIONS:**

**BIDDING REQUIREMENTS AND CONDITIONS:**

**Suspension from Bidding:**

The City may suspend any person and any subsidiary or affiliate of any person from further bidding to the City and from being a subcontractor to a contractor or supplier or otherwise participating in the work:

- (A) If that person or any officer, director, employee or agent of that person is convicted, in this State, of any other jurisdiction, of a crime involving any of the following elements or actions:
  - (1) Entering into any contract, combination, conspiracy or other unlawful act in restraint of trade or commerce,
  - (2) Knowingly and willfully falsifying, concealing, or covering up a material fact by trick, scheme, or device,
  - (3) Making false, fictitious, or fraudulent statements or representations,
  - (4) Making or using a false writing or document knowing it to contain a false, fictitious, or fraudulent statement or entry.
  - (5) Misrepresentation or false statement on any application for bonding:
  - (6) Misrepresentation or false statement on any application for prequalification; or
- (B) If the City makes a finding of any of the above or finds that the contractor is not a Responsible Bidder or a Responsible Contractor.

Under this Subsection, a person means any individual, partnership, joint venture, corporation, association or other entity formed for the purpose of doing business as a contractor, subcontractor or supplier.

The signature of the bid proposal by a submitter constitutes the submitter's certification, under penalty of perjury under the laws of the United States, that the submitter, or any person associated therewith in the capacity of owner, partner, director, officer, principal investor, project director, manager, auditor, or any position involving the administration of federal funds, has not been, or is not currently, under suspension, debarment, voluntary exclusion or been determined ineligible by any federal agency within the past three years. Signature of the bid proposal also certifies, under penalty of perjury under the laws of the United States, that the submitter does not have a proposed debarment pending. In addition, signature of the bid proposal certifies that the submitter has not been indicted, 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 three years.

Any exceptions to the above paragraph shall be noted and fully described on a separate sheet and attached to the bid proposal.

**Non-Collusion Certification:**

Bidders making their submittal shall complete the "AFFIDAVIT BY CONTRACTOR CERTIFYING THAT THERE WAS NO COLLUSION IN BIDDING OF CONTRACT" form included within these project specifications. This form shall be executed by or on behalf of the person, firm, association of corporation submitting the bid, in the following form:

The bidder certifies that, pursuant to Subsection 112(c) of Title 23, United States Code, and Title 44, Chapter 10, Article 1 and Title 34, Chapter 2, Article 4 of the Arizona Revised Statutes, neither it nor anyone associated with the company, firm, corporation, or individual has, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of full competitive bidding in connection with the above referenced project.

**SCOPE OF WORK:**

**Intent of Contract:**

**(A) COVENANT OF GOOD FAITH AND FAIR DEALING**

This contract imposes an obligation of good faith and fair dealing in its performance and enforcement.

The Contractor and the City, with a positive commitment to honesty and integrity, agree to the following mutual duties:

- (1) Each will function within the laws and statutes applicable to their duties and responsibilities.
- (2) Each will assist in the other's performance.
- (3) Each will avoid hindering the other's performance.
- (4) Each will proceed to fulfill its obligations diligently.
- (5) Each will cooperate in the common endeavor of the contract.

**(B) VOLUNTARY PARTNERING**

The City of Phoenix Street Transportation Department intends to encourage the foundation of a cohesive partnership with the Contractor and its principal subcontractors and suppliers. This partnership will be structured to draw on the strengths of each organization to identify and achieve reciprocal goals. The objectives are effective and efficient contract performance and completion within budget, on schedule, and in accordance with plans and Specifications.

This partnership will be bilateral in makeup, and participation will be totally voluntary.

To implement this partner initiative prior to starting work, the Contractor's management personnel and the City's Engineering Supervisor will initiate a partnering development session. Persons required to be in attendance will be the City's Engineering Supervisor and key project personnel; the prime Contractor's on-site project manager and key project personnel; and principal subcontractor and supplier representatives.

Follow-up workshops may be held periodically throughout the duration of the contract as agreed by the Contractor and the City.

The establishment of a partnership charter on a project will not change the legal relationship of the parties to the contract, nor relieve either party from any of the terms of the contract.

**(C) VALUE ENGINEERING PROPOSALS**

Value Engineering proposals may be submitted to the Engineer for modifying the plans, specifications, or other requirements of the contract for the sole purpose of reducing the total cost of construction without impairing in any manner the essential functions or characteristics of the project, including but not limited to service life, economy of operations, ease of maintenance, desired appearance, or design and safety standards.

After execution of the contract, a value engineering proposal may be recommended by the Contractor. A proposal may include modifications to the plans or specifications, construction phasing or procedures, or other contract requirements.

The Engineer reserves the right to make alterations to the contract, in accordance with MAG Specification Section 104.2.1. The Engineer will notify the Contractor in writing of any alterations to the contract. Such alterations shall not

be eligible for inclusion in any value engineering initiatives or joint proposals.

A savings resulting solely from the elimination or reduction in quantity of a bid item will not be considered as a value engineering proposal. A savings resulting from the elimination or reduction in quantity of a bid item specified as part of a value engineering proposal will be considered.

The Contractor shall identify a value engineering proposal as such, and it shall contain, at a minimum, the following:

- (A) A description of both the existing contract requirements for performing the work and the proposed changes.
- (B) All engineering drawings and computations necessary for a thorough and expeditious evaluation.
- (C) An itemization of the existing contract requirements that must be changed if the proposal is adopted, and a recommendation as to the manner in which the change should be made.
- (D) A detailed estimate of the cost of performing the work under the existing contract and under the proposed changes, including the cost of implementing the changes.
- (E) The contract items affected by the proposed changes and any variations in quantities resulting from the changes, and any new items not listed in the bid schedule.
- (F) An objective estimate of any effects the proposal will have on collateral costs to the City, costs of related items, and costs of maintenance and operation.
- (G) A statement as to the effect that the proposal will have on the time for the completion of the project.
- (H) A statement in which the Engineer and Contractor jointly establish an acceptable period of time for evaluation of the proposal, and execution of a supplemental agreement. Any delays or extensions must be jointly approved by the Engineer and Contractor, or such proposal shall be considered rejected.
- (I) A statement as to any contract time extension or time related costs which will be requested by the Contractor as a condition for implementing the proposed changes.

The City will not be liable for any delay in executing a supplemental agreement, nor for any failure to accept a value engineering proposal.

The Engineer will notify the Contractor in writing regarding acceptance or rejection of a proposal. The City's decision will be final.

If the value engineering proposal is accepted in whole or in part, the necessary contract modifications and contract price adjustments will be made by the execution of a supplemental agreement which will specifically state that it is executed pursuant to the provisions of this subsection. The City will be the sole judge of the acceptability of a proposal, and of the estimated net savings in construction costs from the adoption of all or any part of the proposal.

The Contractor shall not perform any work described in the value engineering proposal until a supplemental agreement incorporating the proposal has been executed, or until the Contractor has been given written approval by the Engineer. If the supplemental agreement has not been executed, or the Contractor has not been given written approval on or before the date jointly determined above in paragraph (H), the proposal shall be deemed rejected.

The executed supplemental agreement shall incorporate the changes in the plans, specifications, or other requirements of the contract which are necessary to permit the proposal, or such part of it which has been accepted, to be put into effect, and shall include any conditions upon which the City's approval thereof is based. The executed supplemental agreement shall also extend the time for the completion of the contract if, the extension was requested by the Contractor as a condition for implementing the proposal, and such an extension has been deemed warranted by the City.

The executed supplemental agreement shall also establish the estimated net savings in the cost of performing the work attributable to the value engineering proposal. In determining the net savings, the Engineer reserves the right to disregard the contract bid prices if, in the Engineer's judgement, such prices do not represent a fair measure of the value of the work to be performed or deleted. The executed supplemental agreement shall provide that the Contractor be paid 50 percent of the estimated net savings amount. Administrative or construction engineering costs by the City will not be included in the determination of the estimated net savings. Changes in overhead costs by the Contractor resulting from the proposal, including related time reductions or extensions, shall not be allowed.

The amount specified to be paid to the Contractor in the executed supplemental agreement shall constitute full compensation to the Contractor for the value engineering proposal and the performance of the work thereof pursuant to the said supplemental agreement.

Upon acceptance of a value engineering proposal, any restrictions imposed by the Contractor on its use or on disclosure of the information shall become void, and the City thereafter shall have the right to use all or any part of the proposal without obligation or compensation of any kind to the Contractor.

#### **CONTROL OF WORK:**

##### **Claims:**

###### **(A) Notice of Claim:**

It is the purpose of this subsection that claims for additional compensation and any difference between the parties arising under and by virtue of the contract be brought to the attention of the Engineer at the earliest possible time and at the first responsible level to increase the possibility for such matters to be resolved or for appropriate action to be taken promptly. This section shall be construed to apply to all claims including, but not limited to, claims based on contract clauses as well as claims based on breach of contract or tort.

In the event any basis for additional compensation or time extension is perceived by the Contractor to have occurred, the Contractor shall give the Engineer immediate oral or written notice of such basis for additional compensation or time extension for the earliest possible decision, instruction, notice or action duly taken by the Engineer.

Should the Contractor disagree with any decision, order, instruction, notice, act or omission of the Engineer, the Contractor may submit a Notice of Claim to the Engineer. The Notice of Claim shall be submitted in writing within three working days after the Contractor has learned of the Engineer's action regarding the occurrence or event and before the Contractor begins the work on which he/she based the claim. For projects on which the voluntary partnering process is followed, and the Contractor elects to file a claim, the Notice of Claim shall be submitted within three working days after the completion of the issue resolution process.

The Notice of Claim shall indicate, insofar as possible, the basis and the nature of the claim. If notification is not given, the Contractor hereby agrees to waive any claim for additional compensation. Within a 10 day period from the submission of the Notice of Claim, the Contractor shall submit in writing a projection of the Contractor's additional costs resulting from the alleged incident. Such costs shall include both present and future costs resulting from the alleged incident.

At the time the Contractor gives written notice of his/her claim, the Contractor shall immediately begin to keep and maintain complete and specific records to the extent possible, including but not limited to, cost records concerning details of the perceived claim.

The Contractor shall give the Engineer access to any such records and, when so requested, shall furnish the Engineer copies of claim documentation.

Unless otherwise agreed to in writing, the Contractor shall continue with and carry on the work and progress during the pendency of any claim, dispute, decision or determination by the Engineer, and any mediation or arbitration proceedings, and

the City will continue to make progress payments to the Contractor in accordance with the contract documents.

**(B) Submission of Claims:**

As promptly as possible following the submission of a Notice of Claim in accordance with Subsection (A) of this section, but in no event later than 30 calendar days after all of the Contractor's costs have been incurred, the Contractor shall submit his/her claim to the Engineer concerning the matter so noticed.

The claim shall set forth clearly and in detail, for each item of additional compensation or extension of time requested, the reasons for the claim, references to applicable provisions of the specifications, the nature and the specific cost ascribed to each element of the claim or for each period of time involved, the basis used in ascribing each such element of cost or for each such period of time, and all other pertinent factual data.

The Contractor shall, insofar as it is possible to do so, promptly furnish any clarification and additional information or data deemed necessary and requested in writing by the Engineer.

**(C) Decision on Claims:**

The Engineer will make a written decision in relation to any claim presented by the Contractor within the following time frames:

- (1) For an adjustment in compensation, or other contractual dispute between the parties where the amount in controversy is \$200,000.00 or less, 30 calendar days from receipt of the Contractor's claim;
- (2) For an adjustment in compensation or other contractual dispute between the parties where the amount in controversy is more than \$200,000.00, 60 calendar days from receipt of the Contractor's claim.

Unless the Contractor and the Engineer otherwise stipulate in writing to a later time, if the Engineer does not make a decision or determination within the time frames prescribed in this subsection, the claim shall be deemed denied and the Contractor may proceed with the legal remedy prescribed herein.

The decision of the Engineer in relation to the Contractor's claim shall be final unless the Contractor commences arbitration or litigation as follows:

- (1) Where the amount in controversy is \$200,000.00 or less, the Contractor's sole legal remedy shall be arbitration.
- (2) Where the amount in controversy is more than \$200,000.00, the Contractor shall initiate litigation within twelve months after the cause of action accrues as prescribed in Section 12-821 of the Arizona Revised Statutes.

**(D) Mediation:**

If the Contractor is not satisfied with the decision of the Engineer, and prior to filing for arbitration or litigation, the Contractor may request a non-binding mediation by filing a request for mediation in writing with the Engineer. The Engineer will then arrange for a mutually agreeable mediator. Such request for mediation shall be made within 30 calendar days from actual receipt of the Engineer's decision as provided for in this section.

In connection with the mediation, each party shall bear its own costs, and any fees and expenses assessed by the mediator shall be borne equally by the parties.

**(E) Arbitration of Claims and Disputes:**

- (1) If the Contractor elects to invoke his/her right to arbitration, the Contractor shall file a Demand for Arbitration in writing with the American Arbitration Association, United States Arbitration and Mediation of Arizona, or

any equivalent arbitration service, and serve a copy thereof upon the Engineer. Such Demand for Arbitration shall be made by claimant within 30 calendar days measured from actual receipt of the Engineer's decision unless a mediation process is already underway, in which case the Demand for Arbitration shall be made within 30 days of the termination of the mediation process. The scope of the arbitration proceeding shall be restricted and limited to the matters presented to the Engineer upon which the decision or determination was made and shall include no other matters. All arbitration of claims shall be conducted in Phoenix, Arizona in accordance with the rules of the arbitration service hearing the dispute.

- (2) The decision or award of the arbitrator shall be supported by substantial evidence and, in writing, contain the basis for the decision or award and findings of fact. The decision or award by the arbitrator when made shall be final and non-appealable except as provided in Section 12-1512, Arizona Revised Statutes. Both the Contractor and the Engineer shall be bound by the Arbitration Award for all purposes and judgment may be entered upon it in accordance with applicable law in the Superior Court of Arizona in and for the County of Maricopa.
- (3) For the purposes of this section, a claim for adjustment in compensation shall mean an aggregate of operative facts that give rise to the rights that the Contractor seeks to enforce. That is to say, a claim under this section is defined as the event, transaction or set of facts that give rise to a claim for compensation, costs or expenses or damages which do not exceed \$200,000.00 in amount.

In making a determination whether the amount in controversy is \$200,000.00 or less, the parties shall not consider, quantify or take into account any requested extensions of contract time, or the release or remission of liquidated damages previously assessed.

(4) Any contractor having a claim, adjustment or dispute for an amount in excess of \$200,000.00 may waive or abandon the dollar amount of any such claim in excess of \$200,000.00 so as to bring the claim, adjustment or dispute within the scope and coverage of this section, provided that the amount allowed to any such contractor by the arbitration award shall not exceed \$200,000.00. Various damages claimed by the Contractor for a single claim may not be divided into separate proceedings to create claims within the \$200,000.00 limit.

- (5) The claim shall be submitted to a single arbitrator who shall be selected by the parties from a list of arbitrators furnished by the arbitration service. Each party shall alternately strike names from the list until only one name remains. The person whose name thus remains on the list of arbitrators is their first choice but if that person is not available to serve, the two persons whose names were last stricken are acceptable, with the one whose name was last stricken being the first alternate.
- (6) Unless agreed to otherwise, the parties shall select the arbitrator within ten calendar days after each has received a copy of the list of arbitrators.
- (7) Each party to the arbitration shall bear its own costs and any other cost and fees assessed shall be divided equally between the parties to the arbitration.

#### **CONTROL OF MATERIAL:**

##### **(A) Source of Supply and Quality Requirements:**

Whenever water is required on a project, as part of either a process or a product, it shall be free of contaminants which, in the judgment of the Engineer, constitute a health hazard to those individuals employed on the project and to the general public.

Untreated effluent shall not be utilized in any aspect of the work.

##### **(B) Certificates:**

## **1. General:**

The Contractor shall submit to the Engineer an original or copy of either a Certificate of Compliance or a Certificate of Analysis, as required, prior to the use of any materials or manufactured assemblies for which these specifications or the special provisions require that such a certificate be furnished.

The Engineer may permit the use of certain materials or manufactured assemblies prior to, or without, sampling and testing if accompanied by a Certificate of Compliance or Certificate of Analysis, as herein specified. Materials or manufactured assemblies for which a certificate is furnished may be sampled and tested at any time, and, if found not in conformity with the requirements of the plans and the specifications, will be subject to rejection, whether in place or not.

Certificates shall comply with the requirements specified herein.

## **2. Certificate of Compliance:**

A Certificate of Compliance shall be submitted on the manufacturer's or suppliers' official letterhead, and contain the following information:

- (1) The name, address and phone number of the manufacturer or supplier of the material.
- (2) A description of the material supplied.
- (3) Quantity of material represented by the certificate.
- (4) Means of material identification, such as label, lot number, or marking.
- (5) Statement that the material complies in all respects with the requirements of the cited specifications. Certificates shall state compliance to the specific cited specification, such as AASHTO M-194, ASTM A-588; or specific table or section of the MAG Uniform Standard Specifications, City of Phoenix Supplement to MAG, or Special Provisions. Certificates may cite all, if applicable.
- (6) A statement that the individual identified in item seven below has the legal authority to bind the manufacturer or the supplier of the material.
- (7) The name, title, and signature the responsible individual. The date of the signature shall also be given.

Each of the first six items specified above shall be completed prior to the signing as defined in item seven. No certificate will be accepted that has been altered, added to, or changed in any way after the authorized signature has been affixed to the original certificate. However, notations of a clarifying nature, such as project number, contractor, or quantity shipped are acceptable, provided the basic requirements of the certificate are not affected.

A copy or facsimile reproduction (FAX) will be acceptable; however, the original certificate shall be made available upon request.

## **3. Certificate of Analysis:**

A Certificate of Analysis shall include all the information required in a Certificate of Compliance and, in addition, shall include the results of all tests required by the specifications.

### **(C) Domestic Materials:**

**Buy America**

Steel and iron materials and products used on all projects shall comply with the current "Buy America" requirements of 23 CFR 635.410.

All manufacturing processes to produce all steel and iron products used on this project shall occur in the United States. Raw materials used in manufacturing the steel and iron products may be foreign or domestic. Steel or iron not meeting these requirements may be used in products on this project provided that the invoiced cost to the Contractor for such steel products incorporated into the work does not exceed either one-tenth of one percent of the total (final) contract cost or \$2,500, whichever is greater.

Any process which involves the application of a coating to iron or steel shall occur in the United States. These processes include epoxy coating, galvanizing, painting, or any other coating which protects or enhances the value of covered material.

The requirements specified herein shall only apply to steel and iron products permanently incorporated into the project. "Buy America" provisions do not apply to temporary steel items, such as sheet piling, temporary bridges, steel scaffolding and falsework, or to materials which remain in place at the contractor's convenience.

Certificates of Compliance, conforming to the requirements of these Specifications, will accompany each shipment of material that includes steel or iron products and will be submitted to the Engineer prior to its use. The Certificates of Compliance must state that the steel or iron products utilized on the project meets the requirements specified herein and shall also certify that all manufacturing processes to produce steel or iron products, and any application of a coating to iron or steel, occurred in the United States.

Convict-produced materials may not be used unless the materials were produced prior to July 1, 1991 at a prison facility specifically producing convict-made materials for Federal-aid construction projects.

## **LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC:**

### **(A) Sanitary, Health, and Safety Provisions:**

Occupational Safety and Health Standards shall apply at all times. The Contractor shall have, in accordance with OSHA requirements, Material Safety Data Sheets (MSDS) available for all applicable materials stored or utilized on the project. Should the Contractor fail to follow OSHA regulations, the Engineer may suspend the work by written notice until compliance has been achieved. Any such failure to comply with OSHA regulations shall constitute waiver of any right to claim for such suspended work. If regulations are in conflict, the more strict regulation will apply.

### **(B) Public Convenience and Safety:**

The Contractor shall abide by all OSHA 29 CFR Part 1926 and 29 CFR Part 1910 Regulations, as well as all applicable standards of the Environmental Protection Agency (EPA), the Arizona Department of Environmental Quality (ADEQ), and the Mine Safety and Health Administration (MSHA). The Contractor shall maintain a copy of the specified OSHA Standards on the construction site at all times.

The Contractor shall submit a Safety Plan at the preconstruction conference. The Safety Plan shall specify the procedures the Contractor will implement to satisfy OSHA and any state occupational safety guidelines related to the worker as well as the public in the construction of excavations, structures and confined air spaces along with all other activities involved in the project. The Engineer will review the Safety Plan within 10 working days and identify any additional elements of the project to be included. The Contractor shall then modify the Safety Plan, if necessary, for re-submittal to the Engineer within 5 working days. The Contractor shall not commence work until the Safety Plan has been approved, unless authorized by the Engineer.

The safety plan shall include a list of emergency procedures, phone numbers, and methods of communication for medical facilities, Police, Fire Department, and other emergency services which may become necessary. The Contractor shall be

responsible for providing First Aid treatment and medical supplies on the project site, in accordance with OSHA 29 CFR Part 1910, and for producing and maintaining records of any injury-related incidents. The Safety Plan shall include the requirement that all workers must wear OSHA approved hard hats, reflective safety vests or other approved high visibility warning garments, work shoes, and, when appropriate, safety glasses while in construction areas. The Engineer and Project Superintendent shall each ensure that their visitors comply with the above requirements as appropriate.

The Contractor shall designate a competent person as Safety Supervisor to be responsible for implementation of the Safety Plan throughout the contract period. The competent person shall be capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and have authority to take prompt corrective measures to eliminate them. The Safety Supervisor shall also conduct safety meetings, oversee and maintain safe job-site conditions, and ensure that emergency procedures, phone numbers, and all applicable OSHA notification posters are conspicuously placed in all work areas.

The Safety Supervisor shall maintain records demonstrating that all workers have sufficient experience to operate their equipment, and have been instructed in the proper operation of the equipment. The Safety Supervisor shall furnish evidence that crane operators have been instructed in accordance with the requirements of OSHA 29 CFR Part 1926.550 Subpart N, and 1926.955 Subpart V.

### **(C) Damage by Storm, Flood, or Earthquake:**

Damage by Storm, Flood, or Earthquake: Attention is directed to MAG Section 107.10, "Contractor's Responsibility for Work". In the event damage to the work is caused by a storm, flood, or earthquake which constitutes an "Occurrence," as hereinafter defined, the provisions of this Section shall be applicable and the Contractor may apply in writing to the Engineer for the City to pay or participate in the cost of repairing damage to the work from such cause or, in lieu thereof, and at the sole discretion of the Department/City, terminate the contract and relieve the Contractor of further obligation to perform the work, subject to the following:

#### **1. Occurrence:**

"Occurrence" shall include tornadoes; earthquakes in excess of a magnitude of 3.5 on the Richter Scale; and storms and floods for which the Governor has proclaimed a state of emergency, when the damaged work is located within the territorial limits to which such proclamation is applicable; or which were a catastrophic, unusual, sudden, and unforeseeable manifestation of the forces of nature, the effect of which could not have been prevented or minimized by reasonable human foresight and effort.

#### **2. Application by Contractor:**

The Contractor shall immediately begin performing emergency work necessary to provide for the safety and passage of public traffic, and such other emergency work necessary to mitigate damages to the facilities. The Contractor's written request for the City to pay or to participate in the cost of rebuilding, repairing, restoring or otherwise remedying the damage to the work caused by the occurrence shall be submitted to the Engineer. The repair work may begin prior to authorization by the Engineer, but the Contractor shall keep accurate costs of all such work performed.

#### **3. Repair Work:**

Repair of damaged work under the provisions of this subsection shall be pursuant to a supplemental agreement issued hereunder and specifying the repair work to be performed on the damaged facility. Such repair work shall consist of restoring the in-place construction (for the purposes of this subsection erected falsework and formwork shall be considered in-place construction) to the same state of completion to which such work had advanced prior to the Occurrence. Emergency work which the Engineer determines would have been part of the repair work if it had not previously been performed, will be considered to be part of said repair work. The City reserves the right to make changes in the plans and specifications applicable to the portions of the work to be repaired, and if such changes will increase the cost of repairing the damage over the Engineer's estimate of the cost of repair without the changes, the Contractor will be paid for such increased costs in accordance with Subsection 4 below.

Nothing in this section shall be construed to relieve the Contractor of full responsibility for the risk or injury, loss or damage to materials not yet incorporated in the work and to materials, tools, and equipment (except erected falsework and formwork) used to perform the work, nor to relieve the Contractor of his liability. The City will be responsible for any portion of the work accepted by the Engineer in accordance with MAG Section 105.15, and the Supplementary Conditions section, "MAG SUBSECTION 105.15(B) FINAL ACCEPTANCE" contained herein.

#### **4. Determination of Costs:**

Unless otherwise agreed between the Engineer and the Contractor, the cost of the work performed pursuant to this Section will be determined in accordance with an approved contract change order. The cost of emergency work, which the Engineer determines would have been part of the repair work if it had not previously been performed will be determined in the same manner as the authorized repair work. The cost of superintendence and other documented direct project costs associated with recovering the site, including idled equipment, remobilization costs and project office overhead shall be included in the cost of emergency and repair work. No payment shall be made for home office overhead.

#### **5. Payment for Repair Work:**

The City will pay the cost of the repair work as determined in Subsection 4.

#### **6. Termination of Contract:**

If the City elects to terminate the contract, the termination and the determination of the total compensation payable to the Contractor shall be governed by the provisions of MAG Section 108.11- Termination of Contract.

#### **PROVIDE ON-THE-JOB TRAINING:**

The Contractor shall provide on-the-job training aimed at developing full journeymen in the type of trade or job classification involved.

The number of trainees to be trained under this project shall be at least 0, and the required number of training hours shall be 0; however, the Contractor shall make every possible effort to provide additional trainees with training and shall see that all trainees are afforded every opportunity to participate in as much training as is practically possible to provide. Due to turnover and attrition of trainees in any single trainee slot, it is expected that continuous trainee replacements may be necessary during the contract work period.

In the event that a Contractor subcontracts a portion of the contract work, he shall determine how many, if any, of the trainees are to be trained by the subcontractor, provided, however, that the Contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The Contractor shall also insure that this training special provision is made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

The number of trainees shall be distributed among the work classifications on the basis of the Contractor's needs and the availability of journeymen in the various classifications within a reasonable area of recruitment. Prior to commencing construction, the Contractor shall submit to the City for approval, the number of trainees to be trained in each selected classification and training program to be used. Furthermore, the Contractor shall specify the starting time for training in each of the classifications. The Contractor will be credited for each trainee employed by him on the contract work who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees as provided hereinafter.

Training and upgrading of minorities and women toward journeyman status is a primary objective of this Training Special Provision. Accordingly, the Contractor shall make every effort to enroll minority trainees and women (e.g., by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent that such persons are available within a reasonable area of recruitment. The Contractor will be responsible for demonstrating

the steps that he has taken in pursuance thereof, prior to a determination as to whether the Contractor is in compliance with this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which he has successfully completed a training course leading to journeyman status or in which he has been employed as a journeyman. The Contractor shall satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used, the Contractor's records shall document the findings in each case.

The minimum length and type of training for each classification will be as established in the training program selected by the Contractor and approved by the City and the Federal Highway Administration. The City and the Federal Highway Administration will approve a program if it is reasonably calculated to meet the equal employment opportunity obligations of the Contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period. Furthermore, Apprenticeship programs registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved but not necessarily sponsored by the U.S. Department of Labor, Bureau of Apprenticeship and Training will also be considered acceptable provided they are being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Specifically, union apprenticeship programs, Associated Builders and Contractor's apprenticeship program and Associated General Contractor's Arizona Training program may be used. Additionally, in-house training programs are approved on a case-by-case basis. Approval or acceptance of a training program shall be obtained from the City prior to commencing work on the classification covered by the program. It is the intention of these provisions that training is to be provided in the construction crafts rather than clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the Federal Highway Administration. Some off site training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

Except as otherwise noted below, the Contractor will be reimbursed 80 cents per hour of training given an employee on this contract in accordance with an approved training program. As approved by the Engineer, reimbursement will be made for training persons in excess of the number specified herein. This reimbursement will be made even though the Contractor receives additional training program funds from other sources, provided such other source does not specifically prohibit the Contractor from receiving other reimbursement. Reimbursement for off-site training indicated above may only be made to the Contractor where he contributes to the cost of the training, provides the instruction to the trainee or pays the trainee's wages during the off site training period.

No payment will be made to the Contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyman, is caused by the Contractor and evidences a lack of good faith on the part of the Contractor in meeting the requirements of this Training Special Provision. It is normally expected that a trainee will begin his training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his work classification or until he has completed his training program. However, when such training opportunities are suspended or interrupted under the contract which the trainee was designated, the Contractor may continue training under other contracts regardless of their funding, except that no reimbursement for such training shall be made on non-federal aid contracts, under this training special provision. It is not required that all trainees be on board for the entire length of the contract. A Contractor will have fulfilled his responsibilities under this Training Special Provision if he has provided acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

Trainees will be paid at least 60 percent of the appropriate minimum journeyman's rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent of the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Departments of Labor or Transportation in connection with the existing program will apply to all trainees being trained for the same classification who are covered by this Training Special Provision.

The Contractor shall furnish the trainee a copy of the program he will follow in providing the training. The Contractor shall

provide each trainee with a certification showing the type and length of training satisfactorily completed.

The Contractor shall provide for the maintenance of records and furnish periodic reports documenting his performance under this Training Special Provision.

The Contractor shall submit a weekly training report to the Engineer. The report shall be prepared on forms obtained from the City of Phoenix Equal Opportunity Department, Business Relations Division, 200 W. Washington Street, 15<sup>th</sup> Floor, Phoenix, AZ 85003.

At the preconstruction conference, the Contractor shall submit a schedule which will indicate each trainee's name, social security number, sex, race/ethnicity, the program in which the trainee is enrolled, the approximate number of hours each trainee will be trained in each phase of the work, the crafts to which the trainees belong and the estimated period of time that they will be employed as trainees. A supplemental schedule shall be submitted to the Engineer when a revision in the original schedule is necessary. At the time each trainee is scheduled to begin work, the Contractor shall submit to the Engineer each trainee's name, social security number, sex, and race/ethnicity. The Contractor must also submit proof that the trainee is enrolled in an approved training program.

At the conclusion of the project or at the end of each calendar year for multi-year projects, the Contractor must submit to the City of Phoenix Equal Opportunity Department (via the Engineer), the same information described hereinbefore for each trainee that worked on the project. Additionally, the Contractor must indicate if the trainee graduated from the program, was terminated due to cause, or was transferred to another project to continue his/her training.

If, at the preconstruction conference, the Contractor does not provide a schedule containing the specified information, the Engineer will notify the Contractor of the infraction. Failure to provide the schedule within 15 calendar days from the date of notification shall be considered as willful non-compliance. The Engineer will cause to be withheld from the Contractor's monthly payments additional retainage in the amounts specified below. The amount withheld from the monthly payment shall be held until an acceptable schedule or supplemental schedule has been submitted.

The Engineer will monitor the use of trainees based on the Contractor's schedule, supplemental schedules, and weekly training report. If the use of trainees is not in conformance with the schedule or supplemental information, the Engineer will cause to be withheld from the Contractor's monthly payments additional retainage in the amounts specified below. Conformance with the schedule will be considered acceptable when the cumulative number of trainee hours earned to date under the bid item, PROVIDE ON THE JOB TRAINING is at least 90 percent of that shown on the schedule, for the work performed to date.

#### ADDITIONAL RETAINAGE

First and Second monthly payments following infraction: \$1,000.00 each month

Third monthly payment and thereafter: \$5,000.00 each month

The amount withheld from the monthly payment shall be held until an acceptable schedule or supplemental schedule has been submitted and until conformance with the schedule has been determined.

If, at the completion of the contract, the City is holding additional retainage in accordance with this specification, the retainage will become the property of the City, not as penalty but as liquidated damages.

#### NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION:

The Contractor shall complete the "Information Furnished Pursuant to the NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)" form (copy included in this Federal Requirement section of these Special Provisions), and submit it to the Engineer at the pre-construction

meeting. This form will be filed with the U.S. Department of Labor by the City of Phoenix.

**NOTICE OF REQUIREMENT FOR CARGO ACT OF 1954:**

The Federal Highway Administration (FHWA) in partnership with the Federal Maritime Administration has mandated the implementation of 46 CFR 381 making the requirements of the Cargo Preference Act (CPA) applicable to the Federal Aid Highway Program.

The requirements apply to items transported by ocean vessel.

The requirements of 46 CFR 381 apply to materials or equipment acquired for a specific federal-aid highway project. In general, the requirements are not applicable to goods or materials that come from inventories independent of FHWA-funded contracts.

Information related to the CPA is presented in "Cargo Preference Requirements – Questions and Answers" available from the FHWA at <https://www.fhwa.dot.gov/construction/cgit/cargo/qa.cfm>.

The Contractor shall comply with the requirements of the Cargo Preference Act 46 CFR 381.7(a)-(b). By executing a construction contract for this project, the Contractor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.
2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in the paragraph above to both the Engineer and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.
3. To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.

INFORMATION FURNISHED PURSUANT TO THE NOTICE OF  
REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE  
EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER  
11246)

Set Forth in Paragraph 3 in Federal Register,  
Vol. 43, No. 68

*Contract in Excess of \$10,000*

CITY OF PHOENIX PROJECT NO:  
FEDERAL AID NO.:  
ADOT TRACS NO.:  
PROJECT DESCRIPTION:  
LOCATION:

Contractor Identification Number (as used on U.S. Treasury Department Form 941): Name \_\_\_\_\_

and Address of Contractor: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Telephone Number: Amount \_\_\_\_\_

of Contract: Estimated \_\_\_\_\_

Starting Date: Estimated \_\_\_\_\_

Completion Date: \_\_\_\_\_

Geographical Area: State of Arizona

\_\_\_\_\_  
(County)

\_\_\_\_\_  
(City)

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY  
CONSTRUCTION CONTRACT SPECIFICATIONS  
EXECUTIVE ORDER 11246, July 1, 1978 (Revised November 3, 1980)

1. 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, United States 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:

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

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

(iii) 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

(iv) 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 must 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 timetable.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7 a through p 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.

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 must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must 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 on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

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 herefore, 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 woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in 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 obligation 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 supervisors; 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 p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p 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, the Contractor may be in violation of the Executive Order if a 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 of 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 numbers, 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).

**NOTICE OF REQUIREMENTS FOR AFFIRMATIVE ACTION  
TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY  
(EXECUTIVE ORDER 11246)**

JULY 1, 1978 (Revised November 3, 1980)

(Revised April 15, 1981)

1. The bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.
  
2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate work force in each trade on all construction work in the covered area, are as follows:

	<u>Minority</u>	<u>Female</u>
Tucson and balance of Pima County	24.1	6.9
Cochise, Graham, Greenlee and Santa Cruz Counties	27.0	6.9
Phoenix and balance of Maricopa County	15.8	6.9
Apache, Coconino, Gila, Mohave, Navajo, Pinal, Yavapai and Yuma Counties	19.6	6.9

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in all areas where he has Federal or federally assisted work.

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 effort to meet the goals. The hours of minority and female employment and training must 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.

FEDERAL-AID PROPOSAL NOTICES

NOTICES TO PROSPECTIVE FEDERAL-AID CONSTRUCTION CONTRACTORS

1. CERTIFICATION OF NONSEGREGATED FACILITIES

a. A certification of Nonsegregated Facilities, as required by the May 9, 1967, Order of the Secretary of Labor (32 F.R. 7439, May 19, 1967) on Elimination of Segregated Facilities (is included in the proposal and must be submitted prior to the award of a Federal-aid highway construction contract exceeding \$10,000 which is not exempt from the provisions of the Equal Opportunity clause).

b. Bidders are cautioned as follows: By signing this bid, the bidder will be deemed to have signed and agreed to the provisions of the "Certification of Nonsegregated Facilities" in this proposal. This certification provides that the bidder does not maintain or provide for his employee facilities which are segregated on a basis of race, creed, color, or national origin, whether such facilities are segregated by directive or on a de facto basis. The certification also provides that the bidder will not maintain such segregated facilities.

c. Bidders receiving Federal-aid highway construction contract awards exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity clause, will be required to provide for the forwarding of the following notice to prospective subcontractors for construction contracts and material suppliers where the subcontracts or materials supply agreements exceed \$10,000 and are not exempt from the provisions of the Equal Opportunity clause.

2. NOTICE TO PROSPECTIVE SUBCONTRACTORS AND MATERIAL SUPPLIERS OF REQUIREMENT FOR CERTIFICATION OF NONSEGREGATED FACILITIES

a. A Certification of Nonsegregated Facilities as required by the May 9, 1967, Order of the Secretary of Labor (32 F.R. 7439, May 19, 1967) on Elimination of Segregated Facilities, which is included in the proposal, or attached hereto, must be submitted by each subcontractor and material supplier prior to the award of the subcontract or consummation of a material supply agreement if such subcontract or agreement exceeds \$10,000 and is not exempt from the provisions of the Equal Opportunity clauses.

b. Subcontractors and material suppliers are cautioned as follows: By signing the subcontract or entering into a material supply agreement, the subcontractor or material supplier will be deemed to have signed and agreed to the provisions of the "Certification of Nonsegregated Facilities" in the subcontract or material supply agreement. This certification provides that the subcontractor or material supplier does not maintain or provide for his employees facilities which are segregated on the basis of race, creed, color, or national origin, whether such facilities are segregated by directive or on a de facto basis. The certification also provides that the subcontractor or material supplier will not maintain such segregated facilities.

c. Subcontractors or material suppliers receiving subcontract awards or material supply agreements exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity clause will be required to provide for the forwarding of this notice to prospective subcontractors for construction contracts and materials suppliers where the subcontracts or material supply agreements exceed \$10,000 and are not exempt from the provisions of the Equal Opportunity clause.

3. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

By signing this bid, the bidder will be deemed to have stipulated as follows:

a. That any facility to be utilized in the performance of this contract, unless such contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1957 et seq., as amended by Pub. L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub. L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR, Part 15), is not listed on the U.S. Environmental Protection 40 CFR 15.20.

b. That the State highway department shall be promptly notified prior to contract award of the receipt by the bidder of any communication from the Director, Office of Federal Activities, EPA, indicating that a facility to be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.

## Title 29: Labor

### PART 3—CONTRACTORS AND SUBCONTRACTORS ON PUBLIC BUILDING OR PUBLIC WORK FINANCED IN WHOLE OR IN PART BY LOANS OR GRANTS FROM THE UNITED STATES

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Authority: R.S. 161, sec. 2, 48 Stat. 848; Reorg. Plan No. 14 of 1950, 64 Stat. 1267; 5 U.S.C. 301; 40 U.S.C. 3145; Secretary's Order 01–2008; and Employment Standards Order No. 2001–01.

Source: 29 FR 97, Jan. 4, 1964, unless otherwise noted.

#### § 3.1 Purpose and scope.

This part prescribes “anti-kickback” regulations under section 2 of the Act of June 13, 1934, as amended (40 U.S.C. 276c), popularly known as the Copeland Act. This part applies to any contract which is subject to Federal wage standards and which is for the construction, prosecution, completion, or repair of public buildings, public works or buildings or works financed in whole or in part by loans or grants from the United States. The part is intended to aid in the enforcement of the minimum wage provisions of the Davis-Bacon Act and the various statutes dealing with federally assisted construction that contain similar minimum wage provisions, including those provisions which are not subject to Reorganization Plan No. 14 (e.g., the College Housing Act of 1950, the Federal Water Pollution Control Act, and the Housing Act of 1959), and in the enforcement of the overtime provisions of the Contract Work Hours Standards Act whenever they are applicable to construction work. The part details the obligation of contractors and subcontractors relative to the weekly submission of statements regarding the wages paid on work covered thereby; sets forth the circumstances and procedures governing the making of payroll deductions from the wages of those employed on such work; and delineates the methods of payment permissible on such work.

#### § 3.2 Definitions.

As used in the regulations in this part:

(a) The terms building or work generally include construction activity as distinguished from manufacturing, furnishing of materials, or servicing and maintenance work. The terms include, without limitation, buildings, structures, and improvements of all types, such as bridges, dams, plants, highways, parkways, streets, subways, tunnels, sewers, mains, powerlines, pumping stations, railways, airports, terminals, docks, piers, wharves, ways, lighthouses, buoys, jetties, breakwaters, levees, and canals; dredging, shoring, scaffolding, drilling, blasting, excavating, clearing, and landscaping. Unless conducted in connection with and at the site of such a building or work as is described in the foregoing sentence, the manufacture or furnishing of materials, articles, supplies, or equipment (whether or not a Federal or State agency acquires title to such materials, articles, supplies, or equipment during the course of the manufacture or furnishing, or owns the materials from which they are manufactured or furnished) is not a building or work within the meaning of the regulations in this part.

(b) The terms construction, prosecution, completion, or repair mean all types of work done on a particular building or work at the site thereof, including, without limitation, altering, remodeling, painting and decorating, the transporting of materials and supplies to or from the building or work by the employees of the construction contractor or construction subcontractor, and the manufacturing or furnishing of materials, articles, supplies, or equipment on the site of the building or work, by persons employed at the site by the contractor or subcontractor.

(c) The terms public building or public work include building or work for whose construction, prosecution, completion, or repair, as defined above, a Federal agency is a contracting party, regardless of whether title thereof is in a Federal agency.

(d) The term building or work financed in whole or in part by loans or grants from the United States includes building or work for whose construction, prosecution, completion, or repair, as defined above, payment or part payment is made directly or indirectly from funds provided by loans or grants by a Federal agency. The term includes building or work for which the Federal assistance granted is in the form of loan guarantees or insurance.

(e) Every person paid by a contractor or subcontractor in any manner for his labor in the construction, prosecution, completion, or repair of a public building or public work or building or work financed in whole or in part by loans or grants from the United States is employed and receiving wages, regardless of any contractual relationship alleged to exist between him and the real employer.

(f) The term any affiliated person includes a spouse, child, parent, or other close relative of the contractor or subcontractor; a partner or officer of the contractor or subcontractor; a corporation closely connected with the contractor or subcontractor as parent, subsidiary, or otherwise, and an officer or agent of such corporation.

(g) The term Federal agency means the United States, the District of Columbia, and all executive departments, independent establishments, administrative agencies, and instrumentalities of the United States and of the District of Columbia, including corporations, all or substantially all of the stock of which is beneficially owned by the United States, by the District of Columbia, or any of the foregoing departments, establishments, agencies, and instrumentalities.

[29 FR 97, Jan. 4, 1964, as amended at 38 FR 32575, Nov. 27, 1973]

§ 3.3 Weekly statement with respect to payment of wages.

(a) As used in this section, the term employee shall not apply to persons in classifications higher than that of laborer or mechanic and those who are the immediate supervisors of such employees.

(b) Each contractor or subcontractor engaged in the construction, prosecution, completion, or repair of any public building or public work, or building or work financed in whole or in part by loans or grants from the United States, shall furnish each week a statement with respect to the wages paid each of its employees engaged on work covered by this part 3 and part 5 of this title during the preceding weekly payroll period. This statement shall be executed by the contractor or subcontractor or by an authorized officer or employee of the contractor or subcontractor who supervises the payment of wages, and shall be on the back of Form WH 347, "Payroll (For Contractors Optional Use)" or on any form with identical wording. Copies of Form WH 347 may be obtained from the Government contracting or sponsoring agency or from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site.

(c) The requirements of this section shall not apply to any contract of \$2,000 or less.

(d) Upon a written finding by the head of a Federal agency, the Secretary of Labor may provide reasonable limitations, variations, tolerances, and exemptions from the requirements of this section subject to such conditions as the Secretary of Labor may specify.

[29 FR 97, Jan. 4, 1964, as amended at 33 FR 10186, July 17, 1968; 47 FR 23679, May 28, 1982; 73 FR 77511, Dec. 19, 2008]

§ 3.4 Submission of weekly statements and the preservation and inspection of weekly payroll records.

(a) Each weekly statement required under §3.3 shall be delivered by the contractor or subcontractor, within seven days after the regular payment date of the payroll period, to a representative of a Federal or State agency in charge at the site of the building or work, or, if there is no representative of a Federal or State agency at the site of the building or work, the statement shall be mailed by the contractor or subcontractor, within such time, to a Federal or State agency contracting for or financing the building or work. After such examination and check as may be made, such statement, or a copy thereof, shall be kept available, or shall be transmitted together with a report of any violation, in accordance with applicable procedures prescribed by the United States Department of Labor.

(b) Each contractor or subcontractor shall preserve his weekly payroll records for a period of three years from date of completion of the contract. The payroll records shall set out accurately and completely the name and address of each laborer and mechanic, his correct classification, rate of pay, daily and weekly number of hours worked, deductions made, and actual wages paid. Such payroll records shall be made available at all times for inspection by the contracting officer or his authorized representative, and by authorized representatives of the Department of Labor.

(Reporting and recordkeeping requirements in paragraph (b) have been approved by the Office of Management and Budget under control number 1215-0017)

[29 FR 97, Jan. 4, 1964, as amended at 47 FR 145, Jan. 5, 1982]

§ 3.5 Payroll deductions permissible without application to or approval of the Secretary of Labor.

Deductions made under the circumstances or in the situations described in the paragraphs of this section may be made without application to and approval of the Secretary of Labor:

(a) Any deduction made in compliance with the requirements of Federal, State, or local law, such as Federal or State withholding income taxes and Federal social security taxes.

(b) Any deduction of sums previously paid to the employee as a bona fide prepayment of wages when such prepayment is made without discount or interest. A bona fide prepayment of wages is considered to have been made only when cash or its equivalent has been advanced to the person employed in such manner as to give him complete freedom of disposition of the advanced funds.

(c) Any deduction of amounts required by court process to be paid to another, unless the deduction is in favor of the contractor, subcontractor, or any affiliated person, or when collusion or collaboration exists.

(d) Any deduction constituting a contribution on behalf of the person employed to funds established by the employer or representatives of employees, or both, for the purpose of providing either from principal or income, or both, medical or hospital care, pensions or annuities on retirement, death benefits, compensation for injuries, illness, accidents, sickness, or disability, or for insurance to provide any of the foregoing, or unemployment benefits, vacation pay, savings accounts, or similar payments for the benefit of employees, their families and dependents: Provided, however, That the following standards are met:

(1) The deduction is not otherwise prohibited by law;

(2) It is either:

(i) Voluntarily consented to by the employee in writing and in advance of the period in which the work is to be done and such consent is not a condition either for the obtaining of or for the continuation of employment, or

(ii) provided for in a bona fide collective bargaining agreement between the contractor or subcontractor and representatives of its employees;

(3) No profit or other benefit is otherwise obtained, directly or indirectly, by the contractor or subcontractor or any affiliated person in the form of commission, dividend, or otherwise; and

(4) The deductions shall serve the convenience and interest of the employee.

(e) Any deduction contributing toward the purchase of United States Defense Stamps and Bonds when voluntarily authorized by the employee.

(f) Any deduction requested by the employee to enable him to repay loans to or to purchase shares in credit unions organized and operated in accordance with Federal and State credit union statutes.

(g) Any deduction voluntarily authorized by the employee for the making of contributions to governmental or quasi-governmental agencies, such as the American Red Cross.

(h) Any deduction voluntarily authorized by the employee for the making of contributions to Community Chests, United Givers Funds, and similar charitable organizations.

(i) Any deductions to pay regular union initiation fees and membership dues, not including fines or special assessments: Provided, however, That a collective bargaining agreement between the contractor or subcontractor and representatives of its employees provides for such deductions and the deductions are not otherwise prohibited by law.

(j) Any deduction not more than for the "reasonable cost" of board, lodging, or other facilities meeting the requirements of section 3(m) of the Fair Labor Standards Act of 1938, as amended, and part 531 of this title. When such a deduction is made the additional records required under §516.25(a) of this title shall be kept.

(k) Any deduction for the cost of safety equipment of nominal value purchased by the employee as his own property for his personal protection in his work, such as safety shoes, safety glasses, safety gloves, and hard hats, if such equipment is not required by law to be furnished by the employer, if such deduction is not violative of the Fair Labor Standards Act or prohibited by other law, if the cost on which the deduction is based does not exceed the actual cost to the employer where the equipment is purchased from him and does not include any direct or indirect monetary return to the employer where the equipment is purchased from a third person, and if the deduction is either

(1) Voluntarily consented to by the employee in writing and in advance of the period in which the work is to be done and such consent is not a condition either for the obtaining of employment or its continuance; or

(2) Provided for in a bona fide collective bargaining agreement between the contractor or subcontractor and representatives of its employees.

[29 FR 97, Jan. 4, 1964, as amended at 36 FR 9770, May 28, 1971]

§ 3.6 Payroll deductions permissible with the approval of the Secretary of Labor.

Any contractor or subcontractor may apply to the Secretary of Labor for permission to make any deduction not permitted under §3.5. The Secretary may grant permission whenever he finds that:

(a) The contractor, subcontractor, or any affiliated person does not make a profit or benefit directly or indirectly from the deduction either in the form of a commission, dividend, or otherwise;

(b) The deduction is not otherwise prohibited by law;

(c) The deduction is either (1) voluntarily consented to by the employee in writing and in advance of the period in which the work is to be done and such consent is not a condition either for the obtaining of employment or its continuance, or (2) provided for in a bona fide collective bargaining agreement between the contractor or subcontractor and representatives of its employees; and

(d) The deduction serves the convenience and interest of the employee.

§ 3.7 Applications for the approval of the Secretary of Labor.

Any application for the making of payroll deductions under §3.6 shall comply with the requirements prescribed in the following paragraphs of this section:

(a) The application shall be in writing and shall be addressed to the Secretary of Labor.

(b) The application need not identify the contract or contracts under which the work in question is to be performed. Permission will be given for deductions on all current and future contracts of the applicant for a period of 1 year. A renewal of permission to make such payroll deduction will be granted upon the submission of an application which makes reference to the original application, recites the date of the Secretary of Labor's approval of such deductions, states affirmatively that there is continued compliance with the standards set forth in the provisions of §3.6, and specifies any conditions which have changed in regard to the payroll deductions.

(c) The application shall state affirmatively that there is compliance with the standards set forth in the provisions of §3.6. The affirmation shall be accompanied by a full statement of the facts indicating such compliance.

(d) The application shall include a description of the proposed deduction, the purpose to be served thereby, and the classes of laborers or mechanics from whose wages the proposed deduction would be made.

(e) The application shall state the name and business of any third person to whom any funds obtained from the proposed deductions are to be transmitted and the affiliation of such person, if any, with the applicant.

[29 FR 97, Jan. 4, 1964, as amended at 36 FR 9771, May 28, 1971]

§ 3.8 Action by the Secretary of Labor upon applications.

The Secretary of Labor shall decide whether or not the requested deduction is permissible under provisions of §3.6; and shall notify the applicant in writing of his decision.

§ 3.9 Prohibited payroll deductions.

Deductions not elsewhere provided for by this part and which are not found to be permissible under §3.6 are prohibited.

§ 3.10 Methods of payment of wages.

The payment of wages shall be by cash, negotiable instruments payable on demand, or the additional forms of compensation for which deductions are permissible under this part. No other methods of payment shall be recognized on work subject to the Copeland Act.

§ 3.11 Regulations part of contract.

All contracts made with respect to the construction, prosecution, completion, or repair of any public building or public work or building or work financed in whole or in part by loans or grants from the United States covered by the regulations in this part shall expressly bind the contractor or subcontractor to comply with such of the regulations in this part as may be applicable. In this regard, see §5.5(a) of this subtitle.

## Title 29: Labor

PART 5—LABOR STANDARDS PROVISIONS APPLICABLE TO CONTRACTS COVERING FEDERALLY FINANCED AND ASSISTED CONSTRUCTION (ALSO LABOR STANDARDS PROVISIONS APPLICABLE TO NONCONSTRUCTION CONTRACTS SUBJECT TO THE CONTRACT WORK HOURS AND SAFETY STANDARDS ACT)

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Authority: 5 U.S.C. 301; R.S. 161, 64 Stat. 1267; Reorganization Plan No. 14 of 1950, 5 U.S.C. appendix; 40 U.S.C. 3141 et seq. ; 40 U.S.C. 3145; 40 U.S.C. 3148; 40 U.S.C. 3701 et seq. ; and the laws listed in 5.1(a) of this part; Secretary's Order 01–2008; and Employment Standards Order No. 2001–01.

Source: 48 FR 19541, Apr. 29, 1983, unless otherwise noted.

## Subpart A—Davis-Bacon and Related Acts Provisions and Procedures

Source: 48 FR 19540, Apr. 29, 1983, unless otherwise noted.

Editorial Note: Nomenclature changes to subpart A appear at 61 FR 19984, May 3, 1996.

### § 5.1 Purpose and scope.

(a) The regulations contained in this part are promulgated under the authority conferred upon the Secretary of Labor by Reorganization Plan No. 14 of 1950 and the Copeland Act in order to coordinate the administration and enforcement of the labor standards provisions of each of the following acts by the Federal agencies responsible for their administration and of such additional statutes as may from time to time confer upon the Secretary of Labor additional duties and responsibilities similar to those conferred upon the Secretary of Labor under Reorganization Plan No. 14 of 1950:

1. The Davis-Bacon Act (sec. 1–7, 46 Stat. 1949, as amended; Pub. L. 74–403, 40 U.S.C. 276a–276a–7).
2. Copeland Act (40 U.S.C. 276c).
3. The Contract Work Hours and Safety Standards Act (40 U.S.C. 327–332).
4. National Housing Act (sec. 212 added to c. 847, 48 Stat. 1246, by sec. 14, 53 Stat. 807; 12 U.S.C. 1715c and repeatedly amended).
5. Housing Act of 1950 (college housing) (amended by Housing Act of 1959 to add labor provisions, 73 Stat. 681; 12 U.S.C. 1749a(f)).
6. Housing Act of 1959 (sec. 401(f) of the Housing Act of 1950 as amended by Pub. L. 86–372, 73 Stat. 681; 12 U.S.C. 1701q(c)(3)).
7. Commercial Fisheries Research and Development Act of 1964 (sec. 7, 78 Stat. 199; 16 U.S.C. 779e(b)).
8. Library Services and Construction Act (sec. 7(a), 78 Stat. 13; 20 U.S.C. 355c(a)(4), as amended).
9. National Technical Institute for the Deaf Act (sec. 5(b)(5), 79 Stat. 126; 20 U.S.C. 684(b)(5)).
10. National Foundation on the Arts and Humanities Act of 1965 (sec. 5(k), 79 Stat. 846 as amended; 20 U.S.C. 954(j)).
11. Elementary and Secondary Education Act of 1965 as amended by Elementary and Secondary and other Education Amendments of 1969 (sec. 423 as added by Pub. L. 91–230, title IV, sec. 401(a)(10), 84 Stat. 169, and renumbered sec. 433, by Pub. L. 92–318; title III, sec. 301(a)(1), 86 Stat. 326; 20 U.S.C. 1232(b)). Under the amendment coverage is extended to all programs administered by the Commissioner of Education.
12. The Federal-Aid Highway Acts (72 Stat. 895, as amended by 82 Stat. 821; 23 U.S.C. 113, as amended by the Surface Transportation Assistance Act of 1982, Pub. L. 97–424).
13. Indian Self-Determination and Education Assistance Act (sec. 7, 88 Stat. 2205; 25 U.S.C. 450e).
14. Indian Health Care Improvement Act (sec. 303(b), 90 Stat. 1407; 25 U.S.C. 1633(b)).
15. Rehabilitation Act of 1973 (sec. 306(b)(5) 87 Stat. 384, 29 U.S.C. 776(b)(5)).

16. Comprehensive Employment and Training Act of 1973 (sec. 606, 87 Stat. 880, renumbered sec. 706 by 88 Stat. 1845; 29 U.S.C. 986; also sec. 604, 88 Stat. 1846; 29 U.S.C. 964(b)(3)).
17. State and Local Fiscal Assistance Act of 1972 (sec. 123(a)(6), 86 Stat. 933; 31 U.S.C. 1246(a)(6)).
18. Federal Water Pollution Control Act (sec. 513 of sec. 2, 86 Stat. 894; 33 U.S.C. 1372).
19. Veterans Nursing Home Care Act of 1964 (78 Stat. 502, as amended; 38 U.S.C. 5035(a)(8)).
20. Postal Reorganization Act (sec. 410(b)(4)(C); 84 Stat. 726 as amended; 39 U.S.C. 410(b)(4)(C)).
21. National Visitors Center Facilities Act of 1966 (sec. 110, 32 Stat. 45; 40 U.S.C. 808).
22. Appalachian Regional Development Act of 1965 (sec. 402, 79 Stat. 21; 40 U.S.C. App. 402).
23. Health Services Research, Health Statistics, and Medical Libraries Act of 1974 (sec. 107, see sec. 308(h)(2) thereof, 88 Stat. 370, as amended by 90 Stat. 378; 42 U.S.C. 242m(h)(2)).
24. Hospital Survey and Construction Act, as amended by the Hospital and Medical Facilities Amendments of 1964 (sec. 605(a)(5), 78 Stat. 453; 42 U.S.C. 291e(a)(5)).
25. Health Professions Educational Assistance Act (sec. 303(b), 90 Stat. 2254; 42 U.S.C. 293a(g)(1)(C); also sec. 308a, 90 Stat. 2258, 42 U.S.C. 293a(c)(7)).
26. Nurse Training Act of 1964 (sec. 941(a)(1)(C), 89 Stat. 384; 42 U.S.C. 296a(b)(5)).
27. Heart Disease, Cancer, and Stroke Amendments of 1965 (sec. 904, as added by sec. 2, 79 Stat. 928; 42 U.S.C. 299d(b)(4)).
28. Safe Drinking Water Act (sec. 2(a) see sec. 1450e thereof, 88 Stat. 1691; 42 U.S.C. 300j–9(e)).
29. National Health Planning and Resources Act (sec. 4, see sec. 1604(b)(1)(H), 88 Stat. 2261, 42 U.S.C. 300o–3(b)(1)(H)).
30. U.S. Housing Act of 1937, as amended and recodified (88 Stat. 667; 42 U.S.C. 1437j).
31. Demonstration Cities and Metropolitan Development Act of 1966 (secs. 110, 311, 503, 1003, 80 Stat. 1259, 1270, 1277, 1284; 42 U.S.C. 3310; 12 U.S.C. 1715c; 42 U.S.C. 1437j).
32. Slum clearance program: Housing Act of 1949 (sec. 109, 63 Stat. 419, as amended; 42 U.S.C. 1459).
33. Farm housing: Housing Act of 1964 (adds sec. 516(f) to Housing Act of 1949 by sec. 503, 78 Stat. 797; 42 U.S.C. 1486(f)).
34. Housing Act of 1961 (sec. 707, added by sec. 907, 79 Stat. 496, as amended; 42 U.S.C. 1500c–3).
35. Defense Housing and Community Facilities and Services Act of 1951 (sec. 310, 65 Stat. 307; 42 U.S.C. 1592j).
36. Special Health Revenue Sharing Act of 1975 (sec. 303, see sec. 222(a)(5) thereof, 89 Stat. 324; 42 U.S.C. 2689j(a)(5)).

37. Economic Opportunity Act of 1964 (sec. 607, 78 Stat. 532; 42 U.S.C. 2947).
38. Headstart, Economic Opportunity, and Community Partnership Act of 1974 (sec. 11, see sec. 811 thereof, 88 Stat. 2327; 42 U.S.C. 2992a).
39. Housing and Urban Development Act of 1965 (sec. 707, 79 Stat. 492 as amended; 42 U.S.C. 3107).
40. Older Americans Act of 1965 (sec. 502, Pub. L. 89–73, as amended by sec. 501, Pub. L. 93–29; 87 Stat. 50; 42 U.S.C. 3041a(a)(4)).
41. Public Works and Economic Development Act of 1965 (sec. 712; 79 Stat. 575 as amended; 42 U.S.C. 3222).
42. Juvenile Delinquency Prevention Act (sec. 1, 86 Stat. 536; 42 U.S.C. 3884).
43. New Communities Act of 1968 (sec. 410, 82 Stat. 516; 42 U.S.C. 3909).
44. Urban Growth and New Community Development Act of 1970 (sec. 727(f), 84 Stat. 1803; 42 U.S.C. 4529).
45. Domestic Volunteer Service Act of 1973 (sec. 406, 87 Stat. 410; 42 U.S.C. 5046).
46. Housing and Community Development Act of 1974 (secs. 110, 802(g), 88 Stat. 649, 724; 42 U.S.C. 5310, 1440(g)).
47. Developmentally Disabled Assistance and Bill of Rights Act (sec. 126(4), 89 Stat. 488; 42 U.S.C. 6042(4); title I, sec. 111, 89 Stat. 491; 42 U.S.C. 6063(b)(19)).
48. National Energy Conservation Policy Act (sec. 312, 92 Stat. 3254; 42 U.S.C. 6371j).
49. Public Works Employment Act of 1976 (sec. 109, 90 Stat. 1001; 42 U.S.C. 6708; also sec. 208, 90 Stat. 1008; 42 U.S.C. 6728).
50. Energy Conservation and Production Act (sec. 451(h), 90 Stat. 1168; 42 U.S.C. 6881(h)).
51. Solid Waste Disposal Act (sec. 2, 90 Stat. 2823; 42 U.S.C. 6979).
52. Rail Passenger Service Act of 1970 (sec. 405d, 84 Stat. 1337; 45 U.S.C. 565(d)).
53. Urban Mass Transportation Act of 1964 (sec. 10, 78 Stat. 307; renumbered sec. 13 by 88 Stat. 715; 49 U.S.C. 1609).
54. Highway Speed Ground Transportation Study (sec. 6(b), 79 Stat. 893; 49 U.S.C. 1636(b)).
55. Airport and Airway Development Act of 1970 (sec. 22(b), 84 Stat. 231; 49 U.S.C. 1722(b)).
56. Federal Civil Defense Act of 1950 (50 U.S.C. App. 2281i).
57. National Capital Transportation Act of 1965 (sec. 3(b)(4), 79 Stat. 644; 40 U.S.C. 682(b)(4)). Note. Repealed December 9, 1969, and labor standards incorporated in sec. 1–1431 of the District of Columbia Code).
58. Model Secondary School for the Deaf Act (sec. 4, 80 Stat. 1027, Pub. L. 89–694, but not in the United States

Code).

59. Delaware River Basin Compact (sec. 15.1, 75 Stat. 714, Pub. L. 87–328) (considered a statute for purposes of the plan but not in the United States Code).

60. Energy Security Act (sec. 175(c), Pub. L. 96–294, 94 Stat. 611; 42 U.S.C. 8701 note).

(b) Part 1 of this subtitle contains the Department's procedural rules governing requests for wage determinations and the issuance and use of such wage determinations under the Davis-Bacon Act and its related statutes as listed in that part.

## § 5.2 Definitions.

(a) The term Secretary includes the Secretary of Labor, the Deputy Under Secretary for Employment Standards, and their authorized representatives.

(b) The term Administrator means the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, or authorized representative.

(c) The term Federal agency means the agency or instrumentality of the United States which enters into the contract or provides assistance through loan, grant, loan guarantee or insurance, or otherwise, to the project subject to a statute listed in §5.1.

(d) The term Agency Head means the principal official of the Federal agency and includes those persons duly authorized to act in the behalf of the Agency Head.

(e) The term Contracting Officer means the individual, a duly appointed successor, or authorized representative who is designated and authorized to enter into contracts on behalf of the Federal agency.

(f) The term labor standards as used in this part means the requirements of the Davis-Bacon Act, the Contract Work Hours and Safety Standards Act (other than those relating to safety and health), the Copeland Act, and the prevailing wage provisions of the other statutes listed in §5.1, and the regulations in parts 1 and 3 of this subtitle and this part.

(g) The term United States or the District of Columbia means the United States, the District of Columbia, and all executive departments, independent establishments, administrative agencies, and instrumentalities of the United States and of the District of Columbia, including corporations, all or substantially all of the stock of which is beneficially owned by the United States, by the foregoing departments, establishments, agencies, instrumentalities, and including nonappropriated fund instrumentalities.

(h) The term contract means any prime contract which is subject wholly or in part to the labor standards provisions of any of the acts listed in §5.1 and any subcontract of any tier thereunder, let under the prime contract. A State or local Government is not regarded as a contractor under statutes providing loans, grants, or other Federal assistance in situations where construction is performed by its own employees. However, under statutes requiring payment of prevailing wages to all laborers and mechanics employed on the assisted project, such as the U.S. Housing Act of 1937, State and local recipients of Federal-aid must pay these employees according to Davis-Bacon labor standards.

(i) The terms building or work generally include construction activity as distinguished from manufacturing, furnishing of materials, or servicing and maintenance work. The terms include without limitation, buildings, structures, and improvements of all types, such as bridges, dams, plants, highways, parkways, streets, subways, tunnels, sewers, mains, power lines, pumping stations, heavy generators, railways, airports, terminals, docks, piers, wharves, ways, lighthouses, buoys, jetties, breakwaters, levees, canals, dredging, shoring, rehabilitation and reactivation of plants, scaffolding, drilling, blasting, excavating, clearing, and landscaping. The manufacture or furnishing of materials, articles, supplies or equipment (whether or not a Federal or State agency acquires title to such materials, articles, supplies, or equipment during the course of the manufacture or furnishing, or owns the materials from which they are manufactured or furnished) is not a building or work within the meaning of the regulations in this part unless conducted in connection with and at the site of such a building or work as is described in the foregoing sentence, or under the United States Housing Act of 1937 and the Housing Act of 1949 in the construction or development of the project.

(j) The terms construction, prosecution, completion, or repair mean the following:

(1) All types of work done on a particular building or work at the site thereof, including work at a facility which is deemed a part of the site of the work within the meaning of (paragraph (l) of this section by laborers and mechanics employed by a construction contractor or construction subcontractor (or, under the United States Housing Act of 1937; the Housing Act of 1949; and the Native American Housing Assistance and Self-Determination Act of 1996, all work done in the construction or development of the project), including without limitation—

(i) Altering, remodeling, installation (where appropriate) on the site of the work of items fabricated off-site;

(ii) Painting and decorating;

(iii) Manufacturing or furnishing of materials, articles, supplies or equipment on the site of the building or work (or, under the United States Housing Act of 1937; the Housing Act of 1949; and the Native American Housing Assistance and Self-Determination Act of 1996 in the construction or development of the project);

(iv)(A) Transportation between the site of the work within the meaning of paragraph (l)(1) of this section and a facility which is dedicated to the construction of the building or work and deemed a part of the site of the work within the meaning of paragraph (l)(2) of this section; and

(B) Transportation of portion(s) of the building or work between a site where a significant portion of such building or work is constructed, which is a part of the site of the work within the meaning of paragraph (l)(1) of this section, and the physical place or places where the building or work will remain.

(2) Except for laborers and mechanics employed in the construction or development of the project under the United States Housing Act of 1937; the Housing Act of 1949; and the Native American Housing Assistance and Self-Determination Act of 1996, and except as provided in paragraph (j)(1)(iv)(A) of this section, the transportation of materials or supplies to or from the site of the work by employees of the construction contractor or a construction subcontractor is not “construction, prosecution, completion, or repair” (see Building and Construction Trades Department, AFL-CIO v. United States Department of Labor Wage Appeals Board (Midway Excavators, Inc.), 932 F.2d 985 (D.C. Cir. 1991)).

(k) The term public building or public work includes building or work, the construction, prosecution, completion, or repair of which, as defined above, is carried on directly by authority of or with funds of a Federal agency to serve the interest of the general public regardless of whether title thereof is in a Federal agency.

(l) The term site of the work is defined as follows:

(1) The site of the work is the physical place or places where the building or work called for in the contract will remain; and any other site where a significant portion of the building or work is constructed, provided that such site is established specifically for the performance of the contract or project;

(2) Except as provided in paragraph (l)(3) of this section, job headquarters, tool yards, batch plants, borrow pits, etc., are part of the site of the work, provided they are dedicated exclusively, or nearly so, to performance of the contract or project, and provided they are adjacent or virtually adjacent to the site of the work as defined in paragraph (l)(1) of this section;

(3) Not included in the site of the work are permanent home offices, branch plant establishments, fabrication plants, tool yards, etc., of a contractor or subcontractor whose location and continuance in operation are determined wholly without regard to a particular Federal or federally assisted contract or project. In addition, fabrication plants, batch plants, borrow pits, job headquarters, tool yards, etc., of a commercial or material supplier, which are established by a supplier of materials for the project before opening of bids and not on the site of the work as stated in paragraph (l)(1) of this section, are not included in the site of the work. Such permanent, previously established facilities are not part of the site of the work, even where the operations for a period of time may be dedicated exclusively, or nearly so, to the performance of a contract.

(m) The term laborer or mechanic includes at least those workers whose duties are manual or physical in nature (including those workers who use tools or who are performing the work of a trade), as distinguished from mental or managerial. The term laborer or mechanic includes apprentices, trainees, helpers, and, in the case of contracts subject to the Contract Work Hours and Safety Standards Act, watchmen or guards. The term does not apply to workers whose duties are primarily administrative, executive, or clerical, rather than manual. Persons employed in a bona fide executive, administrative, or professional capacity as defined in part 541 of this title are not deemed to be laborers or mechanics. Working foremen who devote more than 20 percent of their time

during a workweek to mechanic or laborer duties, and who do not meet the criteria of part 541, are laborers and mechanics for the time so spent.

(n) The terms apprentice, trainee, and helper are defined as follows:

(1) Apprentice means (i) a person employed 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 Bureau, or (ii) a person in the 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;

(2) Trainee means a person registered and receiving on-the-job training in a construction occupation under a program which has been approved in advance by the U.S. Department of Labor, Employment and Training Administration, as meeting its standards for on-the-job training programs and which has been so certified by that Administration.

(3) These provisions do not apply to apprentices and trainees employed on projects subject to 23 U.S.C. 113 who are enrolled in programs which have been certified by the Secretary of Transportation in accordance with 23 U.S.C. 113(c).

(4) A distinct classification of "helper" will be issued in wage determinations applicable to work performed on construction projects covered by the labor standards provisions of the Davis-Bacon and Related Acts only where:

(i) The duties of the helper are clearly defined and distinct from those of any other classification on the wage determination;

(ii) The use of such helpers is an established prevailing practice in the area; and

(iii) The helper is not employed as a trainee in an informal training program. A "helper" classification will be added to wage determinations pursuant to §5.5(a)(1)(ii)(A) only where, in addition, the work to be performed by the helper is not performed by a classification in the wage determination.

(o) Every person performing the duties of a laborer or mechanic in the construction, prosecution, completion, or repair of a public building or public work, or building or work financed in whole or in part by loans, grants, or guarantees from the United States is employed regardless of any contractual relationship alleged to exist between the contractor and such person.

(p) The term wages means the basic hourly rate of pay; any contribution irrevocably made by a contractor or subcontractor to a trustee or to a third person pursuant to a bona fide fringe benefit fund, plan, or program; and the rate of costs to the contractor or subcontractor which may be reasonably anticipated in providing bona fide fringe benefits to laborers and mechanics pursuant to an enforceable commitment to carry out a financially responsible plan of program, which was communicated in writing to the laborers and mechanics affected. The fringe benefits enumerated in the Davis-Bacon Act include medical or hospital care, pensions on retirement or death, compensation for injuries or illness resulting from occupational activity, or insurance to provide any of the foregoing; unemployment benefits; life insurance, disability insurance, sickness insurance, or accident insurance; vacation or holiday pay; defraying costs of apprenticeship or other similar programs; or other bona fide fringe benefits. Fringe benefits do not include benefits required by other Federal, State, or local law.

(q) The term wage determination includes the original decision and any subsequent decisions modifying, superseding, correcting, or otherwise changing the provisions of the original decision. The application of the wage determination shall be in accordance with the provisions of §1.6 of this title.

[48 FR 19541, Apr. 29, 1983, as amended at 48 FR 50313, Nov. 1, 1983; 55 FR 50149, Dec. 4, 1990; 57 FR 19206, May 4, 1992; 65 FR 69693, Nov. 20, 2000; 65 FR 80278, Dec. 20, 2000]

§§ 5.3-5.4 [Reserved]

## § 5.5 Contract provisions and related matters.

(a) The Agency head shall cause or require the contracting officer to insert in full in any contract in excess of \$2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a public building or public work, or building or work financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in §5.1, the following clauses (or any modifications thereof to meet the particular needs of the agency, Provided, That such modifications are first approved by the Department of Labor):

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

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(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 paragraph (a)(1)(iv) of this section; 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 §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 paragraph (a)(1)(ii) of this section) 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) The contracting officer shall require that 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 contracting officer 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 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, DC 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 the 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 paragraphs (a)(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 (write in name of Federal Agency or the loan or grant recipient) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, the (Agency) 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 and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 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 (write in name of appropriate federal agency) 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 (write in name of agency). The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee ( e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the (write in name of appropriate federal agency) if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit them to the applicant, sponsor, or owner, as the case may be, for transmission to the (write in name of agency), the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section 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 §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, 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 Regulations, 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 paragraph (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 paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the (write the name of the agency) 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, the Federal agency 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 classification of 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 this part 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 shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the (write in the name of the Federal agency) may by appropriate instructions require, 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) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

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

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

(b) Contract Work Hours and Safety Standards Act. The Agency Head shall cause or require the contracting officer to insert the following clauses set forth in paragraphs (b)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by §5.5(a) or 4.6 of part 4 of this title. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty 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 forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(1)

of this section the contractor and any subcontractor responsible therefor 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 paragraph (b)(1) of this section, 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 forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The (write in the name of the Federal agency or the loan or grant recipient) 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 contractor, 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 paragraph (b)(2) of this section.

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

(c) In addition to the clauses contained in paragraph (b), in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in §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.

(The information collection, recordkeeping, and reporting requirements contained in the following paragraphs of this section were approved by the Office of Management and Budget:

Paragraph	OMB Control Number
(a)(1)(ii)(B)	1215-0140
(a)(1)(ii)(C)	1215-0140
(a)(1)(iv)	1215-0140
(a)(3)(i)	1215-0140,
	1215-0017
(a)(3)(ii)(A)	1215-0149
(c)	1215-0140,
	1215-0017

[48 FR 19540, Apr. 29, 1983, as amended at 51 FR 12265, Apr. 9, 1986; 55 FR 50150, Dec. 4, 1990; 57 FR 28776, June 26, 1992; 58 FR 58955, Nov. 5, 1993; 61 FR 40716, Aug. 5, 1996; 65 FR 69693, Nov. 20, 2000; 73 FR 77511, Dec. 19, 2008]

Effective Date Note: At 58 FR 58955, Nov. 5, 1993, §5.5 was amended by suspending paragraph (a)(1)(ii) indefinitely.

## § 5.6 Enforcement.

(a)(1) It shall be the responsibility of the Federal agency to ascertain whether the clauses required by §5.5 have been inserted in the contracts subject to the labor standards provisions of the Acts contained in §5.1. Agencies which do not directly enter into such contracts shall promulgate the necessary regulations or procedures to require the recipient of the Federal assistance to insert in its contracts the provisions of §5.5. No payment, advance, grant, loan, or guarantee of funds shall be approved by the Federal agency unless the agency insures that the clauses required by §5.5 and the appropriate wage determination of the Secretary of Labor are contained in such contracts. Furthermore, no payment, advance, grant, loan, or guarantee of funds shall be approved by the Federal agency after the beginning of construction unless there is on file with the agency a certification by the contractor that the contractor and its subcontractors have complied with the provisions of §5.5 or unless there is on file with the agency a certification by the contractor that there is a substantial dispute with respect to the required provisions.

(2) Payrolls and Statements of Compliance submitted pursuant to §5.5(a)(3)(ii) shall be preserved by the Federal agency for a period of 3 years from the date of completion of the contract and shall be produced at the request of the Department of Labor at any time during the 3-year period.

(3) The Federal agency shall cause such investigations to be made as may be necessary to assure compliance with the labor standards clauses required by §5.5 and the applicable statutes listed in §5.1. Investigations shall be made of all contracts with such frequency as may be necessary to assure compliance. Such investigations shall include interviews with employees, which shall be taken in confidence, and examinations of payroll data and evidence of registration and certification with respect to apprenticeship and training plans. In making such examinations, particular care shall be taken to determine the correctness of classifications and to determine whether there is a disproportionate employment of laborers and of apprentices or trainees registered in approved programs. Such investigations shall also include evidence of fringe benefit plans and payments thereunder. Complaints of alleged violations shall be given priority.

(4) In accordance with normal operating procedures, the contracting agency may be furnished various investigatory material from the investigation files of the Department of Labor. None of the material, other than computations of back wages and liquidated damages and the summary of back wages due, may be disclosed in any manner to anyone other than Federal officials charged with administering the contract or program providing Federal assistance to the contract, without requesting the permission and views of the Department of Labor.

(5) It is the policy of the Department of Labor to protect the identity of its confidential sources and to prevent an unwarranted invasion of personal privacy. Accordingly, the identity of an employee who makes a written or oral statement as a complaint or in the course of an investigation, as well as portions of the statement which would reveal the employee's identity, shall not be disclosed in any manner to anyone other than Federal officials without the prior consent of the employee. Disclosure of employee statements shall be governed by the provisions of the "Freedom of Information Act" (5 U.S.C. 552, see 29 CFR part 70) and the "Privacy Act of 1974" (5 U.S.C. 552a).

(b) The Administrator shall cause to be made such investigations as deemed necessary, in order to obtain compliance with the labor standards provisions of the applicable statutes listed in §5.1, or to affirm or reject the recommendations by the Agency Head with respect to labor standards matters arising under the statutes listed in §5.1. Federal agencies, contractors, subcontractors, sponsors, applicants, or owners shall cooperate with any authorized representative of the Department of Labor in the inspection of records, in interviews with workers, and in all other aspects of the investigations. The findings of such an investigation, including amounts found due, may not be altered or reduced without the approval of the Department of Labor. Where the underpayments disclosed by such an investigation total \$1,000 or more, where there is reason to believe that the violations are aggravated or willful (or, in the case of the Davis-Bacon Act, that the contractor has disregarded its obligations to employees and subcontractors), or where liquidated damages may be assessed under the Contract Work Hours and Safety Standards Act, the Department of Labor will furnish the Federal agency an enforcement report detailing the labor standards violations disclosed by the investigation and any action taken by the contractor to correct the violative practices, including any payment of back wages. In other circumstances, the Federal agency will be furnished a letter of notification summarizing the findings of the investigation.

## § 5.7 Reports to the Secretary of Labor.

(a) Enforcement reports. (1) Where underpayments by a contractor or subcontractor total less than \$1,000, and where there is no reason to believe that the violations are aggravated or willful (or, in the case of the Davis-Bacon Act that the contractor has disregarded its obligations to employees and subcontractors), and where restitution has been effected and future compliance assured, the Federal agency need not submit its investigative findings and recommendations to the Administrator, unless the investigation was made at the request of the Department of Labor. In the latter case, the Federal agency shall submit a factual

summary report detailing any violations including any data on the amount of restitution paid, the number of workers who received restitution, liquidated damages assessed under the Contract Work Hours and Safety Standards Act, corrective measures taken (such as "letters of notice"), and any information that may be necessary to review any recommendations for an appropriate adjustment in liquidated damages under §5.8.

(2) Where underpayments by a contractor or subcontractor total \$1,000 or more, or where there is reason to believe that the violations are aggravated or willful (or, in the case of the Davis-Bacon Act, that the contractor has disregarded its obligations to employees and subcontractors), the Federal agency shall furnish within 60 days after completion of its investigation, a detailed enforcement report to the Administrator.

(b) Semi-annual enforcement reports. To assist the Secretary in fulfilling the responsibilities under Reorganization Plan No. 14 of 1950, Federal agencies shall furnish to the Administrator by April 30 and October 31 of each calendar year semi-annual reports on compliance with and enforcement of the labor standards provisions of the Davis-Bacon Act and its related acts covering the periods of October 1 through March 31 and April 1 through September 30, respectively. Such reports shall be prepared in the manner prescribed in memoranda issued to Federal agencies by the Administrator. This report has been cleared in accordance with FPMR 101-11.11 and assigned interagency report control number 1482-DOL-SA.

(c) Additional information. Upon request, the Agency Head shall transmit to the Administrator such information available to the Agency with respect to contractors and subcontractors, their contracts, and the nature of the contract work as the Administrator may find necessary for the performance of his or her duties with respect to the labor standards provisions referred to in this part.

(d) Contract termination. Where a contract is terminated by reason of violations of the labor standards provisions of the statutes listed in §5.1, a report shall be submitted promptly to the Administrator and to the Comptroller General (if the contract is subject to the Davis-Bacon Act), giving the name and address of the contractor or subcontractor whose right to proceed has been terminated, and the name and address of the contractor or subcontractor, if any, who is to complete the work, the amount and number of the contract, and the description of the work to be performed.

#### § 5.8 Liquidated damages under the Contract Work Hours and Safety Standards Act.

(a) The Contract Work Hours and Safety Standards Act requires that laborers or mechanics shall be paid wages at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in any workweek. In the event of violation of this provision, the contractor and any subcontractor shall be liable for the unpaid wages and in addition for liquidated damages, computed with respect to each laborer or mechanic employed in violation of the Act in the amount of \$10 for each calendar day in the workweek on which such individual was required or permitted to work in excess of forty hours without payment of required overtime wages. Any contractor or subcontractor aggrieved by the withholding of liquidated damages shall have the right to appeal to the head of the agency of the United States (or the territory of District of Columbia, as appropriate) for which the contract work was performed or for which financial assistance was provided.

(b) Findings and recommendations of the Agency Head. The Agency Head has the authority to review the administrative determination of liquidated damages and to issue a final order affirming the determination. It is not necessary to seek the concurrence of the Administrator but the Administrator shall be advised of the action taken. Whenever the Agency Head finds that a sum of liquidated damages administratively determined to be due is incorrect or that the contractor or subcontractor violated inadvertently the provisions of the Act notwithstanding the exercise of due care upon the part of the contractor or subcontractor involved, and the amount of the liquidated damages computed for the contract is in excess of \$500, the Agency Head may make recommendations to the Secretary that an appropriate adjustment in liquidated damages be made or that the contractor or subcontractor be relieved of liability for such liquidated damages. Such findings with respect to liquidated damages shall include findings with respect to any wage underpayments for which the liquidated damages are determined.

(c) The recommendations of the Agency Head for adjustment or relief from liquidated damages under paragraph (a) of this section shall be reviewed by the Administrator or an authorized representative who shall issue an order concurring in the recommendations, partially concurring in the recommendations, or rejecting the recommendations, and the reasons therefor. The order shall be the final decision of the Department of Labor, unless a petition for review is filed pursuant to part 7 of this title, and the Administrative Review Board in its discretion reviews such decision and order; or, with respect to contracts subject to the Service Contract Act, unless petition for review is filed pursuant to part 8 of this title, and the Administrative Review Board in its discretion reviews such decision and order.

(d) Whenever the Agency Head finds that a sum of liquidated damages administratively determined to be due under section 104(a) of the Contract Work Hours and Safety Standards Act for a contract is \$500 or less and the Agency Head finds that the

sum of liquidated damages is incorrect or that the contractor or subcontractor violated inadvertently the provisions of the Contract Work Hours and Safety Standards Act notwithstanding the exercise of due care upon the part of the contractor or subcontractor involved, an appropriate adjustment may be made in such liquidated damages or the contractor or subcontractor may be relieved of liability for such liquidated damages without submitting recommendations to this effect or a report to the Department of Labor. This delegation of authority is made under section 105 of the Contract Work Hours and Safety Standards Act and has been found to be necessary and proper in the public interest to prevent undue hardship and to avoid serious impairment of the conduct of Government business.

[48 FR 19541, Apr. 29, 1983, as amended at 51 FR 12265, Apr. 9, 1986; 51 FR 13496, Apr. 21, 1986]

#### § 5.9 Suspension of funds.

In the event of failure or refusal of the contractor or any subcontractor to comply with the labor standards clauses contained in §5.5 and the applicable statutes listed in §5.1, the Federal agency, upon its own action or upon written request of an authorized representative of the Department of Labor, shall take such action as may be necessary to cause the suspension of the payment, advance or guarantee of funds until such time as the violations are discontinued or until sufficient funds are withheld to compensate employees for the wages to which they are entitled and to cover any liquidated damages which may be due.

#### § 5.10 Restitution, criminal action.

(a) In cases other than those forwarded to the Attorney General of the United States under paragraph (b), of this section, where violations of the labor standards clauses contained in §5.5 and the applicable statutes listed in §5.1 result in underpayment of wages to employees, the Federal agency or an authorized representative of the Department of Labor shall request that restitution be made to such employees or on their behalf to plans, funds, or programs for any type of bona fide fringe benefits within the meaning of section 1(b)(2) of the Davis-Bacon Act.

(b) In cases where the Agency Head or the Administrator finds substantial evidence that such violations are willful and in violation of a criminal statute, the matter shall be forwarded to the Attorney General of the United States for prosecution if the facts warrant. In all such cases the Administrator shall be informed simultaneously of the action taken.

#### § 5.11 Disputes concerning payment of wages.

(a) This section sets forth the procedure for resolution of disputes of fact or law concerning payment of prevailing wage rates, overtime pay, or proper classification. The procedures in this section may be initiated upon the Administrator's own motion, upon referral of the dispute by a Federal agency pursuant to §5.5(a)(9), or upon request of the contractor or subcontractor(s).

(b)(1) In the event of a dispute described in paragraph (a) of this section in which it appears that relevant facts are at issue, the Administrator will notify the affected contractor and subcontractor(s) (if any), by registered or certified mail to the last known address, of the investigation findings. If the Administrator determines that there is reasonable cause to believe that the contractor and/or subcontractor(s) should also be subject to debarment under the Davis-Bacon Act or §5.12(a)(1), the letter will so indicate.

(2) A contractor and/or subcontractor desiring a hearing concerning the Administrator's investigative findings shall request such a hearing by letter postmarked within 30 days of the date of the Administrator's letter. The request shall set forth those findings which are in dispute and the reasons therefor, including any affirmative defenses, with respect to the violations and/or debarment, as appropriate.

(3) Upon receipt of a timely request for a hearing, the Administrator shall refer the case to the Chief Administrative Law Judge by Order of Reference, to which shall be attached a copy of the letter from the Administrator and response thereto, for designation of an Administrative Law Judge to conduct such hearings as may be necessary to resolve the disputed matters. The hearing shall be conducted in accordance with the procedures set forth in 29 CFR part 6.

(c)(1) In the event of a dispute described in paragraph (a) of this section in which it appears that there are no relevant facts at issue, and where there is not at that time reasonable cause to institute debarment proceedings under §5.12, the Administrator shall notify the contractor and subcontractor(s) (if any), by registered or certified mail to the last known address, of the investigation findings, and shall issue a ruling on any issues of law known to be in dispute.

(2)(i) If the contractor and/or subcontractor(s) disagree with the factual findings of the Administrator or believe that there are relevant facts in dispute, the contractor or subcontractor(s) shall so advise the Administrator by letter postmarked within 30 days of the date of the Administrator's letter. In the response, the contractor and/or subcontractor(s) shall explain in detail the facts alleged to be in dispute and attach any supporting documentation.

(ii) Upon receipt of a response under paragraph (c)(2)(i) of this section alleging the existence of a factual dispute, the Administrator shall examine the information submitted. If the Administrator determines that there is a relevant issue of fact, the Administrator shall refer the case to the Chief Administrative Law Judge in accordance with paragraph (b)(3) of this section. If the Administrator determines that there is no relevant issue of fact, the Administrator shall so rule and advise the contractor and subcontractor(s) (if any) accordingly.

(3) If the contractor and/or subcontractor(s) desire review of the ruling issued by the Administrator under paragraph (c)(1) or (2) of this section, the contractor and/or subcontractor(s) shall file a petition for review thereof with the Administrative Review Board within 30 days of the date of the ruling, with a copy thereof the Administrator. The petition for review shall be filed in accordance with part 7 of this title.

(d) If a timely response to the Administrator's findings or ruling is not made or a timely petition for review is not filed, the Administrator's findings and/or ruling shall be final, except that with respect to debarment under the Davis-Bacon Act, the Administrator shall advise the Comptroller General of the Administrator's recommendation in accordance with §5.12(a)(1). If a timely response or petition for review is filed, the findings and/or ruling of the Administrator shall be inoperative unless and until the decision is upheld by the Administrative Law Judge or the Administrative Review Board.

#### § 5.12 Debarment proceedings.

(a)(1) Whenever any contractor or subcontractor is found by the Secretary of Labor to be in aggravated or willful violation of the labor standards provisions of any of the applicable statutes listed in §5.1 other than the Davis-Bacon Act, such contractor or subcontractor or any firm, corporation, partnership, or association in which such contractor or subcontractor has a substantial interest shall be ineligible for a period not to exceed 3 years (from the date of publication by the Comptroller General of the name or names of said contractor or subcontractor on the ineligible list as provided below) to receive any contracts or subcontracts subject to any of the statutes listed in §5.1.

(2) In cases arising under contracts covered by the Davis-Bacon Act, the Administrator shall transmit to the Comptroller General the names of the contractors or subcontractors and their responsible officers, if any (and any firms in which the contractors or subcontractors are known to have an interest), who have been found to have disregarded their obligations to employees, and the recommendation of the Secretary of Labor or authorized representative regarding debarment. The Comptroller General will distribute a list to all Federal agencies giving the names of such ineligible person or firms, who shall be ineligible to be awarded any contract or subcontract of the United States or the District of Columbia and any contract or subcontract subject to the labor standards provisions of the statutes listed in §5.1.

(b)(1) In addition to cases under which debarment action is initiated pursuant to §5.11, whenever as a result of an investigation conducted by the Federal agency or the Department of Labor, and where the Administrator finds reasonable cause to believe that a contractor or subcontractor has committed willful or aggravated violations of the labor standards provisions of any of the statutes listed in §5.1 (other than the Davis-Bacon Act), or has committed violations of the Davis-Bacon Act which constitute a disregard of its obligations to employees or subcontractors under section 3(a) thereof, the Administrator shall notify by registered or certified mail to the last known address, the contractor or subcontractor and its responsible officers, if any (and any firms in which the contractor or subcontractor are known to have a substantial interest), of the finding. The Administrator shall afford such contractor or subcontractor and any other parties notified an opportunity for a hearing as to whether debarment action should be taken under paragraph (a)(1) of this section or section 3(a) of the Davis-Bacon Act. The Administrator shall furnish to those notified a summary of the investigative findings. If the contractor or subcontractor or any other parties notified wish to request a hearing as to whether debarment action should be taken, such a request shall be made by letter postmarked within 30 days of the date of the letter from the Administrator, and shall set forth any findings which are in dispute and the reasons therefor, including any affirmative defenses to be raised. Upon receipt of such request for a hearing, the Administrator shall refer the case to the Chief Administrative Law Judge by Order of Reference, to which shall be attached a copy of the letter from the Administrator and the response thereto, for designation of an Administrative Law Judge to conduct such hearings as may be necessary to determine the matters in dispute. In considering debarment under any of the statutes listed in §5.1 other than the Davis-Bacon Act, the Administrative Law Judge shall issue an order concerning whether the contractor or subcontractor is to be debarred in accordance with paragraph (a)(1) of this section. In considering debarment under the Davis-Bacon Act, the Administrative Law Judge shall issue a recommendation as to whether the contractor or subcontractor should be debarred under section 3(a) of the

Act.

(2) Hearings under this section shall be conducted in accordance with 29 CFR part 6. If no hearing is requested within 30 days of receipt of the letter from the Administrator, the Administrator's findings shall be final, except with respect to recommendations regarding debarment under the Davis-Bacon Act, as set forth in paragraph (a)(2) of this section.

(c) Any person or firm debarred under §5.12(a)(1) may in writing request removal from the debarment list after six months from the date of publication by the Comptroller General of such person or firm's name on the ineligible list. Such a request should be directed to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210, and shall contain a full explanation of the reasons why such person or firm should be removed from the ineligible list. In cases where the contractor or subcontractor failed to make full restitution to all underpaid employees, a request for removal will not be considered until such underpayments are made. In all other cases, the Administrator will examine the facts and circumstances surrounding the violative practices which caused the debarment, and issue a decision as to whether or not such person or firm has demonstrated a current responsibility to comply with the labor standards provisions of the statutes listed in §5.1, and therefore should be removed from the ineligible list. Among the factors to be considered in reaching such a decision are the severity of the violations, the contractor or subcontractor's attitude towards compliance, and the past compliance history of the firm. In no case will such removal be effected unless the Administrator determines after an investigation that such person or firm is in compliance with the labor standards provisions applicable to Federal contracts and Federally assisted construction work subject to any of the applicable statutes listed in §5.1 and other labor statutes providing wage protection, such as the Service Contract Act, the Walsh-Healey Public Contracts Act, and the Fair Labor Standards Act. If the request for removal is denied, the person or firm may petition for review by the Administrative Review Board pursuant to 29 CFR part 7.

(d)(1) Section 3(a) of the Davis-Bacon Act provides that for a period of three years from date of publication on the ineligible list, no contract shall be awarded to any persons or firms placed on the list as a result of a finding by the Comptroller General that such persons or firms have disregarded obligations to employees and subcontractors under that Act, and further, that no contract shall be awarded to "any firm, corporation, partnership, or association in which such persons or firms have an interest." Paragraph (a)(1) of this section similarly provides that for a period not to exceed three years from date of publication on the ineligible list, no contract subject to any of the statutes listed in §5.1 shall be awarded to any contractor or subcontractor on the ineligible list pursuant to that paragraph, or to "any firm, corporation, partnership, or association" in which such contractor or subcontractor has a "substantial interest." A finding as to whether persons or firms whose names appear on the ineligible list have an interest (or a substantial interest, as appropriate) in any other firm, corporation, partnership, or association, may be made through investigation, hearing, or otherwise.

(2)(i) The Administrator, on his/her own motion or after receipt of a request for a determination pursuant to paragraph (d)(3) of this section may make a finding on the issue of interest (or substantial interest, as appropriate).

(ii) If the Administrator determines that there may be an interest (or substantial interest, as appropriate), but finds that there is insufficient evidence to render a final ruling thereon, the Administrator may refer the issue to the Chief Administrative Law Judge in accordance with paragraph (d)(4) of this section.

(iii) If the Administrator finds that no interest (or substantial interest, as appropriate) exists, or that there is not sufficient information to warrant the initiation of an investigation, the requesting party, if any, will be so notified and no further action taken.

(iv)(A) If the Administrator finds that an interest (or substantial interest, as appropriate) exists, the person or firm affected will be notified of the Administrator's finding (by certified mail to the last known address), which shall include the reasons therefor, and such person or firm shall be afforded an opportunity to request that a hearing be held to render a decision on the issue.

(B) Such person or firm shall have 20 days from the date of the Administrator's ruling to request a hearing. A detailed statement of the reasons why the Administrator's ruling is in error, including facts alleged to be in dispute, if any, shall be submitted with the request for a hearing.

(C) If no hearing is requested within the time mentioned in paragraph (d)(2)(iv)(B) of this section, the Administrator's finding shall be final and the Administrator shall so notify the Comptroller General. If a hearing is requested, the ruling of the Administrator shall be inoperative unless and until the administrative law judge or the Administrative Review Board issues an order that there is an interest (or substantial interest, as appropriate).

(3)(i) A request for a determination of interest (or substantial interest, as appropriate), may be made by any interested party,

including contractors or prospective contractors and associations of contractor's representatives of employees, and interested Government agencies. Such a request shall be submitted in writing to the Administrator, Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210.

(ii) The request shall include a statement setting forth in detail why the petitioner believes that a person or firm whose name appears on the debarred bidders list has an interest (or a substantial interest, as appropriate) in any firm, corporation, partnership, or association which is seeking or has been awarded a contract of the United States or the District of Columbia, or which is subject to any of the statutes listed in §5.1. No particular form is prescribed for the submission of a request under this section.

(4) Referral to the Chief Administrative Law Judge. The Administrator, on his/her own motion under paragraph (d)(2)(ii) of this section or upon a request for hearing where the Administrator determines that relevant facts are in dispute, will by order refer the issue to the Chief Administrative Law Judge, for designation of an Administrative Law Judge who shall conduct such hearings as may be necessary to render a decision solely on the issue of interest (or substantial interest, as appropriate). Such proceedings shall be conducted in accordance with the procedures set forth at 29 CFR part 6.

(5) Referral to the Administrative Review Board. If the person or firm affected requests a hearing and the Administrator determines that relevant facts are not in dispute, the Administrator will refer the issue and the record compiled thereon to the Administrative Review Board to render a decision solely on the issue of interest (or substantial interest, as appropriate). Such proceeding shall be conducted in accordance with the procedures set forth at 29 CFR part 7.

[48 FR 19541, Apr. 29, 1983, as amended at 48 FR 50313, Nov. 1, 1983]

### § 5.13 Rulings and interpretations.

All questions relating to the application and interpretation of wage determinations (including the classifications therein) issued pursuant to part 1 of this subtitle, of the rules contained in this part and in parts 1 and 3, and of the labor standards provisions of any of the statutes listed in §5.1 shall be referred to the Administrator for appropriate ruling or interpretation. The rulings and interpretations shall be authoritative and those under the Davis-Bacon Act may be relied upon as provided for in section 10 of the Portal-to-Portal Act of 1947 (29 U.S.C. 259). Requests for such rulings and interpretations should be addressed to the Administrator, Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210.

### § 5.14 Variations, tolerances, and exemptions from parts 1 and 3 of this subtitle and this part.

The Secretary of Labor may make variations, tolerances, and exemptions from the regulatory requirements of this part and those of parts 1 and 3 of this subtitle whenever the Secretary finds that such action is necessary and proper in the public interest or to prevent injustice and undue hardship. Variations, tolerances, and exemptions may not be made from the statutory requirements of any of the statutes listed in §5.1 unless the statute specifically provides such authority.

### § 5.15 Limitations, variations, tolerances, and exemptions under the Contract Work Hours and Safety Standards Act.

(a) General. Upon his or her own initiative or upon the request of any Federal agency, the Secretary of Labor may provide under section 105 of the Contract Work Hours and Safety Standards Act reasonable limitations and allow variations, tolerances, and exemptions to and from any or all provisions of that Act whenever the Secretary finds such action to be necessary and proper in the public interest to prevent injustice, or undue hardship, or to avoid serious impairment of the conduct of Government business. Any request for such action by the Secretary shall be submitted in writing, and shall set forth the reasons for which the request is made.

(b) Exemptions. Pursuant to section 105 of the Contract Work Hours and Safety Standards Act, the following classes of contracts are found exempt from all provisions of that Act in order to prevent injustice, undue hardship, or serious impairment of Government business:

(1) Contract work performed in a workplace within a foreign country or within territory under the jurisdiction of the United States other than the following: A State of the United States; the District of Columbia; Puerto Rico; the Virgin Islands; Outer Continental Shelf lands defined in the Outer Continental Shelf Lands Act (ch. 345, 67 Stat. 462); American Samoa; Guam; Wake Island;

Eniwetok Atoll; Kwajalein Atoll; and Johnston Island.

(2) Agreements entered into by or on behalf of the Commodity Credit Corporation providing for the storing in or handling by commercial warehouses of wheat, corn, oats, barley, rye, grain sorghums, soybeans, flaxseed, rice, naval stores, tobacco, peanuts, dry beans, seeds, cotton, and wool.

(3) Sales of surplus power by the Tennessee Valley Authority to States, counties, municipalities, cooperative organization of citizens or farmers, corporations and other individuals pursuant to section 10 of the Tennessee Valley Authority Act of 1933 (16 U.S.C. 8311).

(c) Tolerances. (1) The "basic rate of pay" under section 102 of the Contract Work Hours and Safety Standards Act may be computed as an hourly equivalent to the rate on which time-and-one-half overtime compensation may be computed and paid under section 7 of the Fair Labor Standards Act of 1938, as amended (29 U.S.C. 207), as interpreted in part 778 of this title. This tolerance is found to be necessary and proper in the public interest in order to prevent undue hardship.

(2) Concerning the tolerance provided in paragraph (c)(1) of this section, the provisions of section 7(d)(2) of the Fair Labor Standards Act and §778.7 of this title should be noted. Under these provisions, payments for occasional periods when no work is performed, due to vacations, and similar causes are excludable from the "regular rate" under the Fair Labor Standards Act. Such payments, therefore, are also excludable from the "basic rate" under the Contract Work Hours and Safety Standards Act.

(3) See §5.8(c) providing a tolerance subdelegating authority to the heads of agencies to make appropriate adjustments in the assessment of liquidated damages totaling \$500 or less under specified circumstances.

(4)(i) Time spent in an organized program of related, supplemental instruction by laborers or mechanics employed under bona fide apprenticeship or training programs may be excluded from working time if the criteria prescribed in paragraphs (c)(4)(ii) and (iii) of this section are met.

(ii) The apprentice or trainee comes within the definition contained in §5.2(n).

(iii) The time in question does not involve productive work or performance of the apprentice's or trainee's regular duties.

(d) Variations. (1) In the event of failure or refusal of the contractor or any subcontractor to comply with overtime pay requirements of the Contract Work Hours and Safety Standards Act, if the funds withheld by Federal agencies for the violations are not sufficient to pay fully both the unpaid wages due laborers and mechanics and the liquidated damages due the United States, the available funds shall be used first to compensate the laborers and mechanics for the wages to which they are entitled (or an equitable portion thereof when the funds are not adequate for this purpose); and the balance, if any, shall be used for the payment of liquidated damages.

(2) In the performance of any contract entered into pursuant to the provisions of 38 U.S.C. 620 to provide nursing home care of veterans, no contractor or subcontractor under such contract shall be deemed in violation of section 102 of the Contract Work Hours and Safety Standards Act by virtue of failure to pay the overtime wages required by such section for work in excess of 40 hours in the workweek to any individual employed by an establishment which is an institution primarily engaged in the care of the sick, the aged, or the mentally ill or defective who reside on the premises if, pursuant to an agreement or understanding arrived at between the employer and the employee before performance of the work, a work period of 14 consecutive days is accepted in lieu of the workweek of 7 consecutive days for the purpose of overtime compensation and if such individual receives compensation for employment in excess of 8 hours in any workday and in excess of 80 hours in such 14-day period at a rate not less than 1 1/2 times the regular rate at which the individual is employed, computed in accordance with the requirements of the Fair Labor Standards Act of 1938, as amended.

(3) Any contractor or subcontractor performing on a government contract the principal purpose of which is the furnishing of fire fighting or suppression and related services, shall not be deemed to be in violation of section 102 of the Contract Work Hour and Safety Standards Act for failing to pay the overtime compensation required by section 102 of the Act in accordance with the basic rate of pay as defined in paragraph (c)(1) of this section, to any pilot or copilot of a fixed-wing or rotary-wing aircraft employed on such contract if:

(i) Pursuant to a written employment agreement between the contractor and the employee which is arrived at before performance of the work.

(A) The employee receives gross wages of not less than \$300 per week regardless of the total number of hours worked in any workweek, and

(B) Within any workweek the total wages which an employee receives are not less than the wages to which the employee would have been entitled in that workweek if the employee were paid the minimum hourly wage required under the contract pursuant to the provisions of the Service Contract Act of 1965 and any applicable wage determination issued thereunder for all hours worked, plus an additional premium payment of one-half times such minimum hourly wage for all hours worked in excess of 40 hours in the workweek;

(ii) The contractor maintains accurate records of the total daily and weekly hours of work performed by such employee on the government contract. In the event these conditions for the exemption are not met, the requirements of section 102 of the Contract Work Hours and Safety Standards Act shall be applicable to the contract from the date the contractor or subcontractor fails to satisfy the conditions until completion of the contract.

(Reporting and recordkeeping requirements in paragraph (d)(2) have been approved by the Office of Management and Budget under control numbers 1215-0140 and 1215-0017. Reporting and recordkeeping requirements in paragraph (d)(3)(ii) have been approved by the Office of Management and Budget under control number 1215-0017)

[48 FR 19541, Apr. 29, 1983, as amended at 51 FR 12265, Apr. 9, 1986; 61 FR 40716, Aug. 5, 1996]

#### § 5.16 Training plans approved or recognized by the Department of Labor prior to August 20, 1975.

(a) Notwithstanding the provisions of §5.5(a)(4)(ii) relating to the utilization of trainees on Federal and federally assisted construction, no contractor shall be required to obtain approval of a training program which, prior to August 20, 1975, was approved by the Department of Labor for purposes of the Davis-Bacon and Related Acts, was established by agreement of organized labor and management and therefore recognized by the Department, and/or was recognized by the Department under Executive Order 11246, as amended. A copy of the program and evidence of its prior approval, if applicable shall be submitted to the Employment and Training Administration, which shall certify such prior approval or recognition of the program. In every other respect, the provisions of §5.5(a)(4)(ii)—including those relating to registration of trainees, permissible ratios, and wage rates to be paid—shall apply to these programs.

(b) Every trainee employed on a contract executed on and after August 20, 1975, in one of the above training programs must be individually registered in the program in accordance with Employment and Training Administration procedures, and must be paid at the rate specified in the program for the level of progress. Any such employee listed on the payroll at a trainee rate who is not registered and participating in a program certified by ETA pursuant to this section, or approved and certified by ETA pursuant to §5.5(a)(4)(ii), must be paid the wage rate determined by the Secretary of Labor for the classification of work actually performed. The ratio of trainees to journeymen shall not be greater than permitted by the terms of the program.

(c) In the event a program which was recognized or approved prior to August 20, 1975, is modified, revised, extended, or renewed, the changes in the program or its renewal must be approved by the Employment and Training Administration before they may be placed into effect.

#### § 5.17 Withdrawal of approval of a training program.

If at any time the Employment and Training Administration determines, after opportunity for a hearing, that the standards of any program, whether it is one recognized or approved prior to August 20, 1975, or a program subsequently approved, have not been complied with, or that such a program fails to provide adequate training for participants, a contractor will no longer be permitted to utilize trainees at less than the predetermined rate for the classification of work actually performed until an acceptable program is approved.

#### Subpart B—Interpretation of the Fringe Benefits Provisions of the Davis-Bacon Act

Source: 29 FR 13465, Sept. 30, 1964, unless otherwise noted.

## § 5.20 Scope and significance of this subpart.

The 1964 amendments (Pub. L. 88-349) to the Davis-Bacon Act require, among other things, that the prevailing wage determined for Federal and federally-assisted construction include: (a) The basic hourly rate of pay; and (b) the amount contributed by the contractor or subcontractor for certain fringe benefits (or the cost to them of such benefits). The purpose of this subpart is to explain the provisions of these amendments. This subpart makes available in one place official interpretations of the fringe benefits provisions of the Davis-Bacon Act. These interpretations will guide the Department of Labor in carrying out its responsibilities under these provisions. These interpretations are intended also for the guidance of contractors, their associations, laborers and mechanics and their organizations, and local, State and Federal agencies, who may be concerned with these provisions of the law. The interpretations contained in this subpart are authoritative and may be relied upon as provided for in section 10 of the Portal-to-Portal Act of 1947 (29 U.S.C. 359). The omission to discuss a particular problem in this subpart or in interpretations supplementing it should not be taken to indicate the adoption of any position by the Secretary of Labor with respect to such problem or to constitute an administrative interpretation, practice, or enforcement policy. Questions on matters not fully covered by this subpart may be referred to the Secretary for interpretation as provided in §5.12.

## § 5.21 [Reserved]

## § 5.22 Effect of the Davis-Bacon fringe benefits provisions.

The Davis-Bacon Act and the prevailing wage provisions of the related statutes listed in §1.1 of this subtitle confer upon the Secretary of Labor the authority to predetermine, as minimum wages, those wage rates found to be prevailing for corresponding classes of laborers and mechanics employed on projects of a character similar to the contract work in the area in which the work is to be performed. See paragraphs (a) and (b) of §1.2 of this subtitle. The fringe benefits amendments enlarge the scope of this authority by including certain bona fide fringe benefits within the meaning of the terms "wages", "scale of wages", "wage rates", "minimum wages" and "prevailing wages", as used in the Davis-Bacon Act.

## § 5.23 The statutory provisions.

The fringe benefits provisions of the 1964 amendments to the Davis-Bacon Act are, in part, as follows:

(b) As used in this Act the term "wages", "scale of wages", "wage rates", "minimum wages", and "prevailing wages" shall include—

(1) The basic hourly rate of pay; and

(2) The amount of—

(A) The rate of contribution irrevocably made by a contractor or subcontractor to a trustee or to a third person pursuant to a fund, plan, or program; and

(B) The rate of costs to the contractor or subcontractor which may be reasonably anticipated in providing benefits to laborers and mechanics pursuant to an enforceable commitment to carry out a financially responsible plan or program which was communicated in writing to the laborers and mechanics affected,

for medical or hospital care, pensions on retirement or death, compensation for injuries or illness resulting from occupational activity, or insurance to provide any of the foregoing, for unemployment benefits, life insurance, disability and sickness insurance, or accident insurance, for vacation and holiday pay, for defraying costs of apprenticeship or other similar programs, or for other bona fide fringe benefits, but only where the contractor or subcontractor is not required by other Federal, State, or local law to provide any of such benefits \* \* \*.

## § 5.24 The basic hourly rate of pay.

"The basic hourly rate of pay" is that part of a laborer's or mechanic's wages which the Secretary of Labor would have found and included in wage determinations prior to the 1964 amendments. The Secretary of Labor is required to continue to make a

separate finding of this portion of the wage. In general, this portion of the wage is the cash payment made directly to the laborer or mechanic. It does not include fringe benefits.

#### § 5.25 Rate of contribution or cost for fringe benefits.

(a) Under the amendments, the Secretary is obligated to make a separate finding of the rate of contribution or cost of fringe benefits. Only the amount of contributions or costs for fringe benefits which meet the requirements of the act will be considered by the Secretary. These requirements are discussed in this subpart.

(b) The rate of contribution or cost is ordinarily an hourly rate, and will be reflected in the wage determination as such. In some cases, however, the contribution or cost for certain fringe benefits may be expressed in a formula or method of payment other than an hourly rate. In such cases, the Secretary may in his discretion express in the wage determination the rate of contribution or cost used in the formula or method or may convert it to an hourly rate of pay whenever he finds that such action would facilitate the administration of the Act. See §5.5(a)(1)(i) and (iii).

#### § 5.26 “\* \* \* contribution irrevocably made \* \* \* to a trustee or to a third person”.

Under the fringe benefits provisions (section 1(b)(2) of the Act) the amount of contributions for fringe benefits must be made to a trustee or to a third person irrevocably. The “third person” must be one who is not affiliated with the contractor or subcontractor. The trustee must assume the usual fiduciary responsibilities imposed upon trustees by applicable law. The trust or fund must be set up in such a way that in no event will the contractor or subcontractor be able to recapture any of the contributions paid in or any way divert the funds to his own use or benefit. Although contributions made to a trustee or third person pursuant to a benefit plan must be irrevocably made, this does not prevent return to the contractor or subcontractor of sums which he had paid in excess of the contributions actually called for by the plan, as where such excess payments result from error or from the necessity of making payments to cover the estimated cost of contributions at a time when the exact amount of the necessary contributions under the plan is not yet ascertained. For example, a benefit plan may provide for definite insurance benefits for employees in the event of the happening of a specified contingency such as death, sickness, accident, etc., and may provide that the cost of such definite benefits, either in full or any balance in excess of specified employee contributions, will be borne by the contractor or subcontractor. In such a case the return by the insurance company to the contractor or subcontractor of sums paid by him in excess of the amount required to provide the benefits which, under the plan, are to be provided through contributions by the contractor or subcontractor, will not be deemed a recapture or diversion by the employer of contributions made pursuant to the plan. (See Report of the Senate Committee on Labor and Public Welfare, S. Rep. No. 963, 88th Cong., 2d Sess., p. 5.)

#### § 5.27 “\* \* \* fund, plan, or program”.

The contributions for fringe benefits must be made pursuant to a fund, plan or program (sec. 1(b)(2)(A) of the act). The phrase “fund, plan, or program” is merely intended to recognize the various types of arrangements commonly used to provide fringe benefits through employer contributions. The phrase is identical with language contained in section 3(1) of the Welfare and Pension Plans Disclosure Act. In interpreting this phrase, the Secretary will be guided by the experience of the Department in administering the latter statute. (See Report of Senate Committee on Labor and Public Welfare, S. Rep. No. 963, 88th Cong., 2d Sess., p. 5.)

#### § 5.28 Unfunded plans.

(a) The costs to a contractor or subcontractor which may be reasonably anticipated in providing benefits of the types described in the act pursuant to an enforceable commitment to carry out a financially responsible plan or program, are considered fringe benefits within the meaning of the act (see 1(b)(2)(B) of the act). The legislative history suggests that these provisions were intended to permit the consideration of fringe benefits meeting, among others, these requirements and which are provided from the general assets of a contractor or subcontractor. (Report of the House Committee on Education and Labor, H. Rep. No. 308, 88th Cong., 1st Sess., p. 4.)

(b) No type of fringe benefit is eligible for consideration as a so-called unfunded plan unless:

(1) It could be reasonably anticipated to provide benefits described in the act;

(2) It represents a commitment that can be legally enforced;

(3) It is carried out under a financially responsible plan or program; and

(4) The plan or program providing the benefits has been communicated in writing to the laborers and mechanics affected. (See S. Rep. No. 963, p. 6.)

(c) It is in this manner that the act provides for the consideration of unfunded plans or programs in finding prevailing wages and in ascertaining compliance with the Act. At the same time, however, there is protection against the use of this provision as a means of avoiding the act's requirements. The words "reasonably anticipated" are intended to require that any unfunded plan or program be able to withstand a test which can perhaps be best described as one of actuarial soundness. Moreover, as in the case of other fringe benefits payable under the act, an unfunded plan or program must be "bona fide" and not a mere simulation or sham for avoiding compliance with the act. (See S. Rep. No. 963, p. 6.) The legislative history suggests that in order to insure against the possibility that these provisions might be used to avoid compliance with the act, the committee contemplates that the Secretary of Labor in carrying out his responsibilities under Reorganization Plan No. 14 of 1950, may direct a contractor or subcontractor to set aside in an account assets which, under sound actuarial principles, will be sufficient to meet the future obligation under the plan. The preservation of this account for the purpose intended would, of course, also be essential. (S. Rep. No. 963, p. 6.) This is implemented by the contractual provisions required by §5.5(a)(1)(iv).

### § 5.29 Specific fringe benefits.

(a) The act lists all types of fringe benefits which the Congress considered to be common in the construction industry as a whole. These include the following: Medical or hospital care, pensions on retirement or death, compensation for injuries or illness resulting from occupational activity, or insurance to provide any of the foregoing, unemployment benefits, life insurance, disability and sickness insurance, or accident insurance, vacation and holiday pay, defrayment of costs of apprenticeship or other similar programs, or other bona fide fringe benefits, but only where the contractor or subcontractor is not required by other Federal, State, or local law to provide any of such benefits.

(b) The legislative history indicates that it was not the intent of the Congress to impose specific standards relating to administration of fringe benefits. It was assumed that the majority of fringe benefits arrangements of this nature will be those which are administered in accordance with requirements of section 302(c)(5) of the National Labor Relations Act, as amended (S. Rep. No. 963, p. 5).

(c) The term "other bona fide fringe benefits" is the so-called "open end" provision. This was included so that new fringe benefits may be recognized by the Secretary as they become prevailing. It was pointed out that a particular fringe benefit need not be recognized beyond a particular area in order for the Secretary to find that it is prevailing in that area. (S. Rep. No. 963, p. 6).

(d) The legislative reports indicate that, to insure against considering and giving credit to any and all fringe benefits, some of which might be illusory or not genuine, the qualification was included that such fringe benefits must be "bona fide" (H. Rep. No. 308, p. 4; S. Rep. No. 963, p. 6). No difficulty is anticipated in determining whether a particular fringe benefit is "bona fide" in the ordinary case where the benefits are those common in the construction industry and which are established under a usual fund, plan, or program. This would be typically the case of those fringe benefits listed in paragraph (a) of this section which are funded under a trust or insurance program. Contractors may take credit for contributions made under such conventional plans without requesting the approval of the Secretary of Labor under §5.5(a)(1)(iv).

(e) Where the plan is not of the conventional type described in the preceding paragraph, it will be necessary for the Secretary to examine the facts and circumstances to determine whether they are "bona fide" in accordance with requirements of the act. This is particularly true with respect to unfunded plans. Contractors or subcontractors seeking credit under the act for costs incurred for such plans must request specific permission from the Secretary under §5.5(a)(1)(iv).

(f) The act excludes fringe benefits which a contractor or subcontractor is obligated to provide under other Federal, State, or local law. No credit may be taken under the act for the payments made for such benefits. For example, payment for workmen's compensation insurance under either a compulsory or elective State statute are not considered payments for fringe benefits under the Act. While each situation must be separately considered on its own merits, payments made for travel, subsistence or to industry promotion funds are not normally payments for fringe benefits under the Act. The omission in the Act of any express reference to these payments, which are common in the construction industry, suggests that these payments should not normally be regarded as bona fide fringe benefits under the Act.

§ 5.30 Types of wage determinations.

(a) When fringe benefits are prevailing for various classes of laborers and mechanics in the area of proposed construction, such benefits are includable in any Davis-Bacon wage determination. Illustrations, contained in paragraph (c) of this section, demonstrate some of the different types of wage determinations which may be made in such cases.

(b) Wage determinations of the Secretary of Labor under the act do not include fringe benefits for various classes of laborers and mechanics whenever such benefits do not prevail in the area of proposed construction. When this occurs the wage determination will contain only the basic hourly rates of pay, that is only the cash wages which are prevailing for the various classes of laborers and mechanics. An illustration of this situation is contained in paragraph (c) of this section.

(c) Illustrations:

Classes	Basic hourly rates	Fringe benefits payments				
		Health and welfare	Pensions	Vacations	Apprenticeship program	Others
Laborers	\$3.25					
Carpenters	4.00	\$0.15				
Painters	3.90	.15	\$0.10	\$0.20		
Electricians	4.85	.10	.15			
Plumbers	4.95	.15	.20		\$0.05	
Ironworkers	4.60			.10		

(It should be noted this format is not necessarily in the exact form in which determinations will issue; it is for illustration only.)

§ 5.31 Meeting wage determination obligations.

(a) A contractor or subcontractor performing work subject to a Davis-Bacon wage determination may discharge his minimum wage obligations for the payment of both straight time wages and fringe benefits by paying in cash, making payments or incurring costs for "bona fide" fringe benefits of the types listed in the applicable wage determination or otherwise found prevailing by the Secretary of Labor, or by a combination thereof.

(b) A contractor or subcontractor may discharge his obligations for the payment of the basic hourly rates and the fringe benefits where both are contained in a wage determination applicable to his laborers or mechanics in the following ways:

(1) By paying not less than the basic hourly rate to the laborers or mechanics and by making the contributions for the fringe benefits in the wage determinations, as specified therein. For example, in the illustration contained in paragraph (c) of §5.30, the obligations for "painters" will be met by the payment of a straight time hourly rate of not less than \$3.90 and by contributing not less than at the rate of 15 cents an hour for health and welfare benefits, 10 cents an hour for pensions, and 20 cents an hour for vacations; or

(2) By paying not less than the basic hourly rate to the laborers or mechanics and by making contributions for "bona fide" fringe benefits in a total amount not less than the total of the fringe benefits required by the wage determination. For example, the obligations for "painters" in the illustration in paragraph (c) of §5.30 will be met by the payment of a straight time hourly rate of not less than \$3.90 and by contributions of not less than a total of 45 cents an hour for "bona fide" fringe benefits; or

(3) By paying in cash directly to laborers or mechanics for the basic hourly rate and by making an additional cash payment in lieu of the required benefits. For example, where an employer does not make payments or incur costs for fringe benefits, he would

meet his obligations for "painters" in the illustration in paragraph (c) of §5.30, by paying directly to the painters a straight time hourly rate of not less than \$4.35 (\$3.90 basic hourly rate plus 45 cents for fringe benefits); or

(4) As stated in paragraph (a) of this section, the contractor or subcontractor may discharge his minimum wage obligations for the payment of straight time wages and fringe benefits by a combination of the methods illustrated in paragraphs (b)(1) thru (3) of this section. Thus, for example, his obligations for "painters" may be met by an hourly rate, partly in cash and partly in payments or costs for fringe benefits which total not less than \$4.35 (\$3.90 basic hourly rate plus 45 cents for fringe benefits). The payments in such case may be \$4.10 in cash and 25 cents in payments or costs in fringe benefits. Or, they may be \$3.75 in cash and 60 cents in payments or costs for fringe benefits.

[30 FR 13136, Oct. 15, 1965]

#### § 5.32 Overtime payments.

(a) The act excludes amounts paid by a contractor or subcontractor for fringe benefits in the computation of overtime under the Fair Labor Standards Act, the Contract Work Hours and Safety Standards Act, and the Walsh-Healey Public Contracts Act whenever the overtime provisions of any of these statutes apply concurrently with the Davis-Bacon Act or its related prevailing wage statutes. It is clear from the legislative history that in no event can the regular or basic rate upon which premium pay for overtime is calculated under the aforementioned Federal statutes be less than the amount determined by the Secretary of Labor as the basic hourly rate (i.e. cash rate) under section 1(b)(1) of the Davis-Bacon Act. (See S. Rep. No. 963, p. 7.) Contributions by employees are not excluded from the regular or basic rate upon which overtime is computed under these statutes; that is, an employee's regular or basic straight-time rate is computed on his earnings before any deductions are made for the employee's contributions to fringe benefits. The contractor's contributions or costs for fringe benefits may be excluded in computing such rate so long as the exclusions do not reduce the regular or basic rate below the basic hourly rate contained in the wage determination.

(b) The legislative report notes that the phrase "contributions irrevocably made by a contractor or subcontractor to a trustee or to a third person pursuant to a fund, plan, or program" was added to the bill in Committee. This language in essence conforms to the overtime provisions of section 7(d)(4) of the Fair Labor Standards Act, as amended. The intent of the committee was to prevent any avoidance of overtime requirements under existing law. See H. Rep. No. 308, p. 5.

(c)(1) The act permits a contractor or subcontractor to pay a cash equivalent of any fringe benefits found prevailing by the Secretary of Labor. Such a cash equivalent would also be excludable in computing the regular or basic rate under the Federal overtime laws mentioned in paragraph (a). For example, the W construction contractor pays his laborers or mechanics \$3.50 in cash under a wage determination of the Secretary of Labor which requires a basic hourly rate of \$3 and a fringe benefit contribution of 50 cents. The contractor pays the 50 cents in cash because he made no payments and incurred no costs for fringe benefits. Overtime compensation in this case would be computed on a regular or basic rate of \$3.00 an hour. However, in some cases a question of fact may be presented in ascertaining whether or not a cash payment made to laborers or mechanics is actually in lieu of a fringe benefit or is simply part of their straight time cash wage. In the latter situation, the cash payment is not excludable in computing overtime compensation. Consider the examples set forth in paragraphs (c)(2) and (3) of this section.

(2) The X construction contractor has for some time been paying \$3.25 an hour to a mechanic as his basic cash wage plus 50 cents an hour as a contribution to a welfare and pension plan. The Secretary of Labor determines that a basic hourly rate of \$3 an hour and a fringe benefit contribution of 50 cents are prevailing. The basic hourly rate or regular rate for overtime purposes would be \$3.25, the rate actually paid as a basic cash wage for the employee of X, rather than the \$3 rate determined as prevailing by the Secretary of Labor.

(3) Under the same prevailing wage determination, discussed in paragraph (c)(2) of this section, the Y construction contractor who has been paying \$3 an hour as his basic cash wage on which he has been computing overtime compensation reduces the cash wage to \$2.75 an hour but computes his costs of benefits under section 1(b)(2)(B) as \$1 an hour. In this example the regular or basic hourly rate would continue to be \$3 an hour. See S. Rep. No. 963, p. 7.

General Decision Number: AZ170008 06/02/2017 AZ8

Superseded General Decision Number: AZ20160008

State: Arizona

Construction Type: Highway

Counties: Coconino, Maricopa, Mohave, Pima, Pinal, Yavapai and Yuma Counties in Arizona.

#### HIGHWAY CONSTRUCTION PROJECTS

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	06/02/2017

CARP0408-005 07/01/2016

	Rates	Fringes
CARPENTER (Including Cement Form Work).....	\$ 25.48	11.54

\* ENGI0428-001 09/01/2016

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
Group 1.....	\$ 23.34	9.68
Group 2.....	\$ 26.61	9.68
Group 3.....	\$ 27.69	9.68
Group 4.....	\$ 28.72	9.68

POWER EQUIPMENT OPERATORS CLASSIFICATIONS:

GROUP 1: A-frame boom truck, air compressor, Beltcrete, boring bridge and texture, brakeman, concrete mixer (skip type), conductor, conveyor, cross timing and pipe float, curing machine, dinky (under 20 tons), elevator hoist (Husky and similar), firemen, forklift, generator (all), handler, highline cableway signalman, hydrographic mulcher, joint inserter, jumbo finishing machine, Kolman belt loader, machine conveyor, multiple power concrete saw, pavement breaker, power grizzly, pressure grout machine, pump, self-propelled chip spreading machine, slurry seal machine (Moto paver driver), small self-propelled compactor (with blade-backfill, ditch operation), straw blower, tractor (wheel type), tripper, tugger (single drum), welding machine, winch truck

GROUP 2:

ALL COUNTIES INCLUDING MARICOPA: Aggregate Plant, Asphalt plant Mixer, Bee Gee, Boring Machine, Concrete Pump, Concrete Mechanical Tamping-Spreading Finishing Machine, Concrete Batch Plant, Concrete Mixer (paving & mobile), Elevating Grader (except as otherwise classified), Field Equipment Serviceman, Locomotive Engineer (including Dinky 20 tons & over), Moto-Paver, Oiler-Driver, Operating Engineer Rigger, Power Jumbo Form Setter, Road Oil Mixing Machine, Self-Propelled Compactor (with blade-grade operation), Slip Form (power driven lifting device for concrete forms), Soil Cement Road Mixing Machine, Pipe-Wrapping & Cleaning Machine (stationary or traveling), Surface Heater & Planer, Trenching Machine, Tugger (2 or more drums).

MARICOPA COUNTY ONLY: Backhoe < 1 cu yd, Motor Grader (rough), Scraper (pneumatic tired), Roller (all types asphalt), Screed, Skip Loader (all types 3<6 cu yd), Tractor (dozer, pusher-all).

GROUP 3:

ALL COUNTIES INCLUDING MARICOPA: Auto Grade Machine, Barge, Boring Machine (including Mole, Badger & similar type directional/horizontal), Crane (crawler & pneumatic 15>100 tons), Crawler type Tractor with boom attachment & slope bar, Derrick, Gradall, Heavy Duty Mechanic-Welder, Helicopter Hoist or Pilot, Highline Cableway, Mechanical Hoist, Mucking Machine, Overhead Crane, Pile Driver Engineer (portable, stationary or skid), Power Driven Ditch Lining or Ditch Trimming Machine, Remote Control Earth Moving Machine, Slip Form Paving Machine (including Gunnert, Zimmerman & similar types), Tower Crane or similar type.

MARICOPA COUNTY ONLY: Backhoe<10 cu yd, Clamshell < 10 cu yd, Concrete Pump (truck mounted with boom only), Dragline <10 cu yd, Grade Checker, Motor Grader (finish-any type power blade), Shovel < 10 cu yd.

GROUP 4: Backhoe 10 cu yd and over, Clamshell 10 cu yd and over, Crane (pneumatic or crawler 100 tons & over), Dragline 10 cu yd and over, Shovel 10 cu yd and over.

All Operators, Oilers, and Motor Crane Drivers on equipment with Booms, except concrete pumping truck booms, including Jibs, shall receive \$0.01 per hour per foot over 80 ft in addition to regular rate of pay

Premium pay for performing hazardous waste removal \$0.50 per hour over base rate.

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IRON0075-004 08/01/2015

COCONINO, MARICOPA, MOHAVE, YAVAPAI & YUMA COUNTIES

	Rates	Fringes
Ironworker, Rebar.....	\$ 26.00	21.77

- Zone 1: 0 to 50 miles from City Hall in Phoenix or Tucson
- Zone 2: 050 to 100 miles - Add \$4.00
- Zone 3: 100 to 150 miles - Add \$5.00
- Zone 4: 150 miles & over - Add \$6.50

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LABO0383-002 06/01/2016

	Rates	Fringes
Laborers:		
Group 1.....	\$ 17.18	5.01
Group 2.....	\$ 18.08	5.01
Group 3.....	\$ 18.78	5.01
Group 4.....	\$ 19.72	5.01
Group 5.....	\$ 20.58	5.01

LABORERS CLASSIFICATIONS:

GROUP 1: All Counties: Chipper, Rip Rap Stoneman. Pinal County Only: General/Cleanup Laborer. Maricopa County Only: Flagger.

GROUP 2: Asphalt Laborer (Shoveling-excluding Asphalt Raker or Ironer), Bander, Cement Mason Tender, Concrete Mucker, Cutting Torch Operator, Fine Grader, Guinea Chaser, Power Type Concrete Buggy

GROUP 3: Chain Saw, Concrete Small Tools, Concrete Vibrating Machine, Cribber & Shorer (except tunnel), Hydraulic Jacks and similar tools, Operator and Tender of Pneumatic and Electric Tools (not herein separately classified), Pipe Caulker and Back-Up Man-Pipeline, Pipe Wrapper, Pneumatic Gopher, Pre-Cast Manhole Erector, Rigger and Signal Man-Pipeline

GROUP 4: Air and Water Washout Nozzleman; Bio-Filter, Pressman, Installer, Operator; Scaffold Laborer; Chuck Tender; Concrete Cutting Torch; Gunite; Hand-Guided Trencher; Jackhammer and/or Pavement Breaker; Scaler (using boson's chair or safety belt); Tamper (mechanical all types).

GROUP 5: AC Dumpman, Asbestos Abatement, Asphalt Raker II, Drill Doctor/Air Tool Repairman, Hazardous Waste Removal, Lead Abatement, Lead Pipeman, Process Piping Installer, Scaler (Driller), Pest Technician/Weed Control, Scissor Lift, Hydro Mobile Scaffold Builder.

PAIN0086-001 04/01/2014

	Rates	Fringes
PAINTER		
PAINTER (Yavapai County only), SAND BLASTER/WATER BLASTER (all Counties).....	\$ 19.50	4.85

ZONE PAY: More than 100 miles from Old Phoenix Courthouse \$3.50 additional per hour.

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SUAZ2009-001 04/20/2009

	Rates	Fringes
CEMENT MASON.....	\$ 19.28	3.99
ELECTRICIAN.....	\$ 22.84	6.48
IRONWORKER (Rebar)		
Pima County.....	\$ 23.17	14.83
Pinal County.....	\$ 20.27	8.35
LABORER		
Asphalt Raker.....	\$ 15.49	3.49
Compaction Tool Operator.....	\$ 14.59	2.91
Concrete Worker.....	\$ 13.55	3.20
Concrete/Asphalt Saw.....	\$ 13.95	2.58
Driller-Core, diamond, wagon, air track.....	\$ 16.94	3.12
Dumpman Spotter.....	\$ 14.99	3.16
Fence Builder.....	\$ 13.28	2.99
Flagger		
Coconino, Mohave, Pima, Pinal, Yavapai & Yuma.....	\$ 12.35	1.59
Formsetter.....	\$ 16.09	3.97
General/Cleanup Laborer		
Coconino, Maricopa, Mohave, Pima, Yavapai & Yuma.....	\$ 14.54	3.49
Grade Setter (Pipeline).....	\$ 17.83	5.45
Guard Rail Installer.....	\$ 13.28	2.99
Landscape Laborer.....	\$ 11.39	
Landscape Sprinkler Installer.....	\$ 15.27	
Pipelayer.....	\$ 14.81	2.96
Powderman, Hydrasonic.....	\$ 16.39	2.58
OPERATOR: Power Equipment		
Asphalt Laydown Machine.....	\$ 21.19	6.05
Backhoe < 1 cu yd		
Coconino, Mohave, Pima, Pinal, Yavapai & Yuma.....	\$ 17.37	3.85
Backhoe < 10 cu yd		
Coconino, Mohave, Pima, Pinal, Yavapai & Yuma.....	\$ 18.72	3.59
Clamshell < 10 cu yd		
Coconino, Mohave, Pima, Pinal, Yavapai & Yuma.....	\$ 18.72	3.59
Concrete Pump (Truck Mounted with boom only)		
Coconino, Mohave, Pima, Pinal, Yavapai & Yuma.....	\$ 19.92	7.10
Crane (under 15 tons).....	\$ 21.35	7.36
Dragline (up to 10 cu yd)		
Coconino, Mohave, Pima, Pinal, Yavapai & Yuma.....	\$ 18.72	3.59

Drilling Machine (including Water Wells).....	\$ 20.58	5.65
Grade Checker		
Coconino, Mohave, Pima, Pinal, Yavapai & Yuma.....	\$ 16.04	3.68
Hydrographic Seeder.....	\$ 15.88	7.67
Mass Excavator.....	\$ 20.97	4.28
Milling Machine/Rotomill.....	\$ 21.42	7.45
Motor Grader (Finish-any type power blade)		
Coconino, Mohave, Pima, Pinal, Yavapai & Yuma.....	\$ 21.92	4.66
Motor Grader (Rough)		
Coconino, Mohave, Pima, Pinal, Yavapai & Yuma.....	\$ 20.07	4.13
Oiler.....	\$ 18.15	8.24
Power Sweeper.....	\$ 16.76	4.44
Roller (all types Asphalt)		
Coconino, Mohave, Pima, Pinal, Yavapai & Yuma.....	\$ 18.27	3.99
Roller (excluding asphalt).....	\$ 15.65	3.32
Scraper (pneumatic tired)		
Coconino, Mohave, Pima, Pinal, Yavapai & Yuma.....	\$ 17.69	3.45
Screed		
Coconino, Mohave, Pima, Pinal, Yavapai & Yuma.....	\$ 17.54	3.72
Shovel < 10 cu yd		
Coconino, Mohave, Pima, Pinal, Yavapai & Yuma.....	\$ 18.72	3.59
Skip Loader (all types <3 cu yd).....	\$ 18.28	5.30
Skip Loader (all types 3 < 6 cu yd)		
Coconino, Mohave, Pima, Pinal, Yavapai & Yuma.....	\$ 18.64	4.86
Skip Loader (all types 6 < 10 cu yd).....	\$ 20.15	4.52
Tractor (dozer, pusher - all)		
Coconino, Mohave, Pima, Pinal, Yavapai & Yuma.....	\$ 17.26	2.65

PAINTER

Coconino, Maricopa, Mohave, Pima, Pinal & Yuma.....	\$ 15.57	3.92
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TRUCK DRIVER

2 or 3 Axle Dump or Flatrack.....	\$ 16.27	3.30
5 Axle Dump or Flatrack.....	\$ 13.97	2.89
6 Axle Dump or Flatrack (< 16 cu yd).....	\$ 17.79	6.42
Belly Dump.....	\$ 14.67	
Oil Tanker Bootman.....	\$ 22.03	
Self-Propelled Street Sweeper.....	\$ 13.11	5.48
Water Truck 2500 < 3900 gallons.....	\$ 18.14	4.55
Water Truck 3900 gallons and over.....	\$ 15.92	3.33
Water Truck under 2500 gallons.....	\$ 15.94	4.16

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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.

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

**GUIDELINES FOR HANDLING SONORAN DESERT TORTOISES  
ENCOUNTERED ON DEVELOPMENT PROJECTS** Arizona Game  
and Fish Department  
Revised October 23, 2007

The Arizona Game and Fish Department (Department) has developed the following guidelines to reduce potential impacts to desert tortoises, and to promote the continued existence of tortoises throughout the state. These guidelines apply to short-term and/or small-scale projects, depending on the number of affected tortoises and specific type of project.

The Sonoran population of desert tortoises occurs south and east of the Colorado River. Tortoises encountered in the open should be moved out of harm's way to adjacent appropriate habitat. If an occupied burrow is determined to be in jeopardy of destruction, the tortoise should be relocated to the nearest appropriate alternate burrow or other appropriate shelter, as determined by a qualified biologist. Tortoises should be moved less than 48 hours in advance of the habitat disturbance so they do not return to the area in the interim. Tortoises should be moved quickly, kept in an upright position parallel to the ground at all times, and placed in the shade. Separate disposable gloves should be worn for each tortoise handled to avoid potential transfer of disease between tortoises. Tortoises must not be moved if the ambient air temperature exceeds 40 degrees Celsius (105 degrees Fahrenheit) unless an alternate burrow is available or the tortoise is in imminent danger.

A tortoise may be moved up to one-half mile, but no further than necessary from its original location. If a release site, or alternate burrow, is unavailable within this distance, and ambient air temperature exceeds 40 degrees Celsius (105 degrees Fahrenheit), the Department should be contacted to place the tortoise into a Department- regulated desert tortoise adoption program. Tortoises salvaged from projects which result in substantial permanent habitat loss (e.g. housing and highway projects), or those requiring removal during long-term (longer than one week) construction projects, will also be placed in desert tortoise adoption programs. *Managers of projects likely to affect desert tortoises should obtain a scientific collecting permit from the Department to facilitate temporary possession of tortoises.* Likewise, if large numbers of tortoises (>5) are expected to be displaced by a project, the project manager should contact the Department for guidance and/or assistance.

Please keep in mind the following points:

- These guidelines do not apply to the Mohave population of desert tortoises (north and west of the Colorado River). Mohave desert tortoises are specifically protected under the Endangered Species Act, as administered by the U.S. Fish and Wildlife Service.
- These guidelines are subject to revision at the discretion of the Department. We recommend that the Department be contacted during the planning stages of any project that may affect desert tortoises.
- Take, possession, or harassment of wild desert tortoises is prohibited by state law. Unless specifically authorized by the Department, or as noted above, project personnel should avoid disturbing any tortoise.

## **CONSTRUCTION STORM WATER POLLUTION PREVENTION PLAN**

Add the following new Section, **233 STORM WATER POLLUTION PREVENTION PLAN SUBMITTAL PROCESS**

### **233.1 DESCRIPTION**

The Contractor shall use the Arizona Department of Environmental Quality (ADEQ) Smart NOI program for all submittals located at this web address:

<https://az.gov/app/smartnoi/>

The location of this process may change and it is the responsibility of the Contractor to verify the correct web address. All fees are the responsibility of the Contractor. The Contractor shall apply for a "Stormwater Construction General Permit" with the project type "MUNICIPAL/PUBLIC".

Before any construction on site begins, the Contractor shall submit the Notice of Intent (NOI) and the SWPPP through the Smart NOI program as the sole permittee. The Contractor shall not commence any construction activities until the ADEQ send a written Notice Of Intent assigning an AZCON number.

As required by ADEQ the Contractor shall submit a Notice of Termination (NOT) through the Smart NOI program. The Contractor shall receive final payment only after receiving a written Notice of Termination Acknowledgement from ADEQ.

#### **Projects Impacting Impaired Waters**

Projects that will have any construction taking place within ¼ mile of the Salt River between 23rd Avenue and the confluence of the Gila River will impact "Impaired Waters". These projects will require the Contractor to design, implement, and evaluate a Monitoring Plan for stormwater runoff from their construction activities. The Monitoring Plan must be site specific and will be submitted to ADEQ as an appendix to the SWPPP. ADEQ is the final authority in the approval of the monitoring plan. A copy of the SWPPP and the Monitoring Plan shall be kept on-site at all times. Additional copies of the Monitoring Plan should be made available to all personnel who anticipate participating in stormwater monitoring activities. The Contractor shall have a copy of the monitoring plan, approved SWPPP, NOI, and ADEQ Authorization to Discharge posted at the jobsite prior to ground disturbance.

#### **Subcontractors**

All subcontractors shall comply with all AZPDES requirements under the supervision of the General Contractor, and shall submit a completed, signed subcontractor certification form, thereby designating themselves as co-permittees.

### **233.2 SAMPLE SWPPP STRUCTURE**

The following is a sample outline of the City requirement for a SWPPP submittal modeled after the ADEQ Construction General Permit Checklist. It shall be the Contractor's responsibility to meet all the ADEQ requirements for a SWPPP and retain a qualified consultant to complete the SWPPP if necessary at no additional cost to the City.

#### 1 **SITE DESCRIPTION**

1.1 Project Name: **CONTRACTOR SHALL FILL IN PROJECT NAME**  
 Project No(s): **CONTRACTOR SHALL FILL IN PROJECT NUMBER**

1.2 Project Location: **CONTRACTOR SHALL FILL IN FOR PROJECT SITE LOCATION**

1.3 Owner's Name:  
 City of Phoenix, Street Transportation Department

1.4 Owner's Address:  
 200 West Washington Street, 5<sup>th</sup> Floor, Phoenix, Arizona 85003

1.5 Project Description: **CONTRACTOR SHALL FILL IN PROJECT DESCRIPTION**

- 1.6 Runoff Coefficient and Soils Information:
1. Overall runoff coefficient of upstream drainage area shall be unchanged by project.
  2. Surface Soils Information: **(EXAMPLE ONLY, CONTRACTOR SHALL FILL IN FOR PROJECT SITE LOCATION)**

<u>SOIL UNIT</u>	<u>SOIL TYPE (USDA TEXTURE)</u>	<u>PERMEABILITY (IN./HR.)</u>
<u>Laveen</u>	<u>Loam</u>	<u>0.6-2.0</u>
<u>Mohall</u>	<u>Clay Loam</u>	<u>0.2-0.6</u>
<u>Tucson</u>	<u>Clay Loam</u>	<u>0.2-0.6</u>
<u>Vecont</u>	<u>Clay</u>	<u>0.06-0.2</u>

1.7 Name of Receiving Water:  
**EXAMPLE: SALT RIVER, CONTRACTOR SHALL FILL FOR PROJECT SITE LOCATION**

2 CONTROLS

2.1 Erosion and Sediment Controls

2.1.a Stabilization Practices:

Stabilization practices on this site include:

- Permanent planting.
- Save selected existing trees.
- Decomposed granite
- **CONTRACTOR SHALL ADD OR REMOVE STABILIZATION PRACTICES AS NECESSARY**

2.1.b Structural Practices:

May include:

- Temporary retention areas (subgrade excavation areas).
- Temporary catch basin inlet protection.
- Silt fence.
- Gravel filter berm.
- Temporary diversion dike.
- Straw bale barriers.
- Sandbag berm
- **CONTRACTOR SHALL ADD OR REMOVE STABILIZATION PRACTICES AS NECESSARY**

2.1.c Narrative: Sequence of major activities.

**CONTRACTOR SHALL COMPLETE NARRATIVE**

2.1.d Storm Water Management: **(CONTRACTOR SHALL EDIT AS NECESSARY)**

Storm water drainage on will be provided by curb and gutter, catch basin inlets, and storm drains. No appreciable changes in runoff coefficients or in finished roadway grades will take place as a result of this project; therefore, no significant alterations of storm water drainage patterns or runoff quantities are expected.

During construction, storm water runoff will be managed by the following means, as conditions require:

- Temporary retention will be provided during roadway construction in areas excavated for subgrade.
- Silt fence, straw bales, sandbag berms, temporary diversion dikes, gravel filter berms or other BMP's as necessary to eliminate erosion may be used to prevent storm runoff from entering open storm drain pipes in excavated trenches. Temporary catch basin inlet protection may also be provided to remove sediment from drainage water before it enters the drainage system. Straw bale protection at outfall pipe locations may be employed during construction.

3 OTHER CONTROLS

3.1 Waste Disposal:

Waste Materials:

All waste materials including trash and construction debris from the site will be either disposed to a designated area immediately or collected and stored in securely-lidded metal dumpsters. The dumpsters will meet all local and State solid waste management regulations. The dumpsters will be emptied a minimum of once per week, or more often if necessary, and the trash will be hauled to an acceptable dump site. Lids will be closed at all times after work hours and during rain events. No construction waste materials will be buried on site. All personnel will be instructed regarding the correct procedures for waste disposal. Notices stating these practices will be posted on site, and the site superintendent who manages the day-to-day site operations, will be responsible for seeing that these procedures are followed.

**ENTER PHONE NUMBER AND NAME OF SITE SUPERINTENDENT**

Concrete washout will only be allowed in designated areas. The hardened waste will be disposed of weekly and before final inspection of the project.

Hazardous Waste:

All hazardous waste materials will be disposed of in the manner specified by local or State regulations or by the manufacturer. Site personnel will be instructed in these practices, and the site superintendent who manages day-to-day site operations, will be responsible for seeing that these practices are followed.

#### Sanitary Waste:

All sanitary sewage generated on-site will be collected from the portable units a minimum of twice per week or as required by local regulations. Units will have a berm placed around them to ensure no spillage can occur.

### 3.2 Off-Site Vehicle Tracking:

Traffic will be maintained on paved roadway throughout construction in order to reduce vehicle tracking of sediments. The paved street beyond the start and end of the project will be swept as often as necessary to remove any excess mud, dirt, or rock that may be tracked from the site by construction vehicles, but not less than once per week. Dump trucks hauling material to or from the construction site will be covered with tarpaulin before leaving the site.

## 4 DEMONSTRATION OF COMPLIANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS

The following Federal, State, and City regulations are followed in the preparation of this storm water pollution prevention plan:

- Section 402(p) of the Clean Water Act.
- Amended Section 405 of the Water Quality Act.
- "ADEQ Arizona Pollutant Discharge Elimination System General Permit for Discharge from Construction Activities to Waters of the United States, Permit AZG-2008-001."
- Flood Control District of Maricopa County "Drainage Design Manual for Maricopa County, Arizona, Volume III, Erosion Control."
- City of Phoenix Code 32C, "Storm Water Quality Protection."
- City of Phoenix "Grading and Drainage Ordinance for Purpose of Fulfilling NPDES Requirements."

## 5 MAINTENANCE/INSPECTION PROCEDURES

### 5.1 Erosion and Sediment Control Practices:

The following is a list of erosion and sediment controls to be used during the construction period:

#### 5.1.a Stabilization practices for this site include:

- Permanent planting.
- Save selected existing trees.
- Decomposed granite.
- **CONTRACTOR TO ADD/DELETE AS NECESSARY**

#### 5.1.b Structural practices for this site will include:

- Silt fence/straw bale barriers.
- Temporary diversion dike/gravel filter berm.
- Sandbag berm.
- Storm drain, curb and gutter, catch basins.
- Temporary catch basin inlet protection.

- Temporary retention in subgrade excavation areas.
- **CONTRACTOR TO ADD/DELETE AS NECESSARY**

## 5.2 Erosion and Sediment Control Maintenance and Inspection Practice:

Following is a list of the inspection and maintenance practices that will be used to maintain erosion and sediment control:

- All control measures will be inspected at least once every 7 days and within 24 hours after each rain event of 0.1 inch or greater.
- All measures will be maintained in good working order; if repair is necessary, it will be initiated within 24 hours of report. All changes will be completed within 14 days after an observation.
- Built-up sediment will be removed from silt fence when it has reduced the design capacity by 50%.
- Erosion control fabric and erosion control dikes will be inspected and any breaches promptly repaired.
- Permanent planting will be inspected for washout and healthy growth per specification requirements.
- A Compliance Evaluation Report will be made at each inspection to ensure all BMP's are functioning correctly.
- The site superintendent will be responsible for inspection, maintenance, and repair activities, and filling out the Compliance Evaluation Report.
- Personnel selected for inspection and maintenance responsibility will receive training from the site superintendent. They will be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used on-site in good working order.
- Only one side of roadways will be excavated for subgrade preparation at a time. This area will serve as temporary retention while traffic is maintained on the paved other half of the road. This will serve to control storm water and minimize tracking of sediments.

## 6 INVENTORY FOR POLLUTION PREVENTION PLAN (CONTRACTOR TO EDIT AS NECESSARY)

The materials or substances listed below are expected to be present on-site during construction:

- |                            |                              |
|----------------------------|------------------------------|
| • Concrete                 | • Wood Paints                |
| • Asphaltic Concrete       | • Herbicide/Pesticide        |
| • Fertilizers              | •                            |
| • Petroleum-Based Products | • Soil Treatment Products    |
| • Cleaning Solvents/Agents | • Other Building Materials   |
| • Sealants                 | • Water Used in Dust Control |

### 6.1 Spill Prevention

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to storm water runoff:

#### 6.1.a Good Housekeeping:

The following good housekeeping practices will be followed on-site during the construction period:

- An effort will be made to store only enough product required to do the immediate job.
- All materials stored on-site will be stored in a neat, orderly manner in their appropriate containers and, if possible, under proper cover and palletized.
- Liquid products will be placed on secondary containment pallets.

- Fuel tanks will be double walled.
- Drip pans will be used under all spigots unless on secondary containment.
- Products will be kept in their original containers with the original manufacturers' label.
- Substances will not be mixed with one another unless recommended by the manufacturer.
- Whenever possible, all of a product will be used up before disposing of the container.
- Manufacturers' recommendations for proper use and disposal will be followed.
- The site superintendent will inspect daily to ensure proper use and disposal of materials.
- Concrete washout will only be allowed in designated areas. The hardened waste will be disposed of weekly and before final inspection of the project.

6.1.b Hazardous Products:

These practices are used to reduce the risks associated with hazardous materials:

- Products will be kept in original containers unless they are not resealable.
- Original labels and material safety data sheets will be retained.
- If surplus product must be disposed of, manufacturers', or local and State recommended methods for proper disposal will be followed.
- Products will be monitored, an inventory shall be conducted regularly, and documentation of all use and disposal shall be maintained.

6.2 Product Specific Practices:

The following product specific practices will be followed on-site:

6.2.a Petroleum Products:

All on-site vehicles will be monitored for leaks and receive regular preventative maintenance to reduce any chance of leakage. Petroleum products will be stored in tightly-sealed containers which are clearly labeled. Any petroleum substances used on-site will be applied according to the manufacturer's recommendations. Spills and leaks from vehicles will be stopped immediately. Any leaking vehicle will have a drip pan placed under the leak until the unit is repaired. Secondary containment will be provided for all petroleum products stored onsite.

6.2.b Fertilizers, Herbicide, Pesticide, Soil Treatment:

All materials used will be applied only in the minimum amounts recommended by the manufacturer or as per specification. Once applied, materials will be worked into the soil to limit exposure to storm water.

On-site storage will be covered and palletized to limit contact with storm water. The contents of any partially-used bags or containers will be transferred to a sealable plastic bin to avoid spills.

6.2.c Paints:

All containers will be tightly sealed and stored when not required for use. Excess paint will not be discharged to the storm drain system or on the ground, but will be properly disposed of according to manufacturers' instructions or State and local regulations.

6.2.d Concrete Trucks:

Concrete trucks will not be allowed to wash out or discharge surplus concrete or dump wash water other than in a designated wash-out area. The hardened waste will be disposed of weekly and before final inspection of the project.

### 6.3 Spill Prevention Practices:

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanup:

- Manufacturers' recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.
- Materials and equipment necessary for spill cleanup will be kept in the material storage area on-site. Equipment and materials will include, but not be limited to, brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically designed for this purpose.
- All spills will be cleaned up immediately after discovery using dry cleanup methods.
- The spill area will be kept well-ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- Spills of toxic or hazardous material will be reported to the appropriate State or local government agency, regardless of the size—ADEQ Hotline: (602) 771-4505; City of Phoenix Hazardous Spills Emergency: 911; City of Phoenix Hazardous Spills Safety Section: (602) 262-7555.
- The spill prevention plan will be adjusted to include measures to prevent this type of spill from recurring and procedures to clean up the spill if there is another one. A description of the spill, what caused it, and the cleanup measures will also be included.
- The site superintendent shall be responsible for the day-to-day site operations, will be the spill prevention and cleanup coordinator. He will designate other site personnel who will receive spill prevention and cleanup training.

### 6.4 Documentation:

Documentation of all inspections, failed BMP's, corrective action and training shall be maintained onsite with the SWPPP at all times during the project, and shall be maintained for not less than three (3) years after the project is complete.

## **OTHER REQUIRED CERTIFICATIONS**

The Contractor shall complete and submit the following certification forms to the City before construction begins:

- Permittee Certification
- Contractor Certification
- Subcontractor Certification (for all Subcontractors as necessary)
- Operator's Compliance Evaluation Report

**PERMITTEE'S CERTIFICATION**

As Contractor of the **GRAND CANAL BIKE AND PEDESTRIAN IMPROVEMENTS** project, I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

---

**Company**

**Name:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_

## CONTRACTOR CERTIFICATION

I certify under penalty of law that I understand the terms and condition of the General Arizona Pollutant Discharge Elimination System (AZPDES) Permit that authorizes the storm water discharges associated with industrial activities from the construction site identified as part of this certification. Further, by my signature, I understand that I am becoming a co-permittee, along with the subcontractors signing such certifications, to the general (AZPDES) Permit for the storm water discharges associated with construction activities of the **GRAND CANAL BIKE AND PEDESTRIAN IMPROVEMENTS** project. As a co-permittee, I understand that I, and my company, are legally required under the Clean Water Act, to ensure compliance with the terms and conditions of the storm water pollution prevention plan developed under the AZPDES Permit and the terms of the AZPDES Permit.

---

### General Contractor and Responsibility

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Signature: \_\_\_\_\_

**SUBCONTRACTOR'S CERTIFICATION**

I certify under penalty of law that I understand the terms and conditions of the General Arizona Pollutant Discharge Elimination System (AZPDES) Permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification. Further, by my signature, I understand that I am becoming a co-permittee, along with the owner(s) and other contractors and subcontractors signing such certifications, to the general AZPDES permit for the storm water discharges associated with construction activities of the **GRAND CANAL BIKE AND PEDESTRIAN IMPROVEMENTS** project. As a co-permittee, I understand that I, and my company, are legally required under the Clean Water Act, to ensure compliance with the terms and conditions of the storm water pollution prevention plan developed under the AZPDES permit and the terms of the AZPDES permit.

Authorized Representative of Subcontractor:

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

For (Subcontractor Name): \_\_\_\_\_

Construction Activities: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Verification of Completion and Acceptance of Subcontractor's Work**

All work to be performed by

\_\_\_\_\_ (Subcontractor) as part of the \_\_\_\_\_ (Project) has been completed and accepted. Execution of this form absolves said subcontractor from liability for AZPDES violations which may occur subsequent to this date as a result of activities of the general contractor or other subcontractors.

Authorized Representative of Subcontractor:

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

For (Subcontractor Name): \_\_\_\_\_

Verified by (General Contractor): \_\_\_\_\_

Authorized Representative of General Contractor: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

# AZG-2008-001 General Permit for Construction Activities

## Operator's Compliance Evaluation Report

This project requires inspection of storm water pollution controls (BMPs) on a choice of frequency described in the General Permit, Part IV. H. Attach sheets if more space is needed.

Project: \_\_\_\_\_ Date: \_\_\_\_\_

Name & Title of Inspector: \_\_\_\_\_

Qualifications of Inspector:  Attached; or  Shown in Sec. \_\_\_\_\_ of the SWPPP.

Periodic Inspection; or  Rain Event inspection

Relevant weather information: \_\_\_\_\_

1. Location(s) of discharge from the site:  None; or  Description: \_\_\_\_\_

\_\_\_\_\_

2. Location(s) of and identification of BMPs that need to be maintained; failed to operate or proved to be inadequate:

None; or  Description: \_\_\_\_\_

\_\_\_\_\_

3. Location(s) where additional BMPs are needed:  None; or  Description: \_\_\_\_\_

\_\_\_\_\_

4. Corrective actions required, including changes and target dates:  None; or  Description: \_\_\_\_\_

\_\_\_\_\_

5. Identify all sources of non-storm water and the associated pollution control measures:  None; or

Description: \_\_\_\_\_

\_\_\_\_\_

6. Identify material storage areas and evidence of, or potential for pollutant discharge from these areas:  None; or

Description: \_\_\_\_\_

\_\_\_\_\_

7. Identify any other apparent incidents of non-compliance:  None; or  Description: \_\_\_\_\_

\_\_\_\_\_

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8. If no incidents of non-compliance are identified in items 1 through 7 above, the inspector certifies that the construction project is being operated in compliance with the SWPPP and the General Permit.

*I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*

Certifying Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_

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## REPORT OF GEOTECHNICAL INVESTIGATION

GRAND CANAL BIKE AND PEDESTRIAN IMPROVEMENTS  
44<sup>TH</sup> STREET AND WASHINGTON  
PHOENIX, ARIZONA  
ACS PROJECT NO. 1601267

### PREPARED FOR:

Mr. Steve Williams, Materials Supervisor  
City of Phoenix Materials Laboratory  
1034 East Madison Street  
Phoenix, Arizona 85034

### PREPARED BY:

ACS Services LLC  
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November 21, 2016



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## **Appendices**

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Appendix A	Figures 1 and 2
Appendix B	Boring Logs
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November 21, 2016

Project 1601267

Mr. Steve Williams, Materials Supervisor  
**City of Phoenix Materials Laboratory**  
1034 East Madison Street  
Phoenix, Arizona 85034

**RE: GEOTECHNICAL INVESTIGATION REPORT  
GRAND CANAL BIKE AND PEDESTRIAN IMPROVEMENTS  
44<sup>TH</sup> STREET AND WASHINGTON  
PHOENIX, ARIZONA 85034**

Dear Steve:

Transmitted herewith is a copy of the final report of the subsurface soil and foundation investigation on the above-mentioned project. The services performed provide an evaluation at the selected locations of the subsurface soil conditions throughout the zone of significant foundation influence. As an additional service, this firm may review the project plans and structural notes for conformance to the intent of this report.

**This firm possesses the capability to provide testing and inspection services during the course of construction. Such quality control/assurance activities may include, but are not limited to, compaction testing as related to fill control, foundation inspection, and concrete sampling. Please notify this firm if a proposal for such services is desired.**

Should any questions arise concerning the content of this report, please feel free to contact this office at your earliest convenience.

Respectfully submitted,

**ACS SERVICES LLC**



Expires 3/31/18

H. Eugene Hansen, P.E.  
**Geotechnical and Materials Testing Engineer**

cc: (1) Addressee via email (pdf copy)



## SCOPE

This report is submitted following a geotechnical investigation conducted by this firm for the proposed **GRAND CANAL BIKE AND PEDESTRIAN IMPROVEMENTS**, to be located southeast of the intersection of 44<sup>th</sup> Street and Washington Street, in Phoenix, Arizona 85034. The objectives of the investigation were to determine the physical characteristics of the soil underlying the site and to provide final recommendations for safe and economical foundation design and slab support. The following value is the estimated maximum load for the bridge foundations:

	<b>Maximum Drilled Shaft Load</b>
<b>Bridge Abutment Foundations</b>	90 Kips (45 tons)

A drilled shaft load in excess of that stated above will need to be addressed in an addendum, i.e. it is not covered under the scope of work involved with this effort. The recommendations for site grading contained in this report do not address the presence or removal of contaminants from the site soils.

## FIELD INVESTIGATION

On August 29, 30, and 31, 2016, this firm advanced three (3) exploratory test borings ((6.625-inch hollow stem auger and air percussion drilling methods) for examination of the subsurface profile to depths ranging from 15.5 to 44.1 feet below the existing site grade. The soils and rock encountered were examined, visually classified and wherever applicable, sampled. Refer to the Boring Logs in Appendix B for a detailed description of the subsurface soil and rock conditions at the specified locations. Refer to the Figure 2 in Appendix A for the approximate locations of the borings.

## LABORATORY TESTING

Representative samples obtained during the field investigation were subjected to the following laboratory analyses:

Test	Sample(s)	Purpose
Consolidation	Undisturbed native soils (6)	Allowable soil bearing capacity and settlement analysis
Sieve Analysis and Atterberg Limits	Native subgrade soils (12)	Soil classification
Proctor	Native subgrade soils (1)	Moisture-Density Relationship
pH and Resistivity	Native subgrade soils (1)	Soil corrosion potential - metals
Sulfate and Chloride Concentrations	Native subgrade soils (1)	Soil corrosion potential - concrete

Refer to Appendix C of this report for a complete listing of laboratory test results.



## **SITE CONDITIONS**

### General Notes:

- |                                     |  |
|-------------------------------------|--|
| (1) Topographic relief              | The proposed pedestrian bridge will span over the existing Grand Canal. The ground surface on each side of the canal is generally flat. The ground surface along the alignment of the pathway is generally flat or gently sloping. |
| (2) Fill                            | Approximately 2.5 to 3.5 feet of possible or existing fill was encountered at the locations of the borings. The fill did not appear to be well-compacted based on the penetration blow counts during the soil sampling.            |
| (3) Evidence of surface disturbance | The surface of the site has been graded on each side of the canal, and each side of the canal is currently used for maintenance vehicle access.  |
| (4) Site use                        | The site is currently occupied by the Grand Canal which runs east-west through the area. The proposed bridge and bike and pedestrian improvements will allow for better access to the area around the Pueblo Grand Museum.         |

## **GEOLOGIC HAZARDS**

The following list represents a general summary of the on-site soil characteristics relative to engineering applications:

- |  |  |
|--|--|
| Depth to groundwater                               | - None encountered   |
| Potential for soil expansion                       | - Low based on the laboratory plasticity index test data for the upper fill and native soils at the site   |
| Potential for soil collapse                        | - High based on the penetration blow count and laboratory consolidation data for upper fill and native soils at the site   |
| Existence of loose soil at shallow depths          | - Probable   |
| Potential for excessive differential soil movement | - High based on the potential for soil collapse for the upper site soils   |
| Potential for earth subsidence fissures            | - Not applicable   |
| Frost depth  | - Not applicable   |
| Presence of caliche, bedrock or other hard stratum | - Very dense sandy gravel soils were encountered below a depth of 19 feet at the locations of Borings 1 and 2. Hard basalt bedrock was encountered below depths ranging from 40 to 41 feet at Borings 1 and 2. |
| 2012 IBC Site Class                                | - C, very dense soil or soft rock  |



## RECOMMENDATIONS

The recommendations contained herein are based upon the properties of the surface and subsurface soils as described by the field and laboratory testing, the results of which are presented and discussed in this report. Alternate recommendations may be possible and will be considered upon request.

### Drilled Shaft Foundations

Since the abutments for the new pedestrian bridge will rest on the banks of the canal at each end, the use of conventional foundations is not recommended. It is our understanding that the bottom of the canal is approximately 9 feet lower than the elevation of the canal banks. Drilled shaft foundations are recommended for support of the new pedestrian bridge. The recommended minimum shaft diameter is 2.5 feet.

Standard Penetration Data (N-values), local geology, and the boring log data were utilized to evaluate the allowable axial capacity for a potential drilled shaft foundation system. The soil parameters for all the soil layers below the existing grade are provided as follows:

The following table presents soil parameters to be used in computer programs to analyze lateral stability (such as LPILE Version 2015):

Depth (ft)	k Soil Modulus (pci)	Undrained Shear Strength (psf)	Cohesion (psf)	Internal Friction Angle (degrees)	Soil Unit Weight (PCF)	N-Value	$\epsilon_{50}$
0 to 10 feet Loose to medium dense clayey silty sand	100	400	200	27	105	6	-
10 to 20 feet Loose to medium dense clayey silty sand to sandy clay	250	1000	500	28	105	12	-
20 to 40 feet Very dense sandy gravel	450	0	0	38	125	>50	-
Below 40 feet Hard basalt bedrock	450	0	0	38	130	>100	-

The upper 19 feet of the site soils were considered to be clay (FHWA Spec.) due to the high percent passing the No. 200 sieve for the tested samples. An LRFD resistance factor of 0.45 was applied to the side friction and 0.4 to end bearing for these upper clayey silty sand soils. The sandy gravel soils below a depth of 19 feet were considered to be gravelly sand soils.

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(Rollins et. Al.). An LRFD resistance factor of 0.6 was applied to the side friction and 0.55 to the end bearing for the sandy gravel soils. The axial design graphs were computed by Ensoft's SHAFT Version 2012 program which is the industry standard for drilled shaft design.

The following graphs depict the allowable axial capacity versus depth for drilled shaft diameters of 2.5 feet and 3.0 feet for drilled shaft foundations. The design graphs for axial capacity are based on a combination of end bearing and skin friction, neglecting the upper 9.0 feet of soil. **The allowable loads for axial capacity are noted in tons and the values shown should be doubled to determine the allowable load values in kips.**

The total vertical settlement of the drilled shaft due to axial loading is anticipated to be on the order of less than 0.10-inch for a load of 45 tons, with differential settlement expected to also be less than 0.10-inch. The settlement will occur during construction due to the granular nature of the lower sandy gravel soils. The following settlement graphs were computed by Ensoft's SHAFT Version 2012 program, which verified the anticipated settlements at the estimated maximum foundation load.

For straight, machine-cleaned drilled shafts, **20.0 feet** below the existing site grade is recommended as the minimum embedment depth for drilled shaft foundations. However, the drilled shafts must be embedded a minimum of 1.0 feet into the sandy gravel soils encountered below a depth of 19 feet at the locations of the borings. The embedment depth for the drilled shafts refers to the depth below the existing site elevation at the time of this study.

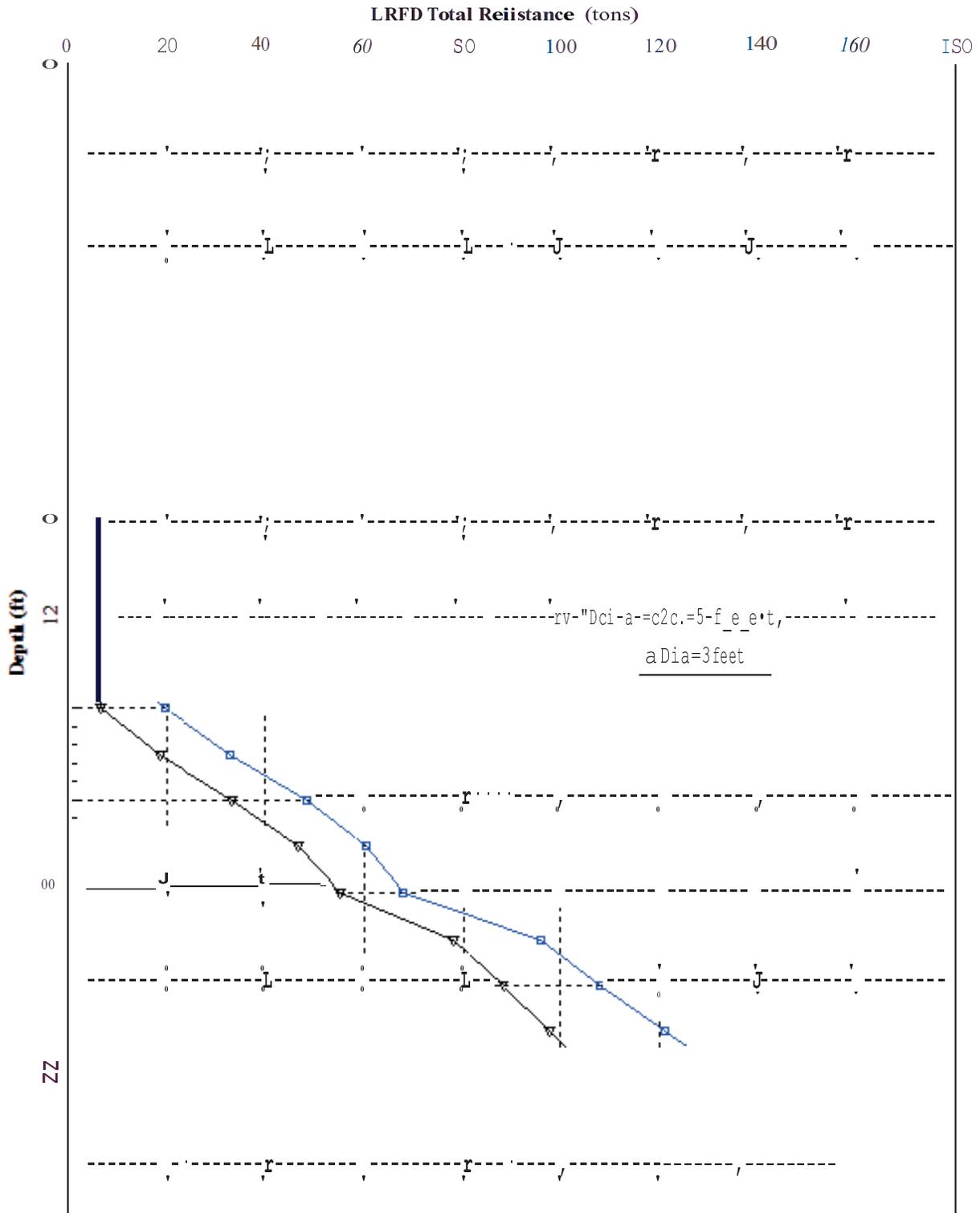
The weight of the foundation below grade was not considered in the design of the axial drilled shaft since the removed soil is similar to the weight of the concrete for the drilled shaft.

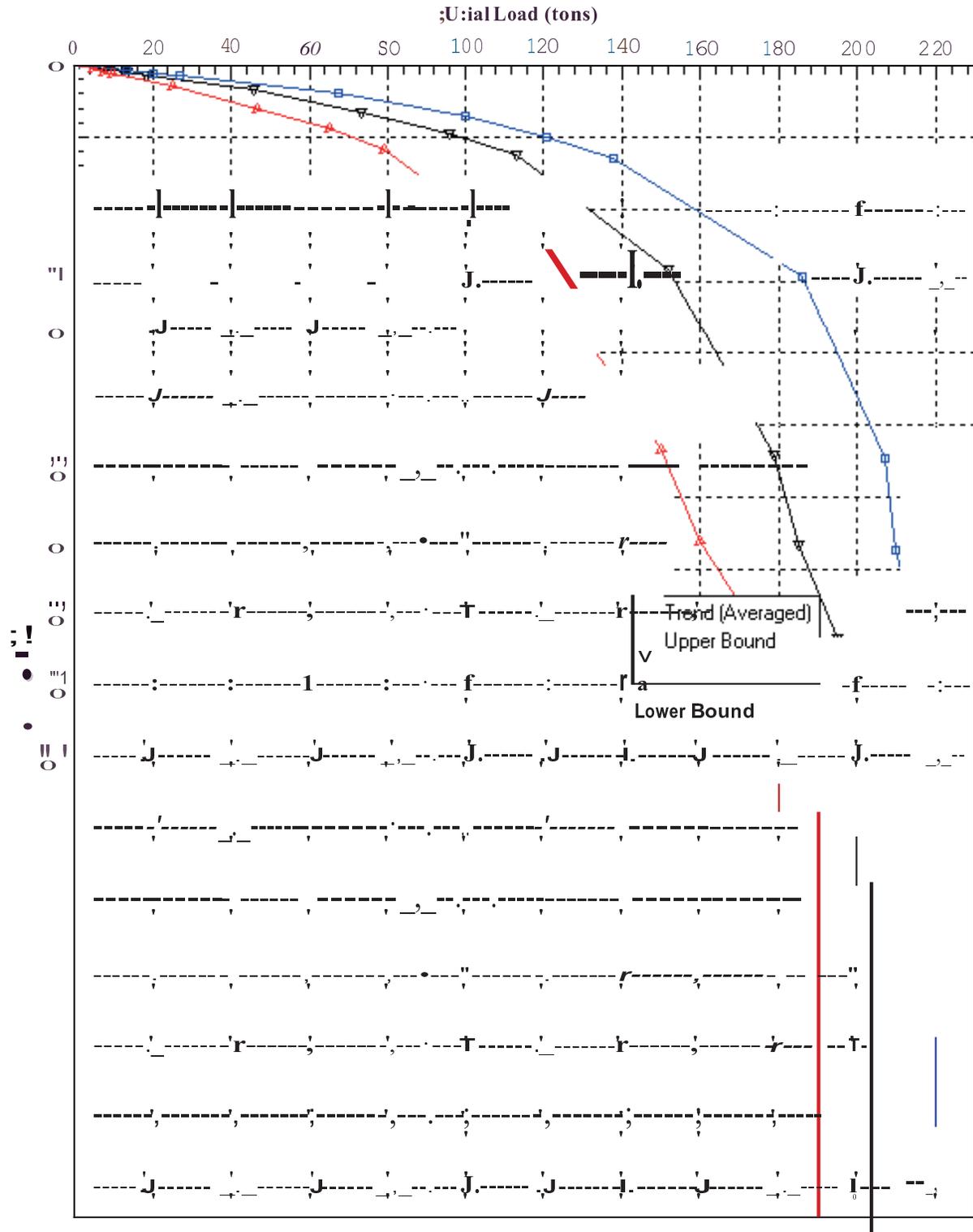
**Drilled shafts may be spaced no closer than 3D (3 times the shaft diameter), center to center.**

Prior to the placement of reinforcing steel or concrete, all drilled shaft excavations should be examined by the project geotechnical engineer, **ACS Services LLC**, or his representative. The excavations should be inspected for location, plumbness, amount of loose and/or compressible material in the bottom of the excavation, and the depth and diameter of the shaft. Formal permission to proceed with construction should subsequently be given in a timely manner.

Unless otherwise specified in the project specifications, the excavation for a drilled shaft should be made so that the axis of the shaft at the top of the shaft is no more than 2 inches from its plan location. In addition, the drilled shaft should be within 2 percent of plumb for the total length of the shaft, with plumbness measured from the as-constructed position of the top of the excavation (provided the excavation meets the first tolerance noted above). The top elevation of the shaft should be no more than 1 inch above or 3 inches below the plan elevation and the diameter of the drilled shaft should be no less than the plan dimension.

For the following graphs, the depth of 0 is considered to be at the existing ground surface.





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Unless otherwise specified in the project specifications, the excavation for a drilled shaft should be made so that the axis of the shaft at the top of the shaft is no more than 2 inches from its plan location. In addition, the drilled shaft should be within 2 percent of plumb for the total length of. In order to minimize problems with the sides of the excavation becoming unstable, the excavation should be completed in a continuous operation and the concrete should be placed without undue delay. Ideally, the concrete would be placed the same day the excavation is completed.

Where possible, reinforcing steel should extend the full length of the drilled shaft. The clear spacing between bars of the rebar cage shall be at least three times the size of the maximum coarse aggregate. Heavy coatings of rust, chemicals, or other surface contaminants (including soil) must be removed before placement.

The strength of the concrete should be sufficient to withstand the axial load on the drilled shaft foundation. The concrete should be designed, from a strength standpoint, so that the slump during placement is over 6 inches, usually in the range of 6 to 8 inches. Admixtures and retarders are not recommended for use in the concrete for the drilled shafts except to make it more flowable. Steps should be taken to prevent an appreciable loss of concrete slump during placement and excessive concrete shrinkage subsequent to placement.

Concrete should be placed through a hopper or other device approved by the project geotechnical engineer so that it is channeled in such a manner to free fall and clear the walls of the excavation and reinforcing steel until it strikes the bottom. Adequate compaction will be achieved by free fall of the concrete up to the top 5 feet. The top 5 feet of concrete should be vibrated internally in order to achieve proper compaction.

As mentioned previously, continuous observation of the construction of drilled shafts should be carried out by the geotechnical engineer or his representative, who should also verify proper diameter, depth, and cleaning, as well as verify the nature of materials encountered in the shaft excavations.

Concrete placement should be continuously observed to ensure that it meets requirements. A quality control report should be submitted on each shaft, stating in writing that all details were observed and requirements met.

A minimum of MAG A (3000 PSI), or equivalent, concrete with Type II cement should be used for drilled shaft foundation.

### **Lightly Loaded Conventional Spread Foundations**

It is recommended that all lightly loaded conventional spread foundations be embedded a minimum of 1.5 feet below the lowest adjacent grade within 5.0 feet of the outside edge of the foundation.

For all construction, 2.0 feet and 1.33 feet are recommended as the minimum width of spread and continuous footings, respectively.



The following tabulation may be used in the design of spread (column) and continuous (wall) foundations for the proposed structures. The column labeled Bearing stratum refers to the soil layer that the footing pad rests on, and does not imply that the foundation be fully embedded into that particular stratum.

**Shallow Spread Foundations Bearing on Hand-Tamped Existing Fill or Native Undisturbed Soils:**

Foundation Depth (ft)	Bearing Stratum	Allowable Soil Bearing Pressure	Allowable Load	
			Wall (KLF)	Column (KIP)
1.5	Minimum 6 inches of hand-tamped native undisturbed soils*	1000 PSF	3.0	49

\*The bottom of the foundation excavations must be hand-tamped to achieve 95% of the maximum density as determined by ASTM D698A to a depth of 6 Inches. The compaction must be verified by a representative of **ACS Services LLC** prior to placing rebar and concrete.

The previously tabulated bearing allowable soil bearing pressure and the allowable wall and column loads are based on a total settlement of 1/2 inch. **It is anticipated that the magnitude of differential settlement will be roughly 1/4 inch** if construction is performed in accordance with locally accepted standards and the recommendations contained herein.

The allowable loads are based on maximum footing sizes of 3.0 and 7.0 feet for continuous and spread footings, respectively. Greater loads and larger footings may be accommodated by the listed bearing values, if there is toleration for increased settlements. This office should be contacted if this situation should arise.

The weight of the foundation below grade may be neglected in dead load computations.

The previously tabulated allowable soil bearing pressures should be considered allowable maximums for dead plus design live loads and may be increased by one-third when considering total loads, including wind or seismic forces or other transient loading conditions.

**Retaining wall or building foundations to be constructed in close proximity to retention basins or flood irrigated areas (within 5.0 feet) should be embedded 1.0 feet deeper than the stated depths in the preceding bearing capacity tables.**

Shallow foundations that are adjacent to lower foundation areas must be stepped down so that their base is below the lower backfill materials, and below a line projected upward from the nearest lower foundation edge at a 45 degree angle. In no case should ancillary structures be designed or constructed, whose foundations will bear into deeper, non-verified backfills.

This firm recommends that continuous footings and stem walls be reinforced, and bearing walls be constructed with frequent joints to better distribute stresses in the event of localized foundation movements. Similarly, all masonry walls should be constructed with both vertical and horizontal reinforcement.



It is strongly recommended that all foundation excavations be inspected (prior to the placement of reinforcing steel) by a representative of the project geotechnical engineer, **ACS Services LLC**, to ensure that they are free of loose soil which may have blown or sloughed into the excavations, the embedment depth is adequate, and the dimensions are in accordance with the project requirements. **It will also be necessary for the geotechnical engineer to verify that conventional spread footings with a minimum foundation embedment depth of 1.5 feet will bear upon hand-tamped existing fill or native undisturbed soil at the required embedment depth to achieve a design soil bearing pressure of 1000 PSF.**

A minimum of MAG A (3000 PSI), or equivalent, concrete with Type II cement should be used for footings, stem walls and floor slabs.

**Lateral Stability Analyses**

The following tabulation presents recommendations for lateral stability analyses for existubg fill or native undisturbed soil and controlled compacted fill:

<sup>a</sup>Foundation Toe Pressures..... 1.33 x max. allowable

	Existing Fill or Native Undisturbed Soils	Controlled Compacted Fill
<sup>b</sup> Lateral Backfill Pressures:		
Unrestrained walls	38 psf/ft.	34 psf/ft.
Restrained walls <sup>c</sup>	56 psf/ft.	52 psf/ft.
Lateral Passive Pressures For Surficial Soils:		
Continuous walls/footings	195 psf/ft.	240 psf/ft.
Spread columns/footings	291 psf/ft.	358 psf/ft.
Coefficient of Base Friction For Surficial Soils:		
Independent of passive resistance	0.53	0.62
In conjunction with passive resistance	0.36	0.42

**Superscript Explanations**

<sup>a</sup>Increase in allowable foundation bearing pressure (previously stated) for foundation toe pressures due to eccentric or lateral loading.

<sup>b</sup>Equivalent fluid pressures for vertical walls and horizontal backfill surfaces (maximum 12.0 feet in height). Pressures do not include temporary forces during compaction of the backfill, expansion pressures developed by overcompacted clayey backfill, hydrostatic pressures from inundation of backfill, or surcharge loads. Walls should be suitably braced during backfilling to prevent damage and excessive deflection.

<sup>c</sup>The backfill pressure can be reduced to the unrestrained value if the backfill zone between the wall and cut slope is a narrow wedge (width less than one-half height).



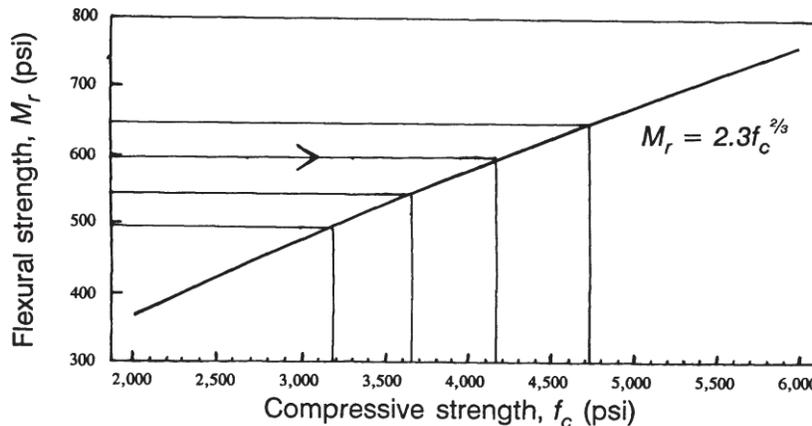
**Pathway Pavement Design**

It is our understanding that the pathway pavement is planned to be concrete. It is our understanding that moderate to heavy maintenance vehicles may utilize the pathway on occasion. The recommended pavement section for the bike pathway is as follows:

Alternate	Prepared Subgrade (Inches)	Concrete Pavement (Inches)
A <sup>a</sup>	8	7.0*

<sup>a</sup> - 20 year design life, with typical maintenance

**\*The above thickness for Portland Cement concrete pavement is based on a modulus of rupture of 600 PSI. The recommended concrete thicknesses should be increased in increments of 0.5 inch for every 50 PSI decrease in the modulus of rupture. The following chart relates rupture modulus to compressive strength.**



**All 8.0 inches of the prepared subgrade may be comprised of the existing fill or native site soils. The subgrade shall be compacted to 95% of the ASTM D698 maximum density in accordance with MAG 301, subgrade preparation, for sidewalks with vehicular traffic.**

Site grading within pavement areas should provide requisite subgrade support for the concrete pavement. A compacted subgrade of on-site soils or soils with comparable properties is assumed. The stability of compacted pavement subgrade soils is reduced under conditions of increased soil moisture. Therefore, pavement materials should not be placed when the surface is in a wet condition. Adequate surface drainage should be provided away from the edge of paved areas to minimize lateral moisture transmission into the subgrade.

The concrete for the pathway shall conform to all requirements as established in MAG Section 725 for Class AA, 4000 psi concrete. Placement of the concrete for the pathway shall be in accordance with MAG 340 for sidewalk or MAG 324 for Portland cement concrete pavement.



**Fill Slope Stability**

The maximum fill slopes may conform to a 3:1 (horizontal:vertical) ratio if fill is placed in accordance with the recommendations contained herein.

**EARTHWORK**

The following final earthwork recommendations are presented as a guide in the compilation of construction specifications. The final recommendations are not comprehensive contract documents and should not be utilized as such.

**Site Preparation**

It is recommended that any vegetation, required removals, and all other deleterious matter be removed from proposed foundation and pathway pavement areas at the commencement of site grading activities.

Subsequent to the surface grubbing efforts and removal of the above listed items, and prior to the placement of subgrade or subbase fill, the exposed existing fill or native soils should be prepared to a minimum depth of 8.0 inches in the proposed pathway pavement areas.

All removed existing fill or native soils are considered by this firm to be suitable for use as engineered fill, provided that it is free of vegetation, debris, and oversized particles (greater than 3.0 inches).

All engineered fill required to bring the structure or backfill areas up to finish grade should be placed in horizontal lifts not exceeding 6.0 inches compacted thickness or in horizontal lifts with thicknesses compatible with the compaction equipment utilized. Fill placement in wall or foundation backfill areas should involve horizontal layers placed in 6.0-inch lifts, such that each successive lift is benched into the native soils a minimum lateral distance of 5.0 feet.

**Compaction and Moisture Content Recommendations**

Compaction of backfill, subgrade soil, subbase fill, and base course materials should be accomplished to the following density criteria:

<b><u>Material</u></b>	<b><u>Percent Compaction (ASTM D698)</u></b>
On-site native and fill soils used as engineered fill or backfill for structural support :	
Foundation areas and foundation backfill	95 min.
Concrete pathway areas	95 min.
Imported subbase fill or backfill for structural support:	
Foundation areas and foundation backfill	95 min.
Concrete pathway areas	95 min.

**Increase the required degree of compaction to a minimum of 98 percent for fill materials greater than 5.0 feet below final grade.**



During construction and prior to concrete placement, moisture contents should be controlled as follows:

<b>Material</b>	<b>Compaction Moisture Content Range</b>
On-site native or fill soils:	
Foundation areas and foundation backfill	optimum -2 to optimum +2%
Concrete pathway areas	optimum -2 to optimum +2%
Imported fill material:	
Foundation areas and foundation backfill	optimum -2 to optimum +2%
Concrete pathway areas	optimum -2 to optimum +2%

Any soil disturbed during construction shall be compacted to the applicable percent compaction as specified herein.

Natural undisturbed soils or compacted soils subsequently disturbed or removed by construction operations should be replaced with materials compacted as specified above.

All imported fill material to be used as structural-supporting fill, should be free of vegetation, debris, and other deleterious material and meet the following requirements:

Maximum Particle Size	3 inches
Maximum Plasticity Index	15
Maximum Passing #200 Sieve	60 percent
Maximum Expansion	1.5 %*

\* - Performed on a sample remolded to 95 percent of the maximum ASTM D698 density at roughly 2.0 percent below the optimum moisture content, under a 100 psf surcharge.

Water settling and/or slurry shall not be used, in any case, to compact or settle surface soils, fill material, or trench backfill within 10.0 feet of any proposed structure.

### **Shrinkage**

Assuming the average degree of compaction will approximate 95 percent of the standard maximum density, the approximate shrinkage of the reworked existing fill or native site soils should be 15 to 20 percent based on the field blow count and laboratory test data. This may result in a vertical elevation change of approximately 0.15 to 0.20 feet following the precompaction effort.

### **Excavating Conditions**

Conventional excavating and drilling equipment may be utilized to excavate the site soils to a depth of 19 feet at the locations of Borings 1 and 2. Caving conditions may be encountered in the sandy gravel soils below a depth of 19 feet at the locations of Borings 1 and 2. However, only one foot of penetration into the sandy gravel soils is required for drilled shaft foundations.



Excavations greater than 4.0 feet should be sloped or braced as required to provide personnel safety and satisfy local safety code regulations.

## **CONSTRUCTION OBSERVATION**

**ACS Services LLC** should be retained to provide documentation that the recommendations set forth are met. These include but are not limited to documentation of site clearing activities, verification of fill suitability and compaction, and inspection of footing excavations. Relative to field density testing, a minimum of 1 field density test should be taken for every 2500 square feet of building area, per 6.0-inch layer of compacted fill.

Prior to construction, we recommend the following:

1. Consultation with the design team in all areas that concern soils and rocks to ensure a clear understanding of all key elements contained within this report.
2. Review of the General Structural Notes to confirm compliance to this report and determination of which allowable soil bearing capacity has been selected by the project structural engineer (this directly affects the extent of earthwork and foundation preparation at the site).
3. This firm be notified of all specific areas to be treated as special inspection items (designated by the architect, structural engineer or governmental agency).

Relative to the involvement of **ACS Services LLC** with the project during the course of construction, we offer the following recommendations:

1. The site or development owner should be directly responsible for the selection of the geotechnical consultant to provide testing and observation services during the course of construction.
2. **ACS Services LLC** should be contracted by the owner to provide the course of construction testing and observation services for this project, as we are most familiar with the interpretation of the methodology followed herein.
3. All parties concerned should understand that there exists a priority surrounding the testing and observation services completed at the site. From a geotechnical perspective, it is imperative to understand the following priority list, presented in order of decreasing priority.
  - A. Foundation observations (compliance with the General Structural Notes, depths, bearing strata, etc.).
  - B. Bridge abutment wall and foundation backfill testing.
  - C. Utility trench backfill
  - D. Special inspections as dictated by the local municipality.
  - E. Concrete sampling and testing for footings, walls, and bridge deck.
  - F. Subgrade testing and concrete sampling and testing for proposed pathway pavement areas.

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**Please understand that Item A above is the only area where ACS Services LLC has control on-site (once it has started) to verify or deny compliance with applicable standards, without the need for any entity to schedule testing activities with this office. Other than Item A, it shall be another entity's responsibility to schedule all testing and observation services, to coincide with the progress of construction. Since this firm is not a contributor to the construction schedule, we do not possess an inherent knowledge as to when our services shall be needed or required.**

## **LIMITATIONS**

Since our investigation is based upon review of background data, the site materials observed, selected laboratory testing and engineering analysis, the conclusions and recommendations are professional opinions. Our professional services have been performed using that degree and skill ordinarily exercised, under similar circumstances, by reputable geotechnical engineers practicing in this or similar localities. These opinions have been derived in accordance with current standards of practice and no other warranty, express or implied, is made.

This report is not intended as a bidding document, and any contractor reviewing this report must draw his own conclusions regarding specific construction techniques to be used on this project.

The scope of services carried out by **ACS Services LLC** does not include an evaluation pertaining to environmental issues. If these services are required by the lender, we would be most pleased to discuss the varying degrees of environmental site assessments.

The materials encountered on the subject site and utilized in our laboratory analysis are believed to be representative of the total area; however, soil and rock materials do vary in character between points of investigation. The recommendations contained in this report are based on the assumption that the soil conditions do not deviate appreciably from those disclosed by the investigation. Should unusual material or conditions be encountered during construction, the soil engineer must be notified so that he may make supplemental recommendations if they should be required.

This report is issued with the understanding that it is the responsibility of the owner to see that its provisions are carried out or brought to the attention of those concerned. In the event that any changes of the proposed project are planned, the conclusions and recommendations contained in this report shall be reviewed and the report shall be modified or supplemented as necessary.

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## DEFINITION OF TERMINOLOGY

Allowable Soil Bearing Capacity	The recommended maximum contact stress developed at the interface of the foundation element and the supporting material.
Aggregate Base Course (ABC)	A sand and gravel mixture of specified gradation, used for slab and pavement support.
Backfill	A specified material placed and compacted in a confined area.
Base Course	A layer of specified material placed on a subgrade or subbase.
Base Course Grade	Top of base course.
Bench	A horizontal surface in a sloped deposit.
Caisson	A concrete foundation element cased in a circular excavation, which may have an enlarged base. Sometimes referred to as a cast-in-place pier.
Concrete Slabs-on-Grade	A concrete surface layer cast directly upon a base, subbase, or subgrade.
Controlled Compacted Fill	Engineered Fill. Specific material placed and compacted to specified density and/or moisture conditions under observation of a representative of a soil engineer.
Differential Settlement	Unequal settlement between or within foundation elements of a structure.
Existing Fill	Materials deposited through the action of man prior to exploration of the site.
Expansive Potential	The potential of a soil to increase in volume due to the absorption of moisture.
Fill	Materials deposited by the action of man.
Finish Grade	The final grade created as a part of the project.
Heave	Upward movement due to expansion or frost action.
Native Grade	The naturally occurring ground surface.
Native Soil	Naturally occurring on-site soil.
Overexcavate	Lateral extent of subexcavation.
Rock	A natural aggregate of mineral grains connected by strong and permanent cohesive forces. Usually requires drilling, wedging, blasting, or other methods of extraordinary force for excavation.
Scarify	To mechanically loosen soil or break down the existing soil structure.
Settlement	Downward movement of the soil mass and structure due to vertical loading.
Soil	Any unconsolidated material composed of disintegrated vegetable or mineral matter, which can be separated by gentle mechanical means, such as agitation in water.
Strip	To remove from present location.
Subbase	A layer of specified material between the subgrade and base course.
Subexcavate	Vertical zone of soil removal and recompaction required for adequate foundation or slab support
Subgrade	Prepared native soil surface.

November 21, 2016

**Project 1601267 – Grand Canal Bike and Pedestrian Improvements**

44<sup>th</sup> Street and Washington

Phoenix, Arizona 85034



## APPENDIX A



NORTH  
N.T.S. ↑

PROJECT NUMBER: 1601267

**FIGURE 1**

**ACS SERVICES LLC**  
2235 W BROADWAY RD  
MESA, ARIZONA 85202  
(480) 968-0190  
(480) 968-0156 FAX  
WWW.ACSSERVICESLLC.COM

**VICINITY MAP**  
Grand Canal Bike and Pedestrian Improvements  
144<sup>th</sup> Street and Washington  
Phoenix, AZ. 85034



NORTH  
N.T.S.



PROJECT NUMBER: 16012617

FIGURE 2

**ACS SERVICES LLC**

2235 W BROADWAY RD  
MESA, ARIZONA 85202  
(480) 968-0190  
(480) 968-0156 FAX  
WWW.ACSSERVICESLLC.COM

**SITE PLAN & APPROXIMATE  
BORING LOCATIONS**  
Grand Canal Bike and Pedestrian Improvements  
144<sup>th</sup> Street and Washington  
Phoenix, AZ. 85034

November 21, 2016

**Project 1601267 – Grand Canal Bike and Pedestrian Improvements**

44<sup>th</sup> Street and Washington

Phoenix, Arizona 85034



## APPENDIX B

# ACS SERVICES LLC

## BORING B-1

**For:** City of Phoenix - Materials Laboratory      **Date:** 8/29/2016      **Project No.** 1601267  
**Project:** Grand Canal Bike and Pedestrian Improvements      **Type of Boring:** 6.625-inch Auger/Air Percussion  
**Location:** 44th Street and Washington      **Field Engineer:** Nathan Sorensen  
Phoenix, AZ      **Location:** See Site Plan

Depth (Feet)	Blows per 6"	Moisture %	Dry Density (PCF)	USCS Soil Class	Remarks: Ring samples obtained from 1.5 to 2.5 feet, 4.0 to 5.0 feet and 9.0 to 10.0 feet
Description of Subsurface Conditions					
1		3.7		SC-SM	Brown clayey silty SAND with gravel, medium dense, damp, PI of 7 (possible fill)
2	R 6 6	6.8	103.4	SM	
3		7.2			
4					
5		R 3 3		6.9	
6	13.9				
7					
8					
9					
10	R 9 10	5.9	101.5	SC-SM	
11					
12					
13					Brown sandy CLAY, stiff, moist, PI of 17
14					
15	S 4 4 6	12.2	101.5	CL	
16					
17					
18					
19					
20	S 4 10			GM-GP	

# ACS SERVICES LLC

## BORING B-1

<b>For:</b> City of Phoenix - Materials Laboratory	<b>Date:</b> 8/29/2016	<b>Project No.:</b> 1601267
<b>Project:</b> Grand Canal Bike and Pedestrian Improvements	<b>Type of Boring:</b> 6.625-inch Auger/Air Percussion	
<b>Location:</b> 44th Street and Washington Phoenix, AZ	<b>Field Engineer:</b> Nathan Sorensen	
	<b>Location:</b> See Site Plan	

Depth (Feet)	Blows per 6"	Moisture %	Dry Density (PCF)	USCS Soil Class	Remarks:
					Description of Subsurface Conditions
21	S 18			GM-GP	Brown sandy GRAVEL, some silt, medium dense, damp, NP
22					
23					
24					Stopped auger drilling at 24 feet, air percussion drilling started
25	S 18 50/6"			GM-GP	Gray sandy GRAVEL, some silt, very dense, damp, NP
26					
27					
28					
29					
30	S 35 50/6"			GM-GP	Gray sandy GRAVEL, some silt, very dense, damp, NP
31					
32					
33					
34					
35	S 29 33			GM-GP	Brown sandy GRAVEL, some silt, very dense, damp, NP
36	31				
37					
38					
39					
40	S 50/4"			GM-GP	Brown sandy GRAVEL, some silt, very dense, damp, NP Apparent hard BASALT BEDROCK encountered at 40 feet

# ACS SERVICES LLC

## BORING B-1

<b>For:</b> City of Phoenix - Materials Laboratory	<b>Date:</b> 8/29/2016	<b>Project No.:</b> 1601267
<b>Project:</b> Grand Canal Bike and Pedestrian Improvements	<b>Type of Boring:</b> 6.625-inch Auger/Air Percussion	
<b>Location:</b> 44th Street and Washington Phoenix, AZ	<b>Field Engineer:</b> Gene Hansen	<b>Location:</b> See Site Plan

Depth (Feet)	Blows per 6"	Moisture %	Dry Density (PCF)	USCS Soil Class	Remarks:
					Description of Subsurface Conditions
41				BR	Dark gray BASALT BEDROCK, very dense, hard consistent drilling, dry, NP
42					Very small dark gray chips produced by the air percussion drilling from 40-44 feet
43					
44					
45	S 50/1"			BR	Dark gray BASALT BEDROCK, very dense, hard consistent drilling, dry, NP
46					Terminated boring at 44.1 feet on hard BASALT BEDROCK
47					
48					
49					
50					
51					
52					
53					
54					
55					
56					
57					
58					
59					
60					

# ACS SERVICES LLC

## BORING B-2

<b>For:</b> City of Phoenix - Materials Laboratory <b>Project:</b> Grand Canal Bike and Pedestrian Improvements <b>Location:</b> 44th Street and Washington Phoenix, AZ	<b>Date:</b> 8/30/2016 <b>Project No.</b> 1601267 <b>Type of Boring:</b> Air Percussion <b>Field Engineer:</b> Yutong Lu <b>Location:</b> See Site Plan
--	--

Depth (Feet)	Blows per 6"	Moisture %	Dry Density (PCF)	USCS Soil Class	Remarks: Ring sample obtained from 1.5 to 2.5 feet
Description of Subsurface Conditions					
1		4.5		SM	FILL - Brown gravelly SAND with silt, loose, damp, NP
2					
3	R 3	4.1		SM	FILL - Brown silty gravelly SAND, loose, damp, NP
	R 3	12.1	95.8	CL	NATIVE - Brown sandy CLAY, firm, moist, PI of 10
4					
5	R 3	5.7		SM	Brown silty SAND, trace gravel, loose, moist, NP
	5	13.6	90.7		
6					
7					
8					
9					
10	R 4	8.5		CL-ML	Dark brown sandy CLAY to SILT, stiff, moist, PI of 6
	7	10.2	101.5		
11					
12					
13					
14					
15	S 4			CL	Brown sandy CLAY, stiff, moist, low to medium PI
	5				
16	S 8				
17					
18					
19					
20	S 21 50/4"			GM-GP	Light brown sandy GRAVEL, some silt, very dense, slightly damp, NP

# ACS SERVICES LLC

## BORING B-2

<b>For:</b> City of Phoenix - Materials Laboratory <b>Project:</b> Grand Canal Bike and Pedestrian Improvements <b>Location:</b> 44th Street and Washington Phoenix, AZ	<b>Date:</b> 8/30/2016 <b>Project No.</b> 1601267 <b>Type of Boring:</b> Air Percussion <b>Field Engineer:</b> Yutong Lu <b>Location:</b> See Site Plan
--	--

Depth (Feet)	Blows per 6"	Moisture %	Dry Density (PCF)	USCS Soil Class	Remarks:
					Description of Subsurface Conditions
21	S 15 50/6"			GM-GP	Brown sandy GRAVEL, some silt, very dense, damp, NP
22					
23					
24					
25					
26	S 50/5"			GM-GP	Gray sandy GRAVEL, some silt, very dense, damp, NP
27					
28					
29					
30					
31	S 17 22 33			GM-GP	Brown sandy GRAVEL, some silt, very dense, damp, NP
32					
33					
34					
35					
36	S 50/4"			GM-GP	Brown sandy GRAVEL, some silt, very dense, damp, NP
37					
38					
39					
40					

# ACS SERVICES LLC

## BORING B-2

<b>For:</b> City of Phoenix - Materials Laboratory <b>Project:</b> Grand Canal Bike and Pedestrian Improvements <b>Location:</b> 44th Street and Washington Phoenix, AZ	<b>Date:</b> 8/30/2016 <b>Project No.</b> 1601267 <b>Type of Boring:</b> Air Percussion <b>Field Engineer:</b> Gene Hansen <b>Location:</b> See Site Plan
--	--

Depth (Feet)	Blows per 6"	Moisture %	Dry Density (PCF)	USCS Soil Class	Remarks:
					Description of Subsurface Conditions
41				GM-GP	Brown sandy GRAVEL, some silt, very dense, damp, NP Apparent hard BASALT BEDROCK encountered at 41 feet
42				BR	Dark gray BASALT BEDROCK, very dense, hard consistent drilling, dry, NP
43					Very small dark gray chips produced by the air percussion drilling from 41-44 feet
44					
45	S 50/1"			BR	Dark gray BASALT BEDROCK, very dense, hard consistent drilling, dry, NP
46					Terminated boring at 44.1 feet on hard BASALT BEDROCK
47					
48					
49					
50					
51					
52					
53					
54					
55					
56					
57					
58					
59					
60					

# ACS SERVICES LLC

## BORING B-3

**For:** City of Phoenix - Materials Laboratory  
**Project:** Grand Canal Bike and Pedestrian Improvements  
**Location:** 44th Street and Washington  
 Phoenix, AZ

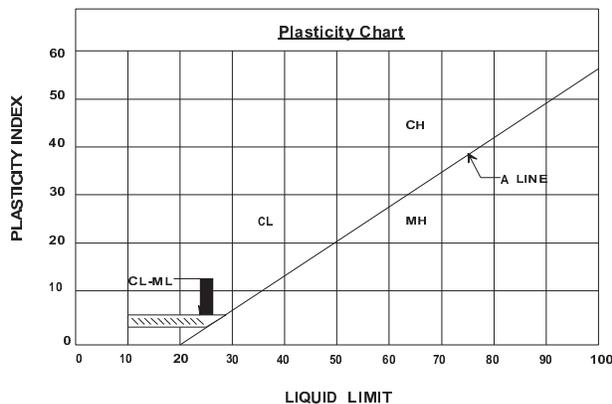
**Date:** 8/31/2016      **Project No.** 1601267  
**Type of Boring:** 6.625-inch Auger  
**Field Engineer:** Nathan Sorensen  
**Location:** See Site Plan

Depth (Feet)	Blows per 6"	Moisture %	Dry Density (PCF)	USCS Soil Class	Remarks: Ring sample obtained from 1.5 to 2.5 feet		
Description of Subsurface Conditions							
1	R 10 11	2.6	98.8	SM-ML	Brown silty gravelly SAND, medium dense, damp, PI of 2 (possible fill)		
2		6.1		SM-ML			
3		13.2		SM-ML			
4							
5	S 1 2 3  3 3 3	5.9		SC-SM	Brown silty clayey SAND, very loose to loose, moist, low PI (native)		
6							
7							
8							
9							
10						SC-SM	Brown silty clayey SAND, loose, moist, low PI
11							
12							
13							
14	S 2 2 1 1			CL-ML	Brown sandy CLAY to SILT, soft to firm, moist, low PI		
15							
16							
17					Terminated boring at 16 feet		
18							
19							
20							



## LEGEND

Major Divisions		Group Symbol	Typical Names	
Coarse-Grained Soils (Less than 50% passes No. 200 sieve)	Gravels (50% or less of coarse fraction passes No. 4 sieve)	Clean Gravels (Less than 5% passes No. 200 sieve)		
		GW	Well graded gravels, gravel-sand mixtures, or sand-gravel-cobble mixtures.	
		GP	Poorly graded gravels, gravel-sand mixtures, or sand-gravel-cobble mixtures.	
		GM	Silty gravels, gravel-sand-silt mixtures.	
	Gravels with Fines (More than 12% passes No. 200 sieve)	Limits plot below "A" line & hatched zone on Plasticity Chart.	GC	Clayey gravels, gravel-sand-clay mixtures.
		Limits plots above "A" line & hatched zone on Plasticity Chart.	SC	Clayey sands, sand-clay mixtures.
Sands (More than 50% of coarse fraction passes No. 4 sieve)	Clean Sands (Less than 5% passes No. 200 sieve)			
	SW	Well graded sands, gravelly sands.		
	SP	Poorly graded sands, gravelly sands.		
	SM	Silty sands, sand-silt mixtures.		
Fine-Grained Soils (50% or more passes No. 200 sieve)	Sils-Plot below "A" line & hatched zone on Plasticity Chart	Sils of Low Plasticity (Liquid Limit Less Than 50)		
		ML	Inorganic silts, clayey silts with slight plasticity.	
	Clays-Plot above "A" line & hatched zone on Plasticity Chart	Sils of High Plasticity (Liquid Limit More Than 50)		
		MH	Inorganic silts, micaceous or diatomaceous silty soils, elastic silts.	
Clays of Low Plasticity (Liquid Limit Less Than 50)		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.	
Clays of High Plasticity (Liquid Limit More Than 50)		CH	Inorganic clays of high plasticity, fat clays, sandy clays of high plasticity.	
<p><b>Note:</b> Coarse grained soils with between 5% &amp; 12% passing the No. 200 sieve and fine grained soils with limits plotting in the hatched zone on the Plasticity Chart to have double symbol.</p>				



### DEFINITIONS OF SOIL FRACTIONS

SOIL COMPONENT	PARTICLE SIZE RANGE
Cobbles	Above 3 in.
Gravel	3 in. to No. 4 sieve
Coarse gravel	3 in. to 3/4 in.
Fine gravel	3/4 in. to No. 4 sieve
Sand	No. 4 to No. 200
Coarse	No. 4 to No. 10
Medium	No. 10 to No. 40
Fine	No. 40 to No. 200
Fines (silt or clay)	Below No. 200 sieve

November 21, 2016

**Project 1601267 – Grand Canal Bike and Pedestrian Improvements**

44<sup>th</sup> Street and Washington

Phoenix, Arizona 85034



## **TEST DRILLING EQUIPMENT & PROCEDURES**

### **Drilling Equipment**

**ACS Services LLC** uses a CME-45 drill-rig capable of auger drilling to depths of 50 feet in southwestern soils. The drill is truck-mounted for rapid, low cost mobilization to the jobsite and on the jobsite. Drilling through soil or softer rock is performed with 6.625 inch O.D. hollow-stem auger. Carbide insert teeth are normally used on the auger bits so they can often penetrate rock or very strongly cemented soils that require blasting or very heavy equipment for excavation. The operation of well-maintained equipment by an experienced crew allows **ACS Services LLC** to complete drilling jobs to a depth of 50 feet with minimum downtime and maximum efficiency.

### **Sampling Procedures**

Dynamically driven tube samples are usually obtained at selected intervals in the borings by the ASTM D1586 procedure. In many cases, 2 inch O.D., 1<sup>3</sup>/<sub>8</sub>-inch I.D. samplers are used to obtain the standard penetration resistance. Undisturbed" samples of firmer soils are often obtained with 3 inch O.D. samplers lined with 2.42 inch I.D. brass rings. The driving energy is generally recorded as a number of blows of a 140-pound hammer, utilizing a 30-inch free fall drop, per foot of penetration. However, in stratified soils, driving resistance is sometimes recorded in 2 or 3-inch increments so that soil changes and the presence of scattered gravel or cemented layers can be readily detected and the realistic penetration values obtained for consideration in design. These values are expressed in blows per foot on the logs. Undisturbed sampling of softer soils is sometimes performed with thin-walled Shelby tubes (ASTM D1587). Tube samples are labeled and placed in watertight containers to maintain field moisture contents for testing from auger cuttings.

### **Continuous Penetration Tests**

Continuous penetration tests are performed by driving a 2-inch O.D. blunt nosed penetrometer adjacent to or in the bottom of test borings. The penetrometer is attached to 1<sup>5</sup>/<sub>8</sub>-inch O.D. drill rods to provide clearance and thus minimize side friction so that penetration values are as nearly as possible a measure of end resistance. Penetration values are recorded as the number of blows of a 140 pound hammer, utilizing a 30 inch drop required to advance the penetrometer in one foot increments or less.

### **Boring Records**

Drilling operations are directed by our field engineer or geologist who examines soil recovery and prepares boring logs. Soils are visually classified in accordance with the Unified Soil Classification System (ASTM D2487) with appropriate group symbols being shown on the logs.

November 21, 2016

**Project 1601267 – Grand Canal Bike and Pedestrian Improvements**

44<sup>th</sup> Street and Washington

Phoenix, Arizona 85034



## APPENDIX C

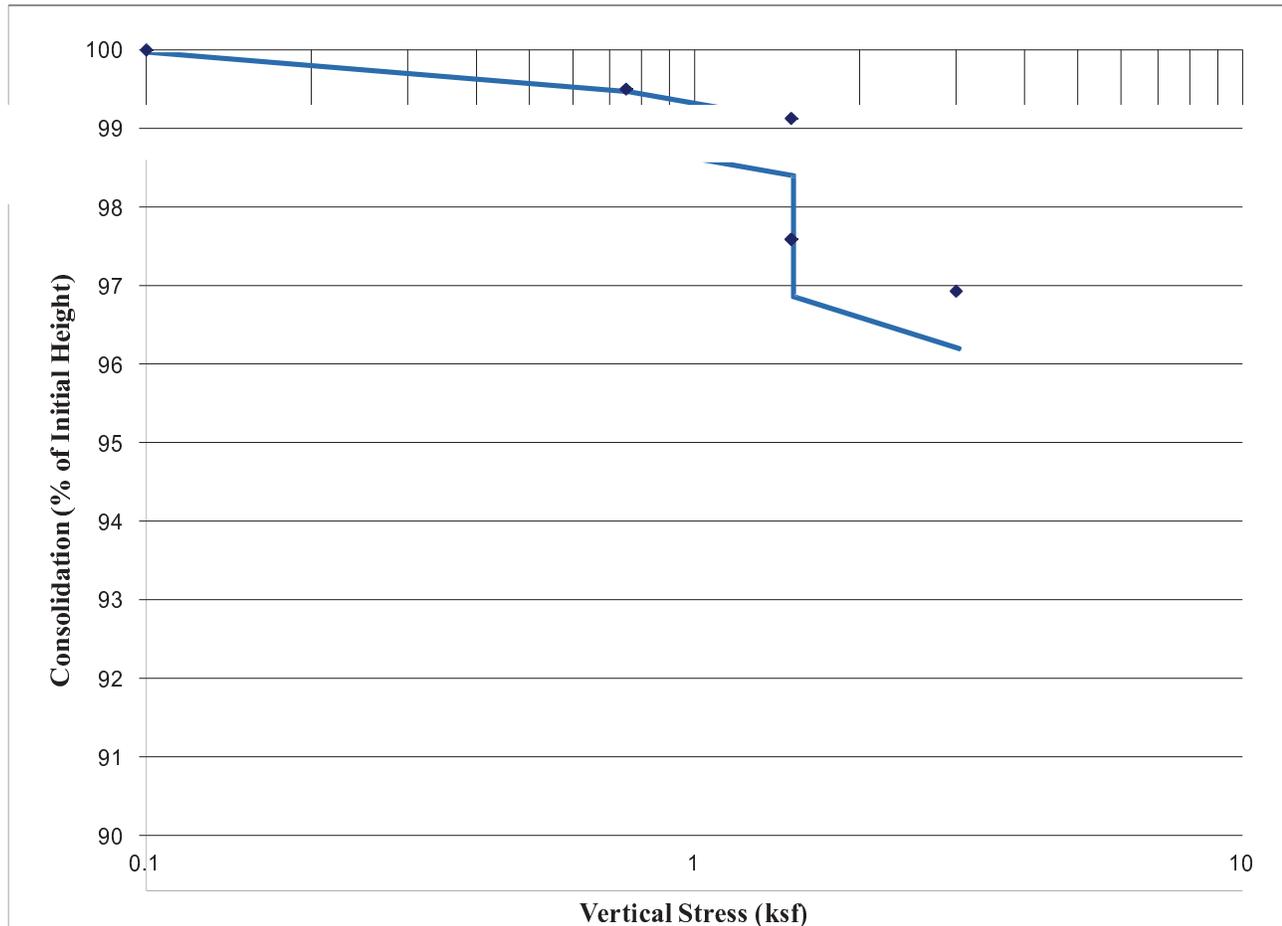
# ACS SERVICES LLC

**ENGINEERING DESIGN • MATERIAL TESTING • CONSTRUCTION INSPECTION**

**\* ONE-DIMENSIONAL CONSOLIDATION PROPERTIES OF SOILS (ASTM D2435)**

<b>ACS Project No.:</b>	<b>1601267</b>		
Lab No.:	16-2895-4	Material Type:	Native
Client:	City of Phoenix - Materials Lab	Date of Extraction:	8/29/2016
Project Name:	Grand Canal Bike and Pedestrian Improvements	Extracted By:	Nathan Sorensen
Project Address:	44th Street and Washington	Date of Lab Test:	9/14/2016
Project City:	Phoenix, AZ	Lab Tested By:	Nelton Nalwood
Sample Location:	B - 1 @ 1.5' - 2.5'	Reviewed By:	Gene Hansen

INITIAL VOLUME (cu.in)	4.60	FINAL VOLUME (cu.in)	4.46
INITIAL MOISTURE CONTENT	7.2%	FINAL MOISTURE CONTENT	18.3%
INITIAL DRY DENSITY(pcf)	103.4	FINAL DRY DENSITY(pcf)	106.7
INITIAL DEGREE OF SATURATION	32%	FINAL DEGREE OF SATURATION	88%
INITIAL VOID RATIO	0.6	FINAL VOID RATIO	0.6
ESTIMATED SPECIFIC GRAVITY	2.65	SATURATED AT	1.5 ksf



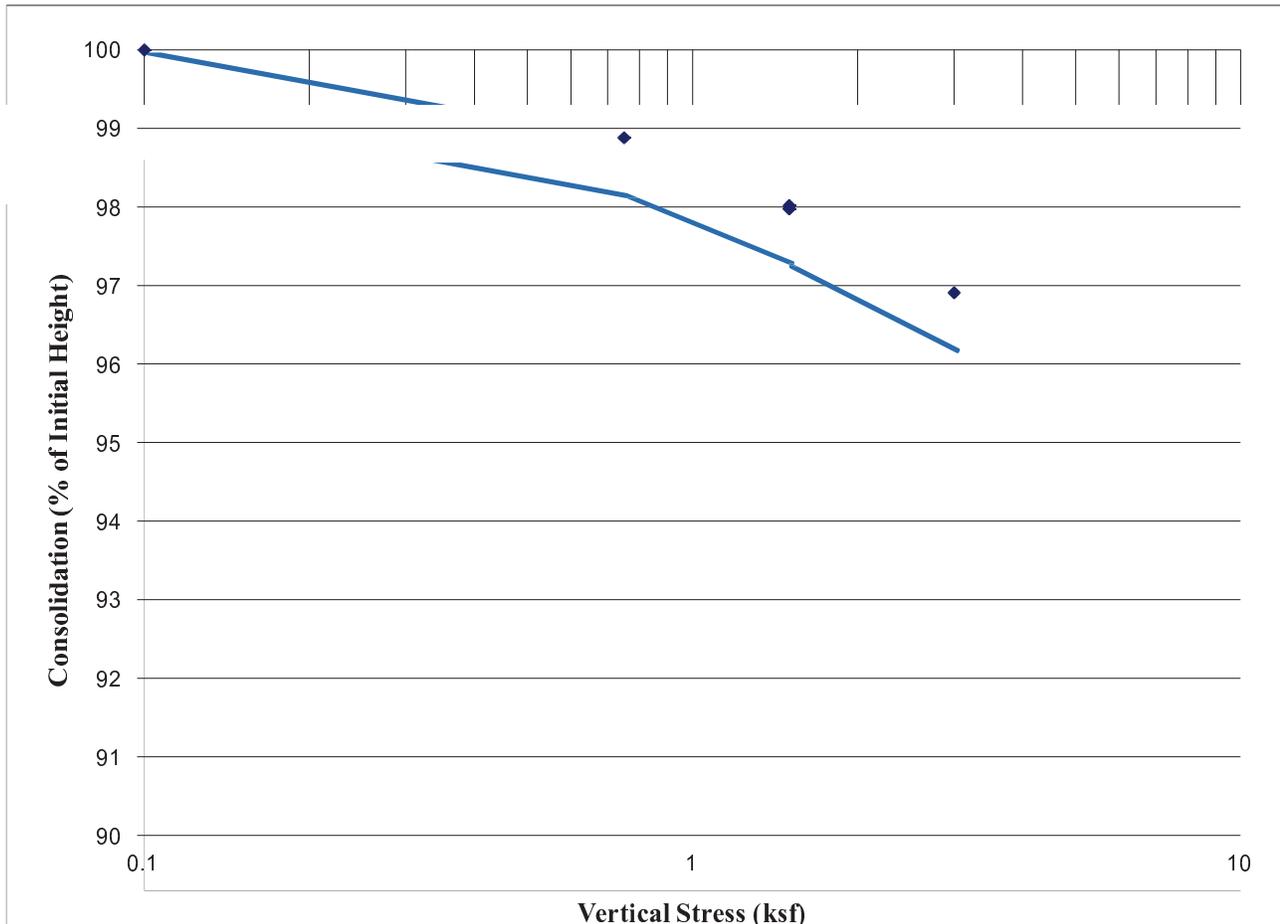
# ACS SERVICES LLC

**ENGINEERING DESIGN • MATERIAL TESTING • CONSTRUCTION INSPECTION**

**\* ONE-DIMENSIONAL CONSOLIDATION PROPERTIES OF SOILS (ASTM D2435)**

<b>ACS Project No.:</b>	<b>1601267</b>		
Lab No.:	16-2895-8	Material Type:	Native
Client:	City of Phoenix - Materials Lab	Date of Extraction:	8/29/2016
Project Name:	Grand Canal Bike and Pedestrian Improvements	Extracted By:	Nathan Sorensen
Project Address:	44th Street and Washington	Date of Lab Test:	9/15/2016
Project City:	Phoenix, AZ	Lab Tested By:	Yutong Lu
Sample Location:	B - 1 @ 4.0' - 5.0'	Reviewed By:	Gene Hansen

INITIAL VOLUME (cu.in)	4.60	FINAL VOLUME (cu.in)	4.46
INITIAL MOISTURE CONTENT	13.9%	FINAL MOISTURE CONTENT	20.5%
INITIAL DRY DENSITY(pcf)	101.5	FINAL DRY DENSITY(pcf)	104.7
INITIAL DEGREE OF SATURATION	59%	FINAL DEGREE OF SATURATION	94%
INITIAL VOID RATIO	0.6	FINAL VOID RATIO	0.6
ESTIMATED SPECIFIC GRAVITY	2.65	SATURATED AT	1.5 ksf



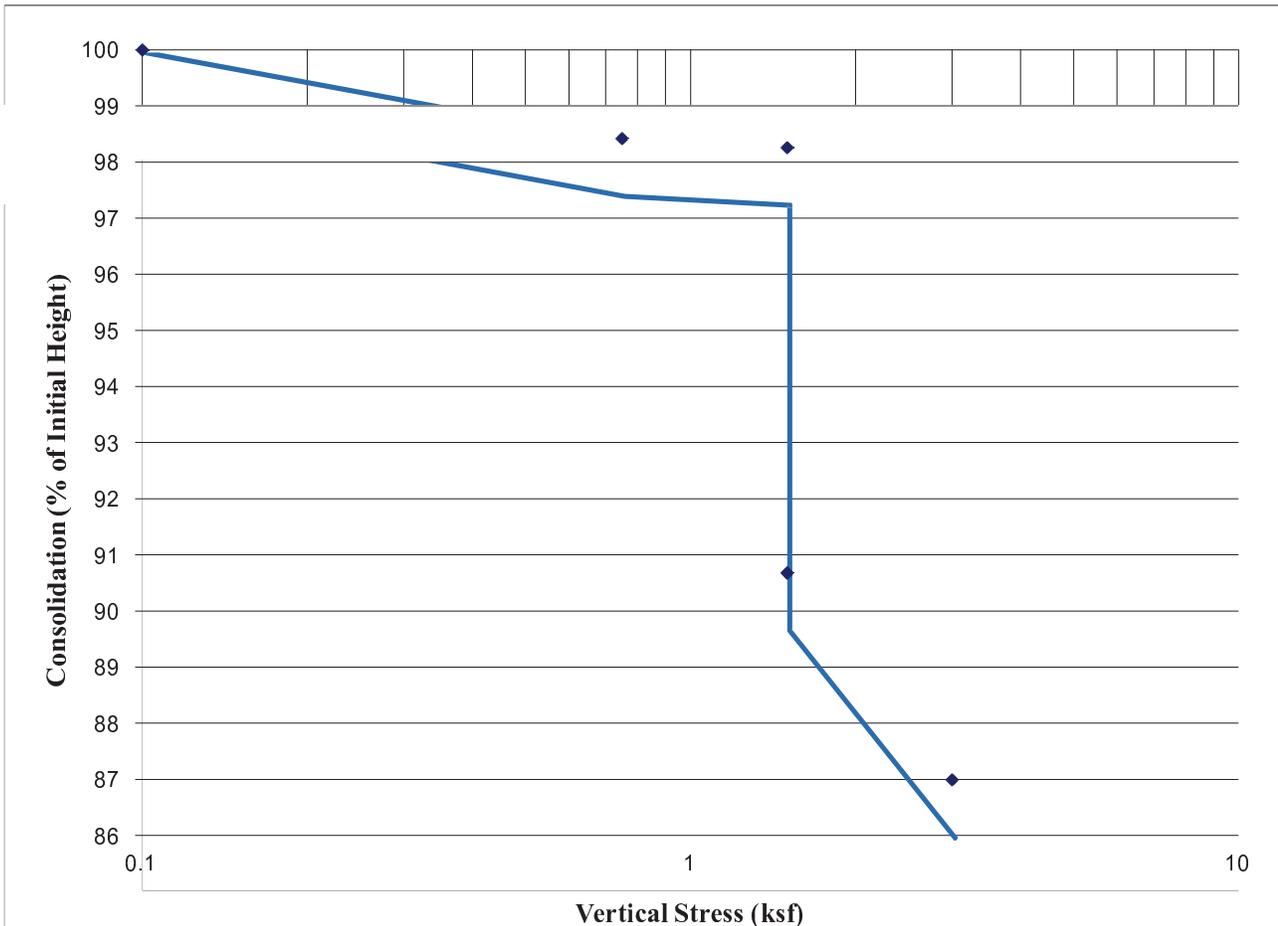
# ACS SERVICES LLC

**ENGINEERING DESIGN • MATERIAL TESTING • CONSTRUCTION INSPECTION**

**\* ONE-DIMENSIONAL CONSOLIDATION PROPERTIES OF SOILS (ASTM D2435)**

<b>ACS Project No.:</b>	<b>1601267</b>		
Lab No.:	16-2895-6	Material Type:	Native
Client:	City of Phoenix - Materials Lab	Date of Extraction:	8/30/2016
Project Name:	Grand Canal Bike and Pedestrian Improvements	Extracted By:	Yutong Lu
Project Address:	44th Street and Washington	Date of Lab Test:	9/14/2016
Project City:	Phoenix, AZ	Lab Tested By:	Yutong Lu
Sample Location:	B - 2 @ 2.5' - 3.0'	Reviewed By:	Gene Hansen

INITIAL VOLUME (cu.in)	4.60	FINAL VOLUME (cu.in)	4.01
INITIAL MOISTURE CONTENT	10.4%	FINAL MOISTURE CONTENT	19.0%
INITIAL DRY DENSITY(pcf)	95.8	FINAL DRY DENSITY(pcf)	110.1
INITIAL DEGREE OF SATURATION	38%	FINAL DEGREE OF SATURATION	100%
INITIAL VOID RATIO	0.7	FINAL VOID RATIO	0.5
ESTIMATED SPECIFIC GRAVITY	2.65	SATURATED AT	1.5 ksf



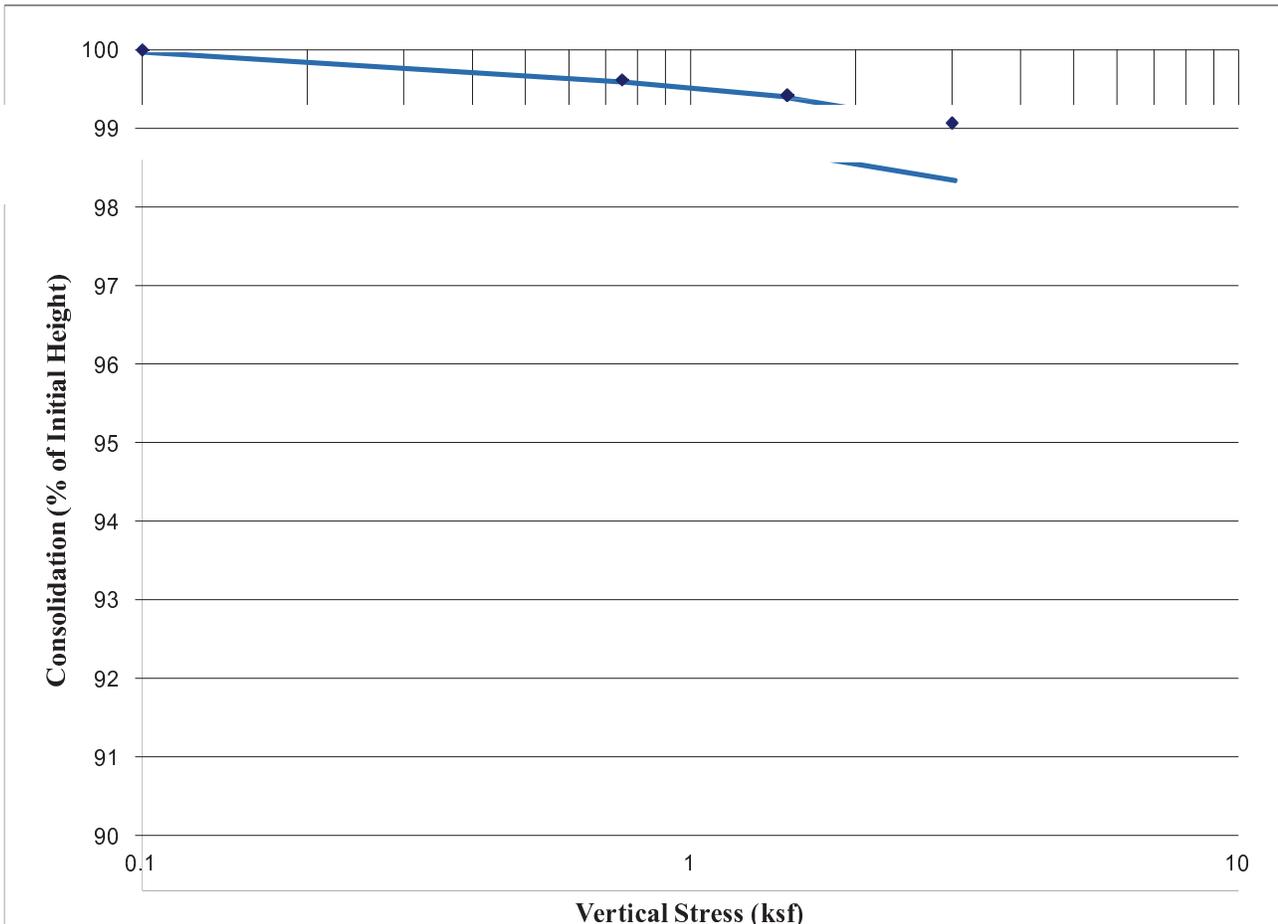
# ACS SERVICES LLC

**ENGINEERING DESIGN • MATERIAL TESTING • CONSTRUCTION INSPECTION**

**\* ONE-DIMENSIONAL CONSOLIDATION PROPERTIES OF SOILS (ASTM D2435)**

<b>ACS Project No.:</b>	<b>1601267</b>		
Lab No.:	16-2895-9	Material Type:	Native
Client:	City of Phoenix - Materials Lab	Date of Extraction:	8/30/2016
Project Name:	Grand Canal Bike and Pedestrian Improvements	Extracted By:	Yutong Lu
Project Address:	44th Street and Washington	Date of Lab Test:	9/16/2016
Project City:	Phoenix, AZ	Lab Tested By:	Yutong Lu
Sample Location:	B - 2 @ 4.0' - 5.0'	Reviewed By:	Gene Hansen

INITIAL VOLUME (cu.in)	4.60	FINAL VOLUME (cu.in)	4.56
INITIAL MOISTURE CONTENT	13.6%	FINAL MOISTURE CONTENT	28.8%
INITIAL DRY DENSITY(pcf)	90.7	FINAL DRY DENSITY(pcf)	91.5
INITIAL DEGREE OF SATURATION	44%	FINAL DEGREE OF SATURATION	95%
INITIAL VOID RATIO	0.8	FINAL VOID RATIO	0.8
ESTIMATED SPECIFIC GRAVITY	2.65	SATURATED AT	1.5 ksf



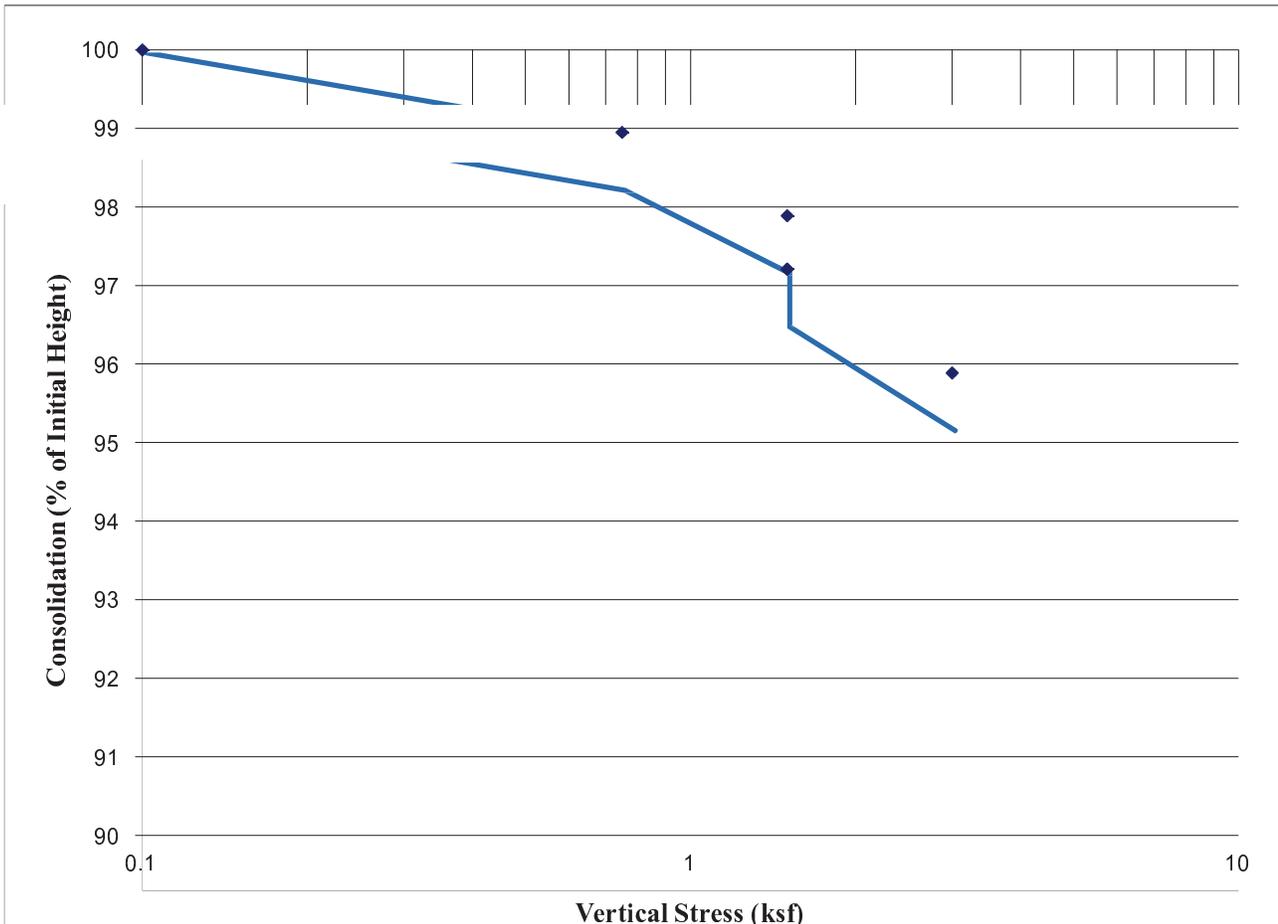
# ACS SERVICES LLC

**ENGINEERING DESIGN • MATERIAL TESTING • CONSTRUCTION INSPECTION**

**\* ONE-DIMENSIONAL CONSOLIDATION PROPERTIES OF SOILS (ASTM D2435)**

<b>ACS Project No.:</b>	<b>1601267</b>		
Lab No.:	16-2895-11	Material Type:	Native
Client:	City of Phoenix - Materials Lab	Date of Extraction:	8/30/2016
Project Name:	Grand Canal Bike and Pedestrian Improvements	Extracted By:	Yutong Lu
Project Address:	44th Street and Washington	Date of Lab Test:	9/16/2016
Project City:	Phoenix, AZ	Lab Tested By:	Yutong Lu
Sample Location:	B - 2 @ 9.0' - 10.0'	Reviewed By:	Gene Hansen

INITIAL VOLUME (cu.in)	4.60	FINAL VOLUME (cu.in)	4.42
INITIAL MOISTURE CONTENT	10.2%	FINAL MOISTURE CONTENT	19.2%
INITIAL DRY DENSITY(pcf)	101.5	FINAL DRY DENSITY(pcf)	105.8
INITIAL DEGREE OF SATURATION	43%	FINAL DEGREE OF SATURATION	91%
INITIAL VOID RATIO	0.6	FINAL VOID RATIO	0.6
ESTIMATED SPECIFIC GRAVITY	2.65	SATURATED AT	1.5 ksf



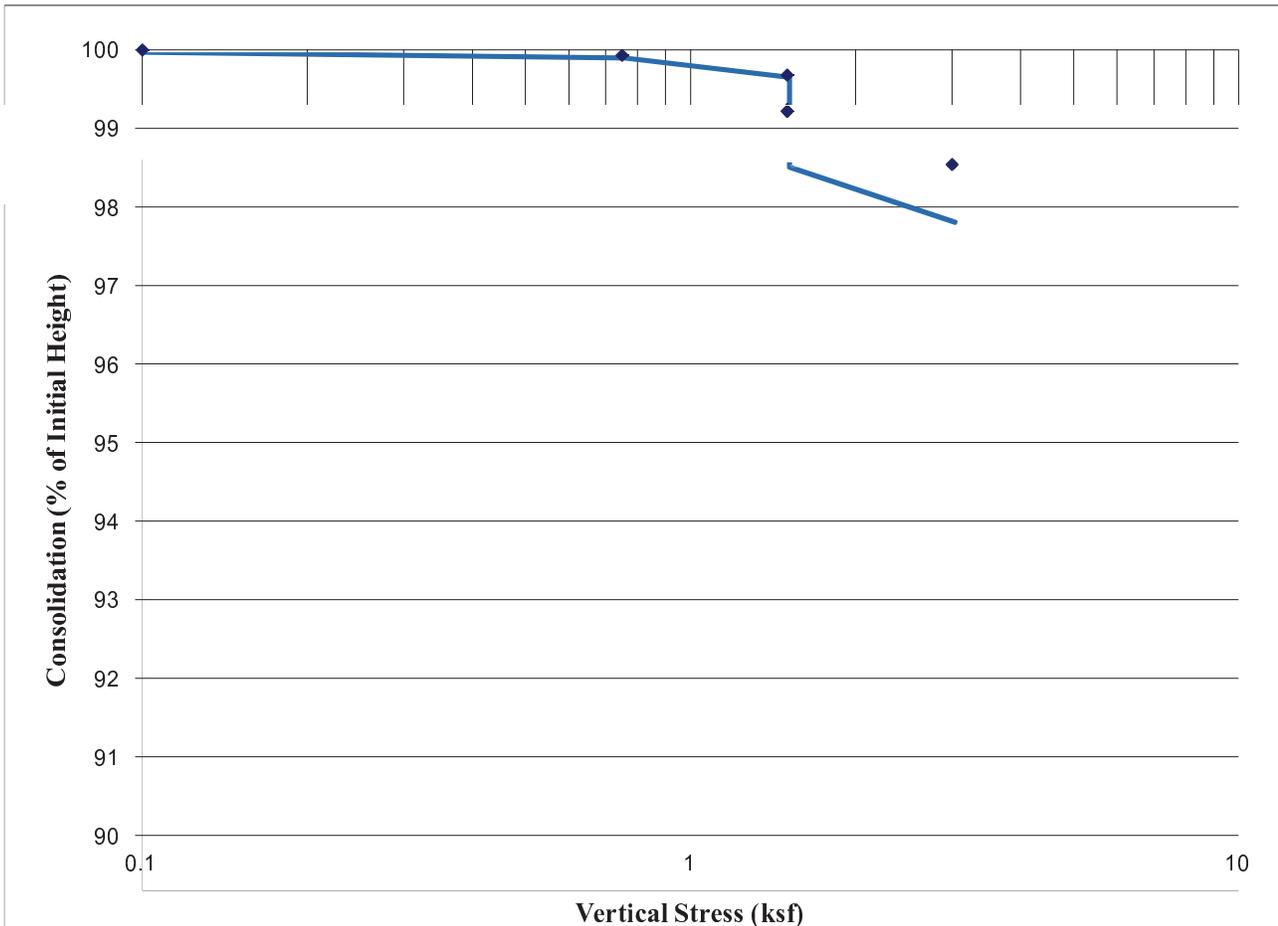
# ACS SERVICES LLC

**ENGINEERING DESIGN • MATERIAL TESTING • CONSTRUCTION INSPECTION**

**\* ONE-DIMENSIONAL CONSOLIDATION PROPERTIES OF SOILS (ASTM D2435)**

<b>ACS Project No.:</b>	<b>1601267</b>		
Lab No.:	16-2895-7	Material Type:	Native
Client:	City of Phoenix - Materials Lab	Date of Extraction:	8/31/2016
Project Name:	Grand Canal Bike and Pedestrian Improvements	Extracted By:	Nathan Sorensen
Project Address:	44th Street and Washington	Date of Lab Test:	9/14/2016
Project City:	Phoenix, AZ	Lab Tested By:	Yutong Lu
Sample Location:	B - 3 @ 1.5' - 2.5'	Reviewed By:	Gene Hansen

INITIAL VOLUME (cu.in)	4.60	FINAL VOLUME (cu.in)	4.54
INITIAL MOISTURE CONTENT	13.2%	FINAL MOISTURE CONTENT	25.5%
INITIAL DRY DENSITY(pcf)	98.8	FINAL DRY DENSITY(pcf)	100.2
INITIAL DEGREE OF SATURATION	52%	FINAL DEGREE OF SATURATION	104%
INITIAL VOID RATIO	0.7	FINAL VOID RATIO	0.7
ESTIMATED SPECIFIC GRAVITY	2.65	SATURATED AT	1.5 ksf



**ACS PROJECT #** 1601267  
**ACS Lab #** 16-2895-1  
**Client:** City of Phoenix - Materials Lab  
**Project Name:** Grand Canal Bike and Pedestrian Improvements  
**Project Address:** 44th Street and Washington  
**Project City** Phoenix, AZ  
**Sample Location:** B - 1 @ 0.0' - 1.5'

**Material Type:** Native  
**Supplier:** N/A  
**Sample Date:** 8/29/2016  
**Sampled By:** Nathan Sorensen  
**Test Date:** 9/1/2016  
**Tested By:** Joe Mueller  
**Reviewed By:** Gene Hansen

Sieve Analysis (ASTM C-139 / AASHTO T-27)			
Sieve Size	% Retained	% Passed	Specs
6"	0	100	
3"	0	100	
2 1/2"	0	100	
2"	0	100	
1 1/2"	0	100	
1"	0	100	
3/4"	1	99	
1/2"	1	98	
3/8"	1	97	
1/4"	6	90	
#4	7	84	
#8	23	61	
#10	3	58	
#16	7	51	
#30	7	44	
#40	3	41	
#50	2	39	
#100	5	34	
#200	6	27.3	

<b>Liquid Limit (AASHTO T-89)</b>	24
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<b>Plastic Limit (AASHTO T-90)</b>	17
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<b>Plasticity Index (AASHTO T-90)</b>	7
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<b>Moisture Content (AASHTO T-255)</b>	3.7
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<b>Fractured Faces (ARIZ 212)</b>	
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<b>Soluble Salts (ARIZ 237)</b>	
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<b>USCS Soil Classification</b>	SC-SM
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*Joanne Martinez*

*Lab Manager*

*Joanne Martinez*

*Signature*

**ACS PROJECT #** 1601267  
**ACS Lab #** 16-2895-4  
**Client:** City of Phoenix - Materials Lab  
**Project Name:** Grand Canal Bike and Pedestrian Improvements  
**Project Address:** 44th Street and Washington  
**Project City:** Phoenix, AZ  
**Sample Location:** B - 1 @ 1.5' - 2.5'

**Material Type:** Native  
**Supplier:** N/A  
**Sample Date:** 8/29/2016  
**Sampled By:** Nathan Sorensen  
**Test Date:** 9/1/2016  
**Tested By:** Joe Mueller  
**Reviewed By:** Gene Hansen

Sieve Analysis (ASTM C-139 / AASHTO T-27)			
Sieve Size	% Retained	% Passed	Specs
6"	0	100	
3"	0	100	
2 1/2"	0	100	
2"	0	100	
1 1/2"	0	100	
1"	3	97	
3/4"	0	97	
1/2"	3	94	
3/8"	2	92	
1/4"	4	88	
#4	3	85	
#8	9	76	
#10	2	75	
#16	5	70	
#30	5	65	
#40	2	62	
#50	3	60	
#100	3	57	
#200	11	45.4	

Liquid Limit (AASHTO T-89)	NV
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Plastic Limit (AASHTO T-90)	NV
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Plasticity Index (AASHTO T-90)	NP
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Moisture Content (AASHTO T-255)	6.8
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Fractured Faces (ARIZ 212)	
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Soluble Salts (ARIZ 237)	
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USCS Soil Classification	SM
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*Joanne Martinez*

Lab Manager

*Joanne Martinez*

Signature

**ACS PROJECT #** 1601267  
**ACS Lab #** 16-2895-8  
**Client:** City of Phoenix - Materials Lab  
**Project Name:** Grand Canal Bike and Pedestrian Improvements  
**Project Address:** 44th Street and Washington  
**Project City:** Phoenix, AZ  
**Sample Location:** B - 1 @ 4.0' - 5.5'

**Material Type:** Native  
**Supplier:** N/A  
**Sample Date:** 8/29/2016  
**Sampled By:** Nathan Sorensen  
**Test Date:** 9/1/2016  
**Tested By:** Joe Mueller  
**Reviewed By:** Gene Hansen

Sieve Analysis (ASTM C-139 / AASHTO T-27)			
Sieve Size	% Retained	% Passed	Specs
6"	0	100	
3"	0	100	
2 1/2"	0	100	
2"	0	100	
1 1/2"	0	100	
1"	0	100	
3/4"	0	100	
1/2"	0	100	
3/8"	1	99	
1/4"	4	95	
#4	4	91	
#8	11	80	
#10	2	78	
#16	8	70	
#30	8	62	
#40	3	59	
#50	3	56	
#100	5	51	
#200	7	43.4	

<b>Liquid Limit (AASHTO T-89)</b>	25
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<b>Plastic Limit (AASHTO T-90)</b>	16
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<b>Plasticity Index (AASHTO T-90)</b>	9
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<b>Moisture Content (AASHTO T-255)</b>	6.9
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<b>Fractured Faces (ARIZ 212)</b>	
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<b>Soluble Salts (ARIZ 237)</b>	
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<b>USCS Soil Classification</b>	SC
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*Joanne Martinez*

Lab Manager

*Joanne Martinez*

Signature

**ACS PROJECT #** 1601267  
**ACS Lab #** 16-2895-10  
**Client:** City of Phoenix - Materials Lab  
**Project Name:** Grand Canal Bike and Pedestrian Improvements  
**Project Address:** 44th Street and Washington  
**Project City** Phoenix, AZ  
**Sample Location:** B - 1 @ 9.0' - 10.0'

**Material Type:** Native  
**Supplier:** N/A  
**Sample Date:** 8/29/2016  
**Sampled By:** Nathan Sorensen  
**Test Date:** 9/1/2016  
**Tested By:** Joe Mueller  
**Reviewed By:** Gene Hansen

Sieve Analysis (ASTM C-139 / AASHTO T-27)			
Sieve Size	% Retained	% Passed	Specs
6"	0	100	
3"	0	100	
2 1/2"	0	100	
2"	0	100	
1 1/2"	0	100	
1"	6	94	
3/4"	0	94	
1/2"	0	94	
3/8"	0	94	
1/4"	3	91	
#4	2	89	
#8	8	81	
#10	3	79	
#16	6	73	
#30	7	66	
#40	3	63	
#50	3	60	
#100	6	55	
#200	11	43.8	

<b>Liquid Limit (AASHTO T-89)</b>	24
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<b>Plastic Limit (AASHTO T-90)</b>	19
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<b>Plasticity Index (AASHTO T-90)</b>	5
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<b>Moisture Content (AASHTO T-255)</b>	5.9
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<b>Fractured Faces (ARIZ 212)</b>	
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<b>Soluble Salts (ARIZ 237)</b>	
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<b>USCS Soil Classification</b>	SC-SM
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*Joanne Martinez*

Lab Manager

*Joanne Martinez*

Signature

<b>ACS PROJECT #</b> _____	1601267	<b>Material Type:</b> _____	Native
<b>ACS Lab #</b> _____	16-2895-12	<b>Supplier:</b> _____	N/A
<b>Client:</b> _____	City of Phoenix - Materials Lab	<b>Sample Date:</b> _____	8/29/2016
<b>Project Name:</b> _____	Grand Canal Bike and Pedestrian Improvements	<b>Sampled By:</b> _____	Nathan Sorensen
<b>Project Address:</b> _____	44th Street and Washington	<b>Test Date:</b> _____	9/1/2016
<b>Project City</b> _____	Phoenix, AZ	<b>Tested By:</b> _____	Joe Mueller
<b>Sample Location:</b> _____	B - 1 @ 14.0' - 15.5'	<b>Reviewed By:</b> _____	Gene Hansen

Sieve Analysis (ASTM C-139 / AASHTO T-27)			
Sieve Size	% Retained	% Passed	Specs
6"	0	100	
3"	0	100	
2 1/2"	0	100	
2"	0	100	
1 1/2"	0	100	
1"	0	100	
3/4"	0	100	
1/2"	0	100	
3/8"	0	100	
1/4"	0	100	
#4	0	100	
#8	1	99	
#10	0	99	
#16	0	99	
#30	1	98	
#40	1	96	
#50	3	94	
#100	15	78	
#200	25	52.8	

<b>Liquid Limit (AASHTO T-89)</b>	35
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<b>Plastic Limit (AASHTO T-90)</b>	18
------------------------------------	----

<b>Plasticity Index (AASHTO T-90)</b>	17
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<b>Moisture Content (AASHTO T-255)</b>	12.2
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<b>Fractured Faces (ARIZ 212)</b>	
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<b>Soluble Salts (ARIZ 237)</b>	
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<b>USCS Soil Classification</b>	CL
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Joanne Martinez  
*Lab Manager*

*Joanne Martinez*  
*Signature*

<b>ACS PROJECT #</b> _____	1601267	<b>Material Type:</b> _____	Native
<b>ACS Lab #</b> _____	16-2895-2	<b>Supplier:</b> _____	N/A
<b>Client:</b> _____	City of Phoenix - Materials Lab	<b>Sample Date:</b> _____	8/30/2016
<b>Project Name:</b> _____	Grand Canal Bike and Pedestrian Improvements	<b>Sampled By:</b> _____	Yutong Lu
<b>Project Address:</b> _____	44th Street and Washington	<b>Test Date:</b> _____	9/1/2016
<b>Project City</b> _____	Phoenix, AZ	<b>Tested By:</b> _____	Joe Mueller
<b>Sample Location:</b> _____	B - 2 @ 0.0' - 1.5'	<b>Reviewed By:</b> _____	Gene Hansen

Sieve Analysis (ASTM C-139 / AASHTO T-27)			
Sieve Size	% Retained	% Passed	Specs
6"	0	100	
3"	0	100	
2 1/2"	0	100	
2"	0	100	
1 1/2"	0	100	
1"	1	99	
3/4"	0	99	
1/2"	3	96	
3/8"	3	93	
1/4"	8	85	
#4	8	77	
#8	16	61	
#10	3	58	
#16	9	49	
#30	9	40	
#40	4	36	
#50	4	32	
#100	8	23	
#200	8	15.3	

<b>Liquid Limit (AASHTO T-89)</b>	NV
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<b>Plastic Limit (AASHTO T-90)</b>	NV
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<b>Plasticity Index (AASHTO T-90)</b>	NP
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<b>Moisture Content (AASHTO T-255)</b>	4.5
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<b>Fractured Faces (ARIZ 212)</b>	
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<b>Soluble Salts (ARIZ 237)</b>	
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<b>USCS Soil Classification</b>	SM
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*Joanne Martinez*

Lab Manager

*Joanne Martinez*

Signature

<b>ACS PROJECT #</b> _____	1601267	<b>Material Type:</b> _____	Native
<b>ACS Lab #</b> _____	16-2895-5	<b>Supplier:</b> _____	N/A
<b>Client:</b> _____	City of Phoenix - Materials Lab	<b>Sample Date:</b> _____	8/30/2016
<b>Project Name:</b> _____	Grand Canal Bike and Pedestrian Improvements	<b>Sampled By:</b> _____	Yutong Lu
<b>Project Address:</b> _____	44th Street and Washington	<b>Test Date:</b> _____	9/1/2016
<b>Project City</b> _____	Phoenix, AZ	<b>Tested By:</b> _____	Joe Mueller
<b>Sample Location:</b> _____	B - 2 @ 2.0' - 2.5'	<b>Reviewed By:</b> _____	Gene Hansen

Sieve Analysis (ASTM C-139 / AASHTO T-27)			
Sieve Size	% Retained	% Passed	Specs
6"	0	100	
3"	0	100	
2 1/2"	0	100	
2"	0	100	
1 1/2"	0	100	
1"	0	100	
3/4"	0	100	
1/2"	4	96	
3/8"	5	90	
1/4"	10	80	
#4	6	74	
#8	14	60	
#10	2	58	
#16	7	51	
#30	6	44	
#40	3	41	
#50	3	38	
#100	6	32	
#200	7	25.6	

<b>Liquid Limit (AASHTO T-89)</b>	NV
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<b>Plastic Limit (AASHTO T-90)</b>	NV
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<b>Plasticity Index (AASHTO T-90)</b>	NP
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<b>Moisture Content (AASHTO T-255)</b>	4.1
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<b>Fractured Faces (ARIZ 212)</b>	
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<b>Soluble Salts (ARIZ 237)</b>	
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<b>USCS Soil Classification</b>	SM
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*Joanne Martinez*

Lab Manager

*Joanne Martinez*

Signature

**ACS PROJECT #** 1601267  
**ACS Lab #** 16-2895-6  
**Client:** City of Phoenix - Materials Lab  
**Project Name:** Grand Canal Bike and Pedestrian Improvements  
**Project Address:** 44th Street and Washington  
**Project City:** Phoenix, AZ  
**Sample Location:** B - 2 @ 2.5' - 3.0'

**Material Type:** Native  
**Supplier:** N/A  
**Sample Date:** 8/30/2016  
**Sampled By:** Yutong Lu  
**Test Date:** 9/1/2016  
**Tested By:** Joe Mueller  
**Reviewed By:** Gene Hansen

Sieve Analysis (ASTM C-139 / AASHTO T-27)			
Sieve Size	% Retained	% Passed	Specs
6"	0	100	
3"	0	100	
2 1/2"	0	100	
2"	0	100	
1 1/2"	0	100	
1"	0	100	
3/4"	0	100	
1/2"	1	99	
3/8"	2	97	
1/4"	2	96	
#4	1	94	
#8	3	91	
#10	1	91	
#16	2	89	
#30	2	87	
#40	1	86	
#50	1	85	
#100	3	82	
#200	5	77.2	

Liquid Limit (AASHTO T-89)	29
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Plastic Limit (AASHTO T-90)	19
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Plasticity Index (AASHTO T-90)	10
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Moisture Content (AASHTO T-255)	12.1
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Fractured Faces (ARIZ 212)	
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Soluble Salts (ARIZ 237)	
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USCS Soil Classification	CL
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*Joanne Martinez*

Lab Manager

*Joanne Martinez*

Signature

**ACS PROJECT #** 1601267  
**ACS Lab #** 16-2895-9  
**Client:** City of Phoenix - Materials Lab  
**Project Name:** Grand Canal Bike and Pedestrian Improvements  
**Project Address:** 44th Street and Washington  
**Project City** Phoenix, AZ  
**Sample Location:** B - 2 @ 4.0' - 5.0'

**Material Type:** Native  
**Supplier:** N/A  
**Sample Date:** 8/30/2016  
**Sampled By:** Yutong Lu  
**Test Date:** 9/1/2016  
**Tested By:** Joe Mueller  
**Reviewed By:** Gene Hansen

Sieve Analysis (ASTM C-139 / AASHTO T-27)			
Sieve Size	% Retained	% Passed	Specs
6"	0	100	
3"	0	100	
2 1/2"	0	100	
2"	0	100	
1 1/2"	0	100	
1"	1	99	
3/4"	1	98	
1/2"	3	95	
3/8"	1	94	
1/4"	1	93	
#4	0	93	
#8	1	92	
#10	0	91	
#16	1	91	
#30	3	87	
#40	6	81	
#50	18	63	
#100	15	49	
#200	12	36.6	

<b>Liquid Limit (AASHTO T-89)</b>	NV
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<b>Plastic Limit (AASHTO T-90)</b>	NV
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<b>Plasticity Index (AASHTO T-90)</b>	NP
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<b>Moisture Content (AASHTO T-255)</b>	5.7
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<b>Fractured Faces (ARIZ 212)</b>	
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<b>Soluble Salts (ARIZ 237)</b>	
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<b>USCS Soil Classification</b>	SM
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*Joanne Martinez*

*Lab Manager*

*Joanne Martinez*

*Signature*

**ACS PROJECT #** 1601267  
**ACS Lab #** 16-2895-11  
**Client:** City of Phoenix - Materials Lab  
**Project Name:** Grand Canal Bike and Pedestrian Improvements  
**Project Address:** 44th Street and Washington  
**Project City:** Phoenix, AZ  
**Sample Location:** B - 2 @ 9.0' - 10.0'

**Material Type:** Native  
**Supplier:** N/A  
**Sample Date:** 8/30/2016  
**Sampled By:** Yutong Lu  
**Test Date:** 9/1/2016  
**Tested By:** Joe Mueller  
**Reviewed By:** Gene Hansen

Sieve Analysis (ASTM C-139 / AASHTO T-27)			
Sieve Size	% Retained	% Passed	Specs
6"	0	100	
3"	0	100	
2 1/2"	0	100	
2"	0	100	
1 1/2"	0	100	
1"	0	100	
3/4"	0	100	
1/2"	0	100	
3/8"	0	100	
1/4"	1	99	
#4	1	97	
#8	3	95	
#10	1	94	
#16	3	91	
#30	4	86	
#40	2	84	
#50	2	82	
#100	6	77	
#200	13	63.5	

<b>Liquid Limit (AASHTO T-89)</b>	24
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<b>Plastic Limit (AASHTO T-90)</b>	18
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<b>Plasticity Index (AASHTO T-90)</b>	6
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<b>Moisture Content (AASHTO T-255)</b>	8.5
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<b>Fractured Faces (ARIZ 212)</b>	
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<b>Soluble Salts (ARIZ 237)</b>	
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<b>USCS Soil Classification</b>	CL-ML
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*Joanne Martinez*

Lab Manager

*Joanne Martinez*

Signature

**ACS PROJECT #** 1601267  
**ACS Lab #** 16-2895-3  
**Client:** City of Phoenix - Materials Lab  
**Project Name:** Grand Canal Bike and Pedestrian Improvements  
**Project Address:** 44th Street and Washington  
**Project City:** Phoenix, AZ  
**Sample Location:** B - 3 @ 0.0' - 1.5'

**Material Type:** Native  
**Supplier:** N/A  
**Sample Date:** 8/31/2016  
**Sampled By:** Nathan Sorensen  
**Test Date:** 9/1/2016  
**Tested By:** Joe Mueller  
**Reviewed By:** Gene Hansen

Sieve Analysis (ASTM C-139 / AASHTO T-27)			
Sieve Size	% Retained	% Passed	Specs
6"	0	100	
3"	0	100	
2 1/2"	0	100	
2"	0	100	
1 1/2"	0	100	
1"	0	100	
3/4"	1	99	
1/2"	3	96	
3/8"	2	94	
1/4"	7	87	
#4	8	80	
#8	17	63	
#10	4	59	
#16	7	52	
#30	8	43	
#40	4	39	
#50	4	35	
#100	7	27	
#200	7	20.6	

<b>Liquid Limit (AASHTO T-89)</b>	21
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<b>Plastic Limit (AASHTO T-90)</b>	19
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<b>Plasticity Index (AASHTO T-90)</b>	2
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<b>Moisture Content (AASHTO T-255)</b>	2.6
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<b>Fractured Faces (ARIZ 212)</b>	
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<b>Soluble Salts (ARIZ 237)</b>	
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<b>USCS Soil Classification</b>	SM
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Joanne Martinez  
 Lab Manager

*Joanne Martinez*  
 Signature

**ACS PROJECT #** 1601267  
**ACS Lab #** 16-2895-7  
**Client:** City of Phoenix - Materials Lab  
**Project Name:** Grand Canal Bike and Pedestrian Improvements  
**Project Address:** 44th Street and Washington  
**Project City** Phoenix, AZ  
**Sample Location:** B - 3 @ 1.5' - 2.5'

**Material Type:** Native  
**Supplier:** N/A  
**Sample Date:** 8/31/2016  
**Sampled By:** Nathan Sorensen  
**Test Date:** 9/1/2016  
**Tested By:** Joe Mueller  
**Reviewed By:** Gene Hansen

Sieve Analysis (ASTM C-139 / AASHTO T-27)			
Sieve Size	% Retained	% Passed	Specs
6"	0	100	
3"	0	100	
2 1/2"	0	100	
2"	0	100	
1 1/2"	0	100	
1"	0	100	
3/4"	0	100	
1/2"	1	99	
3/8"	1	98	
1/4"	1	97	
#4	1	96	
#8	3	93	
#10	1	92	
#16	3	89	
#30	3	86	
#40	3	83	
#50	4	79	
#100	13	66	
#200	17	49.6	

<b>Liquid Limit (AASHTO T-89)</b>	21
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<b>Plastic Limit (AASHTO T-90)</b>	20
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<b>Plasticity Index (AASHTO T-90)</b>	1
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<b>Moisture Content (AASHTO T-255)</b>	6.1
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<b>Fractured Faces (ARIZ 212)</b>	
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<b>Soluble Salts (ARIZ 237)</b>	
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<b>USCS Soil Classification</b>	SM-ML
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Joanne Martinez  
 Lab Manager

Joanne Martinez  
 Signature

# ACS Services LLC

## Maximum Dry Density & Optimum Moisture

AASHTO T-99 /  AASHTO T-180

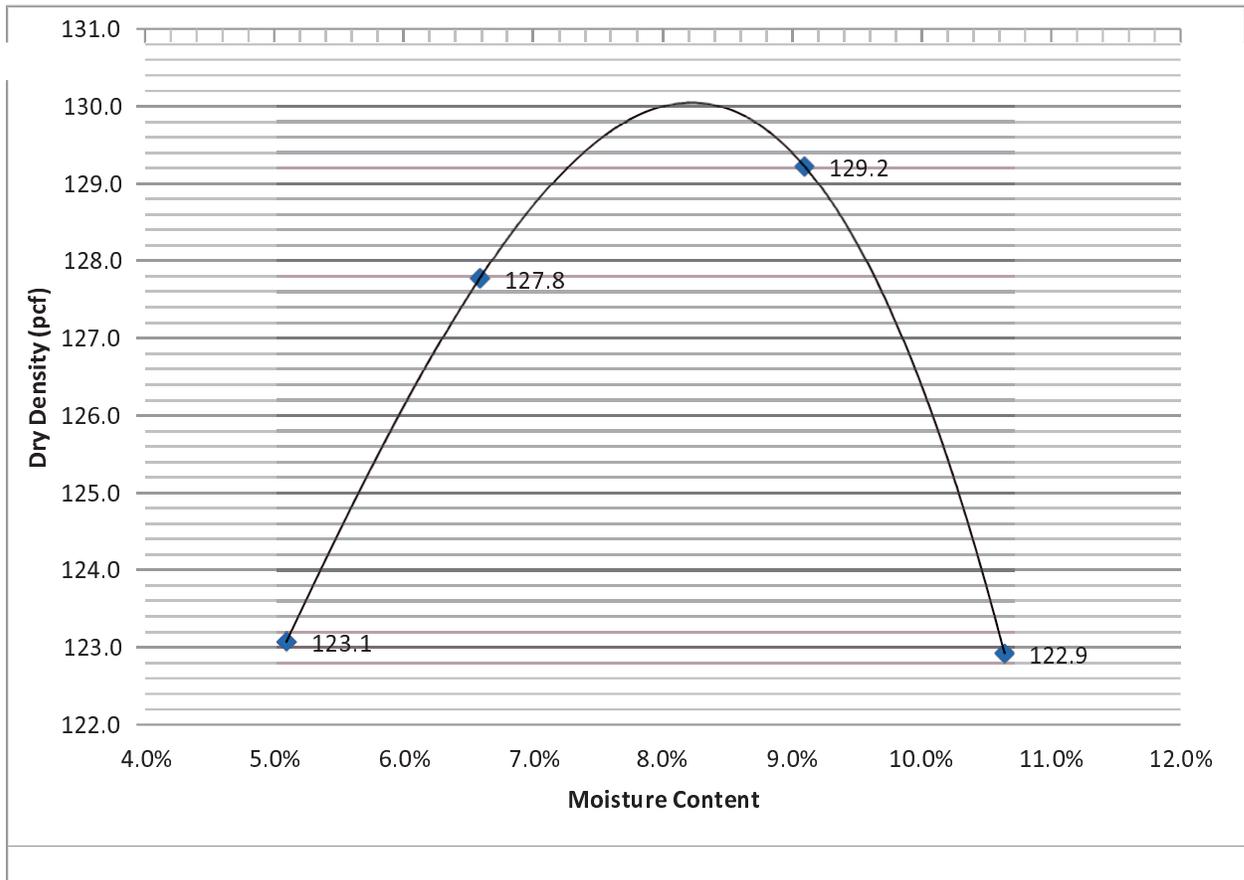
ACS Project # 1601267  
 ACS Lab # 16-2895-1  
 Client Name: City of Phoenix - Materials Lab  
 Project Name: Grand Canal Bike and Pedestrian Improvements  
 Project Address: 44th Street and Washington  
 Project City: Phoenix, AZ

Material Type: GEO  
 Material Supplier: Existing fill or native soils  
 Sample Date: 8/29/2016  
 Sampled By: Nathan Sorensen  
 Date Tested: 9/1/2016  
 Tested By: Joe Mueller  
 Reviewed By: Gene Hansen

Sample Location: B-1 @ 0-1.5'

Dry Density	123.1	127.8	129.2	122.9
Moisture Content	5.1%	6.6%	9.1%	10.6%

Uncorrected Dry Density	130	Uncorrected Moisture Content	8.2
% Rock	17	% Passing	83
Rock Corrected Dry Density	135.0	Rock Corrected Moisture Content	7.1



*Sean Mayfield*

Project Manager



**GRAND CANAL BIKE AND PEDESTRIAN IMPROVEMENTS**  
**44<sup>TH</sup> STREET AND WASHINGTON**  
**PHOENIX, ARIZONA 85034**  
**ACS PROJECT NO. 1601267**

pH and Resistivity Test Results

Sample Location	Depth	Resistivity (ohms-cm)	pH
B-1, B-2, and B-3	0-1.5', 4.0-5.5', 9.0-10.5' and 14.0-15.5'	112 - 202	7.8



## Soil Analysis Report

ACS Services LLC  
Nathan Sorensen  
550 East University Drive  
Mesa, AZ 85203

Project: 1601267  
Sampler:  
Date Received: 9/13/2016  
Date Reported: 9/15/2016  
PO Number: 1601267

**Lab Number: 918908-01      B1 (0-1.5')**

<i>Sulfate &amp; Chloride</i>	Method	Result	Units	Levels
Sulfate, SO <sub>4</sub>	ARIZ 733	1621	ppm	
Chloride, Cl	ARIZ 736	4559	ppm	

Sulfate 0.16% ; Chloride 0.46%

**BID PROPOSAL**  
**CITY OF PHOENIX, ARIZONA**  
**OFFICE OF THE CITY ENGINEER**  
**PROJECT TITLE: GRAND CANAL BIKE & PEDESTRIAN IMPROVEMENTS PROJECT**  
**PROJECT NO.: ST87600114-3**  
**FEDERAL AID PROJECT NO: PHX-0(BFG)F**  
**BOND ISSUE OR BUDGET PROJECT**

PROPOSAL to the City Engineer of the City of Phoenix.

In compliance with the Advertisement for Bids, by the City Engineer, the undersigned bidder:

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(Print or Type Contractor Name and Vendor Number)

Having examined the contract documents, site of work and being familiar with the conditions to be met, hereby submits the following proposal for furnishing the material, equipment, labor and everything necessary for the completion of the work listed and agrees to execute the contract documents and furnish the required bonds and certificates of insurance for the completion of said work, at the locations and for the prices set forth on the inside pages of this form.

Understands that construction of this project shall be in accordance with all applicable Maricopa Association of Governments' (MAG) Uniform Standard Specifications and Uniform Standard Details, latest revision, and the City of Phoenix Supplements, latest revision to the MAG Uniform Standard Specifications and Details, except as otherwise required by the project plans and specifications.

No proposal may be withdrawn for a period of 50 days after opening without consent of the Contracting Agency through the body or agent duly authorized to accept or reject the proposal except in the case of federally-assisted projects.

Understands that his proposal shall be submitted with a proposal guarantee of cash, certified check, cashier's check or surety bond for an amount not less than ten (10) percent of the amount bid, as referenced in the Call for Bids.

Agrees that upon receipt of Notice of Award, from the City of Phoenix, he will execute the contract documents within 10 calendar days.

**Work shall be completed within 365 calendar days**, beginning with the day following the starting date specified in the Notice to Proceed. The time allowed for completion of the work includes lead time for obtaining the necessary materials and/or equipment and approvals.

The bidder shall acknowledge all addenda in writing. By writing the addendum number(s) below, the bidder agrees that this proposal is computed with consideration of the specification book(s) plus any addenda.

<u>ADDENDUM NO.</u>	<u>DATE</u>	<u>ADDENDUM NO.</u>	<u>DATE</u>
_____	_____	_____	_____
_____	_____	_____	_____

CITY OF PHOENIX  
BID PROPOSAL

Project No ST87600114 FA  
Grand Canal Bike and Pedestrian Improvements  
Federal Aid No. PHX-0(BFG)F

Item No.	Description	Unit	Quantity	Unit Price	Extension
<b>1. Removals</b>					
1.10	Remove Portland Cement Concrete Curb and Gutter	Lin. Ft.	1,137		
1.11	Remove Portland Cement Concrete Sidewalk, Driveway, Valley Gutter, and Slab	Sq.Ft.	5,372		
1.12	Remove Concrete Sidewalk	Sq. Ft.	6,369		
1.13	Remove and Replace Headwall Per Pipe Plan and Profile	Each	5		
1.14	Remove Catch Basin, Backfill & Compact	Each	1		
1.15	Remove Miscellaneous Concrete	Sq.Yd.	130		
1.16	Remove Pipe, Backfill & Compact	Lin. Ft.	30		
1.17	Remove Portland Cement Concrete Pavement	Sq. Yd.	10		
1.18	Remove Asphalt Concrete Pavement	Sq. Yd.	1,530		
1.19	Remove Chainlink and Wood Fence	Lin. Ft.	833		
1.20	Remove Bushes, Shrubs, Cacti or Small Trees	Job	1		
1.21	Sign Removal	Each	3		
1.22	Remove Graffiti on CMU Wall	Job	1		
1.23	Cut & Plug Existing Storm Drain Pipe	Each	4		
1.24	Remove Existing Barricade	Lin. Ft.	228		
<b>Removal Subtotal for Item Numbers 1.10 through 1.24</b>					
<b>2. Survey (Construction Staking)</b>					
2.10	Construction Surveying And Layout	Job	1		
2.11	2-Person Survey Party Contingent Item	Hour	200		
<b>Survey (Construction Staking) Subtotal for Item Numbers 2.10 through 2.11</b>					
<b>3. Pathway &amp; Drainage</b>					
3.10	Allowance For Stormwater Pollution Prevention Best Management Practices (BMP'S)	Job	1	\$ 50,000.00	\$ 50,000.00
3.11	Art Feature (Sand Blast Street Name)	Each	22		
3.12	Earthwork For Basin, Includes Clear & Grub, Excavation, Grade & Shape	Cu. Yd.	3,928		
3.13	Clearing and Grubbing	Lump Sum	1		
3.14	Shotcrete Channel	Sq. Yd.	3,045		
3.15	Shotcrete Spillway	Sq. Yd.	22		
3.16	Subgrade Preparation	Sq.Yd.	19,862		
3.17	Sawcut, Remove and Replace A.C. Pavement, MAG Std. Det. 200, Type "A"	Sq. Yd.	181		
3.18	Asphalt Concrete for Permanent Pavement Replacement, Type C 3/4, 7" Thick	Sq.Yd.	447		
3.19	Concrete Sidewalk, COP Std. Dtl. P-1230, 4" Thick	Sq. Ft.	4,258		
3.20	Concrete Sidewalk, COP Std. Dtl. P-1230, 7" Thick	Sq. Ft.	345,661		
3.21	Truncated Domes for Sidewalk Ramps	Sq. Ft.	817		
3.22	Concrete Driveway Entrance, Std. Dtl. 250-2 (6" Thick)	Sq. Ft.	262		
3.23	Concrete Curb Ramp, C.O.P. Std P-1241-2	Sq.Ft.	96		
3.24	Concrete Curb Ramp, COP Std. Dtl. P1237	Sq. Ft	68		
3.25	Concrete Mid-block Ramp with Detached Sidewalk, COP Std. Dtl. P-1241-2	Sq. Ft.	338		
3.26	Concrete Driveway Entrance, Type 1, COP Std. Dtl. P-1255-1	Sq. Ft.	6,007		
3.27	Concrete Driveway Entrance, MAG Std. Dtl. 263	Sq. Ft	230		
3.28	Combined Concrete Curb and Gutter, MAG Std. Dtl. 220-1, Type "A", H=6"	Lin. Ft.	360		
3.29	Concrete Single Curb, MAG Std. Dtl. 222, Type "A", H=6"	Lin. Ft.	104		

3.30	Concrete Roll Curb and Gutter, Mag Std. Dtl. 220-1 Type "C"	Lin. Ft.	38		
3.31	Concrete Single Curb Termination Type Per MAG Std. Detail 222	Lin. Ft.	5		
3.32	Combined Concrete Curb and Gutter, Std Detail 220, Type "A" Modified	Lin.Ft.	1,029		
3.33	Vehicular Maintenance Access Ramp Per Plans	Each	4		
3.34	Adjust Existing Water Meter Box & Cover	Each	1		
3.35	Adjust Existing Manhole Frame and Cover, MAG Std Detail 422 and COP Detail P1430	Each	15		
3.36	Adjust Existing Utility Frame and Cover, Manhole, or Utility Riser	Each	3		
3.37	Adjust Grade at Utility As Detailed On Plans	Each	9		
3.38	Remove and Reinstall Existing Gate	Each	5		
3.39	Adjust Existing Type "A" Water Valve Per COP Std. Dtl. P1391 and P1391-1	Each	1		
3.40	Railroad Pavement Marking Per ADOT Std. Dwg. M-5	Each	2		
3.41	Foundation for Square Perforated Tube Sign Post, MCDOT Std. Dtl. 2058	Each	28		
3.42	Sign Post (P-1) Square Perforated	Each	28		
3.43	Regulation Sign Panel	Sq.Ft.	149		
3.44	Warning Sign Panel	Sq.Ft.	158		
3.45	Pavement Marking (4", White Thermoplastic)	Lin. Ft.	4,168		
3.46	Pavement Marking (4", Yellow)	Lin. Ft.	206		
3.47	Pavement Marking (White Thermoplastic)(0.060") 4" Measure	Lin.Ft.	16,373		
3.48	Pavement Marking (Paint, Stencil Legend)(15 mils) "PED X-ING"	Each	26		
3.49	Safety Rail, MAG Detail 145	Lin. Ft.	1,326		
3.50	Swing Gate Per Plans	Each	4		
3.51	16' Wide Double Swing Chain Link Gate, 72" High, ADOT Det. C-12.20	Each	2		
3.52	Chain Link Fence, ADOT Detail C-12.20, Type 1, H=4'-6"	Lin. Ft.	389		
3.53	Concrete Retaining Wall, Per Plan	Lin.Ft.	160		
5.54	Scupper, MAG Std. Dtl. 203	Each	4		
3.55	Concrete Scupper As Detailed On Plans	Each	2		
3.56	Headwall For 18" Pipe, SRP Standard Headwall	Each	1		
3.57	Headwall For 24" Pipe, SRP Standard Headwall	Each	13		
3.58	Junction Structure As Detailed On Plans	Each	1		
3.59	Water Service Connection (Main to Meter)	Each	6		
3.60	18" Rubber Gasket Reinforced Concrete Pipe, Class V (Private Irrigation)	Lin. Ft.	25		
3.61	24" Rubber Gasket Reinforced Concrete Pipe, Class V (Private Irrigation)	Lin.Ft.	330		
3.62	30" Rubber Gasket Reinforced Concrete Pipe, Class V (Private Irrigation)	Lin. Ft.	38		
3.63	F1W Flexible Delineators Per ADOT Std. Dtl. M-26	Each	6		
<b>Pathway and &amp; Drainage Subtotal for Item Number 3.10 through 3.63</b>					
<b>4. Bridge Structure</b>					
<b>Bridge Seg 2</b>					
4.10	Drilled Shafts (2'-6" Dia)	Lin.Ft.	88		
4.11	Concrete Approach Slab	Sq.Ft.	400		
4.12	Concrete Channel Lining	Sq.Yd.	22		
4.13	Structural Concrete (Class "S")(3,000 psi)	Cu.Yd.	36		
4.14	Steel Reinforcement	Lbs.	3,090		
4.15	Elastometric Bearing Pads Per Plans	Each	4		
4.16	64' Prefabricated Steel Bridge Per Plans	Lump Sum	1		
4.17	Steel Bollards Per Plan	Each	2		
4.18	Steel Ladder - SRP	Each	1		
<b>Bridge Seg 3</b>					
4.19	Drilled Shafts (2'-6" Dia)	Lin. Ft.	104		
4.20	Concrete Approach Slab	Sq. Ft.	438		
4.21	Structural Concrete (Class "S") (3,000 PSI)	CY	22		

4.22	Steel Reinforcement	LB	1,970		
4.23	Elastomeric Bearing Pads per Plans	Each	4		
4.24	78' Prefabricated Steel Bridge per Plans	Lump Sum	1		
4.25	Steel Bollards per Plans	Each	2		
<b>Bridge Structure Subtotal for Item Numbers 4.10 through 4.25</b>					
<b>5. Pedestrian Lighting</b>					
5.10	Furnish & Install Conduit, Sized Per Plans, Including Trenching & Backfill; Attachments to Above Ground Junction Boxes; and Slices	L.Sum	1		
5.11	Directional Boring for Conduit	Lin. Ft.	920		
5.12	Furnish & Install Conductors & Bond Wires, Sized Per Plans, Complete & In Place Including Splices & Terminations for a Complete Set of Conductors	Job	1		
5.13	Connection to Irrigation Controller	Each	8		
5.14	No. 3-1/2 Junction Box	Each	36		
5.15	Electrical Power Service Pedestal Cabinet, 100A, Single Phase, Including Utility Company Related Costs & Requirements	Each	9		
5.16	Furnish & Install LED Pole Mounted Area Light, 12' Mounting on Concrete Direct Buried Pole, Complete	Each	65		
5.17	Furnish & Install LED Pole Mounted Area Light, 15' Mounting on Concrete Direct Buried Pole, Complete	Each	235		
5.18	Furnish & Install Concrete Bollard Accent Light, Complete	Each	42		
5.19	Lighting Fixtures With Concrete Pole	Each	101		
<b>Pedestrian Lighting Subtotal for Item Numbers 5.10 through 5.19</b>					
<b>6. Crossing Treatments</b>					
6.10	HAWK Traffic Signal at 19th Ave	L.Sum	1		
6.11	HAWK Traffic Signal at Indian School	L.Sum	1		
6.12	HAWK Traffic Signal at Osborn Rd	L.Sum	1		
6.13	HAWK Traffic Signal at 20th Street	L.Sum	1		
6.14	HAWK Traffic Signal at Thomas Rd	L.Sum	1		
6.15	HAWK Traffic Signal at 24th Street	L.Sum	1		
6.16	RRFB Traffic Signal at Oak Street	L.Sum	1		
6.17	HAWK Traffic Signal at McDowell Rd	L.Sum	1		
6.18	HAWK Traffic Signal at 32nd Street	L.Sum	1		
6.19	Traffic Signal Modifications at 44th Street	L. Sum	1		
6.20	RRFB signal at 48th Street	L. Sum	1		
6.21	Traffic Control	L.Sum	1		
6.22	Allowance for Off Duty Uniformed Officer	L.Sum	1	\$ 50,000.00	\$50,000.00
<b>Crossing Treatments Subtotal for Item Numbers 6.10 through 6.22</b>					
<b>7. Landscape &amp; Functional Art</b>					
7.10	As-Builts, Complete	L.Sum	1		
7.11	Trench Excavation Backfill and Compaction Per MAG Section 601	Lin. Ft.	45		
7.12	Remove and Haul Excavated Materials	Cu. Yd.	62		
7.13	Allowance for Disposal of Excavated Waste Materials	Ton	50	\$ 200.00	\$10,000.00
7.14	Sort, retain, and redistribute existing salvage piles per plan	Job	1		
7.15	3" - 6" Rip - Rap Rock Mulch (for 50/50 Hydroseed Rock application)	Ton	950		
7.16	2'x2'x6' Welded Wire Mesh, 9-ga., non galvanized, Gabion Boxes	Each	79		
7.17	Concrete Block Pavers on 90% compacted sand bed	Sq. Ft.	670		
7.18	8"x12" Concrete Single Curb, MAG Type B Class B w/smooth trowel finish and joints	Lin. Ft.	54		
7.19	Concrete Block Pavers, set on 90% compacted sand bed	Sq. Ft.	1,195		
7.20	Trim Existing Trees In Place	Job	1		
7.21	Remove Graffiti on CMU Wall	Job	1		

7.22	Remove Bushes, Shrubs, Cacti or Small Trees	Job	1		
7.23	Landscape Grading to include swales and berms, and for all landscape construction and node areas	Job	1		
7.24	Clean fill for landscape grading	Cu. Yd.	315		
7.25	12 Station Controller to Include Stainless Steel Pedestal, all Trenching, Two Wire Paige Communication cables, wire, surge suppression and Grounding Rods (5/8" diamx8' Copper), Water Proof Wire Nuts, Conduit, and Power Company Coordination, two wire module for pedestal mount. Installation shall be complete, tested, and verified for operation per manufacturer's recommended procedures prior to punch list preparation. Power source to be provided by others.	Each	4		
7.26	6 Station Controller to include Stainless Steel Pedestal, all Trenching, Two Wire Paige Communication cables, wire, surge suppression and Grounding Rods (5/8" diamx8' Copper), Water Proof Wire Nuts, Conduit, and Power Company Coordination, two wire module for pedestal mount. Installation shall be complete, tested, and verified for operation per manufacturer's recommended procedures prior to punch list preparation. Power source to be provided by others.	Each	10		
7.27	New Water Meter Box and Cover, Furnish and Install	Each	14		
7.28	1" Water Meter Service Connect. Pipe and Fittings, Main to Meter, Furnish and Install	Lin. Ft.	809		
7.29	Sawcut, Remove and Replace Existing Asphalt Pavement Per MAG Section 710 (To include vertical curb and gutter replacement as needed)	Sq. Yd.	1,025		
7.30	Trench Excavation Backfill and Compaction Per MAG Section 601	Lin. Ft.	770		
7.31	1" Reduced Pressure Backflow Prevention Unit and Enclosure,with Concrete Pad, Desert Tan	Each	14		
7.32	1" Master Valve and Flow Sensor Assembly with box installed and complete	Each	14		
7.33	1" Remote Control Valve Assembly	Each	82		
7.34	Pressure Regulator	Each	82		
7.35	Wye Strainer	Each	82		
7.36	3/4", Sch 40 PVC Irrigation Pipe	Lin. Ft.	17,934		
7.37	1", Sch 40 PVC Irrigation Pipe	Lin. Ft.	9,796		
7.38	1 1/2" Sch 40 PVC Mainline	Lin. Ft.	15,958		
7.39	1" Bronze Isolation Valve	Each	48		
7.40	1/2", Sch 40 PVC Irrigation Pipe	Lin. Ft.	7,204		
7.41	1/2", Sch 80 PVC Flex Hose Risers	Lin. Ft.	2,255		
7.42	Flush Caps and 7" Round Box	Each	105		
7.43	1" Quick Coupler	Each	16		
7.44	Mainline Gate Valve and 10" Round Box	Each	21		
7.45	Single-Port Emitter and Riser Assembly w/ Bug Cap	Each	50		
7.46	Multi-Port Emitter and Riser Assembly w/ Bug Cap	Each	1,480		
7.47	Graffiti Repellent on Node Walls	Sq. Ft.	5,340		
7.48	Schedule 80 PVC Irrigation Sleeve, 3"	Lin. Ft.	254		
7.49	Schedule 80 PVC Irrigation Sleeve, 6"	Lin. Ft.	613		
7.50	Shrubs 1 Gallon	Each	1,526		
7.51	Shrubs 3 Gallon	Each	200		
7.52	Shrubs 5 Gallon	Each	4080		
7.53	Shrubs 15 Gallon	Each	400		
7.54	Shrubs 25 Gallon	Each	97		
7.55	Ocotillo - Bareroot - (6' Planted Height with 7 cane minimum) - Bareroot	Each	28		
7.56	Saguaro - 6' Planted Height Minimum	Each	15		
7.57	Cactus, Succulent - 15 Gallon	Each	140		
7.58	Tilling, soil prep and Native Seed Mix / Hydroseed Type B Non Woody Plant Material	Acre	4.85		

7.59	Concrete Node Walls, 8" Thick, Poured and Board Formed with reinforced footing, #4	Lin. Ft.	803		
7.60	Bench Seats with supports and hardware per manufacturer	Each	32		
7.61	Pre-emergent and Water Application (2 Total Applications) - Not applied in Hydroseed Area.	Sq. Ft.	529437		
7.62	1/2" Screened, Decomposed Granite, Mountain Vista Brown, 2" Depth	Cu. Yd.	3769		
7.63	3" - 6" Rip - Rap Rock Mulch (for 50/50 Hydroseed Rock application)	Cu. Yd.	237		
7.64	4" - 8" Clean River Rock for Gabion Boxes	Tons	426		
7.65	2'x2'x6' Welded Wire Mesh, 9-ga., non galvanized, Gabion Boxes	Each	204		
7.66	2-7/8" Outside Diameter, Galvanized Steel Pipes, fabricated, cut to size, and set in concrete footing per detail	Lin. Ft.	4153		
7.67	6' New Chainlink Fence with 2" Posts and Footings	Lin. Ft.	257		
7.68	6' New Wood Fence w/3" Posts and Footings	Lin. Ft.	39		
7.69	18" d x 12" w Concrete Footing	Lin. Ft.	1788		
7.70	1/4" Minus, 4" depth, Stabilized Decomposed Granite	Cu. Yd.	10		
7.71	Ocotillo (6'-7' height/7 cane minimum) Bareroot	Each	117		
7.72	24" Box Tree	Each	81		
7.73	36" Box Tree	Each	143		
7.74	8"x12" Concrete Single Curb, MAG Type B Class B w/smooth trowel finish and joints	Lin. Ft.	128		
7.75	2-7/8" Outside Diameter, Galvanized Steel Pipes, fabricated, cut to size, and set in concrete footing per detail	Lin. Ft.	3205		
7.76	3" steel caps tack welded and sealed to steel posts	Each	1263		
7.77	Colorant for galvanized metal	Lin. Ft.	7358		
7.78	Polymer gel packs @ initial planting and re-application @ 45 day intervals	Each	12		
7.79	Shrubs 65 Gallon	Each	116		
7.80	1/4" Steel Header with stakes @ 4' o.c. for Stabilized D.G. Paths	Lin. Ft.	233		
7.81	Core drill 3" diameter holes, existing jersey barriers, and install galvanized steel pipe per plan	Job	1		
7.82	Metal Locator Tape	Lin. Ft.	15,958		
<b>Landscape &amp; Functional Art Subtotal for Item Numbers 7.10 through 7.81</b>					
<b>8. Landscape Establishment</b>					
8.10	Plant Establishment Guarantee and Maintenance	Month	6		
<b>Landscape Establishment Subtotal for Item Number 8.10</b>					
<b>9. Allowances</b>					
9.10	Allowance for Extra Work	Job	1	\$ 500,000.00	\$500,000.00
<b>Allowance Subtotal for Item Number 9.10</b>					
<b>TOTAL AMOUNT OF CONSTRUCTION BID</b>					

& \_\_\_\_\_ /100 DOLLARS

Written Words

**PROPOSAL SUBMITTAL**

**Project Title: GRAND CANAL BIKE & PEDESTRIAN IMPROVEMENTS**

**Project No.: ST87600114-3**

**Federal Aid Project No.: PHX-0(BFG)F**

THIS PROPOSAL IS SUBMITTED BY \_\_\_\_\_

a corporation organized under the laws of the State of \_\_\_\_\_

a partnership consisting of \_\_\_\_\_

\_\_\_\_\_

a joint venture consisting of \_\_\_\_\_

\_\_\_\_\_

or individual trading as \_\_\_\_\_

\_\_\_\_\_

of the City of \_\_\_\_\_

FIRM \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_

PHONE \_\_\_\_\_ VENDOR NO. \_\_\_\_\_

BY \_\_\_\_\_  
Officer and Title (signature)

\_\_\_\_\_  
Officer and Title (print or type)

\_\_\_\_\_  
Date

\_\_\_\_\_  
WITNESS: If Contractor is an individual  
(signature)

\_\_\_\_\_  
ATTEST: If Contractor is Corporation or Partnership  
(signature and title)

**SURETY BOND**

**GRAND CANAL BIKE & PEDESTRIAN IMPROVEMENTS  
Project No.: ST87600114-3  
Federal Aid Project No.: PHX-0(BFG)F**

That we, \_\_\_\_\_, as Principal, (hereinafter called the Principal) and the \_\_\_\_\_, a corporation duly organized under the laws of the State of \_\_\_\_\_, as Surety, (hereinafter called the Surety) are held and firmly bound unto the City of Phoenix as Obligee, in the sum of ten (10) percent of the total amount of the bid of Principal, submitted by him to the City of Phoenix for the work described below, for the payment of which sum, well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents and in conformance with A.R.S. #34-201.

**WHEREAS**, the said Principal is herewith submitting its proposal for GRAND CANAL BIKE AND PEDESTRIAN IMPROVEMENTS PROJECT

**NOW, THEREFORE**, if the City of Phoenix shall accept the proposal of the Principal and the Principal shall enter into a contract with the City of Phoenix in accordance with the terms of such proposal and give such Bonds and Certificates of Insurance as specified in the Standard Specifications with good and sufficient Surety for the faithful performance of such contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter into such contract and give such Bonds and Certificates of Insurance, if the Principal shall pay to the City of Phoenix the difference not to exceed the penalty of the bond between the amount specified in the proposal and such larger amount for which the Obligee may in good faith contract with another party to perform the work covered by the proposal, then this obligation shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_ A.D., 2017

\_\_\_\_\_  
Principal

\_\_\_\_\_  
Title

\_\_\_\_\_  
\_\_\_\_\_  
Surety

\_\_\_\_\_  
WITNESS:  
\_\_\_\_\_

**A.M. BEST RATING:**



**CITY OF PHOENIX  
LIST OF ALL SUBCONTRACTORS AND SUPPLIERS**

PROJECT NO.: ST87600114-3 PROJECT TITLE: GRAND CANAL BIKE AND PEDESTRIAN IMPROVEMENTS PROJECT Federal Aid Project No.: PHX-0(BFG)F

DESCRIPTION OF WORK OR MATERIALS (CONTRACTOR TO ENTER TRADE/SUPPLIER AREAS)	SELF- PERFORMED BY PRIME CONTRACTOR		SUBCONTRACTOR/SUPPLIER COMPANY NAME (IF NOT SELF-PERFORMED)	CONTACT PERSON	PHONE NUMBER
	<input type="checkbox"/> YES	<input type="checkbox"/> NO			
	<input type="checkbox"/> YES	<input type="checkbox"/> NO			
	<input type="checkbox"/> YES	<input type="checkbox"/> NO			
	<input type="checkbox"/> YES	<input type="checkbox"/> NO			
	<input type="checkbox"/> YES	<input type="checkbox"/> NO			
	<input type="checkbox"/> YES	<input type="checkbox"/> NO			
	<input type="checkbox"/> YES	<input type="checkbox"/> NO			
	<input type="checkbox"/> YES	<input type="checkbox"/> NO			
	<input type="checkbox"/> YES	<input type="checkbox"/> NO			
	<input type="checkbox"/> YES	<input type="checkbox"/> NO			
	<input type="checkbox"/> YES	<input type="checkbox"/> NO			
	<input type="checkbox"/> YES	<input type="checkbox"/> NO			
	<input type="checkbox"/> YES	<input type="checkbox"/> NO			
	<input type="checkbox"/> YES	<input type="checkbox"/> NO			
	<input type="checkbox"/> YES	<input type="checkbox"/> NO			

I hereby certify by signing below that the above listed companies will be utilized to perform work on this project. These companies shall not be removed or replaced on the project without prior written approval by the City of Phoenix Project Manager. The City requires, as in Paragraph D - List of All Subcontractors and Suppliers in the Information for Bidders that ALL vendors are listed or you will be disqualified. If you are self-performing the work, you must still list any suppliers for materials, or list any contractor's that will assist you in any form.

COMPANY NAME \_\_\_\_\_ SIGNATURE \_\_\_\_\_

NAME & TITLE \_\_\_\_\_ PHONE NUMBER \_\_\_\_\_ DATE \_\_\_\_\_

EMAIL ADDRESS \_\_\_\_\_

## BIDDER'S DISCLOSURE STATEMENT

Authorized Contact for this Disclosure Statement

Name: \_\_\_\_\_

Title: \_\_\_\_\_

E-mail: \_\_\_\_\_

Phone number: \_\_\_\_\_

FAX number: \_\_\_\_\_

List any other DBA, trade name, other identity, or EIN used in the last five (5) years, the state or country where filed, and the status (active or inactive): (if applicable): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### Business Characteristics

Business entity type – Please check appropriate box and provide additional information:

- |  |                                    |
|--|------------------------------------|
| <input type="checkbox"/> Corporation                   | Date of incorporation: _____       |
| <input type="checkbox"/> Limited Liability Company     | Date organized: _____              |
| <input type="checkbox"/> Limited Liability Partnership | Date of registration: _____        |
| <input type="checkbox"/> Limited Partnership           | Date established: _____            |
| <input type="checkbox"/> General Partnership           | Date established: _____            |
| <input type="checkbox"/> Sole Proprietor               | How many years in business?: _____ |
| <input type="checkbox"/> Other (explain)               | Date established: _____            |

Was the business entity formed in the State of Arizona? Yes \_\_\_\_\_ No \_\_\_\_\_

If no, indicate jurisdiction where Business Entity was formed: \_\_\_\_\_

Is the Business Entity currently registered to do business in Arizona with the Arizona Corporation Commission? Yes \_\_\_\_\_ No \_\_\_\_\_ Not required \_\_\_\_\_ (if sole proprietor or general partnership)

Does the Business Entity have a City of Phoenix business privilege license? Yes \_\_\_\_\_ No \_\_\_\_\_ If "no" explain and provide detail such as "not required" or "application in progress" or other reason.

Is the Business Entity publicly traded? Yes \_\_\_\_\_ No \_\_\_\_\_

Is the responding Business Entity a Joint Venture? Note: If the Submitting Business entity is a Joint Venture, also submit a questionnaire for each Business Entity comprising the Joint Venture. Yes \_\_\_\_\_ No \_\_\_\_\_

Is the Business Entity's Principal Place of Business/Executive office in Phoenix? If "no" does the Business Entity maintain an office in Phoenix? Yes \_\_\_\_\_ No \_\_\_\_\_

Provide the address and phone number for the Phoenix office. \_\_\_\_\_

Is the business certified by Phoenix as a Small Business Enterprise? Yes \_\_\_\_\_ No \_\_\_\_\_

Identify Business Entity Officials and principal Owners:

Name(s) \_\_\_\_\_ Title \_\_\_\_\_ Percentage ownership \_\_\_\_\_%(Enter 0% if not applicable).

Name(s) \_\_\_\_\_ Title \_\_\_\_\_ Percentage ownership \_\_\_\_\_%(Enter 0% if not applicable).

Name(s) \_\_\_\_\_ Title \_\_\_\_\_ Percentage ownership \_\_\_\_\_%(Enter 0% if not applicable).

Name(s) \_\_\_\_\_ Title \_\_\_\_\_ Percentage ownership \_\_\_\_\_%(Enter 0% if not applicable).

**Affiliates and Joint Venture Relationships**

Does the Business entity have any Affiliates? Yes \_\_\_\_\_ No \_\_\_\_\_ Attach additional pages if necessary.

Affiliate name: \_\_\_\_\_

Affiliate EIN (if available): \_\_\_\_\_.

Affiliate's primary Business Activity: \_\_\_\_\_

Explain relationship with Affiliate and indicate percent ownership, if applicable. \_\_\_\_\_

Are there any Business Entity Officials or Principal Owners that the Business Entity has in common with this Affiliate? \_\_\_\_\_  
Individual's name: \_\_\_\_\_

Position/Title with Affiliate: \_\_\_\_\_

Has the Business Entity participated in any joint Ventures within the past three years? Yes \_\_\_\_\_ No \_\_\_\_\_  
(Attach additional pages if necessary)

Joint Venture Name: \_\_\_\_\_

Joint venture EIN (if applicable): \_\_\_\_\_

Identify parties to the Joint Venture: \_\_\_\_\_

**Contract History**

Has the Business Entity held any contracts with the city of Phoenix in the last three (3) years? Yes \_\_\_\_\_ No \_\_\_\_\_ If “yes” attach a list.

**Integrity – Contract Bidding**

Within the past three (3) years, has the Business Entity or any Affiliate been suspended or debarred from any government contracting process or been disqualified on any government procurement? Yes \_\_\_\_\_ No \_\_\_\_\_

Been subject to a denial or revocation of a government prequalification? Yes \_\_\_\_\_ No \_\_\_\_\_

Been denied a contract award or had a bid rejected based upon a finding of a non-responsibility by a government entity? Yes \_\_\_\_\_ No \_\_\_\_\_

Agreed to a voluntary exclusion from bidding/contracting with a government entity? Yes \_\_\_\_\_ No \_\_\_\_\_

Initiated a request to withdraw a bid submitted to a government entity or made any claim of an error on a bid submitted to a government entity? Yes \_\_\_\_\_ No \_\_\_\_\_

Initiated a request to withdraw a bid submitted to a government entity or made any claim of an error on a bid submitted to a government entity? Yes \_\_\_\_\_ No \_\_\_\_\_

For each “Yes” answer above, provide an explanation of the issues.

**Integrity – Contract Award**

Within the past three (3) years has the Business Entity or any Affiliate been suspended, cancelled, or terminated for cause on any government contract? Yes \_\_\_\_\_ No \_\_\_\_\_

Been subject to an administrative proceeding or civil action seeking specific performance or restitution in connection with any government contract? Yes \_\_\_\_\_ No \_\_\_\_\_

For each “yes” answer, provide an explanation. (Attach explanation on a separate sheet of paper).

**Certifications/Licenses**

Within the past three (3) years, has the Business Entity or Affiliate had a revocation, suspension, or disbarment of any business or professional permit and/or license? Yes \_\_\_\_\_ No \_\_\_\_\_

If “yes” provide an explanation of the issue(s), the Business Entity involved, the relationship to the submitting Business Entity, relevant dates, the government entity involved, and any remedial or corrective action(s) taken and the current status of the issues.

**Legal Proceedings**

Within the past three (3) years, has the Business Entity of any Affiliate:

Been the subject of an investigation, whether open or closed, by any government entity for a civil or criminal violation? Yes \_\_\_\_\_ No \_\_\_\_\_

Been the subject of an indictment, grant of immunity, judgment or conviction, (including entering into a plea bargain for conduct constituting a crime)? Yes \_\_\_\_\_ No \_\_\_\_\_

Received any OSHA citation and Notification of Penalty containing a violation classified as serious or willful? Yes \_\_\_\_\_ No \_\_\_\_\_

Had a government entity find a willful prevailing wage or supplemental payment violation? Yes \_\_\_\_\_ No \_\_\_\_\_

Been involved in litigation as either a plaintiff or a defendant involving a copyright or patent infringement violation or an anti-trust violation? Yes \_\_\_\_\_ No \_\_\_\_\_

Other than previously disclosed, for the past three (3) years:

(i) Been subject to the imposition of a fine or penalty in excess of \$1000 imposed by any government as a result of the issuance of citation, summons or notice of violation, or pursuant to any administrative, regulatory, or judicial determination ; Yes \_\_\_\_\_ No \_\_\_\_\_

(ii) Been charged or convicted of a criminal offense pursuant to any administrative and/or regulatory action taken by any government entity? Yes \_\_\_\_\_ No \_\_\_\_\_

If “yes” provide an explanation of the issue(s), the Business Entity involved, the relationship to the submitting Business Entity, relevant dates, the government entity involved, and any remedial or corrective action(s) taken and the current status of the issues.

**Leadership Integrity**

If the Business Entity is a joint Venture Entity, answer “N/A – Not Applicable” to questions below:

Within the past three (3) years has any individual previously identified, or any other Business Entity Leader not previously identified, or any individual having the authority to sign, execute, or approve bids, proposals, contracts or supporting documentation with the city of Phoenix been subject to:

A sanction imposed relative to any business or professional permit and/or license? Yes \_\_\_\_\_ No \_\_\_\_\_

An investigation, whether open or closed, by any government entity for a civil or criminal violation for any business related conduct? Yes \_\_\_\_\_ No \_\_\_\_\_



City of Phoenix
AFFIDAVIT OF IDENTITY

Your completion of this form is required by Arizona state law. A.R.S. §§ 1-501 and -50 only if you are a sole proprietor.

I, \_\_\_\_\_ (print full name exactly as on document), hereby affirm, upon penalty of perjury, that I presented the document marked below to the City of Phoenix, that I am lawfully present in the United States, and that I am the person stated on the document. (select one category only)

- Arizona driver license issued after 1996. Print first four numbers/letters from license: [ ] [ ] [ ] [ ]
Arizona non-operating identification license. Print first four numbers/letters: [ ] [ ] [ ] [ ]
Birth certificate or delayed birth certificate issued in any state, territory or possession of the U.S. Year of birth: \_\_\_\_\_; Place of birth: \_\_\_\_\_
United States Certificate of Birth Abroad. Year of birth: \_\_\_\_\_; Place of birth: \_\_\_\_\_
United States Passport. Print first four numbers/letters on Passport: [ ] [ ] [ ] [ ]
Foreign Passport with United States Visa. Print first four numbers/letters on Passport: [ ] [ ] [ ] [ ]
Print first four numbers/letters on Visa: [ ] [ ] [ ] [ ]
I-94 Form with a photograph. Print first four numbers on I-94: [ ] [ ] [ ] [ ]
USCIS Employment Authorization Document (EAD). Print first four numbers/letters on EAD: [ ] [ ] [ ] [ ]
or Perm. Resident Card (acceptable alternative): [ ] [ ] [ ] [ ]
Refugee Travel Document. Date of issuance: \_\_\_\_\_; Refugee country: \_\_\_\_\_
U.S. Certificate of Naturalization. Print first four digits of CIS Reg. No.: [ ] [ ] [ ] [ ]
U.S. Certificate of Citizenship. Date of issuance: \_\_\_\_\_; Place of issuance: \_\_\_\_\_
Tribal Certificate of Indian Blood. Date of issuance: \_\_\_\_\_; Name of tribe: \_\_\_\_\_
Tribal or Bureau of Indian Affairs Affidavit of Birth. Year of birth: \_\_\_\_\_; Place of birth: \_\_\_\_\_

Signed: \_\_\_\_\_ Dated: \_\_\_\_\_

**BUY AMERICA CERTIFICATE  
FOR COMPLIANCE WITH TITLE 23 USC § 313  
(For Procurement of Steel, Iron, or Manufactured Products)  
(EXCLUDES ROLLING STOCK)**

**GRAND CANAL BIKE & PEDESTRIAN IMPROVEMENTS  
PROJECT NO.: ST87600114-3  
FEDERAL AID PROJECT NO.: PHX-0(BFG)F**

(Complete form and submit with bid)

The Bidder/Proposer hereby certifies that it will comply with the requirements of Title 23 USC § 313 and the applicable regulations in 23 CFR Part 635.410.

Executed on \_\_\_\_\_, 2017, at \_\_\_\_\_,  
(Date) (City) (State)

\_\_\_\_\_  
Typewritten or Printed Name                      Signature of Authorized                      Official Title

**BUY AMERICA CERTIFICATE FOR NON-COMPLIANCE WITH TITLE 23 USC §. 313**

The Bidder/Proposer hereby certifies that it cannot comply with the requirements of Title 23 USC § 313, but it may qualify for an exception pursuant to Title 23 USC § 313 and the regulations in 23 CFR 635.410.

Executed on \_\_\_\_\_, 2017, at \_\_\_\_\_,  
(Date) (City) (State)

\_\_\_\_\_  
Typewritten or Printed Name                      Signature of Authorized                      Official Title

**AFFIDAVIT BY CONTRACTOR  
CERTIFYING THAT THERE WAS NO  
COLLUSION IN BIDDING OF CONTRACT**

STATE OF: Arizona     )  
                                  )  
                                  )  
COUNTY OF: Maricopa )     ss

\_\_\_\_\_ (Name of Individual)

being first duly sworn upon oath deposes and says:

That he is \_\_\_\_\_ (Title)

of \_\_\_\_\_ (Name of Company, Firm or Corporation)

and that, pursuant to Subsection 112(c) of Title 23, United States Code and Title 44, Chapter 10, Article 1, and Title 34, Chapter 2, Article 4 of Arizona Revised Statutes, he certifies that neither he nor anyone associated with the company, firm, or corporation mentioned above has, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of fully competitive bidding in connection with project:

**GRAND CANAL BIKE & PEDESTRIAN IMPROVEMENTS  
PROJECT NO.: ST87600114-3  
FEDERAL AID PROJECT NO.: PHX-0(BFG)F**

Subscribed and sworn to before me this

\_\_\_\_\_ day of \_\_\_\_\_, 2017.

\_\_\_\_\_ Signature

My Commission expires:

\_\_\_\_\_ Notary Public

If by a Corporation:  
(Seal)