



ADVERTISEMENT FOR BIDS

SPECIAL PROVISIONS

BIDDERS DOCUMENTS

TRACS/Proj. No.:

095 LA 158 F070601C 095-C(229)T
QUARTZSITE-PARKER-TOPOCK HIGHWAY
(SOUTH OF PARKER DAM)

Contracts and Specifications Group
205 S. 17TH Ave., 2nd Floor, M/D 121F
Phoenix, Arizona 85007-3217

ARIZONA DEPARTMENT OF TRANSPORTATION

ADVERTISEMENT FOR BIDS

BID OPENING: FRIDAY, OCTOBER 16, 2026, AT 11:00 A.M. (M.S.T.)

TRACS NO	095 LA 158 F070601C
PROJECT NO	095-C(229)T
TERMINI	QUARTZSITE – PARKER – TOPOCK HWY
LOCATION	SOUTH OF PARKER DAM

ROUTE NO.	MILEPOST	DISTRICT	ITEM NO.
095	158.8 to 161.5	SOUTHWEST	103844

The amount programmed for this contract is \$ 3,000,000.00. The location and description of the proposed work are as follows:

The proposed project is located on SR 95 between MP 158.8 and 161.5 south of Parker in La Paz County. The work consists of constructing rockfall mitigation measures in four locations. The work includes excavation, rock netting, scaling, concrete barrier, concrete spillways, erosion control, and other related work.

The time allowed for the completion of the work included in this contract will be 100 working days.

The Arizona Department of Transportation, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to §§ 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, Disadvantaged Business Enterprises will 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.

Contract documents, and other project documents, if applicable, are available as electronic files, at no charge, from the Department's website through the ADOT Contracts and Specifications Group (<https://azdot.gov/business/contracts-and-specifications/current-advertisements>).

Documents will be available within one week following the advertisement for bids.

To submit a valid bid, the bidder must (1) have prequalification from the Department as necessary for the project, and (2) be included on the project Plansholder List as a Prime.

The Application for Contractor Prequalification may be obtained from the Contracts and Specifications website.

SPECIAL PROVISIONS

FOR

ARIZONA PROJECT

095 LA 158 F0706 01C

095-C(229)T

QUARTZSITE – PARKER – TOPOCK HWY

SOUTH OF PARKER DAM

ROCKFALL MITIGATION

PROPOSED WORK:

The proposed project is located on SR 95 between MP 158.8 and 161.5 south of Parker in La Paz County. The work consists of constructing rockfall mitigation measures in four locations. The work includes excavation, rock netting, scaling, concrete barrier, concrete spillways, erosion control, and other related work.

PROFESSIONAL ENGINEER SEALS:

These Special Provisions represent the combined efforts of the following organizations:

- (1) ADOT Contracts and Specifications (2) ADOT Roadside Development Section

A representative of each organization has affixed their seal below, which attests that portions of these Special Provisions were prepared under their direction.



Organization (1)



Organization (2)

(SPC00FA,03/19/26)

SPECIFICATIONS:

The work embraced herein shall be performed in accordance with the requirements of the following separate documents:

Arizona Department of Transportation, Standard Specifications for Road and Bridge Construction, Edition of 2021,

Arizona Department of Transportation, Roadway Engineering Group, Construction Standard Drawings, listed in the project plans, and available on the Department's website,

Arizona Department of Transportation, Traffic Engineering Group, Manual of Approved Signs, available on the Department's website,

Arizona Department of Transportation, Traffic Engineering Group, Temporary Traffic Control Design Guidelines, dated April, 2025, available on the Department's website,

Manual on Uniform Traffic Control Devices for Streets and Highways, 2023 edition and Arizona Supplement to the 2023 edition, dated January 2026,

The Proposal Pamphlet which includes the following documents:

These Special Provisions,

Required Contract Provisions Federal-Aid Construction Contracts (Form FHWA 1273 Revised October 23, 2023),

Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246), July 1, 1978, Revised November 3, 1980 and Revised April 15, 1981,

Title VI / Non-Discrimination Assurances,
Appendix A
Appendix E,

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, Revised January 1, 2005, Revised August 1, 2005, and Revised March 1, 2015,

Wage Determination Decision,

Bidding Schedule,

Proposal,

Surety (Bid) Bond, 12-1303,

Certification With Regard to the Performance of Previous Contracts or Subcontracts Subject to the Equal Opportunity Clause and the Filing of Required Reports, Federal Aid Projects, April, 1969, Rev. July, 2003,

Certification With Respect to the Receipt of Addenda,

Participation in Boycott of Israel Certification Form,

Forced Labor of Ethnic Uyghurs Ban Certification Form, Rev. November 2022.

Disadvantaged Business Enterprise (DBE) Assurance,

BID SUBMISSION:

In submitting a bid, the bidder shall completely execute the following documents:

Proposal,

Bidding Schedule,

Surety (Bid) Bond, 12-1303,

Certification With Regard to the Performance of Previous Contracts or Subcontracts Subject to the Equal Opportunity Clause and the Filing of Required Reports, Federal Aid Projects, April, 1969, Rev. July, 2003,

Certification With Respect to the Receipt of Addenda,

Participation in Boycott of Israel Certification Form, and

Forced Labor of Ethnic Uyghurs Ban Certification Form, Rev. November 2022.

Disadvantaged Business Enterprise (DBE) Assurance,

PROPOSAL GUARANTY:

Each bidder is advised to satisfy itself as to the character and the amount of the proposal guaranty required in the Advertisement for Bids.

CONTRACT DOCUMENTS:

The bidder to whom an award is made will be required to execute a Performance Bond and a Payment Bond, each in 100 percent of the amount of the bid, an Insurance Certificate and the Contract Agreement.

A copy of these documents is not included in the Proposal Pamphlet; however, each bidder shall satisfy itself as to the requirements of each document.

The documents, approved by the Department of Transportation, Highways Division, are identified as follows:

Statutory Performance Bond, 12-1301, September, 1992

Statutory Payment Bond, 12-1302, September, 1992

Contract Agreement, 12-0912, August, 2000

Certificate of Insurance, 12-0100, June, 1998

A copy of each document may be obtained by making a request to Contracts & Specifications.

MATERIAL AND SITE INFORMATION:

Projects requiring materials, excavation, or site investigation may have additional information available concerning the material investigations of the project site and adjacent projects. This information, when available and applicable, may be examined in the Office of the Bridge Group-Geotechnical Services, located at 205 S. 17th Avenue, Phoenix, AZ 85007-3212. The contractor may contact Bridge Group at (602) 712-7481 to schedule an appointment to examine the information. This information will not be attached to the contract documents.

(EPRISENGL-IFR)

DISADVANTAGED BUSINESS ENTERPRISES:

1.0 Policy:

The Arizona Department of Transportation (hereinafter the Department) has established a Disadvantaged Business Enterprise (DBE) program in accordance with the regulations of the U.S. Department of Transportation (USDOT), 49 Code of Federal Regulation Part 26 (49 CFR Part 26), as revised by the USDOT DBE Interim Final Rule (IFR) issued October 3, 2025 (hereinafter referred to as IFR).

The Department has received Federal financial assistance from the U.S. Department of Transportation and as a condition of receiving this assistance, the Department has signed an assurance that it will comply with 49 CFR Part 26, as revised by the IFR.

It is the policy of the Department to ensure that DBEs (hereinafter DBE or DBE firm), as defined in Part 26, have an equal opportunity to receive and participate in USDOT-assisted contracts. It is also the policy of the Department:

- (A) To ensure nondiscrimination in the award and administration of USDOT-assisted contracts;
- (B) To create a level playing field on which DBEs can compete fairly for USDOT-assisted contracts;
- (C) To ensure that the DBE program operates in a nondiscriminatory manner and without regard to race or sex, while maximizing efficiency of service;
- (D) To ensure that only firms that fully meet 49 CFR Part 26 eligibility standards are counted as DBEs;
- (E) To help remove barriers to the participation of DBEs in USDOT-assisted contracts,
- (F) To assist in the development of firms that can compete successfully in the market place outside the DBE program; and
- (G) To promote the use of DBEs in all types of federally-assisted contracts and procurement activities.

It is also the policy of the Department to facilitate and encourage participation of Small Business Concerns (SBCs), as defined herein, in USDOT-assisted contracts. The Department encourages contractors to take reasonable steps to eliminate obstacles to SBCs' participation and to utilize SBCs in performing contracts.

2.0 Assurances of Non-Discrimination:

The contractor, subrecipient, or subcontractor shall not discriminate on the basis of race, color, sex or national origin in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 as revised by the IFR 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 State deems appropriate, which may include, but are not limited to:

- (A) Withholding monthly progress payments;
- (B) Assessing sanctions; and/or
- (C) Disqualifying the contractor from future bidding as non-responsible.

The contractor, subrecipient, or subcontractor shall ensure that all subcontract agreements contain this non-discrimination assurance.

3.0 Definitions:

- (A) **Commercially Useful Function (CUF):** Commercially Useful Function is defined in 49 CFR Part 26.55. That definition is incorporated herein by reference.
- (B) **Disadvantaged Business Enterprise (DBE):** A DBE, as defined in 49 CFR Part 26.5, is a for-profit small business concern which meets both of the following requirements:
- (1) Is at least 51 percent owned by one or more individuals who are both socially and economically disadvantaged; and,
 - (2) Whose management and daily business operations are controlled by one or more of the socially and economically disadvantaged individuals who own it.
- (C) **Joint Check:** a two-party check between a subcontractor, DBE and/or non-DBE, a prime contractor and the regular dealer of material supplies.
- (D) **Joint Venture:** an association of a DBE firm and one or more other firms to carry out a single, for-profit business enterprise, for which parties combine their property, capital, efforts, skills and knowledge, and in which the DBE is responsible for a distinct, clearly defined portion of the work of the contract and whose share in the capital contribution, control, management, risks, and profits of the joint venture are commensurate with its ownership interest.
- (E) **NAICS Code:** The North American Industry Classification System (NAICS) is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the US business economy.
- (F) **Non-DBE:** any firm that is not a DBE.
- (G) **DBE Conscious:** a measure or program that is focused specifically on assisting only DBEs.
- (H) **DBE Neutral:** a measure or program that is, or can be, used to assist all small businesses.
- (I) **Small Business Concern:** a business that meets all of the following conditions:
1. Operates as a for-profit business.
 2. Operates a place of business primarily within the U.S. or makes a significant contribution to the U.S. economy through payment of taxes or use of American products, materials, or labor.
 3. Is independently owned and operated.

4. Is not dominant in its field on a national basis; and

5. Does not have annual gross receipts that exceed the Small Business Administration size standards average annual income criteria for its primary North American Industry Classification System (NAICS) code.

(J) Socially and Economically Disadvantaged Individuals: Socially and Economically Disadvantaged Individuals is defined in 49 CFR Part 26.5, as revised by the IFR. That definition is incorporated here.

(1) Any individual who is a citizen (or lawfully admitted permanent resident) of the United States and who a certifier finds to be socially and economically disadvantaged on an individual basis.

(2) A determination that an individual is socially and economically disadvantaged must not be based in whole or in part on race or sex. For that reason, all applicants shall qualify as socially and economically disadvantaged if they can demonstrate that they can meet the relevant criteria described in 49 CFR Part 26.67.

(3) Being born in a particular country does not, standing alone, mean that a person is necessarily socially and economically disadvantaged.

4.0 Working with DBEs:

The Department works with DBEs and assists them in their efforts to participate in the highway construction program. All bidders should contact the Department's Business Engagement and Compliance Office (BECO) by phone, through email, or at the address shown below, for assistance in their efforts to use DBEs in the highway construction program of the Department. BECO contact information is as follows:

Arizona Department of Transportation
Business Engagement and Compliance Office
1801 W. Jefferson Street, Ste. 101, Mail Drop 154A
Phoenix, AZ 85007
Phone (602) 712-7761
Email: contractorcompliance@azdot.gov
Website: www.azdot.gov/business/business-engagement-and-compliance

4.01 Business Development Program:

The Department has established the Business Development Program as an initiative to encourage and develop disadvantaged businesses in the highway construction industry. The Department is committed to providing new, emerging, developmental and transitional DBEs with general and firm-specific training and technical assistance. The Department intends for this assistance to aid DBEs to become competitive within the heavy highway and construction industry market places. In particular, the Department's DBE Supportive Services Program (DBE/SS) is designed to work in collaboration with stakeholder organizations (including departments and agencies of State and Federal Governments,

small business organizations, tribal governments, profit and nonprofit corporations) to help DBEs to successfully compete for highway construction projects and become self-sufficient. The program provides educational opportunities for DBEs regarding current market conditions, Federal regulatory compliance, and best business practices. These efforts are reinforced with one-on-one business counseling for DBEs certified in areas that directly support Federal-aid highway projects, small group workshops, conferences, business expositions, regular in-person training opportunities, and regular virtual training opportunities. For guidance regarding this program, refer to the Business Development Program Guidelines available on the BECO website at <https://azdot.gov/business/business-engagement-and-compliance/dbe-supportive-services/business-development-program/disadvantaged-business-enterprise-dbe-program/dbe>.

The Business Development Program is intended to increase legitimate DBE activities. The program operates in conformity with the Federal DBE rules and regulations. The Department's DBE/SS participants may not circumvent the Federal DBE rules or regulations.

5.0 Applicability:

During the transition period, the IFR provides that until the Arizona Unified Certification Program (UCP) completes the recertification process, the Department may not 1) set any DBE contract goals or 2) count any participation towards its overall DBE goal.

The Department has established an overall annual goal for DBE participation on Federal-aid contracts. The Department intends for the goal to be met with a combination of DBE conscious efforts and DBE neutral efforts once the DBE recertification process is completed in accordance with the IFR. DBE conscious participation occurs where the contractor uses a percentage of DBEs, as defined herein, to meet the contract-specified goal. DBE neutral efforts are those that are, or can be, used to assist all small businesses or increase opportunities for all small businesses. The regulation, 49 CFR 26, as revised by the IFR describes DBE neutral participation as when a DBE wins a prime contract through customary competitive procurement procedures or is awarded a subcontract on a prime contract that does not carry a DBE contract goal.

The provisions are applicable to all bidders.

6.0 Certification and Registration:

6.01 DBE Certification:

Certification as a DBE shall be predicated on:

- (A) The completion and execution of an application for certification as a "Disadvantaged Business Enterprise".
- (B) The submission of documents pertaining to the firm(s) as stated in the application(s), including but not limited to a statement of social disadvantage and a personal financial statement.

(C) The submission of any additional information which the Department or the applicable Arizona Unified Certification (UCP) agency may require to determine the firm's eligibility to participate in the DBE program.

(D) The information obtained during the on-site visits to the offices of the firm and to active job-sites.

Application Submission. Applications for Disadvantaged Business Enterprise (DBE) certification may be filed with the Department or the applicable UCP agency at any time through the Arizona Unified Transportation Registration and Certification System (AZ UTRACS) website at <https://utracs.azdot.gov/Home>.

Implementation of Revised Federal Standards. Effective October 3, 2025, all certification applications and renewals shall be reviewed and processed in accordance with the 49 CFR Part 26 as revised by the IFR. The revised rule modifies certification standards, documentation, and evidentiary requirements applicable to determinations of social and economic disadvantage, business size, ownership, and control.

Transition Period. During the transition period in which the Department and participating UCP agencies are updating internal procedures and the AZ UTRACS system to implement the revised rule, certification applications may continue to be submitted through the existing online platform. Applicants submitting applications during this period may be required to furnish additional or supplemental documentation consistent with the revised certification criteria upon system update or upon request by the certifying agency.

All applicants, whether filing initial or renewal applications, shall comply with any new or amended federal documentation requirements that become effective under 49 CFR Part 26 as revised by the IFR, including but not limited to personal narrative statements, financial disclosures, and supporting affidavits required to demonstrate eligibility under the revised standards.

The Department is a member of the AZ Unified Certification Program (AZUCP). During the transition period, the list of firms listed in AZ UTRACS were certified prior to October 3, 2025, not in accordance with the IFR, and therefore do not count for DBE credit, unless otherwise noted in AZ UTRACS. The list indicates contact information and specialty for each DBE firm and may be sorted in a variety of ways. However, the Department does not guarantee the accuracy and/or completeness of this information, nor does the Department represent that any licenses or registrations are appropriate for the work to be done.

The Department's certification of a DBE is not a representation of qualifications and/or abilities only that the firm has met the criteria for DBE certification as outlined in 49 CFR Part 26, as revised by the IFR. The contractor bears all risks of ensuring that DBE firms selected by the contractor are able to perform the work.

6.02 SBC Registration:

To comply with 49 CFR Part 26.39, the Department's DBE Program incorporates contracting requirements to facilitate participation by Small Business Concerns (SBCs) in federally assisted contracts. SBCs are for-profit businesses registered to do business in

Arizona that meet the Small Business Administration (SBA) size standards for average annual revenue criteria for its primary North American Industry Classification System (NAICS) code.

While the SBC component of the DBE program does not require utilization goals on projects, the Department encourages contractors to utilize small businesses that are registered in AZ UTRACS on their contracts, in addition to DBEs meeting the certification requirement in accordance with the IFR. However, SBCs that are not DBEs will not be counted toward DBE participation.

SBCs can register online at the AZ UTRACS website at <http://utracs.azdot.gov/Home/>. The Department's registration of SBCs is not a representation of qualifications and/or abilities. The contractor bears all risks of ensuring that SBC firms selected by the contractor are able to perform the work.

7.0 DBE Financial Institutions:

The Department thoroughly investigates the full extent of services offered by financial institutions owned and controlled by socially and economically disadvantaged individuals in its service area and makes reasonable efforts to use these institutions. The Department encourages prime contractors to use such institutions on USDOT assisted contracts. However, use of DBE financial institutions will not be counted toward DBE participation.

The Department encourages prime contractors to research the Federal Reserve Board website at www.federalreserve.gov to identify minority-owned banks in Arizona derived from the Consolidated Reports of Condition and Income filed quarterly by banks (FFIEC 031 and 041) and from other information on the Board's National Information Center database.

8.0 Time is of the Essence:

TIME IS OF THE ESSENCE IN RESPECT TO THE DBE PROVISIONS.

9.0 Computation of Time:

In computing any period of time described in this DBE special provision, such as calendar days, the day from which the period begins to run is not counted. When the last day of the period is a Saturday, Sunday, or Federal or State holiday, the period extends to the next day that is not a Saturday, Sunday, or Federal or State holiday. When the Department's offices are closed for all or part of the last day, the period extends to the next day on which the Department's offices are open.

10.0 Contractor and Subcontractor Requirements:

10.01 General:

The contractor shall establish a DBE program that will ensure nondiscrimination in the award and administration of contracts and subcontracts.

Agreements between the bidder and a DBE in which the DBE promises not to provide subcontracting quotations to other bidders are prohibited.

10.02 Blank:

11.0 Bidders/Proposers List and AZ UTRACS Registration Requirement:

Under 49 CFR Part 26.11, DOTs are required to collect certain information from all contractors and subcontractors who seek to work on federally-assisted contracts in order to set overall and contract DBE goals. The Department collects this information through a Bidders/Proposers List when firms register their companies on the Arizona Unified Transportation Registration and Certification System (AZ UTRACS) web portal at <http://utracs.azdot.gov/Home/> a centralized database for companies that seek to do business with the Department. This information will be maintained as confidential to the extent allowed by Federal and State law.

All prime contractors, subcontractors, and DBEs shall: 1) register in AZ UTRACS, and 2) maintain their profile with current and accurate firm information. Bidders may verify that their firm and each subcontractor is registered using the AZ UTRACS website.

Bidders may obtain additional information at the AZ UTRACS website or by contacting BECO.

Bidders shall create the Bidders/Proposers List in the AZ UTRACS by selecting all subcontractors, service providers, manufacturers and suppliers that expressed interest or submitted bids, proposals or quotes for this contract. The Bidders/Proposers List form must be complete and must include the names for all subcontractors, service providers, manufacturers and suppliers regardless of the bidders' intentions to use those firms on the project.

All bidders must complete the Bidders/Proposers List online at AZ UTRACS whether they are the apparent low bidder or not. A confirmation email will be generated by the system. The bidders shall submit to BECO a copy of the email confirmation no later than 4:00 p.m. on the fifth calendar day following the bid opening. Faxed copies are acceptable.

FAILURE TO SUBMIT THE REQUIRED BIDDERS/PROPOSERS LIST CONFIRMATION EMAIL TO BECO BY THE STATED TIME AND IN THE MANNER HEREIN SPECIFIED SHALL BE CAUSE FOR THE BIDDER BEING DEEMED INELIGIBLE FOR AWARD OF THE CONTRACT.

12.0 DBE Goals:

During the transition period, the IFR provides that until the UCP completes the recertification process, the Department may not 1) set any DBE contract goals or 2) count any participation towards its overall DBE goal. The Department will not be counting any DBE conscious or DBE neutral efforts towards its overall DBE goal during this transitional period.

The Department has not established contract goals for DBE participation in this contract. Contractors are still encouraged to employ reasonable means to obtain DBE neutral efforts.

Contractors must retain records in accordance with these DBE specifications. The contractor is notified that this record keeping is important to the Department so that it can track DBE participation where only DBE neutral efforts are employed.

13.0 Payment Reporting:

The contractor shall report on a monthly basis indicating the amounts paid to all subcontractors, of all tiers, working on the project. Reporting shall be in accordance with Subsection 109.06(B)(5) of the specifications.

14.0 Crediting DBE Participation:

14.01 General Requirements:

During the transition period, the IFR provides that until the UCP completes the recertification process, the Department may not count any participation towards its overall DBE goal. This applies to both DBE conscious and DBE neutral efforts.

To count toward DBE participation, the DBE firm must be certified in each NAICS code applicable to the kind of work the firm will perform on the contract. NAICS for each DBE can be found on the AZ UTRACS under the Firm Directory. General descriptions of all NAICS codes can be found at www.naics.com.

The entire amount of a contract that is performed by the DBE's own forces, including the cost of supplies and materials purchased by the DBE for the work on the contract and equipment leased by the DBE will be credited toward DBE participation. Supplies and equipment the DBE subcontractor purchases or leases from the prime contractor or its affiliate will not be credited toward DBE participation.

The contractor bears the responsibility to determine whether the DBE possesses the proper contractor's license(s) to perform the work.

The Department's certification is not a representation of a DBE's qualifications and/or abilities. The contractor bears all risks that the DBE may not be able to perform its work for any reason.

A DBE may participate as a prime contractor, subcontractor, joint venture partner with either a prime contractor or a subcontractor, or as a vendor of materials or supplies. A DBE joint venture partner shall be responsible for a clearly defined portion of the work to be performed, in addition to meeting the requirements for ownership and control.

The dollar amount of work to be accomplished by DBEs, including partial amount of a lump sum or other similar item, shall be on the basis of agreements such as: subcontract, purchase order, hourly rate, and rate per ton.

With the exception of bond premiums, all work must be attributed to specific bid items. Where work applies to several items, the DBE contracting arrangement must specify unit price and amount attributable to each bid item. DBE credit for any individual item of work performed by the DBE shall be the lesser of the amount to be paid to the DBE or the prime contractor's bid price. If the amount bid by the DBE on any item exceeds the prime

contractor's bid amount, the prime contractor may not obtain credit by attributing the excess to other items.

Where more than one DBE is engaged to perform parts of an item (for example, supply and installation), the total amount payable to the DBEs will not be considered in excess of the prime contractor's bid amount for that item.

Bond premiums may be stated separately, so long as the arrangement between the prime contractor and the DBE provides for separate payment not to exceed the price charged by the bonding company.

DBE credit may be obtained only for specific work done for the project, supply of equipment specifically for physical work on the project, or supply of materials to be incorporated in the work. DBE credit will not be allowed for costs such as overhead items, capital expenditures (for example, purchase of equipment), and office items.

If a DBE performs part of an item (for example, installation of materials purchased by a Non-DBE), the DBE credit shall not exceed the lesser of (1) the DBE's contract or (2) the prime contractor's bid for the item, less a reasonable deduction for the portion performed by the Non-DBE.

When a DBE performs as a partner in a joint venture, only that portion of the total dollar value of the contract which is clearly and distinctly performed by the DBE's own forces can be credited.

The contractor may credit second-tier subcontracts issued to DBEs by non-DBE subcontractors. Any second-tier subcontract to a DBE must meet the requirements of a first-tier DBE subcontract.

A prime contractor may credit the entire amount of that portion of a construction contract that is performed by the DBE's own forces. The cost of supplies and materials obtained by the DBE for the work of the contract can be included so long as that cost is reasonable. Leased equipment may also be included. No credit is permitted for supplies purchased or equipment leased from the prime contractor or its affiliate(s).

When a DBE subcontracts a part of the work of its contract to another firm, the value of the subcontract may be credited towards DBE participation only if the DBE's subcontractor is itself a DBE and performs the work with its own forces. Work that a DBE subcontracts to a non-DBE firm does not count towards DBE participation.

A prime contractor may credit the entire amount of fees or commissions charged by a DBE firm for providing a bona fide service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a USDOT-assisted contract, provided the fees are reasonable and not excessive as compared with fees customarily allowed for similar services.

14.02 Effect of Loss of DBE Eligibility:

If a DBE or a DBE prime contractor is deemed ineligible, decertified, or suspended by the Department in accordance with 49 CFR Part 26.87 and 49 CFR Part 26.88, the following provisions shall apply:

- (A) If a DBE firm loses its DBE eligibility because the DBE firm was acquired by a non-DBE firm, no work performed by the DBE firm after the Decision Date will be counted toward DBE participation.
- (B) If a subcontract, contract, or supplier arrangement has been executed before the Decision Date, work performed by the DBE firm will be counted toward DBE participation.
- (C) If neither paragraph (A) nor paragraph (B) above applies, the work performed by the DBE firm after the Decision Date will be counted toward DBE participation.
- (D) If the contractor extends or adds work to the DBE firm's subcontract, that work will not be counted towards DBE participation unless the contractor has obtained prior approval from the Department for DBE credit. Any requests to extend or add work to the DBE firm's subcontract to count towards DBE participation shall be submitted using the request form, made available on BECO's website at <https://azdot.gov/business/business-engagement-and-compliance/dbe-contract-compliance/contract-specs-and-forms>, to extend Decertified DBE contract for DBE credit.
- (E) The Department will consent to such DBE credit only if the added work is within the foreseeable range of added work, given the circumstances of the original DBE contract.
- (F) For the purposes of this subsection, "Decision Date" means the date the Department notifies the DBE that it has become ineligible, decertified, or suspended under 49 CFR Part 26.87(c)(4), (g).

14.03 Notifying the Contractor of DBE Certification Status:

Each DBE contract of any tier shall require any DBE subcontractor or supplier that is either decertified or certified during the term of the contract to immediately notify the contractor and all parties to the DBE contract in writing, with the date of decertification or certification. The contractor shall require that this provision be incorporated in any contract of any tier in which a DBE is a participant.

14.04 Police Officers:

DBE credit will not be permitted for procuring DPS officers. For projects on which officers from other agencies are supplied, DBE credit will be given only for the broker fees charged, and will not include amounts paid to the officers. The broker fees must be reasonable.

14.05 Commercially Useful Function:

A prime contractor can credit expenditures to a DBE subcontractor only if the DBE performs a commercially useful function (CUF) on the contract.

In conformity with 49 CFR Part 26.55(c), a DBE performs a CUF when it is responsible for execution of the work of a contract and carries out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the DBE must also be responsible, with respect to materials and supplies on the contract, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself that it uses on the project. To determine whether a DBE is performing a commercially useful function, the Department will evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the contract is commensurate with the work it is actually performing and the DBE credit claimed for its performance of the work, and other relevant factors.

A DBE will not be considered to perform a commercially useful function if its role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of DBE participation. In determining whether a DBE is such an extra participant, the Department will examine similar transactions, particularly those in which DBEs do not participate.

If a DBE does not perform or exercise responsibility for at least 30 percent 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 within normal industry practice for the type of work involved, the Department will presume that the DBE is not performing a commercially useful function.

When a DBE is presumed not to be performing a commercially useful function as provided above, the DBE may present evidence to rebut this presumption. The Department will determine if the firm is performing a CUF given the type of work involved and normal industry practices.

The Department will notify the contractor, in writing, if it determines that the contractor's DBE subcontractor is not performing a CUF. The contractor will be notified within seven calendar days of the Department's decision.

Decisions on CUF may be appealed to the State Engineer. The appeal must be in writing and personally delivered or sent by certified mail, return receipt requested, to the State Engineer. The appeal must be received by the State Engineer no later than seven calendar days after the decision of BECO. BECO's decision remains in effect unless and until the State Engineer reverses or modifies BECO's decision. The State Engineer will promptly consider any appeals under this subsection and notify the contractor of the State Engineer's findings and decisions. Decisions on CUF matters are not appealable to USDOT.

The Department will conduct project site visits on the contract to confirm that DBEs are performing a CUF. The contractor shall cooperate during the site visits and the Department's staff will make every effort not to disrupt work on the project.

14.06 Trucking:

In conformity with 49 CFR Part 26.55(d), the Department will use the following factors in determining whether a DBE trucking company is performing a commercially useful function. The DBE must be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract.

The DBE must itself own and operate at least one fully licensed, insured, and operational truck used on the contract on every day that credit is to be given for trucking.

The contractor will receive credit for the total value of transportation services provided by the DBE using trucks it owns, insures and operates, and using drivers it employs.

The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services.

The DBE may also lease trucks from a non-DBE firm, including an owner-operator. The DBE who leases trucks with drivers from a non-DBE is entitled to credit for the total value of the transportation services provided by non-DBE leased trucks with drivers not to exceed the value of transportation services on the contract provided by DBE-owned trucks or leased trucks with DBE employee drivers. Additional participation by non-DBE owned trucks with drivers receives credit only for the fee or commission paid to the DBE as a result of the lease agreement.

Example: DBE Firm X uses two of its own trucks on contract. It leases two trucks from DBE Firm Y and six trucks from non-DBE firm Z. DBE credit would be awarded for the total value of transportation services provided by Firm X and Firm Y, and may also be awarded for the total value of transportation services provided by four of the six trucks provided by Firm Z. In all, full credit would be allowed for the participation of eight trucks. DBE credit could be awarded only for the fees or commissions pertaining to the remaining trucks Firm X receives as a result of the lease with Firm Z.

The DBE may lease trucks without drivers from a non-DBE truck leasing company. If the DBE leases trucks from a non-DBE leasing company and uses its own employees as drivers, it is entitled to credit for the total value of these hauling services.

Example: DBE Firm X uses two of its own trucks on a contract. It leases three additional trucks from non-DBE Firm Z. Firm X uses its own employees to drive the trucks leased from Firm Z. DBE credit would be awarded for the total value of the transportation services provided by all five trucks.

For purposes of this section, a lease must indicate that the DBE has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck. Leased trucks must display the name and identification number of the DBE. DBE participation will be allowed only for those lease costs related to the time each truck is devoted to the project.

DBE credit for supplying paving grade asphalt and other asphalt products will only be permitted for standard industry hauling costs, and only if the DBE is owner or lessee of the equipment and trucks. Leases for trucks must be long term (extending for a fixed time period and not related to time for contract performance) and must include all attendant responsibilities such as insurance, titling, hazardous waste requirements, and payment of drivers.

14.07 Materials and Supplies:

In conformity with 49 CFR Part 26.55(e), the Department will credit expenditures with DBEs for material and supplies towards DBE participation as follows:

- (A) If the materials or supplies are obtained from a DBE manufacturer, 100 percent of the cost of the materials or supplies is credited.
 - (1) A DBE manufacturer is defined as: a firm that owns, or leases, and operates a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract, and of the general character described by the specifications.
 - (2) Manufacturing includes blending or modifying raw materials or assembling components to create the product to meet contract specifications. When a DBE makes minor modifications to the materials, supplies, articles, or equipment, the DBE is not a manufacturer. Minor modifications are additional changes to a manufactured product that are small in scope and add minimal value to the final product.
- (B) If the materials or supplies are purchased from a DBE regular dealer, 60 percent of the cost of the materials or supplies, (including transportation costs), is credited.
 - (1) A DBE regular dealer is defined as: a firm that owns, or leases, and operates, or maintains a store or warehouse or other establishment in which the materials, supplies, articles, or equipment of the general character described by the specifications and required under the contract are bought, kept in sufficient quantities, and regularly sold or leased to the public in the usual course of business.
 - (a) To be a regular dealer, the firm must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question.
 - (b) Items kept and regularly sold by the DBE are of the “general character” when they share the same material characteristics and application as the items specified by the contract.
 - (2) A firm may be a DBE regular dealer in such bulk items as petroleum products, steel, concrete or concrete products, stone or asphalt without owning and operating a place of business, as provided above, if the person both owns and operates distribution equipment used to deliver the products. Any supplementing of regular dealers’ own

distribution equipment must be by a long-term operating lease, and not on an ad-hoc or contract-by-contract basis.

- (3) A DBE supplier performs a CUF as a regular dealer and receives credit for 60 percent of the cost of materials or supplies, including transportation cost, when all, or at least 51 percent of, the items under a purchase order or subcontract are provided from the DBE's inventory, and when necessary, any minor quantities delivered from and by other sources are of the general character as those provided from the DBE's inventory.
 - (4) A DBE supplier of items that are not typically stocked due to their unique characteristics (e.g., limited shelf life or items ordered to specification) should be considered in the same manner as a regular dealer of bulk items as described above. If the DBE supplier of these items does not own or lease distribution equipment, as described above, it is not a regular dealer.
 - (5) Packagers, brokers, manufacturers' representatives, or other persons who arrange, facilitate or expedite transactions are not regular dealers within the meaning of this paragraph and the paragraph above.
- (C) If the materials or supplies are purchased from a DBE distributor that neither maintains sufficient inventory nor uses its own distribution equipment for the products in question, 40 percent of the cost of materials or supplies (including transportation costs) count for credit.
- (1) A DBE distributor is defined as: an established business that engages in the regular sale or lease of the items specified by the contract. A DBE distributor assumes responsibility for the items it purchases once they leave the point of origin (e.g., a manufacturer's facility), making it liable for any loss or damage not covered by the carrier's insurance.
 - (2) A DBE distributor performs a CUF when it demonstrates ownership of the items in question and assumes all risk for loss or damage during transportation, evidenced by the terms of the purchase order or a bill of lading (BOL) from a third party, indicating Free on Board (FOB) at the point of origin or similar terms that transfer responsibility of the items in question to the DBE distributor.
 - (3) If paragraph (1) and paragraph (2), above, are met, DBE distributors may receive 40 percent for drop-shipped items.
 - (4) Terms that transfer liability to the distributor at the delivery destination (e.g., FOB destination), or deliveries made or arranged by the manufacturer or another seller do not satisfy this requirement.
- (D) With respect to materials or supplies purchased from a DBE which is neither a manufacturer, a regular dealer, nor a distributor, the following standards shall apply:
- (1) The Department will credit the entire amount of the fees or commissions charged by the DBE for: (1) assistance in the procurement of the materials and supplies,

or (2) fees or transportation charges for the delivery of materials or supplies required on a job site, toward DBE participation.

- (2) The Department will only credit the fees or commissions charged by the DBE if the Department determines the fees to be reasonable and not excessive as compared with fees customarily allowed for similar services.
- (3) The cost of the materials and supplies themselves may not be counted toward DBE participation.
- (E) The Department will credit expenditures with DBEs for material and supplies (e.g. whether a firm is acting as a regular dealer, distributor or a transaction facilitator) towards DBE participation on a contract-by-contract basis.
- (F) The fact that a DBE firm qualifies under a classification (manufacturer, regular dealer, distributor or supplier) for one contract does not mean it will qualify for the same classification on another contract.
- (G) The bidder shall be responsible for verifying whether a DBE qualifies as a DBE manufacturer, regular dealer, distributor or supplier.
- (1) For each DBE firm listed as a regular dealer or distributor, the bidder must assess a DBE firm's eligibility for 60 or 40 percent credit, respectively, of the cost of materials and supplies based on its demonstrated capacity and intent to perform as a regular dealer or distributor.
- (2) To receive credit toward DBE participation, the bidder shall use and submit the form made available on BECO's website at <https://azdot.gov/business/business-engagement-and-compliance/dbe-contract-compliance/contract-specs-and-forms>, to affirm the DBE firm's capacity and intent to perform as a regular dealer or distributor.

15.0 Joint Checks:

15.01 Requirements:

A DBE subcontractor and a material supplier (or equipment supplier) may request permission for the use of joint checks for payments from the prime contractor to the DBE subcontractor and the supplier. Joint checks may be issued only if all the conditions in this subsection are met.

- (A) The DBE subcontractor must be independent from the prime contractor and the supplier, and must perform a commercially useful function. The DBE subcontractor must be responsible for negotiating the price of the material, determining quality and quantity, ordering the materials, installing (where applicable), and paying for the material. The DBE subcontractor may not be utilized as an extra participant in a transaction, contract, or project in order to obtain the appearance of DBE participation.

- (B) The use of joint checks will be allowed only if the prime contractor, DBE subcontractor, and material supplier establish that the use of joint checks in similar transactions is a commonly recognized business practice in the industry, particularly with respect to similar transactions in which DBE's do not participate.
- (C) A material or supply contract may not bear an excessive ratio relative to the DBE subcontractor's normal capacity.
- (D) There may not be any exclusive arrangement between one prime and one DBE in the use of joint checks that may bring into question whether the DBE is independent of the prime contractor.
- (E) Any arrangement for joint checks must be in writing, and for a specific term (for example, one year, or a specified number of months) that does not exceed a reasonable time to establish a suitable credit line with the supplier.
- (F) The prime contractor may act solely as the payer of the joint check, and may not have responsibility for establishing the terms of the agreement between the DBE subcontractor and the supplier.
- (G) The DBE must be responsible for receiving the check from the prime contractor and delivering the check to the supplier.
- (H) The prime contractor cannot require the DBE subcontractor to use a specific supplier, and the prime contractor may not participate in the negotiation of unit prices between the DBE subcontractor and the supplier.

15.02 Procedure and Compliance:

- (A) The Business Engagement and Compliance Office must approve the agreement for the use of joint checks in writing before any joint checks are issued. The prime contractor shall submit a DBE joint check request form, available from the BECO website, along with the joint check agreement, to BECO through email within seven calendar days from the time the subcontract is executed.
- (B) After obtaining authorization for the use of joint checks, the prime contractor, the DBE, and the supplier must retain documentation to allow for efficient monitoring of the agreement.
- (C) Copies of canceled checks must be submitted, with the payment information for the period in which the joint check was issued, electronically through email to BECO, and made available for review at the time of the onsite CUF review. The prime contractor, DBE, and supplier each have an independent duty to report to the Department in the case of any change from the approved joint check arrangement.
- (D) Any failure to comply will be considered by the Department to be a material breach of this contract and will subject the prime contractor, DBE, and supplier to contract remedies and, in the case of serious violations, a potential for termination

of the contract, reduction or loss of prequalification, debarment, or other remedies which may prevent future participation by the offending party.

16.0 Certification of Final DBE Payments:

DBE participation on the contract is measured by actual payments made to the DBEs. The contractor shall submit the "Certification of Final DBE Payments" form for each DBE firm working on the contract. This form shall be signed by the contractor and the relevant DBE, and submitted to the Engineer no later than 30 days after the DBE completes its work.

The contractor will not be released from the obligations of the contract until the "Certification of Final DBE Payments" forms are received and deemed acceptable by the Engineer and BECO.

17.0 False, Fraudulent, or Dishonest Conduct:

In addition to any other remedies or actions, the Department will bring to the attention of the USDOT any appearance of false, fraudulent, or dishonest conduct in connection with the DBE program, so that USDOT can take steps such as referral to the Department of Justice for criminal prosecution, referral to the USDOT Inspector General for possible initiation of suspension and debarment proceedings against the offending parties or application of "Program Fraud and Civil Penalties" rules provided in 49 CFR Part 31.

(TITLE VI, 08/19/21)

STANDARD TITLE VI SPECIFIC ASSURANCES:

The Arizona Department of Transportation, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, Disadvantaged Business Enterprises will 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.

GENERAL REQUIREMENTS:

BLM Material Sources:

If the contractor elects to pursue the use of material sources on BLM land under Title 30 Code of Federal Regulations, it is at the contractor's sole risk, and the Department bears no responsibility for any delays or costs associated with the request to use material sources on BLM Land.

The Department will not request or pursue any "free-use permit" under Title 23 Code of Federal Regulations or any other arrangement with BLM on this project.

No extension in contract time or compensation will be granted for any attempt by the contractor to utilize BLM land.

Use of Prohibited Products:

The contractor shall not commit any of the following actions:

- (1) Deliver, install, or include any prohibited product under this contract.
- (2) Propose to deliver, install, or include any prohibited product under this contract.
- (3) Enter into a new contract to procure or obtain any prohibited product.

For the purpose of this Section, "Prohibited Product" is defined as any telecommunication or video surveillance equipment, systems, or services produced by:

- (1) Huawei Technologies Company.
- (2) ZTE Corporation.
- (3) Hytera Communications Corporation.
- (4) Hangzhou Hikivision Digital Technology Company.
- (5) Dahua Technology Company.
- (6) Any subsidiary or affiliate of the entities mentioned in this Section.

The contractor shall identify the known subsidiaries and affiliates of the aforementioned from the following Website: https://umd.service-now.com/itsupport?id=kb_article_view&sysparm_article=KB0014132&sys_kb_id=28015b70d96193f

Scaling Material

Prior to submitting the bid, the contractor has access to the slope areas at and above the work sites by foot only. Only hand-carried equipment will be allowed during these site inspection trips. Photos are available with the geotechnical reports to assist the contractor in

further assessing the conditions of the areas where work is to be performed. A copy of the Geotechnical Report can be purchased at Arizona Department of Transportation, Contracts and Specifications office.

Scaling, pinning in place, temporary fencing, and/or removal of loose rocks outside the designated working limits may be allowed on a case-by-case basis if deemed necessary by the contractor for safety and approved in writing by the Engineer prior to beginning the work. All work shall be in accordance with the provisions of Section 202-3 of these Special Provisions.

Prior to performing work (including scaling), the limits of the working area shall be surveyed and marked with stakes, tape, and/or other means to clearly delineate the allowable working area. The marking shall be maintained throughout the duration of construction and shall not be removed until after completion of the work. After review and approval by the Engineer, the contractor shall install temporary plastic fencing to clearly delineate the limit of disturbance and serve as a reference line. The cost of staking, furnishing and installing the temporary plastic fence shall be considered included in the price of contract items.

A working platform may be required to provide access for drilling equipment and personnel. The cost of furnishing and installing the working platform shall be considered included in the price of contract items. The contractor shall exercise extreme care to eliminate hazards to the public and to all persons associated with the work. Blasting will not be allowed for hard rock removal at any location.

The contractor shall submit a site-specific plan for fall protection (for construction worker safety). The plan shall satisfy OSHA requirements, 29 CFR Part 1926. The Engineer will conduct a site meeting with the contractor after the Pre-Construction meeting but prior to the beginning of construction activities. The purpose of the meeting will be to ensure a common understanding of the site features and constraints. Topics of discussion will include working limits, scaling of existing slopes for safety, staging areas, storm water pollution prevention, traffic control, local access, lines of communication, and other items of common interest to the contractor and the Engineer. All traffic control devices required to provide for the one-lane closure as shown in the plans shall be installed and operational prior to construction operations.

There is a designated waste site for this project at MP 19.4 in the median. The contractor shall comply with all regulations regarding disposal of waste from project activities.

The contractor shall submit for the Engineer's review and approval a list of proposed equipment and a description of proposed methods of excavation and scaling. These items shall be submitted a minimum of ten working days prior to beginning the work. Submittal of documents for review, site meetings and all other similar activities will be considered included in the contract items.

All Scaling material shall become property of the contractor.

Minimize Adverse Visual Impacts:

The contractor shall minimize adverse visual impacts of constructing rockfall mitigation measures in accordance with ADOT Guidelines for Highways on BLM and U.S. Forest Service Lands. When required, Natina or similar native color treatment products shall be applied to rock, concrete, and/or new galvanized surfaces as directed by an ADOT Construction Professional Landscape Architect (PLA) through the Engineer. If applied, no separate measurement or direct payment will be made for Natina or similar native color treatment; the cost is included in the price of the respective contract items.

Erosion, Sediment Control and Stormwater Quality Protection:

The contractor shall pay attention to the impact of the construction operations on the natural landscape and shall take care to maintain the natural surroundings undamaged. The contractor shall minimize soil disturbance by implementing Low Impact Development (LID) methods to control erosion as close as possible to the source of disturbance.

The contractor shall maintain the independence of discrete locations of construction by accessing them through the paved area only. For project areas above/outside the Jurisdictional Waters of the U.S., the contractor shall minimize off-pavement (off-road) soil/ground disturbance at each discrete construction location to ensure disturbance is less than one acre (< 1 acre) beyond all new shoulder build-up areas (edge of pavement build-up areas). No unpaved temporary construction roads shall be created to directly connect discrete locations of soil/ground disturbance above/outside the Jurisdictional Waters of the U.S.

The contractor shall use all means necessary to significantly reduce impacts by staging/stockpiling and conducting project activities in such a way as to minimize the potential for erosion and discharge of pollutants from the project site.

The contractor shall field verify the proposed location around Sta 901+90, Offset 73' RT and install the temporary STABILIZED CONSTRUCTION ENTRANCE/EXIT GRAVEL PADs (ITEM **8101018**) as approved by the Engineer in accordance with project plans and site conditions.

In addition to what is shown in the plans and/or details, when required, the contractor shall apply perimeter/containment control Best Management Practices (BMPs) or temporary stormwater quality Control Measures (CMs) on the down-slope perimeter of construction disturbed areas, unpaved on-site staging/storage, and unpaved on-site stockpiling at no additional cost to the Department. The contractor shall also apply perimeter/containment control BMPs/CMs parallel to the slope contours and beyond the toe of the new guardrail end treatment pad disturbed slopes. To prevent sediment from bypassing the perimeter control BMP/CM end, the end of the BMP/CM shall be turned up the slopes for a minimum of three (3) feet to form an "L" shape. No portion of the BMPs/CMs shall be installed within six (6) feet from the edge of the pavement. BMPs/CMs shall not be placed over any driveways or access roads that intersect with the roadway mainline. Unless otherwise called out in the plans/details and approved by the Engineer, such BMPs/CMs shall not be placed on the flow path of inlets and outlets of drainage facilities. All BMPs/CMs shall be installed in accordance with the manufacturer's instructions. Moreover, perimeter/containment control

BMPs/CMs shall be applied outside and above adjacent wetlands, as well as water courses. The contractor shall adjust the field layout of erosion control and sediment prevention elements according to the actual limits of soil/ground disturbance as approved by the Engineer. The contractor shall also observe ADOT traffic safety standards when installing perimeter/containment control BMPs/CMs in the traffic clear zone/recovery area.

Wattles/logs, bio-socks, filter socks, compost socks, or compost tubes shall be deemed as temporary stormwater quality CMs/BMPs. The non-biodegradable and/or non-photodegradable components of such temporary CMs/BMPs shall be removed when the project site has achieved stabilization as approved by the Engineer. Rock materials used for temporary stormwater quality protection CMs/BMPs may be left onsite to cover unpaved disturbed soil area for permanent stabilization as approved by the Engineer. If approved, on-site rock materials shall be flattened and re-graded to match the final unpaved finished grade.

All Rock Mulch and Rock Riprap used for erosion/sediment control shall be placed and shaped as shown on the CMs/BMPs' plans/details. Rock Mulch/Riprap materials shall be fractured/crushed rocks in angular shape for effective erosion/sediment control and energy/velocity dissipation as defined in Section 810 / 913 of the Standard Specifications. Unless otherwise called out in the plans/details/estimates, or as directed by the Engineer, natural river-run materials, especially rounded natural river rocks/cobblestones, and pebbles are not acceptable. The color of Rock Mulch and Rock Riprap shall harmonize with the natural surrounding rock/inert artificial existing ground cover material as approved by the Engineer in accordance with the ADOT Construction PLA's evaluation.

The contractor is responsible for maintaining the functional longevity and good working conditions of all stormwater quality protection CMs/BMPs during the entire contract time. No separate measurement or direct payment will be made for the maintenance and/or replacement of such CMs/BMPs to assure manufacturer-specified functionality; the cost is considered included in the price of the respective contract items.

The contractor is also responsible for protecting Storm Drain Inlets within the project limits from pollutants/contaminants discharged by construction at no additional cost to the Department.

Fine particles including minor miscellaneous dirt, dust, rock fragments, milled asphalt concrete (AC), or construction debris that may be associated with stormwater discharges into catch basins / Storm Drain Inlets shall be prevented and controlled to the maximum extent practicable (MEP) at no additional cost to the Department. Such compliance measures may include frequent dry vacuuming and/or pavement sweeping during construction to ensure no debris, dirt, dust, and material fragments will build up within twenty-five (25) feet from catch basins / Storm Drain Inlets. On-site staging, material storage, and stockpiling shall not be allowed within fifty (50) feet from catch basins / Storm Drain Inlets.

During construction, the contractor shall minimize vehicular travel or equipment operation on unpaved soil areas to the MEP. The contractor shall develop and implement procedures to avoid earth disturbance, soil compaction, and damage to vegetative cover from vehicular travel or equipment operation during inclement weather or unsuitable soil conditions. The

contractor shall stabilize all construction-disturbed soil areas at no additional cost to the Department. Furthermore, the contractor shall minimize off-site sedimentation, including minor miscellaneous dirt, dust, rock fragments, or construction debris by eliminating the tracking of such contaminants from construction sites.

No grout, concrete or wash water shall be disposed of within the project limits or its vicinity. The contractor shall install concrete washout CM/BMP as needed and under the direction of the Engineer at no additional cost to the Department. This CM/BMP shall include proper disposal of all excess grout, concrete, and wash water.

The contractor shall not use unpaved areas within the project limits for staging or stockpiling without first installing erosion control and sediment prevention CMs/BMPs and as directed and approved by the Engineer. Staging and stockpiling in the unpaved areas shall be avoided to the MEP.

Erosion and Sediment Control beyond the Project Limits:

The contractor shall apply erosion/sediment and water quality protection CMs/BMPs as required by the commercial material source owner and environmental permit standards at no additional cost to the Department.

The contractor shall apply erosion/sediment and water quality protection CMs/BMPs for off-project-site staging, material storage, maintenance yard, disposal spots, and stockpiling areas as required by the facility owner and environmental permit standards at no additional cost to the Department.

If the contractor elects to obtain an off-project site for staging, stockpiling, material storage, maintenance yard, or waste disposal, the contractor shall meet the requirements for erosion control, sediment prevention, and stormwater quality protection measures within the written agreements with the facility and/or the landowner, as well as environmental permits for such operations.

Ground Disturbance on areas above and outside the Waters of the United States (WOTUS):

The contractor shall minimize the ground disturbance of any unpaved areas within the project limits. If the disturbance is not avoidable due to construction activities, the disturbance areas at each discrete location shall be less than one contiguous acre. If the disturbed areas equal or exceed one contiguous acre, the contractor shall conform to all applicable requirements of Subsection 104.09 of the specifications, the Arizona Pollutant Discharge Elimination System (AZPDES), and/or National Pollution Discharge Elimination System (NPDES) at no additional cost to the Department. Shoulder build-up areas will not be considered as disturbed areas.

Coordination between Control of Noxious Plants and Seeding:

All unpaved construction-disturbed project areas shall ultimately be stabilized with Class II Seeding unless otherwise stabilized by equivalent permanent stabilization measures as approved by the Engineer. As part of Integrated Vegetation Management, the contractor

shall re-establish diversified native vegetation through seeding after successfully controlling noxious plants as approved by the Engineer in accordance with an ADOT Construction PLA evaluation. A well-established diversified plant community, through seeding of desirable native species, will be able to effectively compete and resist the spread of non-native invasive weed species from re-invasion / re-infestation.

The contractor shall avoid herbicide persistence in subsequent desirable seeding establishment. Pre-emergent herbicide shall NOT be applied to all project seeding areas during Control of Noxious Plants. The time period and length of an herbicide product that remains active in the soil, which is the acceptable herbicide Soil Persistence or Soil Residual Life, shall be approved by the Engineer in accordance with an ADOT Construction PLA's evaluation. As herbicides vary in their length of time to persist in the soil, the contractor shall demonstrate information / methods on how the application of herbicide(s) will NOT harm the expected desirable seed species germination and establishment as specified in Items 9240181 and 9240182 of these Special Provisions.

Transition of Select AASHTO Standard Test Method to Arizona Test Method Equivalent:

Whenever reference is made in the specifications to an AASHTO Test Method, the reference shall be construed to mean it's equivalent Arizona Test Method as listed in the table below.

TEST METHOD TRANSITION TABLE	
AASHTO Standard	Equivalent Arizona Test Method
R 66	103
R 97	104
R 90	105
T 11, T 27	201
T 85	210
T 84	211
T 335	212
T 99	225
	226
T 224	227
T 191	230
T 272	232
T 310	235
T 288, T 289	236
T 176	242
T 99	245
T 272	246
T 304 Method A	247
T 24	317
T 329	406
R 68, T 245	410

T 355	412
T 166	415
R 47	416
T 209	417
T 287	421
T 269	424
T 308	427
	428

(101DEFN, 04/21/22)

SECTION 101 DEFINITIONS AND TERMS:

101.02 Definitions:

Acceptance: of the Standard Specifications is hereby deleted:

Characteristic: of the Standard Specifications is revised to read:

A measurable or an observable property of a material, product, or item of construction.

City, County, Township, or Town: of the Standard Specifications is hereby deleted:

Contract Bonds (Performance Bond and Payment Bond): the title and text of the Standard Specifications is revised to read:

Contract Bonds:

Surety Bonds that include Performance Bond and Payment Bond.

Highway, Street, or Road: of the Standard Specifications is revised to read:

A general term denoting a public way for purposes of travel, vehicular, pedestrian or by other means, including the entire area within the right-of-way.

Roadbed: of the Standard Specifications is revised to read:

The graded portion of a highway, prepared as a foundation for the pavement structure and shoulders.

Roadside Development: of the Standard Specifications is revised to read:

Activities which provide for the preservation of landscape materials and features; the rehabilitation and protection against erosion of all areas disturbed by construction through seeding, sodding, mulching and the placing of other ground covers; or such planting and other improvements as may increase the effectiveness and enhance the appearance of the highway.

State: of the Standard Specifications is revised to read:

The State of Arizona, acting through its authorized representatives.

(102BID, 03/19/26)

SECTION 102 BIDDING REQUIREMENTS AND CONDITIONS: of the Standard Specifications is revised to read:

102.01 Contract Documents:

(A) General:

The Contract Documents, including but not limited to, Advertisement for Bids, Project Plans, and Proposal Pamphlets will be available in electronic format, on the ADOT Contracts and Specifications Group website. Any interested party may access the advertised Contract Documents.

(B) Advertisements for Bids:

The advertisement for bids may contain the following information:

- Programmed Amount,
- Project number and name of highway,
- Route number and mileposts,
- Date and time of opening of bids,
- Location of the project,
- General description of work,
- Specified contract time for completion of contract work,
- Statement of proposal requirements,
- Manner in which project plans and specifications may be obtained,
- Type and amount of proposal guaranty.

(C) Proposal Pamphlet:

The Proposal Pamphlet will include the location and general description of the contemplated construction, an approximate estimate of the quantities and types of work to be performed and/or materials to be furnished, a schedule of bid items for which unit prices are invited, the

specified time for completion, any applicable Special Provisions or supplemental requirements, and all necessary bidding documents.

102.02 Prerequisites for Bidding:

(A) General:

To submit a valid bid, the bidder shall:

- (1) Have prequalification from the Department as necessary for the project, in accordance with Subsection 102.02(B) of the specifications; and
- (2) Be included on the project Plansholder List as a Prime in accordance with Subsection 102.02(C) of the specifications.

(B) Prequalification of Bidders:

Prior to submitting a bid, the bidder will (unless waived by the Department) be required to be prequalified with the Department to bid on the project. The submission of Prequalification information and determination of Prequalification shall be in accordance with the requirements of the Rules for Prequalification of Contractors as approved and adopted by the Department.

(C) Plansholder List:

It is the bidder's responsibility to ensure that their firm is on the Plansholder List as a Prime prior to submitting a bid.

Firms may register electronically requesting placement on the project Plansholder List as a Prime contractor as follows:

- (1) Go to the ADOT Contracts and Specifications Group Website;
- (2) Select "Current Advertisements";
- (3) Identify the project of interest;
- (4) Click on the "Register" icon;
- (5) Select the "Bidder" radio button;
- (6) Complete all required fields;
- (7) Click "Save". This submits the request to the Department; and
- (8) If all required information is provided, the "ADOT C&S Advertisement Registration Confirmation" Screen will appear. An email will also be sent to the email address provided acknowledging the receipt of the request.

Requests to be included on the Plansholder List as a Prime will be evaluated by the Department to determine whether the bidder is prequalified for the project. The Department cannot guarantee that requests to be on the Plansholder List will be considered if the request is submitted less than five working days prior to the bid opening. The Department will send an email to the email address provided notifying the contractor of the results of their request.

The Department's email will state whether the request was approved or denied. More information regarding the Department's decision may be obtained by contacting the ADOT Contracts and Specifications Group.

If an individual from a firm submits a duplicate request to be placed on the Plansholder List, the request will be denied. The Department will register the contact person listed on the duplicate request to receive email notices of updates to the project. The Department will send an email to the email address provided notifying the contractor of the results of their request.

(D) Registration for Notifications:

Subcontractors, Vendor and other interested parties may electronically register to receive email notifications regarding updates or changes to specific advertised contracts.

To register:

- (1) Go to the ADOT Contracts and Specifications Group Website;
- (2) Select "Current Advertisements";
- (3) Identify the project of interest;
- (4) Click on the "Register" icon;
- (5) Select the "Other" radio button, as applicable;
- (6) Select the "Yes" in response to the prompt "Are you interested in registering to be notified about any changes made to this advertisement?";
- (7) Complete all required fields;
- (8) Click "Save". This submits the request to the Department; and
- (9) If all required information is provided, the "ADOT C&S Advertisement Registration Confirmation" Screen will appear and a confirmation email will be sent to the email address provided.

All registered parties will receive notifications when changes are made to the associated contract advertisement.

102.03 Suspension from Bidding:

The Department may suspend any person and any subsidiary or affiliate of any person from further bidding to the Department and from being a subcontractor or a 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, or 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;
- (B) If the Department makes a finding of any of the above or finds that the contractor is not a Responsible Bidder or a Responsible Contractor; or
- (C) If the Department determines that a contractor, subcontractor, or supplier has repeatedly or willfully failed to comply with federal or state immigration laws.

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.

102.04 Availability of Documents:

The following documents, if applicable, will be available in electronic format on the ADOT Contracts and Specifications Group website:

- A. Project Plans.
- B. Advertisement for Bids.
- C. Proposal Pamphlet.
- D. Cross Sections.
- E. Earthwork Report.
- F. Other Available Reports.
- G. Existing Ground Digital Terrain Model (DTM).
- H. Design Ground Digital Terrain Model (DTM).

I. Survey Control Sheet.

The project plans, proposal pamphlet, cross sections, earthwork report, survey control sheet, and any applicable reports are provided in PDF format. The Department makes no representation or warranties as to the compatibility, usability, or readability of the PDF documents with any system, software, hardware, or application package other than that on which the files were originally saved. The contractor bears the sole risk of any modifications, manipulations, or alterations to the plans, proposal pamphlet, and any applicable reports.

The existing ground DTM and the design DTM, if applicable, are provided in either DTM or DGN files for informational purposes only. The DTMs are not part of the contract documents. The contractor's use of the information in the DTMs is at the contractor's sole risk. The Department makes no representation or warranties as to the compatibility, usability, or readability of the DTMs with any system, software, hardware, or application package other than that on which the files were originally prepared. The version of Microstation used to save the DTMs is indicated at <https://azdot.gov/business/engineering-and-construction/computer-aided-design-and-drafting-cadd>.

The Department is providing the available electronic project documents to bidders for informational purposes in conjunction with work or services to be provided to the Department under the contract. Any use of the electronic files for any purposes other than for this project is prohibited.

102.05 Plansholder Eligibility:

The Department reserves the right to disqualify a prequalified contractor from being a Plansholder for any of the following reasons:

- (A) Lack of competency or adequate machinery, plant and other equipment, as revealed by the financial statement and experience questionnaires required under Subsection 102.02 of the specifications.
- (B) Incomplete work which, in the judgment of the Department, might hinder or prevent the prompt completion of additional work if awarded.
- (C) Failure to pay, or settle satisfactorily, all bills due for work on other contracts.
- (D) Failure to comply with any qualification regulations of the Department.
- (E) Default under previous contracts.
- (F) Unsatisfactory performance on previous work.
- (G) Entering into any contract, combination, conspiracy, or other unlawful act in restraint of trade or commerce.
- (H) Knowingly and willfully falsifying, concealing, or covering up a material fact by trick, scheme, or device.
- (I) Making false, fictitious, or fraudulent statements or representations.

- (J) Making or using a false writing or document knowing it to contain a false, fictitious, or fraudulent statement or entry.
- (K) Misrepresentation or false statement on any application for bonding.
- (L) Misrepresentation or false statement on any application for prequalification.
- (M) Lack of sufficient ability or integrity to complete the contract.

102.06 Interpretation of Quantities in Bidding Schedule:

The quantities appearing in the bidding schedule, except as provided elsewhere, are approximate only and are prepared for the comparison of bids. Payment to the contractor will be made only for the actual quantities of work performed and accepted or materials furnished in accordance with the requirements of the contract. The scheduled quantities of work to be done and materials to be furnished may each be increased, decreased, or omitted as hereinafter provided in Subsection 104.02 of the specifications.

102.07 Examination of Plans, Specifications and Site of Work:

The bidder shall examine the site of the proposed work and the contract before submitting a Proposal. If no site investigation is performed, the bidder is responsible for all site conditions that should have been discovered had a reasonable site investigation been performed. The submission of a Proposal will be considered conclusive evidence that the bidder is satisfied with the conditions to be encountered in performing the work and as to the requirements of the proposed contract.

The bidder shall take no advantage of any apparent error or omission in the plans, bid schedule items, estimated quantities, specifications, or other contract documents. In the event the bidder discovers such an error or omission, the bidder shall immediately notify the Department. The Department will then make such corrections and interpretations as may be deemed necessary.

Any request for explanation of the meaning or interpretations of the contract shall be submitted in adequate time to allow a reply to reach all bidders before submission of their Bid Proposal. If the Department determines interpretations or explanations are warranted, the response will be issued, if necessary, through an addendum to the contract documents, and will be made available to all prospective bidders before the time set for opening of Proposals.

The Department will not be bound by any statement or representation concerning conditions or description of the work unless they are included in the contract. Oral explanations, interpretations, or instructions given before the opening of the bids by Department employees or agents are not binding.

102.08 Preparation of Proposal:

(A) General:

The bidder shall prepare and submit its proposal using Department-approved bid preparation software.

Proposals shall be prepared and submitted in accordance with the requirements of Subsection 102.08(B) of the specifications.

The bidder shall submit its proposal using the electronic bid process described herein.

(B) Electronic Submittal:

(1) General:

In order to submit a bid electronically, a firm shall have obtained a bidder identification number from the Department, at the office of ADOT Contracts and Specifications Group, 205 South 17th Avenue, Maildrop 121F, Phoenix, AZ 85007, phone (602) 712-7221.

In addition, bidders shall subscribe to Info Tech, Inc., doing business as Infotech's Bid Express® service at www.bidx.com, an online bidding service, and obtain an online Digital ID. Bid Express can be reached at www.bidx.com, phone (888)-352-2439 and/or customer.support@bidx.com. The bidder shall also download and install a copy of the AASHTOWare Project Bids Bid Component from the internet at the Bid Express website. The version of the software currently used by ADOT can then be located by selecting the ADOT tab and the "AASHTOWare Project Bids" link under Downloads.

In order to obtain a Digital ID, bidders shall name at least one authorized signatory, as approved by the Department to commit the firm to the terms and conditions specified in the Proposal and the contract documents.

The bidder shall download the electronic copy of the project EBSX file, listed as an AASHTOWare Project Bids Data File on the Bid Express website. The file includes a schedule of items folder containing the bid schedule, a miscellaneous data folder containing the proposal and attachments, contractor authorization folder containing bidders's contact information, and a bid bond folder. The bidder shall review the proposal and complete the bidding schedule, as specified herein, and the attachments.

The bidder shall include with its bid an email address and recipient name as its contact information for the purpose of receiving the notice of award or other notices related to the bidding. The Department will send the notice of award, executed contract and other notices to the requested email address and recipient name.

It is the contractor's responsibility to provide the updated contact information to the Department if there are any changes to the above requested email address or recipient name prior to the award of the contract.

The bidder shall specify a unit price for each pay item for which a quantity is given in the bidding schedule. The software will automatically produce the extended amount, as the product of the quantity given and the specified unit price.

The bidder shall also download all addenda files issued and update the project file accordingly. The bidder shall be responsible for the successful submission of its electronic

bid prior to the time specified for submission of bids. The bidder agrees that the Department bears no liability resulting from the bidder's failure to successfully submit an electronic bid.

(2) Procedure for Missing Bids:

If a bidder believes that its electronically submitted bid should have been read at the bid opening but was not read, the bidder shall notify the Department at CSGroup@azdot.gov of the apparent irregularity and provide its bid receipt for the bid in question no later than three hours after the time specified for submission of bids.

Upon proper notification of a missing bid by a bidder, the Department will notify all bidders that a missing bid has been reported. The Department will begin an investigation to determine the status of the bid, and will review all electronic bids received from Bid Express service.

The Department will direct Infotech to review their records and determine whether the missing bid was submitted. Infotech will make a determination about receipt of the bidder's missing bid.

If requested by the Department, Infotech will attempt to retrieve a copy of the encrypted bid from the bidder's computer.

The Department will partner with Infotech and implement best practices to configure the Bid Express service to decrypt the bid.

If the Department determines that a bid cannot be recovered, the Department will notify all bidders of its determination.

If a missing bid is recovered, the Department will determine the validity of the bid, and may recommend award of the contract to the bidder submitting the missing bid if appropriate. The Department will notify all bidders.

102.09 Non-Collusion Certification:

By submission of its bid electronically, the bidder makes the certification stated in the following paragraph, binding as if it had been signed by the bidder.

The bidder certifies that, pursuant to Subsection 112(c) of Title 23, United States Code and Title 44, Chapter 10, Article 1 of the A.R.S, 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 free competitive bidding in connection with the submitted bid.

102.10 Irregular Proposals:

(A) Proposals may be considered irregular and may be rejected for any of the following reasons:

- (1) If there is a submission of any kind which may tend to make the proposal incomplete, indefinite or ambiguous as to its meaning.
 - (2) If the bid is mathematically unbalanced.
 - (3) If the bid is materially unbalanced.
- (B) Proposals will be considered irregular and will be rejected for any of the following reasons:
- (1) If the bidder or surety fails to provide a proposal guaranty as specified in Subsection 102.11 of the specifications.
 - (2) If the bidding schedule does not contain a unit price for each pay item listed.
 - (3) If the bidder fails to meet the required goal for Disadvantaged Business Enterprises (DBE) established in the Special Provisions or show good faith effort as determined by the Department.

102.11 Proposal Guaranty:

The bidder shall provide an electronic proposal guaranty payable to the Arizona Department of Transportation for 10 percent of the amount of the bid.

The surety (bid) bond shall be executed by the bidder and a surety company or companies holding a certificate of authority to transact surety business in this State issued by the Director of the Department of Insurance. The agent for the surety shall be licensed to act as an insurance agent in Arizona.

Bidders shall provide an electronic proposal guaranty as described herein.

Two companies have established web-based surety processing procedures with Bid Express: Surety 2000 (<https://surety2000.com/>) and Sure Path Network (<http://web.insurevision.com/>). Bidders may contact these companies for additional information and requirements on electronic proposal guaranty.

102.12 Withdrawal of Proposals:

(A) General:

A bidder may withdraw its electronic submittal at a minimum 30 minutes prior to the time specified for bid opening in writing to the Contracts and Specifications Manager through the Contract and Specifications Group email at CSGroup@azdot.gov.

(B) Conditional Withdrawal:

When proposals for more than one contract are to be publicly read on any one date, a bidder may request in the event it is the apparent low bidder on a given contract or contracts, that one or more subsequent bids be withdrawn.

The bidder shall submit a written request for conditional withdrawal to the Contracts and Specifications Group Manager via email at CSGroup@azdot.gov a minimum of 30 minutes prior to the specified bid opening time.

102.13 Combination or Conditional Proposals:

At the Department's discretion, proposals may be issued for projects either separately or in combination. Bidders may submit bids for the combination or for individual units within the combination, as allowed in the proposal. The Department reserves the right to award contracts based on separate or combination bids, whichever is most advantageous to the state. Only combination bids specifically authorized in the Department's proposal will be considered.

102.14 Public Opening of Proposals:

Proposals will be opened and read aloud at the time indicated in the advertisement for bid.

Bidders, their authorized agents and other interested parties may attend the bid opening while they are read aloud. After the completion of the bid opening, the as-read bid results will then be made available through the ADOT Contracts and Specifications Group website.

102.15 Licensing:

It is the responsibility of the bidder to determine whether it has the appropriate contracting licenses to perform the work. For all projects except Federal-aid funded projects, the bidder shall have the proper licenses at the time of bid opening. The successful bidder's failure to meet with the necessary license requirements at the time of bid opening will result in the rejection of the bid.

On Federal-aid funded projects, the bidder is not required to have the licenses at the time of bidding, but it must procure the licenses from the State Registrar of Contractors, in accordance with A.R.S. 32 1101 et seq. before award can be made, and no later than 60 days after the date bids are opened. The bidder's failure to get the necessary licenses within 60 days after the bid opening date will result in rejection of the bid.

Licensing information is available from:
Arizona Registrar of Contractors
1700 W. Washington St. Suite 105
Phoenix, AZ 85007-2812
Phone: (602) 542-1525
Email: Webmaster@azroc.gov
www.roc.az.gov

102.16 Boycott of Israel:

All bidders are required to certify in their bid proposal on the "Participation in Boycott of Israel Certification" form either:

(A) The bidder does not participate in, and agrees not to participate in during the term of the contract, a boycott of Israel in accordance with ARS 35-393.01; or

(B) The bidder does participate in a boycott of Israel as defined in ARS 35-393.01.

The Department will not recommend award of the contract unless the bidder makes the certification described in subparagraph (A) of this Subsection.

102.17 Forced Labor of Ethnic Uyghurs Ban:

All bidders are required to certify in their bid proposal on the "Forced Labor of Ethnic Uyghurs Ban Certification Form" either:

(A) The bidder does not use the Forced labor of Ethnic Uyghurs as described in A.R.S. 35-394; or

(B) The bidder does use the Forced labor of Ethnic Uyghurs as described in A.R.S. 35-394.

The Department will not recommend award of the contract if the bidder makes the certification described in subparagraph (B) of this Subsection, unless the bidder uses an exempt contractor.

For the purposes of this subsection, a contractor is defined as an exempt contractor if it is a sole proprietorship; has fewer than 10 employees; and/or is a non-profit organization.

(102NOBID, 09/19/12)

SECTION 102 BIDDING REQUIREMENTS AND CONDITIONS:

102.03 Suspension from Bidding: of the Standard Specifications is modified to add:

The signature of the bid proposal by a bidder constitutes the bidder's certification, under penalty of perjury under the laws of the United States, that the bidder, 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 bidder does not have a proposed debarment pending. In addition, signature of the bid proposal certifies that the bidder 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.

(102LOBY, 01/21/21)

SECTION 102 BIDDING REQUIREMENTS AND CONDITIONS:

102.09 Non-Collusion Certification: of the Standard Specifications is modified to add:

(A) Lobbying:

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

- (1) No Federally 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 any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract grant, loan, or cooperative agreement.
- (2) If any funds other than Federally 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. Copies of Form-LLL, "Disclosure Form to Report Lobbying", are available at ADOT Contracts and Specifications Group, 205 South 17th Avenue, Room 121F, Phoenix, AZ 85007.

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

The bidder also agrees, by submitting the bid or proposal, that it shall require that the language of this certification be included in all subcontracts and lower tier subcontracts which exceed \$100,000 and that all such subcontractors and lower tier subcontractors shall certify and disclose accordingly.

The Department will keep the prime contractors' certifications on file as part of their original bid proposals. Each prime contractor shall keep

individual certifications from all subcontractors and lower tier subcontractors on file. Certifications shall be retained for three years following completion and acceptance of any given project.

Disclosure forms for the prime contractor shall be submitted to the Engineer at the pre-construction conference. Disclosure forms for subcontractors and lower tier subcontractors shall be submitted to the Engineer by the prime contractor along with the submittal of each subcontract or lower tier subcontract, as required under Subsection 108.01, when said subcontracts exceed \$100,000.00. During the performance of the contract the prime contractor and any affected subcontractors shall file revised disclosure forms at the end of each calendar year quarter in which events occur that materially affect the accuracy of any previously filed disclosure form. Disclosure forms will be submitted by the Engineer to the Federal Highway Administration for further processing.

(103AWARD, 09/17/20)

SECTION 103 - AWARD AND EXECUTION OF CONTRACT:

103.04 Award of Contract: of the Standard Specifications is modified to add:

The Department will make the award to the lowest responsible bidder who has the proper licenses.

When a contract is funded, either wholly or in part, by federal funds, an award of contract may be made contingent upon the successful bidder obtaining an appropriate license in accordance with the requirements of Subsection 102.16 of the specifications. The license must be obtained within 60 calendar days following opening of bid proposals. No adjustment in proposed bid prices or damages for delay will be allowed as a result of any delay caused by the lack of an appropriate license.

Failure to acquire the necessary licensing within the specified period of time shall result in either award to the next lowest responsible bidder, or re-advertisement of the contract, as may be in the best interests of the Department.

SECTION 104 SCOPE OF WORK:

104.04 Maintenance of Traffic: of the Standard Specifications is modified to add:

(A) General Traffic Control Information:

Construction work activities that impact traffic shall not begin until the traffic control plan and days and times impacted have been approved by the Engineer.

The project traffic control shall be constructed in accordance with Part VI of the Manual on Uniform Traffic Control Devices (MUTCD) 2023 Edition with Revisions 1 and the Arizona Supplement to the 2023 Edition, the Arizona Department of Transportation Traffic Control Design Guidelines (TCDG) 2025 and the project plans and specifications. The contractor shall establish the traffic control necessary to provide a safe and efficient work zone without unduly delaying traffic. Alterations and modifications to the traffic control concepts included in the specifications will be considered if they conform to the references listed above.

The contractor shall prepare and submit a traffic control plan to the Engineer for review and approval at the Preconstruction Conference.

Traffic control devices shall not be permitted to remain stockpiled on the shoulder until the next closure.

Changeable message board legends shall be concurrently submitted with the TCP to the Engineer for review and approval.

The contractor shall be required to check on all traffic control barricades, signs, and changeable message boards twice daily and maintain as needed per the specifications.

At all times, the contractor shall conduct the construction activities to safeguard motorists, traffic control personnel, workers, pedestrians and vehicular access in the vicinity of the project.

The contractor shall provide all safety equipment, barricades, proper lighting, and all other items to perform nighttime work when deemed necessary by the Engineer, in a prudent and safe manner. If night work is approved by the Engineer, the contractor shall position a portable light unit at each flagger station. Each portable light unit shall have its own independent power source. The power source shall be capable of supplying adequate continuous power for the light for the duration of nighttime work and flagging, as directed by the Engineer. If nighttime work is approved by the Engineer, then the contractor shall provide sufficient lighting for nighttime operations without incurring any extra cost to the Department.

(B) Access Requirements:

The contractor shall maintain access to all side streets, access roads, driveways, alleys, parking lots, and adjacent businesses during their hours of operation. Access to adjacent private driveways shall be provided during all non-working hours. Where property has more than one point of access, no more than one access may be restricted or closed at a time. The contractor shall coordinate through the Engineer to inform all property and business operators that may be affected by any restrictions at least 72 hours in advance as a result of construction activities of the scope of work, duration of construction activities, and the

possible interference with their day-to-day activities. Any business or residential access restrictions shall be coordinated in writing through the Engineer with the affected businesses or residents at least one week in advance of the restriction. The contractor shall coordinate with the Engineer to make a good faith effort to make personal contact with affected property owners or business operators. If primary access cannot be maintained, the contractor shall coordinate through the Engineer to provide an alternative that will be pre-determined with the business prior to instituting the closure or restriction. If the property owner or business operator cannot be contacted, then the Engineer shall be the sole judge for the approval of any closures or restrictions. The contractor shall include temporary "Business Access" signs for affected businesses. No separate measurement or payment will be made to provide alternatives to maintaining access, the cost being considered as included in the price of the contract items.

(C) Schedules for Daily Traffic Control Activities:

The contractor shall provide a schedule of daily activities and corresponding traffic control schemes. The information shall be provided in advance of or during the weekly construction meeting in accordance with the requirements of Subsection 108.03 of the specifications and shall specify the limits of the work activities and related traffic control plan by location, direction, and time.

The schedule and the related traffic control shall be developed in such a way that emergency access is maintained on SR 95 at all times.

The schedule shall be developed in such a manner that it can be released to other agencies and the public. The schedule shall be updated as necessary.

A minimum of 72 hours advance notice is required to be given to the Department of Public Safety (DPS), Local Law Enforcement, local Fire Department and local ambulance services should access restrictions be implemented on SR 95.

All lane closures will be subject to the following:

- All work requiring a lane closure shall have a TCP.
- All proposed lane closures shall be submitted to the Engineer seven calendar days in advance of the closure, unless otherwise approved by the Engineer.
- No closures or traffic restrictions will be allowed during weekends or recognized holidays unless otherwise directed by the Engineer. Weekends are defined as from 12:00 PM Friday through 5:00 AM the following Monday.
- The contractor shall remove all traffic control for temporary lane closures prior to the holidays or weekends.
- All work requiring lane closure of the roadway or shoulder closure of the roadway

shall conform to the allowable work hours and durations shown on Table 104-1 of these Special Provisions unless as approved by the Engineer.

Table 104-1 - Closures		
Closure Type	Activity	Work Hours
SR-95 NB/SB Single Lane Closure with Flaggers	Drainage Work, Permanent Barrier Work	Monday-Thursday 5:00 AM to 5:00 PM Friday 5:00 AM to 12:00 PM Weekend As approved by the Engineer
SR-95 NB/SB Shoulder Closure	Drainage Work	Monday-Thursday 5:00 AM to 5:00 PM Friday 5:00 AM to 12:00 PM Weekend As approved by the Engineer
SR-95 NB/SB Stop traffic/full closure	Rock Scaling Rock Draping	Monday-Thursday 5:00 AM to 2:00 PM 15-minutes increment as approved by the Engineer.

Holidays

- Holidays are from 12:00 PM of the last working day prior to the holiday until 5:00 AM of the first working day following the holiday. When holiday falls on Tuesday, the Monday before the holiday is considered part of the holiday. When the holiday falls on a Thursday, the Friday following the holiday is considered part of the holiday.

2026-2027 Holiday Period		
Holiday	Start Day (12 P.M.)	End Day (5 A.M.)
Veteran's Day	11/10/2026	11/12/2026
Thanksgiving Day	11/20/2026	11/30/2026
Christmas Day/New Year's Day	12/18/2026	1/4/2027
Civil Rights Day	1/15/2027	1/19/2027
President's Day	2/12/2027	2/16/2027
Memorial Day	5/28/2027	6/1/2027
Independence Day	7/2/2027	7/6/2027
Labor Day	9/3/2027	9/7/2027
Columbus Day	10/8/2027	10/12/2027
Veteran's Day	11/10/2027	11/15/2027
Thanksgiving Day	11/19/2027	11/29/2027
Christmas Day/New Year's Day	12/17/2027	1/3/2028

(104STORM, 11/01/95)

SECTION 104 SCOPE OF WORK:

104.11 Damage by Storm, Flood or Earthquake: Item (D), Idled Equipment and Remobilization, of the Standard Specifications is hereby deleted.

104.11 Damage by Storm, Flood or Earthquake: Items (E) and (F) of the Standard Specifications are revised to read:

(D) Payment for Repair Work:

The State will pay the cost of the repair work as determined in Subsection 109.04.

(E) Termination of Contract:

If the Department 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 Subsection 108.11, Termination of Contract for Convenience of the Department.

(104ENVIR, 06/17/21)

SECTION 104 SCOPE OF WORK:

104.12 Environmental Analysis: the fifth and sixth paragraphs of the Standard Specifications are revised to read:

If the contractor elects to do an environmental analysis and use any site, source, or access for the reasons listed above, they choose to do so at their own risk. It is the contractor's responsibility to exercise due diligence when selecting these sites and areas. The contractor shall bear all costs associated with the use of proposed sites, sources, and accesses.

The contractor shall promptly advise the Engineer that it is preparing the environmental analysis and shall submit to the Engineer for review and consultation. The Department will review the submittal and send it to the appropriate agencies and/or jurisdictions for consultation or return it to the contractor for revision. The contractor shall allow a minimum of 60 calendar days after submittal, or subsequent resubmittals, to the Department for the Department to review the environmental analysis and to consult with the appropriate jurisdictions and/or agencies. At the end of the review period, the Engineer will notify the contractor whether or not the environmental analysis is acceptable.

If the approval of the environmental analysis causes a delay to a controlling activity of the project due to the Department's actions in the aforementioned review process, the contractor may seek, and the Engineer may grant, an extension of time in accordance with the terms of Subsection 108.08 of the specifications. The time extension shall not exceed 30 working days for a working-day contract, or 45 calendar days for a calendar-day project. The time extension will not be considered unless the contractor can show evidence of the delay resulting due to the Department's actions in the review process. A time extension request will not be considered or granted for any other reason. No time extension will be granted for a fixed completion date contract.

104.12 Environmental Analysis: the items (G) and (O) of the seventh paragraph of the Standard Specifications is revised to read:

- (G) The archaeological survey of the proposed source prepared by a person who meets the Secretary of the Interior's Professional Qualification Standards (48 FR 44716) and possesses a current permit for archaeological survey issued by the Arizona State Museum (ASM). The survey shall be prepared in a State Historic Preservation Office (SHPO) standardized format. The survey shall identify all historic properties within the area of potential effect (APE), as defined by the National Historic Preservation Act (36 CFR 800.4). This includes the materials source, processing area, and the haul road. Additionally, the survey report shall identify the effects of the proposed source on any historic properties within the APE, and recommend measures to avoid, minimize, or mitigate those effects. The survey report shall be prepared by the contractor in accordance with SHPO and ASM formatting style for the Historic Preservation Specialist's initial review. After the initial review, the

Department will consult with the landowner, SHPO, and Tribes for a minimum of 35 days for the final approval of the survey report.

- (O) A description of the impact on federally or state protected or other agency-specific special status wildlife and plants and their habitat, as defined in ADOT's consultant biological procedures on the Department's website. Compliance with the Arizona Native Plant Law shall be coordinated through the Arizona Commission of Agriculture and Horticulture.

104.12 Environmental Analysis: the eighth paragraph of the Standard Specifications is revised to read:

Guidance and forms for preparing the environmental analysis are available on the Department's website through the Environmental Planning Group, or by calling Environmental Planning Group at 602-712-7767.

(104ENVST, 09/19/24)

SECTION 104 SCOPE OF WORK:

104.16 Environmental Standard Work: of the Standard Specifications is hereby modified as follows:

BIO-2B: MBTA – General Requirements: (Contractor will avoid nests if possible with nest location option)

If construction occurs during the breeding season (***breeding season start date March 1 and breeding season end date August 31***), the contractor shall employ a qualified biologist to conduct a migratory bird nest survey of all affected vegetation within the work area no sooner than 10 days prior to clearing and grubbing. Vegetation removal may proceed if the survey determines that no active bird nests are present. If active nests are found the contractor shall notify the Engineer and avoid and protect the nests. The Engineer will further direct how to avoid and protect nests. If active nests are found in the project work area, the contractor shall not begin work until it is so directed by the Engineer. In the event of a suspension of work the contractor shall refer to the provisions of Subsection 104.02 of the specifications. During the non-breeding ***season (non-breeding season start date September 1 through non-breeding season end date February 28)***, vegetation removal is not subject to this restriction.

If active bird nests are found during the nest survey and avoidance is not possible, as determined by the Engineer, the contractor shall employ a wildlife rehabilitator who, in coordination with the Department Environmental Planning Biologist and relevant programmatic agreements, will apply for a project specific US Fish and Wildlife Service Migratory Bird Treaty Act Special Purpose – Relocation Permit. The wildlife rehabilitator shall be permitted by the US Fish and Wildlife Service and licensed by the Arizona Game and Fish Department. Relocation of any eggs or nestlings from active nests shall be performed by the wildlife rehabilitator.

No later than 10 working days after the completion of each relocation effort, the contractor shall submit a written report containing the following information to the Engineer:

- (1) Project name, location and ADOT project number;
- (2) Point of contact;
- (3) Date(s) of relocations;
- (4) Location of the areas birds where moved from and where they were moved to;
- (5) An explanation of why the birds were relocated;
- (6) The number of birds relocated; and
- (7) Name of rehabilitator, AZGFD rehabilitator license and USFWS permit information.

(104VEPC, 03/20/25)

SECTION 104 SCOPE OF WORK:

104.13 Value Engineering Proposals by the Contractor: the third paragraph of the Standard Specifications is revised to read:

Any cost savings generated to the contract as a result of VEP offered by the contractor and approved by the Department will be shared between the contractor and the Department, with the contractor receiving 60 percent and the Department receiving 40 percent, as specified in Subsection 104.13(D) of the specifications.

104.13(C) Conditions: of the Standard Specifications is modified to add:

- (13) The contractor may submit a previously approved VEP from another project.

104.13(D) Acceptance, Rejection and Payment: the seventh paragraph of the Standard Specifications is revised to read:

- (6) The executed supplemental agreement shall provide that the contractor be paid 60 percent of the net savings amount as reflected by the difference between the cost of the revised work and the cost of the related construction required by the original contract computed at contract bid prices. The net savings will take into account the contractor's cost of developing the VEP and implementing the change, and reducing this amount by the Department's cost for investigating and evaluating the VEP,

including any ascertainable collateral costs to the Department. Such collateral costs may include increased costs for maintenance, operation, related work items, additional work items, or elements of related or additional work items.

(105TPDDC, 08/21/25)

SECTION 105 CONTROL OF WORK:

105.18 Opening Sections of Project to Traffic: of the Standard Specifications is modified to add:

Damage to the project resulting from a third-party shall be reported to the Engineer. Damages to permanent project features, determined by the Engineer as eligible for payment in accordance with the requirements of Subsection 104.04 of the specifications, will be paid for in accordance with Subsection 109.04 of the specifications.

(106DMAT, 12/18/25)

SECTION 106 CONTROL OF MATERIALS:

106.15 Blank: of the Standard Specifications is revised to read:

106.15 Domestic Materials and Products:

Steel and iron materials and products used on this project shall comply with the current "Buy America" requirements of 23 CFR 635.410.

All manufacturing processes to produce 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 0.1 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.

The contractor shall furnish the Engineer with Certificates of Compliance, conforming to the requirements of Subsection 106.05, which state that steel or iron products incorporated in the project meet the requirements specified. Certificates of Compliance 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.

(106CMATLS, 12/18/25)

SECTION 106 CONTROL OF MATERIALS: of the Standard Specifications is modified to add:

106.17 Construction Materials:

A construction material shall comply with the requirements of Build America, Buy America (BABA) Act specified in Title IX, Subtitle A, Part 1, Sections 70901 and 70911-70917 (Pub. L. No. 117-58 §§ 70901; §§ 70911-70917) of the Infrastructure Investment and Job Act (IIJA).

A “construction material” that is permanently incorporated on the project shall include an article, material, or supply that is or consists primarily of the following:

1. Non-ferrous metals;
2. Plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables);
3. Glass (including optic glass);
4. Fiber optic cable (including drop cable);
5. Optical fiber;
6. Lumber;
7. Engineered wood; or
8. Drywall.

Items manufactured through a combination of either two or more materials listed above, or at least one of the materials listed above and a material not listed shall be considered as a manufactured product, rather than as a construction material.

Construction materials shall not include cement and cementitious materials; bituminous materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives.

All construction materials shall be produced in the United States. This means, all manufacturing processes to produce the construction materials shall occur in the United States. All manufacturing processes for construction materials shall mean the final manufacturing process and the immediately preceding manufacturing stage for the construction material.

The contractor shall furnish the Engineer with Certificates of Compliance, conforming to the requirements of Subsection 106.05 of the specifications, which shall state that the

construction materials incorporated in the project meet the requirements specified herein. Certificates of Compliance shall also certify that all manufacturing processes to produce construction materials occurred in the United States.

If the total cost of construction materials incorporated in the project is no more than 5% of the original contract amount or \$1,000,000, whichever is lesser, the requirements specified herein will not apply for such construction materials.

Convict-produced materials are prohibited in accordance with the requirements of 23 CFR 635.417.

(106MAPR, 12/18/25)

SECTION 106 CONTROL OF MATERIALS: of the Standard Specifications is modified to add:

106.18 Manufactured Products:

Manufactured products used on all projects shall comply with the current “Buy America” requirements of 23 CFR 635.410.

A “manufactured product” is defined as an article, material, or supply that has been processed into a specific form and shape, or combined with other articles, materials, or supplies to create a product with different properties than the individual article, material, or supply. Items manufactured through a combination of two or more materials, or at least one listed construction material and a material not listed, shall be classified as manufactured products.

An item classified as iron or steel product in accordance with the requirements specified in Subsection 106.15 of the specifications or excluded materials such as cement and cementitious materials; bituminous materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives is not considered a manufactured product. However, manufactured product may include components that are iron or steel products or excluded materials.

Mixtures of excluded materials delivered to a work site without final form for incorporation into a project are not considered manufactured products.

Precast concrete products, components of precast concrete products that consist wholly or predominantly of iron or steel or a combination of both, will be considered iron and steel product and shall meet the requirements specified in Subsection 106.15 of the specifications.

The intelligent transportation systems and other electronic hardware systems that are installed in the highway right of way or other real property, the cabinets or other enclosures of such systems that consist wholly or predominantly of iron or steel or a combination of both will be considered iron and steel product and shall meet the requirements specified in Subsection 106.15 of the specifications.

The contractor shall furnish the Engineer with Certificates of Compliance, conforming to the requirements of Subsection 106.05 of the specifications, which shall state that the manufactured products incorporated in the project meet the requirements specified herein. Certificates of Compliance shall also certify that all manufactured products used in the project are manufactured in the United States.

Convict-produced materials are prohibited in accordance with the requirements of 23 CFR 635.417.

(107UINSLMTS, 02/20/25)

SECTION 107 LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC:

107.14 Insurance: the sixth paragraph of the Standard Specifications is revised to read:

Without limiting any liabilities or any other obligations of the contractor, the contractor shall provide and maintain, if commercially available, the minimum insurance coverage listed below until all obligations under this contract are satisfied:

- (A) General Liability insurance with a minimum combined single limit of \$1,000,000 each occurrence applicable to all premises and operations, and a minimum general aggregate limit of \$2,000,000. The policy shall include coverage for bodily injury, broad form property damage (including completed operations), personal injury (including coverage for contractual and employee acts), blanket contractual, independent contractors, products and completed operations. Further, the policy shall include coverage for the hazards commonly referred to as XCU (explosion, collapse and underground). The products and completed operations coverage shall extend for one year past acceptance, cancellation or termination of the work. The policy shall contain a severability of interests provision.
- (B) Comprehensive Automobile Liability insurance with a combined single limit for bodily injury and property of not less than \$1,000,000 each occurrence with respect to contractor's owned, hired, or non-owned vehicles, assigned to or used in performance of the work.
- (C) Workers' Compensation insurance to cover obligations imposed by Federal and State statutes having jurisdiction of its employees engaged in the performance of the work, and Employers' Liability insurance with a minimum limit of \$1,000,000. Evidence of qualified self-insured status will suffice for this subsection.

(107UTIL, 04/17/25)

SECTION 107 LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC:

107.15 Contractor's Responsibility for Utility Property and Services: of the Standard Specifications is modified to add:

Copies of existing ADOT permits, subject to availability, may be obtained from the ADOT Area Permit Supervisor as listed below:

SOUTHWEST DISTRICT

(928) 317-2106 2243 E. Gila Ridge Road
(928) 317-2100 Yuma, AZ 85365

Email address:
southwestpermit@azdot.gov

The following agencies and utility companies have facilities in the area but are not anticipated to be in conflict:

Company	Contact	Phone Number	Email
ADOT Southwest District Blue Stake	Robert Ortiz	(928) 927-6311	rortiz2@azdot.gov
Central Arizona Project	Thomas Fitzgerald Camille Champion	(602) 292-1450 (602) 413-3325	tfitzgerald@cap-az.com cchampion@cap-az.com
Optimum/NPG/ Suddenlink	Shane Henderson	(702) 354-1084	Shane.henderson@optimum.com
Hillcrest Water Company	Roy Hokenson	(928) 706-3304	

ADOT owns drainage facilities within the project limits. The contractor shall contact the ADOT Southwest District Blue Stake Office before construction.

Central Arizona Project (CAP)

CAP has underground fiber optic facilities within the project limits. The Contractor shall protect all CAP facilities in place.

Optimum/NPG/Suddenlink

Optimum has underground fiber optic and cable facilities throughout the project. The contractor shall protect their facilities in place. The contractor shall provide a minimum of 72 hour notice to Optimum prior to working within 10 feet of their facilities.

Hillcrest Water Company (HWC)

HWC has underground water lines within the project limits. The Contractor shall protect all HWC facilities in place.

The following utility companies have facilities in conflict with the proposed construction and anticipates relocating before construction commences:

Company	Contact	Phone Number	Email
Arizona Public Service	Ben Gowers Sara Donnelly	(602) 809-3677	Ben.Gowers@aps.com Sara.Donnelly@aps.com
Frontier Communications	Chad Nichi James Hansen	(928) 716-1253	Chad.Nichi@ftr.com chad.nichi@verizon.com James.Hansen@ftr.com

Arizona Public Service (APS)

APS has overhead and underground electrical facilities throughout the project. The contractor shall protect all APS facilities in place.

APS has two - 2.5 inch underground electrical conduits on the south side of SR 95 which conflicts with a portion of Ditch 5. APS will relocate their electrical conduits by 8/1/26.

Frontier Communications/Verizon

Frontier has overhead and underground cable, and pedestals within the project limits. The Contractor shall protect all Frontier facilities in place.

Frontier has underground cable facilities crossing Ditch 4 at Station 909+60, 68.8'LT and Station 910+47, 54.0' Lt, which are in conflict. Frontier will remove the cable at both locations and relocate south of the proposed ditch, between the existing barrier and new ditch slope. Prior to any excavation work, the contractor shall coordinate with Frontier to verify facilities have been removed.

Frontier has underground cable along the south side of SR 95 which conflicts with a portion of Ditch 5. Frontier will expose their line and concrete encase their conduit from Station 921+99 to Station 922+55

The relocation work is expected to take two weeks and be completed on or before 8/15/26.

The contractor is to exercise extreme caution when working in close proximity to Frontier facilities and is required to hand dig when excavation is within one foot of their facilities.

The contractor shall coordinate with the Engineer to request that all the above utility companies be invited to the Pre-Construction meeting.

No separate measurement or direct payment will be made for coordination with the utility companies; the cost being considered included in contract items.

POWER LINES:

Power lines and other utilities may exist at various locations throughout the project. The contractor shall keep a safe distance from all facilities. All work at or in close proximity to any utility lines shall be performed in accordance with all Federal, State and local laws and regulations, including but not limited to:

- (1) Arizona law regarding "Underground Facilities" (A.R.S. 40-360.21 through .29).
- (2) Arizona law regarding "High Voltage Power Lines and Safety Restrictions" (A.R.S. 40 360.41 .45).
- (3) The Occupational Safety and Health Administration.
- (4) The National Electric Safety Code.

THE RAILROAD STATEMENT:

There is no railroad within ½ mile of the project limits.

107.15(F) Sewage Discharge Damage Assessments: of the Standard Specifications is revised to read:

The Department will assess sanctions in accordance with the Table 107.15-1 below for each 24-hour period, or portion thereof, for each unplanned breakage that occurs in an active sanitary sewer line as a result of the contractor's operation. The rate of these sanctions is based on the type and quantity of effluent discharged as determined by the Engineer.

These sanctions do not relieve the contractor from any of its responsibilities under the contract, including any liquidated damages that may be assessed under Subsection 108.09 of the specifications for late completion of the project.

The sanctions specified in this subsection will be independent of any penalties imposed by others.

The contractor acknowledges that Regulatory agencies may assess or impose civil or criminal penalties on the contractor resulting from sewer discharges.

The Department will not be responsible for any civil or criminal penalties, fines, damages, or other charges imposed on the contractor by any regulatory agency or court for sewage discharges that are a result, directly or indirectly, of the contractor's work performed under this contract.

TABLE 107.15-1 SANCTIONS (EACH 24-HOUR PERIOD, OR PORTION THEREOF)		
Volume of Discharge	Raw Sewage or Industrial Wastewater	Treated Effluent
Less than 10,000 gallons	\$5,000	\$1,000
10,000 to 99,999 gallons	\$10,000	\$2,000
100,000 to 1 million gallons	\$25,000	\$3,000
Greater than 1 million gallons	\$40,000	\$5,000

These sanctions will be assessed for each 24-hour period, or portion thereof, until the contractor has completed all of the following tasks:

Stopped the discharge;
Repaired the damaged pipe;
Restored normal service; and
Fully cleaned and disinfected the site to the satisfaction of the Engineer.

Upon completion of tasks (1), (2), and (3) above, and prior to completion of Task (4), the sanctions for the current 24-hour period will be at the rate shown in Table 107.15-1. However, for each subsequent 24-hour period, the assessment will be 1/2 of the rate shown in Table 107.15-1.

The sanctions will continue at the reduced rate until the site has been fully cleaned and disinfected to the satisfaction of the Engineer.

As an example, the amounts assessed each 24-hour period for an unplanned discharge of 20,000 gallons of raw sewage, in which the contractor completes tasks (1), (2), and (3) within the second 24-hour period but does not complete full cleanup until the third 24-hour period, will be as follows:

First 24-hour period:	\$10,000
Second 24-hour period:	\$10,000
Third 24-hour period:	\$5,000

For this example, the total sanction will be \$25,000 (\$10,000 + \$10,000 + \$5,000).

(108SUBLT, 10/20/22)

SECTION 108 PROSECUTION AND PROGRESS:

108.01 Subletting of Contract: the thirteenth paragraph of the Standard Specifications is revised to read:

If a subcontractor, of any tier, begins work on the contract prior to the contractor submitting the required documentation and receiving consent from the Engineer, the Department will retain \$1,000 from monies due or becoming due the contractor. The money retained will be for each subcontractor, of any tier, that starts work without the consent of the Engineer. These sanctions will be in addition to all other retention or liquidated damages provided for elsewhere in the contract.

(108PRCN, 08/19/21)

SECTION 108 PROSECUTION AND PROGRESS:

108.03 Preconstruction Conference: the second paragraph of the Standard Specifications is revised to read:

At the preconstruction conference the contractor shall submit a progress schedule showing the order in which the contractor proposes to carry out the work, the dates on which the contractor and its subcontractors will start the work, including procurement of materials, equipment, etc.; the ordering of articles of special manufacture; the furnishing of drawings, plans and other data required under Subsection 105.03 of the specifications for the review and approval of the Engineer; the inspection of structural steel fabrication; and the contemplated dates for the completion.

108.04 Prosecution and Progress: the third paragraph of the Standard Specifications is revised to read:

At a mutually convenient location and time, the contractor shall meet weekly with the Engineer to discuss construction activities; however, a meeting may be waived if mutually agreed to, due to weather conditions, work progress, or for other reasons. At the meetings, the contractor shall provide the Engineer with a detailed, written schedule of construction activities and phases of work for the current week, forthcoming three week period as well as the construction activities which were performed during the previous week. This schedule shall detail the anticipated start dates and anticipated completion dates of work activities. The weekly schedule should reflect, at a minimum, all activities from the most recently updated project schedule. For work which was completed during the previous week, this schedule shall detail the actual start and completion dates of work activities as well as indicate the status of major ongoing activities. Upon the second occurrence of the contractor failing to provide an accurate schedule as describe herein and after written notification by the Engineer of the first occurrence, the Department will deduct \$500 from the contractor's progress payment per each occurrence thereafter. Minutes of the weekly meetings will be kept by the Engineer and a copy given to the contractor for review and acceptance.

(108TIME, 10/15/20)

SECTION 108 PROSECUTION AND PROGRESS:

108.08 Determination and Extension of Contract Time: the first paragraph of the Standard Specifications is revised to read:

The time allowed for the completion of the work included in the contract will be 100 working days, and will be known as the "Contract Time."

(108RSLD, 06/19/2025)

SECTION 108 PROSECUTION AND PROGRESS:

108.09 Failure to Complete the Work on Time: the Schedule of Liquidated Damages table of the Standard Specifications is revised to read:

SCHEDULE OF LIQUIDATED DAMAGES			
Original Contract Amount		Liquidated Damages Per Day	
From More Than:	To and Including:	Calendar Day or Fixed Date:	Working Day:
\$ 0	\$ 500,000	\$ 300	\$ 1,000
\$ 500,000	\$ 1,000,000	\$ 850	\$ 1,700
\$ 1,000,000	\$ 2,000,000	\$ 1,250	\$ 2,650
\$ 2,000,000	\$ 5,000,000	\$ 2,100	\$ 3,800
\$ 5,000,000	\$ 10,000,000	\$ 3,300	\$ 6,850
\$ 10,000,000	\$ 30,000,000	\$ 7,300	\$ 10,550
\$ 30,000,000	\$ 60,000,000	\$ 9,350	\$ 17,750
\$ 60,000,000	\$ 90,000,000	\$ 19,900	\$ 27,850
\$ 90,000,000	-----	\$ 27,450	\$ 38,400

(108SCHLVL1, 08/19/21)

SECTION 108 PROSECUTION AND PROGRESS: of the Standard Specifications is modified to add:

108.12 Schedules:

(A) Definitions:

Activity:

A discrete, identifiable task or event that contributes to completing the project and can be used to schedule and monitor the work.

Activity ID:

A unique alphanumeric identification code permanently assigned to an activity.

Baseline Schedule:

A Critical Path Method (CPM) schedule illustrating the contractor's committed plan to complete the work within the contract time and used to compare the progress of the work.

Constraint:

A limitation placed on a scheduled activity that affects the start or end date of an activity.

Critical Path:

The longest continuous chain of activities which establishes the minimum overall project duration.

Critical Path Method (CPM):

A network-based planning technique that uses activity durations and relationships to calculate a schedule for the project.

Data Date:

The date from which a schedule is calculated, where all activities occurring earlier than the data date are complete and all activities occurring on or after the data date are planned.

Duration:

The estimated time required to complete an activity as recorded on the Project Schedule.

Float Suppression/Sequestering:

The process of utilizing zero free float techniques that allows an activity to start as late as possible by using all available free float of that activity, by the utilization of overly generous activity durations, or by using overly restrictive calendar non-working periods.

Free Float:

The amount of time an activity may be delayed without delaying the early start date of its successors.

Longest Path:

The longest continuous path of activities through a project, which controls project early completion.

Look-Ahead Schedule:

A computer-generated schedule that shows the previous week's work and the work planned for the current and next three weeks.

Milestone:

An activity, with no duration, that is typically used to represent the beginning, end, interim stages and significant events of the project, or contractually required dates.

Monthly Progress Schedule:

A monthly update to the approved baseline schedule.

Narrative:

A written report explaining the Project Schedule in detail.

Predecessor:

An activity that affects the start or finish date of another activity with a logically tied relationship.

Preliminary Schedule:

A CPM schedule that shows the Baseline Schedule for the first 60 calendar days of contract time and, the work breakdown structure and milestones for the entire contract.

Project Schedule:

A logic-based critical path for all work leading up to and including substantial completion or final acceptance that is used for tracking the performance of the work. The term “Project Schedule” will refer to one or more of the following:

- (a) Baseline Schedule,
- (b) Monthly Schedule, or
- (c) Recovery Schedule.

Record Schedule:

A CPM schedule that shows the actual start and finish date of each activity, durations, and all changes.

Recovery Schedule:

A CPM schedule that shows the activity changes to recover the time lost due to incompletion of the work within the contract time as specified in the Monthly Progress Schedule.

Scheduler:

An individual, who creates, maintains and revises the Project Schedule using applicable software.

Successor:

An activity whose start or finish date is affected by the logically tied relationship with another activity.

Time Impact Analysis (TIA):

A forward-looking, prospective schedule analysis developed to demonstrate the impact of a change to the current schedule on its longest path.

Total Float (Float):

The cumulative duration of time an activity may be delayed without delaying the contract time or a contractual milestone.

Work Breakdown Structure (WBS):

A framework for organizing and ordering the work activities into hierarchical groups.

(B) General:

The contractor shall prepare, furnish, and use the Project Schedule to plan, monitor, and report the progress of the work. The schedule shall demonstrate a detailed plan to complete the work in accordance with the contract time and be used in communication to coordinate activities among all affected parties.

The contractor shall provide a Scheduler to create and maintain all schedules, updates, Narratives, reports, and TIA related to this project. The Scheduler shall be proficient in CPM schedule development, analysis of resources applicable to the required detail of the Project Schedule, and shall be able to perform the required tasks using the specified software.

The Scheduler shall be present at all schedule meetings, in person or via teleconference, and made available for discussion or meetings when requested by the Engineer. The contractor project management personnel, subcontractors, and suppliers shall actively communicate with the Scheduler to develop and maintain accurate updates of progress and schedule revisions throughout the duration of the contract.

The Department's review and comment on a schedule for compliance with this specification does not do the following:

- (1) Imply or constitute approval of particular construction methods or relieve the contractor of its responsibility to provide sufficient materials, equipment, and labor to complete the project in accordance with the contract;
- (2) Attest to the validity of assumptions, activities, relationships, sequences, resource allocations, or other aspects of the schedule;
- (3) Imply the contractor is entitled to a Supplemental Agreement extending the contract time or adjusting the contract price;
- (4) Relieve the contractor from compliance with the requirements of the contract or result in the approval of a deviation, exception to or other variation from the contract. Failure to include an element of work required by the contract in the schedule does not release or relieve the contractor from responsibility to perform such work.

In preparing, developing and updating the Project Schedule the contractor shall not utilize:

- (1) Float suppression techniques in the schedule, including interim dates imposed by the contractor other than project milestone(s);
- (2) The inclusion of activities or constraints in a path or chain leading to a project milestone which are unrelated to the work as specified in the contract;

- (3) Activity durations or sequences determined by the Department to be unreasonable in whole or in part.

The contractor shall not use preferential sequencing, whereby activities that could be performed concurrently and are established in the Project Schedule as sequential simply to consume float. The contractor shall not indicate artificial activity durations by inflating activities in the schedule to consume float and influence the Critical Path. Sequestering of float is cause for rejection of the contractor's schedule submittal. If float sequestering is identified, the contractor shall revise the schedule appropriately.

Total Float is a commodity available to both the Department and the contractor for sequential use until depleted and not for the exclusive use or financial benefit of either party. A schedule showing an early completion date shall show the time between the scheduled completion date(s) and the required contract completion deadline(s) as Total Float.

The Department will not be liable to the contractor for delays by any party when the contractor completes the work prior to expiration of contract time.

If a delay in performing the work is caused by the Department, the contractor shall immediately notify the Department in writing that a revision to the contract is necessary in accordance with Subsection 104.02 and Subsection 104.03 of the specifications. The contractor shall include a description of the cause of delay, the projected amount of Total Float to be used, and the revised Monthly Progress Schedule showing the use of the Total Float in the Monthly Progress submittal. The contractor shall work cooperatively with the Department, other contractors, and third parties to identify and implement, to the maximum extent possible, no-cost measures to recover all schedule delays, regardless of the cause of the delays.

The contractor shall coordinate with the Department, local governmental entities, utility companies, railroad companies, and any third party entities when developing and maintaining the Project Schedule. The contractor shall coordinate its planning and scheduling efforts as required to address conflicts and comments received from adjacent projects and other entities.

(C) BLANK:

(D) Baseline Schedule:

The contractor shall submit a Baseline Schedule before or at the Preconstruction Conference for the Engineer's review and approval.

The Baseline Schedule shall be in the following format:

- i. Project ID: The schedule project ID shall match the filename format in Subsection 108.12(K) of the specifications. The project name shall be the route number followed by the project description.

- ii. Activity ID: Each activity shall be assigned a unique identification number. Activity ID numbers shall not be changed or reassigned for the duration of the contract. Within each group of the WBS, activity ID's shall be numbered sequentially in increments of 10 in the order of their start date or by finish date of a finish milestone. Milestone activities shall begin with "M". Use 10 characters or less.
- iii. Activity Name: Each activity shall be defined with a unique name that contains the description of work. Each name shall at a minimum consist of a verb or work function (i.e. remove, excavate, form, install), an object (i.e. curb, pipe, footing) and a location (i.e. street, station, bridge number). For example, "Install Barrier Dtl C – S1 120+25 Lt". The activity quantity may be included after location.

The contractor shall create an activity name using the following:

- a) Use 50 characters or less;
- b) Use "S1, S2, ..." for stage naming if applicable;
- c) Do not use all capital letters;
- d) Keep names readable, but use abbreviations as needed. Do not use periods when abbreviating. All abbreviations shall be consistent; and
- e) Location is not required if object name is specific, such as "CMP #201".

The contractor shall provide a list of abbreviations and acronyms. The work related to each activity shall be limited to one stage, one area, one traffic control phase, and one responsible party of the contract.

- iv. Activity Code: Activities shall be assigned with project activity codes that will be used to classify, categorize and organize activities for reporting. Only use project level activity codes and not global or enterprise codes. At a minimum, all activities shall have an activity code for responsible party, stages, and phases. Additional activity codes shall be added if requested by the Department.
- v. Milestones: The contractor shall separately identify each project milestone, conforming to the scheduling requirements set forth in the contract.
- vi. Constraints: The contractor shall not use date constraints to logically begin or complete a project activity unless specific calendar dates are shown in the contract. Specific contract dates may only be applied as a

constraint to a milestone activity and input as either a “Start on or After” or “Finish on or Before” date. No other constraint types shall be allowed.

- vii. Duration: Activity duration shall not exceed 20 calendar days unless approved by the Engineer. Activity durations shall be at least one calendar day. Durations shall represent the anticipated productivity rates that factor in all limitations to the productivity. Long lead activities such as procurement and Level of Effort activities may exceed 20 calendar days.
- viii. Relationships: All activities shall have at least one predecessor and one successor except for the project start and project end milestones. Negative lags or negative floats shall not be allowed. Predecessors and successors shall not be linked to the same activity with different relationship types. The start of an activity shall have a Start-to-Start or Finish-to-Start relationship with preceding activities. The completion of an activity shall have a Finish-to-Start or Finish-to-Finish relationship with succeeding activities. Do not use Start-to-Finish relationships. Do not use Finish-to-Start relationships with a lag or overlap.
- ix. If applicable, the schedule shall include but not be limited to all activities below:
 - 1. Mobilization/Demobilization;
 - 2. Right of Way Acquisition;
 - 3. Submittal development;
 - 4. Submittal review and acceptance;
 - 5. Submittal and approval of material samples and mix designs;
 - 6. Submittal and approval of shop drawings;
 - 7. Long lead items, material and equipment procurement;
 - 8. Procurement of permits;
 - 9. Environmental commitments and mitigation activities;
 - 10. Equipment and plant setup;

11. Fabrication of special items;
 12. Erection and removal of falsework and shoring;
 13. Utility and railroad relocations;
 14. Cure times for concrete;
 15. Cure times for pavement before striping;
 16. Landscape and seeding establishment periods;
 17. Test periods;
 18. Major traffic stage changes;
 19. Substantial completion;
 20. Punchlist completion; and
 21. Final cleanup;
-
- x. The schedule shall be in detail to allow day-to-day monitoring and review of the contractor's operations. It shall show the order and interdependence of activities and the sequence of work.
 - xi. The contractor shall detail the Critical Path activities and logic ties in the schedule to show the work sequencing. The contractor shall use the CPM software to determine the controlling activities in the critical path. The critical activities shall be prominently distinguished on all reports by the use of color or pattern.
 - xii. The contractor shall provide the number of activities to assure adequate project planning and allow for monitoring and evaluation of work progress.
 - xiii. The contractor shall provide activities as necessary to depict third-party work related to the contract. Third-party work activities may include but is not limited to railroads, utilities, real estate, and government agencies.

- xiv. Seasonal, winter shutdown, traffic, special event, environmental, or other contract restrictions shall be considered and included in the schedule for all work. These restrictions shall be addressed with project calendars and shown as non-work days for each major work type. Global calendars shall not be used. Examples of major work types are earthwork, concrete paving, structures, asphalt, drainage, landscaping, etc. The contractor shall include project calendar for curing time if applicable.
- xv. The duration for each activity shall include the anticipated production rate and the time for anticipated weather stoppages. The contractor shall not reserve random non-work days in a project calendar to account for weather stoppages.
- xvi. The schedule shall have a Data Date of the start date shown in the Notice of Award letter.
- xvii. When processing the schedule in the software, the contractor shall use the following options:
 - 1. When scheduling progressed activities use Retained Logic;
 - 2. Calculate start-to-start lag from Early Start;
 - 3. Define critical activities as Longest Path;
 - 4. Compute Total Float as $\text{Finish Float} = \text{Late Finish} - \text{Early Finish}$; and
 - 5. Calendar for scheduling relationship lag as predecessor activity calendar.
- xviii. The bar chart schedule plot shall be accompanied by a schedule report of the network with a tabulation of the following data for each activity:
 - 1. Activity ID;
 - 2. Activity name;
 - 3. Original duration;
 - 4. Early start date;

5. Early finish date;
6. Late start date;
7. Late finish date;
8. Predecessors;
9. Successors;
10. Free float;
11. Total float;
12. Primary constraint date;
13. Calendar; and
14. Responsibility for activity - e.g., prime contractor, subcontractor, supplier, etc.

(E) BLANK:

(F) BLANK:

(G) Recovery Schedule:

If the Project Schedule indicates a late completion of the work by 28 or more calendar days, the contractor shall prepare a Recovery Schedule which demonstrates how the contractor intends to reschedule the activities to regain compliance with the contract.

Within ten working days of receipt of the Engineer's written direction, the contractor shall submit the Recovery Schedule to the Engineer. The contractor shall not be required to prepare a Recovery Schedule if the contractor requests and demonstrates, in writing, entitlement to extension of a completion deadline due to a Department caused delay, and the Engineer concurs that a Recovery Schedule is not required at that time. If the Engineer disputes the contractor's entitlement to a completion deadline adjustment, the contractor shall, within five working days, submit a Recovery Schedule that does not include a completion deadline adjustment.

Within five working days after a rejection by the Engineer of the Recovery Schedule, the contractor shall resubmit a revised Recovery Schedule incorporating the Department's

comments. When the Engineer accepts the contractor's Recovery Schedule, the contractor shall, within five working days after the Engineer's acceptance, incorporate such schedule in the Project Schedule, deliver the same to the Department, and proceed in accordance with the approved Recovery Schedule.

All acceleration costs required to bring the contract work back into compliance with project milestones and the contract time due to a contractor caused delay shall be borne solely by the contractor. Whenever a Recovery Schedule is required, the contractor shall provide the following information:

- i. Transmittal letter;
- ii. Bar chart schedule plot;
- iii. Electronic copy of the file used for the proposed Recovery Schedule; and
- iv. Narrative describing all proposed changes to the Project Schedule in detail, with justification for the changes, including the following:
 1. Changes to activity original durations;
 2. Changes to activity relationships and schedule logic;
 3. Cause of schedule slippage and actions taken to recover schedule within the shortest reasonable time (e.g., hiring of additional labor, use of additional construction equipment, and expediting of deliveries);
 4. Float consumption;
 5. Identification of activities that have been added, deleted, or modified; and
 6. Changes to the Project Schedule's Critical Path.

(H) Revisions to Contract:

If the contractor receives a request for extra work from the Department or submits a contract change request in accordance with Subsection 104.02 of the specifications asserting that an event, situation, or change affects a Critical Path of the Project Schedule, the contractor shall prepare and submit a TIA showing the cumulative effect of the change on the

completion or fixed milestone date along with a written report describing the time impact in a form satisfactory to the Department complying to Subsection 104.03 of the specifications.

Each TIA shall include a fragmentary network (fragnet) demonstrating the following information:

- i. How the contractor proposes to incorporate a time extension provided for in a Supplemental Agreement;
- ii. The impact to the Project Schedule;
- iii. The sequence of new and/or existing activity revisions that are proposed to be added to the Project Schedule that is in effect when the change or delay is encountered;
- iv. The proposed method for incorporating the delay and its impact to the Project Schedule; and
- v. The computation of two finish dates. The first finish date shall be computed without consideration of impacts by the proposed revision. The second finish date shall be computed with consideration of impacts by the proposed revision.

If a proposed change in planned work results in altering the Critical Path or extending the schedule completion date, the contractor shall submit a Revised Schedule and a TIA within 15 calendar days of the proposed change.

(I) Record Schedule:

The contractor shall prepare a Record Schedule that includes actual start and actual finish dates for all activities. The Record Schedule, once approved, serves as the final update of the Project Schedule. The contractor shall include a written certification with the Record Schedule submittal signed by the Project Manager of the contractor in accordance with the following:

“To the best of my knowledge, the enclosed final update of the project Schedule reflects the actual start and completion dates of the activities for the project contained herein.”

The contractor shall submit the Record Schedule to the Engineer for review. Final acceptance will not be issued until the Record Schedule has been approved.

(J) Schedule Meetings and Three Week Look Ahead Schedule:

a. Baseline Schedule Presentation Meeting:

At a time agreeable to the Engineer, the contractor shall conduct a Baseline Schedule presentation meeting within seven calendar days after submitting the proposed Baseline Schedule. The purpose of this meeting is for the contractor to present and explain the contractor's schedule and construction phasing plan. At a minimum, the following is to be covered at the joint review of the schedule:

- (a) WBS;
- (b) Sequence of work - step through the schedule activity by activity;
- (c) Construction phasing including traffic control phasing and changes;
- (d) Resources to include number of construction personnel and production rates used; and
- (e) Critical Path review.

b. Weekly Project Meeting and Look-Ahead Schedule:

At the weekly project meetings, the contractor shall provide the Engineer with a detailed, Look-Ahead Schedule. The Look-Ahead Schedule is a computer generated bar chart schedule plot that shows the previous week's work and the work planned for the current and next three weeks. The contractor shall base the Look-Ahead Schedule on the Project Schedule and provide a greater breakdown of the Project Schedule activities for the purpose of materials inspection and testing. The Look-Ahead Schedule shall clearly note and explain all departures from the Project Schedule. The contractor shall reference the Project Schedule activity ID numbers, WBS, and define subsequent specific daily operations for all work activities scheduled to be performed during the four-week period. The contractor shall identify work being performed by Disadvantaged Business Enterprise (DBE) firms as separate activities. At least one day before the weekly construction activity meetings, the contractor shall submit weekly Look-Ahead Schedules to the Engineer.

(K) Submittals:

Two 11 x 17 inch hard copies and one pdf copy of each schedule in color listed herein shall be provided to the Engineer. The contractor shall furnish to the Engineer for project use an electronic copy of the schedule. The electronic copy shall be Primavera P6 .xml file format prepared in Primavera software.

The filename of schedules shall be submitted in the following format:

SCHEDULE FILENAME FORMAT	
Preliminary Schedule	TTTTT-YYMM-PSVV
Baseline Schedule	TTTTT-YYMM-BSVV
Monthly Progress Schedule #1	TTTTT-YYMM-MPS01VV
Monthly Progress Schedule #2	TTTTT-YYMM-MPS02VV
Recovery Schedule	TTTTT-YYMM-RCYSVV
TIA Schedule	TTTTT-YYMM-TIASVV
Record Schedule	TTTTT-YYMM-RCDSVV
3 Week Lookahead Schedule	TTTTT-YYMM-LASVV
Schedule Narrative	TTTTT-YYMM-NARVV
Note: (1) TTTTT: First 5 digits of project TRACS number. (2) YYMM: Current 2 digit year and month. (3) VV: 2 digit version number (01, 02, etc.).	

All bar chart schedule plots shall be in color and have a size and scale acceptable to the Engineer. Include a title block and a legend on each page. The plot layout shall include a schedule activity table with corresponding bar chart. The activity table shall be grouped by the WBS and include the activity ID, activity name, duration, start date, finish date, and total float. All activities in the bar chart shall be plotted on their start and finish dates. Show relationship lines and data date line. The bar chart shall be time-scaled in two-line format with a date interval set to year/month and type set to calendar.

The contractor shall provide two 8.5 x 11 inch hard copies of the narrative and monthly report with an electronic pdf copy.

The contractor shall provide a schedule log file generated by the software in a .txt file format with all schedule submittals. The log file shall have the same filename as the schedule file. The contractor shall review the log file prior to submittal to verify that the electronic schedule is in compliance with this specification.

(L) Software:

The automated system software shall be Primavera P6.

(109RRBB, 04/18/24)

SECTION 109 MEASUREMENT AND PAYMENT:

109.04(D)(3) Equipment: the first paragraph of the Standard Specifications is revised to read:

Equipment which the Engineer considers necessary for the performance of work will be eligible for payment at the established rates only during the hours that it is operated except as otherwise allowed elsewhere in these specifications. Equipment hours will be recorded to the nearest one-half hour. For the use of equipment owned by the contractor and approved by the Engineer, the contractor will be paid the rental rates, as modified herein, outlined in the Rental Rate Blue Book® (RRBB) for Construction Equipment which is updated by EquipmentWatch™, a division of Fusable, 3200 Rice Mine Road NE, Tuscaloosa, Alabama 35406, phone (888) 307-1713. All rate determinations will be based on the RRBB quarterly rate revisions that are applicable at the time equipment is being used.

(109FAEU, 08/15/24)

SECTION 109 MEASUREMENT AND PAYMENT:

109.04(D)(3)(a) Rental Rates (Without Operators): the equation of the first paragraph of the Standard Specifications is revised to read:

The hourly equipment rental rate (HERR) will be determined by the following formula:

$$\text{HERR} = F \times \left[\frac{1.15 \times R}{176} \right] + \text{HOC}$$

Where: F= Adjustment Factor to R is 0.933

R= Current RRBB Monthly Rate

HOC= Hourly Operating Cost

(109WFADF, 05/15/25)

SECTION 109 MEASUREMENT AND PAYMENT:

109.04(D)(6) Statements: the title and text of the Standard Specifications is revised to read:

109.04(D)(6) Forms:

The contractor shall prepare the Weekly Force Account Detail form for each week of force account activity. The Weekly Force Account Detail form is a standardized, fillable form made available by the Department on the ADOT Construction Group's website.

The form shall detail the labor, equipment, and material charges utilized to accomplish the force account work along with all supporting documentation. The contractor shall furnish copies of original receipts (paid invoice cost) for materials, rental equipment cost, including freight and transportation charges, copies of rental rate blue book equipment sheets and certified payrolls.

If materials used on the force account work are not specifically purchased for such work but are taken from the contractor's stock, then instead of invoices, the forms shall contain or be accompanied by an affidavit of the contractor certifying that such materials were taken from stock, that the quantity claimed was actually used, and that the price and transportation claimed represent the actual cost to the contractor.

Force account work shall be tracked daily; however, the contractor shall compile no more than one full week's worth of daily records into a Weekly Force Account Detail form. Each reporting period runs from Saturday through Friday. The contractor shall submit the form within 30 calendar days of the respective week's force account performance. The completed form shall be submitted to the Engineer for review and approval. The Engineer will review the form and supporting documentation against the ADOT Inspector's Daily Force Account Reports, and will verify that the form is timely, complete, and accurate. Payment will not be made until the contractor has furnished applicable forms, detailing the costs of the force account work, including but not limited to the following information:

- (a) Labor: name, classification, date, daily hours, hourly rate and fringe rate, and certified payrolls for each foreman and laborer.
- (b) Equipment: dates, equipment number, description, operator name, hours used, approved stand-by hours, monthly rental rate, hourly operating cost and rental rate blue book sheets for each unit of equipment.
- (c) Rental Equipment (Third Party): invoice, dates used, vendor name, description of equipment, operator name, hours used, invoice rate, hourly operating cost and rental rate blue book sheets for each rental equipment.

- (d) Materials: invoice, date used, supplier name, description, quantity, unit of measure and unit cost.
- (e) Transportation: freight and express charges on materials, FOB jobsite.

(109FASUB, 05/21/26)

SECTION 109 MEASUREMENT AND PAYMENT:

109.04(D)(7) Force Account Work by Subcontractors: the first paragraph of the Standard Specifications is revised to read:

When force account work is determined by the Engineer to require specialized labor or equipment not normally utilized by the contractor, and such force account work is performed by subcontractors, the contractor will be allowed a supplemental markup of 5 percent of the subcontractor's costs plus the applicable tax and bond as specified in Subsection 109.04(D).

(109RET, 10/20/22)

SECTION 109 MEASUREMENT AND PAYMENT:

109.06(B)(3) Partial Payment: of the Standard Specifications is modified to add:

Notwithstanding any provision of Arizona Revised Statutes Section 28-6924, the parties may not agree otherwise.

109.06(B)(4) Final Payment: of the Standard Specifications is modified to add:

Notwithstanding any provision of Arizona Revised Statutes Section 28-6924, the parties may not agree otherwise.

109.06 Partial Payments and Retention: of the Standard Specifications is modified to add:

(C) Payroll Submittals:

The contractor shall submit payrolls electronically through the internet to the Department's web-based certified payroll tracking system. This requirement shall also apply to every lower-tier subcontractor that is required to provide certified payroll reports.

If, by the 15th of the month, the contractor has not submitted its payrolls for all work performed during the preceding month, the Engineer will provide a written notification of the discrepancies to the contractor. For each payroll document that the contractor fails to submit within 10 days after the written notification, the Department will retain \$2,500.00 from the progress payment for the current month. The contractor shall submit each complete and correct payroll within 90 days of the date of notification. If the payroll is complete and correct within the 90-day time frame, the Department will release the \$2,500.00 on the next monthly estimate. For each payroll that is not acceptable until after the 90-day time frame, the Department will only release \$2,000.00 of the \$2,500.00 retained. The Department will retain \$500.00 as sanctions. Such \$500.00 retentions will not relieve the contractor of its responsibility to provide each required payroll, complete and correct, as specified above. These sanctions shall be in addition to all other retention or liquidated damages provided for elsewhere in the contract.

(109SUBPAY, 10/20/22)

SECTION 109 MEASUREMENT AND PAYMENT:

109.06(B)(5) Payment Reporting and Sanctions: the eighth paragraph of the Standard Specifications is revised to read:

For each month that the contractor fails to submit timely and complete payment information the Department will retain \$5,000 as sanctions from the monies due to the contractor. After 90 consecutive days of non-reporting, the sanctions will increase to \$10,000 for each subsequent month which the contractor fails to report until the information is provided. These sanctions will be in addition to all other retention or liquidated damages provided for elsewhere in the contract.

109.06(B)(8) Non-compliance: of the Standard Specifications is revised to read:

Failure to make prompt partial payment, or prompt final payment including any retention, within the time frames established above, will result in remedies, as the Department deems appropriate, which may include but are not limited to:

Sanctions. These sanctions will be in addition to all other retention or liquidated damages provided for elsewhere in the contract:

The Department will withhold two times the dollar amount not paid to each subcontractor;

If full payment is made within 30 days of the Department's payment to the contractor, the amount withheld by the Department will be released; and

If full payment is made after 30 days of the Department's payment to the contractor, the Department will release 75 percent of the funds withheld. The Department will retain the remaining 25 percent of the monies withheld as sanctions.

Additional Remedies. If the contractor fails to make prompt payment for three consecutive months, or any four months over the course of one project, or if the contractor fails to make prompt payment on two or more projects within 24 months, the Department may, in addition, invoke the following remedies:

Withhold monthly progress payments until the issue is resolved and full payment has been made to all subcontractors, subject to the sanctions described in paragraph (a) above;

Terminate the contract for default in accordance with Subsection 108.10 of the specifications; and/or

Disqualify the contractor from future bidding, temporarily or permanently, depending on the number and severity of violations.

In determining whether the sanctions will be assessed, the extent of the sanctions, or additional remedies assessed, the State Construction Engineer will consider whether there have been other violations on this or other contracts, whether the failure to make prompt payment was due to circumstances beyond the contractor's control, and other circumstances. The contractor may, within 15 calendar days of receipt of the decision of the State Construction Engineer, escalate the decision to the State Engineer. If the contractor does not escalate the decision of the State Construction Engineer, in writing to the State Engineer, within 15 calendar days of receipt of the decision, the contractor will be deemed to have accepted the decision and there will be no further remedy for the contractor. If the contractor escalates the decision to the State Engineer, and the contractor does not agree with the State Engineer's decision, the contractor may initiate litigation, arbitration or mediation pursuant to Subsection 105.21(D) and (E) of the specifications.

(109FUEL, 02/10/12)

SECTION 109 MEASUREMENT AND PAYMENT: of the Standard Specifications is modified to add:

109.12 Fuel Cost Adjustment:

(A) General:

The Department will adjust monthly progress payments up or down as appropriate for cost fluctuations in diesel fuel as determined in accordance with these special provisions.

A fuel cost adjustment will be made when fluctuations in the price of diesel fuel, in excess of 15 percent, occur throughout this contract. The Department will not provide such adjustments for fluctuations in the price of diesel fuel of 15 percent or less.

No adjustments will be made for fluctuations in the price of fuels other than diesel.

(B) Measurement:

The base index price of fuel will be determined by the Department from the selling prices of diesel fuel published by OPIS (Oil Price Information Service). The base index price to be used will be the price for Diesel fuel No. 2, Ultra Low Sulfur, PAD 5, City of Phoenix Rack. The reported average value for the Phoenix area will be used.

The base index price for each month will be the arithmetic average of the selling price for diesel fuel, as specified above, shown in the last four reports received prior to the last Wednesday of the month.

This price will be effective as of the last Wednesday of each month, and will be posted on the Department's website, at <http://www.azdot.gov/Highways/cns/bitmat.asp>, on or shortly after the last Wednesday of the month.

This price may also be obtained from Contracts and Specifications Services at (602) 712-7221.

This price will be deemed to be the "initial cost" (IC) for diesel fuel on projects for which bids are opened during the following month.

The current index price for diesel fuel in subsequent months will be the base index price, determined as specified above, for the current month. For example; an adjustment for diesel fuel used in May, if applicable, will be based on the "current price" (CP) for May as posted on the last Wednesday of May. The amount of adjustment per gallon will be the net difference between the "initial cost," adjusted by 15 percent, and the current index price. The monthly adjustment will be determined by the Engineer and included in the payment estimate as a fuel adjustment. For fluctuations in excess of 15 percent, fuel cost adjustments will only be made for current price index increases greater than 1.15 times the "initial cost" or for decreases less than 0.85 times the "initial cost." No calculation will be

made for fluctuations in the current index price of 15 percent or less when compared to the "initial cost."

The number of gallons of diesel fuel used per month will be considered to equal 1.5 percent of the dollar amount of work reported by the contractor for each month. Such dollar amount will not include incentives earned by the contractor for pavement smoothness, thickness, or strength for Portland cement concrete pavements; for pavement smoothness or quality lots for asphaltic concrete pavements; for any other revenue derived from quality incentives; or for revenue accrued in the previous month for bituminous material cost fluctuations or diesel fuel price adjustments.

A monthly adjustment, if applicable, will be made on this quantity, as shown below:

$$S = \frac{0.015(Q)}{IC} \times (CP - AC)$$

Where; S = Monetary amount of the adjustment (plus or minus) in dollars
Q = Dollar amount of work completed for the month
CP = Current index price in dollars per gallon
AC = Adjusted "initial cost" (1.15 or 0.85 times IC) in dollars per gallon
IC = "Initial cost" as determined above, dollars per gallon

If adjustments are made in the contract quantities, the contractor shall accept any fuel adjustment as full compensation for increases or decreases in the price of fuel regardless of the amounts of overrun or underrun.

The value calculated above (plus or minus) will be adjusted to include sales tax and other taxes as applicable.

No additional compensation will be made for any additional charges, costs, expenses, etc., which the contractor may have incurred since the time of bidding and which may be the result of any fluctuation in the base index price of diesel fuel.

No adjustments will be made for work performed after Substantial Completion, as defined in Subsection 105.19, has been achieved.

(C) Payment:

Price adjustments will be shown on the monthly progress estimate, but will not be included in the total cost of work for determination of progress or for extension of contract time.

(109BITUMADJ, 06/19/25)

SECTION 109 MEASUREMENT AND PAYMENT: of the Standard Specifications is modified to add:

109.16 Bituminous Price Adjustment:

(A) General:

The term "bituminous material" as used herein shall include asphalt binder, asphalt rubber and emulsified asphalt.

The Department will adjust monthly progress payments as appropriate for market fluctuations in the price of bituminous material.

A price for bituminous material will be determined monthly by the Department based on the selling prices published by the Asphalt Weekly Monitor, a publication of Poten & Partners, Inc. The price will be the arithmetic average of the high and low selling prices for bituminous material shown in the previous four reports for the Arizona/Utah and Southern California regions.

This value will be effective as of the last Wednesday of each month, and will be posted on the ADOT Contracts and Specifications Group website, on or shortly after the last Wednesday of each month.

This price will be deemed the "initial cost" (IC) for bituminous material for projects on which bids are opened during the following month. This price will also be deemed the "current price" (CP) for bituminous material for the following month for projects in construction.

(B) Measurement:

For each item of bituminous material for which there is a specific pay item, and for the bituminous material used in Asphaltic Concrete mixes, an adjustment will be made for each month that a quantity of bituminous material was used on the project.

The IC for the month in which the project was bid will be compared with the CP for the appropriate current month. The CP will be as posted on the Department's website on the last Wednesday of each month, and will be used to adjust costs for bituminous material incorporated into the job during the following month (for example; bituminous material used in May will be adjusted, as specified herein, based on the CP for May as posted on the last Wednesday of April). Any difference in price between these two values will be applied to the quantity of eligible bituminous material incorporated into the work.

Determination of the eligible quantities of bituminous material for adjustment will be based on contractor-furnished invoices, except as described herein.

The tons of emulsified products to which the adjustment will be applicable will be the tons of the emulsified asphalt prior to dilution.

Adjustments in compensation for emulsified asphalts will be made at 60 percent of either the increase or decrease of IC. For emulsified asphalts containing polymer, adjustments in compensation will be made at 66 percent of either the increase or decrease.

The tons of Bituminous Material (Asphalt-Rubber) to which the adjustment is applicable will be 80 percent of the total quantity of the item used. The adjustment is not applicable to the 20 percent of the material which constitutes the crumb-rubber additive.

The tons of Bituminous Material (TR+) to which the adjustment is applicable will be 92 percent of the total quantity of the item used. The adjustment is not applicable to the 8 percent of the material which constitutes the crumb-rubber additive.

The tons of bituminous material in Asphaltic Concrete mixes, subject to price adjustment shall be calculated as follows, based on the approved mix design target values and the quantity of Asphaltic Concrete placed—regardless of the actual percentage of binder incorporated:

A monthly adjustment, if applicable, will be made on this quantity, as shown below:

$$PA = (CP - IC) \times ACP \times F$$

Where: PA = Price Adjustment monetary amount (plus or minus in dollars)
CP = Current index price (dollars per ton)
IC = Initial Cost at time of bid (dollars per ton)
ACP = Asphaltic Concrete Placed (tons)
F = Eligible Asphalt Cement %

The value calculated above (plus or minus) will be adjusted to include sales tax and other taxes as applicable.

- (1) For mixes without reclaimed asphalt pavement (RAP):

F = Approved Mix Design Target Asphalt Cement %

- (2) For mixes with RAP:

F = Approved Mix Design Target Asphalt Cement % – Mix Design RAP Asphalt Cement contribution %

- (3) For mixes using PG TR+ Terminal Blend (8 % Crumb Rubber):

F = 0.92 x (Approved Mix Design Target Asphalt Cement %)

- (4) For mixes using Asphalt-Rubber Blend (20 % Crumb Rubber):

F = 0.80 x (Approved Mix Design Target Asphalt Cement %)

- (5) If the quantity of Asphaltic Concrete is measured by volume, the supplemental agreement establishing the method of measurement will

specify the manner in which the tons of bituminous material eligible for the adjustment is determined.

(C) Payment:

Price adjustments will be shown on the monthly progress estimate, but will not be included in the total cost of work for determination of progress or for extension of contract time.

Price adjustments will be calculated using the measurement methods described above. Only the tons of virgin asphalt binder determined by those methods will be subject to a bituminous material price adjustment.

No price adjustment will be made for the RAP binder in the mix.

No price adjustment will be made for the 8% of binder comprising crumb rubber when (TR+) is used.

No price adjustment will be made for the 20% of binder comprising crumb rubber in the asphalt-rubber material blend.

No compensation will be made for changes that may have occurred since the time of bidding and which may be the result of any increase in the IC of bituminous material.

Adjustment in unit prices of items governed by this provision will be made in the next regular monthly progress payment following actual use or application of the bituminous material.

(201PAY, 07/15/21)

SECTION 201 CLEARING AND GRUBBING:

201-5 Basis of Payment: of the Standard Specifications is modified to add:

When clearing and grubbing is not included as a contract pay item, full compensation for any clearing and grubbing necessary to perform the construction operations designated on the project plans or specified in the Special Provisions shall be considered as included in the price of contract item.

SECTION 202 REMOVAL OF STRUCTURES AND OBSTRUCTIONS: the first paragraph of the Standard Specifications is hereby deleted:

(303RASBAB, 04/18/24)

SECTION 303 AGGREGATE SUBBASES AND AGGREGATE BASES:

303-2 **Materials:** of the Standard Specifications is revised to read:

Aggregate for the various classes of aggregate subbases and aggregate bases shall consist of stone, gravel or other approved inert material of similar characteristics, and shall be clean and free from vegetable matter and other deleterious substances.

Aggregate subbase and aggregate base material may be comprised of processed salvaged asphaltic concrete, processed salvaged aggregate base material, processed salvaged Portland Cement Concrete materials, virgin aggregate base materials or any combination of these materials meeting the requirements of Table 303-1. These materials may be from a specific project site or approved commercial source. Processed salvaged materials shall conform to the requirements specified in AASHTO M 319.

Aggregate subbases and aggregate bases shall conform to the requirements of Table 303-1:

TABLE 303-1										
Class of Aggregate	Percent Passing Sieve (Inch or No.)									PI, Max.
	3	1-1/2	1	3/4	1/4	4	8	30	200	
1		100	90 - 100				35 - 55		0 - 8.0	3
2		100	90 - 100			38 - 65	25 - 60	10 - 40	3.0 - 12.0	3
3										
4	100				35 - 70				0 - 10.0	5
5	100				30 - 75				0 - 10.0	5
6										

Notes:

The PI (Plasticity Index) will be determined in accordance with the requirements of AASHTO R 58, T 89, and T 90.

Classes 1, 2 and 3 are bases; Classes 4, 5 and 6 are subbases.

The requirements for Class 3 and for Class 6 will be specified in the Special Provisions.

For Class 1 through Class 4 aggregate, the amount of one fractured face coarse aggregate particles shall be at least 50 percent.

Resistance to abrasion for Class 1 through Class 4 aggregate will be

determined in accordance with the requirements of AASHTO T 96 and shall meet the following requirements:

Maximum loss of 12 percent at 100 revolutions

Maximum loss of 40 percent at 500 revolutions

When determining gradation of aggregate subbase or aggregate base material containing processed salvaged asphaltic concrete materials, drying to a constant weight shall be performed at a temperature of 140 ± 5 F, in accordance with the requirements of AASHTO T 265.

Aggregate subbase and aggregate base material not conforming to the requirements of Table 303-1 for gradation and/or PI may be accepted by the Engineer upon the contractor's submittal of testing results demonstrating that the R-Value is at least 79 when determined by AASHTO T 190. At the contractor's option, the material may be reprocessed and re-compacted at no additional cost to the Department.

All metal reinforcement and expansion materials shall be removed from processed salvaged Portland Cement Concrete prior to its use in aggregate subbase and aggregate base material.

The contractor shall submit the testing information for the base and subbase materials which are intended to be used to the Engineer for approval. Any significant change in the materials shall be approved by the Engineer prior to use.

Mixing on grade shall be accomplished using a full depth reclamation machine or pulverizer, manufactured for this purpose. Motor graders, gannon boxes, auger scrapers, or other similar devices will not be allowed for mechanical mixing on grade.

If suitable in-place aggregate subbase or aggregate base materials are available, the contractor shall have the option of re-using such materials as processed salvaged aggregate base. Processed salvaged asphaltic concrete and salvaged Portland Cement Concrete materials may be blended with the processed salvaged aggregate subbase, processed salvaged aggregate base and virgin base aggregates. The blended material shall be homogenous mixture in which there is no segregation, crusts, lumps, or nesting, and shall be sampled and tested to meet the requirements specified herein.

303-3.01 **Placement:** of the Standard Specifications is modified to add:

When processed salvaged materials are utilized, either from in-place or from a commercial source, the Engineer may require a test section of 1000 feet be placed utilizing the processed materials and construction methods proposed for use by the contractor. Full operations shall not proceed until the test section has been tested and approved by the Engineer. The contractor shall use the same equipment, material processing, and construction methods for the remainder of the construction, unless adjustments made by the contractor are approved in advance by the Engineer.

303-3.02 Compaction: of the Standard Specifications is revised to read:

Each layer of aggregate subbase and aggregate base material shall be compacted to a density of not less than 100 percent of the maximum density determined in accordance with the requirements of the applicable test methods of the ADOT Materials Testing Manual, as directed and approved by the Engineer.

The moisture content shall be determined per AASHTO T 265 when determining density for aggregate subbase and aggregate base material containing processed salvaged asphaltic concrete and/or processed salvaged Portland Cement Concrete.

When AASHTO T 265 is utilized to determine moisture content, acceptance testing results for density will be furnished to the contractor up to 24 hours after performance of in-place density testing to allow sufficient time for moisture determination.

303-5 Basis of Payment: of the Standard Specifications is revised to read:

The accepted quantities of aggregate subbase and aggregate base, measured as provided above, will be paid for at the contract unit price per cubic yard, which price shall be full compensation for the work, complete in place.

(404BITUM, 08/18/22)

SECTION 404 BITUMINOUS TREATMENTS:

404-1 Description: of the Standard Specifications is revised to read:

The work under this section shall consist of furnishing all materials and constructing or applying bituminous treatments at the locations designated on the plans and in accordance with the requirements of the specifications and in conformity to the lines shown on the project plans or established by the Engineer.

The bituminous treatments include one or a combination of prime coat, tack coat, and fog coat. The bituminous treatments also include emulsified asphalt chip seal and hot applied chip seal both either with or without fog coat.

When a "hot applied" chip seal is called for on the plans and specifications, it refers to a chip seal using a performance grade asphalt cement or a crumb rubber asphalt as the bituminous material.

404-2.02 Aggregate Materials:

- (A) General:** the second and third paragraphs of the Standard Specifications are revised to read:

With the exception of precoated cover material, aggregate material shall be sampled for gradation acceptance from the final stockpile prior to being incorporated into the work. The aggregate for the precoated material shall be sampled prior to precoating.

- (B) Blotter Material:** of the Standard Specifications is revised to read:

Blotter material shall be natural or manufactured sand, volcanic cinders, or other approved material and shall be free of deleterious materials or foreign substances.

The gradation shall meet the following requirements when tested in accordance with the requirements of Arizona Test Method 201:

Sieve Size	Percent Passing
3/8 inch	100
No. 4	80 - 100
No. 16	45 - 80
No. 200	0 - 5.0

- (C) Cover Material:** of the Standard Specifications is revised to read:

Aggregate for cover material shall be clean gravel or crushed rock, shall be free of clay, and shall not contain calcium carbonate, caliche, synthetic materials, organic matter, or foreign substances. Cover material shall not be obtained from sweepings of previously applied cover material.

The gradation shall meet the following requirements when tested in accordance with the requirements of Arizona Test Method 201.

Sieve Size	Percent Passing	
	Class 1	Class 2
3/4 inch	100	
1/2 inch	97 – 100	100
3/8 inch	70 – 100	97 – 100
1/4 inch	0 – 10	70 – 100
No. 8	0 – 5	0 – 5
No. 200	0 - 2.0	0 - 2.0

Cover material shall meet the following requirements:

Aggregate Characteristics	Test Method	Requirement
Abrasion	AASHTO T 96	100 Rev., Max 9% 500 Rev., Max 40%
Carbonates	Arizona Test Method 238	Maximum 20%
Fractured Coarse Aggregate Particles	Arizona Test Method 212	Minimum 75% one fractured face, determined on plus No. 8 material
Flakiness Index	Arizona Test Method 233	Maximum 20%
Bulk Oven Dry Specific Gravity	Arizona Test Method 210	2.350 – 2.850
Water Absorption	Arizona Test Method 210	0.0 – 2.5%

(D) Precoated Cover Material: of the Standard Specifications is revised to read:

For hot applied chip seals, the cover material shall be precoated with any grade of PG asphalt cement which meets the requirements of Section 1005 of the specifications. The precoating shall be accomplished by mixing at a central plant until the aggregate is evenly coated. The cover material shall have a minimum temperature of 250 degrees F at the time of precoating with asphalt cement. The cover material shall be precoated with approximately 0.40 to 0.60 percent asphalt cement, by weight of the aggregate. The final percentage of asphalt cement used for precoating will be as directed by the Engineer. Precoated cover material shall be dust free upon completion of coating and shall remain dust free prior to being incorporated into the work.

The aggregate for precoated cover material shall meet the requirements in Subsection 404-2.02(C) of the specifications prior to precoating with bituminous material.

No precoated cover material shall be stockpiled following precoating with asphalt cement for more than five calendar days prior to placement, unless otherwise approved by the Engineer.

404-2.03 Bituminous Treatment Material Types and Application Rates: of the Standard Specifications is modified to add:

The type of bituminous material for tack coat and approximate application rate shall be as specified in Subsection 404-4.02 of the specifications.

The type of bituminous material for fog coat shall be CSS-1 and shall be applied at the approximate rate of 0.08 gallons per square yard. Blotter material shall be applied at the approximate rate of 2 pounds per square yard.

The bituminous material application rates provided in this Subsection are approximate, and are to be used for bidding purposes, and shall be modified as required herein. Final application rates for all materials shall be those required to ensure the most favorable outcome, as approved by the Engineer.

404-3 Construction Requirements:

404-3.01 Seasonal and Weather Limitations: of the Standard Specifications is revised to read:

(A) General:

At any time, the Engineer may require that the work cease or that the work day be reduced in the event that weather conditions, either existing or expected, are anticipated to have an adverse effect upon the bituminous treatment.

Placement shall cease for the remainder of the day if sustained wind velocities in excess of 15 MPH occur at the project site.

(B) Prime Coat:

Bituminous material used for prime coats shall be applied to an existing aggregate surface only when the ambient temperature in the shade is at least 70 degrees F and when the existing aggregate surface is slightly damp.

(C) Fog Coat:

Bituminous material used for fog coats shall be applied to an existing pavement surface only when the surface is dry, the pavement surface temperature is at least 60 degrees F but does not exceed 175 degrees F, and the ambient temperature at the beginning of the application is at least 50 degrees F and rising but does not exceed 110 degrees F. The application of bituminous material shall be stopped when the ambient temperature is 55 degrees F or less and falling.

(D) Chip Seal:

The contractor's bid submittal and initial construction schedule shall adhere to the beginning and ending dates shown in Subsection 404-4.04(A) of the specifications. Bituminous material used for chip seal coats shall only be placed when the existing pavement surface is dry, the surface temperature is at least 85 degrees F, and the ambient temperature at the beginning of the application of bituminous material is at least 65 degrees F and rising. The application of bituminous material shall be stopped when the ambient temperature is 70 degrees F or less and falling.

No placement of bituminous material for chip seals shall occur if ambient temperatures are forecasted to be at or below 40 degrees F at any time during the day or night after placement.

For hot applied chip seals, no placement shall occur if ambient temperatures exceed, or are forecasted to exceed, 110 degrees F the day before, the day of, or the two days after placement.

404-3.02 Equipment:

- (A) **Distributor Truck:** the first sentence of the first paragraph of the Standard Specifications is revised to read:

Distributor trucks shall be so designed, equipped, maintained and operated that bituminous material at the specified temperature may be applied uniformly on variable widths of surface at readily determined and controlled rates from 0.03 to 1.00 gallons per square yard, with uniform pressure, and with an allowable transverse variation from any specified rate not to exceed 10 percent or 0.02 gallons per square yard, whichever is less.

- (A) **Distributor Truck:** the first sentence of the fourth paragraph of the Standard Specifications is revised to read:

Distributor truck spray bars shall be equipped with the appropriate size nozzles adjusted to the proper angle with the associated adjustment wrench to achieve maximum overlap of spray and an even application.

- (B) **Power Brooms:** of the Standard Specifications is revised to read:

Power brooms shall be of the rotary or pickup type, capable of completely removing excess blotter material, and cleaning without gouging or tearing the surface.

- (D) **Aggregate Spreaders:** of the Standard Specifications is revised to read:

The application of blotter material shall be accomplished by means of a sand slinger or other equipment approved by the Engineer.

The application of cover material shall be accomplished by means of a calibrated spreader. The spreader shall be a self-propelled, computerized rate-controlled unit capable of an application width of 14 feet or greater. The spreader shall be in good mechanical condition, capable of applying the correct aggregate application rate uniformly across the spread width.

Chip spreader boxes shall be calibrated to ensure consistent discharge across all of the chutes except where the discharge is intentionally adjusted to compensate for site conditions and construction operations.

404-3.03 Traffic Control: of the Standard Specifications is hereby deleted.

404-3.04 Preparation of the Surface: of the Standard Specifications is revised to read:

The surface to be treated shall be thoroughly cleaned prior to applying bituminous material. Man holes, utility covers, and catch basins shall be protected prior to and during application

of bituminous material. Self-propelled rotary power brooms, pickup brooms, and hand brooms shall be used immediately in advance of applying the bituminous material.

When a bituminous treatment is to be applied to an existing aggregate surface, the surface shall be uniformly smooth, firm and reasonably true to grades and cross sections as shown on the project plans, and shall be so maintained throughout the placing of the bituminous treatment. In no event shall a bituminous treatment be placed on a soft, uneven base. All holes, depressions or irregularities shall be repaired. All loose and unsuitable material shall be removed and replaced by suitable material, which shall be compacted to produce a dense uniform surface conforming to the adjacent area.

When required, the existing aggregate surface on which the bituminous treatment is to be placed shall be lightly bladed, watered and compacted immediately prior to the application of bituminous material. In extremely dry areas, additional light applications of water may be required prior to the application of the bituminous material to facilitate penetration of the bituminous material.

404-3.05 Application of Bituminous Material: the first, second and third paragraphs of the Standard Specifications are revised to read:

The types, grades, and approximate rates of application of bituminous material shall be as specified in Subsections 404-2.03 of the specifications. The application rates for chip seal coats shall be determined by the contractor in accordance with the requirements herein, subject to approval by the Engineer.

The rates to be applied may vary substantially because of different surface conditions within the project limits. The actual bituminous material application rate shall not vary more than 10 percent from the application rate specified or approved by the Engineer.

The bituminous material shall be uniformly applied to the prepared surface at the rate specified or approved by the Engineer and in one application.

404-3.05 Application of Bituminous Material: the seventh, eighth and ninth paragraphs of the Standard Specifications are revised to read:

In the event that any spots are missed in the application, or any areas develop that do not have a uniform spread or penetration, such areas shall be remedied without delay.

Care shall be taken to prevent the spraying or splattering of bituminous material on adjacent pavements, structures, curb, guardrail, vegetation, or any other object outside of the area designated for spraying.

Removal and disposal of unused bituminous material shall be the contractor's responsibility and at no cost to the Department.

404-3.06 Application of Blotter Material: of the Standard Specifications is revised to read:

The approximate application rate of blotter material, when required as a part of a bituminous treatment, shall be as specified in Subsection 404-2.03 of the specifications; however, the

Engineer will specify the exact rate to be applied based on the characteristics of the bituminous treated surface. The specified application rates are based on the wet weight of material.

Blotter material, at the time of spreading, shall be wet but free from running water. Blotter material shall be spread uniformly to the treated surface in one or more applications for a total application rate as specified. Blotter material shall be applied at a time acceptable to the Engineer and before opening to traffic.

Any oversized aggregate or foreign material picked up during stockpiling or loading operations shall be eliminated before entering the spreader. Supplemental spreading or smoothing shall be done by hand methods where necessary.

Prior to final acceptance and when ordered by the Engineer, the contractor shall remove and dispose of any excess blotter material. Removal and disposal of excess blotter material shall be the contractor's responsibility and at no cost to the Department.

404-3.07 Joints: of the Standard Specifications is revised to read:

(A) General:

Transverse joints with the preceding work, at intersections, and at all existing pavements and structures shall be made by a method approved by the Engineer prior to the start of the work.

Longitudinal joints shall be overlapped between 2 to 6 inches.

Regardless of the width of the roadway to be sealed, the number of longitudinal joints shall be kept to a minimum. Longitudinal joints shall be located to the greatest degree obtainable to coincide with the painted lines between traffic lanes.

(B) Chip Seal:

Unless otherwise directed by the Engineer, transverse joints with the preceding work shall be made by placing building paper over the end of the previous application, and the joining application shall start on the building paper. Once the application process has progressed beyond the paper, the paper shall be disposed of as directed by the Engineer. Transverse joints at other locations shall be made by a method approved by the Engineer prior to the start of the work.

Joints shall be cleaned as deemed necessary by the Engineer prior to the application of bituminous material in the adjacent strip.

404-3 Construction Requirements: of the Standard Specifications is modified to add:

404-3.08 Opening to Traffic:

In the construction or application of bituminous treatments, no traffic or equipment will be permitted on the treated roadway surface until it has been established to the satisfaction of

the Engineer that the treated roadway surface will not be damaged or marred under the action of traffic. No traffic of any description shall be allowed on any bituminous treatment until approved by the Engineer.

404-4 Prime Coat: the title and text of the Standard Specifications is revised to read:

404-4 Bituminous Surface Treatment:

404-4.01 Prime Coat:

The type of bituminous material and the approximate application rate shall be as specified in Subsection 404-2.03 of the specifications. The Engineer may adjust the actual application rate based on specific trials and visual observations performed on test areas for different base conditions.

When it is deemed necessary, areas having excess bituminous material shall be blotted with material as directed by the Engineer.

When directed by the Engineer, the surface of the completed prime coat shall be rolled with a pneumatic-tired roller.

The integrity of the prime coat shall be maintained at all times until the next course is placed or until final acceptance. In the event traffic has caused holes or breaks in the surface, such holes or breaks shall be repaired by the contractor.

404-4.02 Tack Coat:

Tack coat shall be applied prior to placing a bituminous mixture on a primed surface, an existing bituminous surface, or an existing Portland cement concrete pavement surface. Tack coat shall also be applied between each layer of bituminous mixtures. A light coat of bituminous material shall also be applied to edges or vertical surfaces against which a bituminous mixture is to be placed.

The contractor shall choose the bituminous material to be used for tack coat. The Engineer must approve the contractor's choice of bituminous material prior to its use.

The rate of application for the specific usage will be specified by the Engineer. The following table shows approximate tack coat application rates:

Type of Bituminous Material	Approximate Tack Coat Application Rates: Gallons / Square Yard		Payment Factor
	Prior to Placing ACFC or AR-ACFC	All Other Tack Coats	
Emulsified Asphalt (Special Type) – See Note (1) Below.	Not Allowed	0.12	0.7
Emulsified Asphalt (Other	0.08	0.08	1.0

than Special Type)			
Asphalt Cement	0.06 to 0.08	0.06 to 0.08	1.0
Note: (1) Emulsified Asphalt (Special Type) shall consist of Type SS-1 or CSS-1 emulsified asphalt diluted with water to provide an asphalt content of not less than 26 percent.			

The Engineer may adjust the application rate.

If emulsified asphalt of any type is used, it shall have broken before the bituminous mixture is placed.

Tack coat shall be applied only as far in advance of the placement of the bituminous mixture as is necessary to obtain the proper condition of tackiness. All traffic on a tack coat surface shall be minimized to the greatest extent possible. In no event shall more tack coat be applied in one day than will be covered by the bituminous mixture during that same day.

404-4.03 Fog Coat:

The type of bituminous material and the approximate application rate shall be as specified in Subsection 404-2.03 of the specifications. The material shall be diluted with one part water to one part bituminous material. The specified application rate is based on the diluted material. The Engineer may adjust the actual application rate based on specific trials and visual observations performed on test areas for different pavement conditions.

When specified in Subsection 404-2.03 of the specifications, blotter material shall be applied following the application of bituminous material.

404-4.04 Chip Seal Coat:

(A) General:

The contractor shall prepare their bid submittal and initial construction schedule, submitted at the Preconstruction Conference as described in Subsection 108.03 of the specifications, based on the following beginning and ending dates for placement of the chip seal.

Average Elevation of Project, Feet	Beginning and Ending Dates
0 – 3499	March 15 – May 31
0 – 3499	September 1 – October 31
3500 – 4999	May 1 – September 30
5000 and over	June 1 – August 31

Any proposed placement deviating from the beginning and ending dates shall be detailed in the written schedule of construction submitted at the weekly meeting described in Subsection 108.04 of the specifications. No contract time extension will be granted for placement outside of the beginning and ending dates. Any placement deviating from the beginning and ending dates shall be at the sole risk of the contractor.

The type of bituminous material and the approximate application rate shall be as specified in Subsection 404-2.03 of the specifications. The type of cover material shall be as specified in Subsection 404-2.03 of the specifications.

The contractor shall determine the application rates and corresponding quantities of bituminous material and cover material for chip seal coat in accordance with Arizona Test Method 819. Application rates are subject to approval by the Engineer. Areas and locations anticipated to require adjustment to the rate(s) shall also be identified.

The application rates and performance of emulsified asphalt chip seals shall be evaluated using the Sweep Test in accordance with ASTM D7000.

The performance of hot applied chip seals shall be verified using the Vialit Retention Test in accordance with EN 1272-3, modified as necessary to account for the specific characteristics of the proposed chip seal.

The actual application rate shall be such that the aggregate is embedded approximately 70 percent (80 percent above 4,000 feet elevation) and excessive tracking of bituminous material does not occur under construction equipment or when opened to traffic.

The actual rate of cover material to be applied shall be such that no more than 5 percent of the chips applied are removed during sweeping and approximately 20 percent void space exists between the aggregate particles once realigned after opening to traffic.

The proposed application rate(s), locations requiring adjustment, and the associated basis for each adjustment, shall be submitted to the Engineer for approval no later than five days following completion of the Pre-Activity Walkthrough as described in Subsection 404-4.04(B) of the specifications and at least five days prior to placement of the test strip.

The basis for any anticipated adjustments shall include use of one or more of the following:

- (a) Sand Patch tests performed in accordance with *STP762 Pavement Surface Characteristics and Materials*; Haydon, C.E. (ASTM, 1982),
- (b) Appendix B of Chip Seal Guide for Application and Construction; Pavement Preservation Committee of the Arizona Chapter of The Associated General Contractors (AGC-Arizona Chapter, 2013),
- (c) Arizona Test Method 742 for mean macrotexture.

The approved application rate(s) and adjustments shall be clearly marked at the corresponding locations and remain visible to equipment operators prior to placement.

At least 10 days prior to chip seal placement, the contractor shall submit a minimum 75-pound sample of uncoated cover material to the Engineer for testing. In addition to the submitted cover material, the contractor shall also submit 3 full gallons of emulsion (5 to 8 gallons for hot applied) in 1-gallon cans in accordance with the requirements of Arizona Test Method 103. The contractor shall also submit 40 pounds of granulated rubber if included in the bituminous material.

(B) Pre-Activity Walkthrough:

Prior to placement, the contractor shall conduct a Pre-Activity Walkthrough with all parties expected to work on the chip seal.

Locations where adjustments in application rate may be appropriate shall be documented.

A location for a test strip, approximately 1,000 feet in length shall be identified. If additional test strip locations are desired due to varying surface conditions, these shall also be identified.

Other factors or site conditions such as turn or deceleration lanes, changes in surface characteristics, crack fill, and recent patchwork which may affect placement of the chip seal coat shall also be identified. A description of any affecting conditions and the corresponding locations and action to be taken to minimize their impact shall be documented.

In addition to the requirements herein, the items contained on the checklists provided in AGC-Arizona Chapter's Chip Seal Guide for Application and Construction shall be considered.

(C) Chip Seal Test Strip:

Prior to the start of placement, all equipment used in the placement of the chip seal coat shall be verified to be in satisfactory operating condition and in accordance with the requirements herein.

Cover material shall be verified to have appropriate moisture and be in a condition consistent with that in which it existed at the time initial acceptance samples were obtained. Bituminous material certifications shall be verified to indicate that the required type of material is on hand. The bituminous material shall be at the proper temperature prior to application.

The chip seal test strip shall be a minimum of 500 linear feet. The existing pavement surface to receive the test strip shall be verified to have been adequately swept and cleaned and meeting the requirements herein. Anticipated application rates shall have been marked and clearly visible to equipment operators.

During placement of the test strip, all equipment shall be observed to confirm proper operation. The application rate of both the bituminous material and cover material shall be measured and verified using a catch-and-weigh "tarp" method. The application rate of the bituminous material shall also be measured and verified by means of a volume per area calculation using the distributor trucks calibrated thermometer and volume measuring gauge or device.

Rolling shall immediately follow placement of the cover material and be verified to be in conformance with the requirements herein.

For emulsion chip seals, the contractor shall broom the surface to remove excess cover material only after the emulsion has fully broken and cured sufficiently for maximum chip retention.

Prior to any subsequent placement, the test strip shall be observed to have adequate embedment of the cover material without excessive void space between the chips, stacking of chips, or accumulation of chips on the shoulders. If the condition of the test strip is not acceptable, adjustments shall be made as appropriate, and an additional test strip shall be performed.

(D) Application of Bituminous Material for Chip Seal:

The following bituminous material application requirements for chip seal are in addition to the requirements specified in Subsection 404-3.05 of the specifications.

Bituminous material shall not be applied a distance ahead of the chip spreader that results in excessive lag of the rollers allowing hot applied bituminous material to cool or emulsified bituminous material to break prior to achieving adequate embedment of the cover material.

When inclement weather is expected, only the amount of hot applied bituminous material which can receive adequately embedded cover material, or only the amount of emulsified asphalt that can receive adequately embedded cover material and has sufficiently broken, shall be placed prior to the start of inclement weather.

(E) Application of Cover Material:

Cover material shall be immediately and uniformly spread over the freshly applied bituminous material such that aggregate particles are securely adhered and will not roll, tumble, or be picked up during the rolling process. Any oversize aggregate or foreign material picked up during stockpiling or loading operations shall be eliminated before entering the aggregate spreader hopper. Supplemental spreading and smoothing shall be done by hand methods where necessary.

When emulsified asphalt is used, the cover material shall be at a saturated surface-dry condition at the time of spreading.

For hot applied chip seals, and when project conditions require, precoated cover material shall be at a sufficient temperature to facilitate adequate embedment.

(F) Rolling Cover Material:

Following the spreading of cover material, the surface shall be promptly rolled with self-propelled pneumatic-tired rollers. A minimum of three rollers shall be provided; however, a sufficient number of rollers shall be provided to cover the entire width of the material spread in one pass of the compactors and rolling shall continue until a minimum of three passes has been completed.

For chip seals with a hot applied bituminous material the first roller pass shall occur as soon as possible but no longer than 2 minutes after applying the aggregate. The third pass shall be completed quickly enough to embed the aggregate before the binder cools, and no longer than 15 minutes after the binder is applied.

(G) Removal of Loose Cover Material:

The cover material shall be removed by means of a power broom which shall be in good condition and of a design suitable for the work. The action of the broom shall be such that particles which are stuck to the bituminous material will not be dislodged.

For chip seals with an emulsified bituminous material, initial removal of all loose cover material shall not commence prior to two hours after placement or at such time that the Engineer has determined that the emulsion has sufficiently cured.

For chip seals with a hot applied bituminous material, the removal of loose cover material shall commence approximately 30 minutes after the final rolling is completed.

Initial removal of loose cover material shall occur prior to opening to traffic. All loose cover material shall be removed from the paved surface by brooming within 24 hours after application.

After the traffic free period as specified in Subsection 404-4.04(H) of the specifications, but prior to final removal of loose cover material, all traffic permitted by the Engineer shall not exceed 25 miles per hour.

If the Engineer determines that conditions are not conducive to obtaining the best results, brooming shall be discontinued until the Engineer has considered all conditions and has determined the best time for the removal of the cover material.

(H) Minimum Traffic-Free Period:

The minimum traffic-free period for a newly applied emulsion chip seal coat shall be three hours. The contractor's hauling equipment may use the new seal coat surface during the traffic free period at a speed not to exceed 15 miles per hour but shall not make sharp turns of brake abruptly.

(I) Fog Coat on New Chip Seals:

When specified in Subsection 404-2.03 of the specifications, a fog coat shall be placed on the new chip seal following the curing period. The type of bituminous material and the approximate application rate shall be as specified in Subsection 404-2.03 of the specifications. The material shall be diluted with one part water to one part bituminous material. The specified application rate is based on the diluted material. The Engineer may adjust the actual application rate based on specific trials and visual observations performed on test areas for different pavement conditions.

When specified in Subsection 404-2.03 of the specifications, blotter material shall be applied following the application of bituminous material.

(J) Contractor Quality Control:

The contractor shall be responsible for the chip seal design, performing quality control testing on materials, and designating an individual charged with constant observation and monitoring.

Need for an adjustment to application rates or a correction to process or equipment shall be communicated immediately to the necessary personnel.

The initial condition of equipment, materials, and the project and pavement surface conditions shall be documented. The performance and results of the test strip shall be documented. Observations of monitoring activities and quantification of application rates during the test strip and production shall be documented no less frequently than every other placement run.

The cause for any adjustments, including quantifying tests performed, the adjustments made, and the result of such adjustments with regard to acceptability and performance of the chip seal coat shall be documented.

404-5 Tack Coat: of the Standard Specifications is hereby deleted.

404-6 Fog Coat: of the Standard Specifications is hereby deleted.

404-7 Chip Seal Coat: of the Standard Specifications is hereby deleted.

404-8 Method of Measurement: the fourth paragraph of the Standard Specifications is revised to read:

The contractor shall be responsible to determine the amount of cover material that will be required to complete the work from the source(s) from which the cover material is obtained.

404-8 Method of Measurement: the sixth paragraph of the Standard Specifications is revised to read:

Measurement for payment will be made only for the quantity of bituminous material and for the quantity of aggregate material used in accordance with the requirements of the specifications.

404-9 Basis of Payment: of the Standard Specifications is revised to read:

The accepted quantities of the work under this section, complete in place, measured as provided above, will be paid for at the contract unit price as designated in the bidding schedule, except the contract unit price for the quantities of bituminous material will be adjusted on the basis of the test results in accordance with the requirements of Section 1005 of the specifications.

No measurement or direct payment will be made for precoating the cover material, material for precoating, rolling and removal of loose cover material, and removal of loose blotter material.

The contract unit price for each item of bituminous material except tack coat will be considered to include all costs for furnishing, hauling, handling, spreading, and mixing of the material as required.

The unit price for bituminous tack coat is deemed to be the cost to furnish, transport, and store asphalt cement or emulsified asphalt at the project location. Payment for bituminous

tack coat will be made at the unit price multiplied by the respective payment factor listed under Subsection 404-4.02 of the specifications, and adjusted to the nearest dollar.

Unless otherwise specified, the accepted quantity of bituminous tack coat, measured as provided above, will be paid at the contract unit price per ton adjusted as provided above which price shall be full compensation for furnishing, transporting, and storing the exact type, grade or designation of bituminous tack coat specified by the Engineer.

Unless otherwise specified, the accepted quantity of time to apply bituminous tack coat, measured as provided above, will be paid for at the contract unit price per hour which payment shall be full compensation for applying bituminous tack coat.

The bidding schedule quantity for tack coat is based on an estimated application rate of 0.06 gallons per square yard for each application shown on the project plans.

The unit price of bituminous material will be adjusted in accordance with the requirements of Subsection 109.16 of the specifications based on the "initial cost" of bituminous material between the date of bid opening and the date that the material is used on the project.

No measurement or direct payment will be made for furnishing, applying and removing blotter material, furnished in conjunction with the application of a prime coat.

No measurement or direct payment will be made for the maintenance or repair of a prime coat surface.

(409AGGR 06/19/25)

SECTION 409 ASPHALTIC CONCRETE (MISCELLANEOUS STRUCTURAL): the title and text of the Standard Specifications is revised to read:

SECTION 409 ASPHALTIC CONCRETE (MISCELLANEOUS STRUCTURAL-SPECIAL MIX):

409-1 Description:

The work under this section shall consist of constructing Asphaltic Concrete (Miscellaneous Structural-Special Mix), hereinafter asphaltic concrete, by furnishing all materials, mixing at a plant, hauling and placing a mixture of aggregate materials, reclaimed asphalt pavement (RAP) if used, mineral admixture, and bituminous material (asphalt cement) to form a pavement course or to be used for other specified purposes, in accordance with the details shown on the project plans and the requirements of the specifications, and as directed by the Engineer.

The contractor shall acquire and make all arrangements for a source or sources of material, furnish a mix design which will meet the design criteria specified hereinafter, and provide all the equipment, materials, and labor necessary to complete the work.

409-2 Materials:

The bidding schedule quantity of asphaltic concrete is based on an estimated unit weight of 148 pounds per cubic foot.

409-2.01 Mineral Aggregate:

Mineral aggregate shall conform to the following requirements when tested in accordance with the applicable test methods.

Mineral Aggregate Characteristics	Test Method	Requirement
Combined Bulk Oven Dry Specific Gravity	Arizona Test Method 251	2.350 - 2.850
Combined Water Absorption	Arizona Test Method 251	0 – 3.0%
Abrasion	AASHTO T 96	100 Rev., Max 9% 500 Rev., Max 40%
Sand Equivalent	AASHTO T 176 (After thoroughly sieving the sample, no additional cleaning of the fines from the plus No. 4 material is required.)	Minimum 55
Fractured Coarse Aggregate Particles	AASHTO T 335	Minimum 85% with at least two fractured faces and minimum 92% with at least one fractured face (plus No. 4 material)
Uncompacted Void Content	AASHTO T 304 Method A	Minimum 45.0%
Carbonates (1)	Arizona Test Method 238	Maximum 20%
(1): Testing for carbonates only applies if either of the following conditions exist: (a) The asphaltic concrete is the designed final pavement surface normally used by traffic. (b) The asphaltic concrete, temporary or otherwise, will be subject to traffic for more than 60 days.		

The gradation will be determined in accordance with AASHTO T 11 and AASHTO 27, and shall conform to the requirements given below.

Mix Design Grading Limits				
Sieve Size	Percent Passing			
	1/2 Inch Mix		3/4 inch Mix	
	Without Admixture	With Admixture	Without Admixture	With Admixture
1-1/4 Inch	---	---	---	---
1 Inch	---	---	100	100
3/4 Inch	100	100	90-100	90-100
1/2 Inch	90 - 100	90-100	---	---
3/8 Inch	67 - 82	67 - 82	62 - 77	62 - 77
No. 8	40 - 48	41 - 49	37 - 46	38 - 47
No. 40	10 - 18	11 - 19	10 - 18	11 - 19
No. 200	1.5 - 4.5	2.5 - 6.0	1.5 - 4.5	2.5 - 6.0

Fine mineral aggregate shall be obtained from crushed gravel or crushed rock. All uncrushed material passing the No. 4 sieve shall be removed prior to the crushing, screening, and washing operations necessary to produce the specified gradation. The contractor shall notify the Engineer a minimum of 48 hours in advance of crushing the material to be used as mineral aggregate, so all crushing operations can be inspected. Existing stockpile material which has not been inspected during crushing will not be permitted for use unless the contractor is able to document to the Engineer's satisfaction that the mineral aggregate has been crushed. Any material inspected by the Department as crushed material for the project shall be separated from the contractor's other stockpiles and reserved for use throughout the project duration.

The contractor may blend uncrushed fine aggregate up to a maximum of 15 percent of the total aggregate, provided that the composite of uncrushed fine aggregate and crushed fine aggregate meets the requirement for uncompacted void content. The uncrushed fine aggregate shall be 100 percent passing the 1/4 inch and not contain more than 4.0 percent passing the No. 200 sieve. Should the contractor modify the method of producing either the uncrushed or crushed fine aggregate, the Engineer shall be immediately notified and the materials sampled and tested for determination of uncompacted void content.

409-2.02 Bituminous Material:

Asphalt cement shall be a performance grade (PG) asphalt binder, conforming to the requirements of Section 1005 of the specifications. The type of asphalt binder shall be PG 76-22.

The percent of asphalt cement used shall be based on the weight of total mix (asphalt cement, mineral aggregate, and mineral admixture).

The contractor shall provide the laboratory mixing and compaction temperature ranges to the mix design laboratory for each PG asphalt binder used for mix design purposes. The laboratory mixing temperature range is defined as the range of temperatures where the un-

aged asphalt binder has a rotational viscosity of 0.17 ± 0.02 Pascal-seconds, measured in accordance with AASHTO T 316. The laboratory compaction temperature range is defined as the range of temperatures where the un-aged asphalt binder has a rotational viscosity of 0.28 ± 0.03 Pascal-seconds, measured in accordance with AASHTO T 316. The testing required in AASHTO T 316 shall be performed at 275 degrees F and 350 degrees F, and a viscosity-temperature curve developed in accordance with ASTM D2493. The viscosity-temperature curve shall be included in the mix design report. For PG asphalt binders that have a maximum laboratory mixing temperature exceeding 325 degrees F or a maximum laboratory compaction temperature exceeding 300 degrees F, the laboratory mixing and compaction temperature ranges shall be specified in writing by the asphalt binder supplier. The laboratory mixing and compaction temperature ranges, as well as the actual laboratory mixing and compaction temperatures used, shall be reported on the mix design. The contractor shall ensure that the asphalt binder supplier information required in this paragraph is provided to all appropriate parties in a timely manner, and that copies are included in the mix design report. The laboratory mixing and compaction temperatures are for mix design purposes only. Field mixing and compaction temperatures are specified in Subsection 409-3 of the specifications.

409-2.03 Mineral Admixture:

Mineral admixture shall be either Portland cement, blended hydraulic cement, or hydrated lime conforming to the following requirements:

Material	Requirement
Portland Cement, Type I or II	ASTM C150
Blended Hydraulic Cement, Type IP or 1L	ASTM C595
Hydrated Lime	ASTM C1097

The mineral admixture content shall be 2.0 percent, by weight, of the mineral aggregate. However, a minimum of 1.0 percent mineral admixture may be used if the contractor submits test information showing a lowered percentage of mineral admixture produces mix design results for Index of Retained Strength of at least 60 percent (70 percent if the average elevation of the project is above 3,500 feet) and a Minimum Wet Strength of 150 psi when tested in accordance with Arizona Test Method 802.

The certification and acceptance of Portland cement, blended hydraulic cement, and hydrated lime shall be in accordance with ADOT Materials Practice and Procedure Directive No. 13, "Certification and Acceptance of Hydraulic Cement, Fly Ash, Natural Pozzolan, Silica Fume, and Lime".

409-2.04 Mix Design:

Utilizing mineral aggregate which has been crushed, processed, separated, and stockpiled, a mix design shall be formulated and submitted by the contractor to the Engineer. The mineral aggregate samples used for mix design purposes shall be representative of aggregate materials to be used during production.

The mix design shall be based on the mix design criteria and other requirements specified herein, utilizing asphalt cement and mineral admixture of the type and from the sources proposed for use in the production of asphaltic concrete.

Mix designs shall be developed utilizing a minimum ratio of three (3) for the lift thickness to nominal maximum aggregate size.

The mix design shall be prepared by or under the direct supervision of a professional engineer experienced in the development of mix designs and mix design testing. Reclaimed asphalt pavement (RAP) may be used in the mixture if properly designed per Arizona Test Method 833. Limits for the usage of RAP shall be per ADOT Materials Practice and Procedure Directive No. 20, "Guidance on the Use of Reclaimed Asphalt Pavement (RAP) in Asphaltic Concrete". The mix design engineer shall meet the requirements given in ADOT Materials Practice and Procedure Directive No. 4, "Asphaltic Concrete Mix Design Proposals and Submittals". The mix design shall be provided in a format that clearly indicates all the mix design requirements and shall be sealed, signed, and dated by the mix design engineer.

The mix design shall be prepared by a mix design laboratory that has met the requirements of ADOT Materials Practice and Procedure Directive No. 19, "ADOT System for the Evaluation of Testing Laboratories".

If approved by the Engineer, as an alternative to meeting the mix design requirements specified herein, a mix design meeting the requirements of the specifications for a Section 416 Asphaltic Concrete (End Product) (1/2 inch Special Mix), Section 416 Asphaltic Concrete (End Product) (3/4 inch Special Mix), Section 417 Asphaltic Concrete (SHRP) (End Product) (1/2 inch Mix), or Section 417 Asphaltic Concrete (SHRP) (End Product) (3/4 inch Mix) may be substituted for use. The type of asphalt binder used in the alternative mix design must be the same as that specified in Subsection 409-2.02 of the specifications. The alternative mix design may include reclaimed asphalt pavement (RAP) if properly designed per Arizona Test Method 833. If a mix design meeting the requirements of Section 417 is used, the number of gyrations for N-design used in the alternative mix design must be at least that which would be specified at the location where the Asphaltic Concrete (Miscellaneous Structural-Special Mix) is to be placed. The lift thickness for the alternative mix design shall conform to the following table:

Alternative Mix Design	Minimum Lift Thickness
Section 416 (1/2 Inch Special Mix)	1-1/2 Inches
Section 416 (3/4 inch Special Mix)	2 inches
Section 417 (1/2 inch Mix)	2 inches
Section 417 (3/4 inch Mix)	2-1/2 inches

The contractor may propose the use of a mix design that has been developed for a previous project. The proposed mix design shall meet the requirements of these specifications. The contractor shall provide evidence that the type and source of bituminous material, the type of mineral admixture, and the source and methods of producing mineral aggregate, and RAP material if applicable, have not changed since the formulation of the previous mix design. The contractor shall also provide current test results for all specified characteristics

of the mineral aggregate, and RAP material if applicable, proposed for use. The Engineer will determine if the previously used mix design is suitable for the intended use and if the previous use of the mix design was satisfactory to the Department. The Engineer will either approve or disapprove the proposed mix design. Should the Engineer disapprove the use of the previously used mix design, the contractor shall prepare and submit a new mix design proposal in accordance with the requirements of these specifications.

A previously used mix design older than two years from the date it was formulated, sealed, signed, and dated shall not be allowed for use. Once approved for use on a project, a previously used mix design may be used for the duration of that project.

Test results used in the formulation of the mix design must be from testing performed no earlier than 45 days prior to the date the mix design is signed by the mix design engineer. Historical abrasion values may be supplied on sources provided the testing was conducted within the past two years.

The mix design shall be submitted to the Engineer under a cover letter signed by an authorized representative of the contractor.

A copy of the mix design and representative samples of the mineral aggregate, mineral admixture, and asphalt cement used in the mix design shall be submitted to the Engineer for calibration of the ignition furnace, and for the determination of sand equivalent, fractured coarse aggregate particles, and uncompacted void content. The Engineer shall witness the sampling of the mineral aggregate. The mix design and samples shall be submitted to the Engineer at least five working days prior to the start of asphaltic concrete production.

The sand equivalent, fractured coarse aggregate particles, and uncompacted void content shall meet the requirements specified in Subsection 409-2.01 of the specifications. Additional testing of the uncrushed and crushed fine aggregate for uncompacted void content will be required if the method of producing either fine aggregate is modified.

If the mineral aggregate fails to meet the requirements specified herein, asphaltic concrete production shall not commence, and the contractor shall either submit a revised mix design which is representative of the materials produced or correct the deficiencies in the aggregate stockpiles.

The mix design shall meet the following criteria when tested in accordance with the requirements of the following test methods:

Criteria	Requirement	Arizona Test Method
1. Voids in Mineral Aggregate: %, Range	15.0 – 18.0	(See Note)
2. Effective Voids: %, Range	3.8 – 4.2	(See Note)
3. Absorbed Asphalt: %, Range	0 – 1.0	(See Note)
Note: For mixes without RAP, Arizona Test Method 815. For mixes with RAP, Arizona Test Method 833.		

The contractor may make self-directed target changes to the approved mix design within the limits shown below. Requests for self-directed target value changes shall be made in writing and acknowledged by the Engineer prior to start of production. Self-directed target changes shall meet contract requirements for mix design criteria and grading limits.

MEASURED CHARACTERISTICS	ALLOWABLE SELF-DIRECTED TARGET VALUE CHANGES
Gradation (sieve size): 3/8 inch No. 8 No. 40 No. 200	$\pm 4\%$ from mix design target value $\pm 4\%$ from mix design target value $\pm 2\%$ from mix design target value $\pm 0.5\%$ from mix design target value
Asphalt Cement Content	+0.2% from mix design target value
Effective Voids	None

The contractor may propose target value changes to the approved mix design for the Engineer's approval. The Engineer will determine if the proposed target value change will result in mix production that meets the contract requirements for mix design criteria and grading limits. For acceptance purposes, target value changes will not be retroactive.

In no case shall the approval of mix design changes relieve the contractor of the responsibility for the results obtained by the use of such approved changes.

409-2.05 Sampling and Testing:

Sampling and testing the materials and mixture for quality control purposes shall be the contractor's responsibility. The contractor shall perform sufficient testing to assure that mineral aggregate and asphaltic concrete are produced which meet all specified requirements.

For acceptance purposes, samples of the asphaltic concrete shall be taken by the contractor, under the observation of the Engineer, at random locations designated by the Engineer. A minimum of one sample shall be taken for each 500 tons of asphaltic concrete. Samples shall be taken in accordance with the requirements of the plate method in AASHTO R 97. The Engineer will immediately take custody of the samples. The material will be tested by the Engineer for the following properties:

Test Property	Test Method
Asphalt Cement Content	AASHTO T 308 (for both Non-RAP and RAP mixes) (See Note)
Gradation	
Marshall Density	AASHTO R 68
Maximum Theoretical Density	AASHTO T 209
Effective Voids	AASHTO T 269
Note: A new calibration of the ignition furnace shall be performed for each mix design, and at any other time the Engineer directs.	

409-3 Construction Requirements:

409-3.01 General:

All courses of asphaltic concrete shall be compacted as required, smooth and true to the required lines, grades, and dimensions.

The asphaltic concrete hot plant shall conform to the requirements of Section 403 of the specifications.

The moisture content of the asphaltic concrete immediately behind the paver shall not exceed 0.5 percent. The moisture content will be determined in accordance with the requirements of AASHTO T 329.

Asphaltic concrete shall be placed only when the temperature of the surface on which the asphaltic concrete is to be placed is at least 65 degrees F.

At any time, the Engineer may require that the work cease or that the work day be reduced in the event that weather conditions, either existing or expected, are anticipated to have an adverse effect upon the asphaltic concrete.

All wheels and tires of compactors shall be wetted with water, or if necessary soapy water, or a release agent in order to prevent the sticking of asphaltic concrete. All other equipment surfaces shall be treated when necessary with a release agent. Only release agents evaluated through AASHTO Product Evaluation & Audit Solutions (formerly NTPEP) are acceptable for use.

The results from AASHTO Product Evaluation & Audit Solutions (formerly NTPEP) testing, when tested in accordance with AASHTO T 383, shall conform to the requirements shown in the table below:

RELEASE AGENT TEST	REQUIREMENT
Asphalt Stripping Test	
Diluted	No Stripping
Non-Diluted (Full Strength)	No Stripping
Asphalt Performance Test	Less than or equal to 10.0% after the third cycle

Release agents which degrade, dissolve, or in any way damage the bituminous material shall not be used. Diesel fuel shall not be used as a release agent.

Asphaltic concrete immediately behind the laydown machine shall be in a thoroughly mixed, free-flowing, and workable condition, be free of lumps and crusts, and have a minimum temperature of 275 degrees F.

All courses of asphaltic concrete shall be placed and finished by means of self-propelled paving machines except under certain conditions or at certain locations where the Engineer deems the use of self-propelled paving machines impractical.

The speed of the paving machine shall be coordinated with the production of the plant and an adequate number of trucks for hauling asphaltic concrete shall be available in order to achieve, as far as practical, a continuous operation.

Self-propelled paving machines shall spread the mixture within the specified tolerances, without segregation or tearing, true to the line, grade, and crown indicated on the project plans. Pavers shall be equipped with hoppers and augers which will distribute the mixture uniformly in front of adjustable screeds.

Pavers shall be equipped with a screed for the full width being paved, heated if necessary, and capable of spreading and finishing all courses of asphaltic concrete.

Pavers shall be equipped with automatic screed controls with sensors for either or both sides of the paver, capable of sensing grade from an outside reference line, sensing the transverse slope of the screed, and providing the automatic signals which operate the screed to maintain the desired grade and transverse slope.

Failure of the control system to function properly shall be cause for the suspension of the placing of asphaltic concrete.

The base or subgrade upon which asphaltic concrete is to be placed shall be prepared and maintained in a firm condition until asphaltic concrete is placed. It shall not be frozen or excessively wet.

Before asphaltic concrete is placed, the surface to be paved shall be cleaned of all objectionable material and tacked with bituminous material in accordance with the requirements of Section 404 of the specifications.

Longitudinal joints of each course shall be staggered a minimum of 1 foot with relation to the longitudinal joint of any immediate underlying course. Longitudinal joints shall be located within 1 foot of the center of a lane or within 1 foot of the centerline between two adjacent lanes.

The contractor shall schedule its paving operations to minimize exposed longitudinal edges. Unless otherwise approved by the Engineer, the contractor shall limit the placement of asphaltic concrete courses, in advance of adjacent courses, to one shift of asphaltic concrete production. The contractor shall schedule its paving operations in such a manner to eliminate exposed longitudinal edges over weekends or holidays.

409-3.02 Compaction:

Compaction shall consist of an established sequence of coverage using specified types of compactors. A pass shall be defined as one movement of a compactor in either direction. Coverage shall be the number of passes as are necessary to cover the entire width being paved.

The rolling sequence, the type of compactor to be used and the number of coverages required shall be as follows:

Rolling Sequence	Type of Compactor		No. of Coverages	
	Option No. 1	Option No. 2	Option No. 1	Option No. 2
Initial	Static Steel	Vibrating Steel	1	1
Intermediate	Pneumatic Tired	Vibrating Steel	2 - 6*	2 - 4*
Finish	Static Steel	Static Steel	1 - 3	1 - 3

Note:

* Based on the roller pattern which exhibits the best performance.

The Engineer shall select the option for compaction and, when pneumatic-tired compactors are used, will designate the tire pressure.

Steel wheel compactors shall not be used in the vibratory mode for courses of 1 inch or less in nominal thickness nor when the temperature of the asphaltic concrete falls below 180 degrees F. Steel wheel compactors shall weigh not less than 8 tons.

Initial and intermediate compaction shall be completed before the temperature of the asphaltic concrete falls below 200 degrees F. All edges shall be rolled with a pneumatic tired compactor, or other methods approved by the Engineer, while the mixture is still hot.

Compaction will be deemed to be acceptable on the condition that the asphaltic concrete is compacted using the type of compactors specified, ballasted and operated as specified and with the number of coverages of the compactors as specified.

409-3.03 Acceptance:

Asphaltic concrete will be accepted complete in place unless the result of any test varies from the contractor's mix design target value (TV) as follows:

Test Property	Allowable Variation from Target Value	
Gradation (Sieve sizes)		
3/8 inch	TV -10.0	TV + 10.0
No. 8	TV - 8.0	TV + 8.0
No. 40	TV - 6.0	TV + 6.0
No. 200	TV - 2.5	TV + 2.5
Asphalt Cement Content	TV - 0.60	TV + 0.70
Effective Voids	TV -2.5	TV + 2.0

Within 25 days after receiving notice of any failing test result(s), the contractor may submit a written proposal to accept the material represented by the failing test result(s), in place, at a reduction in cost. If the failing test result(s) are only on Asphalt Cement Content and/or Effective Voids, the reduction in cost will be \$5.00 per ton. If the failing test result(s) are only on Gradation, the reduction in cost will be \$3.00 per ton. If the failing test result(s) are on Asphalt Cement Content and/or Effective Voids, and also on Gradation, the reduction in cost will be \$5.00 per ton. The proposal shall contain an engineering analysis of the anticipated performance (i.e. reduction in serviceability, in years) of the asphaltic concrete if left in place. The engineering analysis shall also detail the potential root cause of the problem, any proposed corrective action, and the anticipated effect of such corrective action

on the performance. The engineering analysis shall only include acceptance or referee test results, as applicable to the standard specifications. The engineering analysis shall include the expected additional cost to the Department (over original performance life) to maintain the pavement at an acceptable condition. The engineering analysis shall include supporting information such as pictures of the area, control charts, plant and field records, etc. The engineering analysis shall be performed by an independent professional engineer, who is not an employee of the contractor or materials supplier, experienced in asphaltic concrete testing and the development of asphaltic concrete mix designs.

Within three working days, the Engineer will determine whether or not to accept the contractor's proposal. If the proposal is accepted, the asphaltic concrete shall remain in place, at a reduction in cost per ton, as described above, and any necessary corrective action shall be performed at no additional cost to the Department. If the proposal is not accepted, the asphaltic concrete shall be removed at no additional cost to the Department and replaced with asphaltic concrete meeting the requirements of these specifications.

The contractor may request that a sample with a failing test result(s) on gradation and/or asphalt cement content be allowed to remain in place without the completion of an engineering analysis if the application of a self-directed target value change as outlined in section 409-2.04 would have brought the failing test result(s) to within the specified tolerances. This proposal must be made to the Engineer in writing with justification. Once accepted, the material will be allowed to remain in place at the maximum negative pay factor(s). Maximum negative are defined as a minus \$3.00 per ton for mixture properties lots in reject for Gradation only, minus \$5.00 per ton for mixture properties lots in reject for Asphalt Cement Content and/or Effective Voids only, and minus \$5.00 per ton for mixture properties lots in reject for Asphalt Cement Content and/or Effective Voids and also Gradation.

If the asphaltic concrete, represented by failing test results, is used as temporary pavement which will be removed prior to, or after, the completion of construction, the Engineer reserves the right to waive the engineering analysis and accept the material in place, at a cost reduction described above, provided the temporary pavement maintains the functionality of the intended use for the duration of the project.

409-4 Method of Measurement:

Asphaltic concrete will be measured by the ton for the mixture actually used, which will include the weight of mineral aggregate, bituminous material, and mineral admixture. Measurement will include any weight used in construction of intersections, turnouts, curbs, spillways and spillway inlets, ditches, catch basin entrances, median strips, sidewalks, or other miscellaneous items or surfaces.

409-5 Basis of Payment:

409-5.01 General:

The accepted quantities of asphaltic concrete, measured as provided above, will be paid for at the contract unit price per ton for the bituminous mixture complete in place.

No direct payment will be made for the bituminous material and mineral admixture in the asphaltic concrete, or the bituminous material for tack coat and application of tack coat, the price being considered as included in the price paid for asphaltic concrete.

Asphaltic concrete may be measured, by volume, upon the execution of a supplemental agreement which will specify the manner in which the volume is determined. The volume will include the volume of mineral aggregate, bituminous material, mineral admixture, and any necessary blending material.

409-5.02 Reduction for Noncompliance:

A reduction in payment to the contractor for asphaltic concrete will be made for asphalt cement (bituminous material) that do not meet the requirements of Section 1005 as determined by corresponding test results. Adjustments in payment will be made in accordance with the requirements of Table 1005-1.

(608 PANEL, 06/19/25)

SECTION 608 SIGN PANELS:

608-1 Description: of the Standard Specifications is revised to read:

The work under this section shall consist of furnishing and installing sign panels in accordance with the details shown on the plans and the requirements set forth herein.

The sign panels shall be of the following types:

- (A) Extruded Aluminum Sign Panels with Direct-Applied, or Demountable Characters;
- (B) Flat Sheet Aluminum Sign Panels with Direct-Applied, Electronic-Cut, or Screen-Printed Characters;
- (C) Warning, Marker, and Regulatory Sign Panels;
- (D) Route Shields for Installation on Sign Panels; and/or
- (E) EXIT ONLY Panels for Installation on Sign Panels.

608-2.02 Extruded Aluminum Sign Panels with Direct-Applied, Digitally-Imaged, or Demountable Characters: the title and the third paragraph of the Standard Specifications are revised to read:

608-2.02 Extruded Aluminum Sign Panels with Direct-Applied or Demountable Characters:

The letters, numerals, symbols, borders and other features of the sign message shall be direct-applied, or demountable, and shall conform to the requirements of Subsection 608-2.08 or Subsection 608-2.09 of the specifications.

608-2.03 Flat Sheet Aluminum Sign Panels with Direct-Applied, Digitally Imaged, Electric-Cut or Screen-Printed Characters: the title and the fifth paragraph of the Standard Specifications are revised to read:

608-2.03 Flat Sheet Aluminum Sign Panels with Direct-Applied, Electronic-Cut, or Screen-Printed Characters:

Messages shall be reflectorized white or, if called for on the plans, opaque black, and shall be produced by either screen printing, direct-applying, or electronic cutting, as specified under Subsections 608-2.09 of the specifications.

608-2.05 Route Shields (For Installation on Sign Panels): The first paragraph of the Standard Specifications is revised to read:

Route shields may be demountable or direct-applied.

608-2.06 EXIT ONLY Panels (For Installation on Sign Panels): the first paragraph of the Standard Specifications is revised to read:

EXIT ONLY panels may be demountable or direct-applied. Demountable EXIT ONLY panels shall be attached to the sign panel with self-plugging aluminum blind rivets.

608-2.10 Digitally-Imaged Characters: the title and the text of the Standard Specifications are revised to read:

608-2.10 Digital Printing of Signs:

Digital printing of signs shall utilize a matched component system, including appropriate software and drivers in accordance with an APL certified retroreflective sheeting manufacturer's warranty requirements. Finished signs shall consist of a UV-protective clear overlay applied to the entire face of the sign. Any overlays shall also be compatible with the retroreflective sheeting manufacturer's matched component system and warranty. Digitally printed signs shall conform to the requirements of ASTM D4956 for daytime and nighttime requirements, as well as the requirements of the Department's Traffic Engineering Guidelines and Processes (TGP) 380 and Section 1007 of the specifications.

(701FLGSV, 03/20/25)

SECTION 701 MAINTENANCE AND PROTECTION OF TRAFFIC:

701-3.13 Flagging Services: of the Standard Specifications is revised to read:

Flagging services shall consist of 1) Department of Public Safety (DPS) officers with agency vehicles, 2) local enforcement officers with agency vehicles, 3) local enforcement officers without agency vehicles, and 4) civilian flaggers. Local enforcement officers and DPS officers include those who meet the requirements of a Peace Officer under ARS Title 38, generally including anyone certified by the Arizona Peace Officer and Training Board. If available, DPS officers shall be used on Interstate Highways and Urban Freeways. Local enforcement officers will include uniformed officers from local police, tribal police, sheriff departments, or any other agencies that meet the requirements of a Peace Officer under ARS Title 38, generally including anyone certified by the Arizona Peace Officer and Training Board. An agency vehicle is defined as an agency-issued vehicle that meets the requirements of ARS Title 28. If local enforcement officers do not have access to an agency vehicle, a personal vehicle may be used, but it shall have a make and model similar in appearance of an agency vehicle, and shall be equipped with front and rear-facing red and blue lights. The personal vehicle, when applicable, shall be presented to the Engineer for acceptability prior to its use on the project by local enforcement officers. Approval of the personal vehicle will be at the sole discretion of the Engineer.

The contractor shall be responsible to procure DPS officers, local enforcement officers, and civilian flaggers. The Engineer will determine the types and the number of hours of flaggers as needed based on the project needs. Quantities shown on the traffic control plans and/or bidding schedule are approximate only and prepared for bidding purposes. When procuring DPS officers and local enforcement officers, the contractor shall contact the relevant agency at least two days, excluding weekends and holidays, before flagging services will be required. Such contact must be made between the hours of 7:00 A.M. and 5:00 P.M. (M.S.T.).

In the event that local enforcement officers or DPS officers are temporarily unable to provide flagging services, the contractor shall ensure that traffic control is maintained and all personnel are protected, either by providing civilian flaggers or through other means as approved by the Engineer. No adjustments to the contract will be allowed for any delays resulting from the unavailability of local enforcement officers or DPS officers.

Local enforcement and DPS officers shall not work more than 12 consecutive hour work shift without the permission of the State Construction Engineer unless an emergency situation exists which, in the opinion of the Engineer, requires that the officer remain in the capacity of a flagger.

The contractor shall furnish verification to the Engineer that all civilian flaggers have completed a recognized training and certification program. Flaggers certified by the American Traffic Safety Services Association (A.T.S.S.A.) or by the National Safety Council will be acceptable. Certification through other programs offering flagger training may be allowed upon by the State Construction Engineer's approval. Flagger certification must be current and updated at least once every four years.

701-6.07 Pilot Services, and Flagging Services: of the Standard Specifications is revised to read:

The accepted quantities of pilot vehicles, measured as provided above, will be paid for at the unit bid price for pilot vehicles with driver, which price shall be full compensation for the work, complete in place including, but not limited to, furnishing and maintaining the vehicle and furnishing the driver. Any hour worked after the eight hour regular time will be considered straight-time and will not be paid as overtime pay.

The accepted quantities of flagging services provided by the local enforcement officers (with agency vehicle), DPS officers, and civilian flaggers, measured as provided above, will be paid for at the contract unit price, which price shall be full compensation for the work, complete in place, including the agency vehicle. Any hour worked after the eight hour regular time will be considered straight-time and will not be paid as overtime pay.

The accepted quantities of flagging services provided by the local enforcement officers without an agency vehicle, measured as provided above, will be paid for at the contract unit price, which price shall be full compensation for the work complete in place. Any hour worked after the eight hour regular time will be considered straight-time and will not be paid as overtime pay. No measurement or payment will be paid for the vehicle, regardless of the type of vehicle is an agency vehicle or not, the cost being considered as included in the price of the contract item.

In addition, the Department has estimated an additional two hours of travel time per officer per day in the quantities shown in the bid schedule. However, if more than two hours of travel time per day is required, such additional hours will be compensated in accordance with the requirements of Subsection 104.02 of the specifications if approved by the State Construction Engineer. Travel time is considered to be supplementary to the hours worked by the officer during a work shift.

ITEM 7020007 IMPACT ATTENUATION DEVICE (CRASH CUSHION) (DETAIL R)

Description:

The work under this item shall consist of installing attenuation devices, including the concrete pad of the types and at the locations in accordance with the details shown on the project plans and the requirements of these Special Provisions.

Materials:

All materials used for construction of the crash cushion shall be new and conform to the most current specifications and details recommended by the manufacturer of the crash cushion designated for use. Options for these devices are the Quad Guard M10 System as designed and manufactured by Trinity Highway Products, of Dallas, TX; or SCI 100 GM Smart Cushion as designed and manufactured by Work Area Protection, of St. Charles, Illinois; or TAU-M as designed and manufactured by Lindsay Transpo Solutions, of Rio

Vista, California. Attenuation devices approved for use are shown on ADOT's Approved Products List (APL). The attenuation devices shall be Test Level 3.

Construction Requirements:

Attenuation devices shall be placed at the locations and per the detail shown on the project plans and in accordance with the requirements of the manufacturer. The soil under the paved pad as required by the manufacturer shall be compacted to not less than 95 percent of the maximum density found in accordance with the applicable test methods of the ADOT Materials Testing Manual, as directed and approved by the Engineer. The contractor shall grade the area of the impact attenuator to make smooth vehicle approach paths to it and perform necessary excavation and backfill immediately adjacent to the barrier as required. When installation of the attenuation device is complete all trash shall be removed from the surrounding area, and the surrounding soil surface shall be graded to the elevation indicated on the project plans or as directed by the Engineer.

Method of Measurement:

Crash Cushions will be measured as a unit for each crash cushion installed.

Basis of Payment:

The accepted quantities of Crash Cushions, measured as provided above, will be paid for at the contract unit price each for the type of crash cushion furnished and installed including the concrete pad, complete in place. Concrete, bituminous material, aggregate base material, reinforcing steel, hardware, fasteners, structural steel, pavement pad materials, and any connection or transition section needed to connect the impact attenuator to guardrail of concrete barriers is considered as included in the cost of this item.

(704TPMF, 10/17/24)

SECTION 704 THERMOPLASTIC PAVEMENT MARKINGS:

704-2.02(C) Filler: of the Standard Specifications is revised to read:

The filler shall be a white calcium carbonate or equivalent filler.

(708 PTVCT, 07/17/25)

SECTION 708 WATERBORNE PAVEMENT MARKINGS:

708-2.01(D) Quantitative Requirements of Mixed Paints: the viscosity row of the Table 708-1 of the Standard Specifications is revised to read:

Table 708-1		
	White	Yellow
Viscosity: Krebs Units at $77 \pm 1^\circ \text{ F}$, ASTM D562	70 - 95	70 - 95

(710SWZ, 05/20/2021)

SECTION 710 SMART WORK ZONE SYSTEMS: the title and text of the Standard Specifications is revised to read:

SECTION 710 SMART WORK ZONE SYSTEM:

710-1 Description:

The work under this section shall consist of furnishing and installing a fully functional, automated, and portable Smart Work Zone (SWZ) system; operating, maintaining, and servicing the portable SWZ system; and relocating and removing various components of the system, as specified herein and in accordance with the project plans and specifications.

710-1.01 Abbreviations:

Wherever the following abbreviations are used in these specifications, the contract, or in other contract documents, they are to be construed the same as the respective expressions represented:

CCTV	Closed-Circuit Television
CMB	Changeable Message Board
DMS	Dynamic Message Sign
DLMS	Dynamic Lane Merge Subsystem
FMS	Freeway Management System
GPS	Global Positioning System
GPSLS	Global Positioning System Location Sensor
GUI	Graphical User Interface
O&M	Operations and Maintenance
PDA	Power Distribution Assembly
PTZ	Pan, Tilt, and Zoom
QWS	Queue Warning Subsystem

SAB	Smart Arrow Board
SFS	Speed Feedback Sign
SWZ	Smart Work Zone
TCP	Traffic Control Plan
TDC	Traffic Data Collection
TDCS	Traffic Data Collection Subsystem
TEES	Truck Entry/Exit Subsystem
TMCS	Traffic Monitoring Camera Subsystem
TOC	Traffic Operations Center
TTS	Travel Time Subsystem
VSL	Variable Speed Limit
VSLS	Variable Speed Limit Sign
WZDx	Work Zone Data Exchange

710-1.02 Definitions:

Wherever the following definitions are used in these specifications, the contract, or in other contract documents, the intent and meaning shall be interpreted as follows:

(A) SWZ System:

The SWZ system is a broad range of portable communications-based information and electronic technologies placed in and around work zones to enhance transportation and improve safety and mobility. The real-time information and automation provided by the SWZ system is used by contractors and transportation agencies to alter traffic control strategies and provide traveler information to better inform motorists of upcoming traffic conditions, allow motorists the opportunity to alter their travel routes, and/or modify the travel behavior within work zones. The SWZ system is comprised of one or multiple SWZ subsystems that operate together.

(B) SWZ Area:

The SWZ area is the area where SWZ field devices are deployed near, within, and/or around the project and work zone limits.

(C) Active Work Space:

The active work space is the area that is anticipated to have the largest concentration of field personnel within the work zone during a specific day or construction shift. The personnel working in active work space are exposed to the dangers of an errant vehicle.

(D) Work Zone:

The work zone is the entire area in which traffic control, which includes, static signs and SWZ field devices are implemented.

(E) Traffic Data Collection Subsystem (TDCS):

The TDCS is a component of the SWZ system that is capable of detecting, processing, and disseminating real-time traffic information such as vehicle speeds, traffic volumes, and travel time/delay within and in advance of the work zone for use by other SWZ subsystems, third-party traveler information systems, and/or to archive work zone traffic conditions. This subsystem could also include the use of third-party data, solely, or in combination with site specific gathered data.

(F) Queue Warning Subsystem (QWS):

The QWS is a component of the SWZ system that uses the real-time TDCS information to determine traffic queue lengths. The QWS warns approaching travelers of slowed or stopped traffic conditions through warning messages displayed on SWZ CMBs. When a queue begins to form, the QWS automates the display of warning messages on the associated SWZ CMB displays located in advance of the anticipated queueing areas. The QWS also alerts field personnel and remote SWZ system operators of the real-time queueing conditions.

(G) Dynamic Lane Merge Subsystem (DLMS):

The DLMS is a component of the SWZ system that uses the real-time TDCS information and SWZ CMBs, in advance of a lane closure, to instruct approaching travelers when to merge. When traffic volumes are high or a potential queueing condition is detected by the DLMS, the DLMS automates the display of messages that instruct drivers to merge later. When traffic volumes are low and a potential queueing condition is not detected in advance of the lane closure, the DLMS automates the display of messages that instruct drivers to merge earlier.

(H) Travel Time Subsystem (TTS):

The TTS is a component of the SWZ system that uses the real-time TDCS information and SWZ CMBs, in advance of the work zone, to determine the approximate travel time between the SWZ CMB location and another fixed point as shown on the project plans, or at the end of the work zone. The TTS automates the display of messages on each CMB to inform the drivers of the associated travel time (at predetermined locations) through the work zone. In addition, the TTS is capable of comparing real-time TDCS information to historical travel time information to estimate the approximate travel delay that a driver can expect, when traveling through the work zone.

(I) Traffic Monitoring Camera Subsystem (TMCS):

The TMCS is a component of the SWZ system that uses closed-circuit television (CCTV) cameras to provide real-time video streams that are monitored on-site by field personnel using a mobile display device and/or remotely by the Engineer, Traffic Operations Center (TOC) operators, and the District to view real-time roadway traffic conditions within the work zone.

(J) Variable Speed Limit (VSL) Subsystem:

The VSL subsystem is a component of the SWZ system that uses TDCS real-time traffic information and variable speed limit signs (VSLS) to dynamically reduce or increase regulatory speed limits in the work zone. Regulatory speed limits are dynamically reduced in the active work space. Regulatory speed limits are dynamically increased within the same area of the work zone when the construction personnel are not present.

(K) Truck Entry/Exit Subsystem (TEES):

The TEES is a component of the SWZ system that uses the real-time TDCS information to determine the entry of construction vehicles to the roadway from the work area and warns approaching travelers of slow-moving vehicles ahead. The TEES may warn drivers by displaying a message on a SWZ CMB or by illuminating flashing warning lights attached to a static sign. Once the construction vehicle has entered the roadway and a pre-determined amount of time has passed, the TEES no longer displays the warning message until it detects another construction vehicle entering the roadway from the work area. The TEES also alerts the field personnel and remote SWZ system operators when the system is activated.

(L) SWZ System Software:

The SWZ system software is a software platform that can receive, store, analyze, send, and display real-time information from the TDCS, QWS, DLMS, TTS, TMCS, TEES and VSL subsystem field devices, Department furnished data from roadway sensors, or other third-party sources. The SWZ system software provides the required automation, GUI, user device applications, and system reports required to operate and maintain each respective SWZ subsystem deployed within the SWZ area.

710-2 Materials (Equipment, Workers, Devices and Facilities):

The SWZ system shall contain the selected SWZ subsystems including all necessary auxiliary field device equipment, the SWZ system software for each selected SWZ subsystem, the communications and third-party data services, system operations, maintenance, and support services to provide a complete SWZ system. The selected SWZ subsystems may consist of one or more of the following: TDCS, QWS, DLMS, TTS, TMCS, TEES, VSL, or other type of subsystem as indicated on the plans or specifications.

The auxiliary field device equipment shall include all appurtenances such as traffic detectors, changeable message boards, CCTV cameras, variable speed limit signs, static SWZ signs, device trailers, mounting assemblies, communications and geolocating devices, power assemblies, wiring, and accessories.

The communications services shall include all services needed for connecting the field devices to the remote SWZ system software and connecting the SWZ system software to the internet and communications service provider networks that the system users and Department representatives have access to for connectivity into the SWZ system.

The system operations, maintenance, and support services shall include all services required to deploy, integrate, configure, test, operate, and maintain the SWZ system communications and geolocating devices, third-party data services, field devices, and software for continuous operations in and around the project work zones.

710-2.01 General Requirements:

The contractor shall submit the SWZ system and the associated field devices as part of the TCP and safety plan.

Except as specified herein, all equipment, procedures used by workers, devices, and facilities shall conform to the requirements of Subsection 701-2 of the specifications.

(A) Documentation:

The contractor shall submit a SWZ material proposal at the preconstruction conference or when reasonably feasible. If the contractor's SWZ material proposal is not submitted at the preconstruction conference, each SWZ subsystem submittal shall be shown in the work schedule.

The contractor's SWZ material proposal shall include the following and any other necessary documents to fully describe the proposed SWZ subsystems and field device items:

(1) Certificate of Compliance:

A Certificate of Compliance conforming to the requirements of Subsection 106.05 of the specifications shall be submitted for each SWZ subsystem assembly. The Department reserves the right to require Certificates of Compliance for the subsystem functionality provided within the SWZ system software, for each field device assembly component, and for third-party data sources.

The Department reserves the right to perform independent evaluations or tests on any SWZ System Software, equipment, or service supplied by the contractor in the work zone.

(2) SWZ Technician Credentials:

The credentials of the contractor's designated SWZ technician(s) skilled in the operation of all the SWZ system equipment and software shall be submitted to the Engineer for approval. There shall be a designated SWZ technician for each shift of work and the qualifications of the designated technician(s) shall demonstrate the following:

- (a) The technician is locally available while the SWZ system is in use and able to respond to the SWZ system issues in person within one hour of notification.
- (b) The technician has the training and experience necessary to perform all SWZ field equipment deployments, device configurations, system testing, trouble shooting, maintenance, and component level repair or replacement.

(c) The technician is employed by a contractor that has a minimum of 3 years of experience deploying SWZ technologies on projects with roadway construction valued at one million dollars or more, or has relevant experience that is approved by the Engineer.

If the contractor would like to replace one or more SWZ technician(s), then the new technician(s) shall be approved by the Engineer prior to assuming these duties on the project.

(3) Communications Site Assessment:

A communications site assessment shall be submitted to the Engineer for approval at least six weeks before mobilizing field equipment for deployment in the project area. The communications site assessment shall identify the specific communications service(s) that the contractor has selected for connecting the field devices to the remote SWZ system software and for documenting the contractor's approach for verifying these communications services are available within the project limits.

The results of this communications site assessment shall be summarized and indicate that the selected communications approach(es) provides sufficient data network capacity and coverage needed for proper SWZ system operations within and in advance of the work zone.

(4) System Configuration Plan:

The contractor shall submit a SWZ system configuration plan to the Engineer for approval at least six weeks before mobilizing field equipment for deployment in the project area. The plan shall describe the system logic and field device layout concepts to be used. The SWZ system configuration plan shall demonstrate the following:

(a) The general deployment locations of each subsystem element within the SWZ area such as, but not limited to, TDC, CMB assembly, VSLS assembly, traffic monitoring camera assembly, SAB assembly, SFS assembly, GPSLS assembly, and auxiliary SWZ equipment for each type of anticipated TCP. The plan shall include the role played by each of these device locations in the overall deployment concepts of the SWZ system.

(b) The operational logic used for each required SWZ subsystem (i.e., TDCS, QWS, DLMS, TTS, TMCS, TEES and VSL) that describes the system's response when various traveler information and system logic thresholds are reached. This shall include, but is not limited, to the following:

(i) Systems that generate alert messages, how the alert messages are received (via text and email), and the Department representatives that will receive the alert messages.

(ii) System logic configuration thresholds, limits, controls, and display messages that have been coordinated with the Department for initial system configuration.

(iii) Configuration thresholds, limits, controls, and display messages that can be changed by system users via the SWZ software interface, and system safeguards that are in place to limit the ranges and messages that are selectable by these system users.

- (c) Documentation and specification details for the deployed devices that support access or receipt of the WZDx information.

(5) SWZ System Operations and Maintenance Plan:

The contractor shall submit a SWZ system O&M plan to the Engineer for approval at least four weeks before mobilizing field equipment for deployment in the project area. The SWZ system O&M plan shall identify the contractor's means and methods for deploying, operating, and maintaining the SWZ system equipment and software. The SWZ system O&M plan shall demonstrate the following:

- (a) A qualified SWZ technician locally available and assigned for every work shift. Contact information shall be provided for each SWZ technician so that the Engineer can notify the technician(s) of a SWZ system issue and the SWZ technician can respond to the SWZ system issue in person within one hour of notification.
- (b) A customer support phone number, email address, and days/hours of support provided for the SWZ system software and each associated subsystem.
- (c) A process in place for maintaining continuous operations of SWZ field devices, including but not limited to:
 - (i) Replacing batteries as needed.
 - (ii) Refueling fuel tanks before the fuel runs out.
 - (iii) Moving equipment to keep pace with moving or changing construction activities, changing traffic queuing conditions, TCP changes, or as directed by the Engineer or contractor.
 - (iv) Adjusting SWZ system software configurations, setting different software logic thresholds and limits, setting days/times and system activities with the software scheduler, selecting different display messages to be posted on the SWZ CMB, changing user alerts and recipients receiving the alerts, changing system software users and levels of access, and making changes to the system logic, configuration, and users in general.
 - (v) Maintaining a SWZ system equipment maintenance log for all associated O&M activities.
 - (vi) Repairing or replacing equipment that has been damaged, stolen, or has become an inoperable component of the overall SWZ system.

(6) SWZ Software User Training Curriculum Outline and Schedule:

A SWZ Software User Training Curriculum Outline and Schedule shall be submitted for each SWZ subsystem assembly. The training curriculum and contractor provided training shall reflect the actual needs of the Department's system users and field personnel and include the following sections:

- (a) Theory of Operation
- (b) Field Device Layout Concepts and Associated Data Collection
- (c) System Logic, Limits, and Safeguards
- (d) GUI and Operating Procedures
- (e) System User Access Levels and Permissions
- (f) System Alerts and Types of Alert Messages
- (g) Generating System Data Reports and Graphics
- (h) SWZ Software Customer Support Services
- (i) Procedures for Reporting Concerns or Requesting Changes with the SWZ Software Configuration and Field Device Deployments

The contractor shall coordinate with the Engineer to identify mutually agreed upon training dates and times for each training class.

(7) SWZ Software User Access Privileges and Alert Messages:

The contractor shall coordinate with the Engineer and provide a SWZ User Access Privileges submittal that clearly identifies each Department user by first and last name and the associated level of access that each of these users will have when logging into the system.

The contractor shall coordinate with the Engineer and provide a SWZ Alert Messages submittal that clearly identifies each Department stakeholder by first and last name, the associated types of system generated alerts they will receive and the method (email or text) the alert is received.

(8) SWZ System Data Reports:

The contractor shall submit an example set of each required SWZ system data report to the Engineer for approval at least two weeks before deploying SWZ field equipment in the project area. The example set shall demonstrate the contractors proposed format for each report, the types of data included within each report, the frequency of the data within the report (i.e., once per minute, five minutes, etc.), and the time period to be covered by each individual report (i.e., each report represents a days' worth of data, a weeks' worth of data, etc.). The SWZ system data reports shall be submitted on a weekly basis, in the approved format, and contain the actual work zone data collected during that week of SWZ system deployment.

In accordance with the ADOT Work Zone Safety & Mobility Policy, to monitor and measure work zone impacts during construction, the SWZ system data report shall include the following sets of data:

- (a) Travel delay
- (b) Queue lengths
- (c) Crash occurrences

Each SWZ system data report shall include the geolocation(s) that the data is associated with.

If the intelligence of the SWZ subsystem(s) required in the project plans and specifications does not generate the above sets of data and the associated reports, then the SWZ system provided shall have the ability to support manual entry of this data and the ability to archive and generate reports of the manually entered data.

The contractor's SWZ system data reports shall include any other information that may be required for each type of SWZ subsystem deployed.

(9) Subsystem Acceptance Testing Procedures:

A system acceptance testing procedures submittal shall be submitted for each SWZ subsystem assembly to demonstrate proper operation of all subsystems and device configurations. The testing procedures shall include the following:

(a) Initial System and Device Testing

Initial system and device testing is intended to demonstrate that each subsystem component provided and its associated configurations for the project work zone successfully achieves all of the required functionality, performance, and reporting requirements.

(b) Individual SWZ Field Device Location Testing

Individual SWZ field device location testing is intended to verify that a specific field device is configured correctly, communicating, and operating properly when moved in the SWZ area after initial system setup.

(10) Certificate of Analysis:

A Certificate of Analysis conforming to the requirements of Subsection 106.05 of the specifications shall be submitted for each SWZ subsystem assembly each time the contractor deploys an associated field device component and completes the associated tests in accordance with the approved subsystem acceptance testing procedures.

(B) Auxiliary SWZ Equipment:

Auxiliary SWZ equipment is considered incidental components that may be required to achieve a fully functional SWZ system. The following are some common types of auxiliary equipment and their associated minimum requirements:

(1) SWZ System Communications:

All SWZ systems shall provide the necessary communications devices and services to connect the field devices to the remote SWZ system software and to connect the SWZ system software to the internet and communications service provider networks. The SWZ system communications shall provide continuous service to the devices of the system operators, users, and Department representatives.

The SWZ system communications devices and services provided shall be in accordance with the approved communications site assessment, as described in Subsection 710-2.01

(A)(3) of the specifications. The SWZ system communications devices and services shall provide sufficient data network capacity and coverage needed for proper SWZ system operations within the SWZ area.

(2) Safety Protocols for Smart Devices:

All SWZ systems shall be deployed in accordance with the following safety protocols for smart devices:

- (a) Each device shall be up to date prior to being deployed with latest release of operating system (OS)\firmware and relevant security patches. Update releases shall be tracked and deployed routinely to keep device OS/firmware current.
- (b) WiFi networks in use shall only be configured to use WPA2 PSK w/ AES and use complex passphrases; diceware passphrases are preferred and rotating pass-phrases is a good practice.
- (c) SNMP capabilities shall be disabled if not intended for use; SNMPv3 shall be configured for use if SNMP is needed (when device is capable).
- (d) Syslog shall be configured and used to monitor deployed devices.
- (e) Telnet shall be disabled, SSH shall be enabled and restricted to SSHv2 only. Keys used for encryption shall be at least 2048 bit.
- (f) Trusted Certificate Authority generated SSL/TLS certificates shall be used on web management UIs to ensure end to end encryption. If possible, the following SSL/TLS version, SSLv 1, 2, 3, and TLS v1.0,1.1 shall be disabled.
- (g) The use of strong ciphers shall be required for both TLS and SSH encryption, any medium or low strength ciphers (i.e. RC4, DES\3DES, etc.) shall be disabled or kept at a lower priority.
- (h) Default\built-in account usernames and passwords shall be changed to follow complexity settings. (e.g. default admin). If possible, these built-in accounts shall be disabled.
- (i) Users or administrators shall be provided with unique accounts for login purposes and shall be configured to comply with the following complexity settings, when the device is capable:
 - i Previous 24 passwords remembered and can't be re-used
 - ii 30-day maximum password age before resetting is required
 - iii 15 character minimum length (Diceware pass phrase preferred)
 - iv Passwords must use at least 2 numbers and 2 special characters

- v Must be stored encrypted, and cannot be stored using reversible encryption
- vi Account must be locked-out for 30 minutes upon 3 invalid logon attempts
- (j) The gateway (i.e., cell modem/router) that is handling the remote communications to the local smart devices shall be secured by setting up firewall rules so that the gateway communicates only with the pre-defined devices, known trusted IP addresses, and keeps out unauthorized traffic.

(3) Geolocation of SWZ System Devices and Information:

The geolocation of intelligent field devices and data sets reported shall be provided using a GPS device accurate within 3 meters (9.84 feet) of the actual location or by some other method for geolocating devices and information, as approved by the Engineer. The GPS device used for the TDC, CMB, VSLS, traffic monitoring camera, SAB, SFS, and intelligent field device assemblies, shall be considered auxiliary SWZ equipment that is incidental to these device locations. The GPSLS assembly is a standalone GPS device location and shall not be considered an auxiliary integral part of any other intelligent field device.

All SWZ systems shall provide a GUI that displays the actual deployed location of each intelligent device, including the standalone GPSLS assemblies, that is communicating with the SWZ system software using the approved geolocating method.

All third-party information used by the SWZ system software and used within SWZ system data reports shall include the geolocation(s) associated with the information provided.

(4) SWZ Field Device Power Supply:

All SWZ system field devices shall be independently powered and shall be powered for operation continuously during all deployment periods within the SWZ area and shall be provided with a means for alerting remote system users and operators of a low power or loss of power condition.

The SWZ system shall have the ability to archive and generate reports on power condition alert messages received from SWZ system field devices deployed within the SWZ area. This archived data shall include the associated device name and number and shall include the date and time of each alert message.

All power supplies shall have capacity to support at least 72 hours of continuous operation. Examples of acceptable power supplies include:

- (a) Battery Powered Devices: The contractor shall replace batteries and equipment as necessary for continuous SWZ system operations in accordance with the approved SWZ system O&M plan.
- (b) Solar Power Distribution Assemblies: The contractor shall clean and adjust the position of solar panels and replace equipment as necessary for continuous SWZ system operations in accordance with the approved SWZ system O&M plan.

(c) Gas and Liquid Fuel Powered Devices: The contractor shall replace fuel and equipment as necessary for continuous SWZ system operations in accordance with the approved SWZ system O&M plan.

(5) Portable Field Device Trailers:

When SWZ system field devices are mounted to portable trailers deployed within the SWZ area the portable trailers shall meet the following requirements:

(a) Trailer Number: All trailers deployed within the SWZ area shall have a trailer number that is easily visible from the first vehicle travel lane adjacent to the deployed trailer. All trailers deployed in the SWZ area shall have different numbers to uniquely identify and differentiate one trailer from another.

(b) Towing Support: The trailers shall be street legal, have functioning brake lights when being towed, support driving speeds up to 65-mph when being towed, and be equipped with a standard size trailer hitch.

(c) Leveling Legs: The trailers shall have adjustable leveling legs that can support the weight of a fully loaded trailer with the tires removed. The adjustable height of the legs should be able to raise the trailer wheels a minimum of four inches between the bottom of the wheels and a flat/level surface that the trailer is standing on. Each leg shall be independently adjustable to support leveling the base of the trailer when deployed on a sloped area.

(d) Wind Loading: With all stabilizing devices in place, the fully loaded trailer shall be capable of withstanding wind gusts up to 80-mph without overturning or changing orientation.

(e) Display Tile Angle Adjustments: When mounting brackets are provided for CMBs and VSLSSs, they shall be provided with the ability to adjust the tilt angle of the display board in accordance with the display board manufacturer's recommendations for the optimal viewing angle.

(f) Pole Rotating Adjustments: When fixed-height or telescoping poles are provided to increase the mounting height of cameras and traffic detection devices, they shall be provided with the ability to rotate the pole, from ground level, in support of adjusting the horizontal viewing/detection angle of the device(s) mounted towards the top of the pole.

(g) Equipment Enclosures: When equipment enclosures are provided to house electronic communications, geolocating devices, local processing devices, batteries, and other PDA components, they shall be provided with security provisions to deter and delay theft of equipment inside the housing.

(6) Static Traffic Control Devices for SWZ Field Equipment:

Static traffic control devices for SWZ field equipment shall consist of furnishing, installing, maintaining, moving and removing barricades, warning signs, cones, and other traffic control devices, per the approved traffic control plans, through or around the SWZ system

field device locations deployed in or adjacent to the work zone. The static traffic control devices for SWZ field equipment shall be provided in accordance with the requirements of Part VI of the current edition of the Manual on Uniform Traffic Control Devices (MUTCD) and the current edition of the associated ADOT MUTCD supplement.

710-2.02 SWZ Traffic Data Collection (TDC) Location:

Each TDC location shall be equipped with all detecting, processing, and disseminating equipment and functionality needed to deliver real-time traffic information. The traffic data collected, shall be practicable for the SWZ subsystem identified such as vehicle speeds, traffic volumes, and occupancy within an area of the roadway that provides a single direction of travel with one or more travel lanes for that location. If required in the project plans or special provisions, additional traffic data shall be collected for vehicle classification and all data shall be collected “per lane”. Each TDC location shall include all of the equipment necessary to provide a fully functional component of the SWZ system.

A minimum of two TDC locations shall be provided to generate the required travel time and travel delay traffic information; unless a third-party traveler information system is used to provide the travel time/delay for the location (i.e. a single route between two or more points).

All TDC locations shall provide the SWZ system software the following information:

- (A) Vehicle speeds averaged together within a maximum time interval of one-minute.
- (B) Traffic volume count for each one-minute time interval.
- (C) Travel time and delay information for each one-minute time interval, computed by the TDC locations, or computed by the SWZ system software based on the per minute data provided by the TDC location(s).
- (D) For each location that has multiple travel lanes, the traveler information provided shall be a representative sample of all travel lanes combined as one for the same direction of travel.
- (E) All real-time traffic information provided to the SWZ system shall be time stamped with the actual date and time, with a tenth of a second accuracy, for each one-minute time interval sent to the SWZ system software.

Each TDC location deployed within the SWZ area shall have a number to uniquely identify that location and differentiate it from all other TCD locations. When the TDC location is comprised of field traffic sensor(s) the location number shall be displayed within the SWZ system software and shall be easily visible by field personnel at the location where the device(s) are mounted. When the field traffic sensors are mounted on a portable field device trailer the TDC location number used shall be the same number that is visible on the trailer.

When third-party data is used to collect the traffic data, the location number only needs to be displayed within the SWZ system software to identify each location where the data is being collected. When third-party data is used to collect travel-times between two locations, a unique route number shall be used to identify the location of each different route.

All TDC locations shall provide additional traveler information, as necessary, to achieve the functionality of other SWZ subsystems required by the project plans and specifications.

710-2.03 SWZ Changeable Message Board (CMB) Assembly:

Each SWZ CMB assembly shall be equipped with a changeable message display board and all processing and disseminating equipment, and have the functionality required to deliver automated messages generated by the SWZ system software to the travelling public via the message display boards of the SWZ CMB assembly. Each SWZ CMB assembly shall include all of the equipment necessary to provide a fully functional component of the SWZ system.

Each SWZ CMB assembly shall be provided and deployed in accordance with the MUTCD requirements for portable changeable message signs (MUTCD Section 6F.60) and the following:

(A) The SWZ CMB shall support the display of three lines of eight characters per line or should consist of a full matrix display.

(B) The letter height used for SWZ CMB messages should be a minimum of 18 inches, unless deployed on low speed facilities (40-mph or less). Shorter letter sizes may be used for SWZ CMB messages when deployed on low speed facilities provided that the message is legible from at least 650 feet.

(C) Under low light level conditions, the SWZ CMB shall automatically adjust its light source to meet the MUTCD legibility requirements and not impair the driver's vision.

(D) The SWZ CMB shall be provided with a default message state that is used when communications with the SWZ system software are lost for a predetermined amount of time. The default message state shall support the following options:

- (1) A blank display with no message,
- (2) A pre-approved message for the project and location, and
- (3) Continue to display the last message received from the SWZ system software.

(E) The SWZ CMB shall be provided with local manual override controls. When the local manual override controls are used, the SWZ CMB shall:

(1) Display only traffic operational, warning, and guidance information, and shall not be used for advertising messages.

(2) Display messages that consist of no more than two phases, and a phase should consist of no more than three lines of text. Each phase should be capable of being understood by itself, regardless of the order in which it is read. Messages should be centered within each line of the legend. If more than one portable SWZ CMB is simultaneously legible to road users, then only one of the signs should display a sequential message at any given time. Each phase shall have a display time of at least two seconds

and the sum of the display times for both of the phases should be a maximum of eight seconds.

Each SWZ CMB assembly deployed within the SWZ area shall have a unique number to identify that location and differentiate it from other SWZ CMB locations. When the SWZ CMB assembly is mounted on a portable field device trailer the SWZ CMB assembly number used shall be the same number that is visible on the trailer.

710-2.04 SWZ Traffic Monitoring Camera Assembly:

Each traffic monitoring camera assembly shall be provided with all cameras, video processing and disseminating equipment, and functionality needed to provide real-time viewing of traffic and roadway conditions, from a remote location and through the SWZ system software. Each SWZ traffic monitoring camera assembly shall provide the ability to view all approaching directions of the roadway, relative to the camera assembly deployment location, using one or more cameras mounted at an appropriate mounting height for viewing the roadway and traffic conditions. Each SWZ traffic monitoring camera assembly shall include all of the equipment necessary to provide a fully functional component of the SWZ system.

All SWZ traffic monitoring camera assembly locations shall provide the following camera functionality:

- (A) Ability to provide a video stream from each camera that can be viewed remotely from the SWZ system software GUI interface display window.
- (B) Ability to adjust the field of view (i.e., pan, tile, and zoom) of each camera, remotely from the SWZ system software, locally at the camera assembly location, or both.
- (C) Ability to support both daytime and nighttime operations. During daytime operations a color video stream shall be provided. During nighttime operations the camera shall function in low light conditions and support color, black-and-white, or both types of video streams.
- (D) Ability to adjust the camera iris and focus manually, via auto-Iris and auto-focus functionality, or both.
- (E) Ability to set and select camera pre-set positions, one for each approaching direction of the roadway, relative to the camera assembly deployment location, when a pan-tile-zoom functionality is provided for remote operations.
- (F) Ability to adjust the mounting height of each camera.

Each traffic monitoring camera assembly location deployed within the SWZ area shall have a unique number to identify that location and differentiate it from other traffic monitoring camera assembly locations. When the traffic monitoring camera assembly is mounted on a portable field device trailer the traffic monitoring camera assembly location number used shall be the same number that is visible on the trailer.

710-2.05 SWZ Variable Speed Limit Sign (VSLS) Assembly:

Each VSLS assembly shall be provided with a changeable message display board for posting regulatory speed limits and all processing and disseminating equipment and functionality needed to deliver SWZ system software generated speed limits to the traveling public via the changeable message display board of the VSLS assembly. Each VSLS assembly shall include all equipment necessary to provide a fully functional component of the SWZ system.

Each VSLS assembly shall be provided and deployed in accordance with the MUTCD requirements for Regulatory Speed Limit Signs (MUTCD Section 2B.13) and the following:

- (A) The VSLS display shall be the R2-1 sign type, per the MUTCD, with white colored lighted pixels that display the speed limit message on a black background.
- (B) The speed limits shall be displayed in multiples of 5 mph.
- (C) Under low light level conditions, the VSLS display shall automatically adjust its light source to meet the MUTCD legibility requirements and not impair the driver's vision.
- (D) The VSLS display shall be provided with a default message state that is used when communications with the SWZ system software is lost for a predetermined amount of time. The default message state shall support the following options:
 - (1) Blank display with no speed limit message,
 - (2) Pre-approved speed limit message for the project and location, and
 - (3) Continue to display last speed limit message received from the SWZ system software.
- (E) The VSLS assembly shall be provided with local manual override controls. When the local manual override controls are used, the VSLS display shall:
 - (1) Only display speed limits in multiples of 5 mph, and
 - (2) Provide a blank display with no speed limit message when moving the sign to a new deployment area.
- (F) A "VARIABLE SPEED ZONE AHEAD" warning sign shall be used in advance of the first VSLS location deployed to inform road users of a variable speed limit zone where the speed limit may be reduced by more than 10 mph. The Variable Speed Zone Ahead warning sign shall be a similar shape, size, and color to the Reduced Speed Limit Ahead (W3-5) or XX MPH Speed Zone Ahead (W3-5a) sign type of the MUTCD.
- (G) An "END OF VARIABLE SPEED ZONE" sign shall be used after the last VSLS location deployed to inform road users that the variable speed limit zone has ended. The End of Variable Speed Zone warning sign shall be a similar size and color to the Reduced

Speed Limit Ahead (W3-5) or XX MPH Speed Zone Ahead (W3-5a) sign type of the MUTCD.

(H) A warning beacon shall be used in combination with a "VARIABLE SPEED ZONE AHEAD" warning sign and the "END OF VARIABLE SPEED ZONE" warning sign when required in the project plans and specifications. When required, warning beacons shall comply with the MUTCD (Section 4L.03).

Each VSLS assembly deployed within the SWZ area shall have a unique number to identify that location and differentiate it from other VSLS locations. When the VSLS assembly is mounted on a portable field device trailer the VSLS assembly number used shall be the same number that is visible on the trailer.

710-2.06 Smart Arrow Board (SAB) Assembly:

Each SAB assembly shall be provided with an arrow board for indicating lane closures all processing and disseminating equipment and functionality needed to SWZ system software generated arrow, chevron symbols and patterns as described in the MUTCD and these specifications. Each SAB assembly shall include all equipment necessary to provide a fully functional component of the SWZ system.

Each SAB assembly shall be provided and deployed in accordance with MUTCD Section 6F.61 and the following:

(A) The SAB assembly shall provide the functionality for the user to identify the GPS coordinates of the SAB assembly through the SWZ system software GUI. Changes in the GPS coordinates of the SAB shall be logged within the SWZ system software with a timestamp.

(B) The SAB assembly shall provide the functionality for the user to identify the display state of the SAB assembly through the SWZ system software GUI. Changes in the display state of the SAB shall be logged within the SWZ system software with a timestamp.

(C) The SAB display shall be provided with a default display state that is used when communications with the SWZ system software is lost for a predetermined amount of time. The default message state shall support the following options:

- (1) Blank display with no chevron, arrow, or other pattern,
- (2) Sequential chevron pattern, and
- (3) Continue to display the last display state received from the SWZ system software.

(D) The SAB assembly shall be provided with local manual override controls. When the local manual override controls are used, the SAB display state shall conform to the MUTCD and these specifications.

Each SAB assembly deployed within the SWZ area shall have a unique number to identify that location and differentiate it from other SAB locations.

710-2.07 Speed Feedback Sign (SFS) Assembly:

Each SFS assembly shall be provided with a static speed limit sign, a changeable message display, and all processing and disseminating equipment and functionality needed to detect and display the speed of approaching vehicles. Each SFS assembly shall include all equipment necessary to provide a fully functional component of the SWZ system.

Each SFS assembly shall be provided and deployed in accordance with the MUTCD requirements for Regulatory Speed Limit Signs (MUTCD Section 2B.13) and the following:

(A) The static sign display shall be the R2-1 sign type, per the MUTCD, with white background and black legend. The pixels of the changeable message display shall be white on a black background.

(B) The changeable message display shall be two digits displayed in miles per hour with character height of 24 inches at a minimum.

(C) The changeable message display shall have the ability to:

(1) Continuously show the speed of an approaching vehicle and not flash regardless of speed limit or preset thresholds

(2) Display a blank message if the detected vehicle speed is between 0% and 50% of the predetermined speed limit setting.

(3) Display the speed of the approaching vehicle if the speed is greater than 50% of the predetermined speed limit setting.

(D) The SFS assembly shall provide the functionality for the user to identify the GPS coordinates of the SFS assembly through the SWZ system software GUI. Changes in GPS coordinates of the SFS shall be logged in the SWZ system software with a timestamp.

(E) Each SFS assembly deployed within the SWZ area shall have a unique number to identify that location and differentiate it from other SFS locations.

710-2.08 GPS Location Sensor (GPSLS) Assembly:

Each GPSLS assembly shall be provided with all processing and disseminating equipment and functionality needed to determine the GPS location of the GPSLS and communicate that location to the SWZ system software. Each GPSLS assembly shall include all equipment necessary to provide a fully functional component of the SWZ system.

The GPSLS assemblies are intended to be standalone intelligent devices used to mark a specific location of interest within the work zone. The following are some examples for how the GPSLS assemblies are intended to be used:

(A) The SAB includes an auxiliary GPS location device that marks the beginning of a lane restriction within the work zone, but the SWZ system software and operator

doesn't know where the end of the lane restriction is located, so a standalone GPSLS assembly is placed at the end of the lane restriction to inform the SWZ system software logic of where the lane restriction ends.

- (B) In some work zones it may be desired to know where the Road Work Ahead, End of Work Zone, or other static construction signs are located, so a standalone GPSLS assembly will be placed at each of these static sign locations to inform the SWZ system software logic of where the work zone starts and ends.

Each GPSLS assembly shall be provided in accordance with the following:

- (A) The GPSLS assembly shall provide the functionality for the user to identify the GPS coordinates of the GPSLS assembly through the SWZ system software GUI. Changes in GPS coordinates of the GPSLS shall be logged in the SWZ system software with a timestamp.

- (B) Each GPSLS assembly deployed within the SWZ area shall have a unique number to identify that location and differentiate it from other GPSLS assembly locations.

710-2.09 SWZ System Software:

The SWZ system software shall receive, store, analyze, and display real-time information from each TDC location, SWZ CMB assembly, VLS assembly, traffic monitoring camera assembly, SAB assembly, SFS assembly, GPSLS assembly, and the associated auxiliary SWZ equipment deployed within the project SWZ area. The software shall provide the control logic, system configurations, automation, and commands for the SWZ CMB and VLS display messages and speed limits.

The SWZ system software shall be furnished with all hardware, device drivers, and auxiliary SWZ equipment necessary to provide a fully functional component of the SWZ system that is accessed remotely by system operators, users, and Department representatives via the internet and by utilizing the software's client interface provided for use during the project.

The SWZ system software and services shall include setting limits and controls on the types of messages that can be displayed on SWZ CMB assemblies in accordance with Subsection 710-2.03 of the specifications

The SWZ system software and services shall include an option to create a "Message Library" of project specific and Engineer approved messages that can be displayed on the SWZ CMBs within the SWZ area.

The SWZ system client interface shall:

Not have a limit to the number of Department representatives that can access the SWZ system software independently from different locations throughout the State of Arizona using an internet link and web browser. The SWZ system software shall be configured to limit the level of access granted to different users to help protect against accidental and malicious acts that can impact the integrity of system performance, configurations, CMB display messages, and posted VLS speed limits.

Be a vendor hosted web site or software application(s) downloadable from one or more internet locations identified by the SWZ system software vendor(s).

Be accessible using personal computers (PC) running a Windows operating system and mobile devices running an Apple or Android operating system. The version of Windows used shall be compatible with the versions supported by the Engineer and TOC.

Include a GUI that displays the location of each TDC location, SWZ CMB assembly, VSLS assembly, traffic monitoring camera assembly, SAB assembly, SFS assembly, and GPSLS assembly deployed within the project SWZ area on a map and provides the associated unique numbers that identifies each location. The SWZ system software shall be configured to use the same unique numbers that have been imprinted on the actual devices in the SWZ area.

Provide the ability for Department representatives to see the current status of each TDC location, SWZ CMB assembly, VSLS assembly, and traffic monitoring camera assembly deployed within the project SWZ area, view all recorded data received from these field devices and the archived results of manual and system processed commands sent to field devices which display messages and speed limits to the traveling public.

The SWZ system software shall include a data exchange compliant with the WZDx Specification. The data exchange provided by the contractor shall update as the conditions of the work zone are changed, work zones are added, and work zones are removed through the SWZ system software.

The SWZ system software shall be comprised of the following subsystems integrated together as one complete system, as multiple separate software platforms, or any combination thereof, as required by the project plans and special provisions:

(A) Traffic Data Collection Subsystem (TDCS):

The TDCS shall be integrated with each TDC location deployed within the SWZ area to receive, archive, process, and disseminate the real-time traffic information for use by the other SWZ subsystems and by the Department for historical information, documentation, and future analyses.

The SWZ system GUI shall be configured to display each TDC location deployed within the SWZ area and the TDCS shall provide the following:

- (1) Traffic volume counts for each direction of travel impacted by construction activities within every one-minute time interval for data archiving.
- (2) Vehicle speeds for each direction of travel impacted by construction activities averaged together within a maximum time interval of one-minute for data archiving.
- (3) The actual posted speed limit for each direction of travel impacted by construction activities and a speed limit compliance value based on the actual vehicle speed value

compared to the posted speed limit value within every one-minute time interval for data archiving.

(4) Travel time between two points, one at near the beginning of the work zone and one at the end, averaged together within a maximum time interval of one-minute for data archiving for each direction of travel impacted by construction activities.

(5) Travel delay between two points, one at near the beginning of the work zone and one at the end, averaged together within a maximum time interval of one-minute for data archiving for each direction of travel impacted by construction activities. The travel delay values shall be based on the SWZ system generated real-time travel time data compared to a contractor provided "baseline set travel time data" that represents the typical travel time between the same two points, for each one-minute interval with each day of the week, when there was no construction or incident that would cause a travel delay.

(6) Queue lengths in locations when construction activities are causing or anticipated to cause traffic queuing for each direction of travel. The contractor proposed maximum time interval for data archiving and the methods used to determine queue lengths shall be approved by the Engineer prior to SWZ system deployment within the work zone.

(7) Traffic volume counts, vehicle speeds, speed limit compliance, travel time, travel delay, and queue length values based on longer time intervals, as selected by the Department representative through the SWZ system client interface, for generating the associated traffic information reports.

(8) Traffic volume counts, vehicle speeds, speed limit compliance, travel time, travel delay, and queue length values based on longer time intervals and associated alert message thresholds approved by the Engineer to send SWZ system generated alert messages to Department representatives via email or text messages.

(9) Crash occurrence data for each incident that occurred within the SWZ area based on the following data generated by the SWZ system or input into the SWZ system, by the contractor, using the SWZ system client interface:

- (a) Geolocation coordinates of the crash
- (b) Direction of travel the crash occurred in
- (c) Approximate time the crash occurred
- (d) Approximate time the crash was cleared from the travel lanes
- (e) Approximate time the crash was cleared from the site
- (f) Description of the crash

The TDCS shall be integrated with other required SWZ subsystems and receive, process, and disseminate additional types of the real-time traffic information that may be required by these other SWZ subsystems.

(B) Queue Warning Subsystems (QWS):

The QWS shall be integrated with the TDCS and the SWZ CMB assemblies to determine traffic queue lengths and warn approaching travelers of slowed or stopped traffic conditions.

The SWZ system GUI shall be configured to display each SWZ CMB assembly and TDC location associated with the QWS and the QWS component of the SWZ system and services shall provide the following:

- (1) The ability to set and change real-time traffic information thresholds, within ranges approved by the Engineer, for the QWS automation logic that decides which queue warning message to display on each associated SWZ CMB location.
- (2) The ability to set and change which messages from the "Message Library" can be used by the QWS for each of the different logic threshold scenarios.
- (3) The ability to set a minimum time, within ranges approved by the Engineer, that a QWS generated message should be displayed on each SWZ CMB, before the QWS can change the message.
- (4) When a queue begins to form, the QWS shall automate the process of displaying warning messages on the associated SWZ CMB assemblies located in advance of the anticipated queueing areas.
- (5) The ability to send alert messages to Department representatives via email and text messages when the QWS displays and removes warning messages on the associated SWZ CMB assemblies
- (6) The ability to send request messages to the Department's TOC operators via email and text messages asking them to consider displaying and removing queue warning related messages on specific FMS DMS locations in advance of the queueing area.

(C) Dynamic Lane Merge Subsystems (DLMS):

The DLMS shall be integrated with the TDCS and the SWZ CMB assemblies to determine traffic volumes and queueing conditions in advance of a lane or shoulder closure and instruct approaching travelers of when they should merge.

The SWZ system GUI shall be configured to display each SWZ CMB assembly and TDC locations associated with the DLMS. The DLMS components of the SWZ system and services shall provide the following:

- (1) The ability to set and change real-time traffic information thresholds, within ranges approved by the Engineer, for the DLMS automation logic that decides which merge message to display on each associated SWZ CMB location.
- (2) The ability to set and change which messages from the "Message Library" can be used by the DLMS for each of the different logic threshold scenarios.
- (3) The ability to set a minimum time, within ranges approved by the Engineer, that a DLMS generated message should be displayed on each SWZ CMB, before the DLMS can change the message.

- (4) When traffic volumes are high, or a potential queueing condition is detected by the DLMS, the DLMS shall automate the process of displaying pre-approved messages on the associated SWZ CMB assemblies that instruct drivers to merge later.
- (5) When traffic volumes are low, and a potential queueing condition is not detected by the DLMS, the DLMS shall automate the process of displaying pre-approved messages on the associated SWZ CMB assemblies that instruct drivers to merge earlier.
- (6) The ability to send alert email or text messages to Department representatives when the DLMS automatically changes messages on the associated SWZ CMB assemblies.
- (7) The ability to send request messages to the Department's TOC operators via email or text messages asking them to consider adding or removing merge instructions displayed on specific FMS DMS locations in advance of the closure.

(D) Travel Time Subsystems (TTS):

The TTS shall be integrated with the TDCS and the SWZ CMB assemblies to determine real time travel times and travel delays between each associated SWZ CMB assembly and an Engineer approved end destination point within the SWZ area. The TTS shall also provide display messages on each respective SWZ CMB with the travel time and travel delay information.

The SWZ system GUI shall be configured to display each SWZ CMB assembly and TDC route associated with the TTS. The TTS component of the SWZ system and services shall provide the following:

- (1) The ability to set and change real-time traffic information thresholds, within ranges approved by the Engineer, for the TTS automation logic that decides which travel time or travel delay message to display on each respective SWZ CMB.
- (2) The ability to set and change which messages from the "Message Library" can be used by the TTS for each of the different logic threshold scenarios.
- (3) The ability to set a minimum time, within ranges approved by the Engineer, that a TTS generated message should be displayed on each SWZ CMB, before the TTS can change the message.
- (4) The ability to set the following types of Engineer approved rules for how the travel times and travel delay values will be displayed with the respective SWZ CMB display messages:
 - (a) Round the time value to the nearest multiple of five or ten, or round-up to the nearest multiple of five or ten.
 - (b) Display the time as greater than or less than a fixed time period when the real-time value exceeds or is below this value respectively.

(5) The ability to send alert email or text messages to Department representatives when the TTS displays a specific type of message on one of the respective SWZ CMB, or if the travel times and travel delay values exceed a predetermined threshold.

(E) Traffic Monitoring Camera Subsystem (TMCS):

The TMCS shall be integrated with all the SWZ traffic monitoring camera assembly locations within the SWZ area and provide real-time viewing of the associated camera video streams for field personnel using mobile display devices and remotely by the Engineer, the TOC operators, and the District to monitor real-time roadway traffic conditions within the work zone.

The SWZ system GUI shall be configured to display the location of each SWZ traffic monitoring camera assembly and the TMCS component of the SWZ system and services shall provide the following:

- (1) The ability to view the real-time video stream of SWZ traffic monitoring camera assembly location when selected from within the SWZ system GUI.
- (2) Ability to adjust the field of view (i.e., pan, tilt, and zoom) of each SWZ traffic monitoring camera assembly.
- (3) Ability to select between daytime and nighttime operations for each SWZ traffic monitoring camera assembly.
- (4) Ability to adjust the iris and focus of each SWZ traffic monitoring camera assembly.
- (5) Ability to set and select pre-set field of view positions of each SWZ traffic monitoring camera assembly, when PTZ cameras are deployed.

(F) Variable Speed Limit (VSL) Subsystem:

The VSL subsystem shall be integrated with the TDCS and the VSLS assemblies located in the SWZ area to reduce regulatory speed limits within the area(s) of the work zone that has the largest concentration of construction personnel exposed to the danger of an errant vehicle and raises the speed limit when construction workers are not present.

The configuration of the VSL subsystem shall include the unique number of a TDC location that is deployed near the center of the Active Work Space and this field device location shall be referred to as the Active Work Space TDC location. The VSL subsystem shall provide system automation logic that changes the posted speed limits based on the real-time traffic information it receives from the Active Work Space TDC location.

The VSL subsystem shall include a variable that represents the length of the Active Work Space and the ability to set a maximum value for this variable. This maximum value which represents the maximum allowable Active Work Space length shall be set to two-miles, unless otherwise approved by the Engineer.

The SWZ system GUI shall be configured to display the Active Work Space TDC location, the length of the Active Work Space, the location of each SWZ VSLS deployed within the work zone, and the real-time speed limit posted on each SWZ VSLS. The VSL subsystem component of the SWZ system and services shall provide the following:

- (1) The ability to only post speed limits in multiples of 5 mph on a VSLS.
- (2) The ability to set a minimum and maximum speed limit value that can be posted on a VSLS for each direction of travel within the project limits.
- (3) The ability to set a minimum time frame or minimum frequency between changes that a VSL subsystem generated speed limit should be displayed on each VSLS, before the VSL subsystem can change the speed limit.
- (4) The ability to set a maximum value that can be used for lowering speed limits between any two consecutive VSLS locations within the same direction of travel.
- (5) The intelligence needed to dynamically know which SWZ VSLS are in advance of the Active Work Space, within the Active Work Space, and subsequent to the Active Work Space, each time the contractor moves the Active Work Space TDC location within the project limits.
- (6) The intelligence needed to dynamically lower the posted speed limits within the Active Work Space and on the VSLS directly in advance of the Active Work Space, while dynamically raising the speed limits on the other VSLS devices to the maximum allowable speed limit for the work zone.
- (7) The ability to set and change VSL subsystem logic and Active Work Space TDC real-time traffic information thresholds, within ranges approved by the Engineer, for the VSL subsystem automation logic that decides which speed limits to post each respective SWZ CMB.
- (8) The ability to dynamically raise the speed limits posted on all the VSLS to the maximum speed limit value or other user selectable lower value based on the time-of-day and day-of-week scheduler and manual overrides to the schedule.
- (9) The ability to only allow the speed limit message displayed on each VSLS to be in accordance with an R2-1 sign type, per the MUTCD, with white colored lighted pixels for displaying the speed limit message on a black background.
- (10) The ability to send alert email and text messages to Department representatives when the speed limit messages on the associated VSLS contain a user selectable speed limit value.

(G) Truck Entry/Exit Subsystem (TEES):

The TEES shall be integrated with the TDCS and either a SWZ CMB assembly or a static sign with attached flashing warning lights and GPSLS assembly to determine when

construction vehicles are entering the roadway from the work area and warn approaching travelers of slow-moving vehicles ahead.

The SWZ system GUI shall be configured to display each SWZ CMB assembly or static sign with attached flashing warning lights and GPSLS assembly and all TDC locations associated with the TEES. The TEES components of the SWZ system and services shall provide the following:

- (1) When construction vehicles leave the work area and enter the roadway, the TEES shall automate the process of displaying either pre-approved messages on the associated SWZ CMB assemblies or illuminating the flashing warning lights on the associated static sign with GPSLS assembly that warn drivers of slow-moving vehicles ahead.
- (2) The ability to set and change the time, within ranges approved by the Engineer, that a TEES generated warning should be displayed on either the associated SWZ CMB assembly or the associated static sign with attached warning lights and GPSLS assembly, before the TEES can change or remove the warning.
- (3) The ability to send alert email or text messages to Department representatives when the TEES automatically changes messages on the associated SWZ CMB assemblies or illuminates the flashing warning lights on the associated static sign with GPSLS assembly .

710-2.10 Data Submittal:

The SWZ system software shall record all loss of communications, low power, and loss of power alerts for the project duration.

The SWZ system software vendor shall also record the following data before final project acceptance:

- (1) All real-time traffic information received by the SWZ system software from all TDC locations deployed in the SWZ area and received by third-party sources, and all real-time traffic information generated by the SWZ system software within every one-minute time interval.
- (2) All messages posted on all SWZ CMB assemblies deployed in the SWZ area.
- (3) All speed limits on all VSLS assemblies deployed in the SWZ area.
- (4) All geolocation data associated with these devices and the required device data.
- (5) A date and time stamp that the data pertains to each data set.

This data shall be submitted electronically to the Engineer in a format compatible with the Work Zone Data Exchange Common Core Data Specification version available at the time of the project's bid opening date.

710-3 Construction Requirements:

The contractor shall coordinate with the Engineer and provide the SWZ software user training to the Department representatives. The contractor shall provide the Department representatives with SWZ software user access privileges including alert messages.

The SWZ system shall be deployed in accordance with the approved TCP, communications site assessment, system configuration plan, and subsystem acceptance testing procedures and provide the required certificate of analysis.

The contractor shall operate and maintain the SWZ system in accordance with the approved SWZ system O&M plan, relocate TDC locations, SWZ CMB assemblies, VLSL assemblies, traffic monitoring camera assemblies, SAB assemblies, SFS assemblies, and GPSLS assemblies and the associated auxiliary SWZ equipment deployed within the project SWZ area as necessary to achieve the SWZ system operational objectives. The required certificate of analysis shall be submitted to the Engineer each time one of the field device locations is moved.

During deployment in the SWZ area, the contractor shall submit the required SWZ system data reports to the Engineer for approval within the Engineer approval time frames.

Any deficiencies in the communications site assessment, SWZ system configuration plan, O&M plan, devices, equipment, services, or other elements of work listed herein will be brought to the attention of the contractor by the Engineer and all deficiencies shall be corrected before the close of that work shift, unless otherwise specified.

710-4 Method of Measurement:

SWZ system will be measured on a lump sum basis for a fully functional complete in place system.

TDC location, SWZ CMB assembly, traffic monitoring assembly, VLSL assembly, SAB assembly, SFS assembly, and GPSLS assembly will be measured by the day for each 24-hour day that the SWZ is in place and functional for the in-use condition, with no loss of communications or power failures for 98 percent of the calendar day or 98 percent of the portion of the calendar day that the system is in place.

Measurement for payment of the TDC location, SWZ CMB assembly, traffic monitoring assembly, VLSL assembly, SAB assembly, SFS assembly, and GPSLS assembly will begin on the day they are installed in place and fully functional. When the elements are not needed, they shall be removed or covered and will not be measured unless they are required to stay on site in anticipation of future use or emergency use as determined by the Engineer. Should devices be required on site for these purposes, they will be measured and paid for at the contract unit prices. During non-working periods such as holidays and weekends, the elements in place will be measured for payment. During these non-working periods the contractor shall conduct a minimum of one check per day to verify that the elements are in place and in satisfactory condition.

Elements of work which are lost, stolen, destroyed, or are deemed unacceptable by the Engineer, while in use on a project shall be replaced by the contractor at no additional cost to the Department.

710-5 Basis of Payment:

SWZ system, measured as provided above, will be paid for at the contract lump sum price, which price shall be full compensation for the work, complete in place, as specified herein and shown on the plans, including all materials, equipment, and labor necessary to facilitate the SWZ system mobilization; obtain the Engineer's approval of required submittal documentation; provide SWZ system software, the SWZ client interface and user training, initial system configurations and associated acceptance testing, SWZ software user access privileges, alert messages, and SWZ system data reports; provide system and equipment operations and maintenance, deployment location changes, and support services as needed to maintain a fully functional and operational SWZ system for the duration of the project; and removal of all SWZ equipment. Documentation of all lessons learned as a result of the SWZ installation, deployment, and removal shall also be included in the lump sum payment.

The accepted quantities of TDC locations, SWZ CMB assemblies, traffic monitoring camera assemblies, VSLs assemblies, SAB assemblies, SFS assemblies and GPSLS assemblies measured as provided above, will be paid for at the contract unit price each for the type of location or assembly designated in the bidding schedule, fully deployed and in operation in the SWZ area, which price shall be full compensation for the work described and specified herein and on the plans, and all other components necessary to provide a complete functional assembly for monitoring the SWZ area traffic conditions and controlling the SWZ operations.

Eighty percent of the contract lump sum price for the SWZ system will be paid upon satisfactory installation of a fully functional system, system, and operating, maintaining and servicing the SWZ system.

Twenty percent of the contract lump sum price for the SWZ system will be paid upon final removal.

Measurement and payment of static traffic control devices as shown on the TCP that are used in conjunction with the SWZ field equipment shall be paid for under their respective bid items.

No payment will be made for relocation of work elements and SWZ system configuration changes.

No payment will be made for setting up or relocating the necessary elements of work and associated protective devices that are moved concurrently with the advancing operation or removal at the end of a shift.

No payment will be made for the elements of work listed herein for non-working periods resulting from a suspension of work that, in the opinion of the Engineer, is due to the fault of

the contractor. In any case, the contractor shall continue to be responsible for maintaining all SWZ system components in proper functioning condition at all times.

ITEM 8050003 — SEEDING (CLASS II):

The work under this item shall consist of furnishing all materials, preparing the soil, applying Class II seed, establishing, and maintaining the seeded areas along with final mulch cover.

Areas to be seeded are those disturbed or unvegetated areas listed herein, shown on the plans, called for in the contractor's erosion/sediment control plan, Nonpoint Source (NPS) pollution control plan, Stormwater Quality Protection Plan (SQPP), Stormwater Runoff Pollution Control Plan, Decentralized Stormwater Management Plan, Stormwater Runoff Mitigation Plan, Stormwater Management Plan (SWMP), Biotechnical Erosion Control Plan, Post-Construction Stormwater Management Plan (PCSMP), Integrated Vegetation Management Plan (IVMP), Functional Landscape Ecological Restoration Plan, Assisted Migration Plan (AMP), or designated by the Engineer. All construction support activities disturbed unpaved temporary construction access, unpaved on-site staging, unpaved on-site material storage, and unpaved on-site stockpiling areas shall ultimately be seeded unless otherwise stabilized by equivalent permanent stabilization measures. If not seeded, the equivalent permanent stabilization measures shall be evaluated by a Construction Professional Landscape Architect (PLA) and approved by the Engineer. Unless otherwise prohibited by environmental permit, seeding is required to stabilize the unpaved disturbed dry area within the Waters of the U.S. Seeding area below the Ordinary High-Water Mark (OHWM) shall exclude any definable low flow channel(s). The seeding area below the OHWM shall also exclude the area directly under bridge(s).

Seeding may be included as part of a landscape project as specified in Section 807 or used for erosion control as part of a Storm Water Pollution Prevention Plan (SWPPP) as specified in Subsection 104.09 of the specifications, or both.

In either case, seeding shall be accomplished in two (2) stages. The first stage shall consist of tillage; furnishing and applying compost, chemical fertilizer, and sulfur; furnishing and planting the contract-specified seed mix; and furnishing, applying, and affixing final mulch cover. The second stage, beginning after the first stage has been accepted by the Engineer, shall be a 45-calendar-day period during which time the contractor shall be responsible for maintaining and stabilizing the seeded and mulched areas, and restoring damaged or eroded areas.

Seeding construction shall be completed before Substantial Completion. The 45-calendar-day seeding maintenance period, including any re-seeding work if required after Initial Seeding Construction Acceptance, shall be completed before project Final Acceptance.

Seeding used as part of a SWPPP shall be completed before Substantial Completion, or sooner as required in the SWPPP. The 45-calendar-day seeding maintenance period, including any re-seeding work if required after Initial Seeding Construction Acceptance, shall be completed before project Final Acceptance.

No time extension will be granted for seeding not completed as specified herein.

Seeding areas below the OHWM shall be exempted from the 45-calendar-day maintenance period requirement.

An on-site pre-activity seeding construction meeting shall be coordinated by Construction PLA. The necessity of half-acre (0.5 acre) sample demonstrative area of Class II Seeding shall be verified for the seeded areas greater than five (> 5) acres excluding shoulder build-up areas (edge of pavement build-up areas). The contractor shall guarantee in writing to furnish all suitable equipment for soil tillage, seeding, and mulching during pre-activity seeding construction meeting as evaluated by a Construction PLA, as well as approved by the Engineer.

2.0 Materials:

2.01 General:

The contractor shall avoid persistent herbicide residues contamination in the soil. Soil sterilant herbicides, especially bare-ground herbicides with long-lasting soil persistence, shall be prohibited for use in all unpaved project areas that will be seeded. Pre-emergence herbicides shall be prohibited from unpaved project areas that will eventually be seeded.

Appropriate documentation, as specified below, shall be submitted to the Engineer a minimum of 30 calendar days before the start of a scheduled seeding activity. No materials shall be delivered to the site until the documentation has been approved by the Engineer.

Unless otherwise specified, Certificates of Compliance conforming to the requirements of Subsection 106.05 of the specifications shall be provided for all materials.

The contractor shall also provide tests from accredited laboratories for all materials, as specified herein. Should the contractor perform its own testing, such test results shall also be provided to the Engineer.

2.02 Seed:

(A) General Requirements:

The species, variety, and strain of seed (designated elsewhere herein as contract-specified seed) shall be as shown on the plans or as specified herein. The contract-specified seed shall be obtained from seed suppliers through harvesting of wildland collections, or field-grown seeds grown prior to or during the contract period.

A Certificate of Analysis for each seed species shall be furnished to the Engineer at least four (4) weeks prior to the seeding construction. No seed shall be furnished to, or delivered to, the project until approved by the Engineer and Roadside Development. The Certificates of Analysis shall contain the following information for each seed sample: the test results of the Fifty States Noxious Weed list, all seeds including weed seeds listed, purity and germination, tetrazolium test results, when used and any pathology found to be present. The sample testing, when available for the native plant species, shall use the rules for

testing seeds published by the “Association of Official Seed Analysts” or the “Society of Commercial Seed Technologists.”

If the samples indicate species listed as noxious, restricted, or invasive, the lot will be rejected or evaluated for use on the project. The list of noxious, restricted, or invasive species is located at Roadside Development and linked to the following website:

<http://www.azdot.gov/business/engineering-and-construction/roadway-engineering/roadside-development>

Within 30 calendar days after the award of contract, the contractor shall submit the name of the seeding subcontractor to be used, along with written confirmation from seed suppliers and/or collectors, on their letterhead, that the source(s) for the contract-specified seed has been secured. A minimum of three (3) separate confirmation letters from seed suppliers, providers, and/or collectors shall be presented through the Engineer for a Construction PLA’s evaluation within the context of reliable sources. If any of the contract-specified seed is expected to be unavailable prior to the time specified for seeding, in accordance with Subsection 2.02(B) below, the contractor shall notify the Engineer at this same time.

The seed shall be delivered to the project site unmixed in standard, sealed, undamaged containers for each seed species. Each container shall be labeled in accordance with the appropriate provisions of the Arizona Revised Statutes and the U.S. Department of Agriculture rules and regulations under the Federal Seed Act. Labels shall indicate the scientific genus, species, subspecies/varieties or strains of seed, the percentage of germination, purity, weed content, and testing information. Unless otherwise approved by Roadside Development Section through the Engineer, the date of analysis for Tetrazolium Test (TZ) shall not be more than 15 months prior to the delivery date from a seed provider/supplier. A Certificate of Analysis from an accredited seed-testing laboratory, and conforming to Subsection 106.05 of the specifications, shall accompany each container of seed.

Unless otherwise approved by Roadside Development through the Engineer, weed content of the contract-specified seed mix shall not exceed 0.5 percent ($\leq 0.5\%$).

In addition to Federal Seed Act Regulations, unless otherwise approved by Roadside Development through the Engineer, the contamination of seed lots from the following noxious / invasive plant species shall not be permitted.

NOXIOUS / INVASIVE WEEDS WATCH LIST FOR THE CONTAMINATED SEED LOTS	
SCIENTIFIC NAME	COMMON NAME
<i>Amaranthus retroflexus</i>	Redroot Amaranth / Redroot Pigweed / Red-Rooted Pigweed / Rough Pigweed
<i>Bassia scoparia</i> (syn. <i>Kochia scoparia</i>)	Kochia / Fireweed
<i>Bothriochloa bladhii</i> (syn. <i>Andropogon bladhii</i> / <i>Andropogon caucasicus</i> / <i>Andropogon intermedius</i> / <i>Bothriochloa caucasica</i> / <i>Bothriochloa intermedia</i>)	Caucasian Bluestem

NOXIOUS / INVASIVE WEEDS WATCH LIST FOR THE CONTAMINATED SEED LOTS	
SCIENTIFIC NAME	COMMON NAME
<i>Bothriochloa ischaemum</i>	Yellow Bluestem
<i>Brassica tournefortii</i>	Sahara Mustard / Mediterranean Mustard / Mediterranean Turnip / Prickly Turnip
<i>Bromus tectorum</i>	Cheatgrass / Downy Brome / Broncograss / Downy Chess / Soft Chess / Drooping Brome
<i>Cynodon dactylon</i> (syn. <i>Capriola dactylon</i>)	Bermudagrass / Devilgrass
<i>Centaurea melitensis</i>	Malta Star-thistle / Napa Star Thistle / Tocalote
<i>Cenchrus spinifex</i> (syn. <i>Cenchrus incertus</i> / <i>Cenchrus pauciflorus</i> / <i>Cenchrus parviceps</i>)	Field Sandbur / Coastal Sandbur / Common Sandbur
<i>Chorispora tenella</i>	Crossflower / Purple Mustard / Blue Mustard / Musk Mustard / Beanpodded Mustard / Tenella Mustard
<i>Cuscuta</i> spp.	Dodder / Angel Hair / Devil's Hair / Devil's Ringlet / Goldthread / Hairweed / Lady's Laces / Strangleweed / Witch's Hair / Amarbel
<i>Eragrostis lehmanniana</i>	Lehmann Lovegrass
<i>Euphorbia esula</i>	Leafy Spurge / Green Spurge / Wolf's Milk
<i>Euphorbia prostrata</i> (syn. <i>Chamaesyce prostrata</i> / <i>Euphorbia chamaesyce</i>)	Prostrate Spurge / Prostrate Sandmat / Ground Spurge / Blue Weed
<i>Onopordum acanthium</i>	Scotch Thistle / Cotton Thistle
<i>Pennisetum ciliare</i> (syn. <i>Cenchrus ciliaris</i>)	Buffelgrass / African Foxtail Grass
<i>Physalis</i> spp.	Ground Cherry / Jerusalem Cherry / Strawberry Tomato
<i>Salsola kali</i> subsp. <i>tragus</i> (syn. <i>Salsola iberica</i>)	Russian Thistle / Tumbleweed
<i>Setaria faberi</i>	Japanese Bristlegrass / Giant Foxtail
<i>Setaria pumila</i> (syn. <i>Chaetochloa glauca</i> / <i>Chaetochloa lutescens</i> / <i>Panicum glaucum</i> / <i>Setaria glauca</i>)	Yellow Foxtail / Pigeon Grass / Yellow Bristlegrass
<i>Setaria viridis</i>	Green Bristlegrass / Pigeon Grass / Wild Millet / Green Foxtail
<i>Solanum physalifolium</i> (syn. <i>Solanum physalifolium</i> / <i>Solanum sarachoides</i> / <i>Solanum villosum</i>)	Hoe Nightshade / Argentine Nightshade / Green Nightshade / Hairy Nightshade

The contractor shall provide all seed tag labels to the Engineer. No payment will be made for seeds until tag labels and Certificates of Analysis from all seeds to be used on the project have been submitted as specified.

Both the contractor and the seed supplier shall store seed under dry conditions, at temperatures of between 35 °F and 120 °F, and out of direct sunlight. Prior to using the seed, the contractor, as well as seed supplier, shall both provide a certification letter to the Engineer verifying that the seed was stored as specified herein.

Legume seed shall be inoculated with appropriate bacteria cultures approved by the Engineer, in accordance with the culture manufacturer's instructions.

Tetrazolium staining shall be acceptable to test for germination and hard seed. Cut or fill testing will not be allowed. As directed by the Engineer, seeds with an expiration date past the acceptable test date or not meeting the specified conditions for storage shall be retested by the contractor. The Engineer may perform random sampling of seeds throughout the project. Mixing of the specified seed at the project site shall be under the supervision of the Engineer.

Application rates of seed as specified are for Pure Live Seed (PLS). PLS is determined by multiplying the sum of the percent germination of seeds, including hard or dormant seeds, by the percent purity.

Diversified seed mix species and the PLS rates are shown in Table 1 below:

TABLE 1			
DIVERSIFIED SEED MIX—for All Unpaved Disturbed Areas, Unvegetated Areas, Receiving Pervious Areas (RPA), Decentralized Stormwater Management Areas, and/or Designated Areas			
Botanical Name	Common Name	PLS Rate (Pounds Per Acre)	Per Pound Value for Substitution (see text)
Aristida purpurea	Purple Threawn	3	\$40
Abronia villosa	Sand Verbena	1	\$90
Bouteloua aristidoides	Needle Grama	0.3	\$20
Bothriochloa barbinodis	Cane Beardgrass	1	\$45
Bouteloua barbata	Sixweeks Grama	0.2	\$30
Baileya multiradiata	Desert Marigold	1	\$80
Castilleja exerta (syn. Orthocarpus purpurascens)	Purple Owl's Clover	0.1	\$200
Coreopsis tinctoria	Plains Coreopsis	1.5	\$20
Distichlis stricta (syn. Distichlis spicata)	Desert Saltgrass	1	\$60
Encelia farinosa	Incienso Brittlebush	5	\$40
Eschscholtzia mexicana	Mexican Poppy	1	\$40

Ephedra nevadensis	Nevada Mormon Tea	3	\$35
Kallstroemia grandiflora	Arizona Poppy	0.5	\$90
Lesquerella gordonii	Gordon's Bladderpod	1	\$40
Lupinus arizonicus	Arizona Lupine	3	\$90
Lupinus bicolor	Miniature Lupine	1	\$60
Lupinus succulentus	Arroyo Lupine	3	\$30
Nassella pulchra (syn. Stipa pulchra)	Purple Needlegrass	3	\$95
Phacelia campanularia	Desertbells	1	\$50
Plantago ovata	Desert Indian Wheat	2	\$5
Sphaeralcea ambigua	Desert Globemallow	1	\$55
Sporobolus airoides	Alkali Sacaton	0.5	\$26
Salvia columbariae	Desert Chia	1	\$55
Senna covesii	Desert Senna	2.5	\$50
Sporobolus cryptandrus	Sand Dropseed	0.2	\$10
Thamnosma montana	Desert Rue	2	\$100
Trifolium willdenovii	Tomcat Clover	0.5	\$90
Estimated Per Acre Subtotal Value for Seeds Only			\$ 2,147.00

(B) Seed Substitution:

No substitution of the contract-specified seed will be allowed unless evidence is submitted documenting that the contractor has made a diligent effort to obtain the contract-specified seed from either seed suppliers or collectors, and that the contract-specified seed will not become available prior to the time specified for seeding in the contractor's approved construction schedule.

The contractor may also request a substitution if the lowest price available for the contract-specified seed is greater than two (2.0) times the value shown in Table 1. The contractor shall provide documentation from a minimum of three (3) seed suppliers or collectors supporting such a request. Documentation shall include copies of the invoices from each supplier or collector. Only those invoices obtained within three (3) weeks of the time specified for seeding in the contractor's approved construction schedule will be acceptable.

Should a substitution of the contract-specified seed be requested for one of the two (2) reasons specified above, and the contractor's documentation is approved by the Engineer, the Department's Roadside Development Section will specify an alternate seed within five (5) working days of the Engineer's approval of the contractor's documentation. The alternate seed will only be allowed when there is an insufficient quantity of the contract-specified seed, as determined in the previous two (2) paragraphs, for the areas to be seeded as

called for herein or as required for erosion control. The contractor shall obtain and apply the alternate seed, as required, to all such remaining areas. Unless otherwise approved by the Engineer, the approved alternate seed will only be allowed until such time that contract-specified seed meeting the availability and price requirements specified herein can be provided.

For each pound of contract-specified seed not provided by the contractor, the value indicated in Table 1 will be deducted from the contract amount. The price per pound for the alternate seed selected by the Department, as specified above, will be determined in accordance with Subsection 109.04(D)(2) of the specifications. No additional adjustments will be made for substituting the alternate seed, the costs being considered as included in the contract item for seeding.

No payment will be made for areas seeded with unapproved seed. No payment will be made for areas seeded until the entire approved seed mix (including all authorized seed substitutions/adjustments) is executed.

2.03 Tacking Agent:

Tacking agent shall be a naturally occurring organic compound and shall be non-toxic. The tacking agent shall be a product typically used for binding soil and mulch in seeding or erosion control operations. Approved types shall consist of mucilage or gum by dry weight as active ingredient obtained from guar or plantago. The tacking agent shall be labeled indicating the type and mucilage purity.

The contractor shall have the tacking agent swell volume tested by an approved testing laboratory using the USP method. The standard swell volume shall be considered as 30 milliliters per gram. Material shall have a swell volume of at least 24 milliliters per gram. Certified laboratory test results for homogenous consistency shall be furnished to the Engineer for each shipment of tacking agent to be used on project areas. Tacking agent rates shall be adjusted to compensate for swell volume variation. Material tested with lesser swell volume shall have the tacking agent rate increased by the same percentage of decrease in swell volume from the standard 30 milliliters per gram. Material tested with greater volume may reduce tacking agent rates by the same percentage of increase in swell volume from the standard 30 milliliters per gram. Tacking agent shall be pure material without starches, bentonite, or other compounds that would alter the swell volume test results of mucilage, or the effectiveness of the tacking.

2.04 Thermally-Refined Wood Fiber:

Wood cellulose fiber mulch shall conform to the requirements of Subsection 805-2.03 of the Standard Specifications, except as modified herein, and shall be from thermo-mechanically processed wood, processed to contain no growth germination inhibiting factors. The mulch shall be from virgin wood, manufactured, and processed so the fibers will remain in uniform suspension in water under agitation to form homogenous slurry. Paper products will not be considered as virgin wood. The thermally-refined wood fiber mulch shall have the properties shown in Table 2 below:

TABLE 2	
Virgin Wood Cellulose Fiber	90% min.
Recycled Cellulose Fiber	10% max.
Ash Content	0.8% +/-0.3%
pH	4.5 +/-1.0
Water Holding Capacity	10 : 1 (water : fiber) Min.

2.05 Weed Free Straw Mulch:

(A) General:

Straw mulch including barley straw shall conform to the requirements of Subsection 805-2.03 of the Standard Specifications, except as modified herein, and shall be from the current season's crop. A letter of certification from the supplier shall be required stating that the straw was baled less than twelve (12) months from the delivery date. Additionally, a bill of sale for straw material shall be presented for a Construction PLA's evaluation within context from reliable sources through the Engineer.

All straw, including hydraulically applied straw, shall be free from noxious weeds in compliance with the standards and procedures of the North American Weed Management Association (NAWMA) or the Arizona Crop Improvement Association (ACIA). The contractor shall provide documentation, including a transit certificate, and appropriate labels and/or marking twine, from the ACIA or NAWMA that straw materials to be used for mulch are free of noxious weeds. The straw shall be accompanied by the certification, labels and/or marking twine at the time of delivery to the project site. Straw delivered to the project without such information will be rejected and promptly removed from the project.

Rye straw and oat straw will not be acceptable.

(B) Weed Free Straw Mulch for Hydraulic Application:

Hydraulically applied straw mulch shall be wheat, barley, or rice straw processed into various particle sizes, mixed with water and tacking material, and applied as a non-clogging slurry using a hydroseeder. A minimum of 70 percent (70%) of wheat, barley, or rice straw in the mix shall be not less than 1/2 inch $\pm$ 1/4 inch in length. Straw particles may be longer provided that the particles can be used with the selected hydroseeder without clogging. Hydraulically applied straw mulch, as furnished by the manufacturer, may contain up to ten (10) percent paper or cotton materials in dry weight. Hydraulically applied straw mulch shall also contain 20 percent (20%) of wood fiber in dry weight. The combined dry weight percentage of paper, cotton, and wood fiber materials together shall be not less than 15 percent (15%) nor more than 30 percent (30%) of the hydraulically applied straw mulch. The date of installation of hydraulically applied straw mulch cover shall be less than twelve (12) months from the date of production. The date of production of hydraulically applied straw mulch material shall be presented for a Construction PLA's verification through the Engineer. All hydraulically applied straw mulch material shall also meet the requirements of Subsection 805-2.05 (A) stated above.

2.06 Slow-release Chemical Fertilizer and Sulfur:

Chemical fertilizer shall conform to the requirements of Subsection 805-2.06 of the specifications and shall be the kind hereafter specified. Fertilizer shall be composed of a mixture of one part sulfur-coated urea 25-4-8, one-part monoammonium phosphate 11-52-0-, and one-part methylene urea 38-0-0. The sulfur-coated urea, a blended fertilizer 25-4-8, shall have approximately 80 percent (80%) of the nitrogen defined as slow release, and contain five percent (5%) Iron, ten percent (10%) sulfur and trace amounts of zinc and manganese. The result shall be a 24-18-2 chemical blended fertilizer, as specified herein.

In addition to the fertilizer mixture, agricultural sulfur compounds, comprised of between 80 percent (80%) and 96 percent (96%) sulfur, shall be applied at the rate specified in Section 3.02. Chemical fertilizer and sulfur shall not be applied to the seeding area below the OHWM.

2.07 Water:

Water shall be free of oil, acid, salts, or other substances which are harmful to plants. All non-potable water shall be tested for its suitability for seeding/planting with the water quality-related concerns of salinity, pathogens, and contaminants. The water quality testing result shall be presented for a Construction PLA's evaluation through the Engineer. An Arizona Guide to Water Quality and Uses (web link: <https://extension.arizona.edu/sites/extension.arizona.edu/files/pubs/az1610.pdf>) Figure 8, Water Quality and Uses Triangle shall be considered as reference for testing result evaluation and approval.

Water Quality Standards for seeding on construction projects that reach or exceed one-contiguous-acre ($\geq$ 1 contiguous acre) permit threshold soil/ground disturbance defined under current Arizona Pollutant Discharge Elimination System (AZPDES) Construction General Permit (CGP) and/or National Pollutant Discharge Elimination System (NPDES) CGP:

- (A) On Arizona Non-Native Americans Land (**Non-Tribal**), water quality for seeding construction within 0.25-mile buffer zones of Impaired and/or Outstanding Arizona Waters (OAWs) shall meet the standards of current AZPDES CGP, as well as requirements of these Special Provisions.

The web link of ADEQ's eMaps within the State of Arizona:

<https://www.azdeq.gov/emaps>

- (B) Water quality for seeding construction within Arizona Native Americans Land (**Tribal**) shall meet the standards of EPA-established or approved Total Maximum Daily Loads (TMDLs) under current NPDES CGP, as well as requirements of these Special Provisions.

The web link of EPA-established or approved TMDLs within the State of Arizona:

<https://www.epa.gov/npdes/epas-stormwater-discharge-mapping-tools>

The source of water shall be approved by a Construction PLA through the Engineer prior to use.

2.08 Compost:

Compost in bulk or furnished in containers or bags, shall consist of composted organic vegetative materials, and may contain worm castings. No animal manures or city biosolids shall be used in the composting or added to the compost. Prior to being furnished on the project, compost samples shall be tested for the specified microbiological and nutrient conditions, including maturity and stability, by a testing laboratory approved for testing organic materials. During pre-activity seeding construction meeting, compost test written results submitted to the Engineer for approval shall be within nine (9) months from the date of the official lab test.

Compost material shall be dark brown in color with the parent material composted and no longer visible. The structure shall be a mixture of fine and medium size particles and humus crumbs. The maximum particle size shall be within the capacity of the contractor's equipment for application to the constructed slopes. The odor shall be that of rich humus with no ammonia or anaerobic odors.

Bulk Compost shall also meet the requirements of Table 3:

TABLE 3	
Cation Exchange Capacity (CEC)	Greater than 45 meq/100 g
Carbon : Nitrogen Ratio (C : N)	Less than 20 : 1
pH (of extract)	5.0 – 8.5
Organic Matter Content	Greater than 30%
Total Nitrogen (not added)	Greater than 1%
Micronutrients (added)	S, Ca, Mg, Na, Fe, Al, Mn, Cu, Zn, B
Maturity Index	Greater than 50% on Maturity Index at a 10 : 1 ratio
Stability Indicator, CO ₂ Evolution: Biologically Available C (BAC)	Less than 4mg CO ₂ -C/g OM/day is desirable. From 4 through 8mg CO ₂ -C/g OM/day is acceptable. Greater than 8mg CO ₂ -C/g OM/day is not acceptable.
The CEC lab testing method shall refer to EPA9081 at the web link: http://epa.gov/osw/hazard/testmethods/sw846/pdfs/9081.pdf	

Bulk compost is preferred and shall be applied to areas designated for seeding at the specified rate of 15 cubic yards per acre prior to final tillage for incorporation into the soil seedbed. Unless otherwise approved by the Engineer, bulk compost shall be engaged to all areas where equipment can be operated for final tillage in order to incorporate into the soil seedbed. Bulk compost may be substituted with hydraulically applied compost for small

sized projects that cover less than five (< 5) acres of Class II Seeding as evaluated by a Construction PLA, as well as approved by the Engineer.

The volume of bulk compost shall be measured and documented for Construction PLA's verification and approval through the Engineer.

In areas where bulk compost cannot be applied by broadcast methods, compost shall be applied hydraulically as per the approval of the Engineer. Hydraulically applied compost shall be applied at the rate of 5 cubic yards (or 135 cubic feet) per acre to mini-benched slopes or on other approved areas for incorporation into the soil seedbed. For seeding areas 3:1 and flatter where bulk compost cannot be employed, hydraulically applied compost shall be utilized at the rate of 5 cubic yards (or 135 cubic feet) per acre as per the approval of the Engineer. Hydraulically applied compost may also be combined with seed, soil amendments, and fertilizer in the same slurry prior to the final mulch cover with the approval of the Engineer.

The volume of hydraulically applied compost shall be measured and documented for Construction PLA's verification and approval through the Engineer.

Hydraulically applied compost shall meet the requirements of Table 4 below:

TABLE 4	
Cation Exchange Capacity (CEC)	Greater than 40 meq/100 g *
Carbon : Nitrogen Ratio (C : N)	Less than 20 : 1
pH (of extract)	5.0 – 8.5
Organic Matter Content	Greater than 35%
Total Nitrogen (not added)	Greater than 1%
Micronutrients (added)	S, Ca, Mg, Na, Fe, Al, Mn, Cu, Zn, B
Stability Indicator, CO ₂ Evolution: Biologically Available C (BAC)	Less than 4mg CO ₂ -C/g OM/day is desirable. From 4 through 8mg CO ₂ -C/g OM/day is acceptable. Greater than 8mg CO ₂ -C/g OM/day is <u>not</u> acceptable.
Moisture Content by Weight	From 15% through 25%
The CEC lab testing method shall refer to EPA9081 at the web link: http://epa.gov/osw/hazard/testmethods/sw846/pdfs/9081.pdf	

* When CEC is from 50 meq/100 g through 55 meq/100 g, in order to be approved, the contractor may add 100 pounds additional Hydraulically Applied Compost per acre to compensate for the lower-than-standard CEC value.

Compost shall not be applied to the seeding area below the OHWM. The choice between bulk compost and hydraulically applied compost shall be evaluated, as well as coordinated by a Construction PLA according to specific project conditions with the approval of the Engineer.

2.09 Soil Conditioners:

Soil conditioners, when required, will be as shown in the Special Provisions.

3.0 Construction Requirements:

3.01 General:

Seeding Operations:

At least two (2) weeks prior to beginning seeding, the contractor shall complete and submit a batch mix and seed application form to the Engineer for approval. The batch mix form will be supplied by the Engineer.

After acceptance of the form stated above, the Engineer and contractor in coordination with Construction PLA shall determine a half-acre (0.5 acre) sample demonstrative area to be seeded and mulched prior to applying seed to the remainder of the project. Both regular straw mulch and hydraulically applied straw mulch shall be applied to the sample demonstrative area, as determined during on-site pre-activity seeding construction meeting. Both straw mulches shall be representative of the materials proposed for use on the project. If the seeding and mulching procedures, as well as outcomes, are acceptable by Construction PLA, the contractor shall begin seeding operations as specified herein. Photographic Documentation of half-acre (0.5 acre) sample demonstrative seeded/mulched area shall be recorded and submitted to a Construction PLA, as comparative standard representation (mandatory visual reference) for Seeding Acceptance under Subsection 3.07 stated below.

The contractor shall notify the Engineer at least two (2) days prior to commencing any phase of seeding operations for the remainder of the project.

The equipment and methods used to distribute seeding materials shall provide an even and uniform application of seed, mulch, and other materials at the specified rates.

It is the contractor's responsibility to furnish all suitable equipment for soil tillage, seeding, and mulching at no additional cost to the Department.

Unless specified otherwise in the Special Provisions, seeding operations shall not be performed on undisturbed soil outside the clearing and grubbing limits of the project or on steep rock cuts.

The contractor shall coordinate the seeding operations with the grading operations to determine mobilization frequency as embankment and cut slopes are finished throughout the duration of the project. Seeding shall be done during suitable weather and soil conditions (soil-water and soil-temperature regimes) for tillage and placement of materials. Seeding operations shall not be performed below 35 degrees Fahrenheit (°F). Seeding operations shall not be performed when wind exceeds ten (10) miles per hour or, in the opinion of the Engineer, conditions would prevent uniform application of materials or would carry seeding materials into areas not designated for seeding. If wind exceeds ten (10)

miles per hour, the seeding operation shall be evaluated by a Construction PLA and approved by the Engineer. If approved, the contractor shall perform seeding operation close to the ground surface with a hydro-seeding hose and hand-held hose-end sprayer nozzle or other equivalently effective seeding methods to guarantee all seeding materials are applied on the target area without being blown away by wind. The contractor is responsible for protecting ambient air and water quality during the seeding operation.

The contractor shall not expose an area greater than 750,000 square feet (≤ 17.22 acre) at any one location within the project limits until the seeding proposed for that portion of the project has been installed and accepted by the Engineer. Seeding shall be accomplished within 14 days after slopes and disturbed areas have been completed. Seeding operations shall comply with Subsection 104.09 and the applicable portions of Section 203 of the specifications, and as directed by the Engineer.

Frequent mobilizations may be required to accomplish seeding as specified herein. The Department will consider the cost of such multiple mobilizations to be included in the price bid for the seeding. No adjustments will be made to the contract for the number of seeding mobilization activities. Should the contractor fail to provide seeding for a sub-area as specified herein, the Engineer will immediately notify the contractor of such non-compliance. Should the contractor fail to immediately remedy the unstabilized area, the Engineer may suspend work until such seeding stabilization has been completed or proceed to provide the necessary seeding stabilization. The entire cost of such work will be deducted from the monies due or to become due to the contractor. In addition, no adjustment to the contract time will be made for suspensions resulting from the contractor's failure to provide seeding for a sub-area within the time periods specified herein.

3.02 Tillage:

Where equipment can operate, the area to be seeded shall be prepared with a ripper bar, chisel plow, or with other devices to provide thorough soil cultivation to the depth specified below. It is the contractor's responsibility to furnish all suitable equipment for soil tillage at no additional cost to the Department.

Where equipment is not suitable for operation, hand tillage and/or other manual methods shall be utilized as approved by the Engineer. Tillage depth shall follow the requirements specified herein in accordance with assessment/measurement from a Construction PLA, as well as acceptance by the Engineer.

For areas too steep to be prepared for seeding after the slope has been completed, as determined by the Engineer, tillage shall be accomplished with appropriate equipment as the slope is being constructed. On slope areas, all tillage shall be horizontal and parallel to the contours of the areas involved in order to create a roughened surface condition to reduce stormwater runoff velocity and volume. All seeding areas suitable for tillage shall be pre-tilled to promote on-site stormwater infiltration and alleviate stormwater surface runoffs, as a part of stormwater peak flow and Volume Reduction Approaches (VRAs). All seeding areas suitable for tillage shall be adequately pre-tilled to minimize pollutant loads anticipated in nonpoint source stormwater runoffs. All project areas eroded shall be restored to the specified condition, grade, and slope as directed prior to seeding.

Cut slopes shall be prepared with ridges and deep tillage or shall be mini-benched so as to detain rainwater/moisture close to its source. On fill slopes, the operations shall be conducted in such a manner as to form minor ridges thereon to assist in retarding runoff associated erosion/pollution and favor germination of the seed through detaining rainwater/moisture close to its source.

Except as specified herein, slopes shall be constructed in accordance with Subsection 203-3.03(B) of the specifications. Cut slopes flatter than 3:1 (horizontal to vertical) shall be tilled a minimum of 12 inches in depth, and fill slopes flatter than 3:1 shall be tilled to a six-inch minimum depth. All slopes steeper than 3:1, and areas which could potentially be affected by underground utilities, shall be tilled to a minimum six (6) inches in depth, and left in a roughened surface condition as they are constructed.

Track-walking or imprinting of rocky new fill slopes through mechanical methods in lieu of tillage may be allowable if accepted by a Construction PLA, through the Engineer. All final impression marks generated by track-walking or imprinting shall be horizontal and parallel to the contours of slope areas involved in order to create a roughened surface condition and reduce stormwater runoff velocity, enhance erosion/sediment control, as well as energy/velocity dissipation.

Tillage shall be a minimum of two (2) inches in depth for the first ten (10) feet from the toe of AC wedge including shoulder build-up areas (edge of pavement build-up areas) or from the outside edge of curb and gutter.

Care shall be taken during the seeding operations to prevent damage to existing trees and shrubs in the seeding area in accordance with the requirements of Subsection 107.11 of the specifications.

Tillage may require passing the equipment over the area several times to provide thorough soil cultivation. Furrows from the tillage shall be no more than 12 inches apart. No work shall be done when the moisture content of the soil is unfavorable to tillage.

All competitive vegetation shall be uprooted prior to seeding and the soil shall be left in a friable roughened surface condition free of clods or large stones over four (4) inches in any dimension, and other foreign material that would interfere with the seeding operation. Exposed stones larger than four (4) inches shall be removed and disposed of in an approved manner prior to grading and seeding. Invasive and non-native weed species shall be eradicated according to the MISCELLANEOUS WORK (CONTROL OF NOXIOUS PLANTS) of these Special Provisions whenever applicable.

All disturbed soil areas covered with existing chipped wood materials and/or native plant residues, which will not interfere with the tillage operation, shall be tilled for incorporation into the soil along with chemical fertilizer, as well as soil amendments (sulfur and compost) prior to final tillage and seeding.

Regardless of the method of seeding application, all areas prepared with tilling shall have chemical fertilizer and soil amendments (sulfur and compost) uniformly applied and incorporated (disked) into the soil prior to final tillage and seeding.

Chemical fertilizer and sulfur shall be applied at the rate of 200 pounds each per acre. Bulk compost shall be applied at the rate of 15 cubic yards per acre.

Unless otherwise approved by the Engineer, bulk compost shall be applied using broadcast methods to all areas where equipment can be operated. For areas where bulk compost cannot be applied by broadcast methods, as evaluated by a Construction PLA and determined by the Engineer, compost shall be applied hydraulically at the rate specified in Section 2.08 above. Hydraulically applied compost shall not be combined with final mulch cover in the same slurry. However, seed, sulfur and fertilizer may be utilized together with hydraulically applied compost in the same slurry with the approval of the Engineer. Final mulch cover shall be installed on top of all seeded areas as a separate construction sub-phase.

Slopes 3:1 and flatter shall have fertilizer, sulfur, and compost tilled/disked into a minimum of the top four (4) inches of the surface. Slopes steeper than 3:1 shall have fertilizer, sulfur, and compost uniformly broadcast for incorporation into the soil as directed by the Engineer. Unless otherwise operated together with hydraulically applied compost for the approved locations, fertilizer and sulfur shall not be applied hydraulically to areas for seeding.

Tillage shall not be applied for the seeding area below the OHWM.

For mini-benched slopes, fertilizer, compost, and sulfur shall be applied at the specified rates with no tillage or incorporation.

Seeding shall not initiate until all tillage areas and/or mini-benched slopes are accomplished as approved by a Construction PLA through the Engineer.

3.03 Seeding:

(A) General:

Drill seeding with straw mulch shall be considered as the preferred method of seed application when practicable. Unless otherwise approved by the Engineer, drill seeding shall be used for all areas with slopes of 3:1 or less.

Hydroseeding shall be the alternative method for seed distribution for slopes in excess of 3:1, and where drill seeding is not practicable or suitable for soil conditions and seed types, as determined by the Engineer.

Seeds not suitable for drill seeding and hydroseeding methods shall be broadcast manually. Areas to be seeded manually shall be completed after the final soil tillage and prior to any drill or hydroseeding.

Regardless of the seeding method(s), the contractor is responsible to guarantee intimate seed-soil contact. Seed application on top of straw mulch cover or hydraulically applied straw mulch cover shall be rejected. To guarantee intimate seed-soil contact, seed application on top of existing exposed chipped wood materials and/or plant residues ground cover shall be rejected.

Final straw mulch cover or hydraulically applied straw mulch cover shall be applied on all seeded areas, as specified in Sections 3.04 and/or 3.05, within 24 hours of seed application. The seeding application shall be accomplished prior to installation of straw mulch cover or hydraulically applied straw mulch cover. Combining the seed application process with the mulching process will not be acceptable. By implementing Low Impact Development (LID) source-control measure, the contractor shall install a final straw mulch cover or hydraulically applied final straw mulch cover to minimize raindrop splash erosion and wind erosion/dust, as close as possible at the source of disturbance to protect all seeded areas. Thermally-refined wood fiber shall not be utilized solely as final mulch cover to protect all seeded areas. Seeds shall be neither exposed nor visible after the installation of straw mulch cover or hydraulically applied straw mulch cover.

Unless otherwise specified in the Special Provisions, Class II seeding areas shall not be watered after planting.

(B) Drill Method:

After the tillage and incorporation of fertilizer, sulfur, and compost is completed and accepted by the Engineer, seed shall be planted with a drill seeder capable of accurately metering the specific seed mix. Use of a drill seeder shall not damage the prepared seedbed and shall provide a soil cover over the planted seed.

Seed shall be planted approximately 1/4 inch deep, with a maximum depth of 1/2 inch. The distance between the furrows produced using the drill process shall not be more than eight (8) inches. If the furrow openers on the drill exceed eight (8) inches, the area shall be drilled twice. Seeding shall be done with grass seeding equipment with double disc openers, depth bands, packer wheels or drag chains, rate control attachments, seed boxes with agitators and separate boxes for small seeds. Seed of different sizes shall be sowed from at least two (2) separate boxes adjusted or set to provide the planting rate as specified.

(C) Hydroseed Method:

Areas and seed types not suitable for drill-seeding, as determined by the Engineer, shall be hydroseeded. The contract-specified seed shall be applied in a slurry containing 200 pounds of thermally-refined wood fiber and a minimum of 40 pounds tacking agent per acre. Seed shall not be in the slurry for more than 30 minutes. Hydroseeded areas shall have 100 percent (100%) coverage from all directions as evaluated by a Construction PLA, as well as approved by the Engineer. Hydroseeded areas shall also be mulched, as specified in Sections 3.04 or 3.05, within 24 hours of application of the seed.

(D) Manual Application:

Manually applied seeds shall be broadcast evenly to produce uniform distribution over the seeded areas.

3.04 Applying Straw Mulch as Final Mulch Cover on Top of Seeded Areas:

(A) General:

Within 24 hours after each area is planted, straw mulch shall be uniformly applied at the minimum rate of 2 1/2 tons per acre for areas to be crimped and tacked, and minimum two (2) tons per acre for tacked-only areas. Except for edge of pavement build-up areas, and unless otherwise specified by the Engineer, straw mulch shall be applied to all seeded areas. Areas to receive hydraulically applied straw mulch, if directed by the Engineer, shall be mulched in accordance with Section 3.05.

During seeding and mulching operations, care shall be exercised to prevent drifting and displacement of materials. Mulch material, which is placed upon trees and shrubs, roadways, structures, and upon any areas where mulching is not specified, or which is placed in excessive depths on mulching areas, shall be removed as directed. Mulch materials which are deposited in matted condition shall be loosened and uniformly spread to the specified depth over the mulching areas. Any unevenness in materials shall be immediately corrected by the contractor. In addition, the contractor shall minimize production of dust or other airborne particulate matter during application of straw mulch, either by moistening the straw, modifying equipment with misters, or through other means approved by the Engineer.

Except as specified in the next paragraph, straw mulch applied to seeded areas shall be immediately affixed by crimping and tacking after application. No mulch shall be applied to seeding areas which cannot be crimped and/or tacked by the end of each day. Any drifting or displacement of mulch before crimping and/or tacking shall be corrected by the contractor at no additional cost to the Department.

Crimping shall not be required for areas that are steeper than 3:1. Crimping may also be waived, when specifically directed by the Engineer, for drill seeded or hydroseeded areas with rocky conditions or other areas deemed unsuitable by the Engineer for crimping. Straw mulch applied to such areas shall only be tacked, as specified in Subsection 3.04(C) below.

Prior to the application of a tacking agent, protective covering shall be placed on all structures and objects where stains would be objectionable. All necessary precautions shall be taken to protect the traveling public and vehicles from damage due to drifting spray.

(B) Anchorage by Crimping:

Except as specified above in 3.04(A), crimping shall be required for all straw mulched areas. Straw mulch shall be anchored into the soil with a heavy disc. Discs shall be flat and serrated, with at least 1/4-inch thickness having dull edges, and spaced no more than nine (9) inches apart. Straw mulch shall be anchored to a depth of at least two (2) inches and shall not be covered with an excessive amount of soil. Anchoring operations shall be across the slopes where practical, with no more than two (2) passes of the anchoring equipment. Immediately following the crimping operation, the crimped area shall be tacked as specified in Subsection 3.04(C) below.

(C) Anchorage by Tacking:

Straw mulch shall be anchored by tacking, using a slurry consisting of a minimum of 150 pounds of tacking agent, 500 pounds of thermally refined wood fiber mulch, and 300 gallons of water per acre. The contractor may increase the quantities of components to ensure the stability of the straw mulch to provide erosion control during the 45-calendar-day maintenance period at no additional cost to the Department.

3.05 Hydraulically Applied Straw Mulch with Tacking Agent as Final Mulch Cover on Top of Seeded Areas:

Areas seeded but not practical for straw mulch, as determined by the Engineer, shall have hydraulically applied straw mulch with tacking agent applied at the variable rates shown in Table 5 below.

TABLE 5			
Slope (H:V)	Hydraulically Applied Straw Mulch (pounds per acre – dry weight)	Tacking Agent (pounds pure mucilage per acre – dry weight)	Thermally-Refined Wood Fiber (pounds per acre – dry weight)
Flat to 6:1	2,000	150	400
From greater than 6:1 to 3:1	2,500	150	500
Greater than 3:1	3,000	200	600
Erosive Soil Slopes or Highly Erosive Areas*	3,500	250	700
* As determined by Engineer			

The contractor shall submit a batch (tank) mix quantity schedule for mulch application to the Engineer for approval prior to mixing hydraulically applied straw mulch, thermally-refined wood fiber, and tacking agent in a slurry. Batch mixing and coverage will be monitored throughout the seeding operations. The contractor shall coordinate the mixing and application operations with the Engineer in advance of all mixing. Fertilizer or seed shall not be mixed into any slurry for temporary erosion control mulch application. To guarantee intimate seed-soil contact, seed shall not be mixed into any slurry with hydraulically applied straw mulch as final mulch cover.

3.06 Shoulder Build-up Areas — Edge of Pavement Build-up Areas:

Seeding shall be applied to all new earthen and milled asphaltic concrete edge of pavement build-up areas. Edge of pavement build-up areas shall be tilled two (2) inches deep from the toe of AC wedge to the toe of the edge of pavement build-up area prior to seeding.

After the two-inch tillage is complete, compost, fertilizer, seeding, and mulching shall be done in three (3) separate steps. For the first step, fertilizer and compost shall be broadcast evenly over both types of edge of pavement build-up areas. For the next step, seed shall be applied by hydroseeding for both types of areas. For the third step, seeded edge of

pavement build-ups comprised of milled asphaltic concrete shall have hydraulically applied straw mulch and tacking agent applied, and earthen edge of pavement build-up areas shall have straw mulch or hydraulically applied straw mulch applied, with a tacking agent in either case. No crimping shall be required.

The application rate of hydraulically applied straw mulch and tacking agent shall be as specified in Table 5 above.

3.07 Seeding Acceptance:

After application, the Engineer will inspect seeded areas or sub-areas for conformance to the contract requirements. The contractor shall correct, to the satisfaction of the Engineer, any areas not conforming to the specifications. The 45-calendar-day seeding maintenance period will begin upon Initial Seeding Construction Acceptance of an area by a Construction PLA through the Engineer.

The contractor shall maintain and stabilize each area or sub-area, including edge of pavement build-up area(s), for a minimum period of 45 calendar days, after Initial Seeding Construction Acceptance, as evaluated by a Construction PLA, as well as approved by the Engineer. Any areas damaged from erosion, or those that have less than 90 percent (< 90%) of the remaining final mulch cover, shall be re-seeded, re-mulched, and re-tacked at no additional cost to the Department. The Construction PLA shall assess the seeded area in comparison to the pre-established half-acre (0.5 acre) sample demonstrative area for Class II Seeding to determine the necessity of re-seeding, re-mulching, and re-tacking.

A new 45-calendar-day maintenance period for an area is not required after re-seeding work; however, the initial or original period remains in effect.

4.0 Method of Measurement:

Seeding (Class II) will be measured by the acre, to the nearest one acre of ground surface seeded. Measurements will be along the ground surface for the areas seeded and mulched, as approved by the Engineer.

5.0 Basis of Payment:

During pre-activity construction meeting, the contractor in conjunction with Engineer shall verify and be in agreement with the quantity of seeding areas as evaluated by a Construction PLA. The quantity of areas to be seeded shall be in compliance with environmental requirements.

The accepted quantities for Seeding (Class II), measured as provided above, will be paid in two (2) phases corresponding to the application stage and the 45-calendar-day maintenance stage.

Upon completion of the application stage through evaluation by a Construction PLA and acceptance by the Engineer in the presence of contractor, the contractor will be paid 70 percent (70%) of the contract bid price per acre for the completed work. Such price will be considered full compensation for furnishing and applying the contract-specified seed mix,

fertilizers, soil amendments, tillage, mulch materials, and tacking agent, all required testing, as well as all equipment and labor required to complete the work as specified herein.

Upon completion of the 45-calendar-day seeding maintenance stage, and acceptance by a Construction PLA through the Engineer, the contractor will be paid the remaining 30 percent (30%) of the contract bid price per acre for the completed work. Such price will be considered full compensation for seeding maintenance, including all equipment, labor, and materials required to correct deficiencies in seeded, mulched areas, as specified herein.

No measurement or payment will be made for any of the mobilizations required to apply and stabilize the seeding for each area or sub-area, as specified herein, the cost being considered as included in the contract price for Seeding (Class II).

No measurement or payment will be made for traffic control for work during the 45-calendar-day seeding maintenance period.

An adjustment to the contract will be made if a contractor-requested seed substitution is approved as specified in Subsection 2.02(B) above.

ITEM 8101018 EROSION CONTROL (STABILIZED CONSTRUCTION ENTRANCE/EXIT GRAVEL PAD):

Description:

The work under this item shall consist of installing the Erosion/Sediment Control Gravel Pad Best Management Practice (BMP) for Stabilized Construction Entrance/Exit as shown on the project plans, specified herein or determined in the field.

Materials:

The rock mulch shall be Gradation C, angular in shape and conform to the requirements of Subsections 803-2.03 and 810-2.03 of the Specifications. The Bulk Specific Gravity (Saturated Surface Dry) shall be determined in accordance with the requirements of AASHTO T 85 and shall be a minimum of 2.4. Unless otherwise directed by the Engineer, natural river-run materials, especially the rounded natural river rocks/cobblestones and pebbles are not acceptable.

The nonwoven very high survivability geotextile fabric shall conform to the requirements of Subsection 1014-4.04(A) of the Specifications.

Construction Requirements:

The bed for the rock mulch shall be shaped and leveled to provide even surfaces and at a depth to accommodate the rock size and depth of rock mulch as specified on the project plans.

The contractor shall install geotextile fabric when water is applied for construction vehicle/equipment cleaning on gravel pad.

If called out in the plans/details or as directed by the Engineer, the contractor shall add track-out control measure of panel(s) / plate(s) / grate(s) such as corrugated steel panel(s), shaker plate(s), rumble plate(s), rattle grate(s), rumble grate(s), or rattle plate(s), on top of gravel pad, at no additional cost to the Department. When installed, the contractor shall maintain the track-out plate(s) / grate(s) control measure in a stable and safe working condition for the duration of the contract time.

The contractor shall remove and dispose of all rock mulch and geotextile fabric when project gravel pad is no longer in use. The gravel pad area shall be backfilled, graded and compacted in accordance with the requirements of Subsection 202-3 of the Specifications.

Method of Measurement:

Item 8101018 — Erosion Control (Stabilized Construction Entrance/Exit Gravel Pad) will be measured by the square yard installed.

Basis of Payment:

The accepted quantities of Item 8101018 — Erosion Control (Stabilized Construction Entrance/Exit Gravel Pad), measured as provided above, will be paid for at the contract price per square yard, which price shall be full compensation for the work including excavation, backfill, grading, and compaction, complete in place.

No measurement of direct payment will be made for removal of the gravel pad and re-grading of the area to pre-construction conditions, the cost considered as included in the cost of contract item.

SECTION 810 — EROSION CONTROL AND POLLUTION PREVENTION

810-2.03 Riprap and Rock Mulch: the Gradation C Rock Mulch table of the Standard Specifications is revised to read:

Gradation C Rock Mulch (fractured/crushed rocks in angular shape)	
<u>Sieve Size</u>	<u>Percent Passing</u>
3.75 Inch	100
3 Inch	55 — 85
2 Inch	15 — 55
1 Inch	0 — 15

(912FIBER, 06/16/22)

SECTION 912 SHOTCRETE:

912-1 Description: of the Standard Specifications is revised to read:

The work under this section shall consist of furnishing all materials and applying shotcrete on prepared surfaces at the locations and in accordance with the details shown on the plans and the requirements of the specifications.

Shotcrete shall be mortar or concrete conveyed through a hose and pneumatically applied using the wet mix process.

The wet mix process shall consist of premixing by mechanical methods a proportional combination of Portland cement, supplementary cementitious material, aggregate, and water required to produce mortar or concrete; conveying the mortar or concrete through the delivery hose to the special nozzle where additional compressed air is added at the nozzle prior to its discharge.

912-2.03 Admixtures: of the Standard Specifications is revised to read:

Admixtures shall conform to the requirements of Subsection 1006-2.04 of the specifications.

Air-entraining admixtures will be required for shotcrete placed at an elevation of 3,000 feet or above and the air content shall be 7 percent plus or minus 2 percent, when measured prior to pumping. At other elevations, air entraining admixtures may be used at the discretion of the contractor/mix designer and shall conform to the approved mix design. Air content will be measured in accordance with AASHTO T 152.

912-2 Materials and Equipment: of the Standard Specifications is modified to add:

912-2.07 Synthetic Fiber:

Microfiber may be used for control of plastic shrinkage. Macrofiber may be used to provide the residual strength. The dosage rate of either product shall be as specified by the mix design.

Fibers shown on the Department's Approved Product List (APL) and meeting the requirements specified herein shall be used as reinforcement. Copies of the most current version of the APL are available on the internet from the ADOT Research Center through its Product Evaluation Program. Fibers other than those listed on the APL that meet with the requirements specified herein may be considered for use as specified in Subsection 106.14 of the specifications, upon Engineer's approval.

Fiber reinforcement shall conform to the requirements of ASTM C1116 and ASTM D7508. Fiber reinforcement shall be polymeric, made from 100 percent virgin materials, non-corrosive, non-magnetic, and 100 percent alkali free.

Microfiber shall have a diameter of less than 0.012 in. (0.3 mm) and be clearly defined as a microfiber on the manufacturers technical data sheets.

Macrofiber shall have a minimum diameter of 0.012 in. (0.3 mm) and be clearly defined as a macrofiber on the manufacturers technical data sheets

The specific type, size, and quantity of fiber shall be determined by the mix designer and approved by the Engineer.

912-3.01 Proportioning and Mixing: of the Standard Specifications is revised to read:

(A) Wet Mix Process:

(1) Premixed Mortar:

Premixed mortar shall consist of not less than 564 pounds of combined Portland cement and supplementary cementitious material per cubic yard, fine aggregate, chemical and/or air-entraining admixtures, and water mixed to a desired consistency, generally to a slump in the range of 1-1/4 to 4 inches.

The material may be mixed at a central mixing plant or at the project site. If mixing is done at the project site, the mixer shall be capable of thoroughly mixing the specified materials in sufficient quantity to maintain continuous placing of the mortar.

(2) Concrete:

The contractor shall determine the mix proportions and shall furnish concrete for pneumatic placement which contains a minimum of 658 pounds of combined Portland cement and supplementary cementitious material per cubic yard of concrete and which attains a minimum 28-day compressive strength of 3,000 pounds per square inch, unless otherwise specified. Fine aggregate and coarse aggregate shall conform to the requirements of Subsection 912-2.02. The total mix shall contain 15 to 20 percent coarse aggregate, by weight. The water/cementitious material ratio shall not exceed 0.50. In no case shall the slump be greater than 4 inches.

If ready-mixed concrete is used, it shall conform to the requirements of ASTM C 94.

If microfiber is used in the mix design, the dosage rate shall be determined to provide a minimum of 40% reduction in plastic shrinkage cracking when tested in accordance with ASTM C1579.

If macrofiber is used in the mix design, the dosage rate shall be determined to meet either the average equivalent flexural strength, or residual strength at a deflection of L/150, fd150 determined in accordance with ASTM C1609, using a load support apparatus compliant with the requirements of ASTM C1812

912-3.04 Steel Reinforcement: of the Standard Specifications is revised to read:

Reinforcement shown on the plans shall consist of continuous steel reinforcement conforming to the requirements of Section 605 of the specifications or synthetic fiber reinforcement meeting requirements of Subsection 912-3.01 of the specifications which meet or exceed the performance of the steel required in Section 605 of the specifications.

912-3.08 Finishing: of the Standard Specifications is revised to read:

The shotcrete shall be placed as nearly as practicable to the required thickness and shape outlined by forms and ground wires. Unless otherwise specified, the surface of the shotcrete shall have a natural gun finish.

(913BKPRT, 02/18/21)

SECTION 913 - BANK PROTECTION: of the Standard Specifications is revised to read:

913-1 Description:

The work under this section shall consist of furnishing all materials and constructing bank protection in accordance with the details shown on the plans and the requirements of the specifications.

Bank protection shall be dumped riprap, grouted riprap, wire tied riprap, riprap in wire baskets or gabions, soil-cement, and other types of bank protection and shall be constructed at the locations and as shown on the plans.

913-2 Materials:

913-2.01 Riprap Bank Protection:

(A) Rock:

Rock shall be sound and durable, free from clay or shale seams, cracks or other structural defects.

The bulk (SSD) specific gravity of the rock shall be a minimum of 2.4 as determined in accordance with the requirements of Arizona Test Method 210.

Rock used to construct dumped riprap shall be angular in shape. Rock used to construct other types of bank protection may be rounded stones or boulders. Rock shall have a least dimension not less than one-third of its greatest dimension and a gradation in reasonable conformity with that shown herein for the various types of bank protection. Control of the gradation will be by visual inspection.

When a source of rock is designated by the Department, it shall be the contractor's responsibility to negotiate for the material, obtain the right-of-way, and pay all royalties and damages.

The acceptability of the rock will be determined by the Engineer by visual inspection and/or testing. If testing is required, suitable samples of rock shall be taken in the presence of the Engineer at least 25 days in advance of its expected use. The approval of some rock fragments from a particular quarry site shall not be construed as constituting the approval of all rock fragments taken from that quarry.

During construction of the bank protection, the contractor shall provide two samples of rock for the intended use. The amount of each sample for dumped riprap and riprap (slope mattress) shall be at least five tons. The amount of each sample for grouted riprap, wire tied riprap, gabions, and rail bank protection shall be at least 500 pounds. One sample shall be provided at the construction site and may be a part of the finished bank protection. The other sample shall be provided at the quarry. These samples will be used as a frequent reference for judging the gradation of the rock supplied. Any difference of opinion between the Engineer and the contractor shall be resolved by checking the gradation of two random samples of the rock.

Material that is deemed unacceptable by the Engineer shall be replaced with acceptable material at no additional cost to the Department.

(1) Grouted Riprap:

Gradation of the rock for grouted riprap shall be as specified in the Special Provisions or as shown on the plans.

(2) Wire Tied Riprap:

Rock for wire tied riprap shall be well graded with at least 95 percent exceeding the least dimension of the wire mesh opening. The maximum size rock, measured normal to the mat, shall not exceed the mat thickness.

(3) Dumped Riprap:

Gradation of the rock for dumped riprap shall be as shown on the plans or as specified in the Special Provisions.

All equipment, sorting sites, and labor needed to check gradation shall be provided by the contractor at no additional cost to the Department.

(4) Gabions:

Rock for gabions shall be well graded, varying in size from 4 to 8 inches.

(5) Riprap (Slope Mattress):

Rock for slope mattress shall be well graded with 70 percent exceeding three inches. The maximum dimension of a single rock shall not exceed the least dimension of the gabion.

(6) Rail Bank Protection:

Rail bank protection rock shall be well graded, varying in size from 4 to 12 inches.

(B) Metal Items:

(1) Wire Fabric:

Welded wire fabric shall be galvanized and shall conform to the requirements of AASHTO M 336, except that the minimum weight of the zinc coating shall be 0.15 ounces per square foot of actual surface.

Woven wire fabric shall be galvanized and shall conform to the requirements of ASTM A116, except that the minimum weight of the zinc coating shall conform to the requirements of ASTM A641, Class 3.

Wire fabric shall be of the diameter, spacing, pattern, and dimensions shown on the plans. The selvage on each sheet of mesh shall be galvanized steel wire with a minimum diameter 25 percent larger than that used in the body of the mesh.

Certificates of Compliance conforming to the requirements of Subsection 106.05 of the specifications shall be submitted to the Engineer.

(2) Miscellaneous Fittings and Hardware:

Miscellaneous fittings and hardware shall be of the type and size provided by the manufacturer of the major item to which they apply and shall be galvanized in accordance with the requirements of AASHTO M 232.

Certificates of Compliance conforming to the requirements of Subsection 106.05 of the specifications shall be submitted to the Engineer.

(3) Tie Wires:

Tie wires shall be of good commercial quality and the size shall be as shown on the plans, except that the minimum weight of the zinc coating shall conform to the requirements of ASTM A641, Class 3. The contractor may use approved wire fasteners on gabions, slope mattresses, or wire fabric in lieu of tie wires.

Certificates of Compliance conforming to the requirements of Subsection 106.05 of the specifications shall be submitted to the Engineer.

(4) Steel Cable:

Steel cable shall be zinc-coated steel structural wire rope conforming to the requirements of ASTM A475, seven-wire strand, Class A, for the diameter shown on the plans.

Certificates of Compliance conforming to the requirements of Subsection 106.05 of the specifications shall be submitted to the Engineer.

(5) Railroad Rail:

Railroad rails may be new or used. If used rails are furnished, they shall be free from rust and equal to at least 95 percent of the original section.

(6) Soil Anchor Stakes:

Soil anchor stakes shall be made of steel and of the length shown on the plans. When not specified to be railroad rails, the following items may be used: crane rails with a weight of at least 40 pounds per linear foot, 2-inch diameter steel pipe conforming to the requirements of ASTM A53, or 3-inch by 3-inch by 3/8-inch structural steel angles conforming to the requirements of ASTM A36. Used rails, pipes or angles may be used provided the material is not rusted or damaged to the extent that the strength of the item is reduced to less than 90 percent of a new item of the same type and size.

Certificates of Compliance conforming to the requirements of Subsection 106.05 of the specifications shall be submitted to the Engineer.

(C) Bedding Material:

Bedding material shall consist of granular material having a maximum dimension of 2 inches and shall be free of clay or organic material.

(D) Grout:

Grout shall consist of Portland cement, aggregate, and water. It may also contain supplementary cementitious material. Portland cement, aggregate, water, and supplementary cementitious material shall conform to the requirements of Section 1006 of the specifications. Chemical admixtures may be used and shall conform to the requirements of Subsection 1006-2.04 of the specifications, except no admixtures containing chlorides or nitrates shall be used. Air-entraining admixtures, conforming to the requirements of Subsections 1006-2.04 and 1006-3.01(E) of the specifications, shall be required for grout placed at elevations of 3000 feet or above.

The grout shall meet the requirements shown in table 1:

Table 1			
Minimum Cementitious Material Content: Lbs per CY (See Note 1)	Maximum Water/Cementitious Material Ratio (w/cm): Lb./Lb.	Slump: Inches (See Note 2)	Air Content: Percent (See Note 3)
850	0.60	9 ± 2	0 – 8
Notes: (1) A maximum of 25 percent of the cementitious material, by weight, may consist of an approved Class F fly ash, conforming to the requirements of ASTM C618. (2) The slump shall be in the appropriate range to permit gravity flow into the interstices with limited spading and brooming. The consistency of the grout shall be as approved by the Engineer. (3) For placement of grout at elevations of 3000 feet or above, the air content shall be a minimum of 4 percent and a maximum of 8 percent.			

The mix shall consist of fine aggregate; however, the contractor may use No. 8 coarse aggregate in the grout. If No. 8 coarse aggregate is used, the volume shall be a maximum of 35 percent of the total aggregate volume.

For plant-mixed grout, the proportioning, mixing, and placing shall be in accordance with the applicable requirements in Section 1006 of the specifications.

For on-site mixing, grout that has been mixed more than one hour shall not be used.

Retempering of grout will not be permitted.

(E) Bank Protection Fabric:

Fabric shall be supplied in accordance with and conform to the material requirements of Subsections 1014-1 and 1014-5 of the specifications, respectively. Special attention shall be given to the required survivability of the fabric.

The identification, packaging, handling, and storage of the geotextile fabric shall be in accordance with ASTM D4873. Fabric rolls shall be furnished with suitable wrapping for protection against moisture and extended ultraviolet exposure prior to placement. Each roll shall be labeled or tagged to provide product identification sufficient to determine the product type, manufacturer, quantity, lot number, roll number, date of manufacture, shipping date, and the project number and name to which it is assigned. Rolls shall be stored on-site or at another storage location in a manner which protects them from the elements. If stored

outdoors, rolls shall be elevated and protected with a waterproof, light colored, opaque cover. At no time, shall the fabric be exposed to sunlight for a period exceeding 14 days.

(F) Sacked Concrete:

Sacked concrete shall be utility concrete conforming to the requirements of Section 922 of the specifications, except that the minimum cement content shall be 376 pounds per cubic yard; the slump shall be from 3 to 5 inches; and the aggregate shall conform to the gradation requirements shown in table 2 when tested in accordance with the requirements of Arizona Test Method 201:

Table 2	
Sieve Size	Percent Passing
2 inch	100
1/4 inch	45 - 89
No. 200	0 -12

Sacks for sacked concrete riprap shall be made of at least AASHTO M 182, Class 3, burlap and shall be approximately 19-1/2 by 36 inches measured inside the seams when the sack is laid flat, with an approximate capacity of 1-1/4 cubic feet. Sound, reclaimed sacks may be used.

913-2.02 Soil-Cement Bank Protection:

(A) Hydraulic Cement, Fly Ash, and Water:

Hydraulic cement, fly ash, and water shall conform to the requirements of Subsection 1006-2 of the specifications.

(B) Soil-Aggregate:

The source of soil-aggregate materials shall be the responsibility of the contractor. The contractor shall be solely responsible for the construction of the stockpile(s), including monitoring for quality and uniformity of the material placed therein. The soil-aggregate used in the soil-cement mixture shall consist of stones, gravel or other approved inert material of similar characteristics, and shall be clean and free from vegetable matter and other deleterious substances. Soil-cement aggregate shall conform to the gradation requirements shown in table 3 when tested in accordance with Arizona Test Method 201:

Table 3	
Soil-Cement Aggregate	
Sieve Size	Percent Passing
1-1/2 in	98 - 100
No. 4	60 - 90
No. 200	5 - 15

Class 2 ABC may be used in-lieu of aggregate meeting the requirements of the table 3. The contractor may submit a request to use alternate material to the Engineer for review and approval.

The Plasticity Index shall be a maximum of seven when tested in accordance with the requirements of AASHTO T 90.

Clay lumps larger than 1 inch shall be removed.

When soil-aggregates are stored on the ground, the sites for the stockpiles shall be clear of all vegetation and level. The bottom six inch layer of aggregate stored on the ground shall not be disturbed or used.

The debris or waste material resulting from the clearing and preparing of the site shall be disposed of in accordance with Subsection 201-3.02 of the specifications.

(C) Mix Design Requirements for Soil-Cement Bank Protection:

Utilizing soil-aggregate, cementitious material, and water, a mix design conforming to the requirements specified herein shall be formulated and submitted by the contractor to the Engineer for approval prior to incorporating any of the material into the work.

The amount of cement shall be determined by laboratory testing by the contractor in accordance with Arizona Test Method 220. For mix design purposes only, the cement content of the soil-cement mixture shall be determined as the cement content which yields a seven day compressive strength of 1250 psi for the soil-cement mixture.

The percent of cement to be used in the mix shall be calculated to be the weight of cement divided by the total weight of the dry compacted soil-cement.

Included in the mix design data shall be the grade of cement, brand of fly ash, and the source of aggregate. A new mix design shall be submitted for approval any time the contractor requests a change in soil-aggregate source from that given in the approved mix designs.

913-3 Construction Requirements:

913-3.01 Riprap Bank Protection:

Areas on which bank protection is to be constructed shall be cleared, grubbed, and excavated or backfilled in accordance with the requirements of the appropriate sections of Division II to produce a ground surface in reasonable conformance with the lines and grades shown on the plans or established by the Engineer.

Placement through water will not be permitted unless otherwise approved by the Engineer.

Areas which are excavated for installation of rail bank protection shall be backfilled to original ground or to the lines and grades shown on the plans.

(A) Bank Protection Fabric:

When fabric is required, it shall be placed in the manner and at the locations shown on the plans. The surface to receive the fabric shall be free of obstructions, depressions and debris. The fabric shall be loosely laid and not placed in a stretched condition.

The strips shall be placed to provide a minimum 24 inches of overlap for each joint. On horizontal joints, the uphill strip shall overlap the downhill strip. On vertical joints, the upstream strip shall overlap the downstream strip. The fabric shall be protected at all times during construction from extensive exposure to sunlight.

When the maximum size of the rock to be placed on fabric exceeds 18 inches, the fabric shall be protected during the placement of the rock by a layer of bedding material. The bedding material shall be spread uniformly on the fabric to a depth of 4 inches and shall be free of mounds, dips or windrows. Compaction of the bedding material will not be required.

Rock shall be carefully placed on the bedding material and fabric in such a manner as not to damage the fabric. If, in the opinion of the Engineer, the fabric is damaged or displaced to the extent that it cannot function as intended, the contractor shall remove the rock, regrade the area if necessary, and replace the fabric.

(B) Dumped Riprap:

The rock shall be placed to its specified thickness in one operation and in a manner which will produce a reasonably well graded mass with a minimum amount of voids and with the larger rock evenly distributed throughout the mass.

No method of placing the rock that will cause segregation will be allowed. Hand placing or rearranging of individual rock may be necessary to obtain the specified results.

(C) Wire Tied Riprap:

After installation of the lower portion of the wire mesh, rock shall be placed in accordance with the requirements of Subsection 913-3.01(B) of the specifications.

After placement of the rock, the upper portion of the wire mesh shall be placed, laced, and tied in accordance with the details shown on the plans.

(D) Grouted Riprap:

Rock for grouted riprap shall be placed in accordance with the requirements of Subsection 913-3.01(B). The stones shall be thoroughly moistened and any excess of fines shall be sluiced to the underside of the stone blanket before grouting.

The grout may be delivered to the place of final deposit by any means that will ensure uniformity and prevent segregation of the grout. If penetration of grout is not obtained by gravity flow into the interstices, the grout shall be spaded or rodded to completely fill the voids in the stone blanket. Pressure grouting shall not unseat the stones, and during placing by this method, the grout shall be spaded or rodded into the voids.

Penetration of the grout shall be to the depth specified on the plans. When a rough surface is specified, stones shall be brushed until 25 to 50 percent of the depth of the maximum size stone is exposed. For a smooth surface, grout shall fill the interstices to within 1/2 inch of the surface.

Grout shall not be placed when the descending air temperature falls below 40 degrees Fahrenheit nor until the ascending air temperature rises above 35 degrees Fahrenheit. Temperatures shall be taken in the shade away from artificial heat.

Curing of the grout shall be in accordance with the requirements of Subsection 912-3.09 of the specifications.

The contractor may use shotcrete conforming to the requirements of Section 912 of the specifications in lieu of grout.

(E) Slope Mattress Riprap:

The mattress bed shall be excavated to the width, line and grade as shown on the plans. The mattress shall be founded on this bed and laid to the lines and dimensions required.

Excavation for toe or cut-off walls shall be made to the neat lines of the wall.

Mattresses shall be fabricated in such a manner that the sides, ends, lid and diaphragms can be assembled at the construction site into rectangular units of the specified sizes. Mattresses are to be of single unit construction, the base, ends and sides either to be woven into a single unit or one edge of these members connected to the base section of the unit in such a manner that strength and flexibility at the point of connection is at least equal to that of the mesh.

All perimeter edges of the mattresses are to be securely selvaged or bound so that the joints formed by tying the selvages have at least the same strength as the body of the mesh.

Mattresses shall be placed to conform to the details shown on the plans. Stones shall be placed in close contact within the unit so that maximum fill is obtained. The units may be filled by machine with sufficient hand work to accomplish the requirements of this specification.

Broken concrete shall not be used in slope mattresses.

Before the mattress units are filled, the longitudinal and lateral edge surfaces of adjoining units shall be tightly connected by means of wire ties placed every four inches or by a spiral tie having a complete loop every four inches. The lid edges of each unit shall be connected in a similar manner to adjacent units. The slope mattress shall be anchored as shown on the plans. Each anchor stake shall be fastened to the cover mesh with a tie wire.

(F) Gabions:

The gabion bed shall be excavated to the width, line and grade as shown on the plans. The gabions shall be founded on this bed and laid to the lines and dimensions required.

Excavation for toe or cut-off walls shall be made to the neat lines of the wall.

Gabions shall be fabricated in such a manner that the sides, ends, lid and diaphragms can be assembled at the construction site into rectangular units of the specified sizes. Gabions are to be of single unit construction, the base, ends and sides either to be woven into a single unit or one edge of these members connected to the base section of the unit in such a manner that strength and flexibility at the point of connection is at least equal to that of the mesh.

Where the length of the gabion exceeds its horizontal width, the gabion is to be equally divided by diaphragms, of the same mesh type as the body of the gabions, into cells whose length does not exceed the horizontal width. The gabion shall be furnished with the necessary diaphragms secured in proper position on the base section in such a manner that no additional tying at this juncture will be necessary.

All perimeter edges of gabions are to be securely selvaged or bound so that the joints formed by tying the selvages have at least the same strength as the body of the mesh.

Gabions shall be placed to conform to the details shown on the plans. Stones shall be placed in close contact in the unit so that maximum fill is obtained. The units may be filled by machine with sufficient hand work to accomplish requirements of this specification.

The exposed face or faces shall be hand-placed using selected stones to prevent bulging of the gabion cell and to improve appearance. Each cell shall be filled in three lifts.

Two connecting tie wires shall be placed as shown on the plans between each lift in each cell.

Care shall be taken to protect the vertical panels and diaphragms from being bent during filling operations.

The last lift of stones in each cell shall be level with the top of the gabion in order to properly close the lid and provide an even surface for the next course.

All gabion units shall be tied together each to its neighbor along all contacting edges in order to form a continuous connecting structure.

Empty gabions stacked on filled gabions shall be laced to the filled gabion at the front, side and back.

(G) Sacked Concrete Riprap:

The sacks shall be filled with concrete, loosely packed so as to leave room for folding or tying at the top. Approximately one cubic foot of concrete shall be placed in each sack.

Immediately after filling, the sacks shall be placed according to the details shown on the plans and lightly trampled to cause them to conform with the earth face and to adjacent sacks in place.

The first two courses shall provide a foundation of double thickness. The first foundation course shall consist of a double row of stretchers laid level and adjacent to each other in a neatly trimmed trench. The trench shall be cut back into the slope a sufficient distance to enable proper subsequent placement of the riprap. The second foundation course shall consist of a row of headers placed directly above the double row of stretchers. The third and remaining courses shall consist of a double row of stretchers and shall be placed in such a manner that joints in succeeding courses are staggered.

All dirt and debris shall be removed from the top of the sacks before the next course is laid thereon. Stretchers shall be placed so that the folded ends will not be adjacent. Headers shall be placed with the folds toward the earth face. Not more than four vertical courses of sacks shall be placed in any tier until initial set has taken place in the first course of any such tier.

When there will not be proper bearing or bond for the concrete because of delays in placing succeeding layers of sacks, a small trench shall be excavated back of the row of sacks already in place, and the trench shall be filled with fresh concrete before the next layer of sacks is laid. The size of the trench and the concrete used for this purpose shall be approved by the Engineer. The Engineer may require header courses at any level to provide additional stability to the riprap.

Sacked concrete riprap shall be cured by being covered with a blanket of wet earth or by being sprinkled with a fine spray of water every two hours during the daytime for a period of four days.

(H) Rail Bank Protection:

Excavation, where required for rock fill, shall be performed in reasonably close conformity to the lines and grades established or shown on the plans.

Rails shall be driven at the locations and to the minimum penetrations shown on the plans. Driving equipment shall be capable of developing sufficient energy to drive the rails to the specified minimum penetration and be approved by the Engineer.

If hard material is encountered during driving before minimum penetration is reached and it has been demonstrated to the satisfaction of the Engineer that additional attempts at driving would result in damage to the rails, the Engineer may order additional work to be performed, such as jetting or drilling, in order that minimum penetration may be obtained or the Engineer may order the minimum penetration to be reduced as required by the conditions encountered.

Wire fabric shall be securely fastened to the rails, placed in the trenches and laid on the slopes. The rock backfill shall then be carefully placed so as not to displace the wire fabric or rails. The wire fabric shall entirely enclose the rock backfill.

The completed rock fill shall be backfilled as necessary and the waste material disposed of as directed by the Engineer.

913-3.02 Soil-Cement Bank Protection:

Soil-cement bank protection construction shall include excavating, backfilling, and grading the wash bed and banks to the lines, grades and cross sections shown on the plans or established by the Engineer; furnishing and mixing aggregate, cement, fly ash and water; and spreading, compacting, and curing the mixture.

The contractor shall investigate for ground water as soon as possible. If there is a need for dewatering, the contractor shall provide to the Engineer for review a comprehensive dewatering plan a minimum of two weeks before construction starts. The dewatering plan shall address any water quality requirements of the Corps of Engineers permit and ADEQ certification. Dewatering activities shall not begin until the Engineer has approved the plan.

The dewatering shall comply with all laws and permit requirements.

If changes to the approved dewatering plan are required, the contractor shall submit a revised plan to the Engineer for approval.

For soil-cement bank protection, the contractor shall be responsible for quality control as necessary to meet the requirements established herein. The contractor shall monitor the complete mix during construction of soil-cement, including the amounts of cement and fly ash used.

(A) Required Contractor Submittals:

Two weeks prior to the start of the soil-cement bank protection construction, the contractor shall submit in writing to the Engineer for approval, the following items:

- (1) The type of spreading and compaction equipment to be used.
- (2) The number and type of watering equipment to be used.
- (3) The method used to keep surfaces continuously moist until subsequent layers of soil-cement are placed.
- (4) The method used to cure permanently exposed surfaces.
- (5) The proposed source of soil-aggregate.
- (6) The proposed source(s) of Portland cement and fly ash (if used).
- (7) The approximate length of soil-cement bank protection or area of soil-cement to be placed each day prior to starting placement and compaction operations, on a daily basis.
- (8) The soil-cement mix design.

Such submittals shall not relieve the contractor of the responsibility for achieving the desired result of constructing sound soil-cement, free from defects, according to the specifications and plans, or as directed by the Engineer. Changes in the source(s) of cement or fly ash will not be permitted without the prior approval of the Engineer.

(B) Preparation of Subgrade:

Before placement of the soil-cement, the area to be treated shall be graded and shaped to the lines and grades as shown on the plans. The subgrade shall be compacted to a minimum of 95 percent of the maximum dry density determined in accordance with Arizona Test Method 225. The subgrade shall be compacted at a moisture content within two percentage points of the optimum moisture content determined in accordance with Arizona Test Method 225.

When the embankment material is composed predominantly of rock such that these compaction control procedures will not indicate the density achieved, the Engineer will determine the amount of compaction required and the adequacy of equipment used in obtaining the required compaction. Immediately prior to placement of the soil-cement mixture, the subgrade within the lines and grades of the plans shall be moistened and any soft or yielding subgrade shall be corrected and made stable before construction proceeds in accordance with requirements of Subsection 203-5.03(A) of the specifications. Any additional subgrade reparations required outside of the lines and grades shown on the plans, as determined by the Engineer, shall be repaired by the contractor and paid for by Force Account.

(C) Mixing Plant:

Aggregate and cementitious materials for the soil-cement shall be proportioned and mixed in a central mixing plant. The mixing plant shall be either of the batch-mixing type using revolving blade, rotary drum mixers, or of the continuous mixing type using a stationary twin shaft pug mill mixer. The aggregate, fly ash, and cement shall be proportioned by weight. The mixing plant shall be designed, coordinated, and operated to produce a soil-cement mixture of the proportions specified within required tolerances.

If the soil-cement temperatures measured at the mixer are 85 degrees Fahrenheit or less, the placing and compaction shall be completed within 1-1/2 hours of the batch time. If soil-cement temperatures measured at the mixer are greater than 85 degrees Fahrenheit but less than 96 degrees Fahrenheit, placing and compaction shall be completed within 1 hour of the batch time. If soil-cement temperatures are 96 degrees Fahrenheit or greater when measured at the mixer, the contractor shall take immediate steps to lower the batch plant mix temperature to 95 degrees Fahrenheit or below, and follow the above time limits as mix temperature dictates, prior to further placement and compaction of soil-cement materials.

The water shall be proportioned by weight or volume and there shall be means by which the Engineer may readily verify the amount of water utilized per batch or the rate of water flow utilized for continuous mixing.

(1) Measuring Devices:

The mixing plant shall record the quantity of the material, shall have a digital readout, and shall provide daily printed record such that the total discharged quantity per hour and the cumulative total quantity are displayed.

Measuring devices shall be calibrated and approved by the Engineer.

Each weight measuring device shall be calibrated to an accuracy of 0.2 percent and shall be inspected and calibrated as often as the Engineer deems necessary to assure their accuracy.

Each volume measuring device shall be calibrated to an accuracy of ± 1.5 percent and shall be inspected and calibrated as often as the Engineer deems necessary to assure their accuracy.

(2) Batch Mixing:

The mixer shall be equipped with a sufficient number of paddles of a type and arrangement to produce a uniformly mixed batch. The mixer shall be equipped with a timing device which will indicate, by a definite audible or visual signal, the expiration of the mixing period. The device shall be accurate to within two seconds. The allowable tolerance for weight batching of aggregates and cementitious material shall be two percent and 0.5 percent, respectively, for each batch.

The batch mixing plants shall provide sampling facilities which are satisfactory to the Engineer and which allow representative samples of the soil-aggregate mixture prior to the addition of water and cementitious material to be obtained easily and safely. Samples of the soil-aggregate will be taken at this point to determine conformance to the gradation and plasticity requirements listed in Subsection 913-2.02(B) of the specifications.

(3) Continuous Mixing:

Aggregates shall be drawn from the storage facility by a feeder or feeders which will continuously supply the correct amount of soil-aggregate in proportion to the cementitious material.

A control system shall be provided that will automatically close down the plant when material in any storage facility approaches the strike off capacity of the feed gate. The plant will not be permitted to operate unless this automatic control system is in good working condition. The feeder for the soil-aggregate shall be mechanically or electrically driven.

Continuous mix plants shall provide sampling facilities which are satisfactory to the Engineer and which allow representative samples of the soil-aggregate mixture prior to the addition of water and cementitious material to be obtained easily and safely. Samples of the soil-aggregate will be taken at this point to determine conformance to the gradation and plasticity requirements listed in Subsection 913-2.02(B) of the specifications.

(4) Blending of Cement and Fly Ash:

The blending procedure shall be sufficient to provide a uniform, thorough, and consistent blend of cement and fly ash. The blending method and operation shall be approved by the Engineer prior to the commencement of soil-cement production. During blending of the cementitious materials, the percent of fly ash content shall not vary by more than ± 0.5 percent of the content approved by the Engineer.

Weight measuring devices are required at both the cement and fly ash feeds. At the direction of the Engineer, an additional measuring device may also be required when the cement and fly ash are pre-blended at the site. In the production of the soil-cement mixture, the percent of cementitious material shall not vary by more than ± 0.5 percent of the contents approved by the Engineer.

Silos and feeders shall be equipped and operated so as to provide uniform rates of feed and prevent caking. The charge in the batch mixer or rate of feed to the continuous mixer shall not exceed that which will permit complete mixing of all the mix material. Provisions shall be made to allow for ready sampling of the cementitious materials.

(D) Transporting, Spreading, and Compaction:

The soil-cement mixture shall be transported from the mixing plant to the construction site in clean hauling equipment vehicles outfitted with suitable covers to protect the mixture in unfavorable weather.

Spreading of the soil-cement mixture shall be accomplished using equipment that will produce uniform layers of the width and thickness necessary to provide for adequate compaction in conformance with the required dimensions shown on the plans for completed soil-cement layers. Where the soil-cement is to be placed in confined areas, the lifts may be spread by other methods as approved by the Engineer.

The layers of soil-cement shall not exceed 12 inches after compaction, or be less than four inches thick after compaction, unless the contractor can demonstrate the ability to place thicker layers with the equipment being utilized in the control strip. If potholing is performed to allow testing of each lift, the recompacted material used to repair the pothole shall also be tested and meet the requirements of this specification. Each successive layer shall be placed as soon as practicable after the preceding layer is completed, and approved by the Engineer. The maximum depth of compacted soil-cement that shall be placed per day in each location is four feet, unless approved by the Engineer.

Prior to spreading new material on a previously compacted lift which has cured for more than 1-1/2 hours, or if the surface has dried due to temperature and/or wind effects, scarification of the lift shall be performed parallel with the direction of placement using equipment approved by the Engineer. The scarification shall be performed to a depth of at least two inches, spaced between 18 and 24 inches. The Engineer may waive requirements for scarification if compaction is performed by means which provide an appropriate surface for bonding with the subsequent layer.

All construction equipment, including water spray trucks, shall be restricted from entering scarified surface areas during the interim between spreading and compaction operations.

If the surface cannot be scarified, the surface shall have cement grout slurry applied to ensure a proper bonding between lifts. The cement slurry shall have a water/cement ratio between 0.70 and 0.80 and be approved for use by the Engineer prior to placement of any additional soil-cement mixture.

All soil-cement surfaces that will be in contact with succeeding layers of soil-cement shall be kept continuously moist by fog spraying until placement of the subsequent layer, provided that the contractor will not be required to keep such surfaces continuously moist for a period longer than seven days. Mixing and placing shall not proceed when the soil-aggregate or the area on which the soil-cement is to be placed is frozen. Soil-cement shall be mixed and placed when the air is at least 40 degrees Fahrenheit and rising.

(E) Monitoring Moisture Content in the Field:

Control of water content by the contractor in the field shall be accomplished in two ways:

(1) The moisture-density relationship for the soil-cement mixture shall be determined in accordance with Arizona Test Method 221 on a routine basis, or when any significant gradation shift or rock content change occurs.

(2) The actual moisture content of the mixture at the time of compaction, or shortly thereafter, shall be determined in accordance with Arizona Test Method 235 to determine if the optimum moisture content as determined by Arizona Test Method 221 is being maintained. The water content in the soil-cement mixture is to be continuously monitored, and the mixing water shall be adjusted at the plant as necessary to achieve the compressive strength and compaction requirements specified herein.

(F) Quality Control Compaction Testing:

Soil-cement shall be uniformly compacted to a minimum of 98 percent of the maximum dry density determined in accordance with Arizona Test Method 221. A running average of five consecutive in place density tests shall not be less than 100 percent of maximum density as monitored by nuclear density tests in accordance with Arizona Test Method 235. Compaction shall be performed within 2 percentage points of the optimum moisture content as determined in accordance with Arizona Test Method 221. Quality control density and moisture tests shall be performed in accordance with Arizona Test Method 235 at a minimum frequency as specified in table 4:

Table 4	
Quality Control Minimum Requirements for Compaction	
Moisture/Density	1 test / 500 sy/lift

(G) Control Strips:

A control strip shall be constructed at the beginning of work on the soil-cement to be compacted. The control strip construction shall be required to establish equipment and procedures required to attain densities for the specified course.

Each control strip, constructed to acceptable density and surface tolerances shall remain in place and become a section of the completed embankment. Once control strip is complete and accepted, production may begin on the same shift for the remainder of project.

Unacceptable control strips shall be corrected or removed and replaced at the contractor's expense. A control strip shall have an area of approximately 100 square yards and shall be of the same depth specified for the construction of the course which it represents.

The materials used in the construction of the control strip shall conform to the specification requirements. They shall be furnished from the same source and shall be of the same type used in the remainder of the course represented by the control strip. The underlying surface upon which a control strip is to be constructed shall have prior approval of the Engineer.

The equipment used in the construction of the control strip shall be approved by the Engineer and shall be of the same type and weight to be used on the remainder of the course represented by the control strip.

Compaction of control strips shall commence immediately after the course has been placed to the specified thickness, and shall be continuous and uniform over the entire surface. Compaction of the control strip shall be continued until no discernable increase in density can be obtained by additional compaction effort.

Upon completion of the compaction, the mean density of the control strip will be determined by averaging the results of ten nuclear density tests taken at randomly selected sites within the control strip.

If the mean density of the control strip is less than 100 percent of the density of laboratory compacted specimens as determined by testing procedures appropriate for the material being placed, the Engineer may order the construction of another control strip.

A new control strip may also be ordered by the Engineer or requested by the contractor when:

- (1) A change in the material or mix design is made.
- (2) A control strip density is not representative of the material being placed.

(H) Power Tampers and Small Vibratory Rollers:

Small vibratory rollers which are capable of operating within 6 inches of a vertical face shall be used for compaction adjacent to the guide banks, next to the utilities and drainage conduit; at transitions to constructed levee protection, and at other areas where larger

vibratory rollers cannot maneuver. The amount of rolling and tamping required shall be whatever is necessary for the particular equipment to provide the same degree of compaction as would be attained with larger self-propelled vibratory rollers. Standby replacement equipment shall be available within 1 hour if needed.

(I) Finishing/Trimming:

After compaction, the soil-cement shall be further shaped, if necessary, to the required lines, grades, and cross-sections and rolled to a reasonably smooth surface. Shaping of the face of the soil-cement bank protection shall be conducted daily at the completion of each day's production.

The exposed face of the soil-cement bank protection shall be trimmed to a neat line as shown on the plans. The resulting soil-cement bank protection width shall not be less than 8 feet after trimming unless specified on the plans.

(J) Curing:

Whenever the atmospheric temperatures are expected to drop below 30 degree Fahrenheit, the soil-cement shall be protected from freezing for seven days, after its construction by a covering of straw, earth, or other suitable material approved by the Engineer.

Temporarily exposed surfaces shall be kept moist as previously set forth. Care must be exercised to ensure that no curing material other than water is applied to the soil-cement surface that will be in contact with succeeding layers.

Permanently exposed surfaces shall be kept in a moist condition for seven days, or they may be covered with bituminous curing material, subject to the Engineer's approval. Any damage to the protective covering within seven days shall be repaired to the satisfaction of the Engineer at no additional cost to the Department.

Regardless of the curing material used, the permanently exposed surfaces shall be kept moist until the protective cover is applied. Such protective cover is to be applied as soon as practicable, with a maximum time limit of 24 hours between the finishing of the surface and the application of the protective cover or membrane.

(K) Backfill:

Backfill shall not be placed against the soil-cement until the contractor has achieved the compaction requirement.

(L) Maintenance:

The contractor shall maintain and protect the soil-cement in good condition until all work is completed and accepted. Maintenance shall include immediate repairs of any defects that may occur. This work shall be done at no cost to the Department and repeated as often as necessary. Faulty work shall be replaced for the full depth of the layer. The contractor shall take all necessary precautions to avoid damage to the completed soil-cement by equipment, and to avoid the deposition of raw earth or foreign materials between layers of soil-

cement. Where ramps are constructed over soil-cement layers which are not to grade, all foreign materials and the uppermost one inch of the previously placed soil-cement mixture must be removed prior to continuation of the soil-cement construction.

(M) Construction Joints:

Construction joints are to be provided at the end of each day's work or when work is to be halted for 90 minutes or more. The joints shall be trimmed to a 15 degree minimum skew, transverse construction joint shall be formed by cutting back into the completed work to form a vertical face to the full depth of the previous lift. Before resuming placement of new material, the joints shall be roughened and loose material shall be removed by power broom.

(N) Acceptance of Soil-Cement:

The Engineer will cast, transport, cure, and test specimens in accordance with Arizona Test Method 241 for each 1,500 cubic yards of soil cement placed. Three cylinders will be tested at seven days. The average compressive strength of the three cylinders shall achieve a minimum compressive strength of 750 psi.

Any early strength testing for the purpose of correlating seven day strength results to provide an early indicator of potentially low strength material shall be the responsibility of the contractor.

913-4 Method of Measurement:

Riprap, except gabions and sacked concrete, will be measured by the cubic yard of protection constructed by computing the surface area measured parallel to the protection surface and the total thickness of the riprap measured normal to the protection surface.

Riprap (gabions) will be measured by the cubic yard by computing the volume of the rock-filled wire baskets used.

Riprap (sacked concrete) will be measured by the cubic yard of concrete placed in the completed work. The measurement will be based on mixer volumes.

Rail bank protection will be measured by the linear foot. Measurement will be made from top of rail to top of rail (longest rail where rails of two or more lengths are used) and the distance measured will be from end rail to end rail.

Where two parallel rows of vertical rails are used, the measurement for payment will be the average of the distance along the two rows. Rail bank protection will be measured along the bank protection control line from end rail to end rail.

Soil-cement will be measured per cubic yard of soil-cement furnished and placed per the specified lines, grades, and cross-sections shown on the plans.

913-5 Basis of Payment:

The accepted quantities of riprap and rail bank protection, measured as provided above, will be paid for at the contract unit price per cubic yard or linear foot, which price shall be full compensation for the work, complete in place, including excavation; preparing the ground area; furnishing and installing the rock, filter fabric, bedding material, metal items, concrete, sacks and grout; and backfilling as required.

Materials, labor and equipment necessary to perform additional work such as jetting or drilling, as specified under Subsection 913-3.01(H) of the specifications, will be paid for in accordance with the provisions of Subsection 109.04 of the specifications.

The accepted quantities of soil-cement, measured as provided above, will be paid for at the contract unit price per cubic yard of soil-cement bank protection. Such payment shall constitute full reimbursement for all work necessary to complete the soil-cement bank protection including:

- (1) Surface Preparation;
- (2) Providing and Stockpiling Soil-Aggregate;
- (3) Cementitious Material, Watering, Mixing;
- (4) Placing;
- (5) Compacting;
- (6) Shaping and Finishing;
- (7) Curing;
- (8) Quality Control Testing; and
- (9) Other Incidental Operations.

Any waste and non-compacted soil-cement material not used on the final soil-cement bank protection will not be measured for payment.

Excavation and backfill associated with the soil-cement construction will be measured and paid under the Structural Excavation and Structure Backfill items respectively.

Construction of Gabion Mattress associated with the soil-cement work will be measured and paid under the Riprap (Gabion Mattress) item.

Payment for additional excavation, where determined by the Engineer to remove unsuitable material, per the requirements of Subsection 203-5.03(A) of the specifications, will be made in accordance with the provisions of Subsection 109.04 of the specifications.

Payment for Dewatering will be made on a Force Account basis in accordance with the requirements of Subsection 109.04 of the specifications.

(923OJTNGL,06/18/26)

SECTION 923 BLANK: the title and text of the Standard Specifications is revised to read:

SECTION 923 ON-THE-JOB TRAINING WITHOUT GOALS:

923-1 Description:

The contractor may provide On-The-Job training (OJT) aimed at moving minorities, women, and disadvantaged trainees into journeymen in various types of construction trades or job classifications in accordance with 23 CFR Part 230, Part 230.111 and Part 230, Appendix B.

It is the intention of these Special Provisions that training be provided in the construction classifications/crafts rather than for office support positions. Some off-site training is permissible as long as the training is an integral part of an approved training program and does not comprise of a significant part of the overall training.

923-1.01 General:

Training and upgrading of minorities and women toward journeyman status is the primary objective of these Special Provisions. Accordingly, the contractor shall make every effort to enroll minority, women, and disadvantaged trainees (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 it has taken in pursuance thereof, prior to a determination as to whether the contractor is in compliance with these Special Provisions. 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.

Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. 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. The ratio of apprentices and OJT Trainees to journeymen shall not be greater than permitted by the terms of the approved training program being utilized.

No employee shall be employed as a trainee in a classification in which they have successfully completed a training course leading to journeyman status, or in which they have been employed as a journeyman. The contractor shall satisfy this requirement by including appropriate questions in the employment application or by other suitable means. The contractor shall maintain documentation that shows the employee's work and training history.

923-1.02 Definitions:

Banking-Carryover Hours:

OJT hours completed by a trainee are eligible to be credited to a future project. Banked-Carryover hours will only be credited when the same trainee that completed the excess hours is used on the future project.

Classification/Craft:

Type of occupational category, trade, or job being done by a trainee on a federal-aid funded highway construction project.

Disadvantaged Persons:

A person who meets one of the following:

- (1) Receives, or is a member of a family and/or household, which receives cash payments under a Federal, State, or local income-based public assistance program;
- (2) Is a member of a family and/or household that receives (or has been determined within the 6-month period prior to registration for the program involved to be eligible to receive) Food Stamps/EBT card under the Food Stamp Act of 1977;
- (3) Is a foster child on behalf of whom State or local government payments are made;
- (4) Does not have a high school diploma or GED; or
- (5) Is from a family whose total annual household income is below the federal poverty limits.

Journeyman:

A person who is capable of performing all the duties within a given job classification or craft.

OJT Trainee:

A person who is:

- (1) A minority, woman, or disadvantaged individual enrolled in an approved training program; or
- (2) Any other individual enrolled in an approved training program, whose training hours are, approved by the Department, and can be credited as OJT hours.

Small Business and Workforce Development (SBWD):

SBWD is responsible for oversight of the OJT program, which targets under-represented segments of the U.S. workforce, including minorities, women and disadvantaged individuals. SBWD assesses OJT hour goals on contracts and monitors them to ensure that trainees receive the required number of training hours

923-1.03 Computation of Time:

In computing any period of time described in this OJT special provision, the day from which the period begins to run is not counted, and when the last day of the period is a Saturday, Sunday or Federal or State holiday, the period extends to the next day that is not a Saturday, Sunday, or Federal or State holiday. In circumstances where the Department's offices are closed for all or part of the last day, the period extends to the next day on which Department's offices are open.

923-1.04 OJT Training Programs:

The minimum length and type of training for each classification will be established in the training program selected by the contractor and approved by the Department and FHWA. The Department and FHWA will approve a program if it is reasonably calculated to meet equal employment opportunity obligations and qualifies the average trainee for journeyman status in the classification concerned by the end of the training period as defined in the training program.

The Department recognizes the following OJT Training programs:

- (A) OJT Programs approved by FHWA or the Department of Labor (DOL) prior to the start of the trainee commencing work.
- (B) Registered union or other approved apprenticeship programs registered with the Bureau of Apprenticeship, U.S. DOL, Employment and Training Administration, Bureau of Apprenticeship and Training or the Arizona Apprenticeship Office, Arizona Department of Economic Security programs recognized by the Bureau.

Approval of a training program other than those specified above to be used for the contract must be approved by the Department or FHWA prior to the trainee commencing work on the classification covered by the program. Contractors intending to submit a training program for approval prior to the start of a contract must submit the program as soon as possible after notification of contract award as approval of a training program may take up to four weeks. Several FHWA approved training program templates for specified classifications are available on the SBWD website.

The contractor shall furnish each trainee with a copy of the Training Program the trainee is enrolled in, and other documentation related to the training program. The contractor shall provide training that develops the skills outlined in the training program. Multiple OJT training programs can be used on the project.

All training programs shall be administered in a manner consistent with the equal employment obligations of federal-aid highway construction contracts. The Department reserves the right to request documentation that the contractor's training program fulfills these obligations.

The trainee will be paid the appropriate trainee Davis-Bacon wage rates for training classifications/crafts on federally-funded projects. The contractor shall compensate trainees not less than the rate outlined in the approved training program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination.

The contractor shall provide for the maintenance of records and furnish/submit required information and reports documenting its performance under these Special Provisions. Such records shall be available at reasonable times and places for inspection or review by the Department and FHWA.

923-1.05 OJT Liaison:

The contractor shall designate an OJT Liaison who shall be responsible for monitoring and administering the contractor's OJT Program and monitoring the trainees' progress. The OJT Liaison may have other responsibilities for the contractor. The OJT Liaison shall serve as the point of contact for the Department regarding information, documentation, and conflict resolution relating to the contractor's OJT program.

923-2 Online Resources:

OJT System Website:

<https://adot.dbesystem.com>

SBWD Website:

<https://azdot.gov/business/small-business-and-workforce-development>

923-3 Requirements:

923-3.01 Documentation:

Documentation related to OJT training can be found on the Department's SBWD website. The contractor shall complete and submit the following information to the Department:

(A) OJT Enrollment and Progression:

(1) OJT Enrollment:

OJT Enrollment information shall be submitted through the Department's online OJT System by the contractor at least 5 days prior to a trainee's start date. OJT Enrollment information shall be completed and includes the trainee's name and address, employment status, gender and ethnicity, training program (s), and classification/craft.

SBWD will review the OJT Enrollment information within 5 days, and if approved, hours will be retroactively credited to the date the OJT Enrollment information is received by SBWD.

To receive OJT credit, apprentice's current apprentice certificate or proof of registration from a union or approved apprenticeship program shall be uploaded into LCPtracker by the contractor within 5 days of the apprentice's start date, in addition to completing the OJT enrollment information in the online OJT System.

If the Arizona Apprenticeship Office Representative's signature is missing from the apprentice certificate, the contractor shall also upload the apprentice's US Department of Labor, Office of Apprenticeship Certificate to LCPtracker. The contractor shall not receive training credit or reimbursement until the certificate is uploaded.

(2) Progression of Training and Change of Status:

Progression of Training-Level Up and Change of Status shall be submitted through the Department's online OJT System each time a trainee advances, progresses to another training level or milestone in his/her training program, or has a change of job classification. Hours will be retroactively credited to the date the information is received.

Hours that exceed the maximum indicated in the program for a certain level will not be credited. Once a level is completed, the trainee should be moved to the next level towards journeymen status.

923-3.02 Training Program Completion:

Once the trainee completes the required number of levels and hours of training for the same classification or craft, or completes an approved training program, the trainee is considered to have completed the training program it is enrolled under. The contractor shall not receive OJT credit for hours exceeding the maximum number of training hours required for completion of the selected training program.

Once a trainee completes a specific training level for a classification or craft, the contractor shall not be permitted to submit that trainee for enrollment or reimbursement at that same level within the same classification or craft, however the same trainee can be enrolled in a different classification or craft.

The contractor shall provide documentation showing the type and length of training satisfactorily completed to each trainee and the Department upon successful completion of a training program.

For an apprenticeship program, the Apprenticeship office will issue a certificate of completion in said craft, a DOL certificate, and a journeyman's card.

923-3.03 Banking-Carryover Hours:

At the completion of the project, the contractor may submit a Banking-Carryover Hours request in the Department's online OJT System, to carryover training hours for a specific trainee on the project to be used on a future project. Banked hours that are carried over to a

project may lower the required number of training hours the contractor is required to complete on that project. The trainee shall be placed on a subsequent project with the intent that the trainee is progressing towards completion of a training program. Banked hours cannot be transferred to other trainees. No additional payment will be paid for banked hours carried over to other projects.

923-3.04 OJT Project Completion and Banked Hours Request:

OJT Completion and Banked Hours documentation shall be submitted within 60 days of completion of training. Any hours to be banked shall be shown on the documentation.

923-4 Method of Measurement:

OJT training hours will be measured by the hour to the nearest half hour.

Measurement of hours will be made as the OJT trainee completes hours on the project. Hours are considered complete if the trainee performs hours on the project, is OJT enrolled, and provides required training by the program.

No measurement for payment will be made for trainee hours in which OJT enrollment information has not been received and approved by the Department.

923-5 Basis of Payment:

The accepted quantities of hours, measured as provided above, will be paid for at a unit price of \$3 per hour for training provided to trainee/apprentice in accordance with an approved training program.

Payment for offsite training may only be made when the contractor does one or more of the following and the trainees are concurrently employed on a federal-aid project;

- (A) Contributes to the cost of the training,
- (B) Provides the instruction to the trainee
- (C) Pays the trainee's wages during the offsite training period.

923-6 Monitoring:

(A) Monthly Reporting:

Contractors shall report monthly hours for each trainee in the online OJT System by the 15th of the month following the month of training hours completed.

(B) Site Visits:

The Department may conduct periodic monitoring site visits to the worksite to review OJT Program compliance, during working hours on the project. The Department will notify the OJT liaison at least 24 hours prior to a site visit if the OJT Liaison is required to be at the

site visit. The site reviews may include, among other activities, interview of trainees, the contractor, and its employees. The contractor shall cooperate in the review and make its employees available. The contractor's OJT Liaison shall be reasonably available to meet with Department staff as well as be available to respond to periodic emails and phone calls from the Department to check on the progress of OJT Trainees. The Department will make efforts to ensure minimal disruption to the work and coordinate site visit times with other Department divisions, as applicable (for example, Davis-Bacon interviews).

ITEM 9240010 FORCE ACCOUNT WORK (PERMANENT PAVEMENT REPAIR):

Description:

The work under this item consists of repairing pavement that has been damaged during earthwork or scaling operations that has occurred beyond the control of the contractor. If the Engineer determines that damages have occurred beyond the control of the contractor, payment for this work, which may include special equipment and manpower, shall be included in this item.

Materials:

The new pavement will follow the requirements provided in Sections 404 and 409, which are included in the project plans.

Construction Requirements:

The repair shall be made prior to reopening the roadway. Adequate materials and equipment shall be readily available to make repairs.

The mix shall be prepared, placed and compacted as directed by the Engineer. The Engineer shall determine the depth of replacement needed. If required, the subgrade shall be brought up to the required as-built elevation. The pavement shall be placed in maximum lifts of 2 inches, to a thickness equal to that of the original asphalt roadway depth. The level of compaction of each lift of the asphalt repair shall be to the satisfaction of the Engineer.

Method of Measurement:

Measurement for Permanent Pavement Repair shall be per Standard Specifications Section 109.04 Force Account.

Basis of Payment:

The accepted quantities of Permanent Pavement Repair, measured as provided above shall be per Standard Specifications Section 109.04 Force Account, which price shall be full compensation for the work, complete in place, as described and specified herein.

ITEM 9240011 FORCE ACCOUNT WORK (QUALIFIED BIOLOGIST):

Description:

The work under this item shall consist of employing a qualified biologist for nest surveys as identified in plan sheet 1F (EPIC Sheet) Section BIO-2B.

The work shall be performed by a qualified biologist meeting the requirements as outlined at ADOT's website:

https://azdot.gov/sites/default/files/2019/06/biology_qualifications_for_biologists.pdf

The contractor shall provide documentation that the biologist meets these qualifications at the pre-construction meeting to the Engineer for approval, prior to any survey work being performed.

Method of Measurement:

Force Account Work (Qualified Biologist) will be measured in accordance with Subsection 109.04(D) of the specifications.

Basis of Payment:

Force Account Work (Qualified Biologist), measured as provided above, will be paid at the contract lump sum price which price will be paid in accordance with the requirements of the Subsection 109.04 (D) of the specifications.

ITEM 9240046 MISCELLANEOUS WORK (SCALING)

Description:

The work under this item consists of scaling by non-mechanized means as shown on the project plans (Sta 799+25 to 800+94). This work shall consist of the manual removal of vegetation, loose rock and soil on the slope at the locations shown in the Plans or as directed by the Engineer.

Submittals:

Not less than 2 weeks prior to commencing scaling, the contractor shall provide to the Engineer written evidence that the rock slope scaling foreman and scalers have performed satisfactory work in similar capabilities for sufficient length of time to be fully qualified to perform their duties. The foreman shall have not less than 1500 hours of demonstrated experience as a scaler. The scalers shall have not less than 1000 hours of demonstrated experience on similar projects.

The contractor shall submit a detailed work plan for each slope to be scaled. The plan shall include:

1. The proposed construction sequence and schedule.
2. The type of equipment and tools to be used.

3. The number of scaling crews to be employed on the project. (A scaling crew is defined as one qualified foreman and two qualified scalers.)
4. Debris removal and disposal plan generated from the scaling work.
5. Provisions to protect adjacent facilities.

Work shall not begin until the Engineer has approved the appropriate submittals in writing.

Construction Requirements:

Slope scaling will be done with the use of scaling bar, portable hydraulic wedges, air pillows, hand drills, splitters, Boulder Buster™ or other mechanical means. Other hand tools in addition to scaling bars may be used provided they have demonstrated effectiveness to perform the required work by approval of the Engineer. Work shall proceed according to the work plan and schedule submitted by the contractor prior to commencement of work.

Slope scaling shall start at the top of the slope and work shall proceed down slope, removing loose rock and soil as the work progresses. Tree and brush removal shall be included as Slope Scaling. Unless otherwise directed by the Engineer, all trees within 20 feet of the slope crest shall be flush cut and the root wad left intact. Tree removal shall be completed prior to performing other scaling work.

The extent of the non-mechanized slope scaling will be determined by the Engineer and/or be specified in the Plans.

Upon removal the material produced by the non-mechanized scaling shall become the property of the contractor.

Method of Measurement:

Measurement for Scaling will be made per cubic yard.

Basis of Payment:

The accepted quantities of Scaling, measured as provided above will be paid at the contract unit price per cubic yard, which price shall be full compensation for the work, complete in place, as described and specified herein and as shown on the project plans.

ITEM 9240111 MISCELLANEOUS WORK (CABLE AND POST BARRIER, DETAIL Q)

Description:

The work under this item shall consist of furnishing all labor, equipment, and materials to remove existing cable and post barrier and install new chain and post barrier in accordance with the locations and details shown on the plans and the requirements of these specifications, including all necessary components.

Materials:

All timber posts shall have nominal external dimensions as shown on detail B and shall have a preservative treatment in accordance with the requirements of AASHTO M-133.

All fasteners, chains and other non-wood elements shall be galvanized steel. All exposed steel components shall be stained or oxidized to an earth tone with matte finish (dark brown color) in accordance with the requirements of Section 905-2 of these special provisions.

Chains shall be grade 30, 3/16 inch zinc plated steel.

Aggregate for backfill shall be #57 rock meeting the requirements of Standard Specification 1006-2-2.03(C)

Construction Requirements:

Earthwork placement, grading, compacting, and bituminous surfacing shall be completed prior to installation of the new chain and post barrier. All existing cable and post barrier shall be removed and the resulting voids backfilled with moist soils placed in compacted lifts as approved by the engineer prior to installation of the new chain and post barrier.

All post holes for new chain and post barrier shall be pre-drilled to a depth of 26 inches and a diameter of 12 inches. Posts shall be set plumb and true to the line, grade, and spacing shown on the plans atop a 2 inch layer of coarse, compacted aggregate then backfilled with coarse aggregate compacted in lifts not greater than 6 inches in depth to 6 inches below finished grade. The remaining 6 inches shall be finished with compacted earth free of rock, organic, and other deleterious materials.

Galvanized lag thread eye-bolts shall be affixed, one on each side of the post, parallel with the direction of travel and independent lengths of chain strung between each post. Eye bolts shall be set at 6" with a tolerance of plus or minus 1" from the top of post. The maximum sag of the chain between posts shall be 6" with a tolerance of plus or minus 1" from a horizontal line between the top of the posts each section of chain connects. Connections to eye bolts shall be made by 3/16" grade 30 galvanized proof coil lap links or similar non-removable connections.

Method of Measurement:

Chain and post barrier will be measured by the linear foot for each complete section of chain and post barrier placed, as measured from the centerline of one post to the centerline of the next.

Basis of Payment:

The accepted quantities of chain and post barrier, measured as provided above, will be paid for at the contract unit price per linear foot, which price shall be full compensation for the work, complete in place, including removal of the existing cable and post barrier as described above, excavation, backfill, and disposal of surplus material for the new barrier. No additional measurement or payment will be made for removal of the existing cable and post barrier and backfill of the resulting voids, the costs being considered as included in other contract items.

ITEM 9240117 MISCELLANEOUS WORK (SLOPE DRAPE)

Description:

The work under these items consists of installing a draped mesh fabric at the locations specified in the Plans.

A field visit to the project site prior to bid is required and it shall be the responsibility of each prospective bidder to schedule their own visit to the site.

Submittals:

Not less than two weeks prior to commencing the fence installation, the contractor shall submit the following in writing to the Engineer for approval:

A. A detailed plan for the draped mesh that includes:

- The proposed construction sequence and schedule.
- The proposed foundation details.
- The proposed ground anchors and the installation methods, materials and equipment necessary for their installation. In addition, the proposed method for anchor verification and testing shall also be included.
- The proposed system components shall be provided. Details for net-to-net connections, net-to-support rope connections, quick-release shackle and tie-back cable connections, and column/post shall also be included.
- The proposed corrosion protection for the fence system.

B. A letter of certification stating that the rockfall protection fence is capable of absorbing repeated impacts at the specified energy with little to no maintenance required or damage to the fence. Work shall not begin until the Engineer has approved the submittals in writing.

Draped mesh panels shall consist of either interlocking rings no larger than 12 inches in diameter or wire rope net panels. For interlocking ring nets, the rings shall be no larger than 12 inches in diameter. The wire rope net panels shall have a grid size no larger than 8 inch x 10 inch. Fences relying solely on chain link mesh for the restraining fabric will not be allowed.

The contractor shall field verify all measurements before ordering and assembling the Draped mesh system. The contractor shall note and resolve any discrepancies with the plans prior to ordering.

Materials:

The materials used shall conform to those specified by the manufacturer and in accordance with Section 924-2.02 of the Specifications. Documentation that the supplier is a pre-approved provider of draped mesh and is included in the Approved Products List. Suppliers that are not pre-approved shall provide written evidence that the draped mesh has performed satisfactorily in similar capacities elsewhere. This documentation shall include full-scale field testing and multi-year performance history.

All materials shall be labeled by the manufacturer in order for the contractor to identify the materials on the manufacturers shop drawings.

Construction Requirements:

The construction methods shall be in accordance with the manufacturer's specifications.

Method of Measurement:

Slope Drape will be measured by the square foot. Measurement will be from the actual area of the draped mesh that is installed.

Basis of Payment:

The accepted quantities measured as provided above, will be paid at the contract unit price per square foot, complete in place, and shall include full compensation for furnishing all labor, materials, tools, equipment, performance and proof testing ground anchors as specified in these Special Provisions, and as directed by the Engineer.

**ITEM 9240181 — MISCELLANEOUS WORK (CONTROL OF NOXIOUS PLANTS)
(MANUAL / MECHANICAL METHODS):**
**ITEM 9240182 — MISCELLANEOUS WORK (CONTROL OF NOXIOUS PLANTS)
(HERBICIDE):**

Description:

The work under these items shall consist of surveying, as well as controlling noxious and invasive plant species manually / mechanically and/or with the application of herbicides, in the areas designated by the Engineer, and throughout the duration of the contract, as required in a Noxious Species Control Plan (NSCP) prepared by the contractor as specified herein. When noxious or invasive plant species are determined to be present within the project limits or all anticipated construction zones, the control procedures in the NSCP shall be implemented with the approved weed management measures achieved prior to earth moving activities of infested areas.

Weed control procedures in the NSCP shall also be implemented during all stages of construction and in advance of seeding. Control of Noxious Plants through herbicide methods shall be accomplished between fourteen (14) and twenty-one (21) calendar days prior to Clearing and Grubbing, as well as construction excavations. Control of Noxious Plants through manual / mechanical methods shall be accomplished within seven (7) calendar days prior to Clearing and Grubbing, as well as construction excavations. Repeated treatments shall resume after Clearing and Grubbing when noxious/invasive plants occur during construction. In addition, all construction-related equipment, materials, and personnel moving in and/or out of the project site shall be inspected and cleaned of noxious and invasive plant species (seeds, seed heads / pods) at no additional cost to the Department.

For projects that include Landscape Establishment, as specified in Section 807 of the Standard Specifications and these Special Provisions, control of noxious and invasive plant species will also be required throughout the Landscape Establishment phase, and shall be included in the contractor's NSCP.

The contractor shall conduct repeated applications for Control of Noxious Plants throughout the entire contract time including the Landscape Establishment phase when noxious/invasive plants occur. Successive treatments along with multiple mobilizations for Control of Noxious Plants shall be conducted in accordance with invasive weeds' growing seasons at no additional cost to the Department.

The control of plant species not on the State or Federal Noxious or Invasive lists — especially Forest Service Regional/BLM lists noted below will be paid only when control is directed by the Engineer based on the original or amended NSCP approved by an ADOT construction Professional Landscape Architect (PLA) licensed in the State of Arizona.

The areas to be designated by the Engineer for Control of Noxious Plants shall be coordinated with an ADOT construction PLA. Unless the project site presents sizable monocultures or pure stands of high-density noxious and invasive plant species, the contractor shall not perform broadcast applications of broad spectrum non-selective

herbicides within the project limits. Spot-treating of identified noxious and invasive plant species patches with appropriate selective herbicides shall be conducted.

For unpaved project areas that will ultimately be seeded with desirable native plant species, the contractor shall avoid persistent herbicide residue contamination in the soil. The application of plant growth regulator (PGR) herbicides, including Pyridine Carboxylic Acid (PCA) herbicides, which do not break down easily, shall be approved by the Engineer in accordance with an ADOT construction PLA's evaluation. Soil sterilant herbicides, especially bare-ground herbicides with long-lasting soil persistence, shall be prohibited for use in all unpaved project areas that will be seeded. Soil sterilant herbicides, including bare-ground herbicides, shall be prohibited for use in all unpaved and/or unstabilized project areas that are prone to soil erosion and/or dust emission. Pre-emergence herbicides shall be prohibited for use in unpaved project areas that will eventually be seeded.

All glyphosate as well as formulations of glyphosate-based herbicides and/or such products under the brand name / trade name of Roundup shall be prohibited for use.

The selection of appropriate treatment method(s) between herbicide versus manual/mechanical or in combination shall be proposed by the contractor within NSCP and approved by an ADOT construction PLA through the Engineer consistent with type(s), life stage(s), growing season(s), and existing condition(s) of plant species, as well as environmental commitments. The contractor may apply the herbicide method to exterminate noxious plants first and remove the dead noxious plants by using the manual / mechanical method after herbicide treatment is successful. Clearing and Grubbing shall not be applied to remove the dead noxious/invasive plants, as well as contaminated soil seed bank if the method will spread the reproducible components of noxious/ invasive plants. Manual / mechanical method shall be applied instead. The reproducible components of noxious/ invasive plants shall include, but are not limited to roots, stems, seeds, seed heads, or seed pods according to various types and life stages of plant species.

Materials:

General

The contractor shall accurately follow all applicable herbicide label requirements and prevent adverse environmental effects. The herbicides to be used and the methods of application shall conform to U. S. Environmental Protection Agency (EPA), Arizona Department of Agriculture, and/or Arizona Department of Environmental Quality (ADEQ) requirements, and the product's label instructions, as approved by the Engineer. If herbicides are to be applied to potential or delineated Waters of the US as defined under Section 404 of the Clean Water Act, the contractor shall file a Notice of Intent (NOI) and Notice of Termination (NOT) to EPA and/or ADEQ for compliance with the National Pollutant Discharge Elimination System (NPDES) Pesticide General Permit and/or Arizona Pollutant Discharge Elimination System (AZPDES) Pesticide General Permit (PGP).

All herbicides used on the project, including stump treatment herbicide(s), shall be in compliance with NPDES and/or AZPDES PGP(s). The PGP NOI(s) shall be filed for herbicide(s) utilized within the Ordinary High-Water Mark (OHWM) of Jurisdictional Waters of the U.S.

Additionally, herbicide use shall adhere to U.S. Fish and Wildlife Service (FWS) recommended protection measures for pesticide applications (White 2007) consistent with the ADOT Environmental Planning Roadside Resources web link: <https://azdot.gov/sites/default/files/media/2022/10/USFWS-2007-Recommended-Protections-for-Pesticide-Applications-in-Region-2.pdf>

Herbicide applicators shall follow the FWS' general protection measures outlined by White (2007) and shall use no herbicides with a toxicity rating over zero (that is ≤ 0) to protect small avian species, reptiles, and amphibians.

Within 200 feet of the OHWM of all definable washes/streams or watercourses inside the project limits, in addition to Manual / Mechanical Methods, the contractor may apply aquatic safe herbicide products approved by the Engineer in accordance with ADOT construction PLA's evaluation. All aquatic safe herbicide products shall be submitted for evaluation. Moreover, aquatic safe herbicide products shall be clearly labeled for such application. Herbicide products that are not aquatic safe shall be rejected for use within 200 feet of the OHWM of all definable washes/streams or watercourses inside the project limits.

All materials to be used shall be listed and protocol information provided in the Noxious Species Control Plan, as specified below. The contractor shall provide the herbicides container with the original chemical label for inspection and confirmation of the chemicals used. All containers shall be disposed of as recommended by the manufacturer.

Herbicides proposed in the plan for use on projects within transportation easements on BLM and/or USFS Lands shall be in conformance with the following current environmental documents including: "Environmental Assessment for ADOT Herbicide Treatment Program on Bureau of Land Management Lands in Arizona", which is available at <https://eplanning.blm.gov/eplanning-ui/project/34810/510> or the "Environmental Assessment for Management of Noxious Weeds and Hazardous Vegetation on Public Roads on National Forest System Lands in Arizona" which is available at: <http://www.fs.usda.gov/main/r3/landmanagement/projects>. The Environmental Documents include a list of approved Herbicides, Mitigations and Best Management Practices (BMPs), which shall be included, as appropriate, by the contractor in the submitted NSCP.

Web links to environmental documents for noxious weeds and invasive plant species treatment for the six (6) National Forests within Arizona:

- (1) Final EIS (Environmental Impact Statement) and Record of Decision for Noxious Weed Treatment on the Coconino, Kaibab, and Prescott National Forests:

<http://www.fs.usda.gov/project/?project=30>

- (2) Coronado National Forest EA (Environmental Assessment) for Noxious Weed Treatments:

<http://www.fs.usda.gov/detail/coronado/landmanagement/resourcemanagement/?cid=stelprdb5123160>

- (3) Apache-Sitgreaves National Forest Integrated Forest-Wide Noxious Terrestrial and Aquatic Weed Management Plan:

<https://www.fs.usda.gov/project/?project=4967>

- (4) Tonto National Forest Integrated Treatment of Noxious and Invasive Weeds:

<https://www.fs.usda.gov/project/?project=4454>;

Additional information on invasive species requirements for the Tonto National Forest is available at:

http://www.fs.usda.gov/detail/tonto/landmanagement/resourcemanagement/?cid=fsbdev3_018789.

Arizona Department of Agriculture NOXIOUS WEEDS (under the authority of Arizona Revised Statutes, Administrative Code R3-4-244 Regulated and Restricted Noxious Weeds, as well as R3-4-245 Prohibited Noxious Weeds) web link:

<https://agriculture.az.gov/pestspest-control/agriculture-pests/noxious-weeds>

Furthermore, the USDA Southwestern Region Weed Field Guides web link is accessible below:

<https://www.fs.usda.gov/detail/r3/forest-grasslandhealth/invasivespecies/?cid=stelprd3813522>

The USDA New Invaders of the Southwest is attainable within the web link below:

<https://docslib.org/doc/7815112/new-invaders-of-the-southwest>

The USDA Field Guide for Managing Buffelgrass in the Southwest is obtainable through the web link below:

https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd563017.pdf

All materials used shall be in accordance with the approved NSCP and Pesticide Use Proposal (PUP).

Construction Requirements:

The contractor shall develop a NSCP for state and federal listed noxious and invasive plant species, and other undesirable plant species shown on the list posted on the Roadside Development web site (<https://azdot.gov/node/5372>

), for approval by an ADOT construction PLA. Four (4) copies of the proposed NSCP in standard three (3) ring binders shall be submitted to the Engineer within seven (7) calendar days after the Execution of Contract. The ADOT construction PLA shall review and respond to the proposed NSCP within ten (10) calendar days upon receiving the submittal. If requested, additional copies may be submitted for review and comments by Native American Community governing body designated representative as approved by the Engineer. Native American Community governing body designated representative shall also review and comment the proposed NSCP within thirty (30) calendar days upon receiving the submittal. The contractor proposed NSCP shall include as minimum the following information applicable to the project area, location and conditions listed below:

- (1) A list of Noxious and Invasive Species and other Roadside Development approved plant species that would be anticipated for control based on existing

vegetation and the project biotic communities. The weed species shall include but not be limited to the TABLE – I listed below:

TABLE – I	
Scientific Name	Common Name
<i>Bromus tectorum</i>	Cheatgrass / Downy Brome / Broncoglass / Downy Chess / Soft Chess / Drooping Brome
<i>Brassica tournefortii</i>	Sahara Mustard / Mediterranean Mustard / Prickly Turnip / Asian Mustard
<i>Cynodon dactylon</i> (syn. <i>Capriola dactylon</i>)	Bermudagrass / Devilgrass
<i>Erodium cicutarium</i>	Redstem Stork's Bill / Redstem Filaree / Common Stork's-Bill
<i>Sisymbrium irio</i> (syn. <i>Norta irio</i>)	London Hedge-mustard / London Rocket / Rocket Mustard / Tumble Mustard
<i>Salsola kali</i> subsp. <i>tragus</i> (syn. <i>Salsola iberica</i>)	Russian Thistle / Tumbleweed
<i>Tamarix</i> spp.	Saltcedar / Tamarisk / Athel Tree
<i>Tribulus terrestris</i>	Puncturevine / Caltrop / Goathead / Bullhead / Mexican Sandbur

(2) The methods of control of noxious and invasive plant species including herbicide stump treatment shall be determined based on the species present within the project limits prior to earth moving activities as well as subsequent project construction phases before seeding. Pre-emergent herbicide shall NOT be applied to all project seeding areas. The contractor shall provide information / methods on how the application of herbicides will NOT harm the expected desirable seed species germination and establishment as specified in Section 805 of these Special Provisions.

(3) The proposed method(s) of control and extermination treatment between herbicide versus manual/mechanical or in combination to be utilized for each anticipated plant species suitable for the specific stage of plant development.

(4) The herbicides, method and frequency of application, and rates to be used for each listed plant species.

(5) Copies of herbicide and surfactant labels and Safety Data Sheet (SDS) for all chemicals proposed for use.

(6) Procedure for collection, removal, containment, and disposal of noxious and invasive plants. All components of noxious and invasive plants such as roots, stems, leaves, flowers,

seeds, seed heads, or seed pods shall be subject to collection, removal, containment, and disposal at no additional cost to the Department.

(7) Methods and procedures to be followed to protect existing, transplanted, and new emerging vegetation in seeded areas.

(8) Responsible Applicator and required Arizona Department of Agriculture Pest Management Division Licensing information, as specified in Section 806.

(9) Record procedures to be followed to document control work completed.

(10) Record procedures to be followed for reporting all chemicals used annually within transportation easements on BLM or USFS Lands within two (2) months or September 30th of each calendar year (whichever is sooner) to an ADOT construction PLA.

(11) Projects on transportation easements on BLM or USFS Lands shall include a completed Pesticide Use Proposal (PUP) form for all proposed herbicide uses prepared for submittal to the appropriate BLM Field Office or National Forest for approval. An example of a completed PUP for the project area will be provided to the contractor for use in preparing their PUP upon request to the ADOT construction PLA.

(12) Projects on transportation easements within Native Americans (Tribal) Land shall include a completed PUP form for all proposed herbicide uses prepared for submittal to the appropriate representative of tribal government (governing body) for approval. An example of a completed PUP for the project area will be provided to the contractor for use in preparing their PUP upon request to the ADOT construction PLA.

(13) When applicable, other information and explanations are required in the PUP or to implement the NSCP.

(14) Process to be used for amending the NSCP to add additional plants or treatments that may be required as the project progresses.

(15) A copy of the original Special Provisions for Control of Noxious Plants that the contractor bid on shall be attached to the NSCP.

(16) Plans and methods to protect Threatened and Endangered Species in accordance with the Environmental Mitigations section of the contract documents.

(17) Plans and methods for controlling of noxious/invasive plants in riparian and aquatic areas:

I – Prevention of herbicide drifted by wind onto non-target native plants or nearby wetlands/watercourses by using low pressure systems and coarse-spray nozzles.

II – Safe and effective use of herbicide chemicals labeled for the vicinity of wetlands/watercourses in prevention of water quality contamination.

Within 200 feet of the OHWM from all definable water bodies, the contractor shall employ aquatic safe herbicide using hand-wand backpack equipment with either liquid streams or relatively coarse sprays to minimize spray drift as evaluated and approved by Construction PLA through the Engineer.

The NSCP submitted to the Engineer shall not be implemented until it is approved by an ADOT construction PLA, and the contractor is so directed by the Engineer.

The contractor shall keep a copy of the approved NSCP and furnish the Engineer a copy of the approved NSCP for record keeping. The NSCP copy of the contractor, and Engineer shall be maintained up to date with the contractor providing submittals of completed work activities within five (5) working days following completion of the work for each area directed by the Engineer for control. The NSCP shall be maintained up to date with submittals of the above completed NSCP information for the duration of the project.

The Engineer in consultation with an ADOT construction PLA shall designate/approve the location of the areas to be treated, and when required the frequency of treatment as per the NSCP. Payment will be made for the initial treatment of each area, whether with manual / mechanical methods or using herbicides, and for each subsequent treatment ordered and approved by the Engineer.

The contractor shall document the location and size of the project treatment areas, as well as noxious and invasive plant species that have been treated by the end of each working day. Furthermore, the contractor shall mark up the project layout plans (engineering drawings) with location and size of the project treatment areas, as well as noxious and invasive plant species that have been treated. Such documentation shall be submitted to an ADOT construction PLA for inspection/evaluation through the Engineer.

The contractor shall begin control of the designated areas within ten (10) working days of the Engineer's notice and complete the treatment within fifteen (15) working days of the notice approved by the Engineer.

If other plant species listed in the Arizona Noxious Weed List, the Forest Service Regional/BLM lists, or the ADOT Invasive and Noxious Plant Species Lists (available electronically at the following Roadside Development web address:

<https://apps.azdot.gov/files/roadway-engineering/roadside-dev/adot-invasive-noxious-plant-species-list-for-construction-projects.pdf>) occur within the project area that are not included in the NSCP, the contractor shall modify the Noxious Species Control Plan to add such species, including acceptable control measures and where applicable a PUP, and submit this information as an amendment of the NSCP to the Engineer and ADOT construction PLA for acceptance. No herbicide Control of Noxious Plants work shall be commenced on Federal lands until the PUP has been entirely completed and approved.

The project areas will be surveyed by an ADOT construction PLA, with the approval of the Engineer, prior to earthmoving activities and following rainfall events and during plant germination and growth periods for listed noxious and invasive plant species. To update NSCP, the contractor shall also furnish field inspection/observation reports for new growth of noxious/invasive plant species between four (4) weeks to six (6) weeks after each rainfall event of 0.5 inches (≥ 12.7 mm) or more. When surveys determine that noxious, invasive, or

other designated plants species listed in the NSCP for control are found to be present within the project right-of-way, the contractor shall treat the areas designated by the Engineer in accordance with the approved NSCP. Such treatments shall be completed and approved by the Engineer before ground disturbing or earthmoving activities occur from those areas.

The contractor shall mark those areas receiving manual / mechanical control with an application of a photosensitive dye. Herbicides shall be mixed with a photosensitive dye which will produce a contrasting color when sprayed upon the ground. The color shall disappear between three (3) and five (5) days after being applied. The dye shall not stain any surfaces nor injure non-target plant or animal species when applied at the manufacturer's recommended application rate.

Application of herbicide shall be in accordance with the manufacturer's instructions and the approved NSCP. Responsible herbicide applicators shall be licensed under the appropriate category as required by State Law.

Mowing shall be allowed if it is proven to be a successful permanent control method of annual noxious / invasive plant species as approved by the Engineer. If approved, mowing shall be performed before the annual noxious / invasive plant species are able to set seed. Mowing shall NOT be operated in areas where there are perennial noxious / invasive plant species. Mowing shall NOT be utilized for noxious / invasive plant species that carry existing seeds (seed heads / pods). All project areas and plant species to be mowed shall be carefully evaluated / identified by an ADOT construction PLA with approval from the Engineer.

Unless otherwise called out in the plans/details specified in these Special Provisions, or as directed by the Engineer, the contractor shall remove the identified noxious / invasive woody vegetation to the finished grade level without uprooting it (flush cutting). In order to stop stump regrowth, the applicable remaining stumps shall be promptly treated with suitable herbicide so the identified noxious / invasive woody vegetation will not sprout new growth from the stumps. Herbicide stump treatment shall NOT be conducted to plant species such as common evergreen coniferous shrubs and trees, which will unlikely generate stump regrowth. Manual / mechanical removal of remaining woody vegetation stumps and rootballs in erosive areas shall be avoided to maximum extent practicable (MEP). The removal method and process shall be evaluated by an ADOT construction PLA with approval from the Engineer.

Removal of soil seed bank that has been contaminated by the natural storage of seeds from noxious / invasive plant species shall be required for projects involving soil / ground disturbance from construction excavations or as designated by the Engineer. The contractor shall remove the top three (3) inches of the existing undisturbed surface soil from the project areas infested with noxious / invasive plant species as evaluated / identified by an ADOT construction PLA with approval from the Engineer. All removed contaminated soil seed bank shall be properly disposed of or placed (buried) below the top two feet (2'-0") of the final finished grade as directed by the Engineer. The removal, stockpile, burial, or disposal of contaminated soil seed banks shall be well contained / concealed during construction. The contractor shall then return all soil-seed-bank removal disturbed areas, to an acceptable surface condition (finished grade), as approved by the Engineer.

No earthmoving activities to the treated areas shall be approved until the employed weed management measures have been inspected to be successfully achieved with the approval of the Engineer.

For projects within transportation easements on BLM, USFS, or Tribal Lands, PUPs shall be prepared and submitted to the Engineer and ADOT construction PLA as required in the NSCP. The PUPs will be submitted by the Department to the appropriate BLM Field Office, National Forest, or appropriate representative of tribal government (governing body) and must be approved by the BLM, National Forest, or tribal government (governing body) before being approved by the Engineer.

The contractor shall keep records of all herbicide applications. A copy of this record shall be added to the NSCP and also submitted to the Engineer after each application. The contractor shall be responsible for the proper transport, storage, and application of all materials necessary for herbicide control treatments.

As a part of the integrated management approach, all areas to be treated for noxious and invasive plant species shall ultimately be seeded, landscaped, or permanently stabilized to minimize and prevent weed re-invasion / re-infestation, as specified in these Special Provisions.

Method of Measurement:

Control of noxious and invasive plant species, either manually (mechanically) or with herbicides, will be measured by the square yard (SQ.YD.) of each treated area, as directed and approved by the Engineer.

Basis of Payment:

Listed bid quantities for CONTROL OF NOXIOUS PLANTS are for estimating and bidding purposes. They shall not be guaranteed to the contractor. The intensity for scope of work, project-specific present conditions, particular stages of noxious and invasive plant development, as well as annual rainfall patterns shall be considered / evaluated by the construction PLA and approved by the Engineer in determining final quantities and unit costs to be paid for.

During pre-construction meeting, the contractor in conjunction with Engineer shall verify and be in agreement with the quantity of areas to be treated as evaluated by an ADOT construction PLA. The quantity of areas to be treated shall be in compliance with environmental requirements.

The accepted quantities of control of noxious and invasive plant species, either manually (mechanically) or with herbicides measured as provided above, will be paid for at the contract unit price for each soil treatment directed and approved by the Engineer. Such price will be considered to include all labor, materials, equipment, and multiple mobilization costs required to complete the work as specified herein. Such price shall also cover collection, removal, containment, and disposal of noxious and invasive plant species. Up to four (4) mobilizations may be required to accomplish control of noxious and invasive plant species as specified herein. The Department will consider the cost of such multiple

mobilizations to be included in the price bid for control of noxious and invasive plant species. Adjustments may be made to the contract through negotiation for more than four (> 4) mobilization activities as per the approval of the Engineer.

No measurement or payment will be made for treatment of those areas, manually / mechanically or with herbicides, not authorized and approved by the Engineer. No payment will be made for treatment areas not in compliance with the approved PUP/NSCP. No payment will be made for areas treated by herbicide products not in compliance with the approved PUP/NSCP. No measurement or payment will be made for the removal and proper disposal of waste materials; the cost being considered is included in contract items.

No measurement or payment will be made for preparation of the NSCP and, when applicable, the PUP, including the initial submittal and modifications, or for monitoring, the costs being considered are included in contract items.

No separate measurement or direct payment will be made for Control of Noxious Plants under Landscape Establishment as specified in Section 807 of the Standard Specifications and these Special Provisions; the cost being considered is included in the respective contract item of Landscape Establishment.

For projects engaging extensive excavations/backfills, no separate measurement or direct payment will be made for the removal, stockpile, burial, or disposal of contaminated soil seed banks, as well as returning all soil-seed-bank removal areas to an acceptable surface condition (finished grade); the cost being considered is included in the respective contract item(s) of excavations/backfills.

(925SRVY, 05/21/26)

SECTION 925 CONSTRUCTION SURVEYING AND LAYOUT:

925-3.01 General: the first paragraph of the Standard Specifications is revised to read:

At the preconstruction meeting, the contractor shall furnish to the Engineer, for approval, the following:

- (A) A schedule of hourly survey services rates and classifications for additional survey work, which shall remain fixed and in effect for the entire duration of the work and shall not be subject to renegotiation; and
- (B) A written outline detailing the method of staking, marking of stakes, grade control for various courses of materials, referencing, structure control, pavement markings, and any other procedures and controls necessary for survey completion. A part of this outline shall also be a schedule which will show the sequencing of the survey and layout work, throughout the course of the contract, listing a percentage of completion for each month.

925-5 **Basis of Payment:** the second and third paragraphs of the Standard Specifications is revised to read:

If additional staking and layout are required as a result of additional work ordered by the Engineer, such work will be paid for in accordance with the provisions of Subsection 109.04 of the specifications.

Payment will be made utilizing the schedule of rates provided per Subsection 925-3.01. No additional payment will be made for overtime hours. Should such additional work require the contractor to pay travel and subsistence costs for the survey party or survey parties utilized, payment for travel and subsistence will be made under the provisions of Subsection 109.04 of the specifications. The Engineer will determine whether the additional work shall be performed by the contractor or by Department forces.

(928LONG, 09/16/21)

SECTION 928 **GROUND-IN RUMBLE STRIP:** the title and text of the Standard Specifications are revised to read:

SECTION 928 **LONGITUDINAL GROUND-IN RUMBLE STRIP:**

928-1 **Description:**

The work under this item shall include furnishing all tools, equipment and labor necessary to install longitudinal ground-in rumble strips of the size and at the locations specified on the project plans or as directed by the Engineer.

928-2 **Blank:**

928-3 **Construction Requirements:**

Longitudinal ground-in rumble strips shall be constructed by mechanically milling or grinding grooves into new or existing asphalt concrete pavements. The grooves shall be constructed with a cylindrical configuration in the direction of the traffic flow, and shall be placed in accordance with the details shown on the project plans. Exceptions in longitudinal ground-in rumble strips not shown on the plans will be designated by the Engineer.

The grooves shall be constructed with equipment specifically designed to remove such material by means of grinding to a controlled line and grade. The equipment used shall be capable of removing the existing asphaltic concrete to the dimensions and tolerances specified on the plans. The removals shall be accomplished in a manner which does not scar the surface of the adjacent pavement. Grooves shall not be constructed in new asphaltic concrete pavements for a minimum of three days after placement, or 10 days after placement of new asphaltic concrete pavements with asphalt-rubber. Construction of the grooves may be allowed in less time if the contractor can demonstrate that the pavements are sufficiently cured.

The contractor shall place a continuous control line as a guide for installation. The milling machine shall also be equipped with an approved guide that is clearly visible to the operator so that proper alignment of the grooves will be obtained. Lateral deviation of the milled rumble strips shall not exceed one inch in any 100 foot interval.

The contractor shall also use high pressure air to remove any millings and debris remaining after the use of the equipment's vacuum recovery system. Such debris shall be removed to the shoulder and disposed of in a manner approved by the engineer.

928-4 Method of Measurement:

Longitudinal ground-in rumble strips will be measured by linear foot at the locations shown in the project plans and in accordance with the specifications.

Gaps in the pattern and exceptions in the longitudinal ground-in rumble strips will not be included in the measurement.

No measurement will be made for the removal and disposal of milling and debris.

928-5 Basis of Payment:

The accepted quantities of longitudinal ground-in rumble strips, measured as provided above, will be paid for at the contract unit price per linear foot, which price shall be full compensation for the work complete in place as shown on the project plans and as specified herein.

No additional payment will be made for the removal and disposal of milling and debris, the cost being considered as included in the price of the contract item.

(1001MATL, 06/17/21)

SECTION 1001 MATERIAL SOURCES: of the Standard Specifications is revised to read:

1001-1 Description:

The work under this section shall consist of the procuring of borrow, topsoil, subbase and base materials, mineral aggregates for concrete structures, surfacing, and landscape plating, from sources either designated on the project plans or in the Special Provisions or from other sources.

1001-2 General:

The contractor shall determine for itself the type of equipment and work required to produce a material meeting the requirements of the specifications.

Sites from which material has been removed shall, upon completion of the work, be left in a neat and presentable condition. Where practicable, borrow pits, gravel pits, and quarry sites shall be located so that they will not be visible from the highway.

The contractor shall provide an environmental analysis, as specified in Subsection 104.12 of the specifications, for any source proposed for use regardless of whether a previously approved environmental analysis exists for the site.

In accordance with Subsection 104.12 of the specifications, the contractor may utilize an existing environmental analysis approved after January 1, 1999, provided that the analysis is updated as necessary to be in compliance with current regulations and with the contractor's planned activities.

It shall be the responsibility of the contractor to conduct any necessary investigations, explorations, and research, on-site and otherwise, before and after submitting the bid proposal, to satisfy itself that the specified quantity and/or quality of material exists in any proposed material source.

The contractor shall not produce material for the project, mobilize crushing equipment or clear a worksite prior to approval of the environmental analysis.

The contractor shall comply with the requirements of the landowner or agency having jurisdiction over the land.

The Department makes no representation regarding quality or quantity of materials in any source.

1001-2.01 Information Available:

The Department maintains a listing of materials sources for which a completed environmental analysis is available and the landowner has allowed the source to be placed on the list. Further information on material sources is available at <https://azdot.gov/business/environmental-planning/material-source-guidance>.

1001-2.02 Material Sources in Floodplains:

Any development of a material source that is determined to be in a flood plain must meet the requirements of the appropriate local, state, and federal agencies, including as applicable, the U.S. Army Corps of Engineers, Section 404 of the Clean Water Act, ADEQ or Tribal 401 Water Quality Certification, and the National or Arizona Pollutant Discharge Elimination System (NPDES/AZPDES).

If the contractor wishes to procure a material source within a floodplain, the contractor or material supplier shall submit a Floodplain Use Permit application to the appropriate floodplain management agency. The contractor shall submit to the Department documentation that the Floodplain Use Permit for the material source was approved and signed by the appropriate agency's Floodplain Administrator. The contractor or material supplier shall comply with all the requirements of the Floodplain Use Permit, including renewal of the Permit as needed or required.

The Department will require an engineering report if the material source is situated in the 100 year floodplain of any stream or watercourse, and located within one mile upstream and

two miles downstream of any highway structure or surfaced roadway crossing. The engineering report shall be prepared by a professional engineer with expertise in hydrology, hydraulics, river mechanics, and fluvial geomorphology. The engineering report shall address the effects of the potential for structural damages following a 100 year flood event.

All other permits required to obtain a material source shall be furnished to the Department upon request.

Surplus material from agency administered flood control management projects may be used as borrow material only if the contractor submits written evidence to the Engineer that the flood control agency project was fully designed and funded.

Material sources in floodplains located on Native American Tribal Lands will be considered for use on an individual analysis. The analysis shall include a review of applicable land use plans, floodplain management plans, environmental plans, applicable laws and regulations pertaining to Native American Tribal Lands, and an engineering analysis of the effects on any highway facility or structure. The contractor shall obtain from the Bureau of Indian Affairs (BIA) and the Native American Tribal Council all permits, licenses, and approvals for the Department to review.

1001-2.03 Protection and Restoration:

The contractor shall comply with the requirements of Subsections 107.11 and 107.12 of the specifications for protecting and restoring the material source. The contractor shall assume full responsibility to protect and rehabilitate the material source to the satisfaction of the Department and in compliance with the requirements of the Federal Land Management Agency (FLMA) having jurisdiction or by the owner of the material source.-

1001-3 Proposed Source:

1001-3.01 Approval Requirements:

(A) General:

The contractor shall notify the Engineer prior to or at the preconstruction conference as to the source that it proposes to use.

The contractor acknowledges that all the conditions set forth in this subsection shall be met prior to the source being approved for use.

Other than sampling and testing, the requirements of this subsection shall be completed prior to initiation of any activities that disturb the existing conditions at the proposed source.

Regulatory changes, specification changes, or other reasons may preclude the approval of a materials source. The contractor acknowledges that the Department may refuse to approve a material source even if the Department had approved the source for other projects.

(B) Specific Conditions for Approval:

The use of a source will require written approval by the Engineer. No approval will be given until the contractor has complied with the following conditions:

- (1) The contractor has submitted an environmental analysis, as specified in Subsection 104.12 of the specifications, of the source proposed for use and the Department has reviewed the analysis and satisfied itself that the use of such source will not have an adverse social, economic or environmental impact. The requirements of Subsection 1001-3.01 of the specifications shall be completed prior to initiation of any activities that disturb the existing conditions at the proposed source.
- (2) The contractor has furnished the Engineer with evidence that he has secured the rights to the source, including ingress and egress.

(C) Historical and Cultural Resources:

The archaeological survey report of the proposed material source shall be prepared by the contractor's archaeological consultant and shall conform to the requirements of Subsection 104.12 of the specifications.

In the event that prehistoric or historic structures and prehistoric or historic artifacts are encountered during any activity related to the construction of the material source, the contractor shall immediately cease operations within a 50 foot radius of the discovery location and notify the Engineer. In the event that an unmarked human burial and/or funerary remains are encountered during any activity related to the construction of the material source, the contractor shall immediately cease operations within a 100 foot radius of the discovery location and notify the Engineer. The Engineer will contact the Environmental Planning – Historic Preservation Team so that appropriate notification of the discovery is made per state and federal regulations.

After notifying the Engineer, the contractor shall, within good faith, secure the area and take all reasonable measures to protect the historical and cultural resources. No activity shall resume unless authorized by the Engineer. The Engineer will not authorize resumption of any activity until receiving confirmation from the Environmental Planning – Historic Preservation Team that the contractor may commence work.

If the Department determines that the proposed use will have major adverse impact on cultural or historic resources, the Department will not allow the use of the source.

(D) Permit from Navajo Nation:

For projects located on the Navajo Reservation, the Navajo Nation has adopted a permitting system for any sources, regardless of whether on or off the Navajo reservation, which are to supply material for projects located within its boundaries. No material source will be approved until the contractor submits a copy of the permit from the Navajo Nation allowing

materials from the proposed source to be used on the project. For information concerning the permit, the contractor shall contact the Navajo Nation Historic Preservation Office.

(E) Bureau of Land Management Material Sources:

If the contractor elects to pursue the use of material sources on BLM land under Title 30 Code of Federal Regulations, it is at the contractor's sole risk, and the Department bears no responsibility for any delays or costs associated with the request to use material sources on BLM Land.

The Department will not request or pursue any "free-use permit" under Title 23 Code of Federal Regulations or any other arrangement with BLM on this project.

1001-4 Special Access within Right Of Way:

The contractor may submit a request to the District Engineer to approve special access to a controlled access highway if special access is not shown on the project plans.

The request by the contractor shall be accompanied by an environmental analysis and by documents which specify the point(s) of access, the acquisition of right of way, the manner in which access will be attained, the traffic control plan, and crossovers, along with all other appropriate data which will allow the District Engineer to evaluate its request. If the request is approved, a supplemental agreement shall be entered into.

All costs associated with the special access requested by the contractor shall be borne by the contractor, including, but not limited to, cattle guards, fences, gates and restoration work.

When access is not being utilized, gates shall be closed and locked. Upon completion of all operations, the area within the right of way that has been disturbed shall be restored to the condition existing prior to the contractor's operations.

The decision by the District Engineer to deny a request by the contractor will be considered to be final.

1001-5 Fences and Cattle Guards:

Where the haul roads to material sources cross existing fence lines in areas where there is livestock of any kind, temporary cattle guards shall be installed by the contractor at each crossing.

The livestock operator or owner shall be contacted prior to the beginning of any operations and effective measures shall be taken and means provided by the contractor to prevent livestock from straying.

In operations where conditions will exist that are dangerous to livestock of any kind, temporary cattle guards and fence shall be installed around the pit area by the contractor to protect livestock.

Temporary cattle guards and fence installed by the contractor shall be removed and existing fence disturbed shall be replaced or reconstructed and all fence shall be left in as good condition as it was prior to the beginning of work.

(1005PG, 06/19/25)

SECTION 1005 BITUMINOUS MATERIALS:

1005-3 Bituminous Material Requirements:

1005-3.01 Asphalt Cement: of the Standard Specifications is revised to read:

Asphalt cement shall be a performance grade (PG) asphalt binder conforming to the requirements of AASHTO M 320. Air blown/oxidized asphalt, Polyphosphoric acid (PPA) modification and re-refined/recycled engine oil bottom (REOB) will not be accepted. The pressure aging temperature for all binders, including Terminal Blend rubberized binder and Polymer modified asphalt binder shall be as specified below:

PG Asphalt Binder	Pressure Aging Temperature
PG 70-XX and above	110 °C
PG 64-XX and below	100 °C

If Terminal Blend rubberized binder (XX-XXTR+) is used, it shall conform to the requirements of Table 1005-1 and 1005-1a.

If Polymer modified asphalt binder (XX-XXPM) is used, it shall conform to the requirements of Table 1005-1 and 1005-1b.

If, during asphaltic concrete production, it is determined by testing that asphalt cement fails to meet the requirements for the specified grade, the asphaltic concrete represented by the corresponding test results shall be evaluated for acceptance. Should the asphaltic concrete be allowed to remain in place, the contract unit price for asphaltic concrete will be adjusted by the percentage shown in Table 1005-1. Should the asphalt cement be in reject status, the contractor may, within 25 days of receiving notice of the reject status, supply an engineering analysis of the expected performance of the asphaltic concrete in which the asphalt cement is incorporated. The engineering analysis shall detail any proposed corrective action and the anticipated effect of such corrective action on the performance. Within three working days, the Engineer will determine whether or not to accept the contractor's proposal. If the proposal is rejected, the asphaltic concrete shall be removed and replaced with asphaltic concrete meeting the requirements of the specifications at no additional expense to the Department. If the contractor's proposal is accepted, the asphaltic concrete shall remain in place at the applicable percent of contract unit price allowed, and any necessary corrective action shall be performed at no additional cost to the Department.

1005-3.03 Emulsified Asphalt: the fourth paragraph of the Standard Specifications is revised to read:

Emulsified asphalts shall be homogeneous. If emulsified asphalt has separated, it shall be thoroughly mixed to insure homogeneity. If emulsified asphalt has separated due to freezing, it shall not be used. Emulsified asphalt shall not be used after 30 days from production.

1005-3.04 Emulsified Asphalt (Special Type): of the Standard Specifications is revised to read:

Emulsified asphalt (special type) shall consist of Type SS-1 or CSS-1 diluted with water to provide an asphalt content not less than 26 percent. The water used shall be potable. Potable water obtained from public utility distribution lines will be acceptable. The water used shall be free of injurious amounts of oil, acid, alkali, clay, vegetable matter, silt, or other harmful matter. The material shall not be diluted in the field.

1005-3.07 Other Requirements: the tables 1005-1, 1005-1a, and 1005-1b of the Standard Specifications are revised to read:

TABLE 1005-1 ASPHALT BINDER ADJUSTMENT TABLE			
Test Property	AASHTO Test Method	Test Result	Percent of Contract Unit Price Allowed
Dynamic Shear of Original Binder: G*/Sin δ , kPa	T 315	≥ 1.00 0.90-0.99 0.70-0.89 < 0.70	100 98 95 88 (1)
Dynamic Shear of RTFO Binder: G*/Sin δ , kPa	T 315	≥ 2.20 2.00-2.19 1.60-1.99 < 1.60	100 98 95 88 (1)
Dynamic Shear of PAV Binder: G*Sin δ , kPa	T 315	≤ 5000 5001-5500 5501-7000 7001-8000 > 8000	100 98 95 89 87 (1)
Creep Stiffness of PAV Binder: S, Mpa	T 313	≤ 300 301-330 331-450 451-600 > 600	100 98 95 89 87 (1)
m-value at 60 sec.	T 313	≥ 0.300 0.270-0.299 0.230-0.269 < 0.230	100 98 90 87 (1)

Notes:

- (1) Reject Status: The pay adjustment applies if allowed to remain in place.
- (2) Specified properties in AASHTO M 320 for flash point, viscosity at 135 °C, and mass loss are not considered performance related. Specification deficiencies for these properties shall be cause for a work stoppage until specification properties are met, but will not be cause for a pay adjustment.
- (3) Should the bituminous material be deficient on more than one property, the pay adjustment will be the greatest reduction to the contract unit price specified considering individual test results.
- (4) The information presented in this table does not apply to asphalt cement used for tack coats.

TABLE 1005-1a
Terminal Blend rubberized binder (XX-XXTR+)

Test Property	Test Method	Requirement	Test Result	Percent of Contract Unit Price Allowed
Solubility, %, minimum	ASTM D7553 or ASTM 2042	98	-----	-----
Elastic Recovery, @ 10 °C, %, minimum	AASHTO T 301	75	75 70 - 74 < 70	100 89 87 (1)

- (1) Reject Status: The pay adjustment applies if allowed to remain in place.

Notes:

In case of dispute, ASTM D2042 shall be used to determine the Solubility.

The asphalt binder shall contain a minimum of 8 percent crumb rubber and a minimum of 3 percent SBS (styrene-butadiene-styrene) polymer.

The crumb rubber shall be derived from processing whole scrap tires or shredded tire materials. The tires from which the crumb rubber is produced shall be taken from automobiles, trucks, or other equipment owned and operated in the United States. The processing shall not produce, as a waste product, casings or other round tire material that can retain moisture when stored or disposed of above ground.

Modified binders shall be blended at the source of supply and delivered as a homogenous mixture to the job site.

Modified Binders stored at the asphalt concrete mixing plant for more than two weeks or beyond the supplier recommended shelf life, whichever is less, shall be sampled and tested.

TABLE 1005-1b Polymer Modified Asphalt Binder (XX-XXPM)				
Test Property	Test Method	Requirement	Test Result	Percent of Contract Unit Price Allowed
Solubility, %, minimum	ASTM D7553 or ASTM D2042	98	-----	-----
Elastic Recovery @ 10°C, %, minimum	AASHTO T 301	75	≥ 75 70 - 74 < 70	100 89 87 (1)
(1) Reject Status: The pay adjustment applies if allowed to remain in place.				
Notes: In case of dispute, ASTM D2042 shall be used to determine the Solubility. Asphalt binder shall contain a minimum of 3 percent SBS (styrene-butadiene-styrene) polymer. Modified binders shall be blended at the source of supply and delivered as a homogenous mixture to the job site. Modified Binders stored at the asphalt concrete mixing plant for more than two weeks or beyond the supplier recommended shelf life, whichever is less, shall be sampled and tested.				

1005-3.07 Other Requirements: the table 1005-1c of the Standard Specifications is hereby deleted.

1005-3.07 Other Requirements: the table 1005-3 of the Standard Specifications is revised to read:

TABLE 1005-3 EMULSIFIED ASPHALTS							
Tests On Emulsion	Test Method	Requirement					
		RS-1	CRS-1	RS-2	CRS-2	SS-1	CSS-1
Viscosity: Saybolt Furol, seconds, range 77 °F 122 °F	AASHTO T 59	20-100	20-100	50-400	50-400	20-100	20-100
Settlement: 5 days, %, maximum	AASHTO T 59	5	5	5	5	5	5
Sieve: Retained on No. 20, %, maximum	AASHTO T 59 (1)	0.10	0.10	0.10		0.10	0.10
Particle Charge	AASHTOT 59		Pos.		Pos.		Pos.

							(2)
Demulsibility: 35 mL, 0.02 N calcium chloride %, minimum	AASHTO T 59	60		60			
Classification: Uncoated particles, %, minimum	Arizona Test Method 502				55		
Residue: (3)		55	60	63	65	57	57
Residue, %, minimum (4)							
Notes:							
(1) Distilled water shall be used. Two percent sodium oleate solution will not be accepted.							
(2) If the Particle Charge Test result is inconclusive, material having a maximum PH value of 6.7 will be acceptable.							
(3) Residue will be obtained in accordance with the requirements of Arizona Test Method 504 and shall conform to all the requirements of AASHTO M 320 for PG 64-16, except that for CRS-2 the dynamic shear ($G^*/\sin \delta$) on the original residue shall be a minimum of 1.00 kPa and a maximum of 1.50 kPa.							
(4) Residue by evaporation may be determined in accordance with the requirements of Arizona Test Method 512; however, in case of dispute, AASHTO T 59 will be used.							

1005-3.07 Other Requirements: the note (2) of Table 1005-3a of the Standard Specifications is revised to read:

(2) Testing shall be performed on residue by distillation. Testing on residue by oven evaporation will not be accepted.

1005-3.07 Other Requirements: the table 1005-5 of the Standard Specifications is revised to read:

TABLE 1005-5					
EMULSIFIED RECYCLING AGENTS					
Tests on Emulsified Recycling Agent	Test Method	Requirement			
		ERA-1	ERA-5	ERA-25	ERA-75
Viscosity: Saybolt Furol, 77 °F, seconds range	AASHTO T 59	15 - 40	15 - 100	15 - 100	15 – 100
Miscibility	AASHTO T 59	Passes	Passes	Passes	Passes
Sieve Test: %, minimum	AASHTO	0.10	0.10	0.10	0.10

maximum	T 59 (1)				
Particle Charge	AASHTO T 59	Positive	Positive	Positive	Positive
Residue: (2) Residue, %, minimum	(3)	60	60	60	60
Notes:					
(1) Distilled water shall be used. Two percent sodium oleate solution will not be accepted. (2) Residue will be obtained in accordance with the requirements of Arizona Test Method 504 and shall conform to the requirements specified in Table 1005-4. (3) Residue by evaporation may be determined in accordance with the requirements of Arizona Test Method 512; however, in case of dispute, AASHTO T 59 will be used.					

1005-3.07 Other Requirements: the Paving Asphalt row of the table 1005-6 of the Standard Specifications is modified to add:

TABLE 1005-6 OTHER REQUIREMENTS			
Grade of Asphalt Specification Designation	Range of Temperatures for Application by Spraying, °F (Not applicable for Plant Mixing)	Range of Aggregate Temperatures for Plant Mixing, °F	Basis of Conversion, Average Gallons Per Ton at 60 °F
Paving Asphalt	275 - 400	-----	
PG 76-22 PM			231
PG 70-22 PM			232
PG 64-28 PM			233

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

- I. General
- II. Nondiscrimination
- III. Non-segregated 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. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
- XI. Certification Regarding Use of Contract Funds for Lobbying
- XII. Use of United States-Flag Vessels:

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, United States Code, as required in 23 CFR 633.102(b) (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). 23 CFR 633.102(e).

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. 23 CFR 633.102(e).

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) in accordance with 23 CFR 633.102. 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 solicitation-for-bids or request-for-proposals 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). 23 CFR 633.102(b).

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. 23 CFR 633.102(d).

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. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A 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 Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), 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 Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), 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 Part 230, Subpart A, 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 (see 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 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 Part 35 and 29 CFR Part 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. 23 CFR 230.409 (g)(4) & (5).

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, sexual orientation, gender identity, 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 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 or other knowledgeable company official.

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, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure 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. 23 CFR 230.409. 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, sexual orientation, gender identity, 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, sexual orientation, gender identity, 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 thereunder. 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, sexual orientation, gender identity, 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, 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. Assurances Required:

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

- (1) Withholding monthly progress payments;
- (2) Assessing sanctions;
- (3) Liquidated damages; and/or
- (4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

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 more than \$10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, 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, sexual orientation, gender identity, 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), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway

Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

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 (29 CFR 5.5)

a. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), 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 basic hourly 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. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act ([40 U.S.C. 3141\(2\)\(B\)](#)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. 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 must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. 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 classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH-1321) must 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. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in [29 CFR part 1](#), a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

(i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

(ii) The classification is used in the area by the construction industry; and

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

c. *Conformance.* (1) The contracting officer must 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 be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate 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 used 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) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) 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 will be sent by the contracting officer by email to DBAconformance@dol.gov. 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.

(4) 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 will, by email to DBAconformance@dol.gov, 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.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division

under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must 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.

d. *Fringe benefits not expressed as an hourly rate.* 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 may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

e. *Unfunded plans.* 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, in accordance with the criteria set forth in § 5.28, 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.

f. *Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding (29 CFR 5.5)

a. *Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and 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.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph

2.a. of this section or Section V, paragraph 3.a., or both, over claims to those funds by:

- (1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;
- (2) A contracting agency for its procurement costs;
- (3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;
- (4) A contractor's assignee(s);
- (5) A contractor's successor(s); or
- (6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901](#)–3907.

3. Records and certified payrolls (29 CFR 5.5)

a. *Basic record requirements* (1) *Length of record retention.* All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(2) *Information required.* Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; 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 [40 U.S.C. 3141\(2\)\(B\)](#) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(3) *Additional records relating to fringe benefits.* Whenever the Secretary of Labor has found under paragraph 1.e. of this section 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 [40 U.S.C. 3141\(2\)\(B\)](#) of the Davis-Bacon Act, the contractor must 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.

(4) *Additional records relating to apprenticeship.* Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

b. *Certified payroll requirements* (1) *Frequency and method of submission.* The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting

agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(2) *Information required.* The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (e.g., the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH-347 or in any other format desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division website at <https://www.dol.gov/sites/dolgov/files/WHDL/legacy/files/wh347.pdf> or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

(3) *Statement of Compliance.* Each certified payroll submitted must be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;

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

(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(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.

(4) *Use of Optional Form WH-347.* The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 will satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(3) of this section.

(5) *Signature*. The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(6) *Falsification*. The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under [18 U.S.C. 1001](#) and [31 U.S.C. 3729](#).

(7) *Length of certified payroll retention*. The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents*. The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access* (1) *Required record disclosures and access to workers*. The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(2) *Sanctions for non-compliance with records and worker access requirements*. If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, 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, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under [29 CFR part 6](#) any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures*. Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address

of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. Apprentices and equal employment opportunity (29 CFR 5.5)

a. *Apprentices (1) Rate of pay*. Apprentices will be permitted to work at less than the predetermined rate for the work they perform 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 (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits*. Apprentices must 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, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio*. The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must 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 this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(4) *Reciprocity of ratios and wage rates*. Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

b. *Equal employment opportunity*. The use of apprentices and journeyworkers under this part must be in conformity with

the equal employment opportunity requirements of Executive Order 11246, as amended, and [29 CFR part 30](#).

c. 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. 23 CFR 230.111(e)(2). 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 journeyworkers 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 as provided in 29 CFR 5.5.

6. Subcontracts. The contractor or subcontractor must insert FHWA-1273 in any subcontracts, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 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 as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, 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 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 [40 U.S.C. 3144\(b\)](#) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of [40 U.S.C. 3144\(b\)](#) or § 5.12(a).

c. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, [18 U.S.C. 1001](#).

11. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#);

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#);

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#); or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#).

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), 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 watchpersons 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. 29 CFR 5.5.

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 and interest from the date of the underpayment. 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 watchpersons and guards, employed in violation of the clause set forth in paragraph 1. of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* 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.

* \$31 as of January 15, 2023 (See 88 FR 88 FR 2210) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990.

3. Withholding for unpaid wages and liquidated damages

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, 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 that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section IV paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

- (1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;
- (2) A contracting agency for its procurement costs;
- (3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;
- (4) A contractor's assignee(s);
- (5) A contractor's successor(s); or
- (6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901](#)–3907.

4. Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the

event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

5. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

- a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;
- b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;
- c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or
- d. Informing any other person about their rights under CWHSSA or this part.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

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" in paragraph 1 of Section VI 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: (based on longstanding interpretation)

- (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. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), 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. Pursuant to 23 CFR 635.116(c), 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. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

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 Part 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. 23 CFR 635.108.

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 Part 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). 29 CFR 1926.10.

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 Part 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 11, 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 (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of \$150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.327.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.327.

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. 2 CFR 180.220 and 1200.220.

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. 2 CFR 180.320.

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. 2 CFR 180.325.

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. 2 CFR 180.345 and 180.350.

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, Subpart I, 180.900-180.1020, and 1200. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient 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 recipient or subrecipient 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. 2 CFR 180.330.

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. 2 CFR 180.220 and 180.300.

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. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. 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 System for Award Management website (<https://www.sam.gov/>). 2 CFR 180.300, 180.320, and 180.325.

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 CFR 180.325.

* * * * *

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 CFR 180.335;.

(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, 2 CFR 180.800;

(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, 2 CFR 180.700 and 180.800; 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. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

3. 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). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant 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. 2 CFR 180.365.

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, Subpart I, 180.900 – 180.1020, 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 recipient or subrecipient of Federal funds and a participant (such as the prime or general contractor). "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 recipient or subrecipient 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. 2 CFR 1200.220 and 1200.332.

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. 2 CFR 180.220 and 1200.220.

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 System for Award Management website (<https://www.sam.gov/>), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

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. 2 CFR 180.325.

* * * * *

4. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(1) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(2) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(3) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

b. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should 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 Part 20, App. A.

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.

XII. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor 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. 46 CFR 381.7.

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 paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS
PREFERENCE FOR APPALACHIAN DEVELOPMENT
HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS
ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B)**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

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.

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.

**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 or 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 or 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 timetables.

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 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 nonworking 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 site 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 therefor, 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 women sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

e. Develop on the job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources complied 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 on site supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

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

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

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

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

l. Conduct, at least annually, an inventory and evaluation at least of all minority and

female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

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

n. Ensure that all facilities and company activities are nonsegregated 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 actions 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 under utilized).

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

11. The Contractor shall not enter into any Subcontract with any person or firm

debarred from Government Contracts pursuant to Executive Order 11246.

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

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

14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to 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 an imitation 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).

TITLE VI / NON-DISCRIMINATION ASSURANCES

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, the *Federal Highway Administration*, 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 or the *Federal Highway Administration* 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 or the *Federal Highway Administration*, as appropriate, and will set forth what efforts it has made to obtain the information.
5. **Sanctions for Noncompliance:** In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the *Federal Highway Administration*, may determine to be appropriate, including, but not limited to:
 - a. withholding payments to the contractor under the contract until the contractor complies; and/or
 - b. cancelling, terminating, or suspending a contract, in whole or in part.
6. **Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with request to any subcontract or procurement as the Recipient or the *Federal Highway Administration* may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor or supplier because of such direction, the contractor may request the 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.

TITLE VI / NON-DISCRIMINATION ASSURANCES

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.*).

NOTICE OF REQUIREMENT 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:

	Minority	Female
Tucson and balance of Pima County Cochise, Graham, Greenlee and Santa Cruz Counties	24.1 27.0	6.9 6.9
Phoenix and balance of Maricopa County Apache, Coconino, Gila, Mohave, Navajo, Pinal, Yavapai and Yuma Counties	15.8 19.6	6.9 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 efforts 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.

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

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. Contractors and subcontractors are required to submit the required information through the LCPtracker system, a labor compliance software monitoring certified payroll and prevailing wage.

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.

"General Decision Number: AZ20260032 05/18/2026

State: Arizona

Construction Types: Highway

Counties: Arizona Counties of
La Paz

Modification Number	Publication Date
0	01/02/2026
1	05/18/2026

ENGI0012-068 12/01/2024

Rates

Fringes

POWER EQUIPMENT OPERATOR: (DRILL RIG/AUGER)\$ 35.56
18.12

IRON0075-013 08/01/2025

Rates

Fringes

IRONWORKER.....\$ 39.50
19.91

LABO1184-038 06/01/2025

Rates

Fringes

LABORER: PIPELAYER.....\$ 31.98
9.26

LABO1184-045 06/01/2025

Rates

Fringes

LABORER: MASON TENDER.....\$ 30.88
9.26

SUAZ2023-017 11/19/2024

	Rates
Fringes	
TRUCK DRIVER: WATER.....	\$ 31.54
4.78	
TRUCK DRIVER: DUMP.....	\$ 23.40
3.19	
TRAFFIC CONTROL.....	\$ 20.00
0.00	
POWER EQUIPMENT OPERATOR: PAVER/SPREADER/FINISH EQUIPMENT (ASPHALT, AGGREGATE, & CONCRETE).....	\$ 31.55
0.06	
POWER EQUIPMENT OPERATOR: OILER.....	\$ 31.86
10.01	
POWER EQUIPMENT OPERATOR: MOTOR GRADER/BLADE.....	\$ 36.47
3.61	
POWER EQUIPMENT OPERATOR: LOADER/FRONT END LOADER...	\$ 38.50
0.00	
POWER EQUIPMENT OPERATOR: FORKLIFT.....	\$ 38.76
9.20	
POWER EQUIPMENT OPERATOR: EXCAVATOR/TRACKHOE.....	\$ 39.48
0.00	
POWER EQUIPMENT OPERATOR: CRANE / DERRICKS.....	\$ 48.32
14.18	
POWER EQUIPMENT OPERATOR: CONCRETE SCREED.....	\$ 33.90
0.00	
POWER EQUIPMENT OPERATOR: COMPACTOR/ROLLER.....	\$ 32.53
0.00	
POWER EQUIPMENT OPERATOR: BOBCAT/SKID STEER/SKID LOADER.....	\$ 32.53
0.00	
PAINTER: SIGN AND DISPLAY ERECTOR.....	\$ 19.06
2.99	
LABORER: GENERAL.....	\$ 31.38
6.56	
LABORER: ASPHALT, INCLUDES RAKER, SHOVELER, SPREADER AND DISTRIBUTOR.....	\$ 24.37
3.34	
CARPENTER: FORMWORK CONCRETE.....	\$ 33.55
12.12	

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

<https://www.dol.gov/agencies/whd/government-contracts>.

Note: Executive Order 13658 generally applies to contracts subject to the Davis-Bacon Act that were awarded on or between January 1, 2015 and January 29, 2022, and that have not been renewed or extended on or after January 30, 2022. Executive Order 13658 does not apply to contracts subject only to the Davis-Bacon Related Acts regardless of when they were awarded. If a contract is subject to Executive Order 13658, the contractor must pay all covered workers at least \$13.65 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract from May 11, 2026, through December 31, 2026. The applicable Executive Order minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under Executive Order 13658 is available at 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) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular

rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than **❖SU❖**, **❖UAVG❖**, **❖SA❖**, or **❖SC❖** denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate 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. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE:

UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The **❖SU❖** identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may

include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the 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. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

❖SU❖ wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ❖SA❖ identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ❖SA❖ identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

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

- a) a survey underlying a wage determination
- b) an existing published wage determination
- c) an initial WHD letter setting forth a position on a wage determination matter
- d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

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

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail 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 an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail 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 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.

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END OF GENERAL DECISION

"



ARIZONA DEPARTMENT OF TRANSPORTATION
PROJECT DELIVERY AND OPERATIONS DIVISION
CONTRACTS AND SPECIFICATIONS GROUP

BID SCHEDULE

CONTRACT # 2024089

TRACS No.	Project No.	Item	County	District	Gross Length	Net Length	Prepared By:
095 LA 158 F070601C	095-C-(229)T	103844	LA PAZ	NORTHWEST	3.1		Rene Teran

Highway Termini	Location	Work Description
• QUARTZSITE - PARKER - TOPOCK HIGHWAY (SR 95)_	• South of Parker	• System Enhancement (Safety Improvements)

BID SCHEDULE**095 LA 158 F070601C**

Item No.	Item Description	Unit	Quantity	Unit Price	Extended Amount
2020029	REMOVAL OF ASPHALTIC CONCRETE PAVEMENT	SQ.YD.	294		
2020052	REMOVE (SPILLWAY)	L.FT.	60		
2020101	REMOVE FENCE	L.FT.	137		
2030301	ROADWAY EXCAVATION	CU.YD.	252		
2030401	DRAINAGE EXCAVATION	CU.YD.	793		
2030811	DYKE (TYPE A) (C-03.10)	L.FT.	33		
2040002	GRADING FOR DRAINAGE	SQ.YD.	1,618		
2050001	GRADING ROADWAY FOR PAVEMENT	SQ.YD.	59		
3030022	AGGREGATE BASE, CLASS 2	CU.YD.	35		
4040125	FOG COAT	TON	1		
4040165	BLOTTER MATERIAL	SQ.YD.	205		
4090006	ASPHALTIC CONCRETE (MISCELLANEOUS STRUCTURAL) (SPECIAL MIX)	TON	69		
6011151	SINGLE SLOPE BRIDGE CONCRETE BARRIER AND TRANSITION (42")	L.FT.	532		
6070054	SIGN POST (PERFORATED) (2 S)	L.FT.	24		

BID SCHEDULE

095 LA 158 F070601C

Item No.	Item Description	Unit	Quantity	Unit Price	Extended Amount
6070060	FOUNDATION FOR SIGN POST (CONCRETE)	EACH	2		
7010025	TEMPORARY IMPACT ATTENUATION DEVICE (IN-LINE ENERGY ABSORBING TERM.)	EACH	6		
7010026	TEMPORARY IMPACT ATTENUATION DEVICE (IN-LINE ENERGY ABSORBING TERM.) (IN USE)	EACH-DAY	60		
7015010	TEMPORARY CONCRETE BARRIER (INSTALLATION AND REMOVAL)	L.FT.	1,120		
7015032	TEMPORARY PREFORMED MARKING (TYPE II, TAPE LINE)	L.FT.	900		
7016020	TEMPORARY CONCRETE BARRIER (IN USE)	L.FT.-DAY	11,200		
7016030	BARRICADE (TYPE 1, TYPE 2, VERT.PANEL, TUBULAR MARKER)	EACH-DAY	3,290		
7016033	PORTABLE SIGN STAND (SPRING TYPE)	EACH-DAY	1,179		
7016035	WARNING LIGHT (TYPE A)	EACH-DAY	969		
7016037	WARNING LIGHT (TYPE C)	EACH-DAY	3,290		
7016050	TRUCK-MOUNTED ATTENUATOR	EACH-DAY	16		
7016051	TEMPORARY SIGN (LESS THAN 10 S.F.)	EACH-DAY	919		
7016052	TEMPORARY SIGN (10 S.F. OR MORE)	EACH-DAY	260		

BID SCHEDULE**095 LA 158 F070601C**

Item No.	Item Description	Unit	Quantity	Unit Price	Extended Amount
7016075	FLAGGING SERVICES (CIVILIAN)	HOUR	1,840		
7016081	FLAGGING SERVICES (DPS)	HOUR	280		
7016082	FLAGGING SERVICES (LOCAL ENFORCEMENT OFFICER)(WITH AGENCY VEHICLE)	HOUR	280		
7020007	IMPACT ATTENUATION DEVICE (DETAIL R)	EACH	2		
7030082	OBJECT MARKER (M-23) (TYPE 2)	EACH	2		
7040005	PAVEMENT MARKING (WHITE EXTRUDED THERMOPLASTIC) (0.090")	L.FT.	2,267		
7080201	WATERBORNE-TYPE I PAVEMENT MARKING (PAINTED) (WHITE)	L.FT.	1,511		
7100001	SWZ SYSTEM	L.SUM	1		
7100100	SWZ TDC LOCATION (IN USE)	EACH-DAY	200		
7100200	SWZ CMB ASSEMBLY (IN USE)	EACH-DAY	140		
8050003	SEEDING (CLASS II)	ACRE	1		
8101018	EROSION CONTROL (STABILIZED CONST. ENTRANCE/EXIT GRAVEL PAD)	SQ.YD.	170		
9010001	MOBILIZATION	L.SUM	1		
9020003	CHAIN LINK FENCE, TYPE 1 (60")	L.FT.	137		

BID SCHEDULE

095 LA 158 F070601C

Item No.	Item Description	Unit	Quantity	Unit Price	Extended Amount
9120004	SHOTCRETE (4")	SQ.YD.	55		
9130002	RIPRAP (WIRE-TIED)	CU.YD.	302		
9130007	RIPRAP (DUMPED) (6 IN.)	CU.YD.	28		
9170003	EMBANKMENT SPILLWAY	L.FT.	156		
9170005	EMBANKMENT SPILLWAY (STD. C-01.10 & DETAIL O2)	L.FT.	122		
9240010	FORCE ACCOUNT WORK (PERMANENT PAVEMENT REPAIR)	L.SUM	1	\$25,000.00	\$25,000.00
9240011	FORCE ACCOUNT WORK (BIOLOGIST)	L.SUM	1	\$5,000.00	\$5,000.00
9240046	MISCELLANEOUS WORK (SCALING)	CU.YD.	15		
9240111	MISCELLANEOUS WORK (CHAIN & POST BARRIER, DETAIL Q)	L.FT.	219		
9240117	MISCELLANEOUS WORK (SLOPE DRAPE)	SQ.FT.	20,550		
9240181	MISCELLANEOUS WORK (CONTROL OF NOXIOUS PLANTS)(MANUAL/MECH. METHODS)	SQ.YD.	3,543		
9240182	MISCELLANEOUS WORK (CONTROL OF NOXIOUS PLANTS)(HERBICIDE)	SQ.YD.	4,330		
9250001	CONSTRUCTION SURVEYING AND LAYOUT	L.SUM	1		

BID SCHEDULE

095 LA 158 F070601C

Item No.	Item Description	Unit	Quantity	Unit Price	Extended Amount
9280034	GROUND-IN RUMBLE STRIP (6 INCH)	L.FT.	1,133		

BID TOTAL :

PROPOSAL

TO THE ARIZONA DEPARTMENT OF TRANSPORTATION:

Gentlemen:

The following Proposal is made for constructing project

095 LA 158 F070601C 095-C(229)T
QUARTZSITE-PARKER-TOPOCK HIGHWAY
(SOUTH OF PARKER DAM)

in the State of Arizona.

The following Proposal is made on behalf of _____

and no others.

(NAME OF COMPANY, FIRM, OR CORPORATION)

The undersigned hereby certifies that (s)he has been duly authorized to submit a proposal on behalf of the company, firm, or corporation mentioned above; and further certifies, pursuant to Subsection 112(c) of Title 23, United States Code and Title 44, Chapter 10, Article 1 of the Arizona Revised Statutes, that neither (s)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 free competitive bidding in connection with such project and furthermore that no member or employee of the Arizona Department of Transportation is personally or financially interested, directly or indirectly, in the Proposal, or in any purchase or sale of any materials or supplies for the work to which it relates, or in any portion of the profits thereof.

The undersigned certifies that the approved Plans, Standard Specifications, Special Provisions and forms of Contract and Bond authorized by the Arizona Department of Transportation and constituting essential parts of this proposal, have been carefully examined, and also that the site of the work has been personally inspected. The undersigned declares that the amount and nature of the work to be done is understood and that at no time will misunderstanding of the Plans, Specifications, Special Provisions, or conditions to be overcome, be plead. On the basis of Plans, Specifications, Special Provisions, and the forms of Contract and Bond proposed for use, the undersigned proposes to furnish all the necessary equipment, materials, machinery, tools, apparatus, and other means of construction, and labor to do all the work in the manner specified, and to accept, as full compensation therefor, the sum of the various products obtained by multiplying each unit price, herein bid for the work or materials, by the quantity thereof actually incorporated in the complete project, as determined by the State Engineer. The undersigned understands that the quantities mentioned herein are approximate only and are subject to increase or decrease and hereby proposes to perform all quantities of work as either increased or decreased, in accordance with the provisions of the Specifications, at the unit price bid in the Bidding Schedule.

The undersigned further proposes to perform all extra work that may be required on the basis provided in the Specifications and to give such work personal attention and to secure economical performance.

The undersigned further proposes to execute the Contract Agreement and furnish satisfactory Bond within ten calendar days from the date of Notice of Award, time being of the essence. The undersigned further proposes to begin work as specified in the contract attached hereto, and to complete the work on or before expiration of the contract time as defined in the Specifications, and maintain at all times a Payment Bond and a Performance Bond, approved by the State Engineer, in an amount equal to one hundred (100) percent of the total bid. These bonds shall serve not only to guarantee the completion of the work on the part of the undersigned, but also to guarantee the excellence of both workmanship and material and the payment of all obligations incurred, until the work is finally accepted and the provisions of the Plans, Standard Specifications and Special Provisions fulfilled.

12-5901 R03/11

Proposal
Sheet 1 of 2

The undersigned hereby agrees to provide an electronic Proposal Guaranty in the amount and character named in the Advertisement for Bids. The Proposal Guaranty is submitted as a guaranty of the good faith of the bidder, and that the bidder will enter into written contract, as provided, to do the work, if successful in securing the award thereof, and it is hereby agreed that if at any time other than as provided in the Proposal there should be failure on the part of the undersigned to execute the Contract and furnish satisfactory Bond as herein provided, the State of Arizona, in either of such events, shall be entitled and is hereby given the right to retain the said Proposal Guaranty as liquidated damages.

If by a Corporation:

(Seal)

Corporate Name: _____

Corporate Mailing Address: _____ Zip Code: _____

Incorporated under the laws of the State of: _____

By (Signature): _____ Date: _____

President: _____

Secretary: _____

Treasurer: _____

If by a Firm or Partnership:

Firm or Partnership Mailing Name: _____

Firm or Partnership Address: _____

By (Signature): _____ Date: _____

Name and Address of Each Member: _____

If by an Individual:

Signature: _____ Date: _____

Mailing Address: _____



ARIZONA DEPARTMENT OF TRANSPORTATION

SURETY (BID) BOND

(Penalty of this bond must not be less than 10% of the bid amount)

KNOW ALL MEN BY THESE PRESENTS, THAT _____

as Principal, hereinafter called the Principal, and _____

a corporation duly organized under the laws of the state of _____
hereinafter called the Surety, holding a certificate of authority to transact surety business in this State issued by the Director of the Department of Insurance, are held and firmly bound unto the Arizona Department of Transportation, as Obligee, hereinafter called the Obligee, in the sum of Ten Percent (10%) of the amount of the bid of Principal, submitted by Principal to the Arizona Department of Transportation 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.

WHEREAS, the Principal is herewith submitting its proposal for TRACS/Project No.

095 LA 158 F070601C 095-C(229)T
QUARTZSITE-PARKER-TOPOCK HIGHWAY
(SOUTH OF PARKER DAM)

NOW THEREFORE, if the Obligee, acting by and through its Transportation board, shall accept the proposal of the Principal and the Principal shall enter into contract with the Obligee in accordance with the terms of such proposal, and give such bonds and certificates of insurance as may be specified in the contract documents 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 Obligee 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 is void. Otherwise it remains in full force and effect.

IN WITNESS WHEREOF, we hereunto set our hands and seals:

Principal

Surety

By

By Attorney-in-Fact

Title

Address Attorney-in-Fact

Subscribed and sworn before me
this _____ day of _____, 20 _____.

My Commission expires: _____

**CERTIFICATION WITH REGARD TO THE PERFORMANCE OF
PREVIOUS CONTRACTS OR SUBCONTRACTS SUBJECT TO THE
EQUAL OPPORTUNITY CLAUSE AND THE FILING OF REQUIRED REPORTS
APRIL, 1969**

The bidder _____, proposed subcontractor _____, hereby certifies that it has _____, has not _____, participated in a previous contract or subcontract subject to the equal opportunity clause, as required by Executive Orders 10925, 11114, or 11246, and that it has _____, has not _____, filed with the Joint Reporting committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

(Company)

By: _____

(Title)

Date: _____

Note: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7b (1),) and must be submitted by bidders and proposed subcontractors only in connection with contracts and subcontracts which are subject to the equal opportunity clause. Contracts and subcontracts which are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5 (Generally only contracts or subcontracts of \$10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders or their implementing regulations.

Information concerning Standard Form 100 (EEO-1) is available from:

Joint Reporting Committee
P.O. Box 19100
Washington, D.C. 20036-9100

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7(b)(1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

095 LA 158 F070601C 095-C(229)T
QUARTZSITE-PARKER-TOPOCK HIGHWAY
(SOUTH OF PARKER DAM)

R7/03

**CERTIFICATION WITH RESPECT TO THE
RECEIPT OF ADDENDA**

In the submission of a bid and by the signing of the Proposal, this will certify that the following numbered addenda issued on this project have been brought to my personal attention and furthermore that I understand and agree that those will be made a part of the Contract.

Addendum No. _____, _____, _____, _____, _____

PRINT NAME OF CONTRACTOR

SIGNATURE

TITLE

DATE

095 LA 158 F070601C 095-C(229)T
QUARTZSITE-PARKER-TOPOCK HIGHWAY
(SOUTH OF PARKER DAM)

ARIZONA DEPARTMENT OF TRANSPORTATION
PARTICIPATION IN BOYCOTT OF ISRAEL CERTIFICATION FORM

Unless and until the District Court's injunction in Jordahl is stayed or lifted, the Anti-Israel Boycott Provision (A.R.S. § 35-393.01(A)) is unenforceable and the State will take no action to enforce it. This attachment (Participation in Boycott of Israel) is no longer a mandatory part of the offer. Offers will not be evaluated based on whether this certification has been completed.

095 LA 158 F070601C 095-C(229)T
QUARTZSITE-PARKER-TOPOCK HIGHWAY
(SOUTH OF PARKER DAM)

This Certification is required in response to legislation enacted to prohibit the State from contracting with companies currently engaged in a boycott of Israel. To ensure compliance with A.R.S. §35-393.01, this form must be completed and returned with the bid. The bidder understands that this response will become public record and may be subject to public inspection.

As defined by A.R.S. §35-393.01:

1. "Boycott" means engaging in a refusal to deal, terminating business activities or performing other actions that are intended to limit commercial relations with Israel or with persons or entities doing business in Israel or in territories controlled by Israel, if those actions are taken either:
 - (a) In compliance with or adherence to calls for a boycott of Israel other than those boycotts to which 50 United States Code section 4607(c) applies.
 - (b) In a manner that discriminates on the basis of nationality, national origin or religion and that is not based on a valid business reason.
2. "Company" means a sole proprietorship, organization, association, corporation, partnership, joint venture, limited partnership, limited liability partnership, Limited Liability Company or other entity or business association, and includes a wholly owned subsidiary, majority-owned subsidiary, parent company or affiliate.
3. "Direct holdings" means all publicly traded securities of a company that are held directly by the state treasurer or a retirement system in an actively managed account or fund in which the retirement system owns all shares or interests.
4. "Indirect holdings" means all securities of a company that are held in an account or fund, including a mutual fund, that is managed by one or more persons who are not employed by the state treasurer or a retirement system, if the state treasurer or retirement system owns shares or interests either:
 - (a) Together with other investors that are not subject to this section.
 - (b) That are held in an index fund.
5. "Public entity" means this State, a political subdivision of this STATE or an agency, board, commission or department of this state or a political subdivision of this state.
6. "Public fund" means the state treasurer or a retirement system.
7. "Restricted companies" means companies that boycott Israel.
8. "Retirement system" means a retirement plan or system that is established by or pursuant to title 38.

All Bidders must select one of the following:

_____The bidder does not participate in, and agrees not to participate in during the term of the contract a boycott of Israel in accordance with A.R.S. §35-393.01.

The bidder **does** participate in a boycott of Israel as defined by A.R.S. §35-393.01.

By submitting this response, the bidder agrees to indemnify and hold the State, its agents and employees, harmless from any claims or causes of action relating to the State's action based upon reliance on the above representations, including the payment of all costs and attorney fees incurred by the State in defending such an action.

_____ Company Name			_____ Signature of Person Authorized to Sign
_____ Address			_____ Printed Name
_____ City	_____ State	_____ Zip	_____ Title

ARIZONA DEPARTMENT OF TRANSPORTATION
Forced Labor of Ethnic Uyghurs Ban Certification Form

Forced Labor of Ethnic Uyghurs Ban

Please note that if any of the following apply to the Contractor, then the bidder shall select the "Exempt Contractor" option below:

- Contractor is a sole proprietorship;
- Contractor has fewer than ten (10) employees; OR
- Contractor is a non-profit organization.

095 LA 158 F070601C 095-C(229)T
QUARTZSITE-PARKER-TOPOCK HIGHWAY
(SOUTH OF PARKER DAM)

Pursuant to A.R.S. § 35-394, written certification is required to show that the company entering into a contract with a public entity does not use the forced labor, or use any contractors, subcontractors or suppliers that use the forced labor or any goods or services produced by the forced labor, of ethnic Uyghurs in the People's Republic of China.

Under A.R.S. §35-394:

1. "Company" means an organization, association, corporation, partnership, joint venture, limited partnership, limited liability partnership, limited liability company or other entity or business association, including a wholly owned subsidiary, majority-owned subsidiary, parent company or affiliate, that engages in for-profit activity and that has ten or more full-time employees.
2. "Public entity" means this State, a political subdivision of this State or an agency, board, commission or department of this State or a political subdivision of this State.

In compliance with A.R.S. §§ 35-394 et seq., all bidders must select one of the following:

☐	The bidder <u>does not</u> use, and agrees not to use during the term of the contract, any of the following: • Forced labor of ethnic Uyghurs in the People's Republic of China; • Any goods or services produced by the forced labor of ethnic Uyghurs in the People's Republic of China; or • Any Contractors, Subcontractors, or suppliers that use the forced labor or any goods or services produced by the forced labor of ethnic Uyghurs in the People's Republic of China.
☐	The bidder <u>does</u> participate in use of Forced Uyghurs Labor as described in A.R.S. § 35-394.
☐	Exempt Contractor. Select all statements that applies to this Contractor: ☐ Contractor is a sole proprietorship; ☐ Contractor has fewer than ten (10) employees; and/or ☐ Contractor is a non-profit organization.

Company Name

Signature of Person Authorized to Sign

Address

Printed Name

City

State

Zip

Title