ARIZONA DEPARTMENT OF TRANSPORTATION

ADVERTISEMENT FOR BIDS
SPECIAL PROVISIONS
BIDDERS DOCUMENTS

SUBMITTED BY:

_____
(Company or Firm Name)

_____
(Mailing Address)

_____
(City) (State) (Zip Code)

_____
(Street Address - If Different From Above)

_____
(City) (State) (Zip Code)

Arizona Commercial License No. _____

License Classifications(s) _____

TRACS/Proj. No.:

010 MA 112 H878701C NH-010-A(226)T
EHRENBERG-PHOENIX HWY (I-10)
SR 85 to Verrado Way (WB)

Contracts and Specifications Section
1651 West Jackson, Room 121F
Phoenix, Arizona 85007-3217

NOTICE

TO ALL BIDDERS

Read carefully the complete ADVERTISEMENT FOR BIDS and SECTION 102 - BIDDING REQUIREMENTS AND CONDITIONS in the Specifications. Important information is given in both documents which affects the acceptance of your bid proposal. Failure to comply may result in rejection of your bid.

Bids are to be prepared with black ink or typed and any alterations, initials or signatures must be in black ink.

Unit prices must be shown for each item of work in the Bidding Schedule, as well as, the extended bid amount. This applies to all items, including lump sum items.

If goals are established for participation by Disadvantaged Business Enterprises (DBE's), please read carefully the portion of the special provisions which addressed this subject. It is advisable to contact ADOT's Business Engagement and Compliance Office for assistance, particularly when bidding infrequently or for the first time.

It is **NOT** advisable to mail bid proposals. Proposals received in Contracts and Specifications Services, 1651 W. Jackson, Room 121F, Phoenix, Arizona 85007, after the designated time for opening will not be accepted regardless of the reason for not being received on time.

IMPORTANT

PRIOR TO SUBMITTING YOUR BID, PRINT COMPANY NAME, ADDRESS, CITY, STATE, AND ZIP IN THE SPACE PROVIDED ON THE COVER OF YOUR PROPOSAL. PLEASE ENSURE THAT THIS DATA IS THE SAME AS SHOWN ON THE BIDDING DOCUMENTS.

ARIZONA DEPARTMENT OF TRANSPORTATION

ADVERTISEMENT FOR BIDS

BID OPENING: FRIDAY, JUNE 24, 2016, AT 11:00 A.M. (M.S.T.)

TRACS NO	010 MA 112 H878701C
PROJ NO	NH-010-A(226)T
TERMINI	EHRENBERG-PHOENIX HWY (I-10)
LOCATION	SR 85 TO VERRADO WAY (WB)

ROUTE NO.	MILEPOST	DISTRICT	ITEM NO.
I-10	112.20 – 120.00	CENTRAL	11617

The amount programmed for this contract is $6,000,000. The location and description of the proposed work and the representative items and approximate quantities are as follows:

The proposed pavement rehabilitation project is located in Maricopa County within the City of Buckeye on Interstate 10 approximately half mile west of SR 85 Interchange. The project begins at MP 112.20 and extends east to MP 120 for an approximate length of 7.8 miles on I-10 WB. The work consists of variable depth milling from 1 Inch to 4 ½ inches and replacing existing pavement with AC and AR-ACFC, and placement of shoulder buildup with milled AC material on both sides of the pavement. In addition, the work includes crack repair in existing asphaltic concrete pavement, pavement markings and other related work.

REPRESENTATIVE ITEMS	**UNIT**	**QUANTITY**
REMOVE BITUMINOUS PAVEMENT (MILLING) (1”- 4 ½”)	SQ. YD	142,039
SHOULDER BUILD-UP (MILLED AC)	L.FT	88,733
BITUMINOUS TACK COAT	TON	90
ASPHALTIC BINDER (PG 76-16)	TON	1,300
ASPHALTIC CONCRETE FRICTION COURSE (ASPHALT-RUBBER)	TON	4,150
ASPHALT RUBBER MATERIAL	TON	395
ASPHALTIC CONCRETE (3/4” MIX) (END PRODUCT) (SPECIAL MIX)	TON	26,000
BRIDGE REPAIR (PENETRATING CRACK SEALANT	SQ. YD	766
LOOP DETECTOR	EACH	3
SEEDING	ACRE	13
PAVEMENT MARKING (WHITE & YELLOW) (THERMOPLASTIC)	L.FT	163,600
MISCELLANEOUS WORK (RUBBER CRACK SEALANT)	LB	14,718
CONTRACTOR QUALITY CONTROL	L.SUM	1
CONSTRUCTION SURVEYING AND LAYOUT	L.SUM	1

The time allowed for the completion of the work included in this project will be **120** calendar 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-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.

The minimum contract-specified goal for participation by Disadvantaged Business Enterprises in the work, as a percentage of the total amount bid, shall be 6.12.

Project plans, special provisions, and proposal pamphlets may be purchased in paper format from Contracts and Specifications Section, 1651 W. Jackson, Room 121F, Phoenix, AZ 85007-3217, (602) 712-7221. The cost is $31, payable at time of order by cash, check, or money order. Please indicate whether a bid proposal package or a subcontractor/supplier set is desired. An additional fee of $5 will be charged for each set of Special Provisions requested which is not accompanied by the purchase of a related set of project plans. Checks should be made payable to the Arizona Department of

Transportation. We cannot guarantee mail delivery. No refund will be made for plans or specifications returned.

Contract documents and other project documents are available as electronic files, at no charge, from the Contracts and Specifications website, pursuant to Subsection 102.02 of the specifications. The Contracts and Specifications Current Advertisements website is located at: http://www.azdot.gov/business/ContractsandSpecifications/CurrentAdvertisements.

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

This project is eligible for electronic bidding.

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 shall be filed at least 15 calendar days prior to the bid opening date. The Application may be obtained from the Contracts and Specifications website.

This contract is subject to the provisions of Arizona Revised Statutes Section 42-5075 -- Prime contracting classification; exemptions; definitions.

No award will be made to any contractor who is not a duly licensed contractor in accordance with Arizona Revised Statutes 32-1101 through 32-1170.03.

All labor employed on this project shall be paid in accordance with the minimum wage rates shown in the General Wage Decision. These rates have been determined in accordance with the requirements of the law and issued by the Secretary of Labor for this project. The wage scale is on file in Contracts and Specifications Section and copies may be obtained at all reasonable times.

A proposal guaranty in the form of either a certified or a cashier's check made payable to the State Treasurer of Arizona for not less than ten percent of the amount of the bid or in the form of a surety (bid) bond for ten percent of the amount of the bid shall accompany the proposal.

Surety (bid) bonds will be accepted only on the form provided by the Department and only from corporate sureties authorized to do business in Arizona.

Proposal pamphlets shall be submitted only in the envelope provided by the Department to:

Arizona Department of Transportation
Infrastructure Delivery and Operations Division
Contracts and Specifications Section
1651 West Jackson Street, Room 121F Phoenix,
Arizona 85007-3217

Sealed bids will be received until the hour indicated and then publicly opened and read. No bids will be received after the time specified.

Engineering Specialist:	Ghalib Mahdi	(602) 712-7618
Construction Supervisor:	Mike Rigby	(602) 712-3540

STEVE BEASLEY,
Engineer - Manager
Contracts & Specifications Section

010 MA 112 H878701C
NH-010-A(226)T
MAY 26, 2016

SPECIAL PROVISIONS

FOR

ARIZONA PROJECT

010 MA 112 H878701C

NH-010-A(226)T

EHRENBERG – PHOENIX HIGHWAY (I-10)

SR 85 – VERRADO WAY (WB)

PAVEMENT REHABILITATION

PROPOSED WORK:

The proposed pavement rehabilitation project is located in Maricopa County within the City of Buckeye on Interstate 10 approximately half mile west of SR 85 Interchange. The project begins at MP 112.20 and extends east to MP 120 for an approximate length of 7.8 miles on I-10 WB. The work consists of variable depth milling from 1 Inch to 4 ½ inches and replacing existing pavement with AC and AR-ACFC, and placement of shoulder buildup with milled AC material on both sides of the pavement. In addition, the work includes crack repair in existing asphaltic concrete pavement, pavement markings and other related work.

Professional Registrant Seals:

This book of specifications and related contract documents represents the efforts of the following firms:

(1) Arizona Department of Transportation – Roadside Development
(2) Arizona Department of Transportation – Traffic Design
(3) Arizona Department of Transportation – Contracts and Specifications

REGISTERED LANDSCAPE ARCHITECT
CERTIFICATE NO.
11197
E. LEROY
BRADY
DATE SIGNED 5-23-16
ARIZONA U.S.A.

Expires 3/31/2017

Arizona Department of Transportation -- Roadside Development

Registered Professional Engineer (Civil)
CERTIFICATE NO.
41976
THOMAS L.
TORTICE
Date Signed 5-23-16
ARIZONA U.S.A.

Expires 3/31/2017

Arizona Department of Transportation – Traffic Design

Registered Professional Engineer (Civil)
CERTIFICATE NO.
49114
Ghalib S.
Mahdi
Date Signed 5-23-16
ARIZONA U.S.A.

Expires 3/31/2018

Arizona Department of Transportation – Contracts and Specifications

(SPC00FA, 02/22/16)

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 2008 (Pub. # 31-066),

Arizona Department of Transportation, Intermodal Transportation Division, Standard Drawings, listed in the project plans, and available on the Department's website,

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

Arizona Department of Transportation, Traffic Group, Traffic Control Design Guidelines, Edition of 2010, available on the Department's website,

Manual on Uniform Traffic Control Devices for Streets and Highways, 2009 edition and Arizona Supplement to the 2009 edition, dated January, 2012,

The Proposal Pamphlet and Non-bid Pamphlet which include the following documents:

These Special Provisions,

Appendix A – Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects
Appendix B – Western Burrowing Owl Awareness

Appendix C– US Army Corps of Engineers Nationwide Permit Number 3

List of Subcontractors, Suppliers, Service Providers and Manufacturers Bidding ADOT Contracts, dated 9/23/10,

Required Contract Provisions Federal-Aid Construction Contracts (Form FHWA 1273 Revised May 1, 2012),

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

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,

Included in the Proposal Pamphlet only:

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,

Affidavit Disadvantaged Business Enterprises,

BID SUBMISSION:

In submitting a bid, the holder of a Bid Proposal Pamphlet 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, and

Certification With Respect to the Receipt of Addenda.

Affidavit Disadvantaged Business Enterprises.

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 which is furnished to prospective bidders; 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 and Specifications Services.

COPIES OF PROJECT DOCUMENTS:

Distribution of a limited number of plans and Special Provisions will be made to the successful low bidder, at no charge, following confirmation of bid prices and DBE submittal, if applicable. The distribution will be made on the following basis:

Contract Size (Dollars)	Full Size Plans	1/2 Size Plans	Bound Bid Books	Unbound Bid Books
$0 - $20,000,000	2	10	5	10
over $$20,000,000	5	20	5	20

These plans and Special Provisions will be set aside and designated for use by the low bidder along with an equal number held in reserve for the responsible District Office.

Any additional plans or Special Provisions that the low bidder may require beyond the above distribution will be available at the invoice cost of printing by ordering through the Engineer.

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 Section, located at 1221 N. 21st Avenue, Phoenix, Arizona 85009-3740. 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. Copies of available information may be purchased by prospective bidders.

(EPRISE, 03/15/11)

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 CFR Part 26. 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.

It is the policy of the Department to ensure that DBEs, 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:

1. To ensure nondiscrimination in the award and administration of USDOT-assisted contracts;
2. To create a level playing field on which DBEs can compete fairly for USDOT-assisted contracts;
3. To ensure that the DBE program is narrowly tailored in accordance with applicable law;
4. To ensure that only firms that fully meet 49 CFR Part 26 eligibility standards are counted as DBEs;
5. To help remove barriers to the participation of DBEs in USDOT-assisted contracts; and
6. To assist in the development of firms that can compete successfully in the market place outside the DBE program.

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 in the award and administration of 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. The contractor, subrecipient, or subcontractor shall ensure that all subcontract agreements contain this non-discrimination assurance.

3.0 Definitions:

(A) Disadvantaged Business Enterprise (DBE): a for-profit small business concern which meets both of the following requirements:

(1) Is at least 51 percent owned by one or more socially and economically disadvantaged individuals or, in the case of any publicly owned business, at least 51 percent of the stock is owned by one or more such individuals; and,

(2) Whose management and daily business operations are controlled by one or more of the socially and economically disadvantaged individuals who own it.

(B) Socially and Economically Disadvantaged Individuals: any individual who is a citizen (or lawfully admitted permanent resident) of the United States and who is:

(1) Any individual who is found to be a socially and economically disadvantaged individual on a case-by-case basis.

(2) Any individual in the following groups, members of which are rebuttably presumed to be socially and economically disadvantaged:

(i) "Black Americans," which includes persons having origins in any of the Black racial groups of Africa;

(ii) "Hispanic Americans," which includes persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish or Portuguese culture or origin, regardless of race;

(iii) "Native Americans," which includes persons who are American Indians, Eskimos, Aleuts, or Native Hawaiians;

(iv) “Asian-Pacific Americans,” which includes persons whose origins are from Japan, China, Taiwan, Korea, Burma (Myanmar), Vietnam, Laos, Cambodia (Kampuchea), Thailand, Malaysia, Indonesia, the Philippines, Brunei, Samoa, Guam, the U.S. Trust Territories of the Pacific Islands (Republic of Palau), the Commonwealth of the Northern Marianas Islands, Macao, Fiji, Tonga, Kiribati, Tuvalu, Nauru, Federated States of Micronesia, or Hong Kong;

(v) “Subcontinent Asian Americans,” which includes persons whose origins are from India, Pakistan, Bangladesh, Bhutan, the Maldives Islands, Nepal or Sri Lanka;

(vi) "Women;"

(vii) Any additional groups whose members are designated as socially and economically disadvantaged by the Small Business Administration (SBA), at such time as the SBA designation becomes effective.

(C) 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.

(D) Non-DBE: any firm that is not a DBE.

(E) RACE-CONSCIOUS: a measure or program is one that is focused specifically on assisting only DBEs, including women-owned DBEs.

(F) RACE-NEUTRAL: a measure or program is one that is, or can be, used to assist all small businesses. For the purposes of this part, race-neutral includes gender-neutrality.

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 Civil Rights Office at the address shown below for assistance in their efforts to use DBEs in the construction program of the Department:

Arizona Department of Transportation
Civil Rights Office
1135 N. 22nd Avenue (second floor), Mail Drop 154A
Phoenix, AZ 85009
Phone (602) 712-7761
FAX (602) 712-8429

5.0 Applicability:

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 race conscious efforts and race neutral efforts. Race conscious participation occurs where the contractor uses a percentage of DBEs, as defined herein, to meet the contract-specified goal. Race 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, defines race neutral as when a DBE wins a prime contract, is awarded a subcontract on a project without DBE goals, and is awarded a subcontract from a prime contractor that did not consider the firm's DBE status.

The contractor shall meet the goal specified herein with DBEs, or establish that it was unable to meet the goal despite making good faith efforts to do so. Prime contractors are encouraged to obtain DBE participation above and beyond any goals that may be set for this project.
The provisions are applicable to all bidders including DBE bidders.

6.0 Certification:

Certification as a DBE shall be predicated on:

(1) The completion and execution of an application for certification as a "Disadvantaged Business Enterprise".

(2) 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.

(3) The submission of any additional information which the Department may require to determine the firm's eligibility to participate in the DBE program.

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

Applications for certification may be filed with the Department at any time. Both hardcopy submission and online submission is available.

For hardcopy submissions, applications for certification are available at the Department's Civil Rights Office, 1135 N. 22nd Avenue (second floor), mail drop 154A, Phoenix, Arizona 85009, phone (602) 712-7761. Hardcopy applications may also be obtained through the internet at www.azdbe.org. Hardcopy applications must be filed through the Civil Rights Office at the above address.

For online submissions, the online application process may be accessed through the internet at www.azdbe.org.

DBE firms and firms seeking DBE certification shall cooperate fully with requests for information relevant to the certification process. Failure or refusal to provide such information is a ground for denial or removal of certification.

Arizona is a member of the AZ Unified Certification Program (AZUCP). Only DBE firms that are certified by the AZUCP are eligible for credit on ADOT projects. A list of DBE firms certified by AZUCP is available on the internet at www.azdbe.org. The list will indicate contact information and specialty for each DBE firm, and may be sorted in a variety of ways. However, ADOT does not guarantee the accuracy and/or completeness of this information, nor does ADOT represent that any licenses or registrations are appropriate for the work to be done.

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

7.0 General:

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

Each contractor shall also designate a full time employee who shall be responsible for the administration of the contractor's DBE program.

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

8.0 DBE Subcontractor Payment Reporting:

The Department is required to collect data on DBE and non-DBE participation to report to FHWA on Federal-aid projects. The contractor is notified that such record keeping is required by the Department for tracking DBE participation.
The contractor shall submit a report on a monthly basis indicating the amounts earned by and paid to all DBEs and non-DBEs working on the project. In addition, the contractor shall require that all DBE and non-DBE subcontractors verify receipt of payment.

The contractor shall provide all such required information for the current month by the 5th of the following month. The required information shall be submitted electronically through the Department's web-based payment tracking system (https://adot.dbesystem.com).

9.0 Goals:

The minimum goal for participation by DBEs on this project is as follows:

3.42 Percent

The percentage of DBE participation shall be based on the total bid.

10.0 Crediting DBE Participation Toward Meeting Goals:

10.01 General Requirements:

Only the value of the work actually performed by the DBE can be credited toward DBE participation. Credit towards the contractor's DBE goal is given only after the DBE has been paid for the work performed.

The contractor bears the responsibility to determine whether the DBE possesses the proper contractor's license(s) to perform the work. If a DBE cannot complete its work due to failure to obtain or maintain its licensing, the contractor bears the responsibility to immediately request

approval to replace the DBE with another DBE and notify the Engineer and the Civil Rights Office.

The Department's certification is not a representation of 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 subcontract, purchase order, hourly rate, rate per ton, etc., as agreed to between parties.

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 toward the DBE goal.

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

All DBE and non-DBE subcontracting activity must be reported by the contractor and counted toward participation. This includes lower-tier subcontracting regardless of whether or not the DBE is under contract with another DBE.

DBE prime contractors must meet the DBE participation goal or demonstrate good faith efforts. This is determined by counting the work the DBE has committed to performing with its own forces, as well as the work that it has committed to be performed by DBE subcontractors and DBE suppliers.
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 the DBE goal 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 toward a DBE goal.

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.

10.02 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.

10.03 Commercially Useful Function:

As a prime contractor, a DBE shall perform a significant portion of the contract work with its own work force in accordance with normal industry practices and Subsection 108.01 - Subletting of Contract of the Standard Specifications.

A prime contractor can credit expenditures to a DBE subcontractor toward DBE goals only if the DBE performs a commercially useful function on the contract. A DBE performs a commercially useful function when it is responsible for execution of the work of a contract and is carrying 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. 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 on the basis of 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. Decisions on commercially useful function matters are subject to review by FHWA, but are not administratively appealable to U.S. DOT.

10.04 Trucking:

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, and there cannot be a contrived arrangement for the purpose of meeting DBE goals.

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 from a non-DBE is entitled to credit for the total value of the transportation services provided by non-DBE lessees not to exceed the value of transportation services provided by DBE-owned trucks on the contract. Additional participation by non-DBE lessees

results in 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 only 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. With respect to the other two trucks provided by Firm Z, DBE credit could be awarded only for the fees or commissions pertaining to those trucks Firm X receives as a result of the lease with Firm Z.

10.05 Materials and Supplies:

The Department will credit expenditures with DBEs for material and supplies towards the DBE goal as follows. If the materials or supplies are obtained from a DBE manufacturer, 100 percent of the cost of the materials or supplies is credited. A manufacturer is defined as a firm that operates or maintains 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.

If the materials or supplies are purchased from a DBE regular dealer, 60 percent of the cost of the materials or supplies is credited. A DBE regular dealer is defined as a firm that owns, 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 stock, and regularly sold or leased to the public in the usual course of business. 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. A firm may be a DBE regular dealer in such bulk items as petroleum products, steel, cement, stone or asphalt without owning, operating, or maintaining a place of business, as provided above, if the person both owns and operates distribution equipment for the products. Any supplementing of regular dealers' own distribution equipment shall be by a long-term lease agreement, and not on an ad-hoc or contract-by-contract basis. Packagers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions are not regular dealers within the meaning of this paragraph and the paragraph above.

With respect to materials or supplies purchased from a DBE which is neither a manufacturer nor a regular dealer, the Department will credit the entire amount of the fees or commissions charged by the DBE for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site, toward DBE goals, provided the fees are determined to be reasonable and not excessive as compared with fees customarily allowed for similar services. The cost of the materials and supplies themselves may not be counted toward the DBE goal.

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.

11.0 Joint Checks:

11.01 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.

1. 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.

2. 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.

3. A material or supply contract may not bear an excessive ratio relative to the DBE subcontractor's normal capacity.

4. 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.

5. 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.

6. 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.

7. The DBE must be responsible for receiving the check from the prime contractor and delivering the check to the supplier.

8. 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.

11.02 Procedure and Compliance:

1. The Civil Rights Office must approve the agreement for the use of joint checks in writing.

2. 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.

3. Copies of canceled checks must be submitted with the payment information for the period in which the joint check was issued. Certificates of payment must indicate whether or not joint checks were used.

4. 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.

5. 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.

12.0 Submission with Bids:

All bidders are required to certify in their bid proposal on the “Disadvantaged Business Enterprise Assurances” certificate either:

(1) The established goal for DBE participation has been met and arrangements have been made at the time of bid with certified DBEs or

(2) The bidder has been unable to meet the goal prior to the submission of the bid and has made good faith efforts to do so.

BIDS SUBMITTED WITH ALTERED, INCOMPLETE, OR UNSIGNED CERTIFICATES WILL BE CONSIDERED NON-RESPONSIVE.

Certifications on forms other than those furnished by the Department will be considered non-responsive.

13.0 Bidder Meeting DBE Goal:

13.01 General:

If the bidder indicates in the bid that it has met or exceeded the DBE goal, the DBE Intended Participation Affidavit, its attachments, and a written confirmation from each DBE that it is participating in the contract as provided on the affidavit, shall be submitted as follows:

(1) The DBE Intended Participation Affidavit, its attachments, and the confirmations must be received by the Civil Rights Office no later than 4:00 P.M. on the fifth working day following the bid opening. Copies of this affidavit and the attachments are available from the Civil Rights Office, 1135 N. 22nd Avenue (second floor), mail drop 154A, Phoenix, Arizona 85009, phone (602) 712-7761, or on the internet at http://www.azdot.gov/inside_adot/CRO/DBEP.asp. This affidavit and its attachments shall indicate that the bidder has met or exceeded the DBE goal if this was indicated on the submittal with the bid.

(2) The affidavit and attachments must be accurate and complete in every detail and must be signed by an officer of the contractor(s).

(3) The DBE Intended Participation affidavit must be submitted listing the DBEs used and the creditable amounts.

(4) A separate DBE Intended Participation affidavit attachment must be submitted for each DBE used to meet the goal of the project. The bidder shall indicate each DBE's name, the bid items the DBE will perform, and proposed subcontract amount. All partial items must be explained. If not, the DBE will be considered to be responsible for the entire item.

(5) A written confirmation from each DBE used to meet the goal indicating that it is participating in the contract, as provided on the affidavit, must also be submitted at this time.

(6) A bidder must determine DBE credit in accordance with Section 10 above, entitled “Crediting DBE Participation Toward Meeting Goals.” The affidavit will be reviewed by the Civil Rights Office.

(7) Only those DBE firms certified by the Arizona Unified Certification Program (AZUCP) at the time of the bid opening will be considered It shall be the bidder’s responsibility to ascertain the certification status of designated DBEs.

(8) The bidder bears the risk of late delivery by the postal service or a delivery service. Late-filed affidavits will not be accepted.

13.02 Failure to Comply:

If the apparent low bidder fails to submit the required information by the stated time and in the manner herein specified, or if the submitted information reveals a failure to meet the requirements of the specifications, the apparent low bidder shall be ineligible to receive award of the contract and the bid will be rejected. The proposal guarantee (bid bond) shall be

forfeited if no submission is made or if the State Transportation Board finds the submission was made in bad faith.

14.0 Documented Good Faith Effort:

14.01 General:

If the apparent low bidder has stated in its bid proposal that it has been unable to meet the DBE goal, that bidder must demonstrate, through detailed and comprehensive documentation, that good faith efforts have been made to solicit, assist, and use DBE firms to meet the DBE goal prior to the bid. The bidder cannot change its bid proposal after submission.

Failure to demonstrate good faith efforts to the satisfaction of ADOT will result in the rejection of the bid.

The apparent low bidder who cannot meet the DBE goal at the time bids are opened must submit its documentation of good faith effort to the Civil Rights Office. The bidder's documentation must be received by the Department's Civil Rights Office by 4:00 P.M. on the fifth working day after the bids are opened.

Bidders are encouraged to review Appendix A of 49 CFR Part 26.

In order to be awarded a contract on the basis of good faith efforts, a bidder must show that it took all necessary and reasonable steps to achieve the DBE goal which, by their scope, intensity, and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if they were not fully successful. The Department will consider the quality, quantity, and intensity of the different kinds of efforts the bidder has made. The efforts employed by the bidder should be those that one could reasonably expect a bidder to make if the bidder were actively and aggressively trying to obtain DBE participation sufficient to meet the DBE goal. Mere pro forma efforts are not sufficient good faith efforts to meet the DBE contract requirements.

The contractor shall, as a minimum, seek DBEs in the same geographic area in which it generally seeks subcontractors for a given project. If the contractor cannot meet the goals using DBEs from this geographic area, the contractor, as part of its effort to meet the goals, shall expand its search to a reasonably wider geographic area.

The following is a list of types of efforts a bidder must address when submitting good faith effort documentation.

(1) Soliciting through all reasonable and available means (e.g., attendance at pre-bid meeting, advertising, written notices, and other means) the interest of all certified DBEs who have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow DBEs to respond to the solicitation. The bidder must determine with certainty if the DBEs are interested by taking appropriate steps to follow-up initial solicitations.

(2) Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the prime contractor might otherwise prefer to perform these work items with its own forces.

(3) Providing interested DBEs with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.

(4) Negotiating in good faith with interested DBEs. It is the bidder's responsibility to make a portion of the work available to the DBE subcontractors and suppliers, and to select those portions of work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBEs that were considered; a description of the information provided from the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBEs to perform work.

A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBEs is not in itself sufficient reason for a bidder's failure to meet the DBE goal, as long as such costs are reasonable. Also, the ability or desire of a prime contractor to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. However, prime contractors are not required to accept higher quotes from DBEs if the price difference is excessive or unreasonable. Documentation, such as copies of all other bids or quotes, must be submitted.

(5) Not rejecting DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The contractor's standing within its industry, membership in specific groups, organizations or associations and political or social affiliations (for example, union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the contractor's efforts to meet the project goal.

(6) Making efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or contractor.

(7) Making efforts to assist interested DBEs in obtaining necessary equipment supplies, materials, or related assistance or services.

(8) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and Federal minority/women business

assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBEs.

In determining whether a bidder has made good faith efforts, the Department will take into account the ability of other bidders to meet the DBE goal.

The bidder will not be considered to have made good faith efforts if the bidder failed to contact the ADOT Civil Rights Office prior to the letting, either in writing, by e-mail, or by telephone, to inform the Civil Rights Office of the firm's difficulty in meeting the DBE goals on a given project, and to request assistance. If the bidder contacts the Civil Rights Office by telephone, the contact must be documented in a telephone log indicating the date and time of call, and name of the person to which he spoke. The telephone number for the Civil Rights Office is (602) 712-7761. The contact must be made in sufficient time to allow the Civil Rights Office to provide assistance.

The ADOT Civil Rights Office will analyze the submittal to determine if in fact good faith efforts have been demonstrated consistent with ADOT procedures and the Federal regulations, 49 CFR 26, Appendix A.

The bidder may appeal the determination of the Civil Rights Office to the State Engineer. That appeal must be in writing and personally delivered or sent by certified mail, return receipt requested, to the State Engineer. The protest must be received by the State Engineer no later than seven calendar days after the decision of the Civil Rights Office. Copies of the protest shall be sent by the protestant to every bidder, at the same time the protest is submitted to the State Engineer. Any other interested party may submit a response to the appeal no later than seven calendar days after the appeal is requested. Responses from other interested parties must also be in writing and personally delivered or sent by certified mail, return receipt requested, to the State Engineer. Any interested party submitting such response shall also provide a copy of its response to every bidder, at the same time the protest is submitted to the State Engineer. The State Engineer shall promptly consider any appeals under this subsection and notify all bidders of the State Engineer's findings and decision.

Any interested party may protest the State Engineer's decision to the Transportation Board, pursuant to the requirements of Subsection 103.10 of the Standard Specifications.

14.02 Failure to Comply:

If the apparent low bidder fails to submit the required information by the stated time and in the manner herein specified, or if the submitted information reveals a failure to meet the requirements of the specifications, the apparent low bidder shall be ineligible to receive award of the contract and the bid will be rejected. The proposal guarantee (bid bond) shall be forfeited if no submission is made or if the State Transportation Board finds the submission was made in bad faith.

15.0 Rejection of Low Bid:

If, for any reason, the bid of the apparent low bidder is rejected, there will be a new apparent low bidder. The Department will notify the new apparent low bidder, and this bidder shall submit its subsequent detailed submission as set forth in paragraph 12 or 13 above.

16.0 Time is of the Essence:

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

17.0 Contract Performance:

Contract items of work designated by the contractor to be awarded to DBEs shall be performed by the designated DBE or a Department-approved DBE substitute. DBE contract work items shall not be performed by the contractor, or a non-DBE subcontractor without prior approval by the Civil Rights Office. The DBE must perform a commercially useful function; that is, the DBE must manage, perform, and supervise a distinct element of work.

The Department reserves the right to inspect all records of the contractor and all records of the DBEs concerning this contract.

The contractor shall provide to the Engineer, at the pre-construction conference, copies of completed and signed subcontracts purchase orders, invoices, etc., with the appropriate DBEs.

Within five working days of the preconstruction conference, the contractor shall also provide electronic copies of signed subcontract agreements to the Civil Rights Office through the Department's web-based payment tracking system (https://adot.dbesystem.com). As part of this submittal, contractors shall be required to log into the system and enter the name, contact information, and subcontract amounts for all subcontractors and vendors performing on the project as verification that scopes of services and commitments made through the DBE Intended Participation Affidavits are being met.
Subcontract agreements shall include all required assurances, including FHWA Form 1273, and the prompt payment and return of retention requirements specified in Subsection 109.06(B) of the specifications. Each page of each required attachment must be dated and initialed by the DBE in order for the subcontract to be considered valid. Contractors executing agreements with subcontractors, DBE or non-DBE, that materially modify federal regulation and state statutes, or prompt payment and retention requirements, through subcontract terms and conditions will be found in breach of contract which may result in termination of the contract, or any other such remedy as the Engineer deems appropriate.

Use of a DBE named on the DBE Intended Participation Affidavit is a condition of award. Substitution will not be allowed without written evidence from the prime contractor and DBE that the DBE is unable or unwilling to perform. Contractors may not terminate a DBE subcontract for convenience, in whole or in part, except to the extent that the Department has

eliminated items of work subcontracted to the DBE. All terminations, substitutions, and reductions in scope must be approved by the Civil Rights Office.

18.0 Non-Performance by DBEs:

In the event a DBE is unable or unwilling to fulfill its agreement with the contractor, the contractor will immediately notify the Engineer and provide all facts surrounding the matter. Such failure on the part of a DBE will not relieve the contractor of responsibility for meeting the DBE goal on the contract. The contractor shall immediately make reasonable good faith efforts to obtain another certified DBE to perform an equal or greater dollar value of work to the extent needed to meet the DBE goal. The substitute DBE's name, description of work, and dollar value of work shall be submitted to the Engineer and the Department's Civil Rights Office. Approval of the Civil Rights Office must be obtained prior to the substitute DBE beginning work.

In the event a prime contractor is unable, after a substantial good faith effort, to obtain another certified DBE, the Department's Civil Rights Office may lower the DBE goal on the project. However, the Civil Rights Office must approve this in writing prior to a Non-DBE starting the work which had been subcontracted to the DBE.

19.0 Compliance:

The contractor's achievement of the goal is measured by actual payments made to the DBEs. The contractor shall submit at the completion of the project the "Certification of Payments to DBE Firms" affidavit for each DBE firm working on the project. This affidavit shall be signed by the prime contract and the relevant DBE, and submitted to the Civil Rights Office. At that time, a copy of each completed affidavit shall also be submitted to the Engineer.

Acceptance and final payment to the contractor, in accordance with Subsections 105.20 and 109.09, will not be made until all "Certification of Payments to DBE Firms" affidavits are received and deemed acceptable by the Engineer and the Civil Rights Office.

20.0 Sanctions:

If the Department determines that the contractor has failed to make sufficient reasonable efforts to meet contract DBE goals, or to otherwise carry out these DBE special provisions, such failure shall constitute a breach of contract and may result in termination of the contract, or any other such remedy as the Engineer deems appropriate.

If the Engineer determines that such failure is not cause to terminate the contract, an amount equal to the value of the DBE goal that was not obtained will be deducted from the payment due the contractor. However, if the failure is the first by the contractor, and the Engineer determines the failure was an unintentional error or oversight, the amount to be deducted may be reduced up to one-half (1/2) of the value of the unobtained DBE goal as determined by the Civil Rights Office. In addition to any other sanctions, willful failure of the contractor or a DBE

to comply with this contract or with the Federal DBE regulations may result in disqualification from further contracting, subcontracting, or other participation in ADOT projects.

(MENTOR, 02/23/06)

MENTOR-PROTEGE PROGRAM

Description:

Purpose:

The Mentor-Protege program is an initiative to encourage and develop disadvantaged businesses in the highway construction industry. The program will permit contractors to provide certain types of assistance to certified Disadvantaged Business Enterprise (DBE) subcontractors on highway construction projects.

The program is intended to increase legitimate DBE activities and is not intended to diminish nor circumvent existing DBE rules or regulations. Abuse of this program may be used as the basis for actions against both categories of firms including suspension or debarment.

Policy:

It is the policy of ADOT that contractors and certified DBE subcontractors may engage in a Mentor-Protege agreement under certain conditions. Such an agreement must be mutually beneficial to both parties and ADOT in fulfilling requirements of 49 Code of Federal Regulations Part 23.

Definitions:

DBE: The definition, status, and requirements of DBE firms are defined by 49 CFR Part 23. Please also refer to the special provision entitled "Disadvantaged Business Enterprises".

Mentor: A designated contractor who oversees the development of a designated DBE subcontractor by training, counseling, assisting, and sponsoring the DBE firm in an ADOT approved Mentor-Protege Program.

Protege: An ADOT-certified DBE subcontractor who is guided by a mentor through training and specialized assistance to gain experience, develop expertise in highway construction, and attain general business growth in an approved Mentor-Protege program.

Mentor-Protege Development Plan: A detailed plan outlining a management agreement between a contractor (who agrees to serve as a mentor) and a DBE subcontractor (who agrees to serve as a protege).

Implementation:

Approval Process:

(1) When a contractor and DBE agree to engage in a Mentor-Protege Development Plan Agreement, ADOT Civil Rights Office will be notified by either party for the purpose of (a) reviewing requirements of STAA, 49 CFR part 23, and Mentor-Protege program; (b) establishing timeline for processing Agreement; (c) preliminary review of Agreement objective(s) and duration; and (d) reporting requirements. (A copy of the suggested form of agreement is included in these special provisions).

(2) A completed Mentor-Protege Development Plan will be submitted to ADOT within 30 days following the initial review. Approval of the Agreement by ADOT will be in two stages:

a) General approval of Agreement by ADOT within 15 working days following submission of Agreement.

b) Approval of working plan for the designated project where a Mentor-Protege Development Plan will be implemented.

(3) Duration of a Mentor-Protege Development Plan may exceed that of a single project, not to exceed three years. Duration of a working plan may exceed that of a single project. However, the continued use of an existing working plan must be approved by the ADOT Civil Rights Office prior to beginning work on a new project.

(4) The Mentor-Protege program is not intended to provide DBE firms with a means to avoid management and operational responsibilities. Mentors cannot be responsible for the management of DBE proteges. Under the program, all administrative functions must be performed by personnel responsible to or employed by protege. The protege must retain final decision making responsibilities.

(5) Mentor and protege shall agree to an interview by ADOT Civil Rights Office during the development of the Mentor-Protege Development Plan.

(6) Mentor and protege shall agree to evaluations by ADOT. The frequency and method will depend on the project.

Content of Mentor-Protege Development Plan:
A Mentor-Protege Development Plan Agreement shall address the following:

(1) Areas of Assistance: Identify the specific areas in which the protege requires assistance.

(2) Schedule of Assistance: Develop an Action Plan which defines the types and scope of assistance the mentor will provide to meet the protege's needs.

(3) Responsibilities: Define the responsibilities of the mentor and the protege in each of the activities.

(4) Benchmarks: Include measurable benchmarks to be reached by the protege at successive stages of the plan.

(5) Evaluation: Provide formal evaluations of the protege's attainment of benchmarks. Evaluations must be made by both the mentor and the protege and reviewed by ADOT.

(6) Duration: Specify the maximum time frame the development plan agreement can remain in effect not to exceed three years.

(7) Assurances: Provide assurances that all agreements, oral and written, pertaining to the Mentor-Protege program do not improperly obtain the benefits of the DBE program.

(8) Key Personnel: Identify mentor's representative(s) responsible for training and/or coordinating the assistance provided to the protege.

(9) Fees: Identify any fees paid as a condition of the agreement.

(10) Copies of agreements: Attach copies of all bonding, security, lease agreements, notes, contracts, etc., made for the duration of the Mentor-Protege Plan.

Type of Assistance:

The type of assistance provided by contractors may include, but not be limited to:

(1) Financial:

a) Working Capital Secured by Time Demand Notes or Stocks. Proteges acquiring working capital through the issuance of stocks must maintain no less than 51 percent ownership to maintain DBE certification. Time demand notes may be used to secure working capital. However, any abusive use of recall features will be cause for terminating program. Where working capital is secured by stocks or demand notes, a third party such as a bank could receive progress payments for work accomplished by the protege, made out jointly to the agent and the protege and make payments, on behalf of the protege, to material suppliers or for Federal and State payroll taxes,

etc. In no case can the day-to-day control of the firm be relinquished by the disadvantaged owner as a requirement of the loan.

b) Bonding. Mentors may bond the entire job and charge a pro-rata share of the cost to the protege. Mentors may bond the entire job and carry the protege by absorbing the cost of the bond. Arrangements of the bonding must be included in the Schedule of Assistance.

(2) Management Technical Assistance:

a) Assist in conducting a Protege Self-Assessment by areas to be strengthened for long-range planning of the protege firm.

b) Assist in developing business plan, loan packaging, and financial counseling.

c) Assist the protege in setting up a cost accounting system and train the protege's personnel to assume full control.

d) Provide training in plan interpretation, estimating, and materials supply function.

e) Provide guidance in general project management and related areas to make the protege aware of techniques to improve productivity and competitiveness and broaden knowledge of industry practices.

(3) Operation:

a) Equipment/Facilities Use. Equipment and facilities may be furnished by mentor, provided that separate lease agreements are made and control over the equipment and facilities are under the supervision of protege.

b) Training of managers and specialists of the protege in state-of-the-art methods in the contracting industry.

c) Mentors may provide personnel with specialized expertise for a specific purpose and duration as outlined in the Action Plan. Such personnel must be on the protege's payroll and under direct supervision of the protege. Long term, continual, or repetitive use by a protege of personnel primarily employed by the mentor will be construed as an attempt to artificially inflate DBE participation and may be cause for termination of the Mentor-Protege agreement and decertification of the DBE.

General Practice:

(1) Agreements may not include exclusive arrangements which limit competition.

(2) DBE firms shall have the latitude to quote bids to other contractors.

(3) The contractor and the DBE involved in a Mentor Protege agreement must remain separate and independent business entities.

(4) Middlemen or passive conduits which serve no commercially useful function, or subcontractors acting essentially as brokers are unacceptable.

(5) Formal or informal agreements which limit control and management by DBE firms are unacceptable.

(6) Part ownership in a DBE firm by a non-disadvantaged entity, including a mentor, is permitted by the regulations (49 CFR 23) and may be necessary to ensure adequate capital and technical guidance of the DBE participant. However, any financial investment by the mentor must not create a situation wherein the mentor may assume control over the DBE firm.

Modifications:

Modifications to the Mentor-Protege Development Plan shall be subject to the approval of ADOT.

Termination:

The Mentor-Protege Development Plan may be terminated by mutual consent by both parties with notice to ADOT. ADOT may terminate approval of the Plan upon determination that:

(1) The protege firm no longer meets the eligibility standards for certification as a DBE.

(2) Either party has failed or is unable to meet its obligations under the Development Plan.

(3) The DBE is not progressing or is not likely to progress in accordance with the Development Plan.

(4) The DBE has reached a satisfactory level of self-sufficiency to compete without special treatment provided in the Development Plan.

In the event a Mentor Protege Development Plan is terminated, the contractor will remain responsible for the DBE goals established in the project Special Provisions.

ARIZONA DEPARTMENT OF TRANSPORTATION

Mentor-Protege Development Plan Agreement

PART ONE: General Agreement

This agreement entered into this _____ day of _____, 20__, in the city of _____, Arizona, by and between _____ (hereafter known as Mentor), and (hereafter known as Protege), in accordance with rules and regulations of the Arizona Department of Transportation (ADOT) Mentor-Protege program, and in accordance with the requirements for increased Disadvantaged Business Enterprises (DBE) participation in the Surface Transportation Act of 1982 (STAA) and Surface Transportation and Uniform Relocation Assistance Act of 1987 (STURAA).

This agreement is intended to cover the general relationship between the parties to insure compliance with STAA, STURAA, and ADOT guidelines, and to implement all provisions set forth in the Mentor-Protege Development Plan.

PART TWO: Assurances

2.1 Both mentor and protege will remain separate and independent business entities. Protege shall have the latitude to quote bids to other contractors.

2.2 Protege is an ADOT-certified DBE firm.

2.3 The Mentor-Protege program is not intended to provide DBEs with means to avoid management and operational responsibilities.

2.4 All agreements, oral and written, pertaining to this Mentor-Protege Plan Agreement do not cause the protege to improperly obtain the benefits of the DBE program.

PART THREE: Content of Plan

Both parties will agree to content of the plan which will include but not be limited to:

3.1 Exhibit A: Areas of Assistance--(Areas identified by both parties as the basis for providing assistance by mentor to protege.)

3.2 Exhibit B: Schedule of Assistance-- An Action Plan developed by both parties defining the types and scope of assistance; responsibilities of mentor and protege in each activity; resources to be utilized; and measurable benchmarks to be reached by protege.

3.3 Exhibit C: Key Personnel-- A list of mentor and protege representatives responsible for training and/or coordinating the Plan.

3.4 Exhibit D: Lease/Agreement(s)--Full copies of all lease agreements for equipment and facilities; financial agreements; and other agreements between the two parties and/or by third parties.

PART FOUR: Monitoring

4.1 Both parties hereby specifically consent to the monitoring of this contract by the appropriate federal and state officials or their agents, and to agree to cooperate with such agencies.

4.2 Both mentor and protege agree to evaluate the progress of the Plan at scheduled intervals with the results reviewed by ADOT.

PART FIVE: Duration

The duration of the Plan will coincide with the length of the project for which the plan was intended. Extended agreement plans shall not exceed a period of three years.

PART SIX: Modifications

None of these agreements may be modified except in writing signed by both parties and approved by ADOT.

PART SEVEN: Termination

The mentor or protege retains the right to terminate this agreement by showing cause in a written notice to all parties and ADOT. ADOT may terminate the approval of this agreement by showing cause in a written notice to mentor and protege. In the event of termination of agreement or termination of ADOT approval, the contractor will remain responsible for the DBE goals established in the project Special Provisions.

PART EIGHT: Privacy Act Provision

The information contained herein and on attachments is used for the ADOT Mentor-Protege Program only, and may not be disclosed without the express permission of all parties involved in this agreement.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be executed by their duly authorized officers on the day and year first above written.

_____	_____	_____
Date	Mentor Firm (Authorized Official Name)	Signature
_____	_____	_____
Date	Protege Firm (Authorized Official Name)	Signature

April 1987

GENERAL REQUIREMENTS:

Availability of Documents:

Project documents will be available as shown below:

Documents	Paper Format	Electronic Format
Project Plans	X	X
Special Provisions	X	X
Proposal Pamphlet	X	X
Additional Documents (if available)		
Cross Sections		X
Earthwork Quantity Sheets		X
Other Reports		X
Existing Ground Digital Terrain Model (DTM)		X
Design Digital Terrain Model (DTM)		X

Documents in Electronic Format:

Project documents in electronic format are available on the Contracts and Specifications website.

In the case of any conflict or discrepancy between the project plans, specifications, or proposal pamphlet in paper and electronic format, the paper document shall govern.

The project plans are provided in PDF format. The Department makes no representation or warranties as to the compatibility, usability, or readability of the PDF plans 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.

The special provisions and proposal pamphlet 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 special provisions and proposal pamphlet.

The cross sections, earthwork quantity sheets, and other reports, if applicable, are provided only in PDF format. They are provided for information purposes and contractor convenience only. They are not part of the contract documents. The contractor's use of the information in the cross sections, earthwork quantity sheets, and other reports is at the contractor's sole risk. 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 documents.

The existing ground DTM and the design DTM, if applicable, are provided as DGN files. They are provided for information purposes and contractor convenience 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 http://www.azdot.gov/business/engineering-and-construction/CADD.

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

Bidder List Requirement:

Bidders shall submit a list of the names of all subcontractors, service providers, manufacturers and suppliers submitting bids, proposals or quotes for this project on the "List of Subcontractors, Suppliers, Service Providers and Manufacturers Bidding ADOT Contracts" form. The form is appended to the Special Provisions.

All bidders must submit the required form, whether or not the bid is the low bid.

Bidders must submit this form with all requested information to the ADOT Civil Rights Office no later than 4:00 p.m. on the fifth working day after bids are opened. Faxed copies are acceptable. The fax number is (602) 712-8429.

FAILURE TO SUBMIT THE REQUIRED INFORMATION BY THE STATED TIME AND IN THE MANNER HEREIN SPECIFIED SHALL BE CAUSE FOR THE BIDDER TO BE DEEMED INELIGIBLE FOR AWARD OF THE CONTRACT.

The form must be complete and must include all the names and contact information for all subcontractors, service providers, manufacturers and suppliers that submitted bids, proposals, or quotes on this project regardless of the bidder's intentions to use the sub bid. Information on second tier bids is not required.

Title 49 of the Code of Federal Regulations, Part 26.11, required ADOT to create and maintain a bidders list. The purpose of this list is to develop the list of the DBE and non-DBE firms seeking to work on Federal-aid highway construction contracts. This information is then used to set ADOT's overall DBE goal. The regulation requires the following information be collected: the firm's name; the firm's address; the firm's status as a DBE or non-DBE; the age of the firm; and the annual gross receipts of the firm.

The Civil Rights Office will contact listed firms to obtain information from them that will be used in the agency's annual DBE goal setting process. This information will be maintained as confidential to the extent allowed by federal and state law.

Cargo Preference Act:

1.0 Description

The Federal Highway Administration (FHWA) in partnership with the Federal Maritime Administration has mandated the implementation of 46 CFR 381 making the requirements of the Cargo Preference Act (CPA) applicable to the Federal Aid Highway Program.

The requirements apply to items transported by ocean vessel.

The requirements of 46 CFR 381 apply to materials or equipment acquired for a specific federal-aid highway project. In general, the requirements are not applicable to goods or materials that come from inventories independent of FHWA-funded contracts.

Information related to the CPA is presented in "Cargo Preference Requirements – Questions and Answers" available from the FHWA at https://www.fhwa.dot.gov/construction/cqit/cargo/qa.cfm.

2.0 Contract Requirements

The contractor shall comply with the requirements of the Cargo Preference Act 46 CFR 381.7(a)-(b). By executing a construction contract for this project, the contractor agrees:

(1) To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.

(2) To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in the paragraph above to both the Engineer and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

(3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.

Milestone Item:

The bridge repair work on Miller Road Bridge (WB) and all and the placement of all Asphaltic Concrete End Product (416 AC) and all Asphaltic Concrete Friction Course (AR-ACFC) on I-10 WB mainline and its ramps (Watson Road), as shown on plans and specified in the special provisions shall be completed by October 31, 2016. Failure to meet the milestone for the work described above by October 31, 2016 shall subject the contractor specific liquidated damages of **$18,000** for each full or partial calendar day that the above work is not completed. The assessed sum will be deducted from monies due or becoming due to the contractor. This amount is an addition to and independent from other withholding or liquidated damages as outlined in these special provisions or Standard Specifications.

The date of October 31, 2016 will not be extended for weather, temperature requirements or any other reason. This specification does not act to relieve the contractor from any temperature requirement specification listed in the contract.

NON-COLLUSION AFFIDAVIT:

Bidders are advised that the “Affidavit by Contractor Certifying That There Was No Collusion in Bidding of Contract” is no longer included as a separate sheet in the contract documents.

This language is part of the proposal, and by signing the proposal the bidder certifies to the non-collusion requirements specified therein.

Saw Cutting:

No measurement or direct payment will be made for sawcutting, the cost being considered as included in the price of contract items.

Signing:

The contractor shall preserve all roadway sign panels, sign supports, object markers, and milepost markers, except for the existing sign panels, sign supports and object markers indicated on the project plans and in the special provisions to be removed or relocated. If any roadway signing or markers not identified on the plans or in the special provisions to be removed or relocated are damaged as a result of the construction, the contractor shall repair or replace the damaged items, as directed by the Engineer, at no cost to the Department. The contractor shall not be held responsible for repairing or replacing any of these items damaged prior to the construction as long as the contractor identifies the damaged items to the Engineer prior to the construction operations.

ADOT Approved Products List:

A list of approved manufactures and distributors for materials that may be used on this project are shown on the Department's Approved Products List. The Approved Products List is

available from the Engineering Records Office, 1655 West Jackson, Phoenix, Arizona, 85007, Phone (602) 712-8216. Copies of the most recent versions are available on the Internet at *http://www.azdot.gov/TPD/ATRC/pride/index.asp*.

Transportation System Management (TSM) Program:

As part of this project, the Department is implementing a Transportation System Management (TSM) Program. The purpose of this program is to keep the motoring public, adjacent homeowners and businesses, transportation officials from the City of Buckeye and other interested parties informed of the status of construction, changes in traffic-handling and routing, and other aspects of construction which affect nearby residents, businesses and commuters. TSM efforts are described in a TSM Manual and will be directed by a Steering Committee including Department officials and representatives of the local jurisdictions, design consultants, traffic design consultants and others. The contractor will participate in TSM activities as follows:

The contractor's project manager will serve on the TSM Steering Committee, participate in the preparation of information communicating construction status and progress, traffic handling schemes, and other aspects of the project of interest to the public and local jurisdictions, and provide information regarding the status of construction and planned activities which will affect the public and local jurisdictions, for use and distribution by the TSM Steering Committee at its planned monthly meetings. Contractor's Reports at each meeting will summarize project progress during the past month and provide information regarding construction sequencing and scheduling and traffic handling for the month ahead.

No measurement or direct payment will be made for the contractor's participation in TSM activities, the cost being considered included in the prices of the contract items.

Removal and Disposal of Trash Debris, Litter and Existing Vegetation:

Upon removal, legal disposal of all trash, debris, litter and vegetation off the project site, including rubber tires, shall be the responsibility of the Contractor. Removal and disposal of trash, debris, litter and existing landscaping and vegetation as necessary shall be in accordance with Section 201 - Clearing and Grubbing, of the Standard Specifications. No measurement or direct payment will be made for general project clearing and grubbing, and for the work described above, the cost shall be considered included in the price of contract items. Trash Debris, litter and existing vegetation shall be considered an existing condition of the project site and the Contractor shall be responsible for familiarizing themselves with the project site prior to bidding.

Removal of existing Loop Detector:

No separate measurement or direct payment will be made for removal of existing loop detectors, the costs being considered included in the price of Items for Bituminous Pavement Milling.

Permits, Licenses and Taxes

The contractor is responsible for procuring all permits and licenses and paying all charges, fees and taxes in accordance with Subsection 107.02 of the *Standard Specifications* and as modified by these Special Conditions. Permits and/or licenses are required from the local jurisdictions for construction activities including hauling, within city limits or impacting their respective rights-of-way or facilities. Permits and/or licenses may be required from other entities and it shall be the responsibility of the contractor to identify these and procure them.

Contract Obligations:

All new construction shall be completed within the public right-of-way or temporary construction easement areas shown on the project Plans. Time restrictions and haul permit requirements for the transportation of materials is dependent upon the local jurisdiction. No transportation of materials shall be allowed on city streets without a local jurisdiction approved haul permit.

The contractor shall determine city corporate boundaries to meet his obligations under Subsection 107.02 of the *Standard Specifications*.

The contractor shall not remove or damage any existing private improvements outside the ADOT right-of-way. Private improvements cannot be removed by the contractor unless otherwise shown on the project Plans.

The contractor is advised multiple work crews and/or extended work shifts may be required to complete this project within the required number of working days indicated in these Special Provisions. No separate measurement or payment for any additional costs associated with multiple work crews and/or extended work shifts to complete this project within the required contract time shall be made, the cost shall be considered included in the price of contract items.

EROSION / SEDIMENT CONTROL AND STORMWATER QUALITY:

The contractor shall give attention to the impact of the construction operations upon natural landscape, and shall take care to maintain 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 use all means necessary to significantly reduce impacts by staging**/**stockpiling and carrying out project activities in such a way as to minimize the potential for erosion and discharge of pollutants from the project site.

When needed, the contractor shall remove native vegetation to finished grade level without uprooting it **(**flush cutting**)** for new shoulder build-up construction **(**edge of pavement build-up**)**. This work shall be done only in the new edge of pavement build-up areas. Class **II** Seeding

shall also be applied with hydro method only on top of the new edge of pavement build-up areas beyond the toe of AC wedge, in accordance with Section 805-3.01 of these Special Provisions. Invasive and non-native weed species shall be eradicated according to MISCELLANEOUS WORK (CONTROL OF NOXIOUS PLANTS) of these Special Provisions.

No separate measurement or direct payment will be made for the Removal (flush cutting) of existing native vegetation in preparation for the new shoulder build-up area; the cost being considered is included in the price of the respective contract item of shoulder build-up construction.

The contractor shall apply Sediment Wattles beyond the outer perimeter of new edge of pavement build-up only in the areas of concentrated flow, which may include but not be limited to roadway sag spots and drop-off repair locations. Wattles shall not be placed over any driveways or access roads that intersect with the roadway mainline. Additionally, Wattles shall not be placed on the flow path of inlets and outlets of drainage facilities. The contractor shall also apply Wattles parallel to the slope contours and beyond the toe of new guardrail end treatment AC pad slopes and/or on the down-slope perimeter of construction disturbed areas, unpaved on-site staging/storage, and on-site stockpiling. Sediment Wattles shall be installed in accordance with the manufacturer's instructions and the details shown on the plans. The contractor shall observe ADOT traffic safety standards when installing Sediment Wattles in the traffic clear zone/recovery area. To prevent sediment from bypassing the Wattle ends, the end of the Wattles shall be turned up the slopes for a minimum of three (3) feet to form an "L" shape. No portion of the Wattle shall be installed within six (6) feet from the edge of the pavement. The contractor shall adjust the field layout of erosion control and sediment prevention elements in accordance with Best Management Practices (BMPs) and as approved by the Engineer.

With the approval of the Engineer, the contractor may choose to replace straw/excelsior Wattles/Logs with equivalent BMP products of compost Logs/Wattles, bio-socks, filter socks, compost socks, or compost tubes covering reinforced geotextile fabric as the outer layer at no additional cost to the Department. Such replacement may be applicable to protect sensitive biological resources (native species and/or habitats) within the project limit or its vicinity. For paved or rocky surface, the compost perimeter control and stormwater quality protection BMPs shall have enough weight so that no staking shall be required for flat construction zones, and gentle slopes of less than five percent (5%). The equivalent compost BMP products stated above shall demonstrate same or better stormwater pollutants loading/filtering capacities as well as qualities in comparison with straw/excelsior Wattles/Logs. All fabric materials of compost perimeter control and stormwater quality protection BMPs shall be biodegradable. No separate measurement or direct payment will be made for the replacement of the straw/excelsior Wattles/Logs with compost BMP products; the cost being considered is included in the price of the respective contract item of Wattles/Logs.

Compost material used for perimeter control and stormwater quality protection BMPs shall not discharge harmful pollutants/nutrients that impair stormwater quality. The Engineer shall randomly sample/exam a minimum of three (3) compost-filled BMPs by opening the outer fabric layer. Non-compost materials such as: rocks, tree barks, wood chips, construction

debris, soil clumps, and/or other inert material shall NOT be allowed within the compost BMP products.

During construction the contactor shall minimize vehicular travel or equipment operation on the unpaved soil areas to maximum extent practicable (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 contaminates from construction sites.

No grout, concrete or wash water shall be disposed within the project limits or its vicinity. The contractor shall install concrete washout BMP as needed and under the direction of the Engineer at no additional cost to the Department. This 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 BMPs and as directed and approved by the Engineer. Staging and stockpiling on the unpaved areas shall be avoided to MEP.

EROSION / SEDIMENT CONTROL BEYOND THE PROJECT LIMITS:

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

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

When needed, the contractor shall only use off-project-site staging, material storage, maintenance yard, disposal spots, and stockpiling areas covered with existing environmental permit for operation.

SEEDING MAINTENANCE PERIOD:

Item 8050003, SEEDING **(**Class **II)** includes a 45 calendar-day maintenance period for each area on which seeding is required. The contractor shall schedule its work activities to ensure that all areas requiring seed are completed in time to allow the 45 calendar-day maintenance stage to be finalized within the specified contract time.

No time extension will be granted for failure to complete the 45 calendar-day maintenance period within the specified contract time.

Verification of Existing Features:

The locations and dimensions of existing roadway features shown on the plans are based on as-built plans, aerial photographs, and field surveys. It shall be the contractor's responsibility to field-verify the information given on the plans wherever that information affects the new work. Significant differences between the measured and plan information shall be submitted to the Engineer prior to proceeding with the work.

Water Service:

The contractor shall be responsible for securing, installing and paying for a water source and water that will be used for construction related work.

ENVIRONMENTAL MITIGATION MEASURES:

These mitigation measures are not subject to change without prior written approval from the Federal Highway Administration.

Contractor Responsibilities

- **If any Sonoran Desert tortoises are encountered during construction, the contractor shall adhere to the attached Arizona Game and Fish Department "Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects" revised October 23, 2007.**
- **Prior to construction within the right of way, the contractor shall review the attached Arizona Department of Transportation Environmental Planning Group "Western Burrowing Owl Awareness" flyer and become familiar with the identification of and avoidance of the western burrowing owl and follow the notification request as applicable.**
- **If any burrowing owls are located during construction, the contractor shall stop work at that location and notify the Engineer immediately. The Engineer will contact the Arizona Department of Transportation Environmental Planning Group biologist (602.712.6819 or 602.712.7767) to determine whether the owls can be avoided or must be relocated. If owls must be relocated, the Arizona Department of Transportation will employ a biologist holding a permit for the US Fish and Wildlife Service to relocate burrowing owls from the project area, as appropriate**
- **Prior to the start of ground-disturbing activities, the contractor shall arrange for and perform the control of noxious and invasive species in the project area.**
- **To prevent the introduction of invasive species seeds, the contractor shall**

inspect all earth-moving and hauling equipment at the equipment storage facility and the equipment shall be washed prior to entering the construction site.

- **To prevent invasive species seeds from leaving the site, the contractor shall inspect all construction equipment and remove all attached plant/vegetation and soil/mud debris prior to leaving the construction site.**
- **All disturbed soils not paved that will not be landscaped or otherwise permanently stabilized by construction shall be seeded using species native to the project vicinity.**
- **If suspected hazardous materials are encountered during construction, work shall cease at that location and the Engineer shall be notified. The Engineer will contact the Arizona Department of Transportation Environmental Planning Group Hazardous Materials Coordinator (602.920.3882 or 602.712.7767) immediately, and make arrangements for assessment, treatment and disposal of those materials.**
- **The contractor shall develop a Stormwater Pollution Prevention Plan, Notice of Intent, and Notice of Termination and submit it to the Engineer for approval.**
- **The contractor, upon approval from the Engineer, shall submit the Stormwater Pollution Prevention Plan's Notice of Intent, and Notice of Termination to the Arizona Department of Environmental Quality.**
- **The contractor shall comply with all local air quality and dust control rules, regulations and ordinances which apply to any work performed pursuant to the contract.**
- **If previously unidentified cultural resources are encountered during activity related to the construction of the project, the contractor shall stop work immediately at that location, notify the Engineer, and shall take all reasonable steps to secure the preservation of those resources. The Engineer will contact the Arizona Department of Transportation Environmental Planning Group, Historic Preservation Team, (602.712.8636 or 602.712.7767) immediately, and make arrangements for proper treatment of those resources.**
- **This project is located within a designated municipal separate storm sewer system. Therefore the contractor shall send a copy of the Notice of Intent and Notice of Termination to the Arizona Depart of Transportation Water Quality Group.**
- **The contractor shall comply with all terms and conditions of the attached Section 404 Nationwide Permit Number 3 as established by the US Army Corps of Engineers**

Protection of Existing Pavements:

The contractor shall be responsible for protecting the driving surface of the mainline freeways, ramps, frontage roads, cross roads and residential roads from any damage due to project construction activities. In particular, crane mats or other means shall be used to avoid damage to existing pavement during crane operations. The contractor shall repair any damage to existing roadway pavements at no additional cost to the Department.

Disposal of Existing Asphaltic Concrete

Upon removal, the existing asphaltic concrete material not authorized for use on the project by the Engineer shall become the property of the contractor and shall be disposed of the project limits per section 202 of the Standard Specifications.

Cooperation Between Contractors

The contractor is advised there is construction activity adjacent to this project site. The contractor is to coordinate this project work to accommodate the construction activities of the following project

TRACS NO	303 MA 104 H857701C
PROJ NO	IM 303-A(216)S
TERMINI	ESTRELLA FREEWAY (SR 303L)
LOCATION	I-10/SR 303L T.I. (PHASE II)

The proposed Construct I-10/SR303L System Traffic Interchange (Phase II) project is located in Maricopa County within the City of Goodyear at the juncture of I-10 and SR 303L. The approximate length of the project is 3.76 miles along I-10 and 1.92 miles on SR 303L. The proposed work consists of SR303L directional ramps to and from the south and SR303L NB and SR303L SB. Construction activities started on February, 2016 and are anticipated to last approximately one and one half year.

Coordination between the contractors shall be administered through the ADOT Agua Fria Field Office, Mike Rigby, PE, 602-712-3540.

The contractor shall coordinate and cooperate through the Engineer for traffic control and other overlapping or conflicting construction operations with other contractors to the benefit of the all contractors and the Department. The contractor’s representative should be available to attend coordination meetings if required by the Engineer

(101ABRV, 02/04/16)

SECTION 101 DEFINITIONS AND TERMS:

101.01 Abbreviations: of the Standard Specifications is modified to add:

ARPA	Arizona Rock Products Association
IFI	International Fasteners Institute
ISO	International Organization for Standardization
ISSA	International Slurry Surfacing Association
NICET	National Institute for Certification in Engineering Technologies
NEC	National Electrical Code
NRMCA	National Ready Mixed Concrete Association
NSPS	National Society of Professional Surveyors
PPI	Plastic Pipe Institute
SSPC	Society for Protective Coatings

(101DEFN, 02/22/16)

SECTION 101 DEFINITIONS AND TERMS:

101.02 Definitions:

Bidding Schedule: of the Standard Specifications is revised to read:

The prepared schedule containing the estimated quantities of the pay items for which unit bid prices are invited.

Working Day: of the Standard Specifications is revised to read:

A day, exclusive of Saturdays, Sundays and State-recognized holidays, beginning at midnight, extending for a twenty-four hour period, and ending at midnight. Any Saturday, Sunday, or State-recognized holiday on which the contractor has been approved to work will also be counted as a working day. Working days on which weather conditions do not permit work on the project to proceed, as determined by the Engineer, will not be charged.

(102PREQ, 02/22/16)

SECTION 102 BIDDING REQUIREMENTS AND CONDITIONS

102.02 Prequalification of Bidders: the title and text of the Standard Specifications is revised to read:

102.02 Prerequisites for Bidding:

(A) General:

To submit a valid bid, the bidder must:

(1) have prequalification from the Department as necessary for the project, in accordance with paragraph (B) of this Subsection, and

(2) be included on the project Plansholder List as a Prime in accordance with paragraph (C) of this Subsection.

(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:

There are two ways for a bidder to be included on the project Plansholder List as a Prime. It is the bidder's responsibility to ensure that it is on the Plansholder List as a Prime prior to submitting a bid.

If a bidder is issued a proposal pamphlet in paper format by the Department, the Department will place the bidder on the project Plansholder List as a Prime.

Firms can register electronically requesting placement on the project Plansholder List as either a Prime or Subcontractor/Vendor as follows:

(a) Go to the C&S Website.

(b) Select "Current Advertisements".

(c) Identify the project of interest.

(d) Click on the "Register" icon.

(e) Select the “Bidder” or “Subcontractor/Vendor” radio button.

(f) Complete all required fields.

(g) Click “Save”. This submits the request to the Department.

(h) 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 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 Contracts and Specifications Section.

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:

Firms on the Plansholder List as a Prime or a Subcontractor/Vendor will receive notification of any changes to the project. Other interested parties can register electronically to receive email notification of any changes to the project as follows:

(a) Go to the C&S Website.

(b) Select “Current Advertisements”.

(c) Identify the project of interest.

(d) Click on the “Register” icon.

(e) Select the “Other” radio button.

(f) Select the “Yes” radio button in response to “Are you interested in registering to be notified about any changes made to this advertisement?”

(g) Complete all required fields.

(h) Click “Save”. This submits the request to the Department.

(i) 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 request.

All parties registering to receive notifications will be sent an email when changes are made to the project.

(102NOBID, 09/19/12)

SECTION 102 - BIDDING REQUIREMENTS AND CONDITIONS:

102.03 **Suspension from Bidding:** of the Standard Specifications is revised to read:

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; or

(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.

(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.

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.

(102PRPMT, 02/22/16)

SECTION 102 BIDDING REQUIREMENTS AND CONDITIONS:

102.04 Contents of Proposal Pamphlet: the first paragraph of the Standard Specifications is revised to read:

The proposal pamphlet will state the location and description of the contemplated construction and will show the approximate estimate of the various quantities and kinds of work to be performed or materials to be furnished and will have a schedule of items for which unit bid prices are invited. The proposal pamphlet will state the time in which the work must be completed, the type and amount of the proposal guaranty and the date, time and place of the opening of proposals. The pamphlet will also include any Special Provisions or requirements which vary from or are not included in the Standard Specifications. Additional contract documents applicable to the specific project are listed in the Special Provisions.

(102ISSPSL, 02/22/16)

SECTION 102 BIDDING REQUIREMENTS AND CONDITIONS:

102.05 Issuance of Proposals: of the Standard Specifications is revised to read:

The Department reserves the right to refuse to issue proposal documents or to accept bids 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.

(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.

(102EXAM, 02/22/16)

SECTION 102 BIDDING REQUIREMENTS AND CONDITIONS

102.07 Examination of Plans, Specifications and Site of Work: the second paragraph of the Standard Specifications is revised to read:

A set of plans, special provisions, and the proposal pamphlet will be on file at Contracts and Specifications, 1651 W. Jackson, Room 121F, Phoenix.

Project plans, special provisions, proposal pamphlets, and other project documents, if available, will be provided in electronic format, at no charge, on the Contracts and Specifications website. Any interested party can access the advertised project documents.

(102LOBY, 10/01/90)

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 his or her 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 Services, 1651 W. Jackson, 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 his or her bid or proposal, that he or she 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.

(102IRPSL, 02/22/16)

SECTION 102 BIDDING REQUIREMENTS AND CONDITIONS:

102.10 **Irregular Proposals:** Item (B) of the Standard Specifications is revised to read:

(B) Proposals will be considered irregular and will be rejected for any of the following reasons:

(1) If the bidder is not on the project Plansholder List as a Prime.

(2) If the proposal, bid bond or bidding schedule is on a form other than that furnished by the Department.

(3) If the bidder or surety fails to provide a proposal guaranty as specified in Subsection 102.12.

(4) If the bidder fails to sign the proposal when submitting a bid in the paper format.

(5) If the bidding schedule does not contain a unit price for each pay item listed except in the case of authorized alternate pay items.

(6) 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.

(7) If the bidder submits a proposal in both the electronic format and in the paper format.

(103RSBTY, 02/22/16)

SECTION 103 AWARD AND EXECUTION OF CONTRACT:

103.03 **Responsibility:** the third paragraph of the Standard Specifications is revised to read:

Non-responsibility may also be found for any of the following reasons:

(A) Anti-competitive acts;

(B) Lack of competency and adequate machinery, plant and other equipment, as revealed by the financial statement and experience questionnaires required under Subsection 102.02;

(C) Incomplete work which, in the judgment of the Department, might hinder or prevent the prompt completion of additional work if awarded;

(D) Failure to pay or settle satisfactorily all bills due for work on other contracts;

(E) Failure to comply with any qualification regulations of the Department;

(F) Default under previous contracts;

(G) Unsatisfactory performance on previous work;

(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) Lack of a proper contractor's license; or

(L) Lack of sufficient ability or integrity to complete the contract.

(103AWARD, 12/14/09)

SECTION 103 - AWARD AND EXECUTION OF CONTRACT:

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

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 from the State Registrar of Contractors, in accordance with Arizona Revised Statutes 32-1101 through 32-1170.03. 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.

Licensing information is available from:

Registrar of Contractors
3838 N. Central
Suite 400
Phoenix, AZ 85012
Phone: (602) 542-1525

SECTION 104 - SCOPE OF WORK:

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

The project shall be constructed in accordance with Part VI of the Manual on Uniform Traffic Control Devices (MUTCD) 2009 Edition, the Arizona Supplement to the 2009 MUTCD, the Arizona Department of Transportation Traffic Control Design Guidelines (TCDG) 2010 edition, and the project plans. The Contractor is responsible for establishing 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 project plans will be considered if they conform to the references listed above. Any changes or revisions to the traffic control plans shall be reviewed and approved in advance by the Engineer.

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

The contractor shall notify ADOT-MPD at (602) 712 - 8598 two weeks prior to schedule Loop installations.

Prior to the start of each phase of work, the Contractor shall submit a Traffic Control Plan relevant to each phase of work, for approval by the Engineer in accordance with these Special Provisions.

The Contractor shall perform all work on I-10 and cross roads at night time or weekends only, unless otherwise approved by the Engineer. The work which doesn't require lane restrictions or closure on I-10 or on I-10 on/off ramps or on crossroads can be performed during day time as approved by the Engineer.

All lane restrictions and closures shall be subject to the following:

- Any work requiring a closure will need to have an approved Traffic Control Plan (TCP).
- Any exceptions must be approved by the Engineer.
- All proposed nighttime and weekend roadway and lane closures shall be submitted to the Engineer 14 calendar days in advance of the closure, unless otherwise approved by the Engineer.
- Traffic control plans for freeway lane restrictions, ramp closure, and cross road lane restrictions shall be provided to the Engineer for their review and approval a minimum of 14 calendar days prior to needing the lane restriction or ramp closure.
- Allowable closure periods for the freeway mainline, ramps, and cross roads are included in Table 104-1 of these Special Provisions.
- During allowable lane closure times, one lane of traffic in each direction on I-10 shall remain open at all times.
- There will be no lane restrictions on I-10 freeway or freeway on-and off-ramps allowed when a special event is occurring.

<u>Holidays</u>

- There will be no lane closures on I-10 freeway, freeway on and off ramps, and crossroads allowed on holidays or weekends which adjoin a holiday.

- The restricted holidays include: New Years Eve and Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, the day after Thanksgiving Day, and Christmas Eve and Day.

- The contractor shall remove all traffic control for temporary lane closures prior to holidays or weekends which adjoin a holiday.

- The holiday period starts from noon of the working day before holiday and ends by 5:00 AM on the next working day following holiday.

- There will be no weekend closures allowed on I-10 from two Mondays before Thanksgiving thru January 2nd of the next year.

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 variable message boards twice daily and maintain as needed per the Standard Specifications.

Table 104-1 – ALLOWABLE CLOSURE PERIODS		
Roadway Closure	**Weekdays**	**Weekends**
I-10 Mainline (**WB**) One Lane Closure	9:00PM to 5:00AM (Mon-Fri)	10:00 PM Fri to 5:00 AM Mon
I-10 on and off Ramps One Lane Closure	9:00PM to 5:00AM (Mon-Fri)	10:00 PM Fri to 5:00 AM Mon
I-10 on and off Ramps Full Closure	9:00PM to 5:00AM (Mon-Fri)	10:00 PM Fri to 5:00 AM Mon
Watson Road One lane Closure	9:00PM to 5:00AM (Mon-Fri)	10:00 PM Fri to 5:00 AM Mon
Full closure of the I-10 Westbound mainlines will not be allowed.		

When traffic control devices are not in use, they shall be moved at least 30 feet from the roadway unless otherwise directed by the Engineer.

The contractor shall not close any ramps as part of an adjacent lane, unless otherwise allowed by the Engineer. The Department will allow the closure of I-10 ramps at Watson Road during paving operations as described on Table 104-1. Ramp closures shall generally conform to Figure SA-10 of the 2010 ADOT Traffic Control Design Guidelines. To close the ramp the Contractor shall place an adequate number of Type III barricades across the ramp being closed with a Type A flashing warning light mounted on each end of each Type

III barricade for nighttime applications. The Contractor shall position Type I or Type II barricades with Type C steady-burning lights for nighttime applications in front of the Type III barricades closing a ramp. A “ROAD CLOSED” (R11-2) sign, with black legend on a white background, shall be attached to one of the Type III barricades closing the roadway. The R11-2 signs shall be 60 inches x 36 inches at the beginning of an off-ramp (alongside I-10) and shall be 48 inches x 30 inches at the beginning of an on-ramp (alongside a crossroad).

The Contractor shall not close two consecutive on-ramps or off-ramps on I-10 concurrently without the approval of the Engineer. The Contractor shall position changeable message boards as directed by the Engineer to alert the public to ramp closures at least 72 hrs. in advance of the ramp closures. The Engineer may also require the Contractor to provide full detour plans for any on/off ramp closures on I-10 and ramp closures on SR-85. The Contractor shall only have closures at the times permitted by the Engineer.

If necessary to ensure the safety of motorists and workers, the Engineer may require the contractor to utilize Flagger as part of the traffic control setup on ramps and the cross roads. For each Flagger positioned on a ramp, the contractor shall install “ROAD WORK AHEAD”, advance Flagger signing, and a high-level flag tree to alert motorists to the flagging activities.

During closures on I-10, the Contractor shall utilize type I or type II barricades for channelizing devices, spaced at 40 feet on center in tapers and 80 feet on center on tangents unless otherwise noted in the plans. If the Engineer allows a reduction in the posted speed limit below 40 miles per hour, the spacing of the channelizing devices in feet within a taper shall not exceed the same number as the speed limit. The spacing of the devices on tangent shall not exceed twice the spacing of the devices within the preceding taper. The Engineer may allow the Contractor to substitute vertical panels on tangents.

During work periods on I-10, lane closures shall generally conform to Typical Application 33 of the 2009 Manual on Uniform Traffic Control Devices (MUTCD) or to Figure SA-5(L) or Figure SA-5(R) of the 2010 ADOT Traffic Control Design Guidelines. The Engineer shall maintain a minimum of one lane of traffic in each direction of I-10. The Contractor’s traffic control shall not require traffic to cross from one I-10 roadway to the roadway for traffic in the opposite direction. The Engineer may modify these requirements if the Contractor can prove to the Engineer that the work cannot be performed within the constraints of these requirements.

DPS officers with vehicles and changeable message boards shall be included as part of the contractor’s traffic control only when and where the Engineer determines they should be present, such as for lane closures. The Engineer will approve the message that will be on the changeable message boards, when used.

Lane closures on I-10 shall not exceed 2 miles at any one time during construction. The Engineer may require the lane closures to be shorter than 2 miles. The Department may allow lane closure up to a maximum of 4 miles for AR-ACFC paving only if approved by the Engineer in advance.

Reduced speed limits, if required by the Engineer based on field conditions, shall be signed with orange 48” x 48” W3-5aAZ SPEED REDUCED AHEAD signs and 48” x 60” R2-1 signs for each 10 mph speed reduction. The signs shall each have two flags and be spaced at a minimum of 500 feet.

The Contractor may reduce the speed limit on I-10 or any other roadway within the project limits only when approved in writing by the Engineer. If the Engineer allows the Contractor to reduce the speed limit, the speed reduction shall only be in place during working hours and shall reduce the speed in 10 MPH increments. In addition, for any speed reduction allowed by the Engineer, the Contractor shall provide a speed limit sign at the end of the construction which will indicate the speed limit at that location prior to the speed reduction due to the construction operations unless there is an existing, uncovered speed limit sign within 1,000 feet of the end of the work zone. Each speed limit (R2-1) sign shall have a black legend on a white background and shall be 36 inches x 48 inches. Any sign indicating a reduction in the posted speed limit shall be positioned as close as practicable to the area where the reduction in speed is necessary, as determined by the Engineer. In addition, the Contractor shall position 48 inch x 48 inch W3-5a AZ (“SPEED REDUCED AHEAD”) signing in advance of a reduction in the posted speed limit, as approved by the Engineer.

Signing for double fines in work zones, when allowed by the Engineer, shall generally conform to Figure SA-12 of the 2010 ADOT Traffic Control Design Guidelines. Such signing shall only be in place during work periods when workers are present in accordance with the guidelines for signing for double fines in work zones. If the Contractor violates the guidelines for signing for double fines in work zones, the Contractor shall forfeit the ability to include double fines signing as part of the traffic control.

The retroreflective sheeting on all traffic control devices shall meet the requirements of Section 1007 of these Special Provisions for criteria established for Type IV, Type VIII, Type IX, or Type XI sheeting in ASTM D4956. In addition, all orange signs shall have fluorescent reflective sheeting and shall meet the criteria established for Type VIII, Type IX, or Type XI sheeting in ASTM D4956.

The nearest edge or corner of a sign shall be approximately 12 feet from the nearest edge of pavement for all signs mounted on embedded posts except behind guardrail the distance may be reduced to 6 feet. The minimum sign height from the bottom of each sign to the nearest edge of pavement shall be 7 feet for signs mounted on embedded posts and 5 feet for signs mounted on portable sign stands. All sign panels and their supports shall be installed to meet the current crash testing requirements identified in Section 701. Except as otherwise permitted by the Engineer, all warning signs used for this project shall be 48” by 48” and shall have black lettering on an orange background. Each sign in place at night shall have a Type A warning light affixed and two warning flags except the “END ROAD WORK THANK YOU (G20-2) sign.

The Contractor shall ensure the new pavement does not cover any sign supports, light poles, or foundations.

The contractor shall furnish verification to the Engineer that the designer of the traffic control plans has completed a recognized training and certification program. Traffic Control Supervisor (TCS) certified by the American Traffic Safety Services Association (A.T.S.S.A.) or by the National Safety Council shall be acceptable. Certification through other programs must be approved by the engineer. TCS certification must be no more than 4 years old.

(104LIQD, 10/22/98)

SECTION 104 - SCOPE OF WORK:

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

For each fifteen minute interval or portion thereof, outside of the allowable closure period, during which any portion of the below described roadway remains closed as a result of the contractor's activities, the contractor shall be assessed a sum as described in below table, which shall be deducted from monies due or becoming due the contractor.

Table 104-2 LIQUODATED DAMAGES:	
Roadway Closure	**Liquidated Damages**
I-10 West Bound One Lane Closure	$700
I-10 on and off Ramps at Watson Road One Lane Closure/Full Closure	$100
Watson Road One lane Closure	$100

If the Engineer finds that the work was delayed because of conditions beyond the control and without fault of the contractor, he may extend the allowable time for lane closure activities, such amount as the conditions justify.

(104APA, 02/26/99)

SECTION 104 - SCOPE OF WORK:

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

In order to eliminate the possibility of causing or exacerbating air quality violations resulting from construction activities, any traffic control plans which include temporary traffic detours involving local adjacent streets or alternate routes must be approved by the Engineer.

104.08 Prevention to Air and Noise Pollution: of the Standard Specifications is modified to add:

In the event that the Governor declares an air pollution emergency, pursuant to ARS § 49-465.B., which restricts work schedules for all employees of the state and its political subdivisions, the Engineer will direct the contractor suspend all work activities until further notice. The contractor shall discontinue all current work activities as soon as possible, but not later than four hours after notification by the Engineer. The contractor will be compensated for labor costs incurred through the end of the work shift in which the notification occurs. No payment adjustments will be made for equipment or overhead costs resulting from the suspension of work. An extension of the time allowable under the contract will be granted in accordance with Subsection 108.08 of these specifications. In the event that any local air quality authority declares air pollution advisory, the cooperation of the contractor is requested in complying with the actions recommended by the local authority to the maximum extent possible.

(104DUST, 11/01/95)

SECTION 104 - SCOPE OF WORK:

104.08 Prevention of Air and Noise Pollution: of the Standard Specifications is modified to add:

For work performed within Maricopa County, the contractor will be required to prepare a comprehensive fugitive dust control plan, in accordance with the guidelines established in Rule 310 of Maricopa County Regulation III, Control of Air Contaminants. The contractor may contact Maricopa County, Division of Air Pollution Control, to purchase a copy of the guidelines. The contractor shall complete and submit the control plan with the permit application, and obtain approval prior to construction or any other activities which may produce dust pollutants.

Some of the measures which the contractor may use to control or minimize fugitive dust include: increased use of water or chemical dust suppressants, cease work temporarily during high winds, reducing vehicle speeds and number of trips, maintaining freeboard of three inches or more in hauling, and covering or stabilizing stockpiles. The contractor shall be required to cover haul trucks with tarps or other suitable enclosures.

No separate payment will be made for preparation and implementation of the fugitive dust control plan, the costs being considered as included in the price of contract items.

(104MTBRN, 06/04/96)

SECTION 104 - SCOPE OF WORK:

104.08 Prevention of Air and Noise Pollution: the first paragraph of the Standard Specifications is modified to add:

Burning of trash, debris, plant material, wood, or any other waste materials will not be allowed. The contractor shall dispose of such materials in accordance with the requirements of Subsection 107.11.

(104SWDEQ, 3/11/13)

SECTION 104 - SCOPE OF WORK:

104.09 Prevention of Landscape Defacement; Protection of Streams, Lakes and Reservoirs: of the Standard Specifications is revised to read:

(A) General:

The contractor shall give attention to the effect of the contractor's operations upon the landscape, and shall take care to maintain natural surroundings undamaged.

The contractor shall be responsible to implement the requirements of the Arizona Pollutant Discharge Elimination System (AZPDES) for erosion and sediment control as specified in the "General Permit For Discharge From Construction Activities To the Waters Of The United States," issued by the Arizona Department of Environmental Quality (ADEQ). That document is hereinafter referred to as the AZPDES general permit.

Useful information related to stormwater controls and erosion and sediment control measures is presented in the "Fact Sheet For The Issuance Of An AZPDES Construction General Permit," available from ADEQ, and ADOT's "Erosion and Pollution Control Manual," available on the Department's website at http://www.azdot.gov/inside_adot/OES/ Water_Quality/Stormwater/Erosion_Pollution_Control_Manual.asp.

The work shall include providing, installing, maintaining, removing and disposing of erosion and sediment control measures such as gravel filter berms, dikes, catch basin inlet protection, end-of-pipe filtering devices, silt fences, dams, sediment basins, earth berms, netting, geotextile fabrics, slope drains, seeding, stream stabilization, and other erosion and sediment control devices or methods. Erosion control, as hereinafter referenced, shall be deemed to include control of erosion and the mitigation of any resulting sediment. Erosion control measures may be temporary or permanent. The contractor shall also be responsible for the preparation and processing of all documents required in the AZPDES general permit.

The plans will include preliminary erosion control measures and additional information to be included in the project's Storm Water Pollution Prevention Plan (SWPPP), as specified in Subsection 104.09(B). The contractor, with input from the Engineer, shall finalize the SWPPP, file a Notice of Intent (NOI), implement the SWPPP, and file a Notice of Termination (NOT), all as described herein.

Except for the NOI, all signatures required of the contractor by the AZPDES general permit, including those required for the NOT, SWPPP, and inspection reports, shall be provided by a

duly authorized representative of the contractor, as defined in Part VIII.J.2 of said permit. Signature of the NOI shall be by a responsible corporate officer, as defined in Part VIII.J.1 of the AZPDES general permit.

No clearing, grubbing, earthwork, or other work elements affected by the erosion control requirements in the SWPPP, shall be started until the SWPPP has been approved, the NOI completed and filed in accordance with Subsection 104.09(C), and the SWPPP implemented. Submission of the contractor's NOI shall certify that the contractor and its subcontractors have read and will comply with all provisions of the AZPDES general permit.

(B) Stormwater Pollution Prevention Plan (SWPPP):

The plans will include descriptions of temporary and permanent erosion control measures; a project description; percent impervious area, including paved areas, rooftops, and other similar surfaces, for both pre-construction and post-construction conditions; inspection schedule; and site-specific diagrams indicating proposed locations where erosion and sediment control devices or pollution control measures may be required during successive construction stages. The plans may also include an initial schedule detailing the proposed sequence of construction and related erosion control measures.

The contractor shall review the preliminary information, including the erosion control features and phasing, evaluate all SWPPP requirements for adequacy in addressing pollution prevention during construction, and prepare a draft SWPPP for review by the Engineer.

The contractor shall designate an erosion control coordinator, in accordance with Subsection 104.09(D), to be responsible for finalization and implementation of the SWPPP, as well as all other applicable requirements of the AZPDES general permit. The contractor's erosion control coordinator shall be approved as specified in Subsection 104.09(D) before the draft SWPPP can be finalized and submitted to the Engineer. After approval, the contractor shall designate the erosion control coordinator as an authorized representative of the contractor in accordance with Part VIII.J.2 of the AZPDES General Permit.

The draft SWPPP shall include all information required in the AZPDES general permit, including a site map; identification of receiving waters and wetlands impacted by the project; a list of potential pollutant sources; inspection schedule; any onsite or off-site material storage sites; additional or modified stormwater, erosion, and sediment controls; procedures for maintaining temporary and permanent erosion control measures; a list of the contractor's pollution prevention practices; and other permit requirements stipulated in the AZPDES program as well as other applicable state or local programs. The contractor shall coordinate with the Engineer on all such additional information.

The draft SWPPP shall also identify any potential for discharge into a municipal separate storm sewer system (MS4), including the name of the owner/operator of the system.

Unless otherwise approved by the Engineer, the contractor shall not expose a surface area of greater than 750,000 square feet to erosion through clearing and grubbing, or excavation and

filling operations within the project limits until temporary or permanent erosion control devices for that portion of the project have been installed and accepted by the Engineer.

The contractor shall indicate each 750,000 square-foot sub-area in the draft SWPPP, along with proposed erosion control measures for each sub-area. The draft SWPPP shall also include the sequence of construction for each sub-area, and installation of the required temporary or permanent erosion control measures.

The contractor shall give installation of permanent erosion control measures priority over reliance on temporary measures. Permanent erosion control measures and drainage structures shall be installed as soon as possible in the construction sequencing of the project, preferably concurrent with construction of the related sub-area or drainage device. However, except as specified in Part IV, Section B.2 of the AZPDES general permit and approved by the Engineer, erosion control measures shall be installed no later than 14 calendar days after construction activity has temporarily or permanently ceased for the affected sub-area.

Temporary or permanent sedimentation basins may be required for reducing or eliminating sediment from stormwater runoff. When required, such basins shall be completed before any clearing and grubbing of the site is initiated. The contractor shall evaluate the need and attainability of installing sediment basins as described in the AZPDES permit and, if approved by the Engineer, include the basins into the SWPPP as appropriate. When sedimentation basins are determined to be necessary and feasible, such work will be paid in accordance with Subsection 109.04(D). The plans may also include sediment basins as part of the preliminary information. No additional payment will be made for such basins, the cost being considered as included in contract items.

The draft SWPPP shall also identify and address erosion control at on-site fueling operations, waste piles, material storage sites, and off-site dedicated asphalt and concrete plants, contractor-use areas, storage areas, and support activity locations which are used solely for the project and are covered by the AZPDES general permit. The draft SWPPP shall also accommodate all requirements for the contractor’s pollution prevention practices specified in Subsection 104.09(E). In addition, the SWPPP shall specifically identify the erosion control measures proposed by the contractor during any vegetation removal and salvaging phases of the project (such as during timber harvesting or native plant salvaging).

The draft SWPPP shall specify the mechanism whereby revisions may be proposed by the contractor or the Engineer throughout the project and incorporated into the plan, including review and approval procedure. The Engineer and contractor shall jointly approve and sign each revision to the SWPPP before implementation. Any subsequent submittals required by the contractor to revise or update the SWPPP will require at least 48 hours for review.

Contractors and subcontractors responsible for implementing all or portions of the SWPPP shall be listed in the draft SWPPP, along with the measures for which they are responsible.

The contractor shall submit two copies of the draft SWPPP, including all information specified herein, to the Engineer at the preconstruction conference if possible, but not later than 14 calendar days from the Department's approval of the contractor's Erosion Control Coordinator.

The Engineer will provide the contractor with the following forms at the preconstruction conference:

- Maintenance, inspection, and site-monitoring report forms;
- Other record keeping forms and procedures, as needed; and
- Notice of Intent (NOI) and Notice of Termination (NOT) forms.

Notice of Intent and Notice of Termination blank forms are also available on the internet at http://azdeq.gov/function/forms/appswater.html#cgp.

Within 10 calendar days from the SWPPP submittal, the Engineer and contractor will jointly review the contractor's draft SWPPP, and include any additional revisions directed by the Engineer. The finalized SWPPP shall meet the terms and conditions of the AZDPES general permit, and be compatible with construction sequencing and maintenance of traffic plans.

When agreement has been reached, the Engineer and contractor's authorized representative will sign the finalized SWPPP. The Engineer's signature will constitute approval of the SWPPP. Upon approval of the SWPPP, the contractor shall file a Notice of Intent (NOI) as specified in Subsection 104.09(C).

After the time period specified in Subsection 104.09(C), the contractor shall implement the requirements of the SWPPP. No clearing, grubbing, earthwork, or other work elements affected by the erosion control requirements in the SWPPP, shall be started until the SWPPP has been approved, the NOIs completed and filed in accordance with Subsection 104.09(C), and the SWPPP implemented.

The contractor shall maintain all related erosion control elements in proper working order throughout the project. Work under this section also includes inspections, record-keeping, and implementation of pollution prevention practices as described in Subsection 104.09(E).

The approved SWPPP shall be updated whenever a change in design, construction method, operation, maintenance procedure, or other activity may cause a significant effect on the discharge of pollutants to surface waters, or when a change is proposed to the personnel responsible for implementing any portion of the SWPPP. The SWPPP shall also be amended if inspections indicate that the SWPPP is ineffective in eliminating or significantly reducing pollutants in the discharges from the construction site. All necessary modifications to the SWPPP shall be made within seven calendar days following the inspection that revealed the deficiency.

ADEQ may notify the contractor at any time that the SWPPP does not comply with the permit requirements. The notification will identify the provisions of the permit that are not being met and parts of the SWPPP that require modification. Within 15 business days of receipt of the

notification from ADEQ the contractor shall make the required changes to the SWPPP and submit a written certification to ADEQ that the requested changes have been made.

The contractor's erosion control coordinator shall maintain the SWPPP along with completed inspection forms and other AZPDES records in a three-ring binder. The erosion control coordinator shall maintain a current copy of the SWPPP, including all associated records and forms, at the job site from the time construction begins until completion of the project. The SWPPP shall be available for inspection by ADEQ, FHWA, and other entities identified in the AZPDES general permit, and for use by the Engineer. The erosion control coordinator shall provide copies of any or all of such documents to the Engineer upon request. When requested, such copies shall be provided within three working days of the request.

The SWPPP (including inspection forms) and all data used to complete the NOI and NOT shall be provided to the Department at the completion of the project. The contractor shall retain its own records for a period of at least three years from the filing of the contractor's NOT.

No condition of the AZPDES general permit or the SWPPP shall release the contractor from any responsibilities or requirements under other environmental statutes or regulations.

(C) Notice of Intent (NOI):

After the project Storm Water Pollution Prevention Plan (SWPPP) has been approved, the contractor will complete a Notice-of-Intent (NOI) form for the project. The NOI includes a certification statement which must be signed and dated by a responsible corporate officer of the contractor, as defined in Part VIII.J.1of the AZPDES General Permit, and include the name and title of that officer.

The NOIs shall be submitted to the Arizona Department of Environmental Quality (ADEQ) at the following address:

Arizona Department of Environmental Quality
Surface Water Section/Permits Unit/Stormwater NOIs (5415A-1)
1110 W. Washington Street
Phoenix, Arizona 85007
or fax to (602) 771-4528

The submittals shall be made to allow for the seven calendar-day review period required by ADEQ before the anticipated start of construction. The contractor shall also allow sufficient time, depending on the manner of submittal, for the NOIs to be received by ADEQ before commencement of the seven-day review period. An Authorization Certificate will be issued by ADEQ and, unless otherwise notified, the construction activities that are covered by the terms and conditions of the AZPDES permit may begin after the submittal period plus the seven calendar-day review period, or upon receipt of the Authorization Certificate, whichever occurs first. The contractor shall provide a copy of the authorization certificate to the Engineer, and keep a copy with the NOI.

The NOI may also be submitted electronically, through ADEQ's Smart NOI website at http://az.gov/webapp/noi/main.do. Regardless of the method of submittal, the contractor shall provide a copy to the Engineer.

At any time after authorization, ADEQ may determine that the contractor's stormwater discharges may cause or contribute to non-attainment of any applicable water quality standards. If ADEQ makes that determination, the contractor will be notified in writing. The contractor shall develop a supplemental erosion control action plan describing SWPPP modifications to address the identified water quality concerns. If the written notice from ADEQ requires a response, failure to respond in a timely manner constitutes a permit violation. All responses shall be in accordance with the AZPDES general permit.

If there is a potential to discharge into a municipal separate storm sewer system (MS4), a copy of the Authorization Certificate shall be submitted to the owner/operator of the system. Also, contractor's operating under an approved local sediment and erosion plan, grading plan, or stormwater management plan shall submit a copy of the Authorization Certificate to the local authority upon their request.

The contractor shall post its NOI and the information required in the AZPDES general permit on the construction-site bulletin board throughout the duration of the project. A copy of the AZPDES general permit shall also be kept at the construction site at all times.

(D) Contractor's Erosion and Pollution Control Coordinator:

(1) General Requirements:

The contractor shall designate a competent person as the contractor's erosion and pollution control coordinator (referred to elsewhere herein as erosion control coordinator) responsible for finalizing the draft SWPPP from the preliminary information included with the plans. The erosion control coordinator shall also be responsible for implementing, monitoring, and revising the approved SWPPP throughout the project, for making the required inspections, and for implementing any other permit requirements stipulated in the AZPDES general permit. The person shall be knowledgeable in the principles and practice of erosion and sediment controls, and possess the skills to assess conditions at the site that could impact stormwater quality and the effectiveness of the contractor's erosion control measures used to control the quality of the stormwater discharges.

Stormwater runoff from construction activities may contaminate adjacent bodies of water, or otherwise exceed water quality standards, and result in possible major civil and/or criminal penalties. Therefore the Engineer will closely consider the qualifications of the contractor's erosion control coordinator. The contractor shall not assume that the person proposed as erosion control coordinator will be acceptable to the Department merely because the experience and education requirements listed herein have been met.

The contractor bears all risks and liabilities for the failure of its erosion control coordinator to properly implement the requirements of the AZPDES general permit.

The person shall be capable of identifying existing and predictable effects of the contractor's operations, and shall have complete authority to direct the contractor's personnel and equipment to implement the requirements described herein, including prompt placement of corrective measures to minimize or eliminate pollution and damage to downstream watercourses. The erosion control coordinator shall also be familiar with procedures and practices identified in the SWPPP, and shall ensure that emergency procedures are up to date and available at project sites.

The erosion control coordinator shall at all times be aware of the contractor's work activities, schedule, and effect of the work on the environment, and shall, at any time, be accessible to direct the contractor's personnel to replace or repair erosion control measures as necessary. Should the erosion control coordinator not be present at the project site on a full-time basis, the contractor shall establish procedures to ensure that its erosion control coordinator is promptly notified of any damage or displacement of the required erosion control measures, whether from construction, vandalism, or other causes. In addition, the contractor shall provide the Engineer with a phone number through which the erosion control coordinator can be contacted at any time, 24 hours a day, seven days a week, including holidays. The erosion control coordinator must be present at the jobsite within 24 hours of such call being placed.

The erosion control coordinator shall also be aware of and comply with all requirements of the AZPDES general permit to address discharges at the site associated with the contractor's activities other than construction, including contractor staging areas, and other potential pollutant and off-site material storage and borrow areas.

The contractor shall be responsible to provide appropriate training to the contractor's personnel, including employees of any subcontractors, to ensure that all personnel understand requirements of the AZPDES general permit and SWPPP that are applicable to their job functions.
Failure of the contractor to properly maintain the erosion control measures required in the approved SWPPP will be cause for the Engineer to reject the erosion control coordinator and issue a stop work order, as specified in Subsection 104.09(G).

(2) Certification Requirements:

The proposed erosion control coordinator shall have successfully completed the two-day (16 hour) "Erosion Control Coordinator" training class (hereinafter referred to as the training class) provided by the Associated General Contractors (Arizona Chapter), phone (602) 252-3926.

If a current training class certificate is more than three years old, the Erosion Control Coordinator will have until April 30, 2014 to successfully complete either a six-hour "Erosion Control Coordinator Refresher" class (hereinafter referred to as the refresher class), also provided by the Associated General Contractors (Arizona Chapter), or the two-day training class specified above.

In order to maintain the training class certification, the refresher class shall be required every three years thereafter, prior to the expiration date listed on the previous certificate. After April 30, 2014, should more than three years elapse from completion of either the training class or refresher class, the contractor's proposed erosion control coordinator shall be required to successfully complete the two-day training class in order to again be eligible for consideration.

In addition, the proposed erosion control coordinator shall have documented experience equal to a minimum of one year from either of the following two categories:

(a) Experience in the development and implementation of Stormwater Pollution Prevention Plans (SWPPP's), as specified in the AZPDES general permit referenced herein, or the National Pollutant Discharge Elimination System (NPDES) for highway construction projects. The proposed erosion control coordinator's experience shall demonstrate full-time responsibility for directly supervising construction personnel in the installation, monitoring, and maintenance of erosion control items.

(b) Experience in re-vegetation or restoration of disturbed areas in environments similar to those on the project. Experience in temporary or permanent stabilization of disturbed areas will also be considered. The proposed erosion control coordinator's experience shall demonstrate full-time responsibility for directly supervising personnel in temporary or permanent re-vegetation or restoration of disturbed areas.

The contractor's documentation shall provide details indicating the types of relevant experience, and shall provide the number of months of each type of experience to be considered for approval.

The contractor's documentation shall also indicate that the proposed erosion control coordinator has completed the training class or refresher class. As specified above, the refresher class shall be required thereafter for each subsequent three-year period.

(3) Acceptance:

The contractor shall submit documentation indicating the qualifications of the proposed erosion control coordinator to the Engineer for approval within seven calendar days of the notice of award of the contract. The Engineer will review the proposed candidate's information within seven calendar days. The contractor may begin development of the draft SWPPP from the preliminary information included with the plans prior to approval of the erosion control coordinator. However no clearing, grubbing, earthwork, or other work elements that, in the opinion of the Engineer, may be subject to the requirements of the AZPDES general permit shall be started until the erosion control coordinator has been approved, the SWPPP finalized and implemented, and the NOI completed and filed, all as specified herein.

(E) Pollution Prevention Practices and Requirements:

The SWPPP shall also specify the contractor's pollution prevention practices and requirements, including vehicle wash-down areas, onsite and off-site tracking control, protection of equipment storage and maintenance areas, methods to minimize generation of dust, and sweeping of highways and roadways related to hauling activities. The contractor shall show each planned location of service and refueling areas on the SWPPP's site map. Changes to the contractor's pollution prevention practices that are related to construction phasing shall also be shown on the SWPPP.

The contractor shall take aggressive actions, considering all conditions, to prevent pollution of streams, lakes, and reservoirs with fuels, oil, bitumens, calcium chloride, fresh Portland cement, fresh Portland cement concrete, raw sewage, muddy water, chemicals or other harmful materials. None of these materials shall be discharged into any channels leading to streams, lakes or reservoirs. The SWPPP shall include the implementation of spill prevention and material management controls and practices to prevent the release of pollutants into stormwater. The SWPPP shall also provide storage procedures for chemicals and construction materials; disposal procedures; cleanup procedures; the contractor's plans for handling such pollutants; and other pollution prevention measures as required.

Machinery service and refueling areas shall be located away from streambeds or washes, and in a manner which prevents discharges into steams or washes.

Waste materials from blasting, including explosives containers, shall be disposed of off-site in accordance with applicable federal regulations. Other waste materials, such as used cans, oils, machine and equipment parts, paint, hazardous materials, plastic and rubber parts, discarded metals, and building materials, shall be removed from the construction site and disposed of according to applicable state and federal regulations.

Where the contractor's working area encroaches on a running or intermittent stream, barriers shall be constructed and maintained between the working areas and the stream bed adequate to prevent the discharge of any contaminants. The SWPPP shall identify the location of streams that may be affected and the specific types of barriers proposed for protecting these resources.

Unless otherwise approved in writing by the Engineer, fording of running streams with construction equipment will not be permitted; therefore, temporary bridges or other structures shall be used whenever an appreciable number of crossings is necessary.

Temporary bridges or other structures proposed by the contractor shall be designed to accommodate the ten-year storm event if to remain in place for up to a one-year period. If a structure is planned to remain in place for longer than one year, the hydraulic conveyance may be subject to more stringent requirements. The contractor shall be responsible for all permits, authorizations, and environmental clearances that may be necessary to approve the use of such structures. The contractor shall submit the design and all required documentation to the Engineer for approval. The contractor is advised that the review and approval process for such structures could be lengthy. Unless otherwise provided for in the contract, the contractor shall be responsible for all costs associated with the design and construction of such

structures. Also, no extension of contract time will be allowed for any review and approval periods, or for the time required to construct temporary bridges proposed by the contractor.

Mechanical equipment shall not be operated in running streams.

Material which is to be stockpiled or disposed of off-site shall be in accordance with Subsection 107.11.

Streams, lakes and reservoirs shall be cleared of all falsework, piling, debris or other obstructions resulting from the contractor's activities, inadvertently placed thereby or resulting from construction operations, within 24 hours from the time the obstruction was observed.

Spill prevention, containment and counter-measures shall be included in the SWPPP if the volume of project-site fuel in a single container exceeds 660 gallons, or if the total fuel storage volume at any one site exceeds 1,320 gallons.

In the event of a spill of a hazardous material, the contractor shall follow the provisions of Subsection 107.07. In addition, the erosion control coordinator shall modify the SWPPP as necessary within 14 calendar days of the discharge. The SWPPP shall be modified to include a description of the release, the circumstances leading to the release, and the date of the release.

The contractor shall assist in any efforts to clean up hazardous material spills, as directed by the Engineer or other authorities. Soil contaminated from spills shall be disposed of according to applicable state and federal regulations.

(F) Inspections:

(1) General:

The Engineer and the erosion control coordinator shall inspect the project at least every 14 calendar days, and also within 24 hours after any storm event of 0.50 inches or more. The inspections shall include disturbed areas that have been temporarily stabilized, areas used for storage of materials, locations where vehicles enter or exit the site, and all of the erosion and sediment controls included in the SWPPP. The contractor shall monitor rainfall on the site with a commercially manufactured rain gauge accurate to within 0.10 inches of rain. Rainfall records shall be submitted to the Engineer on a weekly basis.

For each inspection, the contractor's erosion control coordinator shall complete and sign a Compliance Evaluation Report as described in the permit. Copies of the completed reports shall be retained on-site in the SWPPP file throughout the construction period. The erosion control coordinator shall also provide a copy of the report to the Engineer following each inspection.

All inspections shall be made jointly with the Engineer.

(2) Adjustments:

When deficiencies are noted during scheduled inspections, the contractor shall take immediate steps to make the required corrections as soon as practical. Deficiencies shall be fully corrected, to the satisfaction of the Engineer, within four calendar days or by the next anticipated storm event, whichever is sooner. Deficiencies noted between designated inspections shall be corrected within the time period directed by the Engineer, but not later than four calendar days after observation.

Direct inflows of sediment into a watercourse shall be corrected by the end of the same day or work shift in which the inflow was observed.

In accordance with Subsection 104.09(G), failure to implement adjustments within the specified time periods may be cause for the Engineer to reject the contractor's erosion control coordinator and issue a stop work order for the affected portions of the project.

(G) Non-Compliance:

The Engineer may reject the contractor's erosion control coordinator if, in the opinion of the Engineer, the conditions of the AZPDES general permit or the approved SWPPP are not being fulfilled. Rejection of the contractor's erosion control coordinator shall be for failure to complete any of the following:

(1) Should the Engineer determine that the SWPPP is not being properly implemented, the contractor will be notified in writing of such deficiencies. The contractor's erosion control coordinator shall fully implement, to the satisfaction of the Engineer, the requirements of the approved SWPPP within three working days.

(2) Should any corrective measures required in Subsection 104.09(F)(2) not be completed within the time periods specified therein, the Engineer will notify the contractor in writing. The contractor's erosion control coordinator shall complete all required corrective measures within two calendar days of such notification, except that direct inflows of sediment into a watercourse shall be corrected within 24 hours.

(3) Should the Engineer determine that routine maintenance of the project's erosion control measures is not being adequately performed, the contractor will be notified in writing. Within three working days, the contractor's erosion control coordinator shall demonstrate, to the satisfaction of the Engineer, that such steps have been taken to correct the problem.

In the event of the erosion control coordinator's failure to comply with any of the above requirements, the Engineer will direct the contractor to stop all affected work and propose a new erosion control coordinator as soon as possible. However, all erosion and pollution control items specified in the SWPPP shall be maintained at all times. No additional work on

construction items affected by the SWPPP will be allowed until a new erosion control coordinator has been approved by the Engineer. The contractor will not be allowed compensation or an extension of contract time for any delays to the work because of the failure of the contractor's erosion control coordinator to properly fulfill the requirements of the approved SWPPP.

(H) Record of Major Construction And Erosion Control Measures:

In addition to the compliance evaluation report, the contractor shall keep records of the major construction activities, including the erosion control measures associated with these activities. In particular, the contractor shall keep a record of the following activities:

- The dates when major grading activities (including clearing and grubbing, excavation and embankment construction) occur in a particular area or portion of the site.
- The dates when construction activities cease in an area, temporarily or permanently.
- The dates when an area is stabilized, temporarily or permanently.

Such information shall be noted within two working days of the occurrence of any of the listed activities, and a copy of the report shall be included in the SWPPP. The contractor shall also provide one copy of such records, and any subsequent up-dated information, to the Engineer within three working days of completion or amendment of the report.

(I) Notice of Termination (NOT):

Upon final acceptance by the Engineer in accordance with Subsection 105.20, and as specified herein, the contractor shall complete and mail a Notice-of-Termination (NOT) for the project to the address shown below. The NOT submitted by the contractor includes a certification statement which must be signed and dated by an authorized representative of the contractor, as defined in Part VIII.J.2 of the AZPDES General Permit, and include the name and title of that authorized representative.

Arizona Department of Environmental Quality
Surface Water Section/Stormwater & General Permits (5415A-1)
1110 W. Washington Street
Phoenix, Arizona 85007
or fax to 602 771-4528

The NOT may also be submitted electronically, through ADEQ's Smart NOI website at http://az.gov/webapp/noi/main.do. Regardless of the method of submittal, the contractor shall provide a copy to the Engineer.

When the approved SWPPP includes the use of Class II seeding as an erosion control measure, seeded areas shall be maintained for 45 calendar days, as specified in the special provisions, and approved by the Engineer before the contractor's NOT can be submitted. Seeding, when used in the SWPPP as an erosion control measure, will not be considered as part of any Landscape Establishment Phase that may be included with the project.

(J) Measurement and Payment:

Measurement and payment for work specified in the SWPPP will be made in accordance with the requirements of Section 810. Erosion control and pollution prevention work specified in the contract which is to be accomplished under any of the other various contract items will be paid for as specified under those items.

If a force account pay item for erosion control is included in the bidding schedule, the contractor may be reimbursed for such additional erosion control items proposed by the contractor but not included with the plans or specifications. Such additional erosion control items must be approved in writing by the Engineer before use. Erosion control items approved by the Engineer will be paid in accordance with Subsection 109.04(D). No measurement or payment will be made for such additional items not approved by the Engineer.

No measurement or payment will be made to the contractor for time spent in preparing, reviewing, and revising the Storm Water Pollution Prevention Plan (SWPPP), including the monitoring plan, or providing other required documentation, the cost being considered as included in the price of contract items. No measurement or payment will be made for inspections, training of personnel, the contractor’s erosion control coordinator, or the contractor's pollution prevention practices and requirements, the costs being considered as included in contract items.

Unless otherwise specified, no measurement or payment will be made for maintenance of temporary and permanent erosion control measures, the cost being considered as included in contract items.

104.10 Contractor's Responsibility for Work: of the Standard Specifications is revised to read:

The contractor shall implement the requirements of the Arizona Pollutant Discharge Elimination System (AZPDES) for erosion control due to storm water runoff during construction, as specified above in Subsection 104.09, Prevention of Landscape Defacement; Protection of Streams, Lakes, and Reservoirs.
Until final written acceptance of the project by the Engineer, the contractor shall have the charge and care thereof and shall take every precaution against injury or damage to any part thereof by the action of the elements, or from any other cause, whether arising from the execution or from the nonexecution of the work. The contractor shall rebuild, repair, restore and make good all injuries or damages to any portion of the work occasioned by any of the above causes before final acceptance. No reimbursement shall be made for work necessary due to the contractor's failure to comply with the requirements of the SWPPP.

Except as specifically provided under Subsection 104.04, in case of suspension of work from any cause whatever, the contractor shall be responsible for the project and shall take such precautions as may be necessary to prevent damage to the project and provide for normal drainage. The contractor shall also erect any necessary temporary structures, signs or other facilities. During such period of suspension of work, the contractor shall properly and continuously maintain in an acceptable growing condition all living material in newly established plantings, seedings and soddings, furnished under its contract and shall take

adequate precautions to protect new tree growth and other important vegetative growth against injury.

(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, 03/17/08)

SECTION 104 - SCOPE OF WORK:

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

The contractor shall prepare an environmental analysis for approval by the Engineer, under any of the following conditions:

(A) If the contractor elects to provide material, in accordance with Section 1001, from a source that involves excavation.

(B) If the contractor elects to use any site to set up a plant for the crushing or processing of base, surfacing, or concrete materials. The contractor may request an exemption from this requirement to provide an environmental analysis if all of the following conditions apply:

(1) the site is exclusively used for the processing of materials,
(2) the site will not be used for excavation of borrow material,
(3) the site was developed as a processing area on or before January 1, 1999,
(4) the site is currently operating as a processing area, and
(5) the plant is located within that portion of the site that was disturbed prior to January 1, 1999.

(C) If the contractor requests that the Engineer approve access to controlled access highway at points other than legally established access points.

The contractor may incorporate 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.

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.

The environmental analysis shall include all areas of proposed excavation, crushing, processing, and haul roads. For the purposes of Subsection 104.12, a haul road is defined as any road on material excavation, processing, or crushing sites, and any road between the respective site and a public highway that may be used by the contractor.

The contractor shall promptly advise the Engineer that it is preparing the environmental analysis and shall submit it upon completion. The contractor should anticipate needing a minimum of 30 calendar days to prepare the environmental analysis. The contractor shall allow a minimum of 45 calendar days after submittal, or subsequent resubmittal, 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, the contractor may seek, and the Engineer may grant, an extension of time in accordance with the terms of Subsection 108.08. 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 due diligence in pursuing the environmental analysis. No time extension will be granted for a fixed completion date contract.
The Environmental analysis shall address all environmental effects, including, but not limited to, the following:

(1) The location of the proposed source and haul road, and the distance from the source to either an existing highway or an established alignment of a proposed Federal, State or County highway along with vicinity maps, sketches or aerial photographs.

(2) The ownership of the land.

(3) The identity and location of nearby lakes, streams, parks, wildlife refuges or other similar protected areas.

(4) The former use, if known, of the source, and haul road and their existing condition.

(5) The identification of present and planned future land use, zoning, etc., and an analysis of the compatibility of the removal of materials with such use.

(6) The anticipated volume of material to be removed; the width, length and depth of the excavation; the length and width of the haul road, and other pertinent features and the final condition in which the excavated area and haul road will be left, such as sloped sides, topsoil replaced, the area seeded, etc.

(7) 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 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.

(8) If the proposed source, or haul road will utilize Prime and Unique Farm land or farm land of statewide importance, a description of such remaining land in the vicinity and an evaluation whether such use will precipitate a land use change.

(9) A description of the visual surroundings and the impact of the removal of materials on the visual setting.

(10) The effect on access, public facilities and adjacent properties, and mitigation of such effects.

(11) The relocation of business or residences.

(12) Procedures to minimize dust in pits and on haul roads and to mitigate the effects of such dust.

(13) A description of noise receptors and procedures to minimize impacts on these receptors.

(14) A description of the impact on the quality and quantity of water resulting from the materials operation shall be provided. The potential to introduce pollutants or turbidity to live streams and/or nearby water bodies shall be addressed. Measures to mitigate potential water quality impacts shall be coordinated through the Environmental Protection Agency (EPA) for sites

located on tribal land, and the Arizona Department of Environmental Quality (ADEQ) for sites located on non-tribal land.

(15) A description of the impact on endangered or threatened wildlife and plants and their habitat. The analysis of potential impact to plants and wildlife shall be coordinated through the Arizona Game and Fish Department and U.S. Fish and Wildlife Service. Compliance with the Arizona Native Plant Law shall be coordinated through the Arizona Commission of Agriculture and Horticulture.

(16) A discussion of the effects of hauling activities upon local traffic and mitigating measures planned where problems are expected.

(17) A description of the permits required, such as zoning, health, mining, land use, flood plains (see Section 404 of the Clean Water Act), etc.

(18) The effect of removing material and/or stockpiling material on stream flow conditions and the potential for adverse impacts on existing or proposed improvements within the flood plain which could result from these activities. Measures to mitigate potential water quality impacts shall be coordinated through the Environmental Protection Agency (EPA) for sites located on tribal land, and the Arizona Department of Environmental Quality (ADEQ) for sites located on non-tribal land.

Guidance in preparing the environmental analysis is available on the Department's Internet Website through the Environmental Planning Group, or by calling Environmental Planning Group at 602-712-7767.

(104MAGDET, 05/03/16)

SECTION 104 SCOPE OF WORK:

104.15(A) **General:** the first three paragraphs of the Standard Specifications are revised to read:

All new underground utility facilities, including service connections, placed within ADOT right-of-way by the contractor must be magnetically detectable with standard locating instruments. The contractor shall place continuous detectable tracer wire with all those underground utility facilities that lack a continuous and integral metallic component capable of detection by standard locating instruments.

Tracer wire will not be required for power cables and wires, telephonic or electronic communications (other than fiber optic lines), or for landscape irrigation lines smaller than two inches in diameter. For Salt River Valley Water Users Association (S.R.V.W.U.A.) irrigation facilities, no tracer wire will be required if Salt River Project provides their own tracer system.

Tracer wire will be required for non-metallic pipe such as corrugated high density polyethylene plastic pipe (HDPE), steel reinforced high density thermoplastic ribbed pipe, corrugated

polypropylene plastic pipe (PP), vitrified clay pipe (VCP), and for polyvinyl chloride pipe (PVC) two inches in diameter and larger. Tracer wire will be required where the metallic component is encased within the pipe, such as reinforced concrete pipe (RCP), rubber gasket reinforced concrete pipe (RGRCP), and steel cylinder concrete pipe.

104.15(B) **Materials:** the first sentence of the first paragraph of the Standard Specifications is revised to read:

Tracer wire shall be solid copper wire, American Wire Gauge (AWG) No. 12 or larger.

(105PLNS, 10/18/10)

SECTION 105 CONTROL OF WORK:

105.03 **Plans and Working Drawings:** the thirteenth paragraph of the Standard Specifications is revised to read:

All working drawings or prints shall be 22 inches in height and 34 inches in length. There shall be 1 1/4-inch margins on the left and right sides, and 3/4-inch margins on the top and bottom. A blank space, four inches wide by three inches high, shall be left inside the margin in the lower right hand corner. All drawings shall be made in such a manner that clear and legible copies can be made from them. When half-size copies are required, they shall be provided on standard 11 by 17 inch sheets.

(105FNL, 03/11/11)

SECTION 105 CONTROL OF WORK:

105.20(B) **Final Acceptance:** the second paragraph of the Standard Specifications is revised to read:

If, however, the inspection discloses any work, in whole or in part, as being unsatisfactory or not complete, the Engineer will give the contractor written notice of the unsatisfactory or incomplete work and the contractor shall immediately correct such work. In such case, the Engineer will also give the contractor written notice as to whether or not the work is substantially complete.

Final acceptance will not be made until all completed plans and working drawings as required in Subsection 105.03 have been submitted and deemed acceptable by the Engineer. In addition, final acceptance will not be made until all “Certification of Payments to DBE Firms” affidavits, as required in the contract documents, have been submitted and deemed acceptable by the Engineer and the Civil Rights Office.

(106QCMAT, 05/03/16)

SECTION 106 CONTROL OF MATERIAL:

106.04(A) General: the fourth and fifth paragraphs of the Standard Specifications are revised to read:

The sampling, testing, and acceptance of materials shall be in accordance with the requirements of the specifications, in conjunction with the following:

- The ADOT Materials Testing Manual.
- The ADOT Materials Practice and Procedure Directives Manual.
- Applicable Federal, AASHTO, or ASTM specifications or test designations.
- Applicable specifications or test designations of other nationally recognized organizations.

Unless otherwise specified, whenever a reference is made to an Arizona Test Method or an ADOT Materials Practice and Procedure Directive, it shall mean the test method or practice and procedure directive in effect on the bid opening date.

Any reference to the ADOT Materials Policy and Procedure Directives elsewhere in the contract documents shall be understood to mean ADOT Materials Practice and Procedure Directives.

106.04(B) Contractor Quality Control: the second paragraph of the Standard Specifications is revised to read:

Certain construction items may require additional quality control measures, as specified in Subsection 106.04(C). When so specified, the contractor shall provide all the personnel, equipment, materials, supplies, and facilities necessary to obtain samples and perform the tests listed in the applicable section and as given in Subsection 106.04(C). Specific contractor quality control requirements will be shown in the applicable construction items. Payment for such additional work shall be in accordance with the Special Provisions, and will be included in Bidding Schedule Item 9240170.

When the specifcations do not require specific contractor quality control measures, the provisions given in Section 106.04(C) do not apply. Bid Item 9240170 will not be included in the Bidding Schedule.

106.04(C)(2) Quality Control Laboratory: the first paragraph is revised to read:

All field and laboratory sampling and testing shall be performed by a laboratory or laboratories approved by the Department. The requirements for approval of laboratories are specified in ADOT Materials Policy and Procedure Directive No. 19, “ADOT System for the Evaluation of Testing Laboratories”. Approved laboratories, and the test methods for which they are

approved to perform, are listed in the "ADOT Directory of Approved Materials Testing Laboratories". Approved test methods listed in the "ADOT Directory of Approved Materials Testing Laboratories" do not include field sampling and testing procedures. When field sampling and testing procedures are performed, the appropriate valid Arizona Technical Testing Institute (ATTI) and/or American Concrete Institute (ACI) certification(s) are required. ADOT Materials Policy and Procedure Directive No. 19, "ADOT System for the Evaluation of Testing Laboratories" and the "ADOT Directory of Approved Materials Testing Laboratories" may be obtained on the internet from the ADOT Materials Quality Assurance Section website.

106.04(C)(6) Weekly Quality Control Reports: of the Standard Specifications is revised to read:

The contractor shall submit Weekly Quality Control Reports to the Engineer. The weekly reports shall be complete and accurate, and shall state the types of work which have been performed during the report period. The report shall also include the process control measures taken to assure quality. The report shall provide sample identification information for materials tested during the report period, including sample number, date sampled, sample location, first and last name of person obtaining sample, and original source of material. The report shall also provide the results for all required tests and any retests, corrective actions, and other information relevant to quality control. The report shall include daily diaries for each day of testing, a weekly summary, the ADOT TRACS number, and the testing laboratory's project identification number.

Except as stated in the following paragraph, the weekly quality control report shall be prepared using standard forms provided by the Department. The standard forms are available on the Department's website at www.azdot.gov. After accessing the Department's website, select "Business", "Engineering and Construction", "Construction and Materials", "Contractor Information", "Forms and Documents", and then "Weekly Quality Control Forms". Except for the daily diaries, all documentation and information required on the forms shall be typed. Daily diaries may be hand-written if acceptable to the Engineer. The weekly report shall be submitted to the Engineer in paper form with a transmittal letter signed by the contractor's quality control manager.

In lieu of using the standard weekly quality control forms available on the Department's website, the contractor or testing laboratory may prepare the weekly report using proprietary or other software, if acceptable to the Engineer, provided that all required information is included, the format is comparable to the Department's standard format, and the report is submitted in paper form with the required transmittal letter.

The report period shall end at midnight of each Friday, and the report shall be submitted to the Engineer no later than 5:00 p.m. of the following Wednesday. The Engineer will verify that the report is timely, complete, and accurate.

Reports that are not submitted by the above-referenced deadline shall be considered delinquent. Reports that are submitted by the above-referenced deadline, but are not complete and accurate, shall also be considered delinquent. In either case monies shall be

deducted from the contractor's monthly estimate in accordance with the requirements for Contractor Quality Control, as specified in these special provisions.

(106CERT, 09/14/12)

SECTION 106 CONTROL OF MATERIAL:

106.05 Certificates: of the Standard Specifications is revised to read:

106.05(A) General:

The contractor shall submit to the Engineer an original or copy of either a Certificate of Compliance or a Certificate of Analysis, as required, prior to the use of any materials or manufactured assemblies for which the specifications require that such a certificate be furnished.

Certificates shall be specifically identified as either a "Certificate of Compliance" or a "Certificate of Analysis".

The Engineer may permit the use of certain materials or manufactured assemblies prior to, or without, sampling and testing if accompanied by a Certificate of Compliance or Certificate of Analysis, as herein specified. Materials or manufactured assemblies for which a certificate is furnished may be sampled and tested at any time, and, if found not in conformity with the requirements of the plans and the specifications, will be subject to rejection, whether in place or not.

Certificates of Compliance and Certificates of Analysis shall comply with the requirements specified herein, the ADOT Materials Testing Manual, and applicable ADOT Materials Policy and Procedure Directives.

106.05(B) Certificate of Compliance:

A Certificate of Compliance shall be submitted on the manufacturer's or supplier's official letterhead, and shall contain the following information:

(1) The current name, address, and phone number of the manufacturer or supplier of the material.

(2) A description of the material supplied.

(3) Quantity of material represented by the certificate.

(4) Means of material identification, such as label, lot number, or marking.

(5) A statement that the material complies in all respects with the requirements of the cited specifications. Certificates shall state compliance with the cited specification, such as AASHTO M 320, ASTM C 494; or specific table or subsection of the Arizona Department of Transportation Standard Specifications or Special Provisions. Certificates may cite both, if applicable.

(6) A statement that the individual identified in item seven below has the legal authority to bind the manufacturer or the supplier of the material.

(7) The name, title, and signature of the responsible individual. The date of the signature shall also be given.

Each of the first six items specified above shall be completed prior to the signing of the certificate as defined in item seven. No certificate will be accepted that has been altered, added to, or changed in any way after the authorized signature has been affixed to the original certificate. However, notations of a clarifying nature, such as project number, contractor, or quantity shipped are acceptable, provided the basic requirements of the certificate are not affected.

A copy or facsimile reproduction of the original certificate will be acceptable; however, the original certificate shall be made available upon request.

106.05(C) Certificate of Analysis:

A Certificate of Analysis shall include all the information required for a Certificate of Compliance and, in addition, shall include the results of all tests required by the specifications.

(106APL, 02/10/12)

SECTION 106 - CONTROL OF MATERIAL:

106.14 Approved Products List: of the Standard Specifications is revised to read:

The Approved Products List is a list of products which have been shown to meet the requirements of these Standard Specifications. The Approved Products List is maintained by the Department and updated monthly. Copies of the most current version are available on the internet from the ADOT Research Center, through its Product Evaluation Program.

The contractor shall verify that any products chosen for use from the Approved Products List are selected from the version which was most current at the time of the bid opening.

Unless otherwise specified in the Special Provisions, products not appearing on the Approved Products List at the time of the bid opening may be used if they meet the requirements of the plans and specifications.

When the Special Provisions limit product selection to only those listed on the Approved Products List, other products will not be evaluated or approved.

(106DMAT, 2/15/11)

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

106.15 Domestic Materials and Products:

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

All manufacturing processes to produce steel and iron products used on this project shall occur in the United States. Raw materials used in manufacturing the steel and iron products may be foreign or domestic. Steel or iron not meeting these requirements may be used in products on this project provided that the invoiced cost to the contractor for such steel products incorporated into the work does not exceed either one-tenth of one percent of the total (final) contract cost or $2,500, whichever is greater.

Any process which involves the application of a coating to iron or steel shall occur in the United States. These processes include epoxy coating, galvanizing, painting, or any other coating which protects or enhances the value of covered material.

The requirements specified herein shall only apply to steel and iron products permanently incorporated into the project. "Buy America" provisions do not apply to temporary steel items, such as sheet piling, temporary bridges, steel scaffolding and falsework, or to materials which remain in place at the contractor's convenience.

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.

(106SALV, 03/26/10)

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

106.16 Salvaged Asphaltic Concrete Materials:

The contract may include mandatory uses and optional uses for reclaimed asphaltic concrete (RAP). Mandatory uses may include milled asphaltic concrete for shoulder build-up, or for other project-specific items. Optional uses for RAP, when allowed in the contract, include asphaltic concrete, aggregate bases, and aggregate subbases.

For projects with both mandatory and optional uses for RAP, the contractor shall ensure that sufficient project-generated RAP is available to complete the mandatory item(s), or provide RAP from other sources, acceptable to the Engineer, to complete such mandatory work, at no additional cost to the Department.

(107INS, 7/10/12)

SECTION 107 - LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC:

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

Prior to the execution of the contract, the contractor shall file with the Department a certificate or certificates of insurance evidencing insurance as required by this contract has been placed with an insurer authorized to transact insurance in the State of Arizona pursuant to ARS Title 20, Chapter 2, Article 1, or with a surplus lines insurer approved and identified by the Director of the Department of Insurance pursuant to ARS Title 20, Chapter 2, Article 5.

All insurers shall have an “A.M. Best” rating of A- VII or better.
The State of Arizona in no way warrants that the above-required minimum insurer rating is sufficient to protect the contractor from potential insurer insolvency.

The contractor’s submission of the required insurance certificates constitutes a representation to the Department that:

1. The contractor has provided a copy of these specifications to every broker who has obtained or filed a certificate of insurance and has communicated the necessity of compliance with these specifications to the broker; and

2. To the best of the contractor’s knowledge, each certificate of insurance and each insurance coverage meets the requirements of these specifications.

The contractor shall provide the Department with certificates of insurance (ACORD form or equivalent acceptable to the State of Arizona) as required by the contract. The certificates for each insurance policy shall be signed by a person authorized by that insurer.

(107UTIL, 11/06/13)

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:

The contractor shall be ADOT's Blue Stake field locator, and perform all requirements as prescribed in A.R.S. 40-360.21 through .29, for all underground facilities that have been installed by the contractor on the current project, until the project is accepted by ADOT.

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

Projects In Maricopa County (602) 263-1100

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

CENTRAL MAINTENANCE DISTRICT

(602) 712-7522 2140 W. Hilton Avenue
(602) 712-6954 Phoenix, AZ 85009

Conflicts are not anticipated with utilities; however, it shall be the contractor's responsibility to determine the exact location of utilities in accordance with blue stake law. Blue stake must be called at least two (2) working days prior to commencing any construction activities on the project.

Due to the nature of this project, which is pavement preservation, plans does not include certain areas of due to similar pavement preservation work; locations of existing utilities are based on record information and not verified by field survey. However, it shall be the contractor's responsibility to determine the exact location of utilities in accordance with blue stake law. Blue stake must be called at least two (2) working days prior to commencing any construction activities on the project.

The contractor is also to be aware that if any additional work is added by change order which requires ground penetration such as additional guardrail, or drainage improvements; pipe end sections, etc. The contractor shall do specific research in these areas to avoid utility conflict.
The contractor’s ground penetrating activity shall avoid impacting any underground utility and the construction shall avoid impacting any overhead utility.

In the case of installation of new or relocated guardrail, or guardrail end terminals, the contractor shall modify the post location(s) as necessary to avoid conflict(s) and shall confirm the new location(s) with ADOT prior to installation. The contractor shall use care and hand tools to excavate for guardrail posts when distance is less than or equal to 24 inches from the

underground utility markings. Prior to working around utilities, the contractor shall notify the utility contact sufficiently in advance to allow the utility to schedule a representative to observe the work.

In the case of any addition of drainage improvements by change order, the required excavation shall be adjusted by the contractor as necessary to avoid impact to utilities or interruption of utility service. Adjustment to improvements shall be made only with the agreement of and direction by the engineer.

There is no railroad involvement within ½ mile of the project limit.

We also caution the contractor to be aware of any overhead utilities in the area of the project and is to keep a safe distance from all overhead facilities:

POWER LINES:

Power lines and other utilities may be at various locations throughout the project limits. However, they are not anticipated to be in conflict. All work at or in close proximity to said 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, .22, .24, .26 and .28).
(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 contractor is cautioned to use care when operating near any utility facilities. It shall be the contractor’s responsibility to determine the exact location of any utilities within the project limits prior to any construction operations and to notify the utility companies at least two (2) working days prior to commencing work on the project.

(107FINA, 09/19/12)

SECTION 107 - LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC:

107.19 Federal Immigration and Nationality Act: of the Standard Specifications is revised to read:

(A) General:

The contractor and all subcontractors shall comply with all federal, state and local immigration laws and regulations, as set forth in Arizona Executive Order 2005-30, relating to the immigration status of their employees who perform services on the contract during the duration

of the contract. The State shall retain the right to perform random audits of contractor and subcontractor records or to inspect papers of any employee thereof to ensure compliance.

The contractor shall include the provisions of Subsection 107.19 in all its subcontracts.

In addition, the contractor shall require that all subcontractors comply with the provisions of Subsection 107.19, monitor such subcontractor compliance, and assist the Department in any compliance verification regarding any subcontractor.

(B) Compliance Requirements for A.R.S. § 41-4401, Government Procurement, E-Verify Requirement; Sanctions:

By submission of a bid, the contractor warrants that the contractor and all proposed subcontractors are and shall remain in compliance with:

(1) All federal, state and local immigration laws and regulations relating to the immigration status of their employees who perform services on the contract, and
(2) A.R.S. Section 23-214, Subsection A (That subsection reads: “After December 31, 2007, every employer, after hiring an employee, shall verify the employment eligibility of the employee through the E-Verify program.”).

A breach of a warranty regarding compliance with immigration laws and regulations shall be deemed a material breach of the contract, and the contractor and subcontractors are subject to sanctions specified in Subsection 107.19(D).

Failure to comply with a State audit process to verify the employment records of contractors and subcontractors shall be deemed a material breach of the contract, and the contractor and subcontractors are subject to sanctions specified in Subsection 107.19(D).

(C) Compliance Verification:

The State may, at any time and at its sole discretion, require evidence of compliance from the contractor or subcontractor.
Should the State request evidence of compliance, the contractor shall complete and return the State Contractor Employment Record Verification Form and Employee Verification Worksheet, provided by the Department, no later than 21 days from receipt of the request for such information.

Listing of the compliance verification procedure specified above does not preclude the Department from utilizing other means to determine compliance.

The State retains the legal right to inspect the papers of any employee who works on the contract to ensure that the contractor or subcontractor is complying with the warranty specified in Subsection 107.19(B).

(D) Sanctions for Non-Compliance:

For purposes of this paragraph, non-compliance refers to either the contractor's or subcontractor's failure to follow immigration laws or to the contractor's failure to provide records when requested. Failure to comply with the immigration laws or to submit proof of compliance constitutes a material breach of contract. At a minimum, the Department will reduce the contractor's compensation by $10,000 for the initial instance of non-compliance by the contractor or a subcontractor. If the same contractor or subcontractor is in non-compliance within two years from the initial non-compliance, the contractor's compensation will be reduced by a minimum of $50,000 for each instance of non-compliance. The third instance by the same contractor or subcontractor within a two-year period may result, in addition to the minimum $50,000 reduction in compensation, in removal of the offending contractor or subcontractor, suspension of work in whole or in part or, in the case of a third violation by the contractor, termination of the contract for default.

In addition, if a contractor is in non-compliance three times within a two-year period, the Department will revoke the contractor's prequalification for a minimum of one year. Subcontractors and suppliers who are in non-compliance three times within a two-year period will be prohibited from participating in Department contracts for a minimum of one year.

Subcontractors who are in non-compliance three times within a two-year period, and who are prequalified with the Department as prime contractors, will also have such prequalifications revoked for a minimum of one year.

After the minimum one-year suspension, contractors, subcontractors, and suppliers may be considered eligible to participate in Department contracts, but only after successful demonstration, to the satisfaction of the Department, that their hiring practices comply with the requirements specified herein. If considered eligible, contractors shall be required to re-apply for prequalification and be accepted prior to bidding on Department contracts. Subcontractors interested in bidding on Department contracts as prime contractors shall also be required to re-apply for prequalification and be accepted prior to bidding. For purposes of considering suspension: (1) non-compliance by a subcontractor does not count as a violation by the contractor, and (2) the Department will count instances of non-compliance on other Department contracts.

The sanctions described herein are the minimum sanctions; in case of major violations the Department reserves the right to impose any sanctions up to and including termination, revocation of prequalification, and prohibition from participation in Department contracts, regardless of the number of instances of non-compliance.

Contractors, subcontractors, and suppliers may appeal the sanctions to the State Engineer. That 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 Department's determination. The State Engineer shall promptly consider any appeals and notify the interested party of the State Engineer's findings and decision. The State Engineer's decision shall be considered administratively final.

Any delay resulting from a compliance verification or a sanction under this subsection is a non-excusable delay. The contractor is not entitled to any compensation or extension of time for any delays or additional costs resulting from a compliance verification or a sanction under subsection 107.19.

An example of the minimum sanctions under this subsection is presented in the following table:

Offense by:			**Minimum** Reduction in Compensation
Contractor	Subcontractor A	Subcontractor B	
First			$10,000
	First		$10,000
	Second		$50,000
		First	$10,000
	Third		$50,000 *
* Will, in addition, result in removal of the subcontractor, prohibition from participating in Department contracts, and revocation of any Department prequalifications that the subcontractor may have obtained.			

(108SUBLT, 02/22/16)

SECTION 108 PROSECUTION AND PROGRESS:

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

The Department may also refuse to approve any entity as a subcontractor or supplier for any of the reasons for which it could refuse to allow an entity to submit a bid, suspend the entity from bidding, or declare the entity non-responsible.

108.01 **Subletting of Contract:** the sixth paragraph of the Standard Specifications is modified to add:

(G) Verification that an alternative dispute resolution process to resolve payment and prompt payment disputes is included in each subcontract. The alternative dispute resolution process shall include a means of prompt escalation beyond the project level and provide the opportunity to hire a mediator.

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

The Engineer will not consent to subletting of any portion of the contract until:

(a) The Engineer receives a copy of the subcontract or lower tier subcontract, and

(b) The AZUTRACS Registration Number for the subcontractor has been provided.

The contractor's schedule shall allow seven calendar days for the Department's subcontract review of each subcontract.

The Engineer's consent shall in no way be construed to be an endorsement of the subcontractor or its ability to complete the work in a satisfactory manner.

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 withhold $1,000 from monies due or becoming due the contractor as liquidated damages. The liquidated damages will be withheld for each subcontractor, of any tier, that starts work without the consent of the Engineer. These liquidated damages shall be in addition to all other retention or liquidated damages provided for elsewhere in the contract.

If a subcontractor, of any tier, is found working on the project without an approved contract the Engineer will immediately stop work on the subcontract. Work shall not resume until all required documentation is submitted and approved by the Engineer. The contractor shall not be entitled to additional compensation or an extension of contract time for any delays to the work because of the contractor's failure to submit the required documentation.

(108PRCN, 05/03/16)

SECTION 108 PROSECUTION AND PROGRESS:

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

The contractor shall submit a traffic control plan in accordance with Subsection 701-1. The contractor shall designate an employee who is competent and experienced in traffic control to implement and monitor the traffic control plan. The qualifications of the designated employee must be satisfactory to the Engineer. Such designated employee shall have successfully completed a recognized traffic control supervisor training program. The traffic control supervisor training provided by the American Traffic Safety Services Association (A.T.S.S.A.) or the International Municipal Signal Association (IMSA) shall be acceptable. Training through other programs must be approved in advance by the Engineer. The contractor shall submit proof that the proposed individual has completed an approved training program at the preconstruction conference. The training shall be current, and must be valid throughout the duration of the project. In order to remain current with the Department, the traffic control supervisor training shall be completed or renewed every four years.

108.03 **Preconstruction Conference:** the fifth paragraph of the Standard Specifications is hereby deleted.

(108CPM, 10/22/96)

SECTION 108 - PROSECUTION AND PROGRESS:

108.03 **Preconstruction Conference:** of the Standard Specifications is modified to add:

The contractor shall be responsible for planning, scheduling and reporting the progress of the work to ensure timely completion of the contract.

The contractor shall submit a schedule in two parts, based upon the Sequence of Construction shown in the project plans or in these special provisions, in accordance with the following:

(A) Part I shall be a preliminary schedule and shall be submitted at the Preconstruction Conference for the Engineer's acceptance. It shall be a schematic (arrow) diagram or precedence diagram, showing the work stages and operations for all activities required by the contract. The diagram shall be in sufficient detail to allow day-to-day monitoring of the contractor's operations. Along with the preliminary schedule, the contractor shall include its calendar for the contract period which shall show work days, calendar days and dates. The diagram shall include four to 10 milestone events as identified by the contractor and accepted by the Engineer.

(B) Part II shall be submitted for the Engineer's acceptance within 15 calendar days after Part I has been accepted by the Engineer. This second schedule shall include a complete critical path schedule to cover the contractor's anticipated time schedule. The schedule shall include a detailed network diagram acceptable to the Engineer with the following features:

(1) It shall be time-scaled in calendar days. All activities shall be plotted on their early start and finish dates. Unless approved by the Engineer, activities shall not exceed 15 working days in length. The plot shall have a size and scale acceptable to the Engineer.

(2) It shall show the order and interdependence of activities and the sequence of work as reflected in the Schedule Report specified in Subsection 108.03(B)(7) below. The critical activities shall be prominently distinguished on all reports by the use of color or other means acceptable to the Engineer.

(3) It shall include, in addition to all construction activities, such tasks as mobilization, demobilization, submittal and approval of samples of materials and shop drawings, procurement of significant materials and equipment, fabrication of special items, installation and testing and interfacing with other projects.

(4) The activities shall be sufficiently detailed so that a reviewer can follow the sequence. For example, the activities shall show forming, reinforcing, and placement of concrete on the calendar days they are scheduled to be performed.

(5) The diagram shall show for each activity the preceding and following event numbers or activity numbers, the activity description, the total float, and the duration of the activity in working days.

(6) The activities shall be organized and described so as to conform to the contract bid items. Activity descriptions shall be unique and specific with respect to the type of work and location.

(7) The diagram shall be accompanied by a Schedule Report of the network with a tabulation of the following data for each activity:

(a) Preceding and following event numbers or activity number

(b) Activity description

(c) Activity duration

(d) Earliest start date

(e) Earliest finish date

(f) Latest start date

(g) Latest finish date

(h) Total float times

(i) Responsibility for activity - e.g., contractor, subcontractor, supplier, etc.

(j) Resource loading for each activity listing personnel, equipment and anticipated revenue.

(C) The contractor shall make updated schedules and reports under the following circumstances or as requested:

(1) The contractor shall submit a monthly report of actual construction progress by the 10th working day of each calendar month by updating its schedule report to reflect all complete and in progress activities on the project. All negative float shall be explained in detail. If, in the opinion of the Engineer, the detailed network diagram requires revision, either wholly or in part, the

Engineer shall so direct the contractor and the contractor shall submit such revision within 10 calendar days.

(2) The monthly report also shall show the activities or portion of activities completed during the one-month reporting period and the portion completed on the project to date, showing actual start and finish dates plus all future activities.

(3) The monthly report shall state the percentage of revenue actually earned as of the report date.

(4) The monthly report shall be accompanied by a narrative description of job progress, problem areas, current and anticipated delaying factors and their expected effect, and any corrective actions proposed or taken. The narrative description shall also clearly identify any departures from earlier schedules, including, but not limited to, changes in logical sequence or logical ties, constraints, changes in activity durations and changes, additions or deletions in event numbers, activity numbers and activity descriptions. The reasons for each departure shall be included in the narrative description. Any additions or deletions of milestone events must be approved by the Engineer.

(5) The monthly report shall include a summary of all activities sequenced by the total float from least to greatest float and ordered by early start.

(6) The required schedules and report shall be submitted to the Engineer as follows:

(a) Part I (Preliminary Schedule): seven originals

(b) Part II (Detail Network Diagram): seven originals

(c) Revisions to Part II: seven originals

(d) Monthly Report: three originals plus three copies of the narrative.

(7) The monthly report shall include a detailed predecessor/successor analysis showing the predecessors, successors, logic ties, and constraints for each activity scheduled. These activities shall be ordered by event number or activity number from least to greatest.

(8) All Extra Work shall be shown on an updated Schedule.

The automated system software shall be Primavera or approved equal. If the contractor proposes and the Engineer approves an alternate software, the contractor shall furnish an unopened licensed disc package of the software to the Engineer for use during the duration of the project. The software shall be IBM PC compatible.

No measurement or direct payment will be made for contractor costs relating to preparation and submission of schedules and reports and revisions thereto, the cost being considered as included in the prices paid for contract items.

Float time is not for the exclusive use or benefit of either the Department or the contractor. Extension of time for performance may be granted to the extent that equitable time adjustment for the activity affected exceeds the total float or where otherwise justified, impact on the contract completion can be shown.

Acceptance of the contractor's schedules by the Engineer is not to be construed as relieving the contractor of its obligation to complete the work within the contract time; or as granting, rejecting, or in any other way acting on the contractor's requests for adjustments to the date for completing contract work, or claims for additional compensation. Such requests shall be processed in strict compliance with other relevant provisions of the contract.

The contractor shall participate in a review and evaluation of the proposed Part I, Preliminary Schedule, and Part II, Schedule, and monthly updated schedule by the Engineer. Any revisions necessary as a result of their review shall be submitted for acceptance to the Engineer within 10 calendar days after the review. The accepted Part II, Schedule, shall then be used by the contractor for planning, organizing, executing, and directing the work and for reporting progress of work accomplished. The contractor shall furnish to the Engineer for project use a copy of the Part II, Schedule, and a monthly updated schedule on a compatible floppy disk of a size and configuration designated by the Engineer.

The Engineer shall complete review of Part I, Preliminary Schedule, and Part II, Schedule, within 15 calendar days of the receipt of each. No monthly progress payment will be made until Part I has been accepted. Within the next 60 calendar days after acceptance of Part I, Part II will be submitted, reviewed, and accepted. If Part II has not been accepted within these 60 calendar days, progress payment will be withheld until Part II has been accepted.

Failure of the contractor to comply with the monthly updated Schedule requirements specified herein, will be grounds for the Engineer to withhold an additional 10 percent of the monthly progress payments, in addition to the normal retention, until the contractor is in compliance. Additional money withheld will be paid upon compliance to the contractor in the next scheduled monthly estimate. If the monthly updated schedule is not received by the 10th working day of each month, but received prior to the 25th of the month, five percent will be withheld until the following estimate.

(108TIME, 10/12/01)

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 **120 calendar** days, and will be known as the "Contract Time."

(108FCWT, 7/01/14)

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	$ 100,000	$ 430	$ 600
100,000	500,000	640	900
500,000	1,000,000	1,000	1,400
1,000,000	2,000,000	1,290	1,800
2,000,000	5,000,000	1,860	2,600
5,000,000	10,000,000	2,710	3,800
10,000,000	20,000,000	2,790	3,900
20,000,000	30,000,000	3,570	5,000
30,000,000	60,000,000	5,500	7,700
60,000,000	90,000,000	9,430	13,200
90,000,000	-------	9,430	13,200

(109FORCE, 02/20/08)

SECTION 109 - MEASUREMENT AND PAYMENT:

109.04(D)(3)(a) **Rental Rates (Without Operators):** of the Standard Specifications is modified to add:

The Rental Rate Blue Book adjustment factor (F) will be 0.933.

(109RET, 6/20/08)

SECTION 109 - MEASUREMENT AND PAYMENT:

109.06(C) Payroll Submittals: of the Standard Specifications is revised to read:
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 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 written 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 liquidated damages. These liquidated damages shall be in addition to all other retention or liquidated damages provided for elsewhere in the contract.

109.07 Partial Payment for Material on Hand: the fifth paragraph of the Standard Specifications is hereby deleted.

(109ACCP, 5/07/13)

SECTION 109 MEASUREMENT AND PAYMENT:

109.11(B) Definitions, Abbreviations, and Formulas for Determining the "Total Percentage of Lot Within UL and LL (PT)" for Asphaltic Concrete:

Target Value (TV): of the Standard Specifications is revised to read:

Target values for gradation, asphalt cement content or asphalt-rubber content, and effective voids shall be as given in the contractor's mix design.

Standard Deviation (s): of the Standard Specifications is revised to read:

The square root of the value formed by summing the squared difference between each individual test result for a measured characteristic and AVE, divided by the number of test results minus one, as shown in the equation below. The standard deviation will be determined to two decimal places.

$$s = \sqrt{\frac{\Sigma\left[\left(\text{Each Individual Test Result - AVE}\right)^2\right]}{\text{Number of Test Results - 1}}}$$

If the standard deviation calculated above is zero and the average of the individual test results meets the specified limits for “UL” and “LL”, the determination of “QU”, “QL”, “PU”, “PL”, and “PT” as shown below will not be made; rather, the value for “PT” (Total Percent of Lot Within UL and LL) shall be “100”. If the standard deviation calculated above is zero and the average of the individual test results does not meet the specified limits for “UL” and “LL”, the value for “PT” shall be “0”.

109.11(C) Definitions, Abbreviations, and Formulas for Determining the "Percent of Lot Within Limits (PWL)" for Thickness of Portland Cement Concrete Pavement:

Standard Deviation (s): of the Standard Specifications is revised to read:

The square root of the value formed by summing the squared difference between the thickness measurement for each core and AVE, divided by the number of cores minus one, as shown in the equation below. The standard deviation will be determined to two decimal places.

$$s = \sqrt{\frac{\Sigma\left[\left(\text{Thickness Measurement for each Core - AVE}\right)^2\right]}{\text{Number of Cores - 1}}}$$

If the standard deviation calculated above is zero and the average of the individual test results meets the specified “LL” (Lower Limit), the determination of “QL” and “PWL” as shown below will not be made; rather, the value for “PWL” (Percent of Lot Within Limits) shall be “100”. If the standard deviation calculated above is zero and the average of the individual test results does not meet the specified Lower Limit, the value for “PWL” shall be “0”.

109.11(D) Definitions, Abbreviations, and Formulas for Determining the "Percent of Lot Within Limits (PWL)" for Compressive Strength of Portland Cement Concrete Pavement:

Standard Deviation (s): of the Standard Specifications is revised to read:

The square root of the value formed by summing the squared difference between the compressive strength result for each sample and AVE, divided by the number of samples minus one, as shown in the equation below. The standard deviation will be determined to the nearest whole number.

$$s = \sqrt{\frac{\Sigma\left[\left(\text{Compressive Strength Result for each Sample - AVE}\right)^2\right]}{\text{Number of Samples - 1}}}$$

If the standard deviation calculated above is zero and the average of the individual test results meets the specified minimum strength “LL”, the determination of “QL” and “PWL” as shown below will not be made; rather, the value for “PWL” (Percent of Lot Within Limits) shall be “100”. If the standard deviation calculated above is zero and the average of the individual test results does not meet the specified minimum strength, the value for “PWL” shall be “0”.

(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:

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

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.

(109PAVSM, 6/15/09)

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

109.13 Measurement and Payment for Asphaltic Concrete Pavement Smoothness:

(A) General:

The final asphaltic concrete pavement surface shall be evaluated for smoothness by testing.

When a surface treatment other than ACFC or AR-ACFC, such as a chip seal coat, is to be placed on a new asphaltic concrete pavement surface as part of the project, the underlying new asphaltic concrete pavement surface will be evaluated for smoothness prior to the placement of the surface treatment.

When an ACFC or AR-ACFC surface treatment is placed on a new Portland cement concrete pavement (PCCP) as part of the project, the ACFC or AR-ACFC surface treatment will be evaluated for smoothness as specified herein, in addition to the PCCP smoothness requirements specified in Section 401 of the specifications.

At the completion of paving, the contractor shall notify the Engineer in writing that the pavement is ready for testing. The Engineer will then evaluate the pavement to be tested. If the Engineer determines that additional pavement preparation is required, the contractor shall perform such preparation as directed by the Engineer. The contractor shall ensure that the pavement to be tested can be driven safely at the design speed. Testing will not be performed on any portions that cannot be made safe for testing at the design speed, or on any lanes of less than 0.30 miles in length. If requested by the Engineer, the contractor shall broom the pavement immediately prior to testing. No measurement or direct payment will be made for preparing the pavement, the cost being considered as included in the price of contract items.

The Actual Smoothness Value (AS) for each 0.1 lane-mile increment will be determined, by the Department, in accordance with the provisions of Arizona Test Method 829.

Testing will not be done when the ambient air temperature is less than 40 degrees F, or during rain or other weather conditions determined to be inclement by the Engineer.

Traffic control costs during the initial smoothness testing period will be reimbursed under the provisions of Section 701 of the Specifications. Any additional traffic control costs incurred,

outside the normal scope of work, due to pavement repairs and subsequent pavement smoothness measurements shall be borne solely by the contractor.

The testing will be performed within ten days after the Engineer has accepted the pavement for testing. The Engineer will notify the contractor of the test results no later than ten days after the testing has been performed.

Testing will be performed on mainline traffic lanes, and will include the full length of the pavement placed under the contract. Unless otherwise specified in the contract documents, testing of distress lanes, shoulders, ramps, tapers, cross roads, and frontage roads will not be performed.

The existing pavement has the following smoothness values (inches per mile).

PROFILOMETER AC SMOOTHNESS SURVEY,CE42, (OPERATOR: S. Harvey, DRIVER: D. Demetri)
PROJECT: H8787 01C, I 10 MP 112.20-120.00
TEST: SMOOTHNESS TEST PRIOR TO CONSTRUCTION
DATE: Apr 18, 2016

EXCEPTIONS: NONE

Westbound START MP 120.00

DISTANCE (miles)	**IRI Values (inches/mile)** LANE (1)	LANE (2)	COMMENTS
0.10	64.13	76.20	
0.20	49.01	65.83	
0.30	41.83	63.25	
0.40	46.02	75.51	
0.50	43.93	78.44	
0.60	45.70	62.00	
0.70	44.08	60.25	
0.80	54.07	61.77	
0.90	58.75	66.88	
1.00	49.42	80.59	MP 119
1.10	45.42	65.56	
1.20	45.27	71.69	
1.30	45.99	83.87	
1.40	47.43	73.93	
1.50	42.46	82.89	
1.60	40.47	85.83	
1.70	41.11	67.16	
1.80	44.23	70.51	
1.90	47.51	72.74	
2.00	59.93	75.61	MP 118
2.10	55.53	63.39	
2.20	53.87	57.33	
2.30	40.91	64.35	
2.40	49.78	60.61	

2.50	42.19	57.78	
2.60	47.75	63.83	
2.70	43.25	80.27	
2.80	42.90	72.83	
2.90	41.96	52.13	
3.00	111.86	114.73	Bridge
3.10	96.82	102.61	Bridge, MP 117
3.20	35.12	53.20	
3.30	42.79	56.81	
3.40	42.51	51.90	
3.50	46.05	61.44	
3.60	42.58	46.76	
3.70	46.79	51.16	
3.80	46.19	49.71	
3.90	44.39	53.34	
4.00	50.81	56.27	MP 116
4.10	43.51	49.72	
4.20	41.99	45.50	
4.30	41.45	68.41	
4.40	37.67	66.22	
4.50	41.40	72.46	
4.60	50.08	83.67	
4.70	41.43	63.55	
4.80	54.80	50.75	
4.90	51.35	43.56	
5.00	53.39	60.32	MP 115
5.10	65.55	102.43	BRIDGE
5.20	153.34	103.60	BRIDGE
5.30	49.68	49.93	
5.40	44.37	54.18	
5.50	46.32	46.70	
5.60	45.65	51.84	
5.70	45.64	47.70	
5.80	47.39	45.70	
5.90	45.04	52.68	
6.00	49.33	49.37	MP 114
6.10	48.20	54.10	
6.20	50.73	56.86	
6.30	45.66	52.73	
6.40	45.06	49.64	
6.50	41.77	46.07	
6.60	39.21	53.56	
6.70	39.51	48.46	
6.80	67.45	67.46	
6.90	63.50	72.40	
7.00	64.74	71.57	MP 113
7.10	68.82	70.56	
7.20	65.70	64.77	
7.30	60.32	71.91	
7.40	61.99	59.41	

7.50	64.42	60.32	
7.60	69.95	60.16	
7.70	80.74	95.15	
7.78	58.23	96.41	End MP 112.20
AVERAGE	52.13	65.01	
STD.DEV.	16.96	15.20	
WB	LANE (1)	LANE (2)	

The Correction Value (CV) for this contract is **84** inches per mile.

Any 0.1 lane-mile increment having an Actual Smoothness Value (AS) equal to or greater than the Correction Value (CV) shall be repaired by the contractor at no additional expense to the Department.

If repairs are required, the contractor shall prepare a written proposal detailing corrective actions and submit the proposal to the Engineer within ten working days after the contractor's receipt of test results. Within three working days, the Engineer will review the submitted proposal and either accept it, or reject it and ask for a new proposal. If rejected, the contractor shall, within ten working days, prepare and submit a new proposal for corrective action, based on discussions with the Engineer. The Engineer will review, and either accept or reject, the new proposal within three working days of receipt.

Upon completion of any necessary repairs, the 0.1 lane-mile increments containing repaired areas will be re-tested in accordance with the provisions of Arizona Test Method 829. Resultant values from re-testing will be used in determining the adjustment in payment to the contractor.

(B) Payment:

An adjustment in payment to the contractor will be made as follows.

The adjustment in payment, either incentive or disincentive, for each 0.1 lane-mile increment on I-10 WB traffic lanes shall be determined using the following formulas:

When AS < **37**

Incentive = [(**37** - AS) / (**37**+ 2)] x $**2,700**

When AS >**49**:

Disincentive = [(**49** - AS) / (**37** + 2)] x $**1,200**

The existing smoothness values, and the values (other than AS) which are utilized in the incentive and disincentive formulas, are determined prior to the contract bid opening date and are not subject to revision or dispute after the awarding of the contract.

The total adjustment in payment to the contractor shall be the summation of the individual adjustments for the respective 0.1 lane-mile increments, except the maximum total incentive allowed shall be **$9,000** per tested lane-mile.

For projects where pavement is removed and replaced to grade, followed by an ACFC or an AR-ACFC overlay, no smoothness measurements will be made for the following areas:

Pavement placed within 35 feet of the termini of the project.

Pavement placed within 35 feet of the approaches and departures for bridge structures not being overlain as part of the project.

For projects where pavement is removed and replaced to grade, followed by an overlay, followed by an ACFC or an AR-ACFC overlay, no smoothness measurements will be made for the following areas:

Pavement placed within 100 feet of the termini of the project.

Pavement placed within 100 feet of the approaches and departures for bridge structures not being overlain as part of the project.

Bridges and their approaches and departures that are overlain as part of the project will be subject to the smoothness requirements.

(201MTBRN, 10/18/10)

SECTION 201 - CLEARING AND GRUBBING:

201-3.02 Removal and Disposal of Materials: the second and third paragraphs of the Standard Specifications are revised to read:

In the disposal of all tree trunks, stumps, brush, limbs, roots, vegetation and other debris, the contractor shall comply with the requirements of Title 49, Chapter 3, of the Arizona Revised Statutes, and with the Rules and Regulations for Air Pollution Control, Title 18, Chapter 2, Article 6, adopted by the Arizona Department of Environmental Quality pursuant to the authority granted by the Arizona Administrative Code.

Burning of trash, debris, plant material, wood, or any other waste materials will not be allowed.

SECTION 202 - REMOVAL OF STRUCTURES AND ABSTRUCTIONS

202-3.03 (C) Bituminous Pavement Removal by Milling: the title of the Standard Specifications is revised to read:

202-3.03 (C) Bituminous Pavement Removal by Milling (When an Asphaltic Concrete Frication Course is not to be Placed on the Milled Surface)

ITEM 2030112 - SHOULDER BUILD-UP (MILLED AC):

(1) Description:

The work under this item shall consist of furnishing, placing, and shaping shoulder build-up material along the edge of pavement in accordance with the details shown on the project plans, the requirements of the specifications, and as approved or directed by the Engineer.

(2) Materials:

Shoulder build-up material shall be minus 1-1/2 inch milled asphaltic concrete, obtained from within the project limits and meeting the approval of the Engineer. Screening will not be required; however, the Engineer's determination of the suitability of the material shall be final.

(3) Construction Requirements:

Clearing and grubbing shall be avoided or minimized to maximum extent practicable (MEP) for Shoulder build-up operation. Shoulder build-up material shall be placed and shaped along the edge of pavement in accordance with the details shown on the project plans, the applicable requirements of Subsection 203-10.03(A), and as directed by the Engineer.

Prior to placing any shoulder build-up material, the contractor shall provide an inventory of all existing delineators, signs, object markers, and milepost markers to the Engineer for approval. The inventory shall indicate the type of device and milepost or station number for each item. After placing and shaping the material, the material shall be compacted in accordance with the requirements of the Specifications and as directed by the Engineer.

Shoulder build-up material placed around guardrail terminals and breakaway- or slip-bases for signing and lighting shall be immediately shaped to allow proper functioning of the supports. No material shall be placed on any signing or lighting base plates or against any sign posts.

The contractor shall also remove shoulder build-up material from pull boxes, valve and meter boxes, vaults, and any other roadway-related items located within the shoulder.

Delineators, signs, valve boxes, vaults, and all other public and private property damaged as a result of the placement of the shoulder build-up material shall be replaced by the contractor at no additional cost to the Department.

Any windrows of shoulder build-up material stockpiled along the shoulders by the contractor shall be placed and shaped, as shown on the plans, by the end of the work shift.

When the drop-off between the newly paved surface and existing shoulder is greater than two inches, and the adjacent shoulder build-up will not be completed before traffic is allowed on the new pavement, a temporary fillet shall be placed adjacent to the drop-off at a slope of three-to-one. Material for the fillet shall be as specified above.
Unless otherwise approved by the Engineer, shoulder build-up shall not be placed beyond the width shown on the project plans.

Unless otherwise shown on the project plans, shoulder build-up shall not be placed along guardrail sections.

(4) Method of Measurement:

Shoulder build-up will be measured for payment by the linear foot. Measurement will be along the edge of pavement against which the material is placed.

(5) Basis of Payment:

The accepted quantities of shoulder build-up, 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, as described and specified herein.

The compaction of shoulder build-up material will be measured and paid for as specified under the respective contract item.

No additional measurement or direct payment will be made for temporary slope fillets, the costs being considered as included in the price of Item 2030112.

(203SHOLD, 5/16/01)

ITEM 2030113 - SHOULDER BUILD-UP (COMPACTION):

(1) Description:

The work under this item shall consist of providing all equipment and personnel necessary for the compaction of the material used to reshape the shoulders in accordance with the details shown on the project plans and the requirements of the Specifications.

(2) Construction Requirements:

No density requirement is specified for this material; however, compaction shall be required for all areas deemed practicable by the Engineer.

The equipment type proposed for obtaining the compaction, and the extent of compaction required shall be as approved by the Engineer.

The contractor shall compact temporary slope fillets if directed by the Engineer.

(3) Method of Measurement:

Shoulder Build-Up (Compaction), regardless of type of equipment used, will be measured by the hour for the compacting unit, but only for the time that the unit is actually used for compacting the shoulder material, except that in any half-shift during which the unit is operated for necessary compaction, measurement will be made for the full half-shift, provided that the unit is not inoperative due to breakdown or other causes determined by the Engineer to be the responsibility of the contractor.

(4) Basis of Payment:

The accepted quantities of Shoulder Build-Up (Compaction), measured as provided above, will be paid for at the contract unit price per hour, which price shall be full compensation for the work complete, as herein described and specified.

No measurement or direct payment will be made for compacting temporary slope fillets, the costs being considered as included in the price of Item 2030111 or 2030112.

(207DSP, 02/20/08)

SECTION 209 FURNISH WATER: of the Standard Specifications is hereby deleted.

SECTION 207 BLANK of the Standard Specifications is revised to read:

SECTION 207 DUST PALLIATIVE:

207-1 Description:

The work under this section shall consist of applying all water required for the control of dust as considered necessary for the safety and convenience of the traveling public, and for the reduction of the dust nuisance to adjacent property.

207-2 Blank

207-3 Construction Requirements:

The use of pressure pumps and spray bars on all sprinkling equipment used for the application of dust palliative will be required. The use of gravity flow spray bars and splash plates will not be permitted.

Water applied for dust control shall be as approved or directed by the Engineer. The contractor shall provide appropriate equipment for effective control of dust.

207-4 Method of Measurement and Basis of Payment:

No measurement will be made for application of dust palliative, including furnishing water and all necessary equipment and labor, the cost being considered as included in contract items.

(403ACHP, 5/07/13)

SECTION 403 ASPHALTIC CONCRETE HOT PLANT REQUIREMENTS:

403-2 Requirements: the third paragraph of the Standard Specifications is revised to read:

The mineral admixture shall be added and thoroughly mixed with the mineral aggregate by means of a mechanical mixing device prior to the mineral aggregate and mineral admixture entering the dryer. For all asphaltic concrete mixes except ACFC (Specification Sections 407 and 411) and AR-ACFC (Specification Section 414), the moisture content of the combined mineral aggregate shall be a minimum of three percent by weight of the aggregate during the mixing process. For ACFC and AR-ACFC mixes, the mineral aggregate shall be wet with free moisture on the surface of the aggregate just prior to the mixing process. To ensure that adequate mixing water is available on the surface of the aggregate, the Engineer may require that the mineral aggregate for ACFC and AR-ACFC mixes have moisture content of up to 1-1/2 percent above the combined water absorption.

403-2 Requirements: the twelfth paragraph of the Standard Specifications is revised to read:

The contractor shall provide daily documentation of the weight and proportion of each individual component (mineral aggregate, mineral admixture, and bituminous material) incorporated into the mix. In addition, when reclaimed asphaltic pavement (RAP) is used, the contractor shall provide daily documentation of the weight, determined by a belt scale, and proportion of material from each individual RAP stockpile incorporated into the mix. The percent moisture content of the RAP material from each stockpile shall also be determined and provided daily by the contractor.

When Warm Mix Asphalt (WMA) technologies are used, the contractor shall provide the percent of water (for WMA water foaming processes) and/or the percent of WMA additive incorporated in the mix. The percent of each WMA technology shall be reported either by weight of total mix or by weight of total binder.

When incorporating WMA technologies, the hot plant shall be modified as required by the WMA technology manufacturer to introduce the WMA technology. Plant modifications may include additional plant instrumentation, the installation of asphalt binder foaming systems

and/or WMA additive delivery systems, adjusting the plant burner and/or the mixing drum flights in order to operate at lower production temperatures, and/or reducing the production rate of WMA.

(404BITUM, 01/26/16)

SECTION 404 BITUMINOUS TREATMENTS:

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

The work under this section shall consist of furnishing all materials and constructing or applying a single or multiple course bituminous treatment in accordance with the requirements of the specifications and in reasonably close conformity to the lines shown on the project plans or established by the Engineer.

404-2.02(A) **General:** the first paragraph of the Standard Specifications is revised to read:

The contractor shall provide a source of aggregate material in accordance with the requirements of Section 1001.

404-3.02(A) **Distributor Truck:** the second paragraph of the Standard Specifications is revised to read:

Prior to the spreading of bituminous material, all distributor trucks proposed for use shall have been tested for rate of transverse spread, in accordance with the requirements of Arizona Test Method 411, and certified within 12 months prior to the date of spreading in accordance with ADOT Materials Policy and Procedure Directive No. 14, “Testing and Certification of Bituminous Distributor Trucks”. However, the Engineer may at any time require that each distributor truck be tested to determine the rate of the transverse spread.

404-3.12 **Tack Coat:** of the Standard Specifications is revised to read:

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 layers 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 bituminous material used for tack coat shall conform to the requirements of Section 1005.

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 Below.	Not Allowed	0.12	0.7
Emulsified Asphalt (Other than Special Type)	0.08	0.08	1.0
Asphalt Cement	0.06 to 0.08	0.06 to 0.08	1.0
Note: 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.			

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

If emulsified asphalt of any type is held over night, it shall be reheated and agitated prior to further application.

The Engineer may either adjust the application rate or, except as specified below, eliminate the use of tack coat in any part of the work if, in the Engineer's judgment, the bituminous mixture to be placed will be effectively bonded to the underlying surface. For asphaltic concrete friction course, asphaltic concrete friction course (asphalt-rubber), or asphaltic concrete (asphalt-rubber), application of the tack coat immediately prior to placing such pavements shall not be eliminated, although the Engineer may adjust the application rate.

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. In no event shall more tack coat be applied in one day than will be covered by the bituminous mixture during that same day.

404-3.13 **Fog Coat:** of the Standard Specifications is revised to read:

The type of bituminous material shall be **SS-1**. The material shall be diluted with one part water to one part bituminous material. The bituminous material shall be applied at the approximate rate of **0.08** gallons per square yard.

Blotter material shall be applied to the treated surface in one or more applications for a total application of approximately **2** pounds per square yard at a time specified by the Engineer and before opening to traffic.

404-4 **Method of Measurement:** the third paragraph of the Standard Specifications is revised to read:

Cover material, when specified, will be measured by the cubic yard. Cover material will be weighed, and the amount in tons of dry material will be converted to cubic yards. The weight of all moisture contained in the cover material will be deducted prior to the conversion of the weight in tons to the volume in cubic yards. The dry weight per cubic yard will be determined in accordance with the requirements of AASHTO T 19 (Shoveling Procedure).

404-5 **Basis of Payment:** the last sentence of the first paragraph of the Standard Specifications is revised to read:

Adjustments will be made in accordance with Section 1005.

~~A~~

(404BIMAT, 01/26/16)

SECTION 404 BITUMINOUS TREATMENTS:

404-5 **Basis of Payment:** of the Standard Specifications is modified to add:

The term "bituminous material" as used herein shall include asphalt cement, liquid asphalt, and emulsified asphalt.

The contract unit price for each item of bituminous material will be considered to include all costs for furnishing, hauling, handling, spreading, and mixing of the material as required, including the "initial cost" of bituminous material, but excluding any difference in the cost of bituminous material that occurs between the date of bid opening and the date that the material is used on the project.

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

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

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

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

The “initial cost” (IC) for the month in which the project was bid will be compared with the “current price” (CP) as specified above for the appropriate current month. The “current price” (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 “current price” (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 will be based on contractor-furnished invoices, except as modified below.

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.

The tons of Bituminous Material (Asphalt-Rubber) to which the adjustment will be applicable will be 0.80 multiplied times the total quantity of the item used. The adjustment will not apply to the 20 percent of the material which constitutes the crumb rubber additive.

The tons of bituminous material incorporated in Asphaltic Concrete (Miscellaneous Structural) or Asphaltic Concrete (Miscellaneous Structural-Special Mix) to which an adjustment will be applicable shall be as follows:

(1) For mixes without reclaimed asphalt pavement (RAP), the adjustment will be equal to five percent of the quantity, measured in tons, of asphaltic concrete placed, regardless of the actual percentage of bituminous material incorporated into the mix.

(2) For mixes with reclaimed asphalt pavement (RAP), the adjustment will be equal to four percent of the quantity, measured in tons, of asphaltic concrete placed, regardless of the actual percentage of bituminous material incorporated into the mix.

(3) 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.

The tons of bituminous materials which are paid for on the basis of testing by nuclear asphalt content gauge, ignition furnace, or other approved methods to which the adjustment will be applicable, are the tons which have been incorporated into the mixture.

When reclaimed asphalt pavement (RAP) is used in asphaltic concrete, only the virgin asphalt cement will be subject to a bituminous material price adjustment. RAP binder is not subject to a price adjustment.

No additional compensation will be made for any additional or increased charges, costs, expenses, taxes, etc., which the contractor may have incurred since the time of bidding and which may be the result of any increase in the "initial cost" 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.

Any adjustment in compensation made for bituminous material incorporated into the work after the expiration of the specified completion time set forth in the contract, or as may be extended in accordance with the provisions of Subsection 108.08, will be on the basis of the price of bituminous material shown on the Department's website and applicable for the date of the expiration of the specified completion time as hereinbefore specified.

(414ACFAR, 9/15/11)

SECTION 414 ASPHALTIC CONCRETE FRICTION COURSE (ASPHALT-RUBBER):

414-1 **Description:** the first paragraph of the Standard Specifications is revised to read:

The work under this section shall consist of constructing Asphaltic Concrete Friction Course (Asphalt-Rubber), hereinafter asphaltic concrete, by furnishing all materials, mixing at a plant, hauling and placing a mixture of aggregate materials, mineral admixture, and bituminous material (asphalt-rubber) 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.

414-3 **Materials:** of the Standard Specifications is modified to add:

For comparative purposes, quantities shown in the bidding schedule have been calculated based on the following data:

Spread Rate (lb./sq. yd.)	**59**
Asphalt-Rubber, %	**9.5**

Mineral Admixture, %	1.0

The estimated target spread rate specified above includes **25** percent for leveling to provide a minimum **0.5**-inch thickness above the leveling thickness.

For comparative purposes, quantities shown in the bidding schedule have been calculated based on the following data placed on bridge decks and approach slabs:

Spread Rate (lb./sq. yd.)	**118**
Asphalt-Rubber, %	**9.5**
Mineral Admixture, %	1.0

The estimated target spread rate specified above includes **25** percent for leveling to provide a minimum **1**-inch thickness above the leveling thickness.

414-3.01 **Mineral Aggregate:** the first paragraph of the Standard Specifications is revised to read:

The contractor shall provide a source of mineral aggregate in accordance with the requirements of Section 1001 of the specifications.

414-3.02 **Mineral Admixture:** the last paragraph of the Standard Specifications is revised to read:

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

414-3.03 **Bituminous Material:** the first paragraph of the Standard Specifications is revised to read:

Bituminous material shall be asphalt-rubber conforming to the requirements of Section 1009 of the specifications. The asphalt-rubber shall be CRA Type 1. The crumb rubber gradation shall be Type B conforming to the requirements of Section 1009.

414-4 **Mix Design:** of the Standard Specifications is modified to add:

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 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 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 mix design may be used for the duration of the project.

414-5 **Mix Design Revisions:** the third paragraph of the Standard Specifications is revised to read:

If the contractor elects to change its source or type of bituminous material, the type of mineral admixture, or the source(s) of mineral aggregate, or if the contractor adds or deletes the use of a mineral aggregate stockpile(s) regardless of source, testing to the extent deemed necessary by the Engineer will be performed in order that the Engineer may be satisfied that the mix design criteria will be met.

414-6.03(B) **Asphalt-Rubber Content:** the last two sentences of the first paragraph of the Standard Specifications are revised to read:

The contractor's technicians performing the testing, including the calibration of the nuclear gauge, shall meet the technician requirements given in Materials Policy and Procedure Directive No. 19, "ADOT System for the Evaluation of Testing Laboratories".

414-6 **Acceptance of Materials:** of the Standard Specifications is modified to add:

414-6.04 **Material Spread:**

The estimated target spread rate will be as shown in the table in Subsection 414-3. The Engineer may adjust the estimated target spread rate, and establish a new target spread rate, as necessary to maintain a suitable thickness.
The thickness behind the screed shall be measured by the contractor continuously throughout each spread lot to ensure that the minimum compacted thickness specified in Subsection 414-3 is being met.

A spread lot shall be considered to be one-half shift of production. The contractor shall record information pertaining to each spread lot on forms provided by the Engineer. Information shall include the project number, date and period of time that each spread lot was placed, the spread lot number, beginning and ending station, the plans thickness, target spread rate, and tons placed in each spread lot. Completed spread lot forms shall be signed by the contractor and given to the Engineer at the end of each shift.

The Engineer will calculate the quantity required in each spread lot using the target spread rate.

The calculated quantity required in each spread lot will be compared to the actual quantity placed. A spread lot will be considered to be acceptable if the actual quantity placed does not vary by more than +5.0 percent from the required quantity.

414-7.03 **Proportioning, Drying, Heating, and Mixing:** the third paragraph of the Standard Specifications is hereby deleted.

414-7.04(A) **General Requirements:** the second and third paragraphs of the Standard Specifications are revised to read:

All equipment surfaces shall be treated when necessary with a release agent approved by the Engineer in order to prevent the sticking of asphaltic concrete. 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.

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.

414-7.04(A)(1) **Placement Dates and Weather Requirements:** the table of the Standard Specifications is revised to read:

Average Elevation of Project, Feet	Beginning and Ending Dates
0 – 3499	March 15 – May 31
0 – 3499	September 1 – October 31
3500 – 4999	April 15 – October 15
5000 – 5999	June 1 – September 15
6000 and over	June 1 – August 15

414-7.04(A)(1) **Placement Dates and Weather Requirements:** the second paragraph of the Standard Specifications is revised to read:

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.

414-7.04(A)(2) **Delivery to Screed Unit:** item “(a)” of the second paragraph of the Standard Specifications is revised to read:

(a) Covering hauling units with tarpaulins.

414-7.04(C) **Placing and Finishing Asphaltic Concrete by Means of Self-Propelled Paving Machines:** the third paragraph of the Standard Specifications is revised to read:

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.

414-7.06(A) **General Requirements:** the second paragraph of the Standard Specifications is revised to read:

The wheels of compactors shall be wetted with water, or if necessary soapy water, or a release agent approved by the Engineer, to prevent the asphaltic concrete from sticking to the steel wheels during rolling. 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. The Engineer may change the rolling procedure if in the Engineer's judgment the change is necessary to prevent picking up of the asphaltic concrete.

414-8 **Method of Measurement:** the fourth paragraph of the Standard Specifications is revised to read:

Mineral admixture will be measured by the ton for the mineral admixture actually used in accordance with Subsection 403-2.

414-9 **Basis of Payment:** the first paragraph of the Standard Specifications is revised to read:

The accepted quantities of asphaltic concrete, measured as provided above, will be paid for at the contract unit price per ton, adjusted if necessary for spread, which price shall be full compensation for the work, complete in place, as specified herein.

If the quantity in a spread lot is found to vary by more than +5.0 percent from the required quantity, as determined in accordance with Subsection 414-6.04, no payment will be made for the material which exceeds the +5.0 percent, including asphalt-rubber and mineral admixture.

The Engineer may exclude asphaltic concrete from the spread lot if the Engineer determines that the proposed use of the material or the existing surface conditions are not conducive to the use of spread lots.

(416ACES, 01/26/16)

SECTION 416 **ASPHALTIC CONCRETE – END PRODUCT:** of the Standard Specifications is revised to read:

416-1 **Description:**

The work under this section shall consist of constructing Asphaltic Concrete-End Product, hereinafter asphaltic concrete, by furnishing all materials, mixing at a plant, hauling and placing

a mixture of aggregate materials, 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.

Reclaimed asphalt pavement (RAP), as defined in Subsection 416-3.04, may be used in the mixture provided all requirements of the specifications are met; however, RAP will not be allowed in the mixture when asphalt cement type PG 76-22 TR+ or PG 70-22 TR+ is specified in Subsection 416-3.03 (B). References to the use of RAP in this section apply only if RAP is utilized as part of the mixture. ADOT Materials Policy and Procedure Directive No. 20, "Guidance on the Use of Reclaimed Asphalt Pavement (RAP) in Asphaltic Concrete", shall be used in conjunction with the requirements of the specifications.

Warm Mix Asphalt (WMA) technologies may be used in the mixture at the option of the contractor provided all requirements of the specifications are met. WMA is defined as asphaltic concrete that is produced within the temperature range of 215 to 275 °F. WMA can be produced by one or a combination of several WMA technologies including plant water foaming processes, mineral additives, and chemical additives. The requirements for incorporating WMA technologies in the mixture are given in these specifications and in Materials Policy and Procedure Directive No. 23, "Requirements for the Use of Warm Mix Asphalt (WMA) Technologies in Asphaltic Concrete".

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.

416-2 Asphaltic Concrete Mix Design Criteria:

Mix designs shall be developed by the contractor on the basis of the following criteria and tested in accordance with the requirements of the following test methods:

Criteria	Requirements	Arizona Test Method
	3/4" Mix	
1. Voids in Mineral Aggregate: %, Range	15.0 - 18.0	Note (1)
2. Effective Voids: %, Range	**5.5** ± 0.2	Note (1)
3. Absorbed Asphalt: %, Range	0 - 1.0	Note (1)
4. Index of Retained Strength: %, Minimum	60 Note (2)	Note (3)
5. Wet Strength: psi, Minimum	150	Note (3)

6. Stability: pounds, Minimum	2,000	Note (1)
7. Flow: 0.01-inch, Range	8 – 16	Note (1)

8. Mix Design Grading Limits:		201
Sieve Size	**Percent Passing**	
	3/4 inch Mix	
	Without Admix.	**With Admix.**
1-1/4 in.		
1 inch	100	100
3/4 inch	90 – 100	90 – 100
1/2 inch	---	---
3/8 inch	62 – 77	62 – 77
No. 8	37 – 46	38 – 47
No. 40	10 – 18	11 – 19
No. 200	1.5 – 4.5	2.5 – 6.0

(1) For mixes without RAP, Arizona Test Method 815. For mixes with RAP, Arizona Test Method 833.
(2) If the average elevation of the project is above 3500 feet, the index of retained strength shall be a minimum of 70 percent.
(3) For mixes without RAP, Arizona Test Method 802 (as modified by Arizona Test Method 815). For mixes with RAP, Arizona Test Method 802 (as modified by Arizona Test Method 833).
(4) The ratio of the mix design composite gradation target for the No. 200 sieve, including mineral admixture, to the effective asphalt content shall be within the range specified below:

$$\frac{\text{Mix Design Composite Gradation Target}}{\text{Effective Asphalt Content}} = \underline{\mathbf{0.8}} \text{ to } 1.2$$

416-3 Materials:

For comparative purposes, quantities shown in the bidding schedule have been calculated based on the following data:

Special Mixes	3/4" Mix
Unit Weight, (lb./cu. ft.)	**147**
Asphalt Cement, %	**5.0**
Mineral Admixture, %	1.0

416-3.01 Mineral Aggregate:

(A) General:

Mineral aggregate shall consist of virgin aggregate, or a combination of virgin aggregate and aggregate from RAP (RAP aggregate). When the terms “mineral aggregate” or “aggregate” are used without being further described as “virgin” or “RAP”, the intended meaning is the total aggregate material used in the mixture.

No individual stockpile or hot bin usage of either virgin aggregate or RAP aggregate shall be less than three percent of the total mineral aggregate.

(B) Virgin Mineral Aggregate:

The contractor shall provide a source in accordance with the requirements of Section 1001, except that sub-paragraph (3) under Subsection 1001-3.01(B) shall not apply.

Coarse virgin mineral aggregate shall consist of crushed gravel, crushed rock, or other approved inert material with similar characteristics, or a combination thereof, conforming to the requirements of these specifications.

For areas or applications where Special Mix is not called for on the plans, fine virgin mineral aggregate shall consist of natural sand or of sand prepared from rock, or other approved inert materials, or a combination thereof, conforming to the requirements of these specifications.

For areas or applications where Special Mix is called for on the project plans, the following shall apply:

Fine virgin 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 virgin 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 virgin 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 virgin aggregate up to a maximum of 15 percent of the total aggregate for mixes not containing RAP, or up to a maximum of 10 percent of the total aggregate for mixes containing RAP. The total composite of virgin fine aggregate shall meet the requirement for uncompacted void content. The uncrushed fine virgin aggregate shall be 100 percent passing the 1/4 inch sieve and contain not 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.

(C) RAP Mineral Aggregate:

RAP aggregate shall consist of the aggregate portion of the reclaimed asphalt pavement. A maximum of 25 percent RAP aggregate, by weight of total aggregate in the mix, may be used in mixes placed in a lower lift (minimum 2" below finished surface). A maximum of 20 percent RAP aggregate, by weight of total aggregate in the mix, may be used at all other locations.

(D) Mineral Aggregate Characteristics:

Aggregates shall be free of deleterious materials, clay balls, and adhering films or other material that prevent the thorough coating with the asphalt cement.

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 (1)	Arizona Test Method 251	2.350 - 2.850
Combined Water Absorption (1)	Arizona Test Method 251	0 - 2.5%
Sand Equivalent (1)	AASHTO T 176 (After thoroughly sieving the sample, no additional cleaning of the fines from the plus No. 4 material is required.)	Minimum 55
Abrasion (2)	AASHTO T 96	100 Rev., Max. 9% 500 Rev., Max. 40%
Fractured Coarse Aggregate Particles (3)	Arizona Test Method 212	Minimum 70% (4) (at least one fractured face, determined on plus No. 4 material)
Uncompacted Void Content (1) (Special Mix Only)	Arizona Test Method 247	Minimum 45.0%
Carbonates (3) and (5)	Arizona Test Method 238	Maximum 20%

Notes:

(1) When the mix design contains RAP, the requirements shall be for the virgin aggregate portion only.

(2) Abrasion shall be performed separately on materials from each source of mineral aggregate, including RAP aggregate. All sources shall meet the requirements for abrasion.

(3) When the mix design contains RAP, the requirements shall be for the composite of virgin and RAP aggregate.

(4) When Special Mix is called for on the project plans, this value shall be minimum 85% with at least two fractured faces and minimum 92% with at least one fractured face, determined on plus No. 4 material.

(5) 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.

Tests on aggregates outlined above, except for abrasion, shall be performed on materials furnished for mix design purposes and composited to the mix design gradation. When RAP is used in the mixture, RAP aggregates for testing shall be obtained from the RAP material using Method A of AASHTO T 164, prior to combining with the virgin aggregate.

Virgin mineral aggregate from a source or combination of sources which does not meet the requirements given in the table above for combined bulk oven dry specific gravity, and/or combined water absorption (up to a maximum of 3.0 percent), but meets the other specified requirements, will be considered for acceptance by the Engineer if: a) the total estimated cost of all asphaltic concrete components, using the mix design unit weight, asphalt cement content, and mineral admixture percentage, does not exceed the total amount bid for these items by more than 5.0 percent; or b) a supplemental agreement is executed adjusting the unit prices of asphaltic concrete components such that the total estimated cost does not exceed the total amount bid by more than 5.0 percent.

416-3.02 Mineral Admixture:

Mineral admixture will be required. The amount used shall be 1.0 percent, by weight of the mineral aggregate, unless testing demonstrates that additional admixture is required in order to meet the mix design criteria for Wet Strength and Index of Retained Strength. A maximum of 2.0 percent admixture will be permitted. The exact amount of admixture required shall be specified in the mix design. 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 C 150
Blended Hydraulic Cement, Type IP	ASTM C 595

Hydrated Lime	ASTM C 1097

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

416-3.03 Bituminous Material:

(A) General:

Bituminous material shall consist of performance grade (PG) asphalt binder (virgin binder), or a combination of virgin binder and binder from RAP (RAP binder). When the terms “bituminous material”, “asphalt cement”, “asphalt binder” or “binder” are used without being further described as “virgin” or “RAP”, the intended meaning is the total bituminous material used in the mixture.

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

(B) Virgin Bituminous Material:

Virgin asphalt cement shall be a performance grade (PG) asphalt binder, conforming to the requirements of Section 1005. The type of virgin asphalt binder shall be PG **76-16** or, if RAP is used in the mixture, the virgin asphalt binder shall be as required to meet the blending requirements in Subsection 416-3.03(C) and Arizona Test Method 833.

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 virgin 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 virgin 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 °F and 350 °F, and a viscosity-temperature curve developed in accordance with ASTM D 2493. 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 °F or a maximum laboratory compaction temperature exceeding 300 °F, the laboratory mixing and compaction temperature ranges shall be specified in writing by the virgin asphalt binder supplier. A viscosity-temperature curve will meet this requirement for written documentation if the viscosity-temperature curve is developed and submitted by the binder supplier and includes language that the recommended laboratory mixing and compaction temperatures are within acceptable ranges, and the submittal includes a statement indicating the maximum laboratory mixing temperature to which the binder can be heated without damage. 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 Subsections 416-6 and 416-7.

(C) RAP Bituminous Material:

RAP binder shall consist of the asphalt binder portion of the reclaimed asphaltic pavement. A maximum of 25 percent RAP binder, by weight of total binder in the mix, may be used in mixes placed in a lower lift (minimum 2” below finished surface). A maximum of 20 percent RAP binder, by weight of total binder in the mix, may be used at all other locations.

When less than or equal to 15 percent RAP binder is used, by weight of total binder in the mix, no testing is required on the RAP binder. When greater than 15 percent RAP binder is used, by weight of total binder in the mix, the RAP binder shall be extracted, recovered, and tested in accordance with the requirements of Arizona Test Method 833. The virgin binder grade shall be modified if necessary to ensure the blend of virgin and RAP binder meets the PG grade specified in the Subsection 416-3.03(B). However, a change of only one virgin PG binder grade (6 °C on either or both the high and low temperatures) will be allowed from that shown in Subsection 416-3.03(B).

416-3.04 Reclaimed Asphalt Pavement (RAP):

RAP shall consist of salvaged, milled, pulverized, broken, or crushed asphalt pavement. If RAP is generated by milling, the minimum removal depth shall be 1-1/2 inches. The source of RAP may be from ADOT or other projects. The contractor shall be responsible for determining the suitability of the RAP for use in the mixture, regardless of its source.

For asphaltic concrete containing less than or equal to 15 percent RAP aggregate, all RAP material shall pass the 1-1/4” sieve. For asphaltic concrete containing greater than 15 percent RAP aggregate, the RAP material shall be processed into uniform coarse and fine stockpiles such that there will be a minimum amount of fines. The use of more than two RAP stockpiles is prohibited. The gradation, when tested in accordance with Arizona Test Method 240, shall meet the following requirements:

Stockpile	Sieve Size	Percent Passing
Coarse	1-1/4 inch	100
	3/8 inch	0-25
Fine	3/4 inch	100
	3/8 inch	75-100

The contractor may propose gradation bands differing from those shown in the table above. The proposal shall be submitted to the Engineer prior to the start of RAP processing. If approved, the required gradation bands will be adjusted accordingly.

RAP shall be stockpiled so that segregation is minimized. When two RAP stockpiles are used, acceptable methods to prevent intermingling of stockpiles shall be provided.

The Engineer reserves the right to reject obviously defective salvaged material or salvaged material that is not representative of the material used in the mix design.

416-3.05 Warm Mix Asphalt Technologies:

Warm Mix Asphalt (WMA) technologies include plant water foaming processes, mineral additives, and chemical additives. WMA technologies must be approved prior to their use in accordance with Materials Policy and Procedure Directive No. 23, “Requirements for the Use of Warm Mix Asphalt (WMA) Technologies in Asphaltic Concrete”.

416-4 Mix Design:

Utilizing mineral aggregate and RAP 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 and RAP samples used for mix design purposes shall be representative of materials to be used during production.

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

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. The mix design engineer shall meet the requirements given in ADOT Materials Policy 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 Policy and Procedure Directive No. 19, “ADOT System for the Evaluation of Testing Laboratories”.

The contactor 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 virgin mineral aggregate and RAP 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 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 mix design may be used for the duration of that project.

The mix design shall contain as a minimum:

(1) The name and address of the testing organization and the person responsible for the mix design testing.

(2) The specific location(s) of the source(s) of mineral aggregate.

(3) The supplier, refinery, type of asphalt cement and any modifiers including polymers. The source and type of mineral admixture. The percentage of asphalt cement and mineral admixture to be used.

(4) The anticipated mineral aggregate gradation in each stockpile.

(5) Mix design gradation. The mix design shall contain the mineral aggregate gradation, and also the gradation with mineral admixture.

(6) The results of all testing, determinations, etc., such as: specific gravity of each component, water absorption, sand equivalent, loss on abrasion, fractured coarse aggregate particles, uncompacted void content (for Special Mix), percent carbonates (if required), immersion compression results (Index of Retained Strength, wet and dry strengths), Marshall stability and flow, asphalt absorption, percent air voids, voids in mineral aggregate, and bulk density.

(7) Viscosity-temperature curve along with the laboratory mixing and compaction temperature ranges, as well as the actual laboratory mixing and compaction temperatures used.

When RAP is used in the mixture, the following additional information shall be included in the mix design:

(1) The specific location(s) of the source(s) of RAP.

(2) The anticipated RAP gradation, RAP aggregate gradation, and RAP binder content in each stockpile.

(3) If greater than 15 percent RAP binder is used in the mixture, the results of all tests on the recovered RAP binder, as well as all tests on the blend of virgin binder and recovered RAP binder.

(4) The percent RAP binder, virgin binder, and total binder in the mixture.

(5) The composite gradation of virgin and RAP aggregates, with and without mineral admixture. The composite gradation of the virgin aggregate and RAP, with and without mineral admixture.

(6) The results of all testing, determinations, etc., for the RAP, virgin aggregate, RAP aggregate, and composite of virgin and RAP aggregates as required, such as: specific gravity, water absorption, sand equivalent, loss on abrasion, fractured coarse aggregate particles, uncompacted void content (for Special Mix), and percent carbonates.

(7) The viscosity-temperature curve along with the laboratory mixing and compaction temperature ranges for the blended binder, if greater than 15 percent RAP binder is used in the mixture, as well as the actual laboratory mixing and compaction temperatures used.

When Warm Mix Asphalt (WMA) technologies are used in the mixture, the additional mix design requirements specified in Materials Policy and Procedure Directive No. 23, “Requirements for the Use of Warm Mix Asphalt (WMA) Technologies in Asphaltic Concrete”, shall also be included in the mix design.

Test results used in the formulation of the mix design shall 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 materials used in the mix design shall be submitted to the Engineer for calibration of the ignition furnace, and for the determination of sand equivalent and fractured coarse aggregate particles. When Special Mix is used, the uncompacted void content shall also be determined. Approximately 300 pounds of virgin mineral aggregate (proportional to the mix design gradation), three gallons of asphalt cement, and one gallon of mineral admixture shall be submitted. When RAP is used, a minimum of 40 pounds of representative RAP material and a minimum of 10 pounds of solvent-extracted RAP aggregate, per AASHTO T 164, Method A, shall be submitted. If RAP is fractionated, the RAP and RAP aggregate from each stockpile shall be kept separate. The Engineer shall witness the sampling of the virgin mineral aggregate and RAP. 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 (for Special Mix) uncompacted void content shall meet the requirements specified in Subsection 416-3.01. 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 Engineer will review the mix design to assure that it contains all required information. If it does not, it will be returned within two working days of receipt of all samples and mix design information, for further action and resubmission by the contractor.

If the contractor elects to change its source(s) of mineral aggregate or RAP, or adds or deletes the use of a stockpile(s) regardless of source, the contractor shall furnish the Engineer with a new mix design which meets the requirements specified hereinbefore.

If changes are made in the source or type of bituminous material, or the type of mineral admixture, the contractor shall provide verification testing results. Verification testing shall be performed at the original mix design asphalt content using the original mineral aggregate and RAP (if used), the proposed bituminous material, and/or the proposed mineral admixture. Three specimens shall be fabricated and tested for bulk density, maximum theoretical density, and effective voids. The percent effective voids must be within $\pm$ 0.2 of the percent effective voids in the original design and also be within the current effective voids mix design specification limits. Verification testing results shall not replace target values shown in the original mix design. All target values from the original design shall be used in future production with the exception of any self-directed target value changes that are requested. The verification process does not ensure that the contractor can meet the target values during production.

In addition to the verification testing specified above, verification testing for immersion compression may also be required. If there is a change in the type of mineral admixture, immersion compression testing is required. If there is a change in the source or type of bituminous material, immersion compression testing is required if the Index of Retained Strength of the original mix design is less than ten percentage points greater than the specified minimum, or if the Wet Strength is less than 100 psi greater than the specified minimum.

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

MEASURED CHARACTERISTICS	ALLOWABLE SELF-DIRECTED TARGET CHANGES
Gradation (sieve size): 3/8 inch No. 8	$\pm$4% from mix design target value

No. 40 No. 200	±4% from mix design target value ±2% from mix design target value ±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 changes to the approved mix design for the Engineer's approval. The Engineer will determine if the proposed target change will result in mix production that meets the contract requirements for mix design criteria and grading limits. For acceptance purposes, target 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.

Should a mix design prove unsatisfactory to the contractor during production, the contractor shall furnish the Engineer with a revised mix design. For acceptance purposes, the revised mix design will not be retroactive.

The contractor shall not change its methods of crushing, screening, washing, or stockpiling from those used during production of material used for mix design purposes without approval of the Engineer or without preparing a new mix design.

416-5 Contractor Quality Control:

The contractor shall perform the quality control measures described in Subsection 106.04(C). At the weekly meeting, the contractor shall be prepared to explain and discuss how the following processes will be employed.

(a) Aggregate production, including crusher methods, pit extraction, and washing.

(b) RAP production, including milling, crushing, screening, and handling methods.

(c) Stockpile management, including stacking methods, separation technique, plant feed technique, stockpile pad thickness, and segregation prevention.

(d) Proportioning and plant control, including plant scale calibration, mix temperature control, storing method, and addition of admixture.

(e) Transporting and placing, including hauling distance and temperature control, segregation and non-uniform placement control, and joint placement and technique.

(f) Compaction, including types and weight of rollers, establishing and monitoring of roller patterns, and temperature controls.

The contractor shall obtain samples and perform the tests specified in the following table:

CONTRACTOR QUALITY CONTROL TESTING REQUIREMENTS			
TYPE OF TEST	TEST METHOD	SAMPLING POINT	MINIMUM TESTING FREQUENCY
Virgin Mineral Aggregate			
Gradation	ARIZ 201	Crusher Belt or Stockpile	1 per stockpile per day
Sand Equivalent	AASHTO T 176		1 per 2000 Tons of total virgin aggregate (1)
Fractured Coarse Aggregate Particles	ARIZ 212		
Uncompacted Void Content (2)	ARIZ 247		
Reclaimed Asphalt Pavement			
Gradation, Moisture Content, and Binder Content	ARIZ 428 (Appendix A)	Crusher Belt or Stockpile	1 per stockpile per day
RAP Aggregate			
Gradation	ARIZ 201	Crusher Belt or Stockpile	1 per stockpile per day
Fractured Coarse Aggregate Particles	ARIZ 212		1 per stockpile every other day
Asphaltic Concrete			
Gradation	ARIZ 201 or 427 (428 for RAP mixes)	Cold Feed, Hot Bins, Roadway, or Plant	1 per 1000 Tons
Asphalt Content	ARIZ 421, 427 (428 for RAP mixes), or other approved methods	Roadway or Plant	1 per 1000 Tons
Voids	ARIZ 410, 415, 417, 424		1 per 1000 Tons each day. Maximum of 4 per day.
Compaction	ARIZ 412	Roadway	1 per 300 tons

Notes:

(1) Prior to the completion of the mix design, quality control tests on mineral aggregate shall be performed based on the anticipated percent use of each stockpile. Samples taken from individual stockpiles may be composited prior to performing the required tests, or testing may be performed on material from each stockpile and the composite test result for each required test determined mathematically.

(2) For Special Mix.

416-6 Construction Requirements:

The contractor shall be responsible for the proportioning of all materials, for the hauling, placing, loading, spreading, and finishing of asphaltic concrete and for the applying of bituminous material, such as tack coats, prime coats, and provisional seals, all in accordance with the appropriate portions of the specifications.

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

During production, the percent RAP aggregate and percent RAP binder shall not exceed the maximum allowed in Subsections 416-3.01(C), 416-3.03(C), and 416-3.04. In addition, the percent RAP material shall be maintained to within plus 2 percent and minus 5 percent of the mix design value(s). When two RAP stockpiles are used, this tolerance shall apply to the total percent RAP material in the mixture, as well as the percent RAP material from each stockpile.

The temperature of asphaltic concrete or mineral aggregate upon discharge from the drier shall not exceed 325 °F unless a higher temperature is recommended in writing by the asphalt binder supplier and approved by the Engineer.

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.

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 shall 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.

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 and other equipment surfaces shall be treated when necessary with a release agent approved by the Engineer in order to prevent the sticking of asphaltic concrete. 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.

Longitudinal joints of each course shall be staggered a minimum of one foot with relation to the longitudinal joint of any immediate underlying course.

When surfacing courses are placed on 10 foot or wider shoulders which are to receive rumble strips, the contractor shall place any longitudinal joints approximately one foot away from the travel lane side of the rumble strip.

Longitudinal joints shall be located within one foot of the center of a lane or within one foot of the centerline between two adjacent lanes. Joints shall be formed by a slope shoe or hot-lapped, and shall result in an even, uniform surface.

Before a surface course is placed in contact with a cold transverse construction joint, the cold existing asphaltic concrete shall be trimmed to a vertical face by cutting the existing asphaltic concrete back for its full depth of the lift and exposing a fresh face. After placement and finishing of the new asphaltic concrete, both sides of the joint shall be dense and the joint shall be well sealed. The surface in the area of the joint shall conform to the requirements hereinafter specified for surface tolerances when tested with the straightedge placed across the joint.

All locations where plate samples are taken from the roadway shall be immediately repaired by the contractor utilizing hot asphaltic concrete. All holes where cores are taken shall be repaired within 48 hours after coring using a material approved by the Engineer. All holes shall be in a dry condition prior to repair. The patching material shall be thoroughly compacted in the holes by the contractor.

The handling of asphaltic concrete shall at all times be such as to minimize segregation. Any asphaltic concrete which displays segregation shall be removed and replaced.

Before asphaltic concrete is placed, the surface to be paved shall be cleaned of all objectionable material and tacked in accordance with the requirements of Section 404. The cleaning of the surface, the tacking of the surface, and the type of bituminous material used shall be acceptable to the Engineer. The amount of bituminous material used shall be as directed by the Engineer.

A light coat of bituminous material shall be applied to edges or vertical surfaces against which asphaltic concrete is to be placed.

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.

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 Arizona Test Method 406.

When Warm Mix Asphalt (WMA) technologies are used, the contractor shall comply with the manufacturer's recommendations for incorporating additives and WMA technologies into the mixture. The contractor shall comply with the manufacturer's recommendations regarding transporting, storage, and delivery of additives and water foaming processes. The contractor shall maintain a copy of the manufacturer's recommendations on file at the asphalt mixing plant and make those recommendations available for reference while using WMA technologies.

416-7 Acceptance:

416-7.01 General:

In addition to the random acceptance samples taken from each lot, the Engineer may sample and reject material which appears to be defective. Such rejected material shall not be used in the work. The results of tests run on rejected material will not be included with the lot acceptance tests.

Acceptance will be on the basis of the following:

Sand Equivalent
Fractured Coarse Aggregate Particles
Uncompacted void Content (for Special Mix)
Material Spread
Gradation
Asphalt Cement Content
Effective Voids

Stability
Compaction
Smoothness

416-7.02 Sand Equivalent, Fractured Coarse Aggregate Particles, and Uncompacted Void Content of Mineral Aggregate:

During asphaltic concrete production, the Engineer shall obtain and test samples of material for the determination of the sand equivalent and fractured coarse aggregate particles. When Special Mix is used, the uncompacted void content shall also be determined. When RAP is used in the mixture, the sand equivalent and uncompacted void content shall be determined on the composite of virgin aggregates only. Samples shall be obtained from the cold feed belt prior to the addition of mineral admixture, or from the stockpiles when sampling from the cold feed belt is not possible.

When RAP is used in the mixture, the material for determining the fractured coarse aggregate particles shall come from an asphaltic concrete sample taken and tested in accordance with Arizona Test Method 428, as specified in Subsection 416-7.04(A). However, if the Engineer determines that excessive breakdown of the aggregate has occurred due to the use of the ignition furnace, the fractured coarse aggregate particles testing shall be performed on the combination of RAP aggregate, as obtained in accordance with Arizona Test Method 428, and virgin mineral aggregate.

Virgin mineral aggregate will be acceptable for sand equivalent if it meets the minimum requirements specified in Subsection 416-3.01.

The fractured coarse aggregate particles shall meet the minimum requirements specified in Subsection 416-3.01.

For Special Mix, the uncompacted void content shall meet the minimum requirements specified in Subsection 416-3.01. 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, operations shall cease and the contractor shall have the option of submitting a revised mix design conforming to the requirements of Subsection 416-4 or correcting deficiencies in the aggregate stockpiles.

416-7.03 Material Spread:

A spread lot shall be considered to be one-half shift of production. Lots encompassing more than one project shall be separated in accordance with Subsection 416-9(D).

The contractor shall record information pertaining to each spread lot on forms provided by the Engineer. Information shall include the project number, date and period of time that each spread lot was placed, the spread lot number, beginning and ending station, the plans

thickness, and tons placed in each lot. Completed spread lot forms shall be signed by the contractor and given to the Engineer at the end of each shift.

The Engineer will calculate the quantity required in each spread lot using the mix design bulk density unless a request is made by the contractor to use a production bulk density. A request to use a production bulk density shall be made in writing and approved by the Engineer prior to use. Changes to the bulk density for calculating spread quantities shall not be retroactive.

The calculated quantity required in each spread lot will be compared to the actual quantity placed. A lot will be considered to be acceptable, with a zero pay factor, if the actual quantity placed varies by no more than -2.0 to +5.0 percent from the required quantity.

If the quantity in a lot is found to vary from the required quantity by -2.1 to -12.0 percent, the appropriate pay factor will be determined in accordance with Table 416-1. This pay factor will be utilized in determining the pay adjustment as outlined in Subsection 416-9.

416-7.04 Gradation, Asphalt Cement Content, Effective Voids, and Stability:

(A) General:

A mixture properties lot shall be considered to be one shift's production. In the event a shift's production is less than 1200 tons, multiple shifts may be combined to form a lot. When a lot consists of production from more than one shift, the following conditions apply: at least one sample shall be taken each shift, at least one sample shall be taken every 500 tons, and no mix design or target value changes shall be made within the lot. If changes are made in the mix design or target values, new lots will be established.

Four samples of the asphaltic concrete shall be taken for each lot by the contractor, under the observation of the Engineer, at random locations designated by the Engineer. Samples will be taken in accordance with the requirements of Section 2 or 3 of Arizona Test Method 104 and delivered to the Engineer immediately after being taken. The minimum weight of the sample shall be 75 pounds. The Engineer will split the sample and save one-half for 15 days after written notification to the contractor of test results for that lot has been made. The material will be tested by the Engineer for the following properties:

Test Property	Test Method
Asphalt Cement Content	Arizona Test Method 427 (428 for RAP mixes) (See Notes 1 and 2 below)
Gradation	
Marshall Density and Stability	Arizona Test Method 410
Maximum Theoretical Density	Arizona Test Method 417
Effective Voids	Arizona Test Method 424

Notes:

(1) A new calibration of the ignition furnace shall be performed for each mix design, and at any other time the Engineer directs.

(2) Ignition furnace results will be corrected for asphalt cement content in accordance with Subsection 416-7.04(B) or (C) as required.

Acceptance testing results will be furnished to the contractor within four working days of receipt of samples by the Engineer.

A mixture-properties lot placed with an average stability below 2,500 pounds for base mixes, or 1,750 pounds for 1/2 or 3/4 inch mixes shall be rejected, and shall be subject to an engineering analysis of anticipated performance in accordance with Subsection 416-9(E). Production shall cease until the contractor proposes a corrective action the Engineer finds acceptable. If the Engineer rejects the proposed corrective action, the contractor shall submit a revised mix design.

The target values for gradation, asphalt cement content, and effective voids are given in the contractor's mix design. The Upper Limits (UL) and Lower Limits (LL) of acceptable production of each of the measured characteristics are as follows:

Measured Characteristics	**LL** (Note 1)	**UL** (Note 1)
Gradation (Sieve size):		
3/8 inch (Note 2)	TV - 6.0	TV + 6.0
No. 8	TV - 6.0	TV + 6.0
No. 40	TV - 5.0	TV + 5.0
No. 200	TV - 2.0	TV + 2.0
Asphalt Cement Content	TV - 0.50	TV + 0.50
Effective Voids	TV - 2.0	TV + 1.5

Notes:

(1) The limits are used in the statistical calculations for Quality Index. Acceptance is controlled by the variability of the produced material and every effort should be made to strive for the applicable target value (TV).

(2) In the case of the 3/8 inch sieve requirement, for the base mix only, the lower limit shall be the target value minus 8.0, and the upper limit shall be the target value plus 8.0.

The Engineer will determine the PT for each measured characteristic in accordance with Subsection 416-9(I), and utilizing Table 416-1 will determine the pay factor for each measured characteristic.

In the event the contractor elects to question the mixture property test results, the contractor may request referee testing in accordance with Subsection 416-9 (J).

(B) Ignition Furnace Correction for Non-RAP Mixes:

For plants providing asphaltic concrete exclusively for the project, the difference between the asphalt cement content as measured by ignition furnace testing and the actual asphalt cement content shall be determined by the Engineer for each of the first five lots of asphaltic concrete produced for each mix design. If there are less than five lots for the mix design, the total number of available lots shall be used. If approved by the Engineer, a plant may be considered exclusive to the project if an asphalt cement tank is dedicated for the shift of asphaltic concrete production. The determination of the actual asphalt cement content may include weighing of asphalt cement deliveries, invoice quantities, volumetric tank measurements using a calibrated rod (tank stickings) corrected for temperature, computerized mass-flow meter, and accounting for wasted materials. If a computerized mass-flow meter is used, documentation of its calibration shall be submitted to the Engineer prior to asphaltic concrete production. At any time during asphaltic concrete production, the Engineer may require that a new calibration of the mass-flow meter be performed. If the average difference exceeds $\pm$ 0.10 percent asphalt cement content between the asphalt cement content measured by ignition furnace testing and the actual asphalt cement content, the contractor may request that a correction to the asphalt cement content by ignition furnace testing be made. The contractor must make such a request in writing within two working days after receiving the test results for the fifth lot of asphaltic concrete production. If referee testing is performed on a lot of asphaltic concrete for which a correction, based on the actual asphalt cement content, was made to the asphalt cement content by ignition furnace testing, referee testing shall not apply to the determination of asphalt cement content. The correction, once documented and approved by the Engineer, shall be applied to test results from the beginning of asphaltic concrete production through the remainder of asphaltic concrete production using that mix design; however, a new correction may be determined at any time the Engineer believes it is necessary due to a change in material or other circumstances. If the contractor submits a new mix design, a new correction must be established and applied as specified above. For plants not providing asphaltic concrete exclusively for this project, no correction will be made to asphalt cement content values measured by ignition furnace testing.

(C) Ignition Furnace Correction for Mixes Containing RAP:

For mixes containing RAP, an asphalt cement tank shall be dedicated to the project for each shift of asphaltic concrete production. The difference between the asphalt cement content as measured by ignition furnace testing and the actual asphalt cement content shall be determined by the Engineer for each of the first five lots of asphaltic concrete produced for each mix design. If there are less than five lots for the mix design, the total number of available lots shall be used. The actual asphalt cement content shall be determined by adding the virgin asphalt cement content to the RAP binder content determined in Subsection 416-7.04(D), both expressed as a percent of the total mix. The determination of the virgin asphalt cement content may include weighing of asphalt cement deliveries, invoice quantities, volumetric tank measurements using a calibrated rod (tank stickings) corrected for

temperature, computerized mass-flow meter, and accounting for wasted materials. If a computerized mass-flow meter is used, documentation of its calibration shall be submitted to the Engineer prior to asphaltic concrete production. At any time during asphaltic concrete production, the Engineer may require that a new calibration of the mass-flow meter be performed. If the average difference exceeds ± 0.10 percent asphalt cement content between the asphalt cement content measured by ignition furnace testing and the actual asphalt cement content, a correction to the asphalt cement content by ignition furnace testing shall be made. The correction shall be applied to test results from the beginning of asphaltic concrete production through the remainder of asphaltic concrete production using that mix design; however, a new correction may be determined at any time the Engineer believes it is necessary due to a change in material or other circumstances. If the contractor submits a new mix design, a new correction must be established and applied as specified above. Referee testing shall not apply to the determination of asphalt cement content for asphaltic concrete containing RAP.

(D) RAP Binder Content:

(1) General:

During asphaltic concrete production, the Engineer shall obtain and test samples of the RAP material to determine the RAP binder content in each stockpile at a minimum frequency of one sample per lot. The RAP will be tested by the Engineer for asphalt binder content in accordance with Arizona Test Method 428. When more than one RAP sample is tested for a given lot and stockpile, the average of the results shall be used.

(2) RAP Binder Content Correction Factor:

A RAP binder correction factor shall be determined for each RAP stockpile used in the mixture.

At the start of asphaltic concrete production, the first two samples of RAP material from each stockpile will be split and tested for asphalt binder content; one split is tested in accordance with Arizona Test Method 428 (ignition furnace) and the other split is tested in accordance with AASHTO T 164 (solvent extraction). A RAP binder correction factor will be determined by subtracting the average ignition furnace result from the average solvent extraction result. The appropriate correction factor shall be added to each asphalt binder test result determined on the material from each RAP stockpile in accordance with Arizona Test Method 428 to determine the RAP binder content. At the discretion of the Engineer, the correction factor may be determined prior to the start of asphaltic concrete production provided representative RAP samples are available. A new correction factor may be determined at any time the Engineer believes it is necessary due to a change in material or other circumstances.

416-7.05 Compaction:

(A) Courses 1 1/2 Inches or Less in Nominal Thickness:

(1) General Requirements:

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 and the ambient temperature at the beginning of placement is at least 65 degrees F and rising. The placement shall be stopped when the ambient temperature is 70 degrees F or less and falling.

When Warm Mix Asphalt (WMA) technologies are not used in the mixture, asphaltic concrete immediately behind the laydown machine shall be a minimum of 275 degrees F.

When Warm Mix Asphalt (WMA) technologies are used in the mixture, the recommended temperature range for compaction during production shall be shown on the mix design and shall be approved by the Engineer.

All edges shall be rolled with a pneumatic tired compactor, or other methods approved by the Engineer, while the mixture is still hot.

(2) Equipment:

Compacting and smoothing shall be accomplished by the use of self-propelled equipment. Compactors shall be pneumatic-tired and/or steel wheel.

Compactors shall be operated in accordance with the manufacturer's recommendations. Compactors shall be designed and properly maintained so that they are capable of accomplishing the required compaction.

Steel wheel compactors shall weigh not less than eight tons.

Pneumatic-tired compactors shall be the oscillating type with at least seven pneumatic tires of equal size and diameter. Wobble-wheel compactors will not be permitted. The tires shall be spaced so that the gaps between adjacent tires will be covered by the following tires. The tires shall be capable of being inflated to 90 pounds per square inch and maintained so that the air pressure will not vary more than five pounds per square inch from the designated pressure. Pneumatic-tired compactors shall be constructed so that the total weight of the compactor will be varied to produce an operating weight per tire of not less than 5,000 pounds. Pneumatic-tired compactors shall be equipped with skirt-type devices mounted around the tires so that the temperature of the tires will be maintained during the compaction process.

(3) Rolling Method Procedure:

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	4	2- 4*
Finish	Static Steel	Static Steel	1-3	1-3
* 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.

One pneumatic-tired roller shall be furnished for each 300 tons of asphaltic concrete per hour.

Steel wheel compactors shall not be used in the vibratory mode for courses of one inch or less in thickness nor when the temperature of the asphaltic concrete falls below 180 degrees F.

Initial and intermediate compaction shall be accomplished before the temperature of the asphaltic concrete falls below 200 degrees F.

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.

(B) Courses Greater than 1 1/2 Inches in Nominal Thickness:

Compaction control shall be the responsibility of the contractor. The number and types of rollers shall be the contractor's responsibility and shall be sufficient to meet these requirements.

All edges shall be rolled with a pneumatic tired compactor, or other methods approved by the Engineer, while the mixture is still hot.

A compaction lot shall be identical to the mixture properties lot described in Subsection 416-7.04. Lots encompassing more than one project shall be separated in accordance with Subsection 416-9 (D). Each lot shall be tested for acceptance.

Twenty cores shall be taken for each lot by the contractor, under the observation of the Engineer. The Engineer will designate ten random locations within the lot, and the contractor shall take two cores at each location; however, if more than one shift constitutes a lot, two cores shall be taken from a minimum of two random locations each shift, or as directed by the Engineer. The Engineer will save one core from each location for 15 days after written notification to the contractor of test results for the lot has been made. Randomly selected locations will be determined to the nearest one-half foot in the transverse direction and to the

nearest foot in the longitudinal direction of the pavement course; however, the outside one foot of the unconfined pavement course will be excluded from testing as shown in Materials ADOT Policy and Procedure Directive (P.P.D.) No. 18, “Determining Sample Times and Locations for End Product Asphaltic Concrete”. P.P.D. No. 18 also addresses areas to be excluded relative to longitudinal joints. Areas excluded from testing will be compacted in accordance with Subsection 416-7.05(A). Cores shall be taken utilizing mechanical coring equipment in accordance with the requirements of Arizona Test Method 104. Cores shall be a minimum of four inches in diameter and shall be taken not later than two working days after placement of the asphaltic concrete. The cores shall be delivered to the Engineer immediately upon being taken. The bulk density of each core will be determined by the Engineer in accordance with the requirements of Arizona Test Method 415. The test results will be furnished to the contractor within four working days of receipt of cores by the Engineer. In areas where more than one lift is placed in the same lot, coring shall be accomplished through the full depth of the lifts after the final lift is placed, and the compaction density shall be based on the full depth of the lifts.

The target value for compaction shall be 7.0 percent in-place air voids. In-place air voids shall be determined in accordance with Arizona Test Method 424. The maximum theoretical density used in the determination of air voids will be the average of the four maximum theoretical densities determined for the lot in Subsection 416-7.04.

The Upper Limit (UL) is 9.0 percent in-place air voids and the Lower Limit (LL) is 3.5 percent in-place air voids. The Engineer will determine the PT for compaction in accordance with Subsection 416-9(I), and utilizing Table 416-1 will determine the compaction pay factor.

In the event the contractor elects to question the core test results, the contractor may request referee testing in accordance with Subsection 416-9(J).

416-7.06 Smoothness and Surface Tolerances:

Asphaltic concrete shall be compacted as required, smooth and true to the required lines, grades, and dimensions.

The Special Provisions may require the smoothness of the final pavement surface to be tested in accordance with Subsection 109.13.

Regardless of whether testing in accordance with Subsection 109.13 is specified or not, the following requirements shall be met:

(1) The surface of the final lift of asphaltic concrete placed under this section of the specifications shall be tested and shall not vary by more than 1/8 inch from the lower edge of a ten-foot straightedge when it is placed in the longitudinal direction (including across transverse joints), and when it is placed in the transverse direction across longitudinal joints.

(2) The surface of any lift of asphaltic concrete placed under this section of the specifications, other than the final lift, shall be tested and shall not vary by more than 1/4 inch from the lower edge of a ten-foot straightedge when it is placed in the longitudinal direction (including across transverse joints), and when it is placed in the transverse direction across longitudinal joints.

(3) All deviations exceeding the specified tolerances above shall be corrected by the contractor, to the satisfaction of the Engineer.

416-8 Method of Measurement:

(A) Asphaltic Concrete:

Asphaltic concrete will be measured by the ton for the asphaltic concrete actually used, which will include the weight of mineral aggregate, asphalt cement, and mineral admixture. Measurement will include any quantity used in construction of intersections, turnouts, or other miscellaneous items or surfaces.

(B) Asphalt Cement:

(1) Non-RAP Mixes:

Asphalt cement will be measured by the ton on the basis of the asphalt cement content determined in accordance with Subsections 416-7.04(A) and (B) for each lot of asphaltic concrete accepted. The average asphalt cement content will be multiplied by the number of tons of asphaltic concrete in that lot to determine the amount of asphalt cement. If the contractor has requested referee testing, the average asphalt cement content will come from the independent testing laboratory results unless a correction, based on the actual asphalt cement content, was made to the ignition furnace test value as allowed in Subsection 416-7.04(B). If a correction, based on the actual asphalt cement content, was made to the ignition furnace test value, the average asphalt cement content determined from the Department's acceptance testing will be used. At the discretion of the Engineer, asphalt cement may be measured by invoice quantities, adjusted as necessary for waste. Waste generated from startup of the asphalt plant will be considered to have a binder content of 3.0 percent. In no case shall the measured amount of asphalt cement for payment be greater than the total of the invoice quantities, adjusted for waste.

(2) Mixes Containing RAP:

Asphalt cement will be measured by the ton on the basis of the asphalt cement content determined in accordance with Subsections 416-7.04(A) and (C) for each lot of asphaltic concrete accepted. The average asphalt cement content will be multiplied by the number of tons of asphaltic concrete in that lot to determine the amount of asphalt cement. At the discretion of the Engineer, asphalt cement may be measured by adding invoice quantities to the RAP binder used, adjusted as necessary for waste. RAP binder used shall be determined by multiplying the RAP binder content determined in Subsection 416-7.04(D) by the number of

tons of dry RAP material used in that lot. Waste generated from startup of the asphalt plant will be considered to have a binder content of 3.0 percent. In no case shall the measured amount of asphalt cement for payment be greater than the total of the invoice quantities plus the RAP binder as determined above, adjusted for waste.

(C) Mineral Admixture:

Mineral admixture will be measured by the ton for the mineral admixture actually used in accordance with Subsection 403-2.

416-9 Basis of Payment:

The accepted quantities of asphaltic concrete, measured as provided above, will be paid for at the contract unit price adjusted by the appropriate pay factors as hereinafter provided.

When Warm Mix Asphalt (WMA) technologies are used in the mixture, no separate payment will be made for WMA additives or technologies, necessary hot plant modifications, or other associated costs.

For the purpose of determining acceptability and appropriate pay factors, each unit of asphaltic concrete will be included in three separate lots: a "spread lot," a "mixture-properties lot," and a "compaction lot." The total unit price for any unit of accepted asphaltic concrete will be the contract unit price, adjusted by the applicable spread lot pay factor, mixture-properties lot pay factor, and compaction lot pay factor.

The contractor may request to place the first lot of each mix type as a test strip. Requests to place a test strip shall be made in writing and acknowledged by the Engineer prior to start of production. A test strip shall be limited to 1,000 tons and may only be placed on shoulders, ramps, cross roads, or other areas approved by the Engineer. A test strip shall be excluded from the mixture properties lot pay factor and the compaction lot pay factor; however, all other provisions of Subsection 416-9 shall still apply to such areas.

The Engineer may exclude asphaltic concrete from the spread lot and from the spread lot pay factor calculations if the Engineer determines that the proposed use of the material or the existing surface conditions are not conducive to the use of spread lots.

The Engineer may exclude certain locations from the mixture properties lot and/or the compaction lot and from the random sampling used in determining the mixture properties lot pay factor and/or the compaction lot pay factor should the Engineer determine that the location of the work precludes normal construction operations.

(A) Spread Lot Pay Factor:

The spread lot pay factor will be determined in accordance with Subsection 416-7.03. If the quantity in a spread lot is found to vary by more than + 5.0 percent from the required quantity, no payment will be made for the material which exceeds + 5.0 percent, including asphalt cement and mineral admixture. If the quantity is found to vary by more than - 12.0 percent from the required quantity, the spread lot will be rejected.

(B) Mixture-Properties Lot Pay Factor:

The mixture properties lot pay factor shall be determined in accordance with the following procedure:

(1) The individual PT values and pay factors for Gradation, Asphalt Cement Content, and Effective Voids shall be determined as set forth in Subsection 416-7.04.

(2) A single pay factor shall be determined for Gradation and Asphalt Cement Content. That pay factor shall be the lowest pay factor for the individual measured characteristics for Gradation and Asphalt Cement Content.

(3) If no individual PT value in (1) above is less than 50, the mixture properties lot pay factor shall be the sum of the pay factor determined in (2) above and the Effective Voids pay factor. The negative pay factor for mixture properties shall not exceed $3.00 per ton. If any individual PT value is less than 50, the lot is in reject and the provisions in Subsection 416-9(E) shall apply.

(C) Compaction Lot Pay Factor:

The compaction lot pay factor shall be determined as set forth in Subsection 416-7.05(B).

(D) Determination of Lot Pay Factors on Contracts Involving Multiple Projects:

When more than one project is included in a single contract, placement during a shift or half shift of production may encompass more than one project. In such case, the applicable spread lot pay factor, mixture-properties lot pay factor, and compaction lot pay factor for each project shall be determined as follows:

(1) Spread lot pay factors will be determined separately for each project utilizing the procedure set forth in Subsection 416-7.03.

(2) The individual PT values and pay factors for Gradation, Asphalt Cement Content, and Effective Voids will be determined from the results of the random samples taken and tested in accordance with Subsection 416-7.04, regardless of which project(s) the samples fall within.

(3) PT values and pay factors for compaction, for those areas subject to Subsection 416-7.05(B), shall be determined from separate sets of core samples for each project utilizing the procedure set forth in that Subsection.

(4) The mixture-properties lot pay factor shall be determined separately for each project in accordance with Subsection 416-9(B), utilizing the individual pay factors determined in (2) above.

(5) The compaction lot pay factor shall be determined separately for each project in accordance with Subsection 416-9(C), utilizing the pay factor determined in (3) above.

(E) Acceptability:

Asphaltic concrete included in any mixture properties lot possessing an individual PT value lower than 50 for Gradation, Asphalt Cement Content, or Effective Voids will be rejected. Asphaltic concrete included in any compaction lot possessing a PT value lower than 50 will be rejected.

Within 15 days after receiving notice that a spread lot, mixture properties lot, or compaction lot of asphaltic concrete has been rejected by the Engineer, the contractor may submit a written proposal to accept the material in place at the applicable maximum negative pay factor(s). Maximum negative pay factors are defined as a minus $1.00 per ton for spread lots, minus $5.00 per ton for compaction lots, 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. Positive mixture properties lot pay factors become zero when the compaction lot is in reject and the material is allowed to be left in place. In addition, for any mixture properties lot that is in reject due to asphalt cement content but allowed to remain in place, payment shall not be made for asphalt cement quantities in excess of the upper limit (UL) as determined in Subsection 416-7.04(A).

The proposal shall contain an engineering analysis of the anticipated performance of the asphaltic concrete if left in place. The engineering analysis shall also detail any proposed corrective action, and the anticipated effect of such corrective action on the performance. The engineering analysis shall be performed by an independent professional engineer experienced in asphaltic concrete testing and the development of asphaltic concrete mix designs. If a rejected mixture properties lot or a rejected compaction lot is submitted for referee testing by the contractor, the 15 days allowed to prepare an engineering analysis will begin upon notification of referee test results.

Within three working days, the Engineer will determine whether or not to accept the contractor's proposal. 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. If the proposal is accepted, the asphaltic concrete shall remain in place at the applicable maximum negative pay factor(s), and any necessary corrective action shall be performed at no additional cost to the Department.

The Department reserves the right to suspend the work should any of the following conditions occur:

(1) The occurrence of two or more rejected lots within any ten consecutive production lots.

(2) The occurrence of three consecutive negative mixture properties lot pay factors or three consecutive negative compaction lot pay factors.

(3) The occurrence of five or more pay factors that are negative either for a mixture properties lot or for a compaction lot within any ten consecutive production lots.

If the Department elects to suspend the work for any of these conditions, the contractor shall either submit a revised mix design in accordance with Subsection 416-4, or submit for the Engineer's approval a written engineering analysis. The engineering analysis shall detail the course of action necessary to correct deficiencies in the contractor’s present production methods such that further production can be accomplished without excessive amounts of asphaltic concrete in penalty or rejection. If approved by the Engineer, the revised mix design, or the course of action proposed in the engineering analysis, shall be implemented, and the work may continue. Costs or delays due to the provisions of this subsection are not compensable.

(F) Asphalt Cement:

(1) Non-RAP Mixes:

Payment for asphalt cement will be made by the ton. Adjustments in payment shall be made in accordance with the requirements of Subsection 1005-3.01.

(2) Mixes Containing RAP:

When RAP is used in the mixture, payment for asphalt cement will be made by the ton for the total asphalt cement as determined in Subsection 416-8(B)(2). Adjustments in payment shall be made in accordance with the requirements of Subsection 1005-3.01 for the virgin binder only.

(G) Mineral Admixture:

Mineral admixture will be paid for at the predetermined price established in the Bidding Schedule.

(H) Smoothness:

When required in the Special Provisions, payment for smoothness shall be made in accordance with the requirements of Subsection 109.13.

(I) Statistical Acceptance:

The "Total Percentage of Lot Within UL and LL (PT)" shall be determined in accordance with Subsection 109.11 of the Specifications.

Pay Factors (PF) shall be determined by entering Table 416-1 with PT.

TABLE 416-1 PAY FACTORS					
Material Spread		**Mixture Properties and Compaction**			
Negative Variance %	**Pay Factor (Dollars per Ton)**	**PT**	**Pay Factors(Dollars per Ton)**		
			Gradation and Asphalt Cement Content	**Effective Voids**	**Compaction**
2.1 - 3.0	- 0.10	100	0.00	+ 2.00	+ 2.00
3.1 - 4.0	- 0.20	95 - 99	0.00	+ 0.50	+ 0.50
4.1 - 5.0	- 0.30	90 - 94	0.00	0.00	0.00
5.1 - 6.0	- 0.40	85 - 89	0.00	- 0.25	- 0.25
6.1 - 7.0	- 0.50	80 - 84	- 0.25	- 0.50	- 0.50
7.1 - 8.0	- 0.60	75 - 79	- 0.50	- 0.75	- 0.75
8.1 - 9.0	- 0.70	70 - 74	- 0.75	- 1.00	- 1.00
9.1 - 10.0	- 0.80	65 - 69	- 1.00	- 1.25	- 1.25
10.1 - 11.0	- 0.90	60 - 64	- 1.50	- 1.50	- 1.75
11.1 - 12.0	- 1.00	55 - 59	- 2.00	- 2.00	- 2.25
More than 12.0	Reject	50 - 54	- 2.50	- 2.50	- 3.00
See Subsections 416-9 (A) and (E)		Less than 50	Reject-See Subsection 416-9 (E)		

(J) Referee Testing:

(1) Referee Testing Performed for Mixture Properties Only:

Within 15 days after written notification to the contractor of test results for a particular mixture properties lot, the contractor may make a written request for referee testing. The referee

testing shall be performed by an independent approved laboratory designated by the Department. The testing of the samples will be performed by the independent testing laboratory without knowledge of the specific project conditions such as the identity of the contractor or mix design laboratory, the test results by the Department, or the mix design targets for gradation and effective voids. The asphaltic concrete samples previously saved will be tested for the following properties:

Test Property	Test Method
Asphalt Cement Content (See Note 1 below)	Arizona Test Method 427 (428 for RAP mixes)
Gradation	
Marshall Density and Stability	Arizona Test Method 410
Maximum Theoretical Density	Arizona Test Method 417
Effective Voids	Arizona Test Method 424

Note:

(1) If a correction to the asphalt cement content by ignition furnace testing is made in accordance with Subsection 416-7.04(B),or if RAP is used in the mixture, the asphalt cement content shall not be subject to referee testing.

The results of the referee testing will be binding on both the contractor and the Department.

Using the referee testing results, the Engineer will determine new PT's for all characteristics, with the exception of asphalt cement content if a correction to the ignition furnace value was made as specified in Subsection 416-7.04(B), or if RAP is used in the mixture.

When referee testing is performed on a mixture properties lot, the referee test result for the average maximum theoretical density will be used to determine a new PT for compaction.

The Department will pay for the referee testing; however, if the combined pay factor of the lot (Mixture Properties plus Compaction) does not improve or is reduced, or if either the mixture properties lot or compaction lot remains in reject or is placed in reject, payment to the contractor for asphaltic concrete shall be reduced by the amount of the cost of the referee testing for the mixture properties of that particular lot.

(2) Referee Testing Performed for Compaction Only:

Within 15 days after written notification to the contractor of test results for a particular compaction lot, the contractor may make a written request for referee testing. The bulk density of each of the cores previously saved will be determined in accordance with the requirements of Arizona Test Method 415 by an independent testing laboratory designated by the Department. The testing of the cores will be performed by the independent testing laboratory without knowledge of the specific project conditions, such as the identity of the contractor or

mix design laboratory, or the test results by the Department. The percent air voids will be determined in accordance with Arizona Test Method 424. The maximum theoretical density used in the determination of air voids will be the average of the four maximum theoretical densities determined for the lot in Subsection 416-7.04.

The results of the referee testing will be binding on both the contractor and the Department.

When referee testing is performed on the compaction lot, the Engineer will determine a new PT for compaction using the referee testing results.

The Department will pay for the referee testing; however, if the pay factor of the compaction lot does not improve or is reduced, or the compaction lot remains in reject or is placed in reject, payment to the contractor for asphaltic concrete will be reduced by the amount of the cost of referee testing for the compaction of that particular lot.

(3) Referee Testing Performed for Both Mixture Properties and Compaction:

When referee testing is performed, as described above, for both the mixture properties lot and the compaction lot, the Engineer will use the referee test results to determine new PT's as specified in Subsections 416-9(J)(1) and 416-9(J)(2).

The Department will pay for the referee testing; however, if the combined pay factor of the lot (Mixture Properties plus Compaction) does not improve or is reduced, or if either the mixture properties lot or compaction lot remains in reject or is placed in reject, payment to the contractor for asphaltic concrete shall be reduced by the amount of the cost of the referee testing for the mixture properties and compaction of that particular lot.

(501PIPE, 05/03/16)

SECTION 501 PIPE CULVERT AND STORM DRAINS:

501-1 **Description:** the first paragraph of the Standard Specifications is revised to read:

The work under this section shall consist of furnishing pipe and all other materials required and the installing of pipe, including excavating, and furnishing, placing and compacting backfill material, all in accordance with the details shown on the plans and the requirements of the specifications.

501-1 **Description:** the last sentence of the third paragraph of the Standard Specifications is revised to read:

Special sections, fittings, elbows, branch connections, tapered inlets, end sections, connectors, coupling, and other such items shall be of the same material and coating as the pipe to which they are attached unless otherwise stated in the specifications.

501-3.03(A) **General:** the second paragraph of the Standard Specifications is revised to read:

If the Engineer determines that the end of an existing pipe is damaged to the extent that it cannot be repaired sufficiently to be joined properly to the new pipe, the damaged portion shall be removed.

Pipe shall be installed in reasonably close conformity with the lines, grades and dimensions shown on the project plans or specified by the Engineer.

501-3.03(B)(1) **General:** the seventh paragraph of the Standard Specifications is hereby deleted:

501-3.03(C) **Slotted Pipe:** the third paragraph of the Standard Specifications is revised to read:

Slotted pipe shall be backfilled with grout in accordance with the details shown on the project plans. The grout shall conform to the requirements of Subsection 1010-3. Grout shall not be placed when a descending air temperature falls below 40 degrees F or until an ascending air temperature exceeds 35 degrees F. Temperatures shall be taken in the shade and away from artificial heat. The grout shall be cured in accordance with the requirements of Subsection 912-3.09.

501-3.03(G) **Corrugated High Density Polyethylene Plastic Pipe:** the title and text of the Standard Specifications are revised to read:

501-3.03(G) **Corrugated High Density Polyethylene Plastic Pipe, Steel Reinforced High Density Thermoplastic Ribbed Pipe, and Corrugated Polypropylene Plastic Pipe:**

Corrugated high density polyethylene plastic pipe, steel reinforced high density thermoplastic ribbed pipe, and corrugated polypropylene plastic pipe shall be assembled and installed in accordance with the manufacturer's instructions.

Watertight joints, unless otherwise specified, will not be required for storm drains, culverts, or other drainage pipes. However, joints for these pipes shall be water resistant. Watertight joints shall be provided for siphon and irrigation pipe installations.

Watertight and water resistant joints shall conform to the requirements of Subsection 1010-8.

Tracer wire for magnetic detection shall be placed in accordance with the requirements of Subsection 104.15.

To prevent damage and to assure that proper line and pipe grade are maintained throughout the backfilling operation, special care shall be taken in the handling and installation of corrugated high density polyethylene plastic pipe and fittings, steel reinforced high density thermoplastic ribbed pipe and fittings, and corrugated polypropylene plastic pipe and fittings.

When end sections for the above listed pipes are called for on the plans, the contractor shall use metal safety end sections unless otherwise specified.

ITEM 6010505 - BRIDGE REPAIR (PENETRATING CRACK SEAL):

Description:

The work under this Item consists of furnishing and the applying Penetrating Crack Seal to the bridge deck and approach slabs in accordance with the project plans, the manufacturer's recommendations and the requirements of these Special Provisions.

Materials:

Penetrating crack sealant material shall be in accordance with the latest ADOT Approved Products List.

The contractor shall review and follow all manufacturers' recommendations on how to use and mix products. If a three-part Methacrylate product is used, precautions shall be implemented to eliminate the possible direct mixing of the Cumene Hydroperoxide (Component B) and Cobolt Promoter (Component C). The direct mixing of these two materials will cause an explosive reaction and should never come in contact with each other during mixing, handling, transporting or storing.

Construction Requirements:

Prior to the start of Bridge Repair, the contractor shall submit for approval by the Engineer, a program for public safety associated with the use of Penetrating crack sealant material. The program shall identify personnel that have been trained by the manufacturer. Personnel who have not been certified by the manufacturer shall not handle, transport or mix the material. Non-certified personnel may apply the crack sealer only while a certified person is present. The manufacturer certification shall be for personnel that have completed training including such topics as but not limited to:

1. Compliance with pertinent OSHA and other federal, state and local regulations governing the use of equipment, the handling of materials and the methods for preventing the occurrence of hazardous conditions and accidents.

2. Proper handling, storage and waste disposal methods to eliminate fire, reactivity and explosion hazards and protect personnel from injury caused by exposure to and contact with the components of the material.

3. Provision of effective protective clothing, especially aprons, gloves, goggles, respirators and emergency devices and adequate ventilation in storage areas.

4. Training in safe work habits, first aid procedures and effective measures for coping with emergencies and accidents.

The program shall identify the location of storage, method of transporting to the project location and mixing location and procedure on the project site. If the three-part Methacrylate product is used it is required that Cumene Hydroperoxide (Component B) and Cobolt Promoter (Component C) be stored in different locations and transported separately. The Monomer (Component A) and Cumene Hydroperoxide (Component B) shall be mixed in a separate location than were Cobolt Promoter (Component C) is located when the three-part Methacrylate product is used.

The program shall identify processes and precautions used to protect the public. This may include but is not limited to maximizing the distance between the mixing of the three-part Methacrylate product and the public, controlling temperatures for storage of the product, protective clothing and equipment used in the handling and application of the material, transportation procedures and routes, safety protection plan in the event of a spill, fire, or required clean-up, and maintain sound safety practices.

The Engineer will notify the contractor of the approval or rejection of any submittal or revised program for public safety associated with the use of Penetrating crack sealant material within 10 working days of receipt. The Department will not be liable to the contractor for failure to approve all or any portion of an originally submitted or revised program for public safety associated with the use of Penetrating crack sealer material, nor for any delays to the work due to the contractor’s failure to submit an acceptable program for public safety associated with the use of Penetrating crack sealer material. If the Engineer does not review or approve the program submitted by the contractor within the time specified and if, in the opinion of the Engineer, the contractor’s controlling operation is delayed or interfered with by reason of the delay in reviewing the program for public safety, the delay will be considered either a compensable delay or an excusable delay as determined by the Engineer.

The contractor shall follow the program for public safety associated with the use of the selected penetrating crack sealer. If it is determined by the Engineer that the measures taken by the contractor are inadequate to provide for public safety, the contractor shall revise his operation. No further work shall be performed associated with the Penetrating crack sealant until the public safety measures are adequate and, if required, a revised program for public safety associated with the use of a Penetrating crack sealant has been approved.

Existing bridge joints and bridge drainage systems shall be watertight sealed, with a system approved by the Engineer. Care shall be taken to not damage the water tight systems, during construction operations.

Application of Blotter Material shall be in accordance with Standard Specification 404-3.09.

An application of blotter material shall be required following the placement of a Penetrating crack sealant on the bridge decks or approach slabs. Blotter material shall be applied within the manufacturer recommended time period for the sealant material. If the blotter material does not adhere to the sealant material and additional application shall be applied at no additional cost to the Department. This material shall be applied at a rate of one (1) pound per four (4) square yards. Any excess blotter material shall be broomed-off from these bridge decks or approach slabs to the satisfaction of the Engineer. The blotter material shall be applied in one or more applications for a total application of 25 pounds per 100 square yards.

Method of Measurement:

Bridge Repair (Penetrating Crack Seal) will be measured by the square yard of bridge deck covered with Penetrating Crack Seal material. Methacrylate and blotter material not applied according to the manufacturer recommendation or these Specifications shall be deducted from the total square yards of measurement.

Basis of Payment:

The accepted quantities of Bridge Repair (Penetrating crack Seal), measured as provided above, will be paid for at the contract unit price per square yard, which price shall be full compensation for the work complete in-place as shown on the project plans, as specified here in and as directed by the Engineer.

No additional payment will be made for the development and preparation of the program for public safety associated with the use of Penetrating crack Seal material, the cost being considered as included in the price paid for Bridge Repair (Penetrating Crack Seal).
No additional payment will be made for blotter material, the cost being considered as included in the price paid for Bridge Repair (Penetrating Crack Seal).

(701PDMPT, 05/03/16)

SECTION 701 - MAINTENANCE AND PROTECTION OF TRAFFIC:

701-1 **Description:** the first and third paragraphs of the Standard Specifications are revised to read:

The work under this section shall consist of providing flagging services and pilot trucks, and furnishing, installing, maintaining, moving and removing barricades, warning signs, lights, signals, cones, and other traffic control devices to provide safe and efficient passage through and/or around the work and to protect workers in or adjacent to the work zone. The work shall be done in accordance with the requirements of Part 6 of the Manual on Uniform Traffic Control Devices (MUTCD) and the associated Arizona Department of Transportation supplement. When referred to herein, these documents will be referred to as MUTCD and associated ADOT Supplement.

When a traffic control plan is included in the project plans, this plan shall govern unless an alternate plan, acceptable to the Engineer, is submitted by the contractor. If no traffic control plan is provided or if the contractor desires to deviate from the provisions for maintaining traffic as described in this section, it shall submit to the Engineer for approval a proposed sequence of operations and a compatible method of maintaining traffic.

The contractor's submittal shall be prepared by an individual meeting one of the following criteria:

(a) Has successfully completed a recognized traffic control supervisor training and certification program. The traffic control supervisor training and certification provided by the American Traffic Safety Services Association (A.T.S.S.A.) or the International Municipal Signal Association (IMSA) shall be acceptable. Training and certification through other programs must be approved in advance by the Engineer. The individual's training and certification shall be current and must be valid throughout the duration of the project. In order to remain current with the Department, training and certification shall be completed or renewed at least once every four years.

(b) Be a licensed professional engineer registered in the State of Arizona and have completed an approved traffic control supervisor training program, as specified in Subsection 108.03. The training shall be current and must be valid throughout the duration of the project. In order for the training to remain current with the Department, it shall be completed or renewed every four years.

The contractor shall submit proof of the proposed individual's credentials at the preconstruction conference. The contractor bears all responsibility for any such contractor-submitted traffic control plan, whether prepared by its direct employee or other individual.

The contractor's proposal shall be submitted early enough to allow at least two weeks for review and approval before use of the proposed traffic control plan.

701-2.01(B)(1) General Requirements: item (d) of the second paragraph of the Standard Specifications is revised to read:

(d) The name, title and signature of a person having legal authority to bind the manufacturer or supplier of the Category I and II devices. The binding authority shall be in accordance with the applicable requirements of Subsection 106.05(B).

701-2.03 **Temporary Concrete Barrier:** the second paragraph of the Standard Specifications is revised to read:

The contractor shall provide, at the preconstruction conference, a certificate of compliance, conforming to the requirements of Subsection 106.05, stating that any temporary concrete barrier to be used on the project conforms to Signing and Marking Standard Drawing C-3. The contractor shall include the project number on the submittal.

701-2.04 **Temporary Impact Attenuation Devices:** the second paragraph of the Standard Specifications is revised to read:

Temporary impact attenuation devices shall also meet evaluation criteria for Test Level 3 per NCHRP (National Cooperative Highway Research Program) Report 350, or for Test Level 3 per MASH (AASHTO Manual for Assessing Safety Hardware). The contractor shall provide, at the preconstruction conference, a certificate of compliance, conforming to the requirements of Subsection 106.05, certifying that any temporary impact attenuation devices to be used on the project will meet the above requirement. The contractor shall include the project number on the submittal.

701-2.08 **Barricades:** the title and second paragraph of the Standard Specifications are revised to read:

701-2.08 **Barricades and Other Channelizing Devices:**

All sheeting for barricades and other channelizing devices shall conform to the requirements of Section 1007.

701-3.05 **Temporary Pavement Markings (Application and Removal):**

(C) **Preformed Pavement Markings:** the first paragraph of the Standard Specifications is revised to read:

Preformed pavement markings for temporary applications shall be Type II (Temporary-Removable) and III (Temporary-Nonremovable) and shall conform to the requirements of Section 705 of the specifications.

701-3.07 **Truck-Mounted Attenuator:** the title and text of the Standard Specifications are revised to read:

701-3.07 **Truck-Mounted and Trailer-Mounted Attenuators:**

The contractor shall provide trucks and truck-mounted attenuators, or trailer-mounted attenuators and host vehicles, at the locations shown on the project plans and/or as directed by the Engineer.

Attenuators shall meet either NCHRP Report 350, Test Level 3 criteria, or MASH (Manual for Assessing Safety Hardware), Test Level 3 criteria, passing both mandatory and optional tests. The truck and attenuator combination shall only be used in the configuration tested. Either the truck or attenuator shall have a sequential arrow display panel or changeable message board.

Attenuators that require chocking or blocking of the vehicle to meet NCHRP Report 350 or MASH certification shall not be used.

Attenuators shall have rear-mounted, retroreflective chevron stripes and a standard trailer lighting system, including brake lights, turn signals, ICC-bar lights, and two yellow rotating beacons, ~~or~~ strobe lights, or LED lights mounted on opposite rear corners of the truck or attenuator approximately 4-1/2 feet above the bottom of the tires. A Type C arrow panel or changeable message board shall be provided and shall be installed in accordance with the NCHRP 350/ MASH Crashworthiness Certification or FHWA Letter of Acceptance. There shall be a minimum of seven feet from the roadway to the bottom of the panel or board. Frame work shall be an integral part of the truck and be permanently mounted in such a way as to prevent the unit from separating from the truck in the case of a collision.

For each proposed truck-mounted or trailer-mounted attenuator, the contractor shall provide a Certificate of Compliance, in accordance with Subsection 106.05, to the Engineer for approval prior to use. For truck-mounted attenuators, the certificate shall also include the certified weigh bill for the truck, and for trailer-mounted attenuators the certificate shall state the minimum weight for the host vehicle. The certificate shall state that the attenuator meets the specified criteria, and shall clearly state the roll-ahead distance. A copy of this documentation shall be kept in the truck cab or host vehicle, available for immediate inspection when requested by the Engineer.

When in use for attenuation, trucks shall be used exclusively for attenuators. When in use for attenuation, such trucks shall not be used to carry or store equipment or devices, secured or unsecured. No modification in configuration or use shall be allowed without a resubmitted certified weigh bill for the Engineer’s approval.

Truck-mounted or trailer-mounted attenuators used as shadow vehicles per the MUTCD shall be positioned at a distance greater than the roll-ahead distance in advance of the workers or equipment being protected so that there will be sufficient distance, but not so much that errant vehicles will travel around the shadow vehicle and strike the protected workers and/or equipment.

The contractor shall cease operations when a truck-mounted or trailer-mounted attenuator is damaged. The contractor shall not resume operations until the attenuator has been repaired or replaced, unless authorized by the Engineer.

701-3.08 Changeable Message Board: of the Standard Specifications is revised to read:

Changeable message boards shall be furnished and maintained by the contractor at the locations shown on the plans and as specified by the Engineer. The operations and messages programmed into the board controller shall be as directed by the Engineer. The changeable message board shall be a complete and operational portable unit which shall consist of a wheeled trailer with an adjustable, changeable message board, board message controller and self-contained power supply.

The power supply for the changeable message board shall be a fully independent self-contained trailer-mounted system. The changeable message board power supply shall be battery operated and rechargeable from a solar panel mounted above the changeable message board.

The message characters shall be delineated by either electromagnetically actuated reflective dots or optically enhanced light emitting diode pixels (LED) operating under the control of a digital computer.

The contractor shall submit, at the pre-construction conference, a Certificate of Compliance that the changeable message board to be used on this project shall be as described herein.

The character formation system and components shall conform to the following requirements:

(1) The changeable message board shall be programmable, and shall be capable of displaying a minimum of three lines of message copy, with a minimum of eight characters per line, in various alphanumeric combinations.

(2) The changeable message board matrix configuration shall be 35 dots or pixels per character in a five horizontal by seven vertical arrangement of the dots or pixels.

(3) The dot or pixel size shall be a 2.5-inch high by 1.625-inch wide rectangle (minimum), or equivalent area.

(4) Each character shall be 18 inches in height and 12 inches in width (minimum).

(5) The horizontal character separation shall be three inches or more.

(6) Dot color shall be fluorescent yellow upon activation and flat black when not activated. The LED pixels shall emit amber light upon activation and be dark when not activated.

(7) The line separation shall be five to 12 inches.

(8) Changeable message boards shall be protected with a clear lexan-type or equivalent shield that shall not interfere with or diminish the visibility of the sign message.

(9) The programmable message board shall be capable of displaying moving arrow patterns as one of the operator-selected programs.

(10) The message board shall also be capable of displaying up to two messages in sequence, with variable timing in a minimum of quarter-second increments.

(11) The message board shall be clearly visible and legible from a distance of 800 feet under both day and night conditions. The dot-matrix board shall have an internal illumination system that shall automatically activate under low light conditions to achieve the visibility requirements. The LED-pixel matrix board shall adjust light output (pulse width modulation) to achieve the visibility requirements.

(12) The power supply achieved from the battery and solar panel recharging system shall have sufficient capacity to operate the changeable message board for a minimum of 20 days without direct sunshine. The solar panel array shall be capable of recharging the batteries such that 2.5 to 3.5 hours of direct sunshine shall provide for a minimum of one 24-hour period of usage. Additionally, the battery recharging controller shall have an ambient temperature sensing device which will automatically adjust the voltage supplied from the solar panels to the batteries. The sensing device shall ensure that the batteries are properly charged in hot or cold weather and shall provide the sign with sufficient power to operate the sign as specified.

When in operation, the changeable message board trailer shall be offset a minimum of eight feet from the nearest edge of pavement. If the trailer is located behind temporary concrete barrier, a minimum offset of six feet will be required. Should the specified shoulder width not be available, a minimum two-foot offset from the nearest edge of pavement or temporary concrete barrier shall be required. When positioned on the highway, the changeable message board trailer shall be delineated with a minimum of 10 Type II barricades or vertical panels with Type C steady burn lights at a spacing of 10 to 20 feet, or as shown on the approved traffic control plan.

When not in operation, the changeable message board shall be moved a minimum of 30 feet from the edge of pavement.

The changeable message board trailer shall be placed on a level surface and be secured as recommended by the manufacturer and as directed by the Engineer. The contractor shall provide any necessary incidental grading and clearing work required to provide a level surface and clear area for the sign.

701-3.10 Sign Sheetings: of the Standard Specifications is revised to read:

Sign sheeting for all temporary work zone signs shall conform to the requirements of Section 1007.

701-3.13 Flagging Services: of the Standard Specifications is revised to read:

Flagging services shall consist of either civilian, local enforcement officers and their vehicles, or DPS (Department of Public Safety) officers and their vehicles. The Engineer will determine the type of flagger needed, and may adjust the relative number of hours of each type of flagger specified in the traffic control plan.

If available, only DPS officers shall be used on Interstate Highways and Urban Freeways. DPS officers shall also be used on other construction projects except when a local law enforcement agency has jurisdiction, in which case a local law enforcement officer and vehicle shall be used.

The contractor shall be responsible to procure civilian flaggers, DPS officers, and local enforcement officers. When procuring DPS officers, the contractor shall contact DPS at least two business days 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.

A DPS or local enforcement officer shall not work more than 12 consecutive hours 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 shall be acceptable. Certification through other programs offering flagger training must be approved by the Engineer. Flagger certification must be current. Training and certification shall be required at least once every four years.

701-4.03(E) Limitation of Measurement: the second paragraph of the Standard Specifications is revised to read:

Measurement will be made after the initial installation and once weekly thereafter for items in continuous use and at any other times changes are made in the use of traffic control elements listed under Subsection 701-4.01(B). The contractor shall notify the Engineer when any changes are made in the use or location of traffic control elements.

701-4.04 **Measurement of Work Elements:** Sub-paragraph (A) of the Standard Specifications is revised to read:

(A) Temporary concrete barrier will be measured by the linear foot along the center line of the uppermost surface upon its initial installation (Complete-in-Place), and upon any subsequent relocations, as defined in Subsection 701-5.01. Barrier will be measured by linear foot for each 24-hour day for the "In-Use" condition.

701-4.04 **Measurement of Work Elements:** Sub-paragraph (C) of the Standard Specifications is revised to read:

(C) Truck-Mounted Attenuators, including driver, and Trailer-Mounted Attenuators, including host vehicle and driver, will be measured by the day for each 24-hour day that a truck-mounted or trailer-mounted attenuator and operator are used to protect the work site.

701-4.04 **Measurement of Work Elements:** Sub-paragraph (F) of the Standard Specifications is revised to read:

(F) Civilian flagging services will be measured by the hour for each hour that a civilian flagger is provided. Flagging services by DPS officers and local enforcement officers will be measured for each hour that a uniformed, off-duty DPS officer or law enforcement officer with vehicle is employed directly by the contractor as a flagger within the project limits, when authorized in advance by the Engineer. Quantities will be rounded to the nearest 0.5 hour.

Civilian, DPS, or local enforcement flagging services and traffic control devices required to permit contractors' traffic to enter safely into normal traffic within the project limits will be paid under their respective items. Flaggers required by a written local permit agreement will be measured for payment under this item. Additional civilian, DPS, or local enforcement flagging services used within the project limits shall be measured for payment under this item, subject to the approval of the Engineer.

Civilian, DPS, or local enforcement flagging services and traffic control devices used outside the project limits will be measured under their respective items. The Department will pay 50 percent of the unit bid price for such flaggers and traffic control devices used as described in this paragraph, subject to the approval of the Engineer. The project limits are defined as the construction work zone as shown on the approved traffic control plan for the specific section of highway under construction.

701-5.01 **Temporary Concrete Barrier (Installation and Removal):** of the Standard Specifications is revised to read:

Temporary concrete barrier, 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, as specified herein and as shown on the plans, including furnishing, placing, dismantling, and removal. The price bid shall also include any required connection devices, barrier markers, and glare screen.

Fifty percent of the contract unit price for temporary concrete barrier will be paid upon satisfactory installation.

Should it be necessary to dismantle, pick up and relocate a portion of the barrier installation during construction, whether laterally or vertically, that portion of the removed and relocated barrier will be considered a new installation and paid for at 100 percent of the contract unit price.

Fifty percent of the contract unit price will be paid upon final removal.

No payment will be made for portions of the barrier which the contractor can adjust or realign without dismantling and picking up, such cost being considered as included in the bid price for Temporary Concrete Barrier "Installation and Removal." The Engineer will be the sole judge as to whether devices are to be dismantled, picked up and reinstalled, or are to be adjusted or realigned.

701-5.02 Temporary Impact Attenuators (Installation and Removal): of the Standard Specifications is revised to read:

Temporary Impact Attenuation Devices shall include Sand Barrels and Energy Absorbing Terminals. Temporary Impact Attenuation Devices, 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, as specified herein and as shown on the plans, including furnishing the devices with replacement parts, installing, removing and stockpiling the devices.

Fifty percent of the contract unit price for temporary impact attenuators will be paid upon satisfactory installation.

Should it be necessary to dismantle, pick up and reinstall attenuation devices during construction, the work of removing and reinstalling the devices will be considered a new installation and paid for at 100 percent of the contract unit bid price.

Fifty percent of the contract unit price will be paid upon final removal.

The Engineer will be the sole judge as to whether devices are to be dismantled, picked up and reinstalled or are to be adjusted or realigned. No additional payment will be made for devices which are adjusted or realigned, the cost being considered as included in the contract unit price paid for Temporary Impact Attenuator "Installation and Removal."

Measurement and payment for furnishing materials, equipment and labor and repairing attenuation devices that are damaged by the traveling public will be made in accordance with the requirements of Subsection 109.04 of the specifications.

No measurement or direct payment will be made for furnishing replacement parts and repairing devices damaged by other than the traveling public.

701-6.05 Truck-Mounted Attenuators: of the Standard Specifications is revised to read:

The accepted quantities of truck-mounted attenuators or trailer-mounted attenuators, measured as provided above, will be paid for at the unit bid price for truck-mounted attenuators per day of work site protection, which rate shall be full compensation for the work, complete, including, but not limited to, furnishing all materials; equipment; attached arrow panel or changeable message board; and labor (including the operator); and maintaining and repairing the truck and truck-mounted attenuator, or trailer-mounted attenuator and host vehicle, as specified herein and on the project plans. No adjustment to the unit bid price for truck-mounted attenuators will be made when trailer-mounted attenuators are provided, such price being considered as full compensation for the work, as specified herein, regardless of which type of attenuator is used to protect the work site. It shall be the contractor's responsibility to replace any damaged or destroyed parts of the truck-mounted attenuator or trailer-mounted attenuator and host vehicle at no additional cost to the Department.

701-6.06 Flashing-Arrow Panels, and Changeable Message Boards: the second paragraph of the Standard Specifications is revised to read:

The accepted quantities of changeable message boards, measured as provided above, will be paid for at the unit bid price per day, which price shall be full compensation for the work, complete, including incidental grading; furnishing, operating, maintaining, and relocating the boards on the work site; and providing all necessary labor. Signs, sign stands, Type II barricades, or vertical panels and lights that are used to delineate changeable message boards shall be paid for at the respective unit bid prices.

701-6.07 Pilot Services, and Flagging Services: the last paragraph of the Standard Specifications is revised to read:

The accepted quantities of flagging services provided by the DPS officers, measured as provided above, will be paid for at the predetermined hourly rate of $65.26, as shown in the bidding schedule. Of this amount, $44.00 per hour shall be remitted to the DPS officer, and $12.75 per hour shall be remitted to DPS. The remaining $8.51 per hour represents profit and overhead for both the prime contractor and subcontractor. Such price shall be considered full compensation for the work. No additional payment will be made for costs in excess of the predetermined rate, for overtime hours, and for travel time to and from the project, such costs being considered as included in contract items.

(702ATTN, 01/26/16)

SECTION 702 ATTENUATION DEVICES:

702-2.03 Sand Barrel Crash Cushion: the third paragraph of the Standard Specifications is revised to read:

Modules shall be filled to the designated weight with clean concrete sand meeting the requirements of ASTM C33 or alternatively, sand (fine aggregate) meeting the requirements of Subsection 1006-2.03(B). The sand, when placed in the module, shall have a dry unit weight of from 80 to 105 pounds per cubic foot when tested in accordance with AASHTO T 19 (Rodding Method) and a moisture content of less than two percent, by weight.

(704THRMO, 8/24/11)

SECTION 704 - THERMOPLASTIC PAVEMENT MARKINGS:

704-1 Description: of the Standard Specifications is revised to read:

The work under this section shall consist of cleaning and preparing pavement surfaces and furnishing and applying either white or yellow thermoplastic reflectorized pavement markings using extrusion or ribbon dispensing devices of the required shape and thickness to the prepared pavement surface at the locations and in accordance with the details shown on the project plans, the manufacturer's specifications, and the requirements of these specifications.

704-2.02 Composition: of the Standard Specifications is revised to read:

(A) General:

The thermoplastic composition shall conform to the following requirements:

Component	Percent by Weight	
	White	Yellow
Binder (Min.)	20	20
Titanium dioxide (Min.)	10	-----
Yellow Lead-Free Pigment (Min.)	-----	1.5
Reflective glass inter-mix beads	30 – 45	30 – 45
Calcium carbonate or equivalent filler	20 – 42	20 - 42

The ingredients of the thermoplastic composition shall be thoroughly mixed and in a solid or sectionalized block, or free-flowing granular form. When heated in a melting apparatus, the

material shall readily liquefy into a uniform solution. This solution shall be free from all skins, dirt, foreign objects or any other ingredient which would cause bleeding, staining, blotting, or discoloration when applied to the bituminous or concrete pavement surfaces.

The thermoplastic formulation shall utilize an alkyd binder. The alkyd binder shall consist of a mixture of synthetic resins, at least one of which is solid at room temperature, and of high-boiling-point plasticizers. At least one third of the binder composition and no less than eight percent by weight of the entire material formulation shall be solid maleic-modified glycerol ester resin or solid maleic-modified pentaerythritol ester resin. The alkyd binder shall not contain any petroleum-based hydrocarbon resins.

(B) Reflective Glass Beads:

In addition to incorporating glass beads in the thermoplastic mix, glass beads shall be evenly applied to the surface of the molten material as specified in Subsection 704-3.02(G).

(C) Filler:

The filler shall be a white calcium carbonate or equivalent filler with a compressive strength of at least 5,000 pounds per square inch.

(D) Titanium Dioxide:

Titanium Dioxide shall conform to the requirements of ASTM D 476 for Type II (92 percent).

(E) Yellow Pigment:

The yellow pigment shall be heat resistant and lead free. The type of yellow pigment shall be at the option of the manufacturer provided that the material conforms to all color requirements in a stable and durable fashion as specified herein.

704-2.03(C) Retroreflectance: of the Standard Specifications is revised to read:

The white and yellow thermoplastic materials shall have the following minimum retroreflectance values at 86.5 degrees illumination angle and 1.5 degrees observation angle as measured by the Department, using an LTL-X Delta Retrometer or similar device, within 30 days after application to the roadway surface:

Product	Retroreflectance (millicandelas)
White	350
Yellow	200

704-2.03(E) Water Absorption and Specific Gravity: the last paragraph of the Standard Specifications is revised to read:

The specific gravity of the material, as determined by Section 16 of AASHTO T 250, shall be between 1.85 and 2.15.

704-2.03 Physical Characteristics of the Composition: of the Standard Specifications is modified to add:

(P) Color Stability:

Using accelerated weathering per ASTM G 155, Cycle 1, white color stability shall be measured for no color change after 500 hours of exposure, and yellow color stability shall be measured for no color change after 1000 hours of exposure.

704-2.04 Physical Requirements for Glass Beads: the second paragraph of the Standard Specifications is revised to read:

The inter-mix beads shall conform to AASHTO M 247 Type I, and may be coated or uncoated as recommended by the manufacturer. If uncoated beads are used, the thermoplastic formulation shall be configured to minimize settling of the intermix beads when the material is heated and applied.

Drop-on beads shall conform to the gradation requirements of AASHTO M 247 for Type I and Type III beads.

704-3.02(B) Material Selection and Compatibility: the second, third, and fourth paragraphs of the Standard Specifications are revised to read:

All materials shall be properly packaged and stored. Each container to be used on the project shall be clearly labeled to indicate the following information:

Nature, type, and formulation of the material;
Manufacturer, batch number, and date of manufacture;
Application requirements and constraints; and
Compatibility requirements and constraints, particularly those pertaining to equipment, storage, and other materials to be used.

Preparation and application equipment shall be in accordance with the plans and specifications, and shall conform to the recommendations of the materials manufacturer.

704-3.02(G) Thermoplastic Application: the first and second paragraphs of the Standard Specifications are revised to read:

The thermoplastic pavement marking material shall be extruded on to the pavement surface at a material temperature between 385 and 415 degrees F, depending on manufacturer's recommendations, ambient air and pavement temperatures, and the nature of the pavement surface. The contractor shall verify temperature requirements with a non-contact infrared thermometer as directed by the Engineer.

The thermoplastic material temperatures shall not exceed 450 degrees F. Material temperatures exceeding 440 degrees F shall be allowed for short periods of time; however, in no case shall the material be held for more than four hours at temperatures above 440 degrees F. Total heating time for any batch of material shall not exceed six hours. The contractor shall note in the temperature log the time when each batch of thermoplastic material is first heated. The start of heating time shall also be marked on the side of the kettle to which it applies.

704-3.02(G) Thermoplastic Application: the fifth and sixth paragraphs of the Standard Specifications are revised to read:

Drop-on glass beads shall be mechanically deposited into the thermoplastic material immediately after the thermoplastic marking is applied, using a double drop method. Each drop shall be comprised of a minimum of six pounds of glass beads per 100 square feet of line (200 linear feet of six-inch stripe). One drop shall be Type I glass beads and the other drop shall be Type III glass beads. The contractor shall determine which type of glass bead is to be applied in each drop; however, both types shall be used. Double drop methods using all Type I or Type III beads will not be allowed.

The dispensers shall evenly distribute the beads in the thermoplastic material. Both Type I and Type III glass beads shall be embedded in the surface of the thermoplastic to a depth of between 50 and 60 percent of the bead diameter. If the glass beads do not adhere to the thermoplastic marking, operations shall be stopped until the problem has been corrected. All markings which do not meet the requirements of Subsection 704-2.03(C), as determined by the Engineer, shall be removed by the contractor and replaced at no additional cost to the Department.

Unless otherwise specified, all thermoplastic pavement markings shall be extruded, and shall be 0.090 ± 0.002 inches thick. The thermoplastic thickness shall be uniform and consistent throughout the total length of the marking project.

704-3.02(G) Thermoplastic Application: the last two paragraphs of the Standard Specifications are revised to read:

The finished thermoplastic line shall have well defined edges and be free from waviness. Lateral deviation of the thermoplastic line shall not exceed one inch in 100 feet. The longitudinal deviation of a painted segment and gap shall not vary more than six inches in a 40-foot cycle. The actual width of line shall be within the limits specified in the following table, according to the width of line called for on the plans:

Plan Width	Actual Width
4 inches	4 to 4-1/2 inches
8 inches	8 to 9 inches
Over 8 inches	± 1 inch

After application and sufficient drying time, the thermoplastic marking shall show no appreciable deformation or discoloration under local traffic conditions with air and road temperatures ranging from -10 to 180 degrees F. The drying time shall be defined as the minimum elapsed time, after application, when the thermoplastic pavement markings shall have and retain the characteristics required herein, and after which normal traffic will leave no impression or imprint on the newly applied marking. When applied within a temperature range of 400 ± 15 degrees F and thickness of 0.090 inches, the material shall set to bear traffic in not more than two minutes when the air and pavement surface temperatures are approximately 50 ± three degrees F and not more than 10 minutes when the air and road surface temperatures are approximately 90 ± three degrees. The Engineer may conduct field tests in accordance with ASTM D 711 to verify actual drying times.

(705PVMRK, 8/18/14)

SECTION 705 PREFORMED PLASTIC PAVEMENT MARKING: the title and text of the Standard Specifications are revised to read:

SECTION 705 PREFORMED PAVEMENT MARKING:

705-1 Description:

(A) General:

The work under this section shall consist of furnishing all materials, preparing the pavement surface and applying preformed reflectorized pavement marking tape, and preformed thermoplastic arrows, symbols, and legends to the pavement in accordance with the details shown on the project plans and the requirements of the specifications.

All markings shall be reflectorized with glass beads or other retroreflective particles uniformly distributed throughout the entire cross section and bonded to the top surface of the material. All markings shall comply with the retroreflectance requirements of Subsection 705-2.05. When glass beads are used to reflectorize markings, the glass bead properties shall also comply with Subsection 705-2.06.

Certificates of Compliance conforming to the requirements of Subsection 106.05 shall be submitted.

Preformed pavement marking tape and preformed thermoplastic arrows, symbols and legends shall be limited to the following applications unless otherwise specified in the contract documents:

A list of approved manufacturers and distributers of Type I, II, III, and IV preformed pavement marking materials is shown on the Department’s Approved Product List (APL). The most recent version is available on the Department’s website from the ADOT Research Center, through its product evaluation program.

(B) Preformed Pavement Markings - Type I (Permanent):

Type I shall be a general purpose high durability retroreflective, pliant, polymer film for preformed long line and short line striping, arrows, symbols, and legends to be used for final permanent pavement markings. Type I shall be capable of performing as specified herein when subjected to high traffic volumes and severe wear conditions such as repeated shear action from crossover or encroachment on edge and channelization lines, starting, stopping, and turning movements.

(C) Preformed Pavement Markings - Type II (Temporary – Removable):

Type II shall be a removable preformed retroreflective pavement marking capable of performing as temporary pavement markings for long line and short line striping, arrows, symbols, and legends for the duration of a normal construction season. It shall be a nonmetallic mixture of high quality materials and shall be capable of being removed intact or in large pieces either manually or with a recommended roll up device. Type II shall be used on finished pavement surfaces where traffic control or channelization through the construction zone is temporary requiring removal prior to final pavement markings.

(D) Preformed Pavement Markings - Type III (Temporary –Nonremovable):

Type III shall be a nonremovable preformed retroreflective film on a conformable metallic backing capable of performing as temporary long line pavement markings for the duration of a normal construction season. Type III shall be used in construction zones where removal is unnecessary due to placement of future paving courses or where pavement will be removed, obliterated or abandoned at the completion of the project.

(E) Preformed Thermoplastic Pavement Markings – Type IV (Permanent):

Type IV shall be a high durability, retroreflective, pliant, preformed thermoplastic product to be used for final permanent arrows, symbols, legends, and short line (transverse) stripes. Type IV shall be capable of performing as specified herein when subjected to high traffic volumes and severe wear conditions such as repeated shear action from crossover or encroachment on edge and channelization lines, starting, stopping, and turning movements.

705-2 Materials:

705-2.01 Preformed Pavement Markings - Type I (Permanent):

(A) General:

Type I preformed pavement marking material shall consist of a homogeneous, extruded, pre-fabricated white or yellow film of specified thickness and width that shall be capable of being affixed to Portland cement concrete or non-bleeding bituminous pavements per the manufacturer's requirements, either on the pavement surface or, when specified on the plans, inlaid into a cut-out groove. The preformed plastic film shall be weather resistant and through

normal traffic wear shall show no appreciable fading, lifting, loss of skid resistance, or shrinkage or significant tearing, roll back, or other signs of poor adhesion throughout the useful life of the marking.

When extruded, the plastic film without adhesive shall be a minimum of 0.065 inch thick. The plastic film as supplied shall be of good appearance, free of cracks and discolorations, and the edges shall be clean-cut and well defined. The plastic film shall be supplied complete with a precoated, factory-applied pressure sensitive adhesive backing with a protective release paper, or it may be furnished with separate adhesive as recommended by the manufacturer. A surface preparation primer shall also be applied if recommended by the manufacturer. Whether the adhesive is precoated or supplied separately, the adhesive shall be such as to allow the plastic film to be repositioned on the pavement surface to which it is applied before permanently fixing it in its final position with a downward pressure.

All white and yellow Type I pavement markings shall be warranted by the manufacturer to retain color and adherence to the pavement, and to retain a minimum retroreflectance of not less than 100 millicandelas/m^2/lux for a minimum of two years for symbols, legends, and transverse pavement markings, and five years for longitudinal pavement markings. The warranty period shall begin after all pavement markings are installed and accepted by the Department. Failure to meet the specified retroreflectance on at least 90 percent of the longitudinal pavement marking in any 1000-foot segment, or 90 percent of a legend, symbol, or transverse pavement marking shall be considered a complete failure of that marking. The warranty shall state that the manufacturer will provide new material to replace defective Type I markings at no additional cost to the Department. The warranty shall also state that the replacement material shall conform to these specifications. The contractor shall submit a copy of the manufacturer's warranty to the Engineer along with the certificate of compliance required in subsection 705-1(A).

(B) Composition Requirements:

The preformed plastic pavement marking material shall consist of the following components:

Minimum Percent by Weight	
Resins and Plasticizers	20
Pigments	30
Reflective Glass Beads*	20*
*Applicable only when glass beads are used to reflectorize Type I markings.	

(C) Physical Requirements:

(1) Color:

The pigments shall be selected and blended to provide a white or yellow marking film which conforms to standard highway colors, when tested according to ASTM D 6628, throughout the expected life of the film.

(2) Bend Test:

The plastic film shall be sufficiently flexible so that at a temperature of 78 to 82 degrees F an unmounted piece of material (without adhesive and paper backing), three by six inches in size, may be bent over a one-inch mandrel until the end faces are parallel and one inch apart without showing any fracture lines in the uppermost surface.

(3) Tensile Strength:

The plastic film (without adhesive or paper backing) shall have a minimum tensile strength of 40 pounds per square inch when a specimen six inches long by one inch wide is tested in accordance with the requirements of ASTM D 638. The rate of pull of the test shall be 0.25 of an inch per minute. The test shall be conducted at a temperature between 70 and 80 degrees F. The elongation shall be no greater than 75 percent.

(4) Plastic Pull Test:

A six-inch long by one-inch wide section of the plastic film (without adhesive and paper backing) shall support a dead load weight of four pounds for not less than five minutes at a temperature between 70 and 80 degrees F.

(5) Abrasion Resistance:

The plastic film shall have a maximum loss in weight of 0.25 grams in 500 revolutions when abraded according to ASTM D 4060.

(6) Skid Resistance:

The surface of the material shall provide a minimum resistance value of 45 BPN when tested according to ASTM E 303.

705-2.02 Preformed Pavement Markings - Type II (Temporary - Removable):

Type II preformed pavement markings shall be a non-metallic mixture of conformable materials and pigments intended for marking applications where removability is required. The marking material shall be white or yellow retroreflective film conforming to standard highway colors.

The markings shall be precoated with a pressure sensitive adhesive capable of adhering to roadway surfaces under climatic and traffic conditions normally encountered in the construction work zone when applied in accordance with the manufacturer's instructions and without the use of heat, solvents or other additional adhesives. Newly applied markings shall be capable of being immediately exposed to traffic without pickup or distortion by vehicles. The markings shall be weather resistant and through normal traffic wear shall show no appreciable fading, lifting, shrinkage, tearing, loss of skid resistance, roll back or other signs of poor adhesion throughout the useful life of the marking.

Temporary pavement markings shall be removable from asphalt and concrete pavement intact or in large sections by following the manufacturer's instructions. It shall be removable, either manually or with a roll-up device, at pavement temperatures above 40 degrees F without the use of heat, solvents, grinding or sand blasting. Visible adhesive residue remaining after removal of temporary pavement markings shall be easily removable without damaging or scarring the pavement surface and without the use of solvents or grinding.

When extruded, pavement marking material without adhesive shall be a minimum of 0.045 inches thick. When supplied, the material shall be of good appearance, free from cracks, and edges shall be true, straight, and unbroken.

705-2.03 Preformed Pavement Markings - Type III (Temporary – Nonremovable):

Type III preformed pavement markings shall be a retroreflective film on a conformable metallic backing intended for marking applications where removal is not a requirement. The marking material shall be white or yellow conforming to standard highway colors.

The markings shall be precoated with a pressure sensitive adhesive capable of adhering to roadway surfaces under climatic and traffic conditions normally encountered in the construction work zone when applied in accordance with the manufacturer's instructions and without the use of heat, solvents or other additional adhesives. Newly applied markings shall be capable of being immediately exposed to traffic without pickup or distortion by vehicles. The markings shall be weather resistant and through normal traffic wear shall show no appreciable fading, lifting, shrinkage, tearing, loss of skid resistance, roll back or other signs of poor adhesion throughout the useful life of the marking.

705-2.04 Preformed Thermoplastic Pavement Markings – Type IV (Permanent):

(A) General:

Preformed thermoplastic pavement markings shall be a resilient white, yellow, or other color thermoplastic material, composed of an ester-modified resin in conjunction with pigments, binders and glass beads that have been factory-produced as a finished product. The markings shall be resistant to the detrimental effects of motor fuels, lubricants, hydraulic fluids, and antifreeze. Preformed thermoplastic pavement markings shall be weather resistant and, through normal traffic wear, shall show no appreciable fading, lifting, or shrinkage or significant tearing, roll back, loss of skid resistance, or other signs of poor adhesion throughout the useful life of the marking.

The markings shall be capable of conforming to pavement contours, breaks and faults through the action of traffic at normal pavement temperatures. The marking shall have resealing characteristics, such that it is capable of fusing with itself or previously applied, worn thermoplastic pavement markings when heated with a common propane torch. The material shall not be brittle and must be sufficiently cohesive and flexible for one person to carry without

danger of fracturing the material prior to application. Surface preparation primer shall also be applied if recommended by the manufacturer.

The material shall be supplied at a minimum thickness of 0.090 inches (90 mils). Arrows, symbols, legends, and short lines shall be capable of being affixed to bituminous and Portland cement concrete pavements by the use of the heat of a common propane torch. Any preheating requirements shall also be met by the use of the heat of a common propane torch and as recommended by the manufacturer.

Type IV preformed thermoplastic markings shall be suitable for use for one year after the date of manufacture when stored in accordance with the manufacturer's recommendation. Type IV marking materials supplied to the jobsite shall clearly display the date of manufacture, and shall be applied within one year of this date.

(B) Composition Requirements:

The preformed thermoplastic pavement marking material shall consist of the following components:

Component	Percent by Weight	
	White	Yellow
Binder (Min.)	18	18
Titanium dioxide (Min.)	10	-----
Yellow Lead-Free Pigment (Min.)	-----	1.5
Reflective glass inter-mix beads	30 – 45	30 – 45

(C) Physical Requirements:

(1) Color:

The pigments shall be selected and blended to provide a white or yellow preformed marking that conforms to standard highway colors, when tested according ASTM D 6628, throughout the expected life of the preformed marking.

(2) Bend Test:

The preformed thermoplastic shall have flexibility at 50 degrees F such that when a specimen, measuring six inches long by one inch wide, is bent through an arc of 90 degrees at a uniform rate in 10 seconds (9 degrees per second) over a one-inch mandrel, no cracking occurs in the test specimen. The specimen shall be conditioned prior to testing at 50 ± two degrees F for a minimum of four hours. At least two specimens tested shall meet the flexibility requirements at 50 degrees F for a passing result.

(3) Tensile Strength:

The preformed thermoplastic material shall have a minimum tensile strength of 150 pounds per square inch when tested in accordance with the requirements of ASTM D 638. The rate of pull of the test shall be 10 to 12 inches per minute. The test shall be conducted at a temperature between 70 and 80 degrees F. The elongation shall be no greater than 20 percent.

(4) Bond Test:

The material shall exhibit a bond strength to Portland cement concrete pavement equal to or exceeding 180 pounds per square inch when tested at 73 ± three degrees F in accordance with the ASTM D 4796.

(5) Abrasion Resistance:

The plastic film shall have a maximum loss in weight of 0.25 grams in 500 revolutions when abraded according to ASTM D 4060.

(6) Skid Resistance:

The surface of the material shall provide a minimum resistance value of 45 BPN when tested according to ASTM E 303.

(7) Impact Resistance:

When tested in accordance with ASTM D 256, Method A, a one-inch by one-inch by six-inch sample shall not break when an impact energy of at least 1.0 joule is applied. The test specimen shall be prepared in accordance with ASTM D 4960 and shall not be notched.

705-2.05 Retroreflectance:

All white and yellow pavement marking materials shall have the following minimum retroreflectance values when measured by the Department, using an LTL-X Delta Retrometer or similar device, within 30 days after application to the roadway surface:

Table 1	
Long Line Markings	**Retroreflectance (millicandelas/m^2/lux)**
White	500
Yellow	300

Table 2	
Arrows, Symbols, Legends, Short Lines	**Retroreflectance (millicandelas/m^2/lux)**
White	350
Yellow	200

For sections determined to be deficient in retroreflectivity, the pavement markings shall be removed in a manner approved by the Engineer, and new markings shall be re-applied in accordance with the manufacturer's recommendations. For long lines, the limits of re-application shall start from the location of a passing test, across the failure area(s), to the next passing test location. The minimum length of reapplication shall be 0.4 miles. For arrows, symbols, legends and short lines, the entire defective unit shall be re-applied.

705-2.06 Glass Bead Properties:

(A) General Requirements:

When glass beads are used to achieve retroreflectivity, the beads shall be manufactured from glass of a composition designed to be highly resistant to traffic wear and to the effects of weathering.

(B) Physical Requirements:

(1) Roundness:

The roundness of the glass beads shall be determined in accordance with the requirements of ASTM D 1155. A minimum of 75 percent of the beads shall be water-white true spheres free from imperfections of all types including air inclusions, film, scratches, clusters, and surface scoring.

(2) Refractive Index:

The glass beads used with the preformed pavement marking material shall have a minimum refractive index of 1.50 when tested by a liquid immersion method (Becke Line Method or equivalent, as specified in ASTM C 1648) at a temperature of 25 $\pm$ 5 °C.

(3) Gradation:

The gradation of the glass beads shall be such that performance requirements for the preformed pavement marking material shall be met.

(4) Heavy Metal Concentration:

Heavy metal concentration in glass beads shall be as specified in the following table, when tested by an independent laboratory, approved by the Engineer, using EPA Method 3052 and EPA Method 6010B. A Certificate of Analysis conforming to Subsection 106.05 shall be furnished to the Engineer prior to use.

Heavy Metal	**Concentration**
Arsenic	< 75 ppm
Antimony	< 75 ppm
Lead	< 100 ppm

705-3 Construction Requirements:

The contractor shall install preformed pavement markings at the locations shown on the project plans, as specified in the Special Provisions, or as directed by the Engineer. Preformed marking tape shall be applied manually or with the tape applicators approved by the tape manufacturer. All markings shall be applied in accordance with the manufacturer's recommendations and as specified herein. Preformed pavement markings shall not be applied over other markings or old paint unless specified in the project plans, directed by the Engineer, or allowed by the manufacturer and approved by the Engineer prior to application.

Preformed pavement markings shall be applied to surfaces that are free of moisture and thoroughly cleaned of loose, foreign or other material that may adversely affect bonding. The contractor shall remove all dirt, dust, grease, oil or other detrimental material from the road surface. The method of cleaning the surface is subject to approval by the Engineer and shall include sweeping and the use of high-pressure air spray.

Newly placed asphaltic concrete surfaces need not be cleaned unless, in the opinion of the Engineer, the surface has become contaminated to the extent that cleaning is necessary to provide proper bonding.

When preformed markings are to be applied to new Portland cement concrete pavement, any curing compound present shall be removed by means of a high-pressure water jet or sandblasting, followed by sweeping and high-pressure air spray. The curing compound shall be removed at least two inches beyond the entire perimeter of each marking to be installed. In addition, a manufacturer approved primer-sealer shall be applied to both old and new Portland cement concrete pavement prior to application of preformed markings. The primer-sealer shall be applied at the manufacturer's recommended application rates prior to placing the preformed marking. The primer-sealer shall be allowed to set up for the manufacturer's specified cure or evaporation time, and shall be free of solvent and water when the preformed marking is applied.

Preformed pavement markings shall be applied immediately after the surface has been prepared or as soon as possible after placement and completion of new pavement. When Type I, II, or III markings are used, the road surface temperature, at the time of application, shall not be less than 60 degrees F and rising and the pavement surface shall be absolutely dry. For Type III temporary markings, the weather conditions noted above may be waived, at the Engineer's discretion, to obtain a traffic stripe prior to allowing traffic to traverse the roadway. Type II markings shall not be installed within 24 hours of any rainfall. In addition, if the possibility of rain is anticipated, as predicted by the National Weather Service, during the time required by the Engineer for installation of Type II markings, the contractor shall apply primer sealer prior to application of the marking, regardless of the type or age of pavement surface. Type IV markings shall be applied in accordance with the manufacturer’s recommendations for minimum temperature.

Despite the specified or recommended minimum surface temperature and surface condition, the Engineer may, at any time, 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 preformed pavement marking.

The contractor shall use butt splices only and shall not overlap the marking material. All markings shall be thoroughly tamped with approved mechanical tampers.

For preformed thermoplastic pavement markings requiring heat application on asphaltic concrete surfaces, the materials shall be applied using the propane torch method recommended by the manufacturer.

The contractor shall immediately correct all misalignments when so ordered by the Engineer. The misaligned portions shall be removed and reinstalled in accordance with these specifications. All areas marked with preformed pavement markings shall be ready for traffic immediately after application.

Type II or Type III temporary pavement markings shall be maintained and replaced when necessary by the contractor until they are covered with the next overlay course or are removed because they are no longer applicable. The temporary pavement markings shall be removed immediately when no longer needed for traffic control or when the temporary pavement markings will be in conflict with the succeeding traffic pattern. This removal includes the removal of pronounced markings caused by the adhesive across lanes, transitions or tapers. Removable temporary marking material shall not be burned or ground off. Preformed pavement markings shall be removed by methods recommended by the manufacturer and approved by the Engineer. Residual adhesive, ghosting, shadows or pavement scarring which might cause confusion during darkness or adverse weather conditions shall be removed immediately by the contractor when so ordered by the Engineer.

When Type I permanent pavement markings for final arrows, symbols, legends, and short lines are specified, Type I or Type IV pavement markings may be used, at the option of the contractor.

When the plans require Type I preformed long line or short line pavement markings to be placed in a groove, the contractor shall construct the sawcut groove in accordance with the requirements of the special provisions.

The application of preformed pavement markings shall be in accordance with the recommendations of the manufacturer of the material and these specifications. After application the pavement markings shall be immediately ready for exposure to traffic.

705-4 Method of Measurement:

Measurement of preformed pavement marking long lines and short lines will be made by the linear foot along the center line of the pavement line and will be based on a four-inch wide

stripe. Measurement for pavement lines with a plan width greater or less than the basic four inches will be made by the following method:

$$\frac{\text{Plan Width of Striping (inches)} \times \text{Linear Feet}}{\text{four (inches)}}$$

Preformed pavement marking symbols, such as diamonds; single, double, or triple arrows; or freeway arrows, will be measured by each unit applied, regardless of configuration. Each pavement symbol, as shown on the plans, will be considered a unit.

Preformed pavement marking legends, defined as a complete letter grouping such as "SCHOOL," "XING," "STOP," “RR,” or "ONLY", will be measured by each unit applied. Each pavement legend, as shown on the plans, will be considered a unit.

Preformed pavement route-to-route freeway legends, defined as complete number and directional letter groupings, will be measured by each unit applied. Each complete route-to-route freeway legend, as shown on the plans, will be considered a unit.

Removal of curing compound from new Portland cement concrete pavement and the application of primer-sealer shall each be measured by the linear foot for striping lines regardless of width, or unit each for symbols and legends, and in accordance with the items of work established in the bid schedule.

705-5 Basis of Payment:

The accepted quantities of preformed pavement markings, measured as provided above, will be paid for at the contract unit price for the type specified in the bidding schedule, which price shall be full compensation for the item, complete in place, including necessary pavement cleaning, primer, removal of Type II temporary markings, and maintaining Types II and III temporary markings in construction work zones.

No additional payment will be made for placement of Type I long line and short line pavement markings in sawcut grooves, the costs being considered as included in the contract price for the marking. Measurement and payment for sawcut grooves shall be in accordance with the special provisions.

Payment will be made for Type I and Type IV permanent pavement symbols, legends and short lines at the contract unit price, regardless of whether Type I or Type IV pavement markings are used.

The accepted quantities for removal of curing compound from new Portland cement concrete pavement and the application of primer-sealer, measured as provided above, will be paid for at the respective contract unit prices, under the items of work established in the bid schedule.

When Type II or III temporary preformed pavement markings are required for maintaining traffic through a construction work zone and are approved for use by the Engineer, but are not

listed as pay items in the bidding schedule, they will be paid for in accordance with the provisions of Subsection 109.04.

Additional payment will be made for replacement of Type II or Type III temporary preformed pavement markings when the contractor is required by the Engineer to install marking materials on distressed pavements or during adverse weather conditions and subsequent failure occurs. Distressed pavement conditions are defined as alligator cracking, bleeding, or spalling of bituminous pavements and spalling of PCC pavements. Adverse weather conditions are defined as any occurrence where application is required at pavement temperatures less than 60 degrees F or when precipitation occurs within 24 hours before or after application. The Department will pay for the replacement, where failures occur, at the contract unit price for the initial occurrence.

In the event a second failure occurs when markings have been reapplied on distressed pavements or under weather conditions described above, the Engineer shall determine if conditions require primer, alternate methods of marking, or reapplication of preformed markings. Preformed markings will be paid for at the contract unit price. Primers or other methods of markings deemed necessary by the Engineer to remedy second failures will be paid for in accordance with the provisions of Subsection 109.04.

(708PPM, 6/15/09)

SECTION 708 - PERMANENT PAVEMENT MARKINGS:

708-2.02(B) **Physical Requirements:** of the Standard Specifications is modified to add:

(6) Heavy Metal Concentration:

Heavy metal concentration in glass beads shall be as specified in the following table, when tested by an independent laboratory, approved by the Engineer, using EPA Method 3052 and EPA Method 6010B. A Certificate of Analysis conforming to Subsection 106.05 shall be furnished to the Engineer prior to use.

Heavy Metal	Concentration
Arsenic	< 75 ppm
Antimony	< 75 ppm
Lead	< 100 ppm

708-3.02 **Application:** the last paragraph of the Standard Specifications is revised to read:

Tolerances for Placing Paint, Beads, and Primer:

The length of painted segment and gap shall not vary more than six inches in a 40-foot cycle.

The finished line shall be smooth, aesthetically acceptable and free from undue waviness.

Painted lines shall be four, eight, or 12 inches wide as shown on the plans with a tolerance of ± 1/8 inch and shall be placed at a minimum rate of 16 gallons per mile for a solid four-inch line and four gallons per mile for a broken four-inch line, based on a 10-foot stripe and a 30-foot gap (40-foot cycle aggregate).

Glass reflectorizing beads shall be applied on the wet paint at a minimum rate of eight pounds per gallon of paint.

Wet thickness shall not be less than 15 mils, unless otherwise shown on the plans.

(735LOOP, 2/07/13)

SECTION 735 DETECTORS: of the Standard Specifications is revised to read:

735-1 Description:

The work under this section shall consist of furnishing and installing traffic signal loops, preformed loop detectors, complete or partial traffic data loop and weigh-in-motion (WIM) systems, and pedestrian detectors at the locations shown on the project plans and in accordance with the details shown on the plans and the requirements of the specifications.

735-2 Materials:

735-2.01 Vehicle Detectors:

(A) General:

Detectors shall conform to the minimum acceptable design and operating requirements of these specifications for detecting the presence, passage, speed, weight, and classification of vehicles.

Except as specified in Subsection 735-2.01(F), all materials shall be furnished by the contractor. The contractor shall submit a complete list of all required project material for approval, as specified in Subsection 730-4 of the specifications.

(B) Loop Detectors:

The detector loop dimensions shall be as specified on the Standard Drawings.

Loop detector wire shall be 14 AWG HDPE polyethylene insulated conductors conforming to IMSA 51-7, as shown on the Standard Drawings.

(C) Lead-in Cable:

For Type SA and SB speed/classification detectors specified in Subsection 735-3.02(D), lead-in cable from the pull box to the cabinet shall conform to IMSA specification 50-2, except as modified on the Standard Drawings.

(D) Conduit:

Conduit shall be rigid nonmetallic PVC conforming to the requirements of Subsection 732-2.02 of the specifications. Conduit shall be large enough to contain the number of wires required, but not less than the diameters shown on the Standard Drawings.

(E) Cabinets:

Traffic monitoring site cabinets for Type SA and SB speed/classification and WIM detectors shall be pole-mounted Type MPD control cabinets as shown on the Standard Drawings, and as specified in Subsection 734-2.03 of the specifications, except that no pre-wiring for AC or DC electric, police panel, or provisions for fan or light shall be required.

Warranties shall comply with Subsection 106.13 of the specifications.

(F) Department Furnished Materials:

When required, the Department will furnish detectors for speed/classification systems (piezoelectric sensors-Class 2) and weigh-in-motion systems (piezoelectric sensors–Class1, or quartz piezoelectric sensors) with pre-attached lead-in cables. For such installations, the Department will also furnish the piezo grout sealant for the sensor portion of speed/classification and weigh-in-motion detectors. The contractor shall furnish all other sealants.

The contractor shall notify the Traffic Monitoring Team of the Multimodal Planning Division (MPD) at (602) 712-8598 a minimum of 15 working days prior to scheduled installation of the Department-furnished piezoelectric sensors. The required sensors and grout will be provided at the Department's central Phoenix location, at 2501 W. Georgia, Phoenix, AZ 85017, or at the appropriate District Office, as specified by the Department at the time of contact.

735-2.02 Pedestrian Push-Button Detectors:

The pedestrian detector shall be a push-button switch mounted inside an approved push-button housing, as shown on the Standard Drawings.

Pedestrian push-button signs shall be made with porcelain enameled 20 gage sheet steel, 9 inches by 12 inches in size. Corners of the sign shall be finished round for safety and neat

appearance. Each hole shall be provided with a brass grommet. Instructions on the signs shall be black enameled letters or symbols on a white enamel background. The legend shall be as shown on the plans or as specified in the Special Provisions.

735-2.03 Blank

735-2.04 Saw Cut Sealant:

Saw cut sealants shall be a flexible encapsulant intended for sealing and protecting vehicle detector loop wires installed in saw cuts.

(A) Two-Part Epoxy Filler Sealant:

Two-part epoxy joint filler sealant shall be a 100-percent solids, flexible, two-component, solvent free, epoxy resin/hardener system for use as a saw cut sealant in asphaltic concrete pavements and Portland cement concrete pavements.

Materials shall comply with the requirements of Subsection 1015-1 of the Specifications.

The epoxy system shall be specifically designed for the intended application according to the product literature provided by the manufacturer.

The epoxy system shall be of sufficient strength and hardness to withstand stress and abrasion from vehicular traffic, while remaining flexible enough to provide stress relief under thermal movement and protect the loop wire from moisture penetration. It shall also be moisture insensitive to allow effective application to damp pavements. No standing water is permitted on the surfaces to which the epoxy system is to be applied.

The epoxy system shall be designed to enable vehicular traffic to pass over properly filled saw cuts immediately after installation without tracking or stringing of the material.

Properly installed and cured epoxy systems shall exhibit resistance to the effects of weather, motor oils, gasoline, anti-freeze solution, brake fluid, deicing chemicals, and salt in such a manner that the performance of the vehicle detector loop wire is not adversely affected.

The epoxy system shall be designed for roadway installation when the surface temperature is a minimum of 40 degrees F and rising. The cured epoxy system shall be temperature stable and exhibit no degradation in performance throughout the ambient pavement temperature ranges experienced within the State of Arizona.

The components of the epoxy system shall have a minimum shelf life of 12 months in original unopened, undamaged containers, when stored in a cool dry environment, as recommended by the manufacturer.

The epoxy system shall meet the following requirements:

Property	Test Method	Requirements
Mixing Ratio; Part A to Part B	-	1 to 1 by volume
Viscosity, centipoises	ASTM D 2393-86	4000 to 8000
Pot Life, minutes	ASTM C 881	12 to 20
Cure Time, minutes	ASTM C 679	60 maximum, Tack Free
Hardness (Shore D)	ASTM D 2240	35 to 65
Tensile Elongation, %	ASTM D 638	50 minimum
Water Absorption, % (24 hrs)	ASTM D 570	1 maximum
3% Salt Water Absorption, % (24 hrs)	-	0.03 to 0.20
Oil Absorption, % (24 hrs)	ASTM D 471	0.01 to 0.02
Gasoline Absorption, % (24 hrs)	-	0.05 to 0.90

(B) One-Part Elastomeric Sealant:

One-part elastomeric sealant may be used to seal saw cuts in Portland cement concrete pavement and lean concrete base.

The sealant shall provide compressive yield strength to withstand normal vehicular traffic as well as sufficient flexibility to withstand normal movement in concrete pavements, while protecting the loop wire from moisture penetration.

The encapsulant shall be a one-part elastomeric compound requiring no mixing, measuring or application of heat prior to or during its installation.
The encapsulant shall, within its stated shelf life in original undamaged packaging, cure only in the presence of moisture. The rate of cure will, therefore, depend upon temperature and relative humidity at the time of installation. Cool dry weather will slow curing whereas warm, humid weather will accelerate curing.

The encapsulant shall be designed to enable vehicular traffic to pass over the properly filled saw cut immediately after installation without tracking or stringing of the material. The encapsulant shall form a surface skin allowing exposure to vehicular traffic within 30 minutes at 75 degrees F and completely cure to a tough, rubber-like consistency in two to seven days after installation.

Properly installed and cured encapsulant shall exhibit resistance to effects of weather, vehicular abrasion, motor oils, gasoline, anti-freeze solution, brake fluid, deicing chemicals and salt normally encountered, in such a manner that the performance of the vehicle detector loop wire is not adversely affected.

The cured encapsulant shall be temperature stable and exhibit no degradation in performance throughout the ambient pavement temperature ranges experienced within the State of Arizona.

The encapsulant shall exhibit minimal shrinkage during or after its installation, and in no manner affect the performance characteristics of the material.

The encapsulant shall be designed to permit clean-up of material and application equipment, prior to curing of the encapsulant, with a suitable non-flammable solvent. Should any encapsulant material be allowed to cure in the application nozzle, it shall be able to be pulled out as a solid plug.
The encapsulant shall have a minimum 12-month shelf life in undamaged original containers when stored in a cool, dry environment.

The encapsulant shall be designed for roadway installation when the surface temperature is between 40 and 140 degrees F.

The encapsulant shall have the following physical properties in its uncured and cured states.

Uncured (Wet) Encapsulant		
Property	**Requirement**	**Test Procedures**
Weight	10.1 ± 0.3 pounds/gallon	A. Weight/Gallon
Total Solids by Weight	75 – 85%	B. Determination of Non-Volatile Content
Viscosity	10,000 - 85,000 centipoise	C. Dynamic Viscosity
Drying Time	Touch: 24 hrs. maximum Complete: 30 hrs. max.	D. Tack-Free Time

Cured Encapsulant		
Property	**Requirement**	**Test Procedure**
Hardness (Indentation)	65 – 85	E. Rex hardness
Tensile Strength	500 psi minimum	F. Tensile & Elongation
Elongation	300% minimum	

(C) Hot Applied Rubberized Sealant:

Hot applied rubberized sealant may be used to seal saw cuts in asphaltic concrete and in lean concrete base. It shall be suitable for use as a sealant for traffic loop saw cuts and be non-tracking under traffic. At application temperatures, the traffic loop sealant shall be a thin, free flowing fluid which penetrates saw cuts and self-levels permitting uniform application. The sealant shall be melted and applied to pavements using a pressure feed melter unit. Pour pot application is not acceptable. The sealant shall be a relatively stiff sealant but shall remain flexible at low pavement surface temperatures. The test results shall conform to the following specifications for the loop detector sealant.

Test	**Specification**
Penetration: 125 ^{o}F, 50g, 5s	50 maximum
Penetration: 77 ^{o}F, 100g, 5s	10 – 25

Test	Specification
Softening Point:	210 ^{o}F minimum
Ductility: 77 ^{o}F	15 cm minimum
Mandrel Bend: 0 ^{o}F, 90° Arc, 10s, 3/4 inch diameter	Pass 2 of 3
Recommended Pour Temp:	380 ^{o}F
Safe Heating Temp:	420 ^{o}F
Brookfield Viscosity: 400 ^{o}F	7,500 centipoise max.
Unit Weight:	8.5 pounds per gallon
Coverage; 1/2 by 1/2 inch crack	11.0 pounds per 100 feet

735-3 Construction Requirements:

735-3.01 Detector Installation:

(A) General:

Detectors shall be installed as shown on the project plans, as shown in the Standard Drawings, and as directed by the Engineer. The installation of the detectors shall be such that the operation shall not be affected by temperature changes, water, ice, rain, snow, chemicals, or electromagnetic noise.

Vehicle detectors shall be installed prior to any chip seal or friction course for asphaltic concrete pavements, and prior to any friction course for Portland cement concrete pavements.

(B) Saw Cut Sealants:

Saw cuts shall be sealed as specified in the Standard Drawings, with the following exceptions:

- Two-part epoxy filler sealant shall be used instead of pre-mixed emulsified crack filler sealant, and
- Department-furnished piezo grout shall be used to seal the piezo sensor portion of speed/classification and weigh-in-motion detectors.

Before the sealant sets up, the surplus sealant shall be removed from the road surface without the use of solvents. Sand blotter shall be applied as directed by the Engineer.

(C) Splices:

Except for piezoelectric or quartz piezoelectric sensors, detector sensor conductors shall run continuous and unspliced to the adjacent pull box. Lead-in cables from the controller cabinet shall be spliced to the detector sensor conductors in the pull box. Splicing of the lead-in cables between the controller cabinet and pull box will not be allowed.

Piezoelectric sensor and quartz piezoelectric sensor lead-in cables used in speed/classification detectors and weigh-in-motion detectors shall run continuous and unspliced through the pull box to the controller cabinet. Splicing of the lead-in cables will not be allowed.

Wire splices in the pull box shall be soldered using resin-core solder with 60 percent tin and 40 percent lead. The splices shall be sealed as specified in the Standard Drawings. A weather proof bond shall form with a dielectric strength of 500 volts per mil, and water absorption shall be less than 6.5 percent. The detector lead-in cable shield shall only be grounded on one end in the control cabinet.

(D) Detector Loop Field Tests:

Detector loop field tests shall be in accordance with the Standard Drawings.

Any loop that fails to meet the specified requirements or cannot be tuned to the Engineer's satisfaction shall be replaced at no additional cost to the Department.

For the traffic data detectors specified in Subsection 735-3.02, the contractor shall also FAX the complete test results to ADOT's Multimodal Planning Division (MPD) at (602) 252-8313, Attention: Traffic Monitoring Team, within two weeks of completion of the second test. As an alternate, the contractor may email the test results to the Department at MPDtrafficmonitoringteam@azdot.gov, also within two weeks of completion of the second test. In either case, the contractor shall also mail two copies of all such required information to ADOT MPD at 1324 S. 22nd Ave., Mail Drop 070R, Phoenix, AZ 85009, Attention: Data Collection. The test results shall identify the project number and detector location.

For pull boxes used with data detector systems, the contractor shall provide GPS latitude and longitude coordinates, ± five feet, for each installed pull box. Such GPS information shall be transmitted along with the test data required above for all pull boxes installed with each tested data detector loop system.

735-3.02 Traffic Data Detectors:

(A) General:

Counter (Type C), speed/classification (Types SA and SB), and weigh-in-motion (WIM) detector systems shall be installed in accordance with the Standard Drawings and as specified herein.

The contractor shall use a 3/4-inch wide saw blade to cut the channel for piezoelectric sensors in pavement. Multiple passes using a thinner blade will not be acceptable.

When new conduit is required under any existing pavement, the contractor shall install conduit beneath the roadway using horizontal directional drilling methods approved by the Engineer.

Pull boxes shall be as shown on the Standard Drawings.

As specified above in Subsection 735-3.01(D), the contractor shall provide GPS latitude and longitude coordinates, ± five feet, for all pull boxes installed with each traffic data detector loop system.

(B) Installation of Piezoelectric Sensors:

The contractor shall install the Department-furnished piezoelectric or quartz piezoelectric sensors, and piezo grout, as specified herein and shown on the plans. An ADOT traffic signal technician must be present during all elements of the piezoelectric sensor installation (to the point where the pre-attached lead-in cable begins), including layout, groove saw-cutting, sensor placement, and application of piezo grout. The contractor shall notify the Engineer at least 15 working days prior to its scheduled installation of any piezoelectric sensors. Any piezoelectric sensor installation work performed without full time inspection by the Department's traffic signal technician may not be eligible for payment.

Lead-in runs of cable from all piezoelectric sensors and quartz piezoelectric sensors to the controller cabinet shall be continuous; splices will not be acceptable.

(C) Traffic Counter Detectors:

A complete new traffic counter system (Type C) shall include all loops and pull boxes for the specific location for both directions of traffic, as shown on the Standard Drawings. A divided roadway shall require a pull box on each shoulder. Loop detector traffic counter systems shall include all necessary conduits from edge of pavement to the roadside pull box(es).

The contractor shall provide a trench and install conduit from the edge of pavement to the pull box. Wiring, conduit, and pull box installation shall be in accordance with Subsections 732-3.01 and 732-3.02 of the specifications.

When a full replacement of an existing traffic counter system is indicated on the plans and bidding schedule, the contractor shall remove the existing facilities, and furnish and install new loops, pull boxes, and conduit.
The total number of loops for each complete traffic counter system specified above (new or full replacement) shall be the number of loops required for all traffic lanes in both travel directions at the specified location.

(D) Speed/Classification Detectors:

A complete new speed/classification system (Type SA or Type SB) shall include all loops, pull boxes, control cabinet, A-pole, pole foundation, the necessary conduits under the roadway and from pull boxes to control cabinets, and Department-furnished piezoelectric sensors with attached lead-in cables, all as shown on the Standard Drawings. When shown on the plans, an additional control cabinet, pull box, A-pole, and pole foundation shall be required.

The contractor shall provide trenches and install conduits from the edge of pavement to the pull box and from the pull box to the control cabinet. Wiring, conduit, and pull box installation shall be in accordance with Subsections 732-3.01 and 732-3.02 of the specifications.

Installation of Department-furnished piezoelectric sensors shall be in accordance with Subsection 735-3.02(B).

The cabinet(s) shall be grounded in accordance with the requirements of Subsections 732-3.03 and 734-3.03 of the specifications. The contractor shall keep the ground wire from the cabinet ground bus bar to the ground rod assembly or array as short as possible.

When a full replacement of an existing speed/classification system is indicated on the plans and bidding schedule, the contractor shall remove the existing facilities, and furnish and install new loops and pull boxes, a new control cabinet, A-pole and foundation, all necessary conduits under the roadway and from pull boxes to control cabinets, and Department-furnished piezoelectric sensors with attached lead-in cables. When shown on the plans, an additional control cabinet, pull-box, A-pole, and pole foundation shall be required.

When a partial replacement of an existing speed/classification system is indicated on the plans and bidding schedule, the contractor shall furnish and install new loops and pull boxes, and new Department-furnished piezoelectric sensors with attached lead-in cables. The contractor shall use the existing cabinet(s), A-pole(s) and foundation(s), and all conduit connections under the roadway and from pull boxes to the cabinet.

The total number of loops for each complete speed/classification system specified above (new, full replacement, or partial replacement) shall be the number of loops required for all traffic lanes in both travel directions at a specified location.

(E) Weigh-in-Motion (WIM) Detectors:

A complete new weigh-in-motion (WIM) system shall include all loops, pull boxes, control cabinet, A-pole, pole foundation, the necessary conduits under the roadway and from pull boxes to control cabinets, and Department-furnished sensors (piezoelectric or quartz piezoelectric as shown on the plans) with attached lead-in cables, all as shown on the Standard Drawings. When shown on the plans, an additional control cabinet, pull box, A-pole, and pole foundation shall be required.
The contractor shall provide trenches and install conduits from the edge of pavement to the pull box and from the pull box to the control cabinet. Wiring, conduit, and pull box installation shall be in accordance with Subsections 732-3.01 and 732-3.02 of the specifications.

Installation of Department-furnished piezoelectric sensors shall be in accordance with Subsection 735-3.02(B).

The cabinet(s) shall be grounded in accordance with the requirements of Subsections 732-3.03 and 734-3.03 of the specifications. The contractor shall keep the ground wire from the cabinet ground bus bar to the ground rod assembly or array as short as possible.

When a full replacement of an existing new WIM system is indicated on the plans and bidding schedule, the contractor shall remove the existing facilities, and furnish and install new loops and pull boxes, a new control cabinet, A-pole and foundation, all necessary conduits under the roadway and from pull boxes to control cabinets, and Department-furnished piezoelectric sensors with attached lead-in cables. When shown on the plans, an additional control cabinet, pull-box, A-pole, and pole foundation shall be required.

When a partial replacement of an existing WIM system is indicated on the plans and bidding schedule, the contractor shall furnish and install new loops and pull boxes, and new Department-furnished piezoelectric sensors with attached lead-in cables. The contractor shall use the existing cabinet(s), A-pole(s) and foundation(s), and all conduit connections under the roadway and from pull boxes to the cabinet.

The total number of sensors for each complete new WIM system specified above (new, full replacement, or partial replacement) shall be the number of sensors required for all traffic lanes in both travel directions at a specified location.

735-3.03 Traffic Signal Detectors:

Traffic signal detectors shall be as shown on the Standard Drawings, and shall include the specified loop, wiring, and conduit required to terminate the wiring in the pull box.

The contractor shall provide a trench and install conduit from the edge of pavement to the pull box. Wiring, conduit, and pull box installation shall be in accordance with Subsections 732-3.01 and 732-3.02 of the specifications.

735-3.04 Preformed Traffic Detectors:

Preformed loop detectors for ramp metering and counting shall comply with the Standard Drawings, and shall include the specified loop, wiring, and conduit required to terminate the wiring in the pull box.

Preformed loop detectors in Portland cement concrete pavement shall comply with the Standard Drawings, and shall include the specified loop, wiring, and conduit required to terminate the wiring in the pull box.

The contractor shall provide a trench and install conduit from the edge of pavement to the pull box. Wiring, conduit, and pull box installation shall be in accordance with Subsections 732-3.01 and 732-3.02 of the specifications.

Preformed loop detectors in bridge deck shall comply with the Standard Drawings, and shall include the specified loop, wiring, and conduit required to terminate the wiring in the junction box.

735-4 Method of Measurement:

Traffic signal detectors, preformed loop detectors, and pedestrian detectors will be measured as a unit for each type of detector furnished and installed.

Traffic data detectors, consisting of counter loop detectors (Type C), speed/classification detectors (Type SA or Type SB), and weigh-in-motion (WIM) detectors will be measured as a complete system for each type of traffic data detector furnished and installed, including all loops required for both directions of traffic. Speed/classification detectors, regardless of type, and weigh-in-motion detectors will be measured as a new system, full system replacement, or partial replacement, as specified herein and indicated on the bidding schedule. Counter detectors will be measured as a new system or full system replacement, as specified herein and indicated on the bidding schedule.

Speed/classification and weigh-in-motion detectors that include two cabinets, A-poles, and pole foundations (two-cabinet systems) will be also be measured as a complete new system, including all loops in both directions of traffic, regardless of the distance between both directions of traffic.

735-5 Basis of Payment:

Traffic signal detectors, preformed loop detectors, and pedestrian detectors, measured as provided above, will be paid for at the contract unit price each for the type detector designated in the bidding schedule, complete in place, which price shall be full compensation for the work described and specified herein and on the plans.

Traffic data detectors, measured as provided above, will be paid for at the contract unit price for each complete type of data detector system designated in the bidding schedule, complete-in-place, regardless of the number of loops, including all conduit, wiring, pull boxes and, when specified, cabinets, poles, and pole foundations, which price shall be full compensation for the work described and specified herein and on the plans.

No measurement or payment will be made for horizontal directional drilling, the cost being considered as included in contract items.

ITEM 8050003 - SEEDING (CLASS II):

The work under this item shall consist of furnishing all materials, preparing the soil, applying Class II seed, and establishing the seeded areas.

Areas to be seeded are those disturbed or unvegetated areas listed herein, shown on the plans, called for in the contractor’s erosion control plan, or designated by the Engineer. 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 channels.

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 used as part of a SWPPP shall be completed, including the 45 calendar-day maintenance period, before the end of the contract time, or sooner as required in the SWPPP. Seeding used as part of a landscape project shall be completed, including the 45 calendar-day maintenance period, before the end of the Construction Phase. When seeding is part of a landscape project, the maintenance activities described herein shall be in addition to the work specified in Section 807 for landscape establishment. No time extension will be granted for seeding not completed as specified herein, including the 45 calendar-day maintenance period, before the end of the contract time or Construction Phase as applicable.

2.0 Materials:

2.01 General:

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 test 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 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 collectors, on their letterhead, that the source(s) for the contract-specified seed has been secured. 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 variety or strain of seed, the percentage of germination, purity and weed content, the date of analysis which shall not be more than twelve **(**12**)** months prior to the delivery date, and testing information. 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 the Engineer, weed content of the contract-specified seed mix shall not exceed 0**.**5 percent.

The contractor shall provide all seed tag labels to the Engineer. No payment will be made for seed until tag labels and Certificates of Analysis from all seed 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.

Seed mix species and the PLS rates are shown in Table 1 below:

TABLE 1			
SEED MIX - for All Unpaved Disturbed Areas, Unvegetated Areas, and/or Designated Areas			
Botanical Name	**Common Name**	**PLS Rate (Pounds Per Acre)**	**Per Pound Value for Substitution (see text)**
Abronia villosa	Sand Verbena	0.5	$95
Argemone platyceras	Prickly Poppy	0.25	$75
Aristida purpurea	Purple Threeawn	3	$30
Atriplex polycarpa	Desert Saltbush	0.25	$23
Baileya multiradiata	Desert Marigold	1	$70
Bouteloua aristidoides	Needle Grama	1.5	$20
Distichlis stricta	Desert Saltgrass	0.5	$65
Encelia farinosa	Incienso Brittlebush	1.5	$17
Encelia frutescens	Button Brittlebush	0.5	$19
Hilaria berlangeri	Curly Mesquitegrass	1	$45
Lesquerella gordonii	Gordon's Bladderpod	1	$40
Lupinus arizonicus	Arizona Lupine	1	$65
Lupinus succulentus	Arroyo Lupine	5	$13
Phacelia crenulata	Arizona Desert Bluebell	1	$30
Plantago ovata	Desert Indian Wheat	1.5	$5
Salvia columbariae	Desert Chia	0.75	$55
Senna covesii	Desert Senna	2	$35
Sphaeralcea ambigua	Desert Globemallow	1	$55

Sporobolus airoides	Alkali Sacaton	1	$25
Sporobolus cryptandrus	Sand Dropseed	0.5	$10
Per Acre Subtotal Value			**$778.25**

(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 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.

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 Straw Mulch:

(A) General:

Straw mulch 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.

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) Straw Mulch for Hydraulic Application:

Hydraulically applied straw mulch shall be wheat or rice straw processed to various particle sizes, mixed with water and tacking material, and applied as a non-clogging slurry using a hydroseeder. A minimum of 70 percent of the wheat or rice straw in the mix shall be not less than 1/2 inch ± 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 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 nor more than 30 percent of the hydraulically applied straw mulch.

Hydraulically applied straw mulch material from the following sources shall be acceptable:

Hydra Matrick
North American Green
5401 St Wendel-Cynthia Road
Poseyville, IN 47633
Phone: 1-800-772-4297

Hydro Straw
Hydrostraw LLC
3676 W 9000 N Road
Manteno, IL 60950
Phone: 1-800-545-1755

Shot Straw
Rio Ranches LLC
PO Box 156
Palo Verde, AZ 85343
Phone: 602-680-8320

DuraBlend 361
PrimeOne Products LLC
PO Box 30816
Spokane, WA 99223
Phone: 509-981-8555

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 monammonium 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 of the nitrogen defined as slow release, and contain five (5) percent Iron, ten (10) percent 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 and 96 percent sulfur, shall be applied at the rate specified in Section 3.02. Chemical fertilizer and sulfur shall not be applied for 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. The source shall be as approved by 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 of 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)	6.5 – 8**.**5
Organic Matter Content	Greater than 30%
Total Nitrogen (not added)	Greater than 1%
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 <u>not</u> 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**.**

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 1**,**500 Pounds per acre to mini-benched slopes or on other approved areas for incorporation into the soil seedbed. Hydraulically applied compost may be combined with soil amendments and fertilizer in the same slurry under the approval of the Engineer. Seed shall be employed separately after the implementation of hydraulically applied compost and prior to the final mulch cover.

Hydraulically applied compost shall meet the requirements of Table 4 below:

TABLE 4	
Cation Exchange Capacity (CEC)	Greater than **55** meq**/**100 g *****
Carbon **:** Nitrogen Ratio (C **:** N)	Less than 20 **:**1
PH (of extract)	6**.**5 – 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**.**
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 for the seeding area below the OHWM.

2.09 Soil Conditioners:

Soil conditioners, when required, will be as shown in the Special Provisions.

3.0 Construction Requirements:

3.01 General:

(A) 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, the Engineer and contractor shall determine a one-acre sample 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 area. Both straw mulches shall be representative of the materials proposed for use on the project. If the seeding and mulching procedures are acceptable, the contractor shall begin seeding operations as specified herein.

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.

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 for tillage and placement of materials. Seeding operations shall not be performed when wind exceeds ten (10) miles per hour or, if in the opinion of the Engineer, conditions would prevent uniform application of materials or would carry seeding materials into areas not designated for seeding.

The contractor shall not expose an area greater than 750,000 square feet 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.

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 to maximum extent practicable (MEP).

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. All seeded areas suitable for tillage shall be pre-tilled to promote on-site stormwater infiltration and alleviate stormwater surface runoffs, as a part of stormwater Volume Reduction Approaches (VRAs). All areas which are 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. On fill slopes, the operations shall be conducted in such a manner as to form minor ridges thereon to assist in retarding erosion and favor germination of the seed.

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.

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 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.

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 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. 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 determined by the Engineer, compost shall be applied hydraulically at the rate of 1**,**500 pounds per acre. Hydraulically applied compost shall not be combined with seed and**/**or final mulch cover in the same slurry. However, sulfur and fertilizer may be utilized together with hydraulically applied compost in the same slurry with the approval of the Engineer.

Slopes 3**:**1 and flatter shall have fertilizer, sulfur, and compost tilled 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.

For mini-benched slopes, fertilizer, compost, and sulfur shall be applied at the specified rates with no tillage or incorporation.

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.

Straw mulch or hydraulically applied straw mulch shall be applied on all seeded areas, as specified in Sections 3.04 or 3.05, within 24 hours of seed application. Seeding application shall be accomplished prior to application of straw mulch or hydraulically applied straw mulch. Combining the seed application process with the mulching process will not be acceptable.

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 seed. 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 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:

(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 drift 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 a 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:

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 the 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.

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-day maintenance period will begin upon acceptance of the area by the Engineer.

The contractor shall maintain and stabilize each area or sub-area, including edge of pavement build-up areas, for a minimum period of 45 calendar days after application of the seeding and mulching materials, and acceptance by the Engineer. Any areas damaged from erosion, or that have less than 90 percent of applied mulch remaining, shall be re-seeded, re-mulched, and re-tacked at no additional cost to the Department.

Except for projects with Landscape Establishment, seeding shall be completed, including the 45 calendar-day maintenance period, before the end of the contract time, or sooner if required in the SWPPP or elsewhere in the contract documents. Seeding used as part of a landscape project shall be completed, including the 45 calendar-day maintenance period, before the end of the Construction Phase.

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:

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 and acceptance by the Engineer, the contractor will be paid 70 percent 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, and all equipment and labor required to complete the work as specified herein.

Upon completion of the 45 calendar-day maintenance stage, and acceptance by the Engineer, the contractor will be paid 30 percent 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 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).

An adjustment to the contract will be made if a contractor-requested seed substitution is approved as specified in Subsection 2.02(B) above.

(810ERCON, 3/24/11)

SECTION 810 - EROSION CONTROL AND POLLUTION PREVENTION:

810-2.06(A) **General:** the first paragraph of the Standard Specifications is revised to read:

Sediment logs, sediment wattles, and fiber rolls shall be manufactured or constructed rolls of fiber matrix, secured with netting, and used for the purpose of controlling erosion by slowing high flow water velocity and trapping silt sediments. Netting for fiber rolls and sediment wattles shall have a minimum durability of one year after installation, and shall be tightly secured at each end of the individual rolls. All wheat straw used in sediment logs, sediment wattles, and fiber rolls shall comply with the requirements of Subsection 810-2.05(B).

(901MOBE, 09/18/12)

SECTION 901 MOBILIZATION:

901-5 **Basis of Payment:** of the Standard Specifications is revised to read:

Payment for mobilization, measured as provided above, will be made at the contract lump sum price, which shall be full compensation for supplying and furnishing all materials, facilities and services and performing all the work involved as specified herein.

Partial payments under this item will be made in accordance with the following provisions. Reference herein to the adjusted contract shall mean the original contract amount exclusive of mobilization:

> The first payment of the lump sum price for mobilization will be paid after the Preconstruction Conference provided that all submissions required under Subsection 108.03 are submitted by the contractor at the Preconstruction Conference to the satisfaction of the Engineer. The amount paid for the first partial payment will be in accordance with Table 901-1.

The second payment of the lump sum price for mobilization will be made when the Engineer has determined that a significant amount of equipment has been mobilized to the project site which will be used to perform portions of the contract work. The amount paid for the second partial payment will be in accordance with Table 901-1.

The third payment of the lump sum price for mobilization will be made on the first estimate following completion of five percent of the adjusted contract. Such percentage determination will not include partial payments for material on hand. The amount paid for the third payment will be in accordance with Table 901-1.
The fourth payment of the lump sum price for mobilization will be made on the first estimate following completion of 10 percent of the adjusted contract. Such percentage determination will not include partial payments for material on hand. The amount paid for the fourth payment will be in accordance with Table 901-1.
The total sum of all payment shall not exceed the original contract lump sum price for mobilization, regardless of the fact that the contractor may have, for any reason, shut down its work on the project or moved its equipment away from the project and back again.

TABLE 901-1
AMOUNT ALLOWED FOR MOBILIZATION DURING THE LIFE OF THE CONTRACT

Contract Amount: $	% Of Contract	Basis Of Payment
0 - 5,000,000	12% *	25% of the lump sum price for mobilization or 3% of the original contract amount, whichever is less.
5,000,000 +	10% *	25% of the lump sum price for mobilization or 2.5% of the original contract amount, whichever is less.
* If the price bid for mobilization exceeds this percentage, any excess will be paid to the contractor upon completion of the contract.		

The adjustment provisions in Section 104 and the retention of funds provisions in Section 109 shall not apply to the item of mobilization.

When other contract items are adjusted as provided in Section 104, and if the costs applicable to such items of work include mobilization costs, such mobilization costs will be considered as recovered by the contractor in the lump sum price paid for mobilization, and will be excluded from consideration in determining compensation under Section 104.

When mobilization is not included as a contract item, full compensation for any necessary mobilization required will be considered as included in the prices paid for the various contract items involved and no additional compensation will be made.

(923CBOJT, 04/14/15)

ITEM 9230002 - CONTRACTOR BASED ON-THE-JOB TRAINING:

1.0 Description:

1.01 Purpose:

The contractor shall provide on-the-job training (OJT) aimed at moving minorities, women, economically disadvantaged, and veteran trainees into journey-level positions in various types of construction trades or job classifications through a contractor-based OJT program. The contractor-based approach assigns contractors annual training goals for a specific number of trainees and hours. The contractor is provided the flexibility to meet the annual trainee and training hour goals on any transportation projects in the United States throughout the year, rather than on a project-by-project basis. Contractors may include ADOT and non-ADOT projects as long as more than 40 percent of the training hours are completed on ADOT projects.

Training of minorities and women toward journey-level status is a primary objective of this Training Special Provision. Accordingly, the contractor shall make every effort to enroll minority, women, economically disadvantaged, and veteran 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 this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

1.02 Program Summary:

The Department has established a Contractor Based On-The-Job Training Pilot Program for a one year period from July 1, 2015 to June 30, 2016. All successful bidders will automatically be placed in the Pilot Program beginning on July 1, 2015. Standard OJT requirements associated with individual projects will no longer be applied at the project level for new projects. OJT requirements will be applicable on an annual basis for each contractor performing work on ADOT projects. During the OJT Pilot Program each contractor meeting the threshold described in Subsection 1.04 of this Training Special Provision will be required to provide training for **one trainee** for a minimum of **1000 hours.** The 1000 hours may be completed by one or more trainees; if a trainee reaches program completion before completion of the 1000 hours then an additional enrolled trainee may be used to complete the remaining training hours. For example, if a trainee reaches program completion after 700 hours, the contractor is required to provide an additional 300 hours of training to an enrolled trainee in order to meet its annual OJT goal.
Contractors may also assign OJT Trainees to be trained by subcontractors on any project with ADOT approval. However, the contractor will only receive credit towards its annual goal for hours earned by its own OJT Trainees. The contractor's OJT Trainees must be employed by the contractor and be enrolled in an approved training program as described in Subsection 2.01 of this Training Special Provision.

Hours earned by a subcontractor's OJT Trainees on a project will be credited to that subcontractor's annual training goal and the contractor shall reimburse the subcontractor in accordance with Subsection 2.02 of this Training Special Provision.

No employee shall be employed as a trainee in any classification in which they have successfully completed a training course leading to journey-level status or in which they have been employed at journey-level status. The contractor shall satisfy this requirement by including appropriate questions in the employment application or by other suitable means. Regardless of the method used, the contractor's records shall document the findings in each case.

The trainees shall be distributed among the work classifications on the basis of the contractor's needs and the availability of journey-level status individuals in the various classifications. The ratio of apprentices and OJT Trainees to journey persons shall not be greater than permitted by the terms of the approved training program being utilized. When a specific ratio is not provided, the ratio of apprentices and OJT Trainees to journey persons expected to be on the contractor's work force during normal operations shall fall between 1:10 and 1:4, pursuant to 23 CFR 230.111(c)(10).

1.03 Definitions:

"OJT Trainee" herein refers to (a) a minority, female, veteran or economically disadvantaged individual enrolled in either a State of Arizona registered apprenticeship program or ADOT's OJT program and (b) any other individual ADOT approves for enrollment in such an apprenticeship or OJT program and for credit toward the OJT Goals.

"Program Completion" herein refers to the point in time when a trainee in the ADOT OJT Program has completed the required number of levels and hours of training within a calendar year for a designated craft classification or a registered Apprenticeship program, or has achieved journey-level status.

"Journey-Level Status" applies to a person who has completed a registered apprenticeship program or is an experienced worker, not a trainee, and is fully qualified and able to perform all of the duties of a specific trade without supervision.

"Economically Disadvantaged Persons" applies to a person who:

- 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.
- 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.
- Is a foster child on behalf of whom State or local government payments are made.
- Does not have a high school diploma or GED.
- Is from a family whose total annual household income is below the federal poverty limits. See Appendix A of the *OJT Guidelines and Procedures* document found at

http://azdot.gov/business/business-engagement-and-compliance/on-the-job-training-program/ojt-contract-compliance.

1.04 Annual Training Goal:

During the OJT Pilot Program, each contractor that was awarded ADOT federally funded construction contracts, as a prime contractor, for $2,000,000 or more between October 1, 2013 and September 30, 2014 will be assigned an annual OJT goal to train a minimum of one trainee for a minimum of 1000 hours. The trainee shall receive training in the same construction trade or job classification from July 1, 2015 to June 30, 2016 with the aim of eventually achieving journey-level status. If the contractor is not awarded an ADOT federally funded contract during the pilot program period, they will not be required to meet the assigned annual OJT goal.
If a contracting firm is not assigned an annual OJT goal, it is not required to provide on-the-job training on ADOT projects regardless of whether OJT hours are included in the project bid schedule. If the contractor chooses to provide training to a registered OJT trainee on an ADOT federal-aid project although they do not meet the above criteria, the contractor will be reimbursed as described in Subsection 2.02 of this Training Special Provision.

The contractor shall make every possible effort to provide additional trainees with training and shall see that all trainees are afforded every opportunity to participate in as much training as is practically possible to provide. Contractors will not be required to meet OJT goals on individual contracts, but must meet the assigned annual training goal for the assigned number of OJT Trainees and hours by the end of the year.
Since not every OJT Trainee that enrolls in the program will complete the program, the contractor is encouraged to enroll sufficient numbers of OJT Trainees (well beyond the number of its annual training goal) to help ensure that it will meet its annual OJT goal if some OJT Trainees drop out of the program during the year. The contractor must carefully screen, hire, and support trainees that are likely to meet or exceed the 1000 hours of OJT during the calendar year, eventually earn journey-level status, and be retained as part of its workforce.

2.0 Requirements:

2.01 Approved Training Programs:

For this Contractor-Based OJT Program, the ADOT Business Engagement & Compliance Office (BECO) will only recognize two types of contractor based training programs. The programs are:

- The Department's OJT Program as approved by FHWA and described at http://azdot.gov/business/business-engagement-and-compliance/on-the-job-training-program/ojt-contract-compliance or

- Registered Apprenticeship and OJT programs registered with the Bureau of Apprenticeship, U.S. Department of Labor and/or the State of Arizona.

Contractors must use one or both of these programs. The contractor shall indicate which OJT program it is using for each trainee on his/her Trainee Enrollment form. It is the intention of these provisions that training be provided in the construction 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 a significant part of the overall training.

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. Contractors shall ensure that each trainee does not exceed the maximum number of training hours required for the completion of the selected training program unless prior approval is received from the Engineer.

2.02 Reimbursement:

The contractor will be reimbursed $3.00 per hour of training provided to a trainee on an ADOT federal-aid project up to the maximum number of hours approved for reimbursement on the project and shown in the project bid schedule. Reimbursement will not be made for a trainee's hours that exceed the maximum number of training hours required for the completion of his/her training program. In addition, the contractor will not be reimbursed for hours in excess of the maximum training hours shown on the project bid schedule unless written approval is received in advance from the Engineer.

The maximum number of hours approved for reimbursement on each ADOT federal-aid contract will be calculated by the Department, based on the engineer's estimate for the project and the contract time.

The trainee will be paid the appropriate trainee Davis-Bacon wage rates for training classifications/crafts on federally-funded projects. The contractor shall compensate OJT Trainees according to pay levels and percentages outlined in the ADOT Training Program Manual found at http://azdot.gov/business/business-engagement-and-compliance/on-the-job-training-program/ojt-contract-compliance.

Contractors shall reimburse subcontractors for the subcontractor's trainees on ADOT federally funded projects at least 75-percent of the amount paid to the contractor by the Department per training hour.

2.03 Submittals:

The contractor shall complete and submit the following to BECO:

- *OJT Program Trainee Enrollment Form* for approval for each proposed minority, female, veteran, economically disadvantaged, and other OJT Trainee throughout the year as each individual is hired. The form shall be submitted to BECO within the first week of

hire if working on an ADOT project. If the contractor is working on an ADOT project, the form shall also be submitted to the Engineer.

In addition, if the contractor is working on an ADOT construction project, the contractor shall submit the *OJT Program Trainee Enrollment Forms* of all current trainees to the Engineer at the Preconstruction Conference.

- Contractors shall enter trainee hours worked on ADOT construction projects on a weekly basis into the web-based Labor Compliance System, LCPtracker. Trainee hours not entered into LCPtracker by the 15th of each month for the preceding month will be considered delinquent. Trainee hours on non-ADOT contracts shall be entered into LCPtracker on a monthly basis.

- *OJT Monthly Progress Report Form* shall be submitted for each month by the 15th of the following month.

- *OJT Monthly Trainee Progress Report Form* shall be submitted for each trainee for each month by the 15th of the following month.

- *OJT Trainee Termination/Completion Form* when an OJT Trainee completes 1000 or more hours in the same construction trade or job classification within a calendar year, achieves journey-level status, terminates employment with the contractor, or withdraws from the OJT program.

- *OJT Annual Summary Report Form* by July 15, 2016 for the Pilot Program as described in Subsection 4.02 of this Training Special Provision.

The contractor's June monthly reports and uploads into LCPtracker submitted after July 31st will not be accepted or considered towards goal attainment for the previous calendar year.

All forms and Guidelines and Procedures for the Contractor-Based OJT program are available online at
http://azdot.gov/business/business-engagement-and-compliance/on-the-job-training-program/ojt-contract-compliance.

The contractor shall retain the training records for all OJT Trainees for a period of five years following the completion of the trainee's work on contracts documenting his performance under this Training Special Provision. Such records shall be available at reasonable times and places for inspection or review by ADOT and the Federal Highway Administration.

The contractor is required to meet the assigned annual OJT goal if they are awarded federally funded ADOT construction contract(s) during the year. In anticipation of obtaining an ADOT contract, contractors are encouraged to begin registering trainees with the Department using the OJT Program Trainee Enrollment Form at the beginning of the year. In order to count training hours toward the goal, the trainee must be registered with the Department and their hours must be entered monthly into the LCPtracker system as described in this specification.

2.04 OJT Liaison:

The contractor shall designate an OJT Liaison that shall be responsible for monitoring and administering its OJT Program and monitoring the trainees' progress. 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. The contractor shall furnish each trainee a copy of the Training Program, monthly reports that reflect their training hours accumulated to date and other documentation related to the training program. The contractor shall further make every reasonable effort to provide training that develops the skills outlined in the training program. The contractor shall furnish each trainee, upon successful completion of their training program, a certificate showing the type and length of training satisfactorily completed.

2.05 Training Hours:

Credit towards the contractor's annual training goal shall be earned as follows:

- Credit will be allowed towards the contractor's annual goal for the year in which the trainee entered training.

- Credit will be allowed for each trainee employed on a project, pending official enrollment, for all documented hours completed.

- Credit will be allowed for a terminated trainee if the contractor demonstrated a good faith effort to meet the goal and the trainee completed more than 90% of the training hours required for the year.

Credit will not be allowed when the contractor fails to provide the required training or does not make a satisfactory good faith effort to meet the requirements of the program.

2.06 Program Completion:

A trainee will be considered to have completed the program once the trainee completes the required number of levels and hours of training for the same craft or classification within a year, completes a registered apprenticeship program, or achieves journey-level status as determined by the contractor. Once a trainee completes a specific training level for a classification, the contractor will not be permitted to resubmit that trainee for enrollment or reimbursed at that same level, unless approved in advance by the Engineer.

Upon completion of the program, the contractor shall notify BECO so that a Certificate of Completion can be issued to the trainee showing the type and length of training satisfactorily completed.

3.0 Good Faith Efforts:

Whenever a contractor requests ADOT approval of someone other than a minority, economically disadvantaged individual, woman, or veteran for credit towards its annual training goal, the contractor shall submit documented evidence of its Good Faith Efforts to fill that trainee position with a minority, female, veteran, or economically disadvantaged individual. Documentation of Good Faith Efforts shall be made by completing and submitting the Good Faith Effort form and supporting documentation to BECO.

Good Faith Efforts are those efforts designed to achieve equal opportunity through positive, proactive, and continuous result-oriented measures (23 CFR 230.409(g)(4)). Good Faith Efforts should be made as trainee hiring opportunities arise. More information on Good Faith Efforts is available in the *OJT Guidelines and Procedures* document available on BECO's website.

4.0 ADOT Program Monitoring:

4.01 Site Visits:

BECO may conduct periodic site visits to a contractor's worksite to review OJT Program compliance, as part of a FHWA required Contractor Compliance Program Review process. 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 available to meet with BECO staff as well as be available to respond to periodic emails and phone calls from BECO to check on the progress of OJT Trainees. BECO will make every effort to ensure minimal disruption to a contractor's work.

4.02 Determination of Compliance:

An OJT Annual Summary Report Form for the previous 12 months (July 1, 2015 to June 30, 2016) shall be submitted to BECO by July 15, 2016 for the Pilot Program. The report shall provide an accurate account of all trainee hours; identifying each trainee by name, ethnicity, and gender and identifying each project and/or contract, listing the contracting agency, whether they are ADOT projects/contracts, whether they are federally funded projects/contracts, and the trainee hours attributed thereto. The report shall include written explanation and documentation of Good Faith Efforts, if the contractor fails to meet its goal.

BECO will review the contractor's OJT Monthly and Annual Reports and Good Faith Effort documentation. BECO will determine whether the contractor has met the assigned annual training goal or made a good faith effort to do so. BECO will communicate its decisions in writing to the contractor.

If a contractor has neither attained its goal nor submitted adequate Good Faith Efforts documentation, ADOT will issue a Show Cause Notice outlining its findings of non-compliance. Within 30 days of receiving the Show Cause Notice, the contractor may submit a written response to the Show Cause Notice providing argument and evidence in opposition to the Department's findings of non-compliance.

If a contractor fails to submit a written response to the Show Cause Notice within the specified period or the written response to the Show Cause Notice does not cause ADOT to change its findings of non-compliance, ADOT will issue its Final Notice to the Contractor regarding the non-compliance.

ITEM 9240116 – MISCELLANEOUS WORK (POLYMER MODIFIED ASPHALT-RUBBER CRACK SEALANT):

Description:

The work under this item shall consist of furnishing all materials, personnel, and equipment to rout and clean cracks in existing asphaltic concrete pavement and seal the cracks with polymer modified asphalt-rubber sealant in accordance with the details shown on the project plans and the requirements of the Specifications.

No routing, cleaning, or sealing of cracks shall be performed during rain or snow or when the pavement surface and cracks are wet.

Materials:

1. Polymer Modified Asphalt-Rubber Crack Sealant:

The crack sealant shall be Type 3.

The crack sealant shall be a mixture of asphalt cement, ground tire rubber, and polymer. It shall conform to the following requirements for the type specified.

TEST	TEST METHOD	TYPE 1	TYPE 2	TYPE 3
Cone Penetration @ 77°F, range	ASTM D 5329	50 - 80	30 - 60	15 - 45
Resilience @ 77°F, minimum	ASTM D 5329	30%	30%	30%
Softening Point, minimum	ASTM D 36	160°F	180°F	190°F
Ductility @ 77°F, minimum	ASTM D 113	30 cm	30 cm	30 cm
Asphalt Compatibility	ASTM D 5329	Pass	Pass	Pass
Bitumen Content, minimum	ASTM D 4	60%	60%	60%

Tensile Adhesion, minimum	ASTM D 5329	500%	500%	400%

Sampling and heating shall be in accordance with ASTM D 5078.

The ground tire rubber shall be free of fabric, wire, or other contaminating materials. The gradation shall be 100% passing the No. 8 sieve, and a maximum of 5% passing the No. 200 sieve.

The sealant shall be capable of being melted and applied to cracks at temperatures below 400 degrees F. The sealant, when properly heated, shall readily penetrate cracks 1/4 inch or wider. The equipment used shall be designed to provide a continuous supply so that operations may proceed without delays.

A Certificate of Analysis, conforming to the requirements of Subsection 106.05 of the specifications, shall be submitted for each lot of sealant. The certificate shall list all test results, and certify that the sealant meets all requirements listed herein. A copy of the certificate shall be supplied with each shipment.

2. Blotter Material:

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

The grading 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

Construction Requirements:

No routing, cleaning, or sealing of cracks shall be performed during rain or snow or when the pavement surface and cracks are wet.

1. Preparation of Cracks:

Immediately prior to application of crack sealant, the contractor shall ensure that the cracks are thoroughly cleaned of loose particles, grass, grass roots, weeds, dust, and other deleterious substances by means of high velocity compressed air, or by other methods approved by the Engineer.

All cracks to be sealed shall be cleaned to the bottom of the crack, or to a depth of 1-1/2 inches, whichever is less.

Fuel, asphalt, and any other spills and debris shall be cleaned up and disposed of by the contractor to the satisfaction of the Engineer at no additional cost to the Department.

All cracks within the entire width of pavement surface, which are 1/4 inch and greater in width, shall be cleaned and sealed.

Unless otherwise directed by the Engineer, cracks with an average clear opening of less than 1/4 inch shall not be cleaned and sealed.

For all cracks which have an average clear opening of 1/4 to 1/2 inch, the top of the crack shall be routed, with a routing machine approved by the Engineer, to a depth of at least 3/4 inch and to a width not less than 3/8 inch or more than 5/8 inch. The routing machine shall closely follow the path of the crack and rout the top of the crack to the required width and depth without damaging the asphaltic concrete pavement. Loose and fractured asphaltic concrete shall be removed and the routed crack shall be thoroughly cleaned prior to sealing.

All cracks which are larger than 1/2 inch shall be cleaned and sealed.

Regardless of their clear opening size, all cracks between the asphaltic concrete pavement and a curb or gutter shall be cleaned and sealed, unless otherwise directed by the Engineer.

The Engineer shall be the sole judge in determining which cracks shall be sealed.

The crack cleaning equipment shall be capable of cleaning cracks to a depth of at least two inches. Dust generated during cleaning of the cracks shall be filtered so that particulate matter 10 micrometers or less in diameter is collected. There shall not be any dust clouds visible to the naked eye during crack cleaning operations. The crack cleaning equipment shall be approved by the Engineer prior to the beginning of crack cleaning operations.

Crack cleaning shall be inspected and approved by the Engineer prior to the beginning of crack sealant application.

2. Application of Sealant:

The sealant shall not be applied during wet weather or under conditions which will adversely affect the operation. The sealant shall not be placed in cracks that are wet. If weather conditions are such as to adversely affect the crack sealing, according to the crack sealant manufacturer's recommendations and/or the Engineer's observations, the Engineer may stop the work until conditions improve. Shut downs due to weather conditions shall be at no additional cost to the Department.

The contractor shall place sealant so as to completely fill the crack and form a lap no greater than one inch on each side of the crack. The thickness of the lap shall not exceed 1/16 inch. Immediately after the application, a rubber squeegee or other acceptable means shall be used to level the sealant flush with the existing pavement surface. After cooling, the sealant shall not shrink more than 1/4 inch below the pavement surface.

Sealant shall be heated to between 325°F and 400°F for at least 1/2 hour prior to application. The temperature of the sealant shall be verified by the Engineer. The contractor shall provide certificates on all temperature gauges. The dates of the certificates shall be within the previous three month period.

Traffic shall be kept off the sealed cracks until the crack sealant will not track under the action of traffic. At locations where this is not practical, the contractor shall prevent tracking by applying blotter material to the crack sealant.

3. Application of Blotter Material:

If the application of blotter material is necessary, the blotter material shall be damp but free of running water at the time of spreading.

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

If necessary, supplemental spreading or smoothing of the blotter material shall be done by hand.

Blotter material shall not be applied beyond the amount required to prevent tracking of the sealant.

Prior to final acceptance, the contractor shall remove and dispose of any excess blotter material. The method of removal and the disposal of any excess material shall be the contractor's responsibility.

Method of Measurement:

Miscellaneous Work (Polymer Modified Asphalt-Rubber Crack Sealant) will be measured by the pound of polymer modified asphalt-rubber crack sealant used in place.

Basis of Payment:

The accepted quantity of Miscellaneous Work (Polymer Modified Asphalt-Rubber Crack Sealant), measured as provided above, will be paid for at the contract unit price per pound, which shall be full compensation for the work complete in place, including routing and cleaning of cracks, and the application of any necessary blotter material, as described and specified herein and as shown on the project plans.

(924CQC, 3/02/09)

ITEM 9240170 - CONTRACTOR QUALITY CONTROL:

1.0 Description:

The work under this section shall consist of furnishing all personnel, materials, supplies, facilities and equipment necessary to perform all certification of test equipment, sampling, testing, and other control actions. The work shall also include the preparation of linear control charts, Weekly Quality Control Reports, and other reports and records as described in Subsection 106.04(C) of the Specifications.

2.0 Method of Measurement:

Contractor quality control will be measured for payment on a lump sum basis as a single unit of work.

3.0 Basis of Payment:

3.1 General:

The accepted quantities of contractor quality control, measured as provided above, will be paid at the contract lump sum price, which price shall be full compensation for the work, complete, as described and specified herein.

Partial payments under this item will be made in accordance with the following provisions:

(a) The first partial payment price will be the lesser of twenty five percent of the contract lump sum price for contractor quality control, or one percent of the original total contract bid amount.

(b) The remaining portion of the lump sum price will be prorated over the duration of the original contract on a monthly basis, and monthly progress payments will be made.

If adjustments to pay items covered under Contractor Quality Control are approved by supplemental agreement, an equitable adjustment to the lump sum amount for Contractor

Quality Control may be made. Any adjustment to Contractor Quality Control shall be included in the supplemental agreement and the adjusted amount, less previous payments, will be prorated equally over the remaining contract period, including any related time extensions.

3.2 Delinquent Reports:

Failure of the contractor to submit complete and accurate Weekly Quality Control Reports, current to the most recent Wednesday submittal date, will be grounds for the Engineer to deduct monies from the contractor's progress payment.

For each Weekly Quality Control Report that is not complete and accurate, and not submitted to the Engineer by the Wednesday submittal date specified in Subsection 106.04(C)(6), the Department will deduct $2,500.00 from the progress payment for the current month.

For each delinquent Weekly Quality Control Report submitted to the Engineer within 10 business days of the original Wednesday due date, $2,000.00 will be returned on the next regular estimate, provided all of the requirements specified herein and in Subsection 106.04(C)(6) have been met, and the report is complete and accurate. No deducted monies will be returned for reports submitted more than 10 business days beyond the original Wednesday due date.

All deducted monies which are retained by the Department, as specified above, are liquidated damages.

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 controlling noxious and invasive plant species, manually **/** mechanically 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. The weed control procedures in the NSCP shall also be implemented during all stages of construction and in advance of seeding. In addition, all construction related equipment, materials, and personnel moving in and**/**or out of project site shall be inspected and treated for 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 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 the 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 ADOT construction PLA.

Materials:
General

The types of herbicide to be used and the methods of application shall conform to U. S. Environmental Protection Agency (EPA), and**/**or Arizona Department of Environmental Quality (ADEQ) requirements, and the product's label instructions, as approved by the Engineer. When applicable, 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) and**/**or Arizona Pollutant Discharge Elimination System (AZPDES) Pesticide General Permit.

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 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 adjacent to 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/epl-front-office/eplanning/projectSummary.do?methodName=renderDefaultProjectSummary&projectId=34810*** or the "Environmental Assessment for Management of Noxious Weeds and Hazardous Vegetation on Public Roads on National Forest System Lands in Arizona" is available at: ***http://azmemory.azlibrary.gov/cdm/ref/collection/feddocs/id/486*** . Additionally, Tonto National Forest Herbicide Application Information is available at: ***http://www.fs.usda.gov/detail/tonto/landmanagement/resourcemanagement/?cid=fsbdev3_018789*** . The Environmental Documents include a list of approved Herbicides, Mitigations and Best Management Practices (BMPs), which as appropriate, should be included by the contractor in the submitted NSCP.

Web links of noxious weeds and invasive plant species environmental analysis 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 EIS for Noxious Weed Treatments: ***http://data.ecosystem-management.org/nepaweb/nepa_project_exp.php?project=4967***

4. Tonto National Forest EA for Treatment of Noxious Weeds: ***http://data.ecosystem-management.org/nepaweb/nepa_project_exp.php?project=4454***

All materials used shall also 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 Roadside Development web site **(** ***http://www.azdot.gov/business/engineering-and-construction/roadway-engineering/roadside-development*** **)** for approval by ADOT construction PLA. Four 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. ADOT construction PLA shall review and respond to the proposed NSCP within 14 calendar days upon receiving the submittal. If requested, additional copies may be submitted for review and comments by Native American Community designated representative as approved by the Engineer. Native American Community designated representative shall also review and comment the proposed NSCP within 14 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**
Amaranthus palmeri	Amaranth **/** Carelessweed **/** Palmer's Pigweed **/** Palmer Amaranth
Brassica tournefortii	Sahara Mustard **/** Mediterranean Mustard **/**

TABLE - I	
Scientific Name	**Common Name**
	Prickly Turnip
Cynodon dactylon **(syn.** *Capriola dactylon***)**	Bermudagrass **/** Devilgrass
Ipomoea spp**.**	Morning Glories
Pennisetum ciliare **(syn.** *Cenchrus ciliaris***)**	Buffelgrass **/** African Foxtail Grass
Salsola kali subsp**.** *tragus* **(syn.** *Salsola iberica***)**	Russian Thistle **/** Tumbleweed

(2) The methods of control of noxious and invasive plant species 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 for all project seeding areas. The contractor shall provide information **/** resolutions on how the application of herbicides will NOT harm the expected seed germination and establishment as specified in the Section 805 of these Special Provisions.

(3) The proposed method(s) of control, either manual **/** mechanical control or herbicide application, to be used for each anticipated plant species at each of 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 Material Safety Data Sheets (MSDS) 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 Office of Pest Management Applicator Licensing information, as specified in Section 806.

(9) Record procedures to be followed for control work completed.

(10) Record procedures to be followed for reporting all chemicals used annually within the project right of way adjacent to BLM or USFS Lands within two (2) months to ADOT construction PLA.

(11) Projects on right of way adjacent to BLM Lands shall include a completed Pesticide Use Proposal (PUP) form for all proposed herbicide uses prepared for submittal to BLM for approval.

(12) Projects on right of way adjacent to USFS Lands shall include the USFS, ADOT approved PUP.

(13) When applicable, other information and explanations 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 shall be attached to the NSCP.

The NSCP submitted to the Engineer shall not be implemented until it is approved by ADOT construction PLA and the contractor is so directed by the Engineer.

The contractor shall keep a copy of the approved NSCP and furnish to 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 will designate 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 begin control of the designated areas within five (5) working days of the Engineer's notice, and complete the treatment within ten (10) working days of the notice unless otherwise approved by the Engineer.

If other plant species listed in the Arizona Noxious Weed List, the Forest Service Regional**/**BLM lists, or the Arizona Invasive Non-Native Plants' Categorized List ***http://www.swvma.org/InvasiveNon-NativePlantsThatThreatenWildlandsInArizona.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.

ADOT Invasive and Noxious Plant Species Lists are available electronically at the following Roadside Development web address**:**
http://www.azdot.gov/docs/business/adot-invasive-noxious-plant-species-list-for-construction-projects.pdf?sfvrsn=0

The project areas will be surveyed by 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. 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 applicator shall be licensed under the appropriate category as required by the State Law.

Mowing shall be allowed if it is proven to be a successful permanent control method of <u>annual</u> noxious **/** invasive plant species as approved by the Engineer. If approved, mowing shall be performed <u>before</u> the <u>annual</u> noxious **/** invasive plant species are able to set seed. Mowing shall NOT be operated in areas where there are <u>perennial</u> 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 ADOT construction PLA with approval from the Engineer.

The contractor shall remove the identified noxious **/** invasive woody vegetation to 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. Such process shall be evaluated by 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 roadway **/** drainage excavations or as designated by the Engineer. The contractor shall remove top three **(**3**)** inches of the existing undisturbed surface soil from the project areas infested with noxious **/** invasive plant species as evaluated **/** identified by 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 area, 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 as per the approval of the Engineer.

For projects on right of way within BLM jurisdiction, 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 BLM and must be approved by the BLM before being approved by the Engineer.

For projects on right of way within Forest Service jurisdiction, application of the herbicide shall be in accordance with the USFS, ADOT approved PUPs for the chemicals to be used.

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 from 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:

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 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.

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

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 is 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 roadway **/** drainage excavations, 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 of roadway **/** drainage excavations.

(925SRVY, 02/20/08)

SECTION 925 - CONSTRUCTION SURVEYING AND LAYOUT:

925-5 **Basis of Payment:** the first two sentences of the second paragraph of the Standard Specifications are 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 under ITEM 9250101 - ONE-PERSON SURVEY PARTY at the predetermined rate of $65 per hour, ITEM 9250102 - TWO-PERSON SURVEY PARTY at the predetermined rate of $100 per hour, ITEM 9250103 - THREE-PERSON SURVEY PARTY at the predetermined rate of $135 per hour, ITEM 9250106 – SURVEY MANAGER at the predetermined rate of $100 per hour, and ITEM 9250105 - OFFICE SURVEY TECHNICIAN at the predetermined rate of $70 per hour.

(1001MATL, 12/14/09)

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 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, for any source proposed for use regardless of whether an approved Environmental Analysis exists for the site.

In accordance with Subsection 104.12, the contractor may incorporate 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 Department makes no representation regarding quality or quantity of materials in any source.

1001-2.01 Material Sources in Flood Plains:

Any material source located in a flood plain and proposed for use on the project shall be reviewed by the appropriate agency having flood plain management jurisdiction for the area in which the proposed source is located. The contractor shall obtain a letter from the governing flood plain agency addressed to the Engineer, certifying that the location of the proposed source conforms to the requirements of the floodplain management agency.

Contractors seeking a flood plain material source are cautioned that Section 404 of the Clean Water Act may prevent use of the source unless an appropriate permit is first obtained from the U.S. Army Corps of Engineers.

Except for surplus material from agency-administered flood control management projects, borrow material shall not be obtained from any area situated in the 100-year flood plain of any stream or watercourse, and located within one mile upstream and two miles downstream of any highway structure or surfaced roadway crossing. 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 prior to the date of advertisement for bids on the Department project.

Material sources in flood plains located on Native American Indian Reservations will be considered for use based on an individual analysis. The analysis shall include a review of applicable land use plans, flood plain management plans, environmental plans, applicable laws and regulations pertaining to Indian Reservations, and an engineering analysis of the effects on any highway facility or structure. The contractor shall obtain from the Native American Tribal Council all permits, licenses, and approvals and present to the Department for review. The Department will review each request on a case by case basis.

1001-2.02 Information Available:

The Department's Materials Group 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. In addition, Materials Group maintains files for those sites for which the Department holds an easement, license, permit, lease, or other right, as well as a General Plan of Operation and Restoration. The contractor may contact the Materials Group at (602) 712-7231 for information and may review the files located at 1221 N. 21st Avenue, Phoenix, Arizona 85009-3740.

Contractors are advised that an agency having jurisdiction over the source, such as the Forest Service, Bureau of Land Management, Bureau of Reclamation, the State Land Department, etc., or the owner, as a condition to the use of the source, may have imposed certain obligations. The contractor who uses such a source shall assume full contractual responsibility for any and all of these obligations imposed either by the agency having jurisdiction or by the owner. Contractors considering such a source shall make themselves fully aware of any and all requirements imposed by the Department and the landowners.

The contractor may propose the use of these or other sources, provided that all requirements of the specifications have been met.

It shall be the responsibility of the contractor to comply with the provisions of the Environmental Analysis and with current laws, rules, and regulations.

The Department makes no representation regarding quality or quantity of materials in any source.

It shall be the responsibility of the contractor to conduct any necessary investigations, explorations and research, on-site and otherwise, to satisfy itself that the specified quantity and/or quality of material exists in any material source.

1001-2.03 Usage of Materials:

Approval of the use of any source shall be limited to the specific contract and purpose for which the use of the source was obtained.

1001-2.04 Royalty Charges:

If the Engineer approves a source for which the Department holds an easement, license, permit, lease, or other right with the landowner or controlling agency that includes requirements for the payment of royalties, the amount of the royalty charges and the name and address of the party to whom royalties are to be paid will be available from the Materials Group, 1221 N. 21st Avenue, Phoenix, Arizona 85009-3740.

Prior to the time of final payment, the contractor shall furnish the Engineer with evidence that all royalty charges have been paid. Such evidence shall consist of a waiver, release, or other written acknowledgement from the owner that all of the contractor's obligations to the owner have been met. In the event that royalty charges have not been paid, the Department reserves the right to make such payment and to deduct the amount of such payment from monies due the contractor.

The final billing and payment for material extracted from sources under the jurisdiction of the State Land Department will include a small administrative charge based on the total amount of royalties due for materials removed.

Upon receipt of the final billing from the Department of Transportation, the contractor shall mail a check, payable to the State Land Department, addressed as follows:

Arizona Department of Transportation
Field Reports Section
206 South 17th Avenue
Phoenix, Arizona 85007

1001-2.05 Performance Bonds:

If sources are under the jurisdiction of either the State Land Department or the Bureau of Land Management, the contractor shall secure a performance bond. A fully executed copy of the bond shall be furnished to the Engineer along with evidence that a fully executed copy has been sent to the State Land Department or the Bureau of Land Management.

The form of the Performance Bond will be available from the Materials Group, 1221 N. 21st Avenue, Phoenix, Arizona 85009-3740. For pits under the jurisdiction of the Bureau of Land Management, the surety shall be a company listed under "Surety Companies Acceptable on Federal Bonds." This list is published annually as of July 1 in the Federal Register.

Performance bonds shall be conditioned upon the compliance with the requirements of the State Land Department and the Bureau of Land Management and the requirements of the specifications for the clearing of pit sites, the removal of material and the cleaning up of pit sites.

Copies of fully executed performance bonds shall be mailed as follows:

State Land Commission	Bureau of Land Management
State Land Department	Manager, Land Office
1624 West Adams Street	222 North Central Avenue

Phoenix, Arizona 85007 Phoenix, Arizona 85004

1001-2.06 Sampling and Testing:

The results of any sampling and testing accomplished by the Department will be available from the Materials Group, 1221 N. 21st Avenue, Phoenix, Arizona 85009-3740.

1001- 2.07 Plan of Operation and Restoration:

The contractor shall determine whether the Department holds an easement, license, permit, lease or other right, for any proposed material source. For such sites, a project-specific Plan of Operation and Restoration will be required. The contractor shall obtain a copy of the related document and the Department's General Plan of Operation and Restoration for the proposed site from the Materials Group. The contractor shall prepare and submit to the Engineer a project-specific Plan of Operation and Restoration which shall follow the format of the Department's General Plan of Operation and Restoration, and shall take into account the requirements of the Environmental Analysis, as well as any restrictions placed on the use of the source by the landowner or agency.

The proposed source will not be approved without an approved project-specific Plan of Operation and Restoration. Approval of the contractor's project-specific plan does not constitute approval of the use of the source.

The contractor shall identify and provide a person in charge of the operation. That person shall maintain copies onsite of the Department's General Plan of Operation and Restoration, the contractor's approved project-specific Plan of Operation and Restoration, the current Environmental Analysis, and the license and permits issued to the Department by the landowner or agency.

1001-3 Proposed Source:

1001-3.01 Approval Requirements:

(A) General:

The contractor shall promptly advise the Engineer 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.

The contractor further acknowledges that no additional compensation will be made on account of any delays in preparing or modifying the Environmental Analysis, obtaining approval for the

use of a source, or the failure to obtain approval of a source. An extension of contract time may be granted only in accordance with Subsections 104.12 or 1001-3.01(B)(4).

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.

If all of the requirements for approval of a materials source have been accomplished for the project, and the Engineer has approved the source for use on the project and, subsequent to that approval, the Environmental Analysis is rescinded, the contractor may request a revision to the contract in accordance with Subsection 104.02 and 108.08. In reviewing the contractor's request, the Department will take into account the following factors. Additional factors may be considered.

(1) Whether the contractor was in compliance with the requirements of the Environmental Analysis and, if applicable, the site-specific Plan of Operations and Restoration.

(2) Whether the reasons for rescinding the approval were reasonably foreseeable.

(3) Whether the action taken was the result of regulatory changes.

(4) Whether deficiencies unrelated to the Environmental Analysis may have rendered the source unacceptable.

(5) Whether rescinding the approval was the sole cause of any impact to controlling activities on the project.

(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 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 shall be completed prior to initiation of any activities that disturb the existing conditions at the proposed source, except for exploring test areas as specified in Subsection 1001-3.02.

(2) The contractor has furnished the Engineer with evidence that he has secured the rights to the source, including ingress and egress.

(3) The Department has determined that the material from the proposed source not only meets the requirements, but is also compatible with the established project design criteria developed by the ADOT Materials Group and based on the soil support value of the embankment; and the sampling and testing as herein specified has been satisfactorily completed.

(4) The contractor has furnished a fully executed copy of the Performance Bond as specified in Subsection 1001-2.05.

(5) When required, the contractor has submitted, and the Department has approved, the site-specific plan of operations and restoration as specified in Subsection 1001-2.07.

The contractor shall also notify the Arizona Department of Agriculture, in accordance with the Arizona Native Plant Law, at least 30 days prior to any clearing operations of less than 40 acres on private land, 60 days prior to clearing operations of 40 or more acres on private land, and 60 days prior to any clearing of state land, regardless of size. If the Engineer is convinced that the contractor has made every effort to comply with the provisions of the Arizona Native Plant Law in contacting the Department of Agriculture, the Engineer will increase the number of contract days by the amount of time required for action by the Department of Agriculture. The increase will not exceed 45 calendar days and will be concurrent with any increase allowed for the preparation of the Environmental Analysis.

(C) Historical and Cultural Resources:

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.

1001-3.02 Testing Requirements:

The contractor shall furnish equipment and personnel and shall obtain representative samples of the material under the supervision of the Engineer. At the option of the contractor, the material shall be tested by either the Department or by a testing laboratory approved by the Department. The cost of all sampling and testing done for the purpose of attaining approval of any source, including the cost of supervision by the Engineer, shall be borne by the contractor.

If testing is performed by a testing laboratory, the contractor shall arrange for the samples to be delivered to the testing laboratory. Tests shall be performed using appropriate test procedures referred to in the sections of the specifications in which the specific material requirements are described.

The contractor shall make the arrangements necessary to see that the testing laboratory submits the results of the tests to ADOT Materials Group. The contractor shall submit to ADOT Materials Group sufficient quantity of material from the samples taken so that ADOT Materials Group may test the materials, at the Department’s expense, and verify the results.

Exploratory sampling and testing activities conducted prior to the Department's approval shall be limited so as to cause the minimum amount of vegetation removal and surface disturbance required to obtain representative samples. The contractor shall not produce material, mobilize crushing equipment or clear a worksite prior to approval of the Environmental Analysis.

The contractor may request an exemption from the testing requirements specified in this subsection upon presentation of evidence to the satisfaction of the Engineer that the material that will be produced on the project is sufficiently similar to material that has been previously acceptable to the Department on projects with similar materials specifications.

No approval of the source shall be assumed, nor will it be made, until the Department has determined that the material meets the specified requirements.

The contract time will not be adjusted because of any time required by either the contractor or the Department to sample and test the material and to determine the quality of the material.

1001-4 Special Access:

The contractor may make a request to the 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 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 Engineer to deny a request by the contractor will be considered to be final.

1001-5 Operations at Source:

1001-5.01 General Requirements:

The contractor shall conduct its operations in such a manner as to preserve available materials in excess of project requirements.

The contractor shall notify the Engineer in advance of operations at the source. Notice shall be given before and after clearing and grubbing, and before and after cleaning up.

1001-5.02 Clearing and Grubbing:

Before beginning stripping, the contractor shall clear and grub the source as necessary to prevent the contamination of materials to be used in the work. Clearing and grubbing shall be in accordance with the requirements of Section 201, except that the resulting surface need not be leveled and vegetable matter need not be separated from any overburden which the Engineer determines to be unsuitable for any future use and which is to be wasted. Clearing and grubbing shall be limited to the area expected to be excavated and areas used for processing and stockpiling.

In the disposal of all tree trunks, stumps, brush, limbs, roots, vegetation and other debris removed, the contractor shall comply with the requirements of the Arizona Revised Statutes Title 49 Chapter 3 – Air Quality; and with the Arizona Administrative Code Title 18 Chapter 2 – Department of Environmental Quality – Air Pollution Control.

Burning will be permitted only after the contractor has obtained a permit from the Arizona Department of Environmental Quality, and from any other Federal, State, County or City Agency that may be involved.

When stripping is required, overburden shall be removed to the extent necessary to remove all undesirable materials and shall, at all times, be kept stripped at least five feet beyond the working face of the area being excavated.

The contractor shall comply with the requirements of the landowner or agency having jurisdiction over the land.

1001-5.03 Extraction of Materials:

Materials shall be removed from the source in a workmanlike manner and, when required, in accordance with the contractor’s project-specific Plan of Operation and Restoration. In order to produce acceptable material in the amount and gradation required, it may be necessary for the contractor to do any or all of the following, along with any other similar operations usually associated with the extraction, processing and production of the particular material being produced:

Move materials from one area to another.

Perform additional screening.
Remove, wash and waste material.
Blend materials.
Revise crushing methods.
Remove deleterious materials such as clay balls, roots and sticks.

If the Engineer determines that the material in a source is stratified, all material except borrow shall be removed for the full depth in such a manner as to produce a uniform blend of the material. Placing the material from different areas and depths into a surge pile and removing material from the surge pile by cutting through the pile will be acceptable provided that a uniformly blended material is obtained.

Material sources located in drainage channels such as washes, riverbeds, etc., may experience seasonal variations in the depth of ground water. In order to produce the quantity of material estimated to be available, the contractor may be required to work below the water table.

1001-6 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.

1001-7 Cleaning Up:

All overburden and other undesirable materials removed and all piles of waste materials resulting from operations in the source shall be handled in accordance with the requirements of the landowner or agency having jurisdiction over the land, the Environmental Analysis, the project-specific Plan of Operation and Restoration, if applicable, and all laws, rules and regulations. All debris shall be removed and disposed of and, if directed, all open test holes shall be filled. Unless otherwise required, the sides of sources shall be sloped and smoothed

so that livestock can enter and leave the excavated area safely. Unless otherwise required, all haul roads shall be obliterated and, as far as practicable, the ground left in as good condition as it was prior to hauling.

1001-8 Method of Measurement and Basis of Payment:

Except as may be otherwise specifically provided for in this section or elsewhere, no measurement or direct payment will be made for any costs involved in the procuring of materials. Such costs shall be considered as included in the cost of contract items.

(1003REBAR, 01/26/16)

SECTION 1003 REINFORCING STEEL:

1003-1 General Requirements: the first paragraph of the Standard Specifications is revised to read:

Reinforcing steel shall be furnished in the sizes, shapes, and lengths shown on the plans and in conformance with the requirements of the specifications.

Certificates of Compliance conforming to the requirements of Subsection 106.05 shall be submitted for epoxy coated reinforcing bars, as well as uncoated reinforcing bars, wire, and welded wire fabric. In addition, for epoxy coated reinforcing bars, Certificates of Compliance shall be required from the coating manufacturer and Certificates of Analysis shall be required from the coating applicator.

1003-2 Reinforcing Bars: the first paragraph of the Standard Specifications is revised to read:

Except when used for wire ties or spirals, steel bars used as reinforcement in concrete shall be deformed and shall conform to the requirements of ASTM A 615. Unless otherwise specified, steel bars meeting the requirements of ASTM A 706 may be substituted for ASTM A 615 steel bars. When ASTM A 706 bars are used, tack welding of the reinforcement will not be permitted unless approved in writing by the Engineer.

1003-3 Wire: of the Standard Specifications is revised to read:

Steel wire used as spirals or ties for reinforcement in concrete shall conform to the requirements of ASTM A 82.

1003-5.02 Epoxy for Coating: the first paragraph of the Standard Specifications is revised to read:

A list of powdered epoxy resins which have passed prequalification tests, as described in ASTM A 775, “Epoxy-Coated Steel Reinforcing Bars”, and which may be used if the material is

applied and cured in the same manner as that used to coat the test bars in the original powder prequalification test may be found on the Department's Approved Products List. Copies of the most current version are available on the internet from the ADOT Research Center through its Product Evaluation Program.

1003-5.02 **Epoxy for Coating:** the fifth paragraph of the Standard Specifications is revised to read:

The contractor shall furnish a Certificate of Compliance from the coating manufacturer, conforming to the requirements of Subsection 106.05. The Certificate of Compliance shall properly identify the batch and/or lot number, material, quantity of batch, date of manufacture, name and address of manufacturer, and a statement that the material is the same composition as the initial sample prequalified for use. The certificate shall also state that production bars and prequalification bars have been identically prepared and applied with epoxy powders.

1003-5.03 **Application of Coating:** the second paragraph of the Standard Specifications is revised to read:

The surface to be coated shall be blast cleaned in accordance with the requirements of the Society for Protective Coatings, Surface Preparation Standard SSPC-SP10, Near White Blast Cleaning.

1003-5.03 **Application of Coating:** the fifth paragraph of the Standard Specifications is revised to read:

The epoxy coating shall be applied as a smooth uniform coat. After curing, the coating thickness shall be ten ± two mils. Coating thickness shall be controlled by taking measurements on a representative number of bars from each production lot. Coating thickness measurements shall be conducted by the method outlined in the Society for Protective Coatings Paint Application Standard SSPC-PA2.

1003-5.03 **Application of Coating:** the ninth and tenth paragraphs of the Standard Specifications are revised to read:

The contractor shall furnish a Certificate of Analysis from the coating applicator, conforming to the requirements of Subsection 106.05, with each shipment of coated steel. In addition to the requirements of Subsection 106.05, the Certificate of Analysis shall state that the coated items and coating material have been tested in accordance with the requirements of this subsection and that the entire lot is in a fully-cured condition.

The coating applicator shall be responsible for performing quality control and tests. This will include inspection and testing to determine compliance with the requirements of this subsection for the coating thickness, continuity of coating, coating cure, and flexibility of coating.

(1005PG, 7/01/14)

SECTION 1005 BITUMINOUS MATERIALS:

1005-2 **Sampling of Bituminous Material:** the first sentence of the first paragraph of the Standard Specifications is revised to read:

Sampling of bituminous material shall conform to the requirements of Arizona Test Method 103.

1005-3.01 **Asphalt Cement:** the second paragraph of the Standard Specifications is revised to read:

If PG 76-22 TR+ asphalt binder is used, it shall conform to the requirements of Table 1005-1a.

If PG 70-22 TR+ asphalt binder is used, it shall conform to the requirements of Table 1005-1b.

If PG 64-28 TR+ asphalt binder is used, it shall conform to the requirements of Table 1005-1c.

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 must be potable. The material shall not be diluted in the field.

TABLE 1005-1: "Creep Stiffness of PAV Binder" in Table 1005-1 of the Standard Specifications is revised to read:

TABLE 1005-1 ASPHALT BINDER ADJUSTMENT TABLE			
Test Property	AASHTO Test Method	Test Result	Percent of Contract Unit Price Allowed
Creep Stiffness of PAV Binder: S, MPa	T 313	≤ 300 301-330 331-450 451-600 > 600	100 95 85 75 65 (1)

TABLE 1005-1b: **PG 70-22 TR+ ASPHALT BINDER** is hereby added to the Standard Specifications:

TABLE 1005-1b
PG 70-22 TR+ ASPHALT BINDER

Test Property	Test Method	Requirement	Test Result	Percent of Contract Unit Price Allowed
Solubility in Trichloroethylene, %, minimum	ASTM D 2042	97.5	------	------
Softening Point, °C, minimum	AASHTO T 53	54	≥ 54 51 - 53 < 51	100 85 70 (1)
Elastic Recovery, @ 10 °C, %, Minimum	AASHTO T 301	55	≥ 55 50 - 54 < 50	100 85 70 (1)
Phase Angle (δ), @ 70 °C @ 10 rad/sec, degrees, maximum	AASHTO T 315	75	≤ 75 76 - 83 > 83	100 85 65 (1)

(1) Reject Status: The pay adjustment applies if allowed to remain in place.

Notes:

PG 70-22 TR+ asphalt binder shall contain a minimum of 8 percent crumb rubber and a minimum of two percent SBS (styrene-butadiene-styrene) polymer.

PG 70-22 TR+ asphalt binder shall conform to the requirements of AASHTO M 320 and, in addition, shall meet the requirements specified above.

Table 1005-1 will also apply for PG 70-22 TR+ asphalt binder.

Should the bituminous material be deficient on more than one of the properties listed in Tables 1005-1 and 1005-1b, the pay adjustment will be the greatest reduction to the contract unit price specified considering individual test results.

The pressure aging temperature for PG 70-22 TR+ asphalt binder shall be 110 °C.

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 hold water when stored or disposed of above ground.

TABLE 1005-1c: PG 64-28 TR+ ASPHALT BINDER is hereby added to the Standard Specifications:

TABLE 1005-1c PG 64-28 TR+ ASPHALT BINDER				
Test Property	Test Method	Requirement	Test Result	Percent of Contract Unit Price Allowed
Solubility in Trichloroethylene, %, minimum	ASTM D 2042	97.5	-----	-----
Softening Point, °C, minimum	AASHTO T 53	50	≥ 50 47 - 49 < 47	100 85 70 (1)
Elastic Recovery, @ 10 °C, %, Minimum	AASHTO T 301	55	≥ 55 50 - 54 < 50	100 85 70 (1)
Phase Angle (δ), @ 64 °C @ 10 rad/sec, degrees, maximum	AASHTO T 315	75	≤ 75 76 - 83 > 83	100 85 65 (1)
(1) Reject Status: The pay adjustment applies if allowed to remain in place.				

Notes:

PG 64-28 TR+ asphalt binder shall contain a minimum of 8% crumb rubber and a minimum of two percent SBS (styrene-butadiene-styrene) polymer.

PG 64-28 TR+ asphalt binder shall conform to the requirements of AASHTO M 320 and, in addition, shall meet the requirements specified above.

Table 1005-1 will also apply for PG 64-28 TR+ asphalt binder.

Should the bituminous material be deficient on more than one of the properties listed in Tables 1005-1 and 1005-1c, the pay adjustment will be the greatest reduction to the contract unit price specified considering individual test results.

The pressure aging temperature for PG 64-28 TR+ asphalt binder shall be 100 °C.

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 hold water when stored or disposed of above ground.

TABLE 1005-3a: "Elastic Recovery by means of Ductilometer" is revised and "Note 2" is added in Table 1005-3a of the Standard Specifications:

TABLE 1005-3a
POLYMERIZED CATIONIC RAPID SET (CRS-2P)
EMULSIFIED ASPHALT (1)

Tests on Emulsion:	Test Method	Requirement
Elastic Recovery by means of Ductilometer, 25 ºC (77 ºF), % minimum	AASHTO T 301 (2)	55

(2) Testing shall be performed on residue by distillation, not on residue by oven evaporation.

TABLE 1005-3b: "Elastic Recovery by means of Ductilometer" is revised and "Note 3" is added in Table 1005-3b of the Standard Specifications:

TABLE 1005-3b
POLYMERIZED HIGH FLOAT EMULSIFIED ASPHALT (1)

Tests on Emulsion:	Test Method	Requirement	
		HFE-150P	HFE-300P
Elastic Recovery by means of Ductilometer, 4 ºC (39.2 ºF), % minimum	AASHTO T 301 (3)	25	25

(3) Testing shall be performed on residue by distillation, not on residue by oven evaporation.

TABLE 1005-6: PG 70-22 TR+ and PG 64-28 TR+ are added to "Paving Asphalt" in Table 1005-6 of the Standard Specifications:

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-XX			232
PG 70-XX			233
PG 64-XX			235
PG 58-XX			236
PG 52-XX			238
PG 76-22 TR+			229
PG 70-22 TR+			230
PG 64-28 TR+			231

(1006PCC, 10/03/14)

SECTION 1006 PORTLAND CEMENT CONCRETE:

1006-1 General Requirements: of the Standard Specifications is revised to read:

Portland cement concrete shall consist of a mixture of hydraulic cement, fine aggregate, coarse aggregate, and water. It may also contain air-entraining admixtures, chemical admixtures, and supplementary cementitious materials.

The contractor shall determine the mix proportions and shall furnish concrete which conforms to the requirements of the specifications. All concrete shall be sufficiently workable, at the slump proposed by the contractor within the specified range, to allow proper placement of the concrete without harmful segregation, bleeding, or incomplete consolidation. It shall be the responsibility of the contractor to proportion, mix, place, finish, and cure the concrete properly in accordance with the requirements of the specifications.

1006-2.01 Hydraulic Cement: the second through the fifth paragraphs of the Standard Specifications are revised to read:

Portland cement shall conform to the requirements of ASTM C 150 for Type II, III, or V, and shall be low alkali cement containing not more than 0.60 percent total alkali (Na_2O equivalent).

Portland-pozzolan cement shall conform to the requirements of ASTM C 595 for blended hydraulic cement with moderate sulfate resistance, Type IP (MS).

Cementitious material is defined as an inorganic material or a mixture of inorganic materials that sets and develops strength by chemical reaction with water by formation of hydrates and is capable of doing so under water. In this specification, cementitious materials are defined as: hydraulic cement (Portland cement or Portland-pozzolan cement) and supplementary cementitious material (Fly Ash, Natural Pozzolan, or Silica Fume).

Hydraulic cement shall be approved prior to its use in accordance with ADOT Materials Policy and Procedure Directive No. 13, "Certification and Acceptance of Hydraulic Cement, Fly Ash, Natural Pozzolan, Silica Fume, and Lime".

1006-2.02 **Water:** the first sentence of the first paragraph of the Standard Specifications is revised to read:

The water used shall be free of injurious amounts of oil, acid, alkali, clay, vegetable matter, silt, or other harmful matter.

1006-2.03(A) **General Requirements:** the first paragraph of the Standard Specifications is revised to read:

When concrete is to be placed at elevations above 4,500 feet, the fine aggregate and the coarse aggregate shall be subjected to five cycles of the sodium sulfate soundness test, and the weighted percentage loss determined separately for each, in accordance with the requirements of AASHTO T 104. The weighted percentage loss determined for each shall not exceed 10 percent. Tests for soundness may be waived when aggregates from the same source have been approved and the approved test results apply to the current production from that source.

1006-2.03(A) **General Requirements:** the second paragraph of the Standard Specifications is hereby deleted:

1006-2.03(A) **General Requirements:** the fifth paragraph of the Standard Specifications is revised to read:

When aggregates are stored on the ground, the sites for the stockpiles shall be level and clear of all vegetation. The bottom one-foot layer of aggregate shall not be disturbed or used.

1006-2.03(A) **General Requirements:** "Lightweight particles" in the table of the ninth paragraph of the Standard Specifications is revised to read:

Lightweight particles (Specific gravity less than 2.0)	AASHTO T 113 (See Note)

1006-2.03(B) Fine Aggregate: "Lightweight particles" in the table of the second paragraph of the Standard Specifications is revised to read:

Lightweight particles (Specific gravity less than 2.0)	AASHTO T 113 (Except that the percent of lightweight particles shall be reported to the nearest 0.01%.)	1.25% (0.25% Max. Coal and Lignite*)

1006-2.03(B) Fine Aggregate: the last paragraph of the Standard Specifications is revised to read:

Fine aggregate shall be made into mortar and subjected to testing under AASHTO T 71, except that the mortar shall develop a compressive strength at seven and 28 days of not less than 90 percent of that developed by a mortar prepared in the same manner with the same Type II cement and graded sand conforming to the requirements of ASTM C 778.

1006-2.03(C) Coarse Aggregate: "Lightweight particles" in the table of the second paragraph of the Standard Specifications is revised to read:

Lightweight particles (Specific gravity less than 2.0)	AASHTO T 113 (Except that the percent of lightweight particles shall be reported to the nearest 0.01%.)	1.25% (0.25% Max. Coal and Lignite*)

1006-2.04(A) General Requirements: the first paragraph of the Standard Specifications is hereby deleted.

1006-2.04(B) Air-Entraining Admixtures: the first paragraph of the Standard Specifications is revised to read:

Air-entraining admixtures shall conform to the requirements of ASTM C 260.

Air-entraining admixtures shall be approved prior to their use in accordance with ADOT Materials Policy and Procedure Directive No. 2, "Certification and Acceptance of Chemical and Air-Entraining Admixtures for Portland Cement Concrete".

1006-2.04(C) Chemical Admixtures: the first paragraph of the Standard Specifications is revised to read:

Chemical admixtures shall conform to the requirements of ASTM C 494.

Chemical admixtures shall be approved prior to their use in accordance with ADOT Materials Policy and Procedure Directive No. 2, "Certification and Acceptance of Chemical and Air-Entraining Admixtures for Portland Cement Concrete".

1006-2.04(D) Supplementary Cementitious Material (Fly Ash, Natural Pozzolan, and Silica Fume): the first paragraph of the Standard Specifications is revised to read:

Supplementary cementitious materials may be used in addition to hydraulic cement. Supplementary cementitious materials shall be approved prior to their use in accordance with ADOT Materials Policy and Procedure Directive No. 13, "Certification and Acceptance of Hydraulic Cement, Fly Ash, Natural Pozzolan, Silica Fume, and Lime".

1006-2.04(D) Supplementary Cementitious Material (Fly Ash, Natural Pozzolan, and Silica Fume): the last two paragraphs of the Standard Specifications are revised to read:

When a supplementary cementitious material with a calcium oxide content greater than 15 percent is proposed, the hydraulic cement/supplementary cementitious material blend shall be tested for sulfate expansion in accordance with ASTM C 1012. The maximum expansion shall be 0.10 percent at six months.

When either moderate or high sulfate resistant concrete is specified in the Special Provisions, the proposed hydraulic cement/supplementary cementitious material blend shall be tested for sulfate expansion in accordance with ASTM C 1012. When moderate sulfate resistance is specified, the maximum expansion shall be 0.10 percent at six months. When high sulfate resistance is specified, the maximum expansion shall be 0.05 percent at six months or 0.10 percent at one year.

1006-2.05 Concrete Curing Materials: the second paragraph of the Standard Specifications is revised to read:

Acceptance of concrete curing materials shall be as specified in ADOT Materials Policy and Procedure Directive No. 3, "Curing Compounds".

1006-3.01 Design Criteria: Table 1006-A of the Standard Specifications is revised to read:

TABLE 1006-A

Class of Concrete	Minimum 28-Day Compressive Strength Required: psi (See Note 1)	Cementitious Material Content: Lbs per Cu Yd Minimum - Maximum (See Notes 2, 3, and 4)	Maximum Water/Cementitious Material Ratio (w/cm): Lb./Lb.	Slump Range: Inches
B	2,500	470 – 658	None	(See Note 6)
S	2,500	520 – 752	0.55	
	3,000 (See Note 5)			
	3,500			
	4,000			
	4,500	564 – 752	0.50	
	Greater than 4,500	564 - 800	0.45	
P	4,000	564 – 658	None	0 – 4.5
H	High performance concrete as specified in project special provisions.			

Note 1: Testing for compressive strength of cylinders for all classes of concrete shall be in accordance with the requirements of Arizona Test Method 314.

Note 2: A supplementary cementitious material (fly ash, natural pozzolan, or silica fume) conforming to the requirements of Subsection 1006-2.04(D) may be used, as specified in paragraphs (a) through (f) below.

(a) When Portland cement is used, a maximum of 25 percent, by weight of the cementitious material, may be an approved fly ash or natural pozzolan, except as specified in paragraphs (d), (e), and (f) below.

(b) When Portland-pozzolan cement [Type lP (MS)] is used, fly ash or natural pozzolan is not allowed, except as specified in paragraphs (d), (e), and (f) below.

(c) When silica fume is used, a maximum of 10 percent, by weight of either Portland cement or Portland-pozzolan cement, may be used.

(d) When a compressive strength greater than 4,500 psi is required, supplementary cementitious material may be added in excess of the maximum cementitious material content. Fly ash or natural pozzolan may exceed 25 percent, by weight of the cementitious material, if approved by the Engineer.

(e) When increased sulfate resistance is specified, the required amount of fly ash or natural pozzolan shall be incorporated into the concrete and may exceed 25 percent, by weight of the cementitious material.

(f) For Class S concrete used in bridge decks, a minimum of 20 percent, by weight of the cementitious material, must be an approved Class F fly ash or natural pozzolan, unless otherwise approved by the Engineer.

Note 3: For any concrete mix, other than for precast and/or prestressed bridge members, with a Portland cement content greater than 545 pounds per cubic yard, **one** of the options specified in paragraphs (a) through (e) below for the mitigation of a potential alkali silica reaction (ASR) shall be used:

(a) A minimum of 20 percent Class F fly ash or natural pozzolan, by weight of the cementitious material, shall be used. The Class F fly ash or natural pozzolan shall have a calcium oxide content of 15 percent or less.

(b) Instead of using Portland cement, Type IP (MS) Portland-pozzolan cement with a Class F fly ash or natural pozzolan content of at least 20 percent, by weight of the cementitious material, shall be used. The Class F fly ash or natural pozzolan shall have a calcium oxide content of 15 percent or less.

(c) Limit the total alkali (Na_2O equivalent) to a maximum of 3.00 pounds per cubic yard of concrete, when calculated as follows:

$$\begin{bmatrix}\text{Pounds of total}\\ \text{alkali per cubic}\\ \text{yard of concrete}\end{bmatrix} = \frac{\begin{pmatrix}\text{Pounds of Portland}\\ \text{cement per cubic}\\ \text{yard of concrete}\end{pmatrix} \text{ x } \begin{pmatrix}Na_2O \text{ equivalent (\%)}\\ \text{in Portand cement}\end{pmatrix}}{100}$$

(d) Introduce a lithium nitrate admixture, which has been approved by the Engineer, at a minimum dosage of 0.55 gallons of 30 percent lithium nitrate solution per pound of total alkali (Na_2O equivalent) per cubic yard of concrete. The required amount of lithium nitrate is calculated as follows:

$$\begin{bmatrix}\text{Required gallons}\\ \text{of 30 percent}\\ \text{lithium nitrate}\\ \text{solution}\end{bmatrix} = \frac{\begin{pmatrix}\text{Pounds of}\\ \text{Portland cement}\\ \text{per cubic yard}\\ \text{of concrete}\end{pmatrix} \text{ x } \begin{pmatrix}Na_2O \text{ equivalent (\%)}\\ \text{in Portand cement}\end{pmatrix}}{100} \text{ x } (0.55)$$

(e) The coarse aggregate and the fine aggregate shall be tested separately in accordance with ASTM C 1260 to determine the potential for alkali silica reaction (ASR). When aggregates show the potential for ASR, as indicated by expansions of 0.10% or greater at 16 days after casting, sufficient mitigation for the expansion shall be determined in accordance with ASTM C 1567. The use of fly ash or natural pozzolan may exceed 25 percent, by weight of the cementitious material.

Note 4: Unless otherwise specified, the cementitious material content shall be as shown.

Note 5: Unless otherwise shown on the plans.

Note 6: The proposed slump shall be chosen by the contractor. Concrete at the proposed slump shall be sufficiently workable to allow proper placement without harmful segregation, bleeding, or incomplete consolidation.

1006-3.01 **Design Criteria:** the second, third, and fourth paragraphs of the Standard Specifications are revised to read:

Air-entraining admixtures will be required for all classes of concrete placed at an elevation of 3,000 feet or above. The air content of the concrete mixture shall not be less than four percent nor more than seven percent by volume. However, no air-entrainment will be required for minor precast structures, precast pipe, and precast, prestressed structural members supporting a concrete deck slab or impervious overlay. Also, no air-entrainment will be required for any precast items constructed using the dry pack or no-slump method.

For elevations below 3,000 feet, air-entraining admixtures may be used at the option of the contractor. If air-entraining admixtures are used, the air content of the concrete mixture shall not exceed seven percent by volume.

Concrete that fails to conform to the air content requirements listed above for the respective elevation as determined by the Engineer, shall be rejected prior to placement.

1006-3.01 **Design Criteria:** the first and second sentences of the sixth paragraph of the Standard Specifications are revised to read:

The coarse aggregate size designation for Class S or Class B concrete shall be chosen by the contractor and approved by the Engineer and shall conform to the size designation and grading requirements of AASHTO M 43. In choosing the size designation, the maximum size of coarse aggregate shall not be larger than one fifth of the narrowest dimension between the sides of adjacent forms, or two thirds of the minimum clear spacing between reinforcing bars, or two thirds of the minimum clear spacing between reinforcing bars and the sides of adjacent forms, or one third of the depth of the slab, whichever is least.

1006-3.01 Design Criteria: the first sentence of the seventh paragraph of the Standard Specifications is revised to read:

Coarse aggregate for Class P concrete used to construct Portland cement concrete pavement without load transfer dowels shall be separated into two or more stockpiles.

1006-3.02 Design Procedures: the first paragraph of the Standard Specifications is revised to read:

At least two weeks prior to the appropriate concreting operation, the contractor shall furnish a mix design for each class of concrete and each strength of Class S concrete for review and approval. More than one mix design for each class of concrete and each strength of Class S concrete may be submitted for approval provided specific items and locations of intended uses accompany the mix design. The contractor shall substantiate each mix design by furnishing test data and providing all details of the mixtures proposed for use. Mix designs, for other than precast or prestressed concrete, shall be prepared by or under the direction of, and signed by, a registered professional engineer, a NICET Level III or higher certified technician in the concrete subfield, a NRMCA Level 3 Certified Concrete Technologist, or an ACI certified Concrete Laboratory Testing Technician Level 2 or Grade II. Mix designs for precast or prestressed concrete shall be prepared by or under the direct supervision of, and signed by, either one of the individuals listed above or a PCI Quality Control Technician/Inspector Level II or higher. Individuals preparing and submitting mix designs shall have experience in the development of mix designs and mix design testing for the respective type of concrete.

1006-3.02 Design Procedures: the second and third paragraphs of the Standard Specifications are revised to read:

The complete solid volume mix designs submitted for approval shall include all weights and volumes of all ingredients. The brand, type, and source of hydraulic cement and admixtures, the coarse aggregate size number designation, source of aggregates, the specific gravities of all ingredients, the proposed slump, the water/cementitious material ratio, a product code to identify the mix design, and the intended use of each mix design shall be an integral part of each mix design.

The use of new and previously used mix designs, and the requirements for trial batches, will be as required by ADOT Materials Policy and Procedure Directive No. 15, “Submittal and Approval of Portland Cement Concrete Mix Designs”.

1006-4.01 General Requirements: of the Standard Specifications is revised to read:

The contractor may obtain concrete for each class of concrete and for each strength of Class S concrete from a source approved by the Engineer in lieu of establishing a batch plant at the project site.

For each class of concrete and each strength of Class S concrete, except for Class P concrete produced in a batch plant at the site and used exclusively for Class P work, the contractor shall

furnish a delivery ticket for each batch of concrete. The minimum information to be shown on each delivery ticket shall be the date, time batched, truck identification number, name or identification of batch plant, name of contractor, name and location of project, the quantity of concrete, the batch weights/volumes or mix design product code, the amount of permissible additional water to meet the design water/cementitious material ratio, and the number of revolutions that the concrete has been mixed at mixing speed in a truck mixer. An authorized representative of the contractor shall be responsible for each delivery ticket and shall sign each delivery ticket accepting the contractor's responsibility for the concrete. The representative shall immediately furnish the delivery ticket to the Engineer.

When requested by the Engineer, the contractor shall supply a separate record for each batch of concrete which shows the batch weight/volume of each individual ingredient.

1006-4.02(A) **Hydraulic Cement:** the last sentence of the first paragraph of the Standard Specifications is hereby deleted:

1006-4.03(A) **General Requirements:** the last sentence of the first paragraph of the Standard Specifications is revised to read:

Concrete may be mixed in a mobile mixer at the site for Class S or Class B concrete, provided written permission of the Engineer is granted.

1006-4.03(B) **Mixing in a Stationary Mixer:** the last sentence of the third paragraph of the Standard Specifications is revised to read:

The mixing time shall be not less than 60 seconds for one cubic yard and shall be increased 15 seconds for each additional cubic yard or fraction thereof for Class S or Class B concrete.

1006-4.03(C) **Mixing in Truck Mixers:** the first sentence of the last paragraph of the Standard Specifications is revised to read:

If additional mixing water is required to maintain the mix design water/cementitious material ratio, the concrete shall be mixed by a minimum of 30 revolutions of the drum at mixing speed after the water has been added, prior to discharge of any concrete for placement.

1006-4.03(D) **Mixing in Mobile Mixers:** of the Standard Specifications is revised to read:

Concrete mixing in mobile mixers for Class S or Class B concrete shall be performed in accordance with the requirements of AASHTO M 241.

1006-4.04 **Consistency:** the second paragraph of the Standard Specifications is revised to read:

The contractor shall furnish Class S and Class B concrete having the slump shown on the approved mix design, with a permissible variation of ± one inch when the slump shown on the approved mix design is four inches or less, and a permissible variation of ± 1½ inches when

the slump shown on the approved mix design is greater than four inches. However, when an approved high range water reducing chemical admixture (ASTM C 494, Type F or Type G) conforming to the requirements of Subsection 1006-2.04 is used, the permissible variation will be ± two inches, regardless of the slump shown on the approved mix design.

1006-5 **Weather Limitations:** the title of the Standard Specifications is revised to read:

1006-5 **Concrete Temperature and Weather Limitations:**

1006-5.01 **General Requirements:** of the Standard Specifications is revised to read:

The temperature of the concrete mixture immediately before placement shall not be less than 50 degrees F nor greater than 90 degrees F. Concrete that fails to conform to this temperature requirement shall be rejected prior to placement.

Under rainy conditions, placing of concrete shall be stopped before the quantity of surface water is sufficient to cause a flow or wash of the concrete surface or have a detrimental effect on the finished concrete and acceptance parameters.

Placing of concrete shall immediately cease if the hauling vehicles or any equipment or pedestrian traffic tracks mud on the prepared base or changes the allowable subgrade dimensional tolerances for Class P concrete and slabs placed on subgrade for Class S or Class B concrete.

1006-5.02 **Hot Weather Concreting:** of the Standard Specifications is revised to read:

Forms, subgrade, and reinforcing steel shall be sprinkled with cool water just prior to the placement of concrete.

Mix water may be cooled by refrigeration, liquid nitrogen, or well-crushed ice of a size that will melt completely during the mixing operation. If crushed ice is used, it shall be substituted for part of the mix water on a pound for pound basis.

1006-5.03 **Cold Weather Concreting:** of the Standard Specifications is revised to read:

Concrete shall not be placed on or against ice-coated forms, reinforcing steel, structural steel, conduits, or construction joints; nor on or against snow, ice, or frozen earth materials. Immediately prior to placing concrete, the temperature of forms, reinforcing steel, earthen material, or any other material that will come in contact with the freshly placed concrete shall be a minimum temperature of 40 degrees F. If artificial heat is used to adjust the temperature of the items that will come in contact with the freshly mixed concrete, the temperature of these items shall not exceed 10 degrees F greater than that of the concrete being placed.

Concrete operations shall be discontinued when a descending ambient temperature in the shade and away from artificial heat falls below 40 degrees F. Concrete operations shall not be resumed until an ascending ambient temperature in the shade and away from artificial heat exceeds 35 degrees F unless otherwise approved by the Engineer.

Mixing and placing concrete shall continue no later in any day than that time which will allow sufficient time to place and protect the concrete already poured before the ambient temperature drops to 35 degrees F.

Concrete shall be protected in a manner to maintain all concrete surface temperatures at not less than 50 degrees F for a period of 72 hours after placement and at not less than 40 degrees F for an additional 96 hours.

The contractor may use equipment to heat the aggregates or water, or both, prior to mixing. If aggregates are heated, the minimum temperature of the heated aggregate shall be 60 degrees F and the aggregates shall have no chunks of ice or frozen aggregate present. Equipment used to heat the aggregates shall be such that consistent temperatures are obtained throughout the aggregate within each batch and from one batch to another. Water shall not be heated in excess of 150 degrees F unless the water is mixed with the aggregate prior to the addition of cement to the batch. During the heating or mixing process, cement shall not be added to water and aggregate combinations which exceed 100 degrees F.

When weather forecasts indicate a probability that ambient temperatures will fall below 35 degrees F during the placement or curing periods, the contractor shall submit a cold weather concreting plan to the Engineer for approval prior to concrete placement. The cold weather concreting plan shall detail methods and equipment which will be used to ensure that the required concrete temperatures are maintained. The contractor shall provide adequate cold weather protection in the form of insulation and/or heated enclosures to protect the concrete after placement. For bridge decks and suspended structures, the cold weather concreting plan shall include protection measures for both the top and bottom surfaces of the concrete. This protection shall maintain concrete surface temperatures as specified above at all locations in the structure. When artificial heating is required, the heating units shall not locally heat or dry the surface of the concrete.

When a cold weather concreting plan is required, the Engineer may require concrete temperatures to be measured and continuously recorded by the use of temperature sensing devices during the entire curing period. The contractor shall provide the temperature sensing devices and recording instruments. The contractor shall install temperature sensing devices near the surface of the concrete at locations and depths designated by the Engineer. When concrete is placed on a bridge deck or suspended structure, both the bottom surface and the top surface shall be monitored with temperature sensing devices. Temperature sensing devices and recording instruments shall be approved by the Engineer. The contractor shall continuously monitor the concrete temperature and provide the recorded data to the Engineer at any time upon request.

If the surface concrete temperature at any location in the structure falls below 35 degrees F during the curing period, the Engineer may direct the contractor to core the areas in question at the locations indicated by the Engineer. The contractor shall submit the cores to a petrographer for examination in accordance with ASTM C 856. Concrete damaged by frost, as determined by the petrographer, shall be removed and replaced at no additional cost to the Department. All costs associated with coring, transmittal of cores, and petrographic examination shall be borne by the contractor regardless of the outcome of the petrographic examination.

The placing of concrete will not be permitted until the Engineer is satisfied that all the necessary protection equipment and materials are on hand at the site and in satisfactory working condition.

Concrete requiring cold weather protection shall have such protection removed at the end of the required curing period in such a manner that will permit a gradual drop in the concrete temperatures.

1006-7.01 **General:** the second paragraph of the Standard Specifications is revised to read:

Rejection of concrete will also occur due to insufficient compressive strength. Concrete compressive strength requirements consist of the specified strength which the concrete shall attain before various loads or stresses are applied and a minimum strength at 28 days.

1006-7.01 **General:** the last sentence of the third paragraph of the Standard Specifications is revised to read:

Sampling and testing for compressive strength will be performed on all classes of concrete furnished, including each strength specified on the project plans for Class S concrete.

1006-7.02 **Sampling and Testing of Concrete:** the first sentence of item (1) of the second paragraph of the Standard Specifications is revised to read:

(1) Concrete for Class S or Class B shall be sampled only once during discharge in the middle portion of the batch.

1006-7.02 **Sampling and Testing of Concrete:** of the Standard Specifications is modified to add:

If approved by the Engineer, and unless otherwise specified, Arizona Test Method 318 may be used to estimate concrete strength by the maturity method. The maturity method shall not substitute for compressive strength acceptance testing (28-day test cylinder breaks). The contractor shall submit a written request to the Engineer prior to using the maturity method. If its use is approved by the Engineer, the contractor shall be responsible to develop the strength-maturity relationship and shall also be responsible to provide the maturity meter(s)

and digital data loggers necessary, as well as performing all required testing, all at no additional cost to the Department.

1006-7.03(A) Class S and Class B Concrete: of the Standard Specifications is revised to read:

For Class S concrete with a compressive strength requirement less than 4000 psi, a sample of concrete for the required tests, as specified in Subsection 1006-7.02, will be taken on a daily basis for each 100 cubic yards, or fraction thereof, of continuously placed concrete from each batch plant. For Class S concrete with a compressive strength requirement equal to or greater than 4000 psi, a sample of concrete for the required tests, as specified in Subsection 1006-7.02, will be taken on a daily basis for each 50 cubic yards, or fraction thereof, of continuously placed concrete from each batch plant. For Class B concrete, a sample of concrete for the required tests, as specified in Subsection 1006-7.02, will be taken for each 100 cubic yards placed from each batch plant. For Class S or Class B concrete placed at elevations of 3,000 feet or above, air content testing shall be performed for each 50 cubic yards placed, regardless of the compressive strength requirement. An additional sample or samples for any of the required tests may be taken at an interval of less than the sampling frequency specified above, at the discretion of the Engineer, on any batch or load of concrete. A sample for the required tests on daily placements of 10 cubic yards or less may be taken at the discretion of the Engineer.

1006-7.03(B) Class E Concrete: of the Standard Specifications is revised to read:

1006-7.03(B) BLANK

1006-7.06(A) Class P Concrete: the fourth sentence of the second paragraph of the Standard Specifications is revised to read:

Cores must be obtained under the observation of an ADOT representative and delivered to the Engineer in time to allow complete testing within 48 days of placement. Testing shall be performed by the Department.

1006-7.06(B) Class S and Class B Concrete: the second paragraph of the Standard Specifications is revised to read:

Concrete failing to meet at least 85 percent of the 28-day compressive strength for specified strengths of 3,000 pounds per square inch and below, 90 percent for a specified strength of 3,500 pounds per square inch, or 95 percent for specified strengths of 4,000 pounds per square inch and above, or any concrete failing to meet the other requirements of Subsection 1006-7.01, will be rejected and removed at no additional cost to the Department and replaced with concrete which meets the specified requirements, unless the contractor can submit evidence that will indicate to the Engineer that the strength and quality of the concrete is such that the concrete should be considered acceptable and be allowed to remain in place.

1006-7.06(B) **Class S and Class B Concrete:** the third sentence of the last paragraph of the Standard Specifications is revised to read:

All cores shall be obtained and tested in accordance with the requirements of Arizona Test Method 317. Testing shall be performed by the Department.

1006-7.06(C) **Class E Concrete:** of the Standard Specifications is revised to read:

1006-7.06(C) **BLANK**

(1007REFS, 11/05/13)

SECTION 1007 - RETROREFLECTIVE SHEETING:

1007-1 **General Requirements:** the last two sentences of the first paragraph of the Standard Specifications are revised to read:

Sheeting shall conform to criteria listed in the most current version of ASTM D 4956 for the applicable type and class, unless otherwise specified.

1007-2 **Material Types:** of the Standard Specifications is revised to read:

Sheeting for permanent warning signs, regulatory signs, and overhead-mounted guide signs, including all sign legends and borders, shall be ASTM Type XI.

Sheeting for all warning signs with yellow backgrounds shall be Type XI fluorescent retroreflective yellow.
Sheeting for information signs, ground-mounted guide signs, and marker signs, including all sign legends and borders, shall be ASTM Type IX or XI.

Sheeting for permanent object markers and delineators on a rigid substrate with yellow backgrounds, including guardrail end treatments, guardrail markers, rigid delineators, and impact attenuators, shall be Type XI fluorescent retroreflective yellow.

Sheeting for permanent object markers and delineators on a rigid substrate in colors other than yellow, including guardrail end treatments, guardrail markers, rigid delineators, and impact attenuators, shall be ASTM Type IX or XI.

Sheeting for object markers and delineators on a flexible or plastic substrate, including flexible delineators and sand barrels, shall be ASTM Type VIII, IX or XI.

For temporary regulatory and guide signs on a rigid substrate with fluorescent retroreflective orange sheeting, ASTM sheeting Types VIII, IX, or XI shall be used.

For temporary regulatory and guide signs on a rigid substrate in colors other than fluorescent retroreflective orange, ASTM sheeting Types IV, VIII, IX, or XI shall be used.

For retroreflective orange temporary signs on a flexible or roll-up substrate, ASTM Type VI sheeting shall be used.

All temporary signs (rigid, flexible, or roll-up) with orange backgrounds shall use fluorescent retroreflective orange sheeting, except that non-reflective sign materials may be used for temporary signs where the signs will be clearly visible under available natural light.

For barricades and other temporary channelizing devices, ASTM sheeting Types IV, VIII, IX, or XI shall be used.

Sheeting for Adopt-A-Highway signs shall be ASTM Type I, IV, or XI.

Logo signs shall be ASTM Type I, IX, or XI.

When more than one sheeting type is allowed, the contractor may use any of the types listed, provided that materials used for a particular application shall be of the same ASTM type, manufacturer, and product for all signs of the same type in the project.

Opaque films used with sheeting shall be acrylic type films.

Direct-applied and demountable black characters shall be non-reflective.

1007-3 Visual Appearance, Luminance and Color Requirements: of the Standard Specifications is revised to read:

Except as specified herein, the color of the sheeting, ink or film shall conform to the ADOT Manual of Approved Signs, the Manual on Uniform Traffic Control Devices (MUTCD), and the plans.
All sheeting, inks and film used shall be uniformly colored so there is no visual variation in their appearance on the same sign or from sign to sign of the same colors.

Standard colors specified for sheeting, processing inks, and films shall, as applicable, match visually and be within the color tolerance limits required by Highway Tolerance Charts issued by the Federal Highway Administration. Additionally, for the retroreflective sheeting, unless otherwise noted, the Luminance Factor (Daytime Luminance) and Color Specification Limits (Daytime) shall conform to the applicable requirements of ASTM D 4956.

In addition to the luminance and color requirements, fluorescent orange sheeting and fluorescent yellow sheeting shall have the capacity to effectively fluoresce outdoors under low light conditions. For all applications requiring fluorescent orange sheeting or fluorescent yellow sheeting, the contractor shall provide a letter to the Engineer from the manufacturer certifying that the sheeting to be used is fluorescent.

1007-6 **Adhesive:** the first paragraph of the Standard Specifications is revised to read:

Reflective sheeting and film adhesives shall be Class I as specified in ASTM D 4956 and as modified herein.

1007-6 **Adhesive:** the third paragraph of the Standard Specifications is hereby deleted:

1007-8 **Durability Requirements:** the second and third paragraphs of the Standard Specifications are revised to read:

Sheeting shall be weather-tested as specified above in Subsection 1007-7. Sheeting weather-testing periods and durability ratings shall be as specified in Table 1007-8. In all cases, the related inks and films shall be tested along with the respective sheeting, and shall be subject to the same durability requirements as the sheeting.

TABLE 1007-8			
ASTM Sheeting Type	**Color**	**Weather-testing period, months**	**Durability rating, years**
XI	Fluorescent yellow	42	7
XI	Fluorescent orange	18	3
XI	All other colors	60	10
IX	Fluorescent orange	18	3
IX	All other colors	60	10
VIII	Fluorescent orange	18	3
VIII	All other colors	30	5
VI	Fluorescent orange	18	3
IV	All colors	30	5
I	All colors	30	5

(1009ASRM, 10/03/14)

SECTION 1009 ASPHALT-RUBBER MATERIAL:

1009-2.01(B) **Crumb Rubber:** the first paragraph and Table 1009-1 of the Standard Specifications are revised to read:

Crumb rubber shall be ambient ground and shall meet the following gradation requirements when tested in accordance with Arizona Test Method 714.

TABLE 1009-1		
Sieve Size	**Percent Passing**	
	Type A	**Type B**

No. 8	100	
No. 10	95 – 100	100
No. 16	0 – 10	75 - 95
No. 30		30 - 60
No. 50		5 - 30
No. 200		0 - 5

1009-2.03 **Asphalt-Rubber Properties:** Table 1009-2 of the Standard Specifications is revised to read:

TABLE 1009-2			
Property	**Requirement**		
	CRA Type 1	**CRA Type 2**	**CRA Type 3**
Grade of base asphalt cement	PG 64-16	PG 58-22	PG 52-28
Rotational Viscosity: 177 °C (350 °F); (ASTM D 7741); Pascal·seconds	1.5 - 4.0	1.5 - 4.0	1.5 - 4.0
Penetration: 4 °C (39.2 °F), 200 g, 60 sec. (ASTM D 5); 0.1 mm, minimum	10	15	25
Softening Point: (AASHTO T 53); °C, minimum	57	54	52
Resilience: 25 °C (77 °F) (ASTM D 5329); %, minimum	30	25	20

1009-2.03 **Asphalt-Rubber Properties:** "Resilience" in Table 1009-3 of the Standard Specifications is revised to read:

TABLE 1009-3 **ASPHALT-RUBBER PAY ADUSTMENT TABLE**						
Test Property	**CRA Type 1**		**CRA Type 2**		**CRA Type 3**	
	Test Value	Percent of Contract Unit Price	Test Value	Percent of Contract Unit Price	Test Value	Percent of Contract Unit Price
Resilience	≥ 30 24 - 29 18-23 < 18	100 85 70 50*	≥ 25 20-24 15-19 < 15	100 85 70 50*	≥ 20 15-19 10-14 < 10	100 85 70 50*

1009-2.04 **Asphalt-Rubber Design:** of the Standard Specifications is revised to read:

At least two weeks prior to the use of asphalt-rubber, the contractor shall submit an asphalt-rubber design prepared by an approved laboratory. The design shall be formulated using asphalt cement and crumb rubber that are representative of the materials to be utilized in production, and shall meet the requirements specified herein. The design shall show the values obtained from the required tests, along with the following information: percent, grade and source of the asphalt cement used; and percent, gradation and source(s) of crumb rubber used. In addition, the asphalt-rubber design shall include verification of the PG binder grade of the base asphalt; however, in lieu of the design including this information, a Certificate of Analysis conforming to Subsection 106.05 from an accredited laboratory or the supplier of the PG base asphalt will be acceptable.

If changes are made in the type or source of asphalt cement or in the type or source of crumb rubber, a new asphalt-rubber design will be required.

The contractor may propose the use of an asphalt-rubber design that has been developed for a previous project. The proposed design shall meet the requirements of the specifications. The contractor shall provide evidence that the type and source of asphalt cement and the type and source of crumb rubber have not changed since the formulation of the previous design. The Engineer will determine if the previously used design is suitable for the intended use and if the previous use of the asphalt-rubber design was satisfactory to the Department. The Engineer will either approve or disapprove the proposed design. Should the Engineer disapprove the use of the previously used design, the contractor shall prepare and submit a new asphalt-rubber design proposal in accordance with the requirements of the specifications.

A previously used asphalt-rubber design more than two years old shall not be allowed for use. Once approved for use on a project, an asphalt-rubber design may be used for the duration of the project.

1009-3.01 Mixing of Asphalt-Rubber: of the Standard Specifications is revised to read:

The temperature of the asphalt cement shall be between 350 and 400 degrees F at the time of addition of the crumb rubber. No agglomerations of crumb rubber particles in excess of two inches shall be allowed in the mixing chamber. The contractor shall document that the amount of crumb rubber used does not deviate more than plus or minus 1.0% from the percentage specified in the accepted asphalt-rubber mix design. The temperature of the asphalt-rubber immediately after the initial dispersion of the crumb rubber into the asphalt cement shall be between 325 and 375 degrees F. The contractor shall ensure that the crumb rubber and asphalt cement for a particular batch have been thoroughly mixed and placed in the reaction tank prior to the beginning of the reaction period. The reaction period shall be a minimum of sixty minutes, during which time the asphalt-rubber is continuously agitated while a temperature between 325 and 375 degrees F is maintained. At any time, if the temperature falls below 325 degrees F, the reaction period shall begin anew when the temperature reaches 325 degrees F. The reaction period shall be completed before the asphalt-rubber is used. The contractor shall demonstrate that the crumb rubber particles have been uniformly

incorporated into the mixture and that they have been “wetted”. The occurrence of crumb rubber floating on the surface or agglomerations of crumb rubber particles shall be evidence of insufficient mixing.

The contractor shall test the viscosity of the asphalt-rubber in each batch by the use of a rotational viscometer, in accordance with ASTM D 7741. The rotational viscometer shall be furnished by the contractor or supplier. Prior to the use of each batch of asphalt-rubber, the results of the rotational viscosity testing shall meet the requirements given in Table 1009-2.

1009-4 **Contractor Quality Control:** is hereby added to the Standard Specifications:

The contractor shall perform the quality control measures described in Subsection 106.04(C). At the weekly meeting, the contractor shall be prepared to explain and discuss how the performance of required quality control measures will be accomplished.

The contractor shall obtain samples and perform the tests specified in Table 1009-4.

TABLE 1009-4
CONTRACTOR QUALITY CONTROL TESTING REQUIREMENTS

TYPE OF TEST	TEST METHOD	SAMPLING POINT	MINIMUM TESTING FREQUENCY
Crumb Rubber for Asphalt-Rubber			
Gradation	Arizona Test Method 714	Hot Plant	One sample per 40,000 lbs.
Asphalt-Rubber Material			
Softening Point	AASHTO T 53	Circulation Line Recommended (Point of sampling specified by the Engineer.)	One sample per day
Resilience: 25 °C (77 °F)	ASTM D 5329		
Rotational Viscosity	ASTM D 7741		One sample per batch.

(1011JMAT, 10/20/08)

SECTION 1011 JOINT MATERIALS:

1011-3 **Joint Sealant (Hot-Poured):** the title and text of the Standard Specifications is revised to read:

1011-3 Joint Sealant (Hot-Applied):

Joint sealant material, other than asphalt-rubber sealant, shall be a hot-applied type, conforming to the requirements of ASTM D 3406 or ASTM D 7116, as appropriate. Joint sealant shall not contain any coal-tar materials.

Asphalt-rubber joint sealant material shall be a hot-applied type, conforming to the requirements of ASTM D 6690, Type I or Type II.

The following requirement shall be added to the "Packaging and Package Marking" requirements of ASTM D 3406, ASTM D 7116, and ASTM D 6690:

> The minimum ambient temperature during application and ambient temperatures under various storage conditions shall be clearly marked on the container.

Certificates of Compliance conforming to the requirements of Subsection 106.05 shall be submitted.

Appendix A

Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects

GUIDELINES FOR HANDLING SONORAN DESERT TORTOISES ENCOUNTERED ON DEVELOPMENT PROJ ECTS

Arizona Game and Fish Department

Revised October 23, 2007

The Arizona Game and Fish Department (Department) has developed the following guidelines to reduce potential impacts to desert tortoises, and to promote the continued existence of tortoises throughout the state. These guidelines apply to short-term and/or small-scale projects, depending on the number of affected tortoise and specific type of project.

The Sonoran population of desert tortoises occurs south and east of the Colorado River. Tortoises encountered in the open should be moved out of harm's way to adjacent appropriate habitat. If and occupied burrow is determined to be in jeopardy of destruction, the tortoise should be relocated to the nearest appropriate alternate burrow or other appropriate shelter, as determined by a qualified biologist. Tortoises should be moved less than 48 hours in advance of the habitat disturbance so they do not return to the area in the interim. Tortoises should be moved quickly, kept in an upright position parallel to the ground at all times, and placed in the shade. Separate disposable gloves should be worn for each tortoise handled to avoid potential transfer of disease between tortoises. Tortoises must not be moved if the ambient air temperature exceeds 40° Celsius (I 05° Fahrenheit) unless an alternate burrow is available or the tortoise is in imminent danger.

A tortoise may be moved up to one-half mile, but no further than necessary from its original location. If a release site, or alternate burrow, is unavailable within this distance, and ambient air temperature exceeds 40° Celsius (105° Fahrenheit), the Department should be contacted to place the tortoise into a Department-regulated desert tortoise adoption program. Tortoises salvaged from projects which result in substantial permanent habitat loss (e.g. housing and highway projects), or those requiring removal during long-term (longer than one week) construction projects, will also be placed in desert tortoise adoption programs. *Managers of projects likely to affect desert tortoises should obtain a scientific collecting permit from the Department of facilitate temporary possession of tortoises.* Likewise, if large numbers of tortoises (>5) are expected to be displaced by a project, the project manager should contact the *Department* for guidance and/or assistance.

Please keep in mind the following points:

- These guidelines do not apply to the Mojave population of desert tortoises (north and west of the Colorado River). Mojave desert tortoises are specifically protected under the Endangered Species Act, as administered by the U.S. Fish and Wildlife Service.

- These guidelines are subject to revision at the discretion of the Department. We recommend that the Department be contacted during the planning stages of any project that may affect desert tortoises.

- Take, possession, or harassment of wild desert tortoises is prohibited by state law. Unless specifically authorized by the Department, or as noted above, project personnel should avoid disturbing any tortoise.

Appendix B

Western Burrowing Owl Awareness

Western Burrowing Owl Awareness

ADOT Environmental Planning Group
1611 W. Jackson St- Mail Drop EM02
Phoenix, AZ 85007

The purpose of this flyer is to provide ADOT employees and contractors, working on roadside projects, with basic knowledge to reduce the risk of incidental take of Western Burrowing Owls.

Legal Status:

Western Burrowing Owls are protected under the Federal Migratory Bird Treaty Act of 1918. All migratory birds and their parts are fully protected. They are also protected under Arizona State Law in Title 17-101, Title 17-235, and Title 17-236.

What to look for:

- Description- small, ground-dwelling owl
- Length- 19.5-25.0 cm (7.68-9.85 inches)
- Wingspan- 58.42 {23.0 inches)
- Mass- about 150 grams
- Males are typically slightly larger than females.
- Round head, lacks ear tufts
- Distinct oval facial ruff, framed by a broad, puffy white eyebrow
- Eyes contain a bright yellow iris

Where are owls found?

- Dry, open, short grass, treeless plains.
- Dependent on fossorial mammals (ground squirrels, prairie dogs, badgers, etc.) to construct burrows.
- Human dominated landscapes: golf courses, airports, agricultural fields

Identifying an active burrow:

- Owls use burrows constructed by ground squirrels, badgers, coyotes and tortoises. They can also use pipes, culverts, and ditches.
- Presence of excrement (whitewash) near entrance to burrow
- Burrowing owls frequently decorate entrance of burrows with cow or horse manure, feathers, vegetation and trash items.

How to avoid them:

- Scan ahead prior to arriving at a sign location.
- If burrowing owls are observed within the project area, stop and move at least 300 feet beyond the owl or occupied burrow before resuming work.

If you think your work may potentially impact a Burrowing Owl or active burrow, please stop.
Move at least 300 feet from the animal or burrow before resuming work.

If you have any questions or think you have a borrowing owl or active burrow on your work site please contact:

Joshua Fife, Biologist, ADOT Environmental Planning Group
Office: (602)712-6819, Mobile: (602} 622-9622, EPG General:(602)712-7767
jfife@azdot.gov

Source: Arizona Game and Fish Department Animal Abstract: Western Burrowing Owl. Heritage Data Management System.

Appendix C

US Army Corps of Engineers Los Angeles District
Regulatory Division/Arizona Branch

Nationwide Permit Number 3

NATIONWIDE PERMIT NUMBER 3

MAINTENANCE

US Army Corps of Engineers
Los Angeles District
Regulatory Division/Arizona Branch

A. General Information

This document is an aid to understanding the terms and conditions of your nationwide permit (NWP) by bringing together information issued separately in; (1) the Federal Register (77 FR 10184-10290)*, (2) the Special Public Notice for NWP "Reissuance of the Nationwide Permits and Issuance of Final Regional Conditions for the Los Angeles District"*, and (3) the Clean Water Act Section 401 water quality certification decisions (401 WQCs)* issued by the White Mountain Apache Tribe, Hopi Tribe, Hualapai Tribe, Navajo Nation, U.S. Environmental Protection Agency, and Arizona Department of Environmental Quality. Please note that website addresses enclosed herein may have been changed and updated since publication of the original document.

1) Pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344) and/or Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 401 et seq) the U.S. Army Corps of Engineers (Corps) published the "Reissuance of Nationwide Permits" in the Federal Register (77 FR 10184-10290) on February 21, 2012. These NWPs are in effect from March 19, 2012 through March 18, 2017 unless modified, reissued, or revoked before that time. It is incumbent upon the permittee to remain informed of changes to the NWPs.
2) The Los Angeles District of the Corps issued a Special Public Notice (March 15, 2012) announcing final regional conditions for NWPs to ensure protection of high value waters within the State of Arizona.
3) The Los Angeles District of the Corps requested and obtained for the entire State of Arizona the 401 WQC decision for all NWPs on all tribal lands from the White Mountain Apache Tribe, Hopi Tribe, Hualapai Tribe, Navajo Nation, and U.S. Environmental Protection Agency and on all non-tribal lands from the Arizona Department of Environmental Quality.

A description of all NWPs and 401 WQCs can be found in the "Nationwide Permits for Arizona" Special Public Notice.*

***Note:** For online availability see section "F. Document Availability" of this enclosure.

Key Sections:

B. Nationwide Permit Terms (page 1)
C. Nationwide Permit General Conditions (page 2)
D. Nationwide Permit Regional Conditions (page 6)
E. 401 Water Quality Certifications (page 7)

B. Nationwide Permit Terms

3. Maintenance. (a) The repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure, or fill, or of any currently serviceable structure or fill authorized by 33 CFR 330.3, provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for it in the original permit or the most recently authorized modification. Minor deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, requirements of other regulatory agencies, or current construction codes or safety standards that are necessary to make the repair, rehabilitation, or replacement are authorized. Any stream channel modification is limited to the minimum necessary for the repair, rehabilitation, or replacement of the structure or fill; such modifications, including the removal of material from the stream channel, must be immediately adjacent to the project or within the boundaries of the structure or fill. This NWP also authorizes the repair, rehabilitation, or replacement of those structures or fills destroyed or damaged by storms, floods, fire or other discrete events, provided the repair, rehabilitation, or replacement is commenced, or is under contract to commence, within two years of the date of their destruction or damage. In cases of catastrophic events, such as hurricanes or tornadoes, this two-year limit may be waived by the district engineer, provided the permittee can demonstrate funding, contract, or other similar delays.

(b) This NWP also authorizes the removal of accumulated sediments and debris in the vicinity of existing structures (e.g., bridges, culverted road crossings, water intake structures, etc.) and/or the placement of new or additional riprap to protect the structure. The removal of sediment is limited to the minimum necessary to restore the waterway in the vicinity of the structure to the approximate dimensions that existed when the structure was built, but cannot extend farther than 200 feet in any direction from the structure. This 200 foot limit does not apply to maintenance dredging to remove accumulated sediments blocking or restricting outfall and intake structures or to maintenance dredging to remove accumulated sediments from canals associated with outfall and intake structures. All dredged or excavated materials must be deposited and retained in an area that has no waters of the United States unless otherwise specifically approved by the district engineer under separate authorization. The placement of new or additional riprap must be the minimum necessary to protect the structure or to ensure the safety of the structure. Any bank stabilization measures not directly associated with the structure will require a separate authorization from the district engineer.

(c) This NWP also authorizes temporary structures, fills, and work necessary to conduct the maintenance activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills

must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

(d) This NWP does not authorize maintenance dredging for the primary purpose of navigation. This NWP does not authorize beach restoration. This NWP does not authorize new stream channelization or stream relocation projects.

Notification: For activities authorized by paragraph (b) of this NWP, the permittee must submit a pre-construction notification to the district engineer prior to commencing the activity (see general condition 31). The pre-construction notification must include information regarding the original design capacities and configurations of the outfalls, intakes, small impoundments, and canals. (Sections 10 and 404)

Note: This NWP authorizes the repair, rehabilitation, or replacement of any previously authorized structure or fill that does not qualify for the Clean Water Act Section 404(f) exemption for maintenance.

C. <u>Nationwide Permit General Conditions</u>

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR §§ 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR § 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation. (b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States. (c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects from Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

17. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed. (b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the NWP activity, or whether additional ESA consultation is necessary. (c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed work or that utilize the designated critical habitat that might be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps. (d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs. (e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, The Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering. (f) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide web pages at http://www.fws.gov/ or http://www.fws.gov/ipac and http://www.noaa.gov/fisheries.html respectively.
(Note: Arizona endangered species information is available at http://www.fws.gov/southwest/es/arizona/Threatened.htm#CountyList)

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for obtaining any "take" permits required under the U.S. Fish and Wildlife Service's regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the U.S. Fish and Wildlife Service to determine if such "take" permits are required for a particular activity.

20. Historic Properties. (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied. (b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address section 106 compliance for the NWP activity, or whether additional section 106 consultation is necessary. (c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties on which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed. (d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps. (e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or

other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 31, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal: (a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal. (c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal, and provides a project-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332. (1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in minimal adverse effects on the aquatic environment. (2) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered. (3) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) – (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)). 4) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided. (5) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan. (d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream rehabilitation, enhancement, or preservation, to ensure that the activity results in minimal adverse effects on the aquatic environment. (e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs. (f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the restoration or establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to establish a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or establishing a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses. (g) Permittees may propose the use of mitigation banks, in-lieu fee programs, or separate permittee-responsible mitigation. For

activities resulting in the loss of marine or estuarine resources, permittee-responsible compensatory mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management. (h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

_____

(Transferee)

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(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized work was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions; (b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and (c) The signature of the permittee certifying the completion of the work and mitigation.

31. Pre-Construction Notification. (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either: (1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or (2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified,

suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2). (b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information: (1) Name, address and telephone numbers of the prospective permittee; (2) Location of the proposed project; (3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause, including the anticipated amount of loss of water of the United States expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans); (4) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate; (5) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse effects are minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan. (6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and (7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act (c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used. (d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level. (2) For all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States, for NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of intermittent and ephemeral stream bed, and for all NWP 48 activities that require pre-construction notification, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5. (3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act. (4) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

D. Nationwide Permit Regional Conditions

Of the ten regional conditions effective within the Los Angeles District of the Corps, six apply to projects within Arizona (1-4, 9 and 10). The remaining four regional conditions apply to specific geographic areas, resources, or species not located in Arizona.

The following regional conditions must be complied with for any authorization by a NWP to be valid in the State of Arizona:

Regional Condition 1: For all activities in waters of the U.S. that are suitable habitat for federally listed fish species, the permittee shall design all road crossings to ensure that the passage and/or spawning of fish is not hindered. In these areas, the permittee shall employ bridge designs that span the stream or river, including pier- or pile-supported spans, or designs that use a bottomless arch culvert with a natural stream bed, unless determined to be impracticable by the Corps.

Regional Condition 2: Nationwide Permits (NWP) 3, 7, 12-15, 17-19, 21, 23, 25, 29, 35, 36, or 39-46, 48-52 cannot be used to authorize structures, work, and/or the discharge of dredged or fill material that would result in the "loss" of wetlands, mudflats, vegetated shallows or riffle and pool complexes as defined at 40 CFR Part 230.40-45. The definition of "loss" for this regional condition is the same as the definition of "loss of waters of the United States" used for the Nationwide Permit Program. Furthermore, this regional condition applies only within the State of Arizona and within the Mojave and Sonoran (Colorado) desert regions of California. The desert regions in California are limited to four USGS Hydrologic Unit Code (HUC) accounting units (Lower Colorado -150301, Northern Mojave-180902, Southern Mojave-181001, and Salton Sea-181002).

Regional Condition 3: When a pre-construction notification (PCN) is required, the appropriate U.S. Army Corps of Engineers (Corps) District shall be notified in accordance with General Condition 31 using either the South Pacific Division PCN Checklist or a signed application form (ENG Form 4345) with an attachment providing information on compliance with all of the General and Regional Conditions. The PCN Checklist and application form are available at: http://www.spl.usace.army.mil/Missions/CivilWorks/Regulatory.aspx. In addition, the PCN shall include: A written statement describing how the activity has been designed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States; drawings, including plan and cross-section views, clearly depicting the location, size and dimensions of the proposed activity as well as the location of delineated waters of the U.S. on the site. The drawings shall contain a title block, legend and scale, amount (in cubic yards) and area (in acres) of fill in Corps jurisdiction, including both permanent and temporary fills/structures. The ordinary high water mark or, if tidal waters, the mean high water mark and high tide line, should be shown (in feet), based on National Geodetic Vertical Datum (NGVD) or other appropriate referenced elevation. All drawings for projects located within the boundaries of the Los Angeles District shall comply with the most current version of the Map and Drawing Standards for the Los Angeles District Regulatory Division (available on the Los Angeles District Regulatory Division website at: http://www.spl.usace.army.mil/Missions/CivilWorks/Regulatory.aspx); and numbered and dated pre-project color photographs showing a representative sample of waters proposed to be impacted on the project site, and all waters proposed to be avoided on and immediately adjacent to the project site. The compass angle and position of each photograph shall be documented on the plan-view drawing required in subpart b of this regional condition.

Regional Condition 4: Submission of a PCN pursuant to General Condition 31 and Regional Condition 3 shall be required for all regulated activities in the following locations: a) All perennial waterbodies and special aquatic sites within the State of Arizona and within the Mojave and Sonoran (Colorado) desert regions of California, excluding the Colorado River in Arizona from Davis Dam to River Mile 261 (northern boundary of the Fort Mojave Indian Tribe Reservation). The desert region in California is limited to four USGS HUC accounting units (Lower Colorado -150301, Northern Mojave-180902, Southern Mojave-181001, and Salton Sea-181002). b) All areas designated as Essential Fish Habitat (EFH) by the Pacific Fishery Management Council (i.e., all tidally influenced areas - Federal Register dated March 12, 2007 (72 FR 11092)), in which case the PCN shall include an EFH assessment and extent of proposed impacts to EFH. Examples of EFH habitat assessments can be found at: http://www.swr.noaa.gov/efh.htm. c) All watersheds in the Santa Monica Mountains in Los Angeles and Ventura counties bounded by Calleguas Creek on the west, by Highway 101 on the north and east, and by Sunset Boulevard and Pacific Ocean on the south. d) The Santa Clara River watershed in Los Angeles and Ventura counties, including but not limited to Aliso Canyon, Agua Dulce Canyon, Sand Canyon, Bouquet Canyon, Mint Canyon, South Fork of the Santa Clara River, San Francisquito Canyon, Castaic Creek, Piru Creek, Sespe Creek and the main-stem of the Santa Clara River.

Regional Condition 9: Any requests to waive the 300 linear foot limitation for intermittent and ephemeral streams for NWPs 29, 39, 40 and 42, 43, 44, 51 and 52 or to waive the 500 linear foot limitation along the bank for NWP 13, must include the following: a) A narrative description of the stream. This should include known information on: volume and duration of flow; the approximate length, width, and depth of the waterbody and characters observed associated with an Ordinary High Water Mark (e.g. bed and bank, wrack line, or scour marks); a description of the adjacent vegetation community and a statement regarding the wetland status of the associated vegetation community (i.e. wetland, non-wetland); surrounding land use; water quality; issues related to cumulative impacts in the watershed, and; any other relevant information. b) An analysis of the proposed impacts to the waterbody in accordance with General Condition 31 and Regional Condition 3; c) Measures taken to avoid and minimize losses, including other methods of constructing the proposed project; and d) A compensatory mitigation plan describing how the unavoidable losses are proposed to be compensated, in accordance with 33 CFR Part 332.

Regional Condition 10: The permittee shall complete the construction of any compensatory mitigation required by special condition(s) of the NWP verification before or concurrent with commencement of construction of the authorized activity, except when specifically determined to be impracticable by the Corps. When mitigation involves use of a mitigation bank or in-lieu fee program, the permittee shall submit proof of payment to the Corps prior to commencement of construction of the authorized activity.

E. 401 Water Quality Certification (401 WQC)

A 401 WQC is mandatory for any activity that requires a Clean Water Act Section 404 permit. A 401 WQC is required prior to discharging any dredged or fill material into a water of the United States. Only one of the following 401 WQCs listed below will apply to your project. The geographical location of your project will determine which 401 WQC is applicable. The 401 WQCs issued for this NWP will remain in effect through March 18, 2017.

On all "Non-Tribal Lands", lands that are not part of federally recognized Indian Reservation, the Arizona Department of Environmental Quality (ADEQ) is the agency responsible for issuing the 401 WQC.

On all "Tribal Lands", lands that are part of a federally recognized Indian Reservation, the U.S. Environmental Protection Agency (EPA) is responsible for issuing the 401 WQC except where EPA has delegated the 401 WQC authority to the White Mountain Apache Tribe (Fort Apache Indian Reservation), Hopi Tribe (Hopi Indian Reservation), Hualapai Tribe (Hualapai Indian Reservation), or Navajo Nation (Navajo Indian Reservation).

If "Individual Certification" is required you must apply for, receive, and comply with the 401 WQC issued by ADEQ, EPA, or the appropriate Tribe.

Non-tribal Lands - 401 WQCs

The 401 WQCs issued by ADEQ are summarized in Table 1. For projects that can be conditionally certified the project must comply with all of the applicable ADEQ 401 General Conditions that follow Table 1.

Tribal Lands - 401 WQCs

Fort Apache Indian Reservation (White Mountain Apache Tribe):	Individual Certification required for all projects.*
Hopi Indian Reservation (Hopi Tribe):	Individual Certification required for all projects.*
Hualapai Indian Reservation (Hualapai Tribe):	Individual Certification required for all projects.*
Navajo Indian Reservation (Navajo Nation):	Individual Certification required for all projects.*
All other Indian Reservations (EPA):	401 WQCs issued by EPA are summarized in Table 2. EPA's General and Permit-Specific Conditions follow Table 2.*

*__Note:__ For online availability see section "F. Document Availability" of this enclosure.

401 WQC Contact Information

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Lionel Puhuyesva
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Lee Anna Silversmith
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Alex Cabillo
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E-mail: acabillo@hotmail.com

Robert Scalamera
Surface Water Section, 401 Certifications
Arizona Department of Environmental Quality
110 West Washington Street (Mailstop 5415A-1)
Phoenix, Arizona 85007
Telephone: 602-771-4502
Fax: Not available
E-mail: rs3@azdeq.gov

F. Document Availability

Reissuance of Nationwide Permits, 77 FR 10184-10290	http://www.gpo.gov/fdsys/pkg/FR-2012-02-21/pdf/2012-3687.pdf
Special Public Notice for Regional Conditions	Contact Corps project manager for copy of document.
EPA 401 WQC for NWPs	Contact Corps project manager for copy of document.
White Mountain Apache Tribe 401 WQC for NWPs	Contact Corps project manager for copy of document.
Hopi Tribe 401 WQC for NWPs	Contact Corps project manager for copy of document.
Havasupai Tribe 401 WQC for NWPs	Contact Corps project manager for copy of document.
Navajo Nation 401 WQC for NWPs	Contact Corps project manager for copy of document.
ADEQ 401 WQC for NWPs	Contact Corps project manager for copy of document.

Table 1 - ADEQ 401 WQCs for all Non-Tribal Lands

NWP	303(d) impaired waters [1]& Tributaries to 303[d]-impaired waters[2]	OAW[3] & Tributaries to OAW	Lakes[4]	Other Waters[5]	Comments
1 - Aids to Navigation	-	-	-	-	N/A
2 - Structures in Artificial Canals	-	-	-	-	N/A
3 - Maintenance	I	I	I	C	
4 - Fish and Wildlife Harvesting, Enhancement, and Attraction Devices and Activities	I	I	I	C	
5 - Scientific Measurement Devices	I	I	I	C	
6 - Survey Activities	I	I	I	C	
7 - Outfall Structures and Associated Intake Structures	I	I	I	C	
8 - Oil and Gas Structures on the Outer Continental Shelf	-	-	-	-	N/A
9 - Structures in Fleeting and Anchorage Areas	-	-	-	-	N/A
10 - Mooring Buoys	-	-	-	-	N/A
11 - Temporary Recreational Structures	-	-	-	-	N/A
12 - Utility Line Activities	I	I	I	C	
13 - Bank Stabilization	I	I	I	C	
14 - Linear Transportation Projects	I	I	I	C	
15 - U.S. Coast Guard Approved Bridges	I	I	I	C	
16 - Return Water From Upland Contained Disposal Areas	I	I	I	C	
17 - Hydropower Projects	I	I	I	C	
18 - Minor Discharges	I	I	I	C	
19 - Minor Dredging	I	I	I	C	
20 - Response Operations for Oil and Hazardous Substances	I	I	I	T	If work begins within 14 days of event.
21 - Surface Coal Mining Activities	I	I	I	I	
22 - Removal of Vessels	I	I	I	C	
23 - Approved Categorical Exclusion	I	I	I	C	
24 - Indian Tribe or State Administered Section 404 Programs	-	-	-	-	N/A
25 - Structural Discharges	I	I	I	C	
26 - [Reserved]	-	-	-	-	
27 - Aquatic Habitat Restoration, Establishment, and Enhancement Activities	I	I	I	I	
28 - Modifications of Existing Marinas	-	-	-	-	N/A
29 - Residential Developments	I	I	I	C	
30 - Moist Soil Management for Wildlife	I	I	I	C	
31 - Maintenance of Existing Flood Control Facilities	I	I	I	C	
32 - Completed Enforcement Actions	I	I	I	C	
33 - Temporary Construction, Access, and Dewatering	I	I	I	C	
34 - Cranberry Production Activities	I	I	I	I	
35 - Maintenance Dredging of Existing Basins	-	-	-	-	N/A
36 - Boat Ramps	I	I	I	C	
37 - Emergency Watershed Protection and Rehabilitation	I	I	I	T	If work begins within 30 days of event.
38 - Cleanup of Hazardous and Toxic Waste	I	I	I	T	If work begins within 2 days of discovery.
39 - Commercial and Institutional Developments	I	I	I	C	
40 - Agricultural Activities	I	I	I	C	
41 - Reshaping Existing Drainage Ditches	I	I	I	C	
42 - Recreational Facilities	I	I	I	C	
43 - Stormwater Management Facilities	I	I	I	C	
44 - Mining Activities	I	I	I	I	
45 - Repair of Uplands Damaged by Discrete Events	I	I	I	T	If work begins within 14 days of event.
46 - Discharges in Ditches	I	I	I	C	
47 - [Reserved]	-	-	-	-	Reserved
48 - Commercial Shellfish Aquaculture Activities	I	I	I	C	
49 - Coal Remining Activities	I	I	I	I	
50 - Underground Coal Mining Activities	I	I	I	I	
51 - Land-Based Renewable Energy Generation Facilities	I	I	I	C	
52 - Water-Based Renewable Energy Generation Pilot Projects	I	I	I	C	

C = Conditionally certified in Other waters, all applicable CWA 401 General Conditions listed on following pages apply.
T = Conditionally certified only if work begins within designated time of event, otherwise individual 401 certification required.
I = Individual certification required. N/A = Not Available/Not Applicable.

[1] 303[d]-listed Impaired Waters list available at http://www.azdeq.gov/index.html. For projects on an impaired surface water, if the project is within 1600 meters (or 1 mile) upstream and/or 800 meters (½ mile) downstream of an impaired surface water.

[2] Tributaries to 303[d]-impaired waters. For projects on a tributary to an impaired surface water, or if the tributary mouth is to an impaired surface water and the project is within 1600 meters (or 1 mile) of its mouth.

[3] Outstanding Arizona Waters (OAW) are the surface waters of exceptional quality listed at http://www.azdeq.gov/index.html. For projects on a designated Outstanding Arizona Water OAW, if the project is within 1600 meters (or 1 mile) upstream and/or 800 meters (½ mile) downstream of a designated OAW. Also, Tributaries to Outstanding Arizona Waters: For projects on a tributary to a designated Outstanding Arizona Water, or if the tributary mouth is to an impaired surface water and the project is within 1600 meters (or 1 mile) of its mouth.

[4] Lakes are lakes and reservoirs listed at http://www.azdeq.gov/index.html

[5] Other Waters are all WUS that are not otherwise designated as a 303(d) Impaired, OAW, or a lake.

ADEQ 401 General Conditions applicable to Other Waters of the United States (WUS) on all Non-Tribal Lands

1) Any discharge occurring as a result of activities certified for the subject project shall not cause an exceedence of any Water Quality Standard (WQS). Applicability of this condition is as defined in A.A.C. R18-11-102.
2) This certification does not authorize the discharge of wastewater, process residues or other waste to any WUS.
3) Work shall be conducted and monitored to ensure that pollution from the activities certified herein does not cause an exceedence of Arizona WQS in any WUS.
4) Activities herein certified shall be performed during periods of low flow (baseflow or less) in any WUS, or no flow in the case of ephemeral and intermittent WUS. No work shall be done, nor shall any equipment or vehicles enter any WUS while flow is present, unless all applicable conditions in this certification are met.
5) The effectiveness of all pollution control measures, including erosion and sedimentation, shall be reevaluated after each flow event and repaired/modified as needed.
6) Applicant must minimize clearing, grubbing, scraping or otherwise limit exposure of erodible surface to the minimum necessary for each construction phase or location.
7) If activities certified herein are likely to cause or contribute to an exceedence of WQS, or create an impediment to the passage of fish or other aquatic life - operations shall cease until the problem is resolved or until control measures have been undertaken.
8) Erosion control, sediment control and/or bank protection measures shall be installed before construction and pre-operation activities, and shall be maintained during construction and post-construction periods to minimize channel or bank erosion, soil loss and sedimentation. Control measures shall not be constructed of uncemented or unconfined imported soil, or other materials easily transported by flow.
9) For portions of the project utilizing potable water or groundwater for irrigation or dust control, direct runoff of such water shall be limited to the extent practicable and shall not cause downstream erosion or flooding.
10) The applicant is responsible for ensuring construction material and/or fill (other than native fill or that necessary to support revegetation) placed in any WUS, shall not include materials that can cause or contribute to pollution of the WUS. Examples of prohibited fill include pollutant-contaminated soil and materials defined as pollutants or hazardous in Arizona Revised Statutes (A.R.S.) § 49-201. Fill used to support vegetation rooting or growth shall be protected from erosion.
11) Any washing of fill material must occur outside of any WUS prior to placement and the rinseate from such washing shall be settled, filtered or otherwise treated to prevent migration of pollutants (including sediment) or from causing erosion to any WUS. Other than replacement of native fill or material used to support vegetation rooting or growth, fill placed in locations subject to scour must resist washout whether such resistance is derived via particle size limits, presence of a binder, vegetation, or other armoring.
12) Any dredged material or waste material is to be placed and retained in areas outside any WUS. Runoff from this material/area is to be settled, filtered or otherwise treated to prevent migration of pollutants (including sediment) to any WUS.
13) Acceptable construction materials that will or may contact water in any WUS are: untreated logs and lumber, crushed stone, crushed clean concrete (recycled concrete), native fill, precast, sprayed or cast-in-place concrete (including soil cement and unmodified grouts), steel (including galvanized), plastic and aluminum. Use of other materials may be allowed, but require application for an individual 401 certification.
14) Upon completion of construction the applicant shall ensure no adverse change, due to the subject project, has occurred in the stability with respect to stream hydraulics, erosion and sedimentation, of any WUS including upstream and downstream from the project. If such change has occurred, the applicant shall take steps to restore the pre-project stability of any impacted segments.
15) Except where the activities certified herein are intended to permanently alter any WUS, all disturbed areas shall be restored and (re)vegetated as soon as physically practicable. Vegetation shall be maintained on unarmored banks and slopes to stabilize soil and prevent erosion.
16) If retention/detention basins are included in the project, applicant will complete the grading necessary to direct runoff towards retention/detention basins no later than immediately following initial land clearing or rough grading. Retention/detention basins shall be sized to accept storm runoff and capture sediment prior to it entering or moving downstream in any WUS. Detention basins will provide detention by controlling outflow and shall cause no significant change to the hydraulic conditions of the upstream or downstream WUS outside of the project boundaries. The basins shall be maintained; e.g., have sediment removed, as required to maintain their function.
17) Unless specifically permitted to do so when flow is present in any WUS within the project area, the applicant and any contractor will not alter the flow by any means except to prevent erosion or pollution of any WUS.
18) Silt laden or turbid water resulting from activities certified herein shall be settled, filtered or otherwise treated to ensure no violation of Arizona WQS in any WUS.
19) When flow in any WUS in the work area is sufficient to erode, carry or deposit material, activities certified herein shall cease until:
The flow decreases below the point where sediment movement ceases, or control measures have been undertaken; e.g., equipment and materials easily transported by flow are protected with non-erodible barriers or moved outside the flow area.
20) The applicant will erect any barriers, covers, shields and other protective devices as necessary to prevent any construction materials, equipment or contaminants/pollutants from falling, being thrown or otherwise entering any WUS.
21) The applicant must designate area(s) for equipment staging and storage located entirely outside of any WUS. In addition, the applicant must designate areas, located entirely outside of any WUS, for fuel, oil and other petroleum product storage and for solid waste containment. All precautions shall be taken to avoid the release of wastes, fuel or other pollutants to any WUS. Any equipment maintenance, washing or fueling that cannot be done offsite will be performed in the designated area with the following exception: equipment too large or unwieldy to be readily moved; e.g., large cranes, may be fueled and serviced in the WUS (but outside of standing or flowing water) as long as material specifically manufactured and sold as spill containment is in place during fueling/servicing. All equipment shall be inspected for leaks, all leaks shall be repaired and all repaired equipment will be cleaned to remove any fuel or other fluid residue prior to use within (including crossing) any WUS. The applicant shall have a spill containment plan onsite to ensure that pollutants are prevented from entering any WUS. Any pollutant generated by activities certified herein shall be properly disposed of in accordance with applicable regulations. A spill response kit will be maintained in this (these) area(s) to mitigate any spills. The kit will include material specifically manufactured and sold as spill adsorbent/absorbent and spill containment. The applicant will ensure that whenever there is activity on the site, that there are personnel on site trained in the proper response to spills and the use of spill response equipment.
22) Permanent and temporary pipes and culverted crossings shall be adequately sized to handle expected flow and properly set with end section, splash pads, or headwalls that dissipate water energy to control erosion.

23) All temporary structures, within any WUS, constructed of imported materials and all permanent structures within any WUS, including but not limited to, access roadways; culverted and unculverted crossings; staging areas; material stockpiles; berms, dikes and pads, shall be constructed so as to accommodate overtopping and must resist washout of the feature by streamflow.
24) Any temporary crossing, other than fords on native material, shall be constructed in such a manner so as to provide armoring of the stream channel. Materials used to provide this armoring shall not include anything easily transportable by flow. Examples of acceptable materials include steel plates, wooden planks, pre-cast concrete planks or blocks; examples of unacceptable materials include clay, silt, sand and gravel finer than cobble (roughly fist-sized). The armoring must, via mass, anchoring systems or a combination of the two, resist washout. Any ford shall be designed, and maintained as necessary, to carry the proposed traffic without causing erosion or sedimentation of the stream channel while dry or during a flow event equal to or less than the crossing's design event; i.e., the flow event which closes the ford to traffic. No unarmored ford shall be subject to heavy-truck or equipment traffic after a flow event until the stream bed is dry enough to support the traffic without disturbing streambed material to a greater extent than in dry conditions. Light vehicles (less than 14,000 pounds gross weight) are not restricted by this condition. Applicant will take measures necessary to prevent approaches to any WUS crossing from causing erosion or contributing sediment to any WUS.
25) Temporary structures constructed of imported materials are to be removed no later than upon completion of the permitted activity.
26) Temporary structures constructed of native materials, if they provide an obstacle to flow or can contribute to or cause sedimentation or erosion, are to be removed no later than upon completion of the permitted activity.
27) Upon completion of the activities certified herein (except as noted in condition 28 -concrete curing), areas within any WUS shall be promptly cleared of all forms, piling, construction residues, equipment, debris or other obstructions.
28) If fully, partially or occasionally submerged structures are constructed of cast-in-place concrete instead of pre-cast concrete, applicant will take steps; e.g., sheet piling or temporary dams, to prevent contact between water (instream and runoff) and the concrete until it cures and until any curing agents have evaporated or otherwise cease to be available; i.e., are no longer a pollutant threat. Where practicable, construction work will be during extreme low water conditions or at a time and season with the highest probability of ensuring work is done in "the dry".
29) Any permanent WUS crossings other than fords, shall not be equipped with gutters, drains, scuppers or other conveyances that allow untreated runoff (due to events equal to or lesser in magnitude than the design event for the crossing structure) to directly enter a WUS if such runoff can be directed to a local stormwater drainage, containment and/or treatment system.
30) Applicant will clear debris as needed from culverts, ditches, dips and other drainage structures in any WUS to prevent clogging or conditions that may lead to washout.

<u>Table 2</u> - EPA 401 WQC for Tribal Lands (All Indian Reservations except Fort Apache, Hopi, Hualapai and Navajo Indian Reservations**)**

NWP	Conditional Certification		Notification	Impact Limits	Notes
	General Conditions	Specific Conditions			
1 - Aids to Navigation	X		MPCN	None	
2 - Structures in Artificial Canals	X		MPCN	None	
3 - Maintenance	X	X	PCN or MPCN	Generally no increase in fill footprint	1,2
4 - Fish and Wildlife Harvesting, Enhancement, and Attraction Devices and Activities	X		MPCN	None	
5 - Scientific Measurement Devices	X		MPCN	25 cyds	
6 - Survey Activities	X		MPCN	25 cyds	
7 - Outfall Structures and Associated Intake Structures	X		PCN	None	
8 - Oil and Gas Structures on the Outer Continental Shelf	X		PCN	None	
9 - Structures in Fleeting and Anchorage Areas	X		MPCN	None	
10 - Mooring Buoys	X		MPCN	None	
11 - Temporary Recreational Structures	X		MPCN	None	
12 - Utility Line Activities	X	X	PCN or MPCN	**½ acre or 300'	3,4
13 - Bank Stabilization	X	X	PCN or MPCN	**½ acre or 300'	5
14 - Linear Transportation Projects	X	X	PCN or MPCN	**½ acre or 300' nontidal, ⅓ acre or 300' tidal	3
15 - U.S. Coast Guard Approved Bridges	X		MPCN	None	
16 - Return Water From Upland Contained Disposal Areas	X		MPCN	None	
17 - Hydropower Projects	X		PCN	None	
18 - Minor Discharges	X		PCN or MPCN	1/10 acre or 25 cyds	
19 - Minor Dredging	X		MPCN	25 cyds	
20 - Response Operations for Oil and Hazardous Substances	X		MPCN	None	
21 - Surface Coal Mining Activities	X	X	PCN	½ acre or 300'	6
22 - Removal of Vessels	X		PCN or MPCN	None	
23 - Approved Categorical Exclusion	X		PCN or MPCN	None	
24 - Indian Tribe or State Administered Section 404 Programs	X		MPCN	None	
25 - Structural Discharges	X		MPCN	None	
26 - [Reserved]					
27 - Aquatic Habitat Restoration, Establishment, and Enhancement Activities	X	X	PCN or MPCN	None	7
28 - Modifications of Existing Marinas	X		MPCN	None	
29 - Residential Developments	X	X	PCN or MPCN	**¼ acres for single house, ½ acres or 300' for multi-unit	8, 9
30 - Moist Soil Management for Wildlife	X		MPCN	None	
31 - Maintenance of Existing Flood Control Facilities	X	X	PCN	None	10
32 - Completed Enforcement Actions	X		MPCN	5 acres non-tidal or 1 acre tidal	
33 - Temporary Construction, Access, and Dewatering	X		PCN	None	
34 - Cranberry Production Activities	X		PCN	10 acres	
35 - Maintenance Dredging of Existing Basins	X		MPCN	Lesser of previously authorized or controlling depths	
36 - Boat Ramps	X		PCN or MPCN	50 cyds, 20'-wide ramp	8
37 - Emergency Watershed Protection and Rehabilitation	X		PCN or MPCN	None	
38 - Cleanup of Hazardous and Toxic Waste	X		PCN	None	
39 - Commercial and Institutional Developments	X	X	PCN or MPCN	½ acre or 300' non-tidal	8
40 - Agricultural Activities	X	X	PCN or MPCN	½ acre or 300' non-tidal	8
41 - Reshaping Existing Drainage Ditches	X	X	PCN or MPCN	**½ acre or 300' non-tidal	8
42 - Recreational Facilities	X	X	PCN	½ acre or 300' non-tidal	
43 - Stormwater Management Facilities	Individual Certification Required		MPCN	Not Applicable	
44 - Mining Activities	X	X	PCN or MPCN	½ acre or 300' non-tidal	8
45 - Repair of Uplands Damaged by Discrete Events	X	X	PCN or MPCN	**½ acre or 300'	8
46 - Discharges in Ditches	X	X	PCN or MPCN	**½ acre or 300' non-tidal	8
47 - [Reserved]					
48 - Commercial Shellfish Aquaculture Activities	X	X	PCN or MPCN	**Impacts of submerged aquatic veg. prohibited	
49 - Coal Remining Activities	X	X	PCN or MPCN	**½ acre or 300' non-tidal	8
50 - Underground Coal Mining Activities	X	X	PCN or MPCN	½ acre or 300' non-tidal	8
51 - Land-Based Renewable Energy Generation Facilities	X	X	PCN or MPCN	½ acre or 300' non-tidal	8
52 - Water-Based Renewable Energy Generation Pilot Projects	X	X	PCN or MPCN	½ acre or 300'	

X=Conditional Certification requires compliance with General and Specific Conditions on following pages.
MPCN=Modified Pre-Construction (MPCN) must be submitted to EPA even though Corps notification is not required.
PCN=Pre-Construction Notification (PCN) submitted to Corps must also be submitted to EPA.
** Impacts limits are modified by EPA

Notes:
1. No undersized structures
2. Bioengineering used whenever practicable
3. Only once per single and complete project with independent utility
4. Waiver approval required from EPA for 300"
5. Waiver approval required from EPA
6. EPA approves mitigation plan first
7. Approval required from EPA
8. Waiver approval required from EPA
9. No recreational impacts authorized
10. Approval for levee vegetation removal required from EPA

EPA 401 WQC General and Specific Nationwide Permit Conditions for Tribal Lands
(All Indian Reservations except Fort Apache, Hopi, Hualapai and Navajo Indian Reservations)
General Conditions

Projects that are unable to comply with the general conditions of this programmatic certification are denied certification without prejudice and the applicant must apply to EPA for an individual certification. Applicants can apply for an individual certification by providing the same content required in a MPCN described in General Condition 01. *Notification*, of this programmatic certification, but EPA may request additional project information for individual certifications after receiving notification materials. When an individual certification is required, EPA will strive to issue, deny, or waive certification within sixty days of receipt of complete project information, but our review shall not exceed one year, the statutory limit beyond which certification is considered waived.[1]

01. Notification - To improve the government's ability to demonstrate whether the NWP program has minimal adverse impacts to the aquatic environment, individually and cumulatively, all NWP-authorized projects proceeding on tribal lands within Region 9 shall submit a form of notification to EPA Region 9 as described below.[2] Notification is required in order to be eligible for any NWP under this certification.

Projects seeking authorization under this certification will fall under one of the following two notification categories:

Pre-Construction Notification (PCN):

The Corps already requires a PCN, subject to criteria in the Corps' General Condition 31, because the project proposes use of a NWP that requires a PCN automatically or for specific activities authorized by the NWP. Applicants must simply forward a second copy of the PCN already required by the Corps to EPA Region 9 for notification. If a PCN is already required by the Corps and a waiver of impact limits is proposed beyond what is approved under this certification, applicants must include written determinations specified in General Condition 02. *Waivers* for EPA approval.

Modified Pre-Construction Notification (MPCN):

a)The Corps does not require a PCN for any activities authorized under the NWP proposed for use, or for impacts below limits identified in the NWP for a PCN. Applicants must forward a MPCN to EPA Region 9 for notification, subject to the criteria below. If a waiver of impact limits is proposed beyond what is approved under this certification, applicants must include written determinations specified in General Condition 02. *Waivers* for EPA approval. 1)***Timing.*** Applicants shall submit an MPCN to EPA Region 9 as early as possible, and in advance of any authorization letter from the Corps allowing the applicant to proceed under a given NWP. When an EPA approval is required by condition of this certification, EPA will act within sixty days of receiving a complete MPCN. 2)***Content.*** MPCNs must be in writing (electronic mail submittal is acceptable) and include the following information: a) Name, address and telephone numbers of the applicant and any agents or representatives. If available, the electronic mail address and fax numbers for these persons; b) Location of the proposed project; c) A description of the proposed project and impacts including i)the project's purpose; ii) direct and indirect adverse environmental effects the project would cause, including the proposed acreages and linear feet (for streams) of waters impacted, avoided, and where applicable, created or otherwise mitigated; iii) any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to determine compliance with NWP and EPA 401 conditions and to determine whether compensatory mitigation may be necessary. Maps, drawings and/or photographs of the project area and aquatic resources are not mandatory, but usually help to clarify the project and allow for quicker review. At minimum, a narrative description of any special aquatic sites and other waters of the United States on the project site must be included; b) Consistent with General Condition 02. *Waivers*, a written demonstration that any proposed impact limit waiver that may be allowable under this certification will result in minimal impacts to aquatic resource functions; c) Consistent with General Condition 03. *Avoidance, Minimization, and Mitigation*, a written statement documenting measures taken to avoid and minimize temporary and permanent impacts to waters of the U.S.; d) Consistent with General Condition 04. *Prohibition on the Multiple Use of One NWP for a Single Project,* for proposed utility or transportation projects where the same NWP is proposed at multiple locations, a written determination will be provided describing independent utility of each impact location and how the project will not contribute to more than minimal direct, indirect and cumulative impacts to waters of the U.S., either at the impact site or to upstream, downstream, or adjacent aquatic resources. e) The name(s) of any species listed as endangered or threatened under the Endangered Species Act which may be adversely affected by the proposed work, either directly or by impacting designated critical habitat; f) Identification of any cultural or historic properties listed in, or eligible for listing in, the National Register of Historic Places that may be adversely affected by the proposed work. Written notification should be mailed to USEPA Region 9, WTR-8, 75 Hawthorne Street, San Francisco, CA 94105.

02. Waivers - For certain NWPs, Corps District Engineers may waive impact thresholds for intermittent and ephemeral drainages by making a written determination that the discharge will result in minimal adverse effects. To ensure that these waters, commonly found on tribal lands in the arid southwest, receive an adequate level of protection, and to prevent the NWP Program from having more than minimal adverse impacts to the aquatic environment, all proposed impact limit waivers are denied under this certification unless EPA approves a written determination that the waiver will not exceed minimal impacts to aquatic resource functions. For some NWPs where the Corps does not include an impact limit, EPA has added an impact limit as a permit-specific condition. Some of these NWPs also include a condition that a waiver may be provided when EPA approves a written determination that the waiver will not exceed minimal impacts to aquatic resource functions. Impacts to special aquatic sites are not permitted under this certification unless EPA approves a written determination that impacts to aquatic resource functions will be minimal. "Special aquatic sites" include sanctuaries and refuges, wetlands, mud flats, vegetated shallows, coral reefs and riffle pool complexes. When EPA approval is required for a waiver, EPA will act within sixty days of receiving a complete PCN or MPCN.

03. Avoidance, Minimization, and Mitigation - To protect water quality and beneficial uses of U.S. waters on tribal lands, all projects using NWPs must avoid discharges to the maximum extent practicable, and utilize the best available and practicable means of minimizing the adverse impact of discharges that cannot be avoided. A written statement documenting measures taken to avoid and minimize temporary and permanent impacts to waters of the U.S. will be provided to EPA and the Corps with each PCN or MPCN. To the extent practicable, temporary impact sites will be returned to pre-construction contours and substrate. Where applicable, banks shall be reseeded or replanted with native vegetation. EPA shall make a written determination, within sixty days of receipt of a complete PCN or MPCN, whether compensatory mitigation measures are required to ensure the activity will have only minimal adverse effects, but no such determination is required for a project to begin work if otherwise in compliance with the NWP, this programmatic certification, and any applicable tribal or local authorities' requirements. Nevertheless, should compensatory mitigation be determined necessary by EPA, the mitigation becomes a condition of water quality certification and thus a condition of the Corps' permit. Failure to address an EPA mitigation requirement would therefore place a permittee out of compliance with their NWP and potentially subject to a range of

[1] Clean Water Act Section 401 Certification (a): http://water.epa.gov/lawsregs/guidance/wetlands/sec401.cfm
[2] NOTE: this requirement does not modify or eliminate existing Corps requirements regarding PCNs for projects proceeding on tribal lands (or elsewhere).

Corps and EPA enforcement actions. The need for post-project performance and/or mitigation monitoring and reporting (if applicable) will be determined by EPA on a case-by-case basis.

04. Prohibition on the Multiple Use of One NWP for a Single Project - Permittees may not use the same NWP multiple times (more than once) for one single and complete project at locations that do not have independent utility; to do so circumvents acreage limitations of the NWPs and may result in more than minimal adverse impacts to water quality and other ecosystem services. For example, under this certification, linear transportation projects on tribal lands must sum the impacts of each proposed crossing of individual waters of the U.S. and use that total to determine eligibility for NWP 14 (Linear Transportation Projects). If the acreage or linear foot impacts exceed the limits of the applicable NWP (or combination of applicable *different* NWPs), minimal adverse impacts to water quality may be exceeded and the project is not eligible for 401 certification under this programmatic action. Under these circumstances, projects must seek individual certification from EPA, and EPA may grant, grant with conditions, waive, or deny 401 certification of the project under the NWP. In the event of a denial, the NWP would not be available to the project proponent and therefore applicants may need to apply to the Corps for authorization under a different General Permit, Letter of Permission, or Individual Permit as appropriate and determined by the Corps. EPA would review these other proposed permit actions for case-by-case certification. Note that, on a case-by-case basis, EPA may waive this General Condition and allow the use of multiple NWPs if the applicant so appeals, and demonstrates in their PCN or MPCN that authorization under the NWP will result in minimal and/or completely mitigated impacts to the aquatic environment, individually and cumulatively.

05. Use of Appropriate Fill Material - To the extent practicable, local, native materials should be used as fill material. (*e.g.*, soil, sand, or rock from the site or near the site; clean building materials or clean imported earthen fill). Inappropriate and unauthorized fill materials include, but are not limited to: tires, junked or abandoned vehicles, appliances, or other equipment; garbage; debris; oil drums or other chemically contaminated vessels; artificial turf; non-native vegetation; etc. If an applicant has any doubts or questions about the suitability of a proposed fill material, they should consult with the Corps and/or EPA prior to discharging into waters of the U.S. Such consultation may be via phone, or written letter, fax or electronic mail.

06. Dewatered Conditions - Discharges below the ordinary high water mark or within jurisdictional wetlands are not approved under this certification unless the discharge site is naturally dewatered (*e.g.*, seasonally dry), or dewatering has been authorized by the Corps, thereby avoiding direct discharge of pollutants into the water column. If the site is artificially dewatered, permittees shall, to the extent practicable, avoid dewatering techniques that require additional temporary or permanent discharges of fill material within jurisdictional waters (*e.g.*, coffer dams).

07. Fills Within Floodplains - Projects requiring NWP authorization for discharges of fill material within 100-year floodplains shall include in their PCN or MPCN a statement of compliance with Executive Order 11988 (Floodplain Management). However, discharges within the FEMA-mapped 100-year floodplain associated with residential and commercial development are not certified for use under the NWP program on tribal lands. The 100-year floodplain is based on hydrologic conditions prior to permit issuance.

08. Best Management Practices - Except as specified in the application, no debris, silt, sand, cement, concrete, oil or petroleum, organic material, or other construction related materials or wastes shall be allowed to enter into or be stored where it may be washed by rainfall or runoff into waters of the U.S. Silt fences, straw wattles, and other techniques shall be employed as appropriate to protect waters of the U.S. from sedimentation and other pollutants. Water used in dust suppression shall not contain contaminants that could violate surface water or aquifer standards. Permittees and their contractors shall take necessary steps to minimize channel and bank erosion within waters of the United States during and after construction. A copy of the permit conditions shall be provided to all contractors and subcontractors, and will be posted visibly at project construction sites.

09. Transportation Projects - Permittees shall implement State transportation agencies' guidelines for construction sites to protect water quality and aquatic habitat. In California, CALTRANS has guidance in the *CALTRANS Stormwater Quality Manuals and Handbooks*[3]; in Nevada NDOT has guidance in their *NDOT Water Quality Manuals*[4]; and in Arizona, ADOT has guidance in their *Erosion and Pollution Control Manual*[5].

10. Inspections - The permittee shall allow EPA representatives to inspect the authorized activity and any mitigation areas at any time deemed necessary to determine compliance with the terms and conditions of the NWP verification.

11. Buffers - Unless specifically determined to be impracticable by the Corps and EPA, for NWPs 29, 39, 40, and 42, the permittee shall establish and maintain upland buffers in perpetuity between upland structures constructed as part of the project approved by the NWP and all preserved open waters, streams and wetlands, including created, restored, enhanced or preserved waters of the U.S. Buffers should be vegetated whenever practicable. Plantings in buffers should be dominated by native species, and not include any federal or state listed invasive or noxious weed species[6]. Except in unusual circumstances, as determined by the Corps and EPA, buffers shall be at least 50 feet in width from the lateral limits of the Corp's jurisdiction[7].

12. *Protected Lands -* The permittee shall record the NWP verification with the Registrar of Deeds or other appropriate official charged with the responsibility for maintaining records of title of interest in real property for areas designated to be preserved as part of compensatory mitigation for authorized impacts, including any associated covenants or restrictions.

13. *Impaired Water Bodies -* If a proposed activity would result in dredge or fill in water bodies listed as impaired under Section 303(d) of the CWA, the PCN or MPCN must include specific measures that will be used to avoid exacerbating the impairment(s).[8]

[3] http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm
[4] http://www.nevadadot.com/About_NDOT/NDOT_Divisions/Engineering/Hydraulics/Water_Quality_BMP_Manuals.aspx
[5] http://www.azdot.gov/inside_adot/OES/Water_Quality/Stormwater/Manuals.asp
[6] http://plants.usda.gov/java/noxiousDriver
[7] Ordinary high water mark in non-tidal and the mean higher high water line in tidal waters
[8] EPA Region 9 lists of impaired water bodies: http://www.epa.gov/region9/water/tmdl/303d.html

Specific Nationwide Permits

NWP-01 Aids to Navigation - Subject to the General Conditions (GCs) above, this NWP is hereby programmatically certified.

NWP-02 Structures in Artificial Canals - Subject to the GCs above, this NWP is hereby programmatically certified.

NWP-03 Maintenance - Subject to the GCs above, and the following permit-specific conditions, this NWP is hereby programmatically certified. "Currently serviceable structures" which may be maintained under this permit do not include undersized culverts or structures that cause or exacerbate channel incision, bank destabilization, and/or prevent fish and wildlife passage due to inadequate design or construction standards. Certification of this permit is granted only if the existing structure proposed to be maintained demonstrably preserves (via design, flow modeling or other information in the PCN) the natural functions of the affected aquatic resource when the structure is fully operational. Otherwise, an alternative permit should be utilized as appropriate (*e.g.*, NWP 13 Bank Stabilization). Where existing bank stabilization structures are to be maintained, bioengineered methods shall be utilized to the extent practicable in lieu of "rip-rap" or other hardscape engineered materials. This permit shall not authorize the enlargement of, or increase in, the footprint of a structure within waters of the U.S., unless that enlargement consists of the replacement of existing artificial channel armoring materials (e.g., rip-rap, soil cement, etc.) with low-impact bioengineered natural channel design structures (e.g., log revetments, geotextile rolls/mats, root wads, brush mattresses, willow wattling, etc.)

NWP-04 Fish and Wildlife Harvesting, Enhancement, and Attraction Devices and Activities
Subject to the GCs above, this NWP is hereby programmatically certified.
NWP-05 Scientific Measurement Devices - Subject to the GCs above, this NWP is hereby programmatically certified.
NWP-06 Survey Activities - Subject to the GCs above, this NWP is hereby programmatically certified.
NWP-07 Outfall Structures and Associated Intake Structures - Subject to the GCs above, this NWP is hereby programmatically certified.
NWP-08 Oil and Gas Structures on the Outer Continental Shelf - Subject to the GCs above, this NWP is hereby programmatically certified.
NWP-09 Structures in Fleeting and Anchorage Areas - Subject to the GCs above, this NWP is hereby programmatically certified.
NWP-10 Mooring Buoys - Subject to the GCs above, this NWP is hereby programmatically certified.
NWP-11 Temporary Recreational Structures - Subject to the GCs above, this NWP is hereby programmatically certified.
NWP-12 Utility Line Activities - Subject to the GCs above, and the following permit-specific conditions, this NWP is hereby programmatically certified. Impacts under this permit are limited to the greater of 1/2 acre or 300 linear feet of waters of the U.S., including intermittent and ephemeral streams. Only the 300 linear foot limit may be waived by EPA upon approval, consistent with General Condition 02. *Waivers*. Under this certification, NWP 12 can only be used once for a single and complete project having independent utility. When NWP 12 is proposed for multiple locations a written determination will be provided describing independent utility of each impact location for approval by EPA, consistent with General Condition 01. *Notification*. Permittees are required to ensure that the construction of utility lines does not result in the draining of any water of the U.S., including wetlands. This may be accomplished through the use of clay blocks, bentonite, or other suitable material (as approved by EPA) to seal the trench. For utility line trenches, during construction, the permittee shall remove and stockpile, separately, the top 6 – 12 inches of topsoil. Following installation of the utility line(s), the permittee shall replace the stockpiled topsoil on top and seed the area with native vegetation.
NWP-13 Bank Stabilization - Subject to the GCs above, and the following permit-specific conditions, this NWP is hereby programmatically certified. Unless approved by EPA, consistent with General Condition 02. *Waivers*, impacts under this permit are limited to the greater of 1/2 acre or 300 linear feet of waters of the U.S., including intermittent and ephemeral streams. All bank stabilization activities under this permit shall involve either the sole use of native vegetation or other bioengineered design techniques (e.g. willow plantings, root wads, large woody debris, etc.) or a combination of hard-armoring (e.g. rock) and native vegetation or bioengineered design techniques, unless specifically determined to be impracticable by the EPA.
NWP-14 Linear Transportation Projects - Subject to the GCs above, and the following permit-specific conditions, this NWP is hereby programmatically certified. Impacts under this permit are limited to the greater of 1/2 acre or 300 linear feet of non-tidal waters of the U.S., including intermittent and ephemeral streams, and 1/3 acre or 300 linear feet of tidal waters of the U.S. NWP 14 can only be used once for a single and complete project having independent utility. When NWP 14 is proposed for multiple locations a written determination will be provided describing independent utility of each impact location for approval by EPA, consistent with General Condition 01. *Notification.* All bank stabilization activities under this permit shall involve either the sole use of native vegetation or other bioengineered design techniques (e.g. willow plantings, root wads, large woody debris, etc.) or a combination of hard-armoring (e.g. rock) and native vegetation or bioengineered design techniques, unless specifically determined to be impracticable by the EPA.
NWP-15 U.S. Coast Guard Approved Bridges - Subject to the GCs above, this NWP is hereby programmatically certified.
NWP-16 Return Water from Upland Contained Disposal Areas - Subject to the GCs above, this NWP is hereby programmatically certified.
NWP-17 Hydropower Projects - Subject to the GCs above, this NWP is hereby programmatically certified.
NWP-18 Minor Discharges - Subject to the GCs above, this NWP is hereby programmatically certified.
NWP-19 Minor Dredging - Subject to the GCs above, this NWP is hereby programmatically certified.
NWP-20 Response Operations for Oil and Hazardous Substances - Subject to the GCs above, this NWP is hereby programmatically certified.
NWP-21 Surface Coal Mining Activities - Subject to the GCs above, and the following permit-specific conditions, this NWP is hereby programmatically certified. Before an applicant may use this permit, EPA must approve a compensatory mitigation plan sufficient to ensure impacts to aquatic resource functions are minimal.
NWP-22 Removal of Vessels - Subject to the GCs above, this NWP is hereby programmatically certified.
NWP-23 Approved Categorical Exclusions - Subject to the GCs above, this NWP is hereby programmatically certified.
NWP-24 Indian Tribe or State Administered Section 404 Programs - Subject to the GCs above, this NWP is hereby programmatically certified.
NWP-25 Structural Discharges - Subject to the GCs above, this NWP is hereby programmatically certified.
NWP-26 [Reserved]
This NWP is no longer in use. No certification is necessary.
NWP-27 Aquatic Habitat Restoration, Establishment, and Enhancement Activities - Subject to the GCs above, and the following permit-specific condition, this NWP is hereby programmatically certified. Upon review of a PCN or MPCN, consistent with General Condition 01. *Notification*, EPA will approve or deny on a case-by-case basis whether the proposed project will result in a net increase in aquatic resource functions and services, consistent with the NWP. An individual certification may be required in the event EPA denies approval of a waiver for this NWP.
NWP-28 Modifications of Existing Marinas - Subject to the GCs above, this NWP is hereby programmatically certified.
NWP-29 Residential Developments - Subject to the GCs above, and the following permit-specific conditions, this NWP is hereby programmatically certified. Unless approved by EPA, consistent with General Condition 02. *Waivers*, impacts under this permit are limited to 1/4 acre of impacts to non-tidal waters of the U.S. for single family houses, and the greater of 1/2 acre or 300 linear feet of impact to waters of the U.S. for multi-unit residential developments. Under this certification, this permit will not be used to approve residential developments and their attendant features within the 100-year floodplain. The 100-year floodplain is determined based on hydrologic conditions at the time of the NWP application. Recreational facilities such as playgrounds, playing fields, and golf courses are not authorized under this certification. These projects are separate and distinct from residential developments, are not required to be included in a residential development project for it to be practicable, and their construction within waters is normally avoidable.
NWP-30 Moist Soil Management for Wildlife - Subject to the GCs above, this NWP is hereby programmatically certified.
NWP-31 Maintenance of Existing Flood Control Facilities - Subject to the GCs above, and the following permit-specific conditions, this NWP is hereby programmatically certified. Upon review of a PCN, consistent with General Condition 01. *Notification*, EPA will approve or deny on a case-by-case basis whether the proposed project will result in minimal impacts to waters of the U.S. for projects that include removal of levee vegetation.
NWP-32 Completed Enforcement Actions - Subject to the GCs above, this NWP is hereby programmatically certified.
NWP-33 Temporary Construction, Access, and Dewatering - Subject to the GCs above, this NWP is hereby programmatically certified.
NWP-34 Cranberry Production Activities - Subject to the GCs above, this NWP is hereby programmatically certified.
NWP-35 Maintenance Dredging of Existing Basins - Subject to the GCs above, this NWP is hereby programmatically certified.

NWP-36 Boat Ramps - Subject to the GCs above, and the following permit-specific conditions, this NWP is hereby programmatically certified. Unless approved by EPA, consistent with General Condition 02. *Waivers*, impacts under this permit are limited to 50 cubic yards of fill and ramps that are 20 feet wide or less.

NWP-37 Emergency Watershed Protection and Rehabilitation - Subject to the GCs above, this NWP is hereby programmatically certified.

NWP-38 Cleanup of Hazardous and Toxic Waste - Subject to the GCs above, this NWP is hereby programmatically certified.

NWP-39 Commercial and Institutional Developments - Subject to the GCs above, and the following permit-specific conditions, this NWP is hereby programmatically certified. Under this certification, this permit will not be used to approve commercial and institutional developments and their attendant features within the 100-year floodplain. The 100-year floodplain is determined based on hydrologic conditions at the time of the NWP application. Recreational facilities such as playgrounds, playing fields, and golf courses are not authorized under this certification. These projects are separate and distinct from commercial and institutional development, are not required to be included in such developments to be practicable, and their construction within waters is normally avoidable.

NWP-40 Agricultural Activities - Subject to the GCs above, and the following permit-specific conditions, this NWP is hereby programmatically certified. Construction of farm ponds under this certification is limited to those that do not qualify for the Clean Water Act section 404(f)(1)(C) exemption because of the recapture provision at section 404(f)(2). Under this certification, no discharges are authorized which would impact hydrological connectivity between jurisdictional waters to such an extent as to convert waters of the U.S. to uplands, or otherwise isolate waters and eliminate federal regulatory jurisdiction. Unless approved by EPA, consistent with General Condition 02. *Waivers*, impacts under this permit are limited to the greater of 1/2 acre or 300 linear feet of impacts to non-tidal waters of the U.S., including intermittent and ephemeral streams.

NWP-41 Reshaping Existing Drainage Ditches - Subject to the GCs above, and the following permit-specific conditions, this NWP is hereby programmatically certified. Unless approved by EPA, consistent with General Condition 02. *Waivers*, impacts under this permit are limited to the greater of 1/2 acre or 300 linear feet of impacts to non-tidal waters of the U.S., including intermittent and ephemeral streams. All sidecast materials from excavation must be stored and/or disposed of within non-jurisdictional uplands under this certification. A statement must be included in the notification as to how the applicant's activities will improve water quality. Under this certification, no discharges are authorized which would impact hydrological connectivity between jurisdictional waters to such an extent as to convert waters of the U.S. to uplands, or otherwise isolate waters to eliminate federal regulatory jurisdiction.

NWP-42 Recreational Facilities - Subject to the GCs above, this NWP is hereby programmatically certified.

NWP-43 Stormwater Management Facilities - Use of this NWP is not covered by this programmatic certification, and prospective users on tribal lands must seek individual project certification from EPA in all cases. NWP authorization of constructing stormwater facilities within waters of the U.S. discourages applicants from using practicable construction options that locate stormwater retention and detention facilities "off line" from streams. For example, retention facilities are often built as sediment (or debris) basins within a stream. This practice includes constructing a dam in the stream, excavating out a basin, and regular sediment removal to maintain the structure. These facilities cause considerable and unnecessary damages to stream functions as retention facilities can be located "off line" by constructing a high flow diversion channel above the ordinary high water mark. If applicants can continue to use the traditional, more damaging practices that are sanctioned by this NWP, there is no incentive for these management practices to improve. We do not believe NWP-43 for new facilities complies with the CWA Section 404(b)(1) Guidelines. CWA section 401 certification for this NWP is denied without prejudice. Applicants for projects on tribal lands must apply to EPA for individual certification if this NWP is proposed to be used. Applicants can apply for an individual certification by providing the same content required in a MPCN described in General Condition 01. *Notification*, of this certification.

NWP-44 Mining Activities - Subject to the GCs above, and the following permit-specific conditions, this NWP is hereby programmatically certified. Applicants must ensure that mining activities (e.g., aggregate mining) approved by this NWP will not cause upstream head cutting or downstream incision. Notification to EPA shall include a narrative description and design drawing, when applicable, of any measure that will be implemented to comply with the condition. When used for in-stream aggregate mining activities, compensatory mitigation is likely to be required due to extensive indirect impacts and temporal losses typical of this type of impact.

NWP-45 Repair of Uplands Damaged by Discrete Events - Subject to the GCs above, and the following permit-specific conditions, this NWP is hereby programmatically certified.

Unless approved by EPA, consistent with General Condition 02. *Waivers*, impacts under this permit are limited to the greater of 1/2 acre or 300 linear feet of impacts to non-tidal waters of the U.S., including intermittent and ephemeral streams.

NWP-46 Discharges in Ditches

Subject to the GCs above, and the following permit-specific conditions, this NWP is hereby programmatically certified.

Unless approved by EPA, consistent with General Condition 02. *Waivers*, impacts under this permit are limited to the greater of 1/2 acre or 300 linear feet of impacts to non-tidal waters of the U.S., including intermittent and ephemeral streams.

NWP-47 [Reserved] - This NWP is no longer in use. No certification is necessary.

NWP-48 Commercial Shellfish Aquaculture Activities - Subject to the GCs above, and the following permit-specific conditions, this NWP is hereby programmatically certified. Under this certification, impacts to submerged aquatic vegetation are prohibited, consistent with NWP 19. *Minor Dredging*, and NWP 36. *Boat Ramps*.

NWP-49 Coal Remining Activities - Subject to the GCs above, and the following permit-specific conditions, this NWP is hereby programmatically certified. Unless approved by EPA, consistent with General Condition 02. *Waivers*, impacts under this permit are limited to the greater of 1/2 acre or 300 linear feet of impacts to non-tidal waters of the U.S., including intermittent and ephemeral streams. Applicants must provide information in the PCN illustrating that activities authorized under NWP-49 will result in a net increase in aquatic resource functions.

NWP-50 Underground Coal Mining Activities - Subject to the GCs above, this NWP is hereby programmatically certified.

NWP-51 Land-Based Renewable Energy Generation Facilities - Subject to the GCs above, this NWP is hereby programmatically certified.

NWP-52 Water-Based Renewable Energy Generation Pilot Projects - Subject to the GCs above, this NWP is hereby programmatically certified.

LIST OF SUBCONTRACTORS, SUPPLIERS, SERVICE PROVIDERS AND MANUFACTURERS BIDDING ON ADOT CONTRACTS

This form must be submitted to the Civil Rights Office by 4:00 p.m. on the fifth working day after the opening of bids. You may make copies of this form. List all companies that bid with your firm on this contract.

FAILURE TO SUBMIT THE REQUIRED INFORMATION BY THE STATED TIME AND IN THE MANNER HEREIN SPECIFIED SHALL BE CAUSE FOR THE BIDDER TO BE DEEMED NONRESPONSIVE.

Project No. _____ TRACS No. _____ Bidder _____

Firm Name	Contact Information (address or phone no)

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. General
II. Nondiscrimination
III. Nonsegregated Facilities
IV. Davis-Bacon and Related Act Provisions
V. Contract Work Hours and Safety Standards Act Provisions
VI. Subletting or Assigning the Contract
VII. Safety: Accident Prevention
VIII. False Statements Concerning Highway Projects
IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
X. Compliance with Governmentwide Suspension and Debarment Requirements
XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

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

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

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

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

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

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

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

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

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

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

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

2. Withholding

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

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

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

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

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

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

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

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

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

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

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

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

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

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

10. Certification of eligibility.

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

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

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

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

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

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

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

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

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;
(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. Instructions for Certification – First Tier Participants:

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

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

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

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2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

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

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion–Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

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XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

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

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

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

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

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 or 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 ad 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

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

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 seperate 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 al 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	24.1	6.9
Cochise, Graham, Greenlee and Santa Cruz Counties	27.0	6.9
Phoenix and balance of Maricopa County	15.8	6.9
Apache, Coconino, Gila, Mohave, Navajo, Pinal, Yavapai and Yuma Counties	19.6	6.9

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in all areas where he has Federal or federally assisted work.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3 (a), and its 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: AZ160008 01/08/2016 AZ8

Superseded General Decision Number: AZ20150008

State: Arizona

Construction Type: Highway

Counties: Coconino, Maricopa, Mohave, Pima, Pinal, Yavapai and Yuma Counties in Arizona.

HIGHWAY CONSTRUCTION PROJECTS

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.15 for calendar year 2016 applies to all contracts subject to the Davis-Bacon Act for which the solicitation was issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.15 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2016. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/08/2016

* CARP0408-005 10/01/2015

	Rates	Fringes
CARPENTER (Including Cement Form Work)	$ 24.63	11.54

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* ENGI0428-001 06/01/2015

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
Group 1	$ 22.59	9.34
Group 2	$ 25.86	9.34
Group 3	$ 26.94	9.34
Group 4	$ 27.97	9.34

POWER EQUIPMENT OPERATORS CLASSIFICATIONS:

GROUP 1: A-frame boom truck, air compressor, Beltcrete, boring bridge and texture, brakeman, concrete mixer (skip type), conductor, conveyor, cross timing and pipe float, curing machine, dinky (under 20 tons), elevator hoist (Husky and similar), firemen, forklift, generator (all), handler, highline cableway signalman, hydrographic mulcher, joint inserter, jumbo finishing machine, Kolman belt loader, machine conveyor, multiple power concrete saw, pavement breaker, power grizzly, pressure grout machine, pump, self-propelled chip spreading machine, slurry seal

machine (Moto paver driver), small self-propelled compactor (with blade-backfill, ditch operation), straw blower, tractor (wheel type), tripper, tugger (single drum), welding machine, winch truck

GROUP 2:
ALL COUNTIES INCLUDING MARICOPA: Aggregate Plant, Asphalt plant Mixer, Bee Gee, Boring Machine, Concrete Pump, Concrete Mechanical Tamping-Spreading Finishing Machine, Concrete Batch Plant, Concrete Mixer (paving & mobile), Elevating Grader (except as otherwise classified), Field Equipment Serviceman, Locomotive Engineer (including Dinky 20 tons & over), Moto-Paver, Oiler-Driver, Operating Engineer Rigger, Power Jumbo Form Setter, Road Oil Mixing Machine, Self-Propelled Compactor (with blade-grade operation), Slip Form (power driven lifting device for concrete forms), Soil Cement Road Mixing Machine, Pipe-Wrapping & Cleaning Machine (stationary or traveling), Surface Heater & Planer, Trenching Machine, Tugger (2 or more drums).

MARICOPA COUNTY ONLY: Backhoe < 1 cu yd, Motor Grader (rough), Scraper (pneumatic tired), Roller (all types asphalt), Screed, Skip Loader (all types 3<6 cu yd), Tractor (dozer, pusher-all).

GROUP 3:
ALL COUNTIES INCLUDING MARICOPA: Auto Grade Machine, Barge, Boring Machine (including Mole, Badger & similar type directional/horizontal), Crane (crawler & pneumatic 15>100 tons), Crawler type Tractor with boom attachment & slope bar, Derrick, Gradall, Heavy Duty Mechanic-Welder, Helicopter Hoist or Pilot, Highline Cableway, Mechanical Hoist, Mucking Machine, Overhead Crane, Pile Driver Engineer (portable, stationary or skid), Power Driven Ditch Lining or Ditch Trimming Machine, Remote Control Earth Moving Machine, Slip Form Paving Machine (including Gunnert, Zimmerman & similar types), Tower Crane or similar type.

MARICOPA COUNTY ONLY: Backhoe<10 cu yd, Clamshell < 10 cu yd, Concrete Pump (truck mounted with boom only), Dragline <10 cu yd, Grade Checker, Motor Grader (finish-any type power blade), Shovel < 10 cu yd.

GROUP 4: Backhoe 10 cu yd and over, Clamshell 10 cu yd and over, Crane (pneumatic or crawler 100 tons & over), Dragline 10 cu yd and over, Shovel 10 cu yd and over.

All Operators, Oilers, and Motor Crane Drivers on equipment with Booms, except concrete pumping truck booms, including Jibs, shall receive $0.01 per hour per foot over 80 ft in addition to regular rate of pay

Premium pay for performing hazardous waste removal $0.50 per hour over base rate.

COCONINO, MARICOPA, MOHAVE, YAVAPAI & YUMA COUNTIES

	Rates	Fringes
Ironworker, Rebar	$ 26.00	21.77

Zone 1: 0 to 50 miles from City Hall in Phoenix or Tucson
Zone 2: 050 to 100 miles - Add $4.00
Zone 3: 100 to 150 miles - Add $5.00
Zone 4: 150 miles & over - Add $6.50

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* LABO0383-002 06/01/2015

	Rates	Fringes
Laborers:		
Group 1	$ 16.49	4.95
Group 2	$ 17.39	4.95
Group 3	$ 18.09	4.95
Group 4	$ 19.03	4.95
Group 5	$ 19.89	4.95

LABORERS CLASSIFICATIONS:

GROUP 1: All Counties: Chipper, Rip Rap Stoneman. Pinal County Only: General/Cleanup Laborer. Maricopa County Only: Flagger.

GROUP 2: Asphalt Laborer (Shoveling-excluding Asphalt Raker or Ironer), Bander, Cement Mason Tender, Concrete Mucker, Cutting Torch Operator, Fine Grader, Guinea Chaser, Power Type Concrete Buggy

GROUP 3: Chain Saw, Concrete Small Tools, Concrete Vibrating Machine, Cribber & Shorer (except tunnel), Hydraulic Jacks and similar tools, Operator and Tender of Pneumatic and Electric Tools (not herein separately classified), Pipe Caulker and Back-Up Man-Pipeline, Pipe Wrapper, Pneumatic Gopher, Pre-Cast Manhole Erector, Rigger and Signal Man-Pipeline

GROUP 4: Air and Water Washout Nozzleman; Bio-Filter, Pressman, Installer, Operator; Scaffold Laborer; Chuck Tender; Concrete Cutting Torch; Gunite; Hand-Guided Trencher; Jackhammer and/or Pavement Breaker; Scaler (using boson's chair or safety belt); Tamper (mechanical all types).

GROUP 5: AC Dumpman, Asbestos Abatement, Asphalt Raker II, Drill Doctor/Air Tool Repairman, Hazardous Waste Removal, Lead Abatement, Lead Pipeman, Process Piping Installer, Scaler (Driller), Pest Technician/Weed Control, Scissor Lift, Hydro Mobile Scaffold Builder.

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* PAIN0086-001 04/01/2014

	Rates	Fringes

PAINTER
PAINTER (Yavapai County only), SAND BLASTER/WATER BLASTER (all Counties).....$ 19.50 4.85

ZONE PAY: More than 100 miles from Old Phoenix Courthouse $3.50 additional per hour.

SUAZ2009-001 04/20/2009

	Rates	Fringes
CEMENT MASON	$ 19.28	3.99
ELECTRICIAN	$ 22.84	6.48
IRONWORKER (Rebar)		
Pima County	$ 23.17	14.83
Pinal County	$ 20.27	8.35
LABORER		
Asphalt Raker	$ 15.49	3.49
Compaction Tool Operator	$ 14.59	2.91
Concrete Worker	$ 13.55	3.20
Concrete/Asphalt Saw	$ 13.95	2.58
Driller-Core, diamond, wagon, air track	$ 16.94	3.12
Dumpman Spotter	$ 14.99	3.16
Fence Builder	$ 13.28	2.99
Flagger Coconino, Mohave, Pima, Pinal, Yavapai & Yuma	$ 12.35	1.59
Formsetter	$ 16.09	3.97
General/Cleanup Laborer Coconino, Maricopa, Mohave, Pima, Yavapai & Yuma	$ 14.54	3.49
Grade Setter (Pipeline)	$ 17.83	5.45
Guard Rail Installer	$ 13.28	2.99
Landscape Laborer	$ 11.39	
Landscape Sprinkler Installer	$ 15.27	
Pipelayer	$ 14.81	2.96
Powderman, Hydrasonic	$ 16.39	2.58
OPERATOR: Power Equipment		
Asphalt Laydown Machine	$ 21.19	6.05
Backhoe < 1 cu yd Coconino, Mohave, Pima, Pinal, Yavapai & Yuma	$ 17.37	3.85
Backhoe < 10 cu yd Coconino, Mohave, Pima, Pinal, Yavapai & Yuma	$ 18.72	3.59
Clamshell < 10 cu yd Coconino, Mohave, Pima, Pinal, Yavapai & Yuma	$ 18.72	3.59
Concrete Pump (Truck Mounted with boom only) Coconino, Mohave, Pima,		

Pinal, Yavapai & Yuma	$ 19.92	7.10
Crane (under 15 tons)	$ 21.35	7.36
Dragline (up to 10 cu yd) Coconino, Mohave, Pima, Pinal, Yavapai & Yuma	$ 18.72	3.59
Drilling Machine (including Water Wells)	$ 20.58	5.65
Grade Checker Coconino, Mohave, Pima, Pinal, Yavapai & Yuma	$ 16.04	3.68
Hydrographic Seeder	$ 15.88	7.67
Mass Excavator	$ 20.97	4.28
Milling Machine/Rotomill	$ 21.42	7.45
Motor Grader (Finish-any type power blade) Coconino, Mohave, Pima, Pinal, Yavapai & Yuma	$ 21.92	4.66
Motor Grader (Rough) Coconino, Mohave, Pima, Pinal, Yavapai & Yuma	$ 20.07	4.13
Oiler	$ 18.15	8.24
Power Sweeper	$ 16.76	4.44
Roller (all types Asphalt) Coconino, Mohave, Pima, Pinal, Yavapai & Yuma	$ 18.27	3.99
Roller (excluding asphalt)	$ 15.65	3.32
Scraper (pneumatic tired) Coconino, Mohave, Pima, Pinal, Yavapai & Yuma	$ 17.69	3.45
Screed Coconino, Mohave, Pima, Pinal, Yavapai & Yuma	$ 17.54	3.72
Shovel < 10 cu yd Coconino, Mohave, Pima, Pinal, Yavapai & Yuma	$ 18.72	3.59
Skip Loader (all types <3 cu yd)	$ 18.28	5.30
Skip Loader (all types 3 < 6 cu yd) Coconino, Mohave, Pima, Pinal, Yavapai & Yuma	$ 18.64	4.86
Skip Loader (all types 6 < 10 cu yd)	$ 20.15	4.52
Tractor (dozer, pusher - all) Coconino, Mohave, Pima, Pinal, Yavapai & Yuma	$ 17.26	2.65
PAINTER		
Coconino, Maricopa, Mohave, Pima, Pinal & Yuma	$ 15.57	3.92
TRUCK DRIVER		
2 or 3 Axle Dump or Flatrack	$ 16.27	3.30
5 Axle Dump or Flatrack	$ 13.97	2.89
6 Axle Dump or Flatrack (< 16 cu yd)	$ 17.79	6.42
Belly Dump	$ 14.67	
Oil Tanker Bootman	$ 22.03	

Self-Propelled Street Sweeper	$ 13.11	5.48
Water Truck 2500 < 3900 gallons	$ 18.14	4.55
Water Truck 3900 gallons and over	$ 15.92	3.33
Water Truck under 2500 gallons	$ 15.94	4.16

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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

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

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

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

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that

classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

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

Union Average Rate Identifiers

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

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

WAGE DETERMINATION APPEALS PROCESS

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

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

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

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

Branch of Construction Wage Determinations
Wage and Hour Division

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

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

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

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

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

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

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

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END OF GENERAL DECISION

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
CONTRACTS AND SPECIFICATIONS SECTION

BID SCHEDULE

CONTRACT # 2016049

TRACS No.	Project No.	Item	County	District	Gross Length	Net Length	Prepared By:
010 MA 112 H878701C	010-A-(226)T	11617	MARICOPA		8		Mahdi Ghalib

Highway Termini	Location	Work Description
• I-10	• SR 85 - VERRADO (WB)	• System Preservation (Restoration/Rehab/Resurface)

BID SCHEDULE

010 MA 112 H878701C

Item No.	Item Description	Unit	Quantity	Unit Price	Extended Amount
2020042	REMOVAL OF PIPE (VARIES SIZES)	L.FT.	32		
2020053	REMOVE (END SECTION) (VARIES SIZES)	EACH	3		
2020081	REMOVE BITUMINOUS PAVEMENT (MILLING) (1")	SQ.YD.	504		
2020084	REMOVE BITUMINOUS PAVEMENT (MILLING) (2 1/2")	SQ.YD.	3,800		
2020085	REMOVE BITUMINOUS PAVEMENT (MILLING) (3")	SQ.YD.	24,550		
2020086	REMOVE BITUMINOUS PAVEMENT (MILLING) (3 1/2 ")	SQ.YD.	56,670		
2020162	REMOVE (BITUMINOUS PAVEMENT) (MILLING) (4 1/2")	SQ.YD.	56,670		
2030112	SHOULDER BUILD-UP (MILLED AC)	L.FT.	88,733		
2030113	SHOULDER BUILD-UP (COMPACTION)	HOUR	74		
2030902	BORROW (IN-PLACE)	CU.YD.	48		
4040111	BITUMINOUS TACK COAT	TON	90		
4040116	APPLY BITUMINOUS TACK COAT	HOUR	157		
4040127	FOG COAT (SS-1)	TON	20		
4040163	BLOTTER MATERIAL	TON	61		
4040282	ASPHALT BINDER (PG 76-16)	TON	1,300		

BID SCHEDULE

010 MA 112 H878701C

Item No.	Item Description	Unit	Quantity	Unit Price	Extended Amount
4140040	ASPHALTIC CONCRETE FRICTION COURSE (ASPHALT-RUBBER)	TON	4,150		
4140042	ASPHALT RUBBER MATERIAL (FOR AR-ACFC)	TON	395		
4140044	MINERAL ADMIXTURE (FOR AR-ACFC)	TON	38	$90.00	$3,420.00
4160004	ASPHALTIC CONCRETE (3/4" MIX) (END PRODUCT) (SPECIAL MIX)	TON	26,000		
4160031	MINERAL ADMIXTURE	TON	245	$90.00	$22,050.00
5010017	PIPE, CORRUGATED METAL, 30"	L.FT.	2		
5010025	PIPE, CORRUGATED METAL, 36"	L.FT.	4		
5010035	PIPE, CORRUGATED METAL, 48"	L.FT.	26		
5014030	FLARED END SECTION, 30" (C-13.25)	EACH	1		
5014036	FLARED END SECTION, 36" (C-13.25)	EACH	2		
6010505	BRIDGE REPAIR (PENETRATING CRACK SEAL)	SQ.YD.	766		
7015042	TEMPORARY PAINTED MARKING (STRIPE)	L.FT.	127,200		
7015052	OBLITERATE PAVEMENT MARKING (STRIPE)	L.FT.	4,500		
7016030	BARRICADE (TYPE II, VERT.PANEL, TUBULAR MARKER)	EACH-DAY	14,305		
7016031	BARRICADE (TYPE III, HIGH LEVEL FLAG TREES)	EACH-DAY	123		

BID SCHEDULE

010 MA 112 H878701C

Item No.	Item Description	Unit	Quantity	Unit Price	Extended Amount
7016032	PORTABLE SIGN STANDS (RIGID)	EACH-DAY	126		
7016033	PORTABLE SIGN STANDS (SPRING TYPE)	EACH-DAY	1,667		
7016035	WARNING LIGHTS (TYPE A)	EACH-DAY	2,192		
7016037	WARNING LIGHTS (TYPE C)	EACH-DAY	14,305		
7016038	TRAFFIC CONE (28 INCHES)	EACH-DAY	370		
7016039	EMBEDDED SIGN POST	EACH-DAY	1,130		
7016050	TRUCK MOUNTED ATTENUATOR	EACH-DAY	67		
7016051	TEMPORARY SIGN (LESS THAN 10 S.F.)	EACH-DAY	995		
7016052	TEMPORARY SIGN (10 S.F. OR MORE)	EACH-DAY	1,940		
7016061	FLASHING ARROW PANEL	EACH-DAY	42		
7016067	CHANGEABLE MESSAGE BOARD (CONTRACTOR FURNISHED)	EACH-DAY	558		
7016075	FLAGGING SERVICES (CIVILIAN)	HOUR	220		
7016078	FLAGGING SERVICES (LOCAL ENFORCEMENT OFFICER)	HOUR	240		
7016080	FLAGGING SERVICES (DPS)	HOUR	240	$65.26	$15,662.40

BID SCHEDULE

010 MA 112 H878701C

Item No.	Item Description	Unit	Quantity	Unit Price	Extended Amount
7040005	PAVEMENT MARKING (WHITE EXTRUDED THERMOPLASTIC) (0.090")	L.FT.	90,950		
7040006	PAVEMENT MARKING (YELLOW EXTRUDED THERMOPLASTIC) (0.090")	L.FT.	72,700		
7040072	PAVEMENT MARKING (TRANSVERSE) (THERMOPLASTIC) (ALKYD) (0.090")	L.FT.	1,200		
7040073	PAVEMENT LEGEND (EXTRUDED THERMOPLASTIC) (ALKYD) (0.090")	EACH	7		
7040074	PAVEMENT SYMBOL (EXTRUDED THERMOPLASTIC) (ALKYD) (0.090")	EACH	24		
7050047	PAVEMENT MARKING, PREFORMED, PATTERNED, WHITE STRIPE	L.FT.	37,500		
7060013	PAVEMENT MARKER, RAISED, TYPE C	EACH	2,040		
7060015	PAVEMENT MARKER, RAISED, TYPE D	EACH	38		
7060017	PAVEMENT MARKER, RAISED, TYPE E	EACH	2,060		
7060018	PAVEMENT MARKER, RAISED, TYPE G	EACH	44		
7080001	PERMANENT PAVEMENT MARKING (PAINTED) (WHITE)	L.FT.	78,800		
7080011	PERMANENT PAVEMENT MARKING (PAINTED) (YELLOW)	L.FT.	48,400		

BID SCHEDULE

010 MA 112 H878701C

Item No.	Item Description	Unit	Quantity	Unit Price	Extended Amount
7080111	PERMANENT PAVEMENT MARKING (PAINTED SYMBOL) (	EACH	1		
7080121	PERMANENT PAVEMENT MARKING (PAINTED SYMBOL) (ARROW)	EACH	24		
7080221	PERMANENT PAVEMENT MARKING (PAINTED LEGEND) (ONLY)	EACH	7		
7350006	LOOP DETECTOR (COUNTER) (FULL REPLACEMENT)	EACH	2		
7350023	LOOP DETECTOR (SPEED/CLASSIFICATION) (PARTIAL REPLACEMENT)	EACH	1		
8050003	SEEDING (CLASS II)	ACRE	13		
8101021	EROSION CONTROL (WATTLES) (9")	L.FT.	1,331		
9010001	MOBILIZATION	L.SUM	1		
9230002	CONTRACTOR BASED ON-THE-JOB TRAINING	HOUR	500	$3.00	$1,500.00
9240116	MISCELLANEOUS WORK (POLYMER MODIFIED ASPHALT-RUBBER CRACK SEALANT)	LB.	14,718		
9240170	CONTRACTOR QUALITY CONTROL	L.SUM	1		
9240181	MISCELLANEOUS WORK (CONTROL OF NOXIOUS PLANTS) (MANUAL/MECHANICAL METHODS)	SQ.YD.	23,662		
9240182	MISCELLANEOUS WORK (CONTROL OF NOXIOUS PLANTS) (HERBICIDE)	SQ.YD.	35,493		

BID SCHEDULE

010 MA 112 H878701C

Item No.	Item Description	Unit	Quantity	Unit Price	Extended Amount
9250001	CONSTRUCTION SURVEYING AND LAYOUT	L.SUM	1		

BID TOTAL :

PROPOSAL

TO THE ARIZONA DEPARTMENT OF TRANSPORTATION:

Gentlemen:

The following Proposal is made for constructing project

010 MA 112 H878701C NH-010-A(226)T
EHRENBERG-PHOENIX HWY (I-10)
SR 85 to Verrado Way (WB)

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.

A Proposal Guaranty in the amount and character named in the Advertisement for Bids is enclosed, which 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.

010 MA 112 H878701C NH-010-A(226)T
EHRENBERG-PHOENIX HWY (I-10)
SR 85 to Verrado Way (WB)

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: _____
	_____
R9/13	Notary Public

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 he has _____, has not _____, participated in a previous contract or subcontract subject to the equal opportunity clause, as required by Executive Orders 10925, 11114, or 11246, and that he 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.

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

010 MA 112 H878701C NH-010-A(226)T
EHRENBERG-PHOENIX HWY (I-10)
SR 85 to Verrado Way (WB)

REVISED 05/02

AFFIDAVIT

DISADVANTAGED BUSINESS ENTERPRISE ASSURANCES

The undersigned, fully cognizant of the requirements and of the goal established, hereby certifies that in the preparation of this bid for federal aid project

010 MA 112 H878701C NH-010-A(226)T
EHRENBERG-PHOENIX HWY (I-10)
SR 85 to Verrado Way (WB)

(CHECK ONE)

_____ The established goal for DBE participation will be met and agreements have been made with certified DBEs, or

_____ The bidder has been unable to meet the goal prior to the submission of the bid and has made good faith efforts to do so.

THIS AFFIDAVIT MAY NOT BE REVISED OR CORRECTED AFTER SUBMISSION OF THE BID.

In accordance with the Special Provisions, the bidder shall specify its DBE participation on the "DBE Intended Participation Affidavit", or provide documentation of its good faith efforts, by 4:00 p.m. on the fifth working day following the bid opening. The apparent low bidder shall obtain the required affidavit from the Civil Rights Office, 1135 N. 22nd Avenue (second floor), Phoenix, AZ, 85009, following the opening of bids.

_____
Print Name of Firm

_____
Print Name of Authorized Officer of Firm

_____
Signature of Authorized Officer of Firm

_____
Title

Subscribed and sworn to before me this

_____day of _____, 20_____

My commission expires:

_____
Notary Public

R03/11