SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY

SUPPLEMENT TO MARICOPA ASSOCIATION OF GOVERNMENTS
UNIFORM STANDARD SPECIFICATIONS AND DETAILS
FOR PUBLIC WORKS CONSTRUCTION

Shall be used in conjunction with all construction improvement plans within the

SRP-MIC jurisdiction.

Any deviations from these supplements/standards shall be approved by the Public Works Director or his/her delegate.

Effective 2024

SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY
SUPPLEMENT TO MAG UNIFORM STANDARD SPECIFICATIONS
FOR PUBLIC WORKS CONSTRUCTION

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SUPPLEMENT TO MAG UNIFORM STANDARD SPECIFICATIONS

PART 100 – GENERAL CONDITIONS

Section 101 Abbreviations and Definitions

101.1 Abbreviations:

Add to include the following:

C of C	Certificate of Completion
C of O	Certificate of Occupancy
C of A	Certificate of Acceptance
ECS	Engineering and Construction Services Department
EPNR	Environmental Protection and Natural Resources Division
FDC	Fire Department Connection
FHWA	Federal Highway Administration
MUTCD	Manual on Uniform Traffic Control Devices
PM	Project Manager
PWD	Public Works Department
SRP-MIC	Salt River Pima-Maricopa Indian Community

101.2 Definitions and Terms:

Add to include the following:

Community: The person(s), appointed by the Salt River Pima-Maricopa Indian Community (SRP-MIC), acting directly or through his duly authorized representative.

Compliance: The person(s), appointed by the SRP-MIC, to enforce compliance of construction codes, ordinances and minimum standards of construction for the protection of the public health, safety and welfare.

Engineer: SRP-MIC Project Manager.

Community Inspector: Designated consultant on the Community's behalf and Public Works Department Inspector.

Owner: Salt River Pima-Maricopa Indian Community.

Section 104 Scope of Work

104.1.1 General:

Second paragraph, revise to read as follows:

In the event a conflict exists between approved project plans, the order of precedence listed in descending order shall be as follows:

Change Orders
Addenda
Special Provisions
Project Plans
SRP-MIC Supplement to MAG Uniform Standard Specifications and Details for Public Works Construction
SRP-MIC Construction Details
MAG Uniform Standard Specifications and Details for Public Works Construction

104.1.3 Water Supply:

Add to include the following:

When Community water is requested to be used for construction, access and supply must be from an approved and available fire hydrant. All water use shall be metered through a Community supplied hydrant meter. The contractor shall be required to start a hydrant meter account for each new hydrant meter requested with the SRP-MIC PWD Water Resources. Application and information can be found at https://www.srpmic-nsn.gov/government/public-works/commercial/#ObtainHydrantMeter

104.1.3.1 Email the following information to PWWaterResources@SRPMIC-nsn.gov:
- Project name and location
- Company name, phone number and address
- Map of the requested fire hydrant location for the hydrant meter installation to obtain approval of the proposed fire hydrant location

104.1.3.2 Fill out a Hydrant Meter Application and submit the following required items with the application, a copy of the Driver License, Company ID, Company's W-9 form, and etc. Provide a requested hydrant meter install date on the form.

104.1.3.3 SRP-MIC Finance Department will contact the contact person provided on the application to collect the new account fee and a deposit. Payment can be made using credit/debit card over the phone or a check can be drop off at the Finance Department.

104.1.3.4 Contractor will be notified of scheduled hydrant meter installation date. Contractor is responsible for installing the gate valve and the backflow per Detail No. 4306. Backflow assemble and gate valve must be remain installed until the account is closed and prior to the removal of the hydrant meter. Backflow assembly shall be tested by a certified backflow assembly tester before use, each time the hydrant meter is relocated, and annually if it is in use for more than a year. Backflow certification shall be provide to SRP-MIC PWD Water Resources within 24 hours after hydrant meter is installed.

104.1.3.5 No modifications are to be made to the hydrant meter assembly. Changes in location of the hydrant meter assembly must be pre-approved by the SRP-MIC PWD Water Resources Section.

104.1.3.6 The Contractor shall not obstruct the SRP-MIC Fire Department's access to the larger port on the fire hydrant as it is reserved for their use.

104.1.3.7 Conditions apply to help protect the Community's water system and personnel. Abuse of condition(s) herein may result in removal of meter without notice. Abuse of conditions include but are not limited to: illegal connections, water theft, vandalism, tampering, damage caused by neglect and failure to notify Community of any damages/issues.

104.1.3.8 Contractor is responsible for any costs required to repair the fire hydrant, meter or other related fixtures until the Community resumes possession. The deposit may be returned to the contractor less any charges identified.

104.1.3.9 The Contractor will be billed once a month for water consumption and charges are due and payable when a statement is rendered by the Community and account shall become delinquent when past due 60 days. Delinquent accounts will be cause for removal of hydrant meter and application of final charges posted against the deposit. If the hydrant meter is needed, any balance owed plus a commercial delinquent account fee of $250 shall be paid in full; a new deposit and installation fee may be required.

104.1.3.10 The Contractor is responsible to notify SRP-MIC PWD Water Resources Section of the completion of the project to close the account and provide a removal date. Adapter, gate valve, backflow assembly, supports and all other connections shall be removed prior to the meter relocation or removal by the Community. Failure to do so may result in these parts being confiscated by the PWD.

104.1.4 Cleanup and Dust Control:

Add to include the following:

Contractor shall contact EPNR at (480) 362-7639 and comply with all dust control requirements.

When engaged in a fugitive dust generating operation, the Contractor shall install, maintain, and use dust control measures, if applicable. The Contractor shall implement control measures before, after, and while conducting fugitive dust operations, including weekends, after work hours, and on holidays. If requested, the Contractor shall submit a Dust Control Plan to the PM prior to beginning operations. Contractor shall not begin operations until Dust Control Plan has been approved by EPNR.

Contractors shall provide adequate means for cleaning trucks and/or other equipment of mud prior to entering public streets, and take whatever measures are necessary to ensure that all roads are maintained in a clean, mud and dust free condition at all times.

No separate measurement or payment will be made for dust prevention measures and the cost will be considered incidental to the contract.

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Section 105 Control of Work

105.5 Cooperation of Contractor:

Add to include the following:

The Contractor shall maintain a copy of the current approved construction plans, specifications, project documents, SRP-MIC Supplement to MAG Uniform Standard Specifications and Details for Public Works Construction and construction permit on-site at all times.

The Contractor shall schedule inspection with the SRP-MIC ECS Compliance Division 24 hours in advance for all onsite and offsite construction (480) 362-7910.

Contractor shall schedule a pre-construction meeting a minimum of 5 business days prior to commencing all major phases of work. The meeting shall include SRP-MIC Compliance Division, PWD, and all affected government agencies, utility companies and contractors. A pre-construction meeting cannot be scheduled until the required SRP-MIC permits are obtained.

The Contractor shall schedule inspections with the Community Inspector and Salt River Fire Department for all fire hydrants, fire lines and FDCs prior to placing pipe shading (480) 362-7290.

MAG Uniform Standard Specifications and Details and SRP-MIC Supplement to MAG Uniform Standard Specifications and Details are in effect five feet from the building through the public R/W.

105.6 Cooperation with Utilities:

Second paragraph, add to include the following:

In addition to contacting Arizona 811 at (602) 659-7500, the Contractor shall contact SRP-MIC PWD at (480) 362-5600 or pwcustomerservice@srpmic-nsn.gov five working days prior to any construction to locate and mark Tribal utilities.

After fourth paragraph, add to include the following:

During preconstruction coordination meetings, the Contractor shall establish a communication protocol and appropriate accommodations for locating and documenting infrastructure and utilities that are uncovered or found in a condition other than that indicated on the plans or that deviate materially from the location(s) shown on the plans. The primary point of contact for the Community on utility conflicts or deviations shall be the Community Inspector.

Upon encountering such condition, the Contractor shall contact the Community Inspector as soon as feasible to give the Community the opportunity to inspect, evaluate, measure and record the encountered utility condition. At a minimum, the Contractor shall take appropriate measures to locate and record such infrastructure and utilities using relative measurement techniques and shall record those locations on the as-built plans that are kept on-site. Any photos, sketches, reports or other documentation prepared as a result of the condition shall be transmitted to the Community Inspector.

Add to include the following:

Contractors shall not dig during Council approved Tribal holidays. Calendar of Tribal holidays can be obtained from the PM.

105.15 Acceptance:

Paragraph (B), add to include the following:

Prior to the issuance of a final C of O or C of C by the ECS Compliance Division, Contractor shall provide as-built construction plan sheets bearing the certification and seal of an Arizona Registered Land Surveyor or professional engineer. As-built revisions and annotations shall be affixed upon the final and approved permitted plans bearing the duly signed approval stamp of the ECS Compliance Division. As-built documents shall be clearly marked with the words "As-Built" on each page.

As-built documents shall adequately describe the location and elevation of infrastructure, horizontal site improvements, and all underground construction with reference to a verified local benchmark. Additionally, all deviations from the final approved plans shall be referenced and annotated within revision clouds.

Contractor shall be responsible for submitting a progress redline on a monthly basis. Failure to do so may delay the approval of the monthly pay estimate. The completed as-built shall incorporate all Request for Information (RFI) and shall be submitted electronically in PDF format to the PM for review. The ECS Compliance Division shall verify completeness and approve the final as-built submittal.

The Contractor shall coordinate with the Community's design consultant who will be responsible, under a separate contract with the owner, to develop a CAD drawing in DWG format that shall depict the revised horizontal line work.

For infrastructure improvements constructed within a Community R/W or easement, the following supplemental documentation shall also be provided electronically to the Community with the final as-built submittal.

1) Deviations from the final approved specifications — referenced and annotated.
2) Warranty documentation.
3) All training and operational manuals, if applicable

Add to include the following:

When all work comprised in the plans, specifications and/or Contract has been satisfactorily completed in accordance with the Contract Documents, including clean-up and restoration, the Contractor shall notify the PM in writing. The Community will then schedule and conduct a final field inspection of the project's work and then prepare a written punch list to itemize and document deficiencies and omissions found related to the work. This will include project administrative close-out tasks including submitting and obtaining approval of final as-built record plan drawings. When all deficiencies and omissions disclosed by the final inspection/punch list have been corrected or completed, acceptance of this project will be given by SRP-MIC ECS Compliance Division and the PM. The Contractor shall be responsible for the work covered

under the Contract until such acceptance is given.

Contractor shall supply personnel to operate water valves and fire hydrants and to open manholes to assist with establishing preliminary and final punch lists at no charge to the Community.

Section 106 Control of Materials

106.2 Samples and Tests of Materials:

Add to include the following:

All materials incorporated in the work shall be sampled and tested by a certified geotechnical testing laboratory as approved by SRP-MIC.

The geotechnical laboratory responsible for the testing shall furnish copies of the test results to the PM, ECS Compliance Division, Contractor and to the appropriated material supplier.

The Contractor will cooperate with the testing firm assigned by SRP-MIC. A minimum 24 hours' notice is required to schedule testing (applicable only to Community CIP Projects).

SRP-MIC reserves the right to request additional tests. Where nuclear density tests are used, one sand cone test shall be conducted at the beginning of testing and for every ten tests thereafter.

Re-tests required as a result of initial test rejections or failures will be paid for by the Contractor.

Section 107 Legal Regulations and Responsibility to Public

107.4 Archaeological Reports:

Add to include the following:

The Contractor shall contact SRP-MIC EPNR prior to any ground disturbance (480) 362-7500.

107.7 Barricades and Warning Signs:

Add to include the following:

The Traffic Barricade Manual referred to under this section and thereafter shall be Part 1, 5 and 6 of the MUTCD 2009 Edition.

Contractor shall submit certified traffic control plans to PWD for review, at least 3 business days prior to any construction affecting public traffic. Traffic control plans shall meet the requirements of the MUTCD, latest edition.

The Contractor shall be responsible for providing proper barricading and traffic control including access into and throughout the work site. This is to include any upfront potholing activities. The Contractor shall install approved barricading and traffic control, as approved by the Community. Traffic control plan must include the project/job name and the assigned Community permit

number. Barricade setup and related work may not start until the traffic control plan is approved by the Community. The Contractor shall maintain all traffic control devices on a 24/7 basis. The Community may require adjustments/additional devices from what was originally permitted. All additional devices installed shall be at no additional expense to the Community.

Vertical chain link fencing shall be used on all open trenches or pits. Open Trench signs shall be installed for any overnight open pits or trenches. Overnight trenching involving street cuts shall be steel plated in accordance with MAG Detail 211.

Truck and haul routes shall comply with Council approved truck route. A copy of approved haul routes may be obtained from ECS Compliance Division. The Contractor shall obtain haul permits as required by ECS Compliance Division.

Section 108 Commencement, Prosecution and Progress

108.8 Guarantee and Warranty Provisions:

Add to include the following:

All improvements within the Community R/W including water, sewer, drainage, streets, and landscaping related items shall be under warranty for a period of 2 years from Community acceptance date. The Contractor shall be responsible for performing any required repair work and all associated costs of repairs within the warranty time frame. All warranty repair work shall be inspected and approved by the Community. Thirty calendar days prior to the end of the 2 year warranty period, a walk through inspection shall take place between the Community and the Contractor/Developer. All improvements including drainage structures/facilities, curb and gutter, sidewalk, pavement and street related work, waterlines and facilities, sewer related facilities, street lights, traffic signals, landscaping, signage and pavement markings shall be re-inspected for damage or failure. Repairs shall be performed as outlined above.

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PART 200 – EARTHWORK

Section 201 Clearing and Grubbing

201.3 Construction Methods:

Add to include the following:

Mature mesquite trees within the project area are recommended to remain in place or be relocated, when feasible; however, when impracticable, mature mesquite trees may be removed from the project area, once confirmed to have no active nests. The wood from the removed trees should be made available to Community Members for cultural uses. The trunks and branches should be divided into logs and kindling wood. Logs and kindling wood pieces should be cut into segments that are 12-15 inches in length. Logs that are larger than 3-5 inches in diameter should be split until they meet the ideal size of no larger than 5 inches in diameter. Young mesquites with trunk diameters less than 4 inches, leaves, and twigs that are impractical for trimming as firewood can be left on site to return nutrients to the ground, or disposed of in an appropriate landfill.

Once the mature mesquite wood is prepared into logs and kindling wood, deliver to the Community's wild horse facility located on North Mesa Drive. Drying and distribution, should be coordinated with the Community's range manager, Brian Gewecke, at (480) 570-4410.

If arrowweed will be removed as part of this undertaking, please contact the Cultural Resources Department (CRD) at (480) 362-6325 a minimum of 14 days prior to beginning of vegetation removal activities. CRD will determine if Community Members are interested in harvesting the arrowweed prior to removal by Contractor.

Section 211 Fill Construction

211.3 Compacting:

Fifth paragraph, revise to read as follows:

The loose thickness of each layer of fill material before compacting shall not exceed 8 inches, except as provided in the following paragraph for rocky material. Each layer shall be compacted to a uniform density of at least 95 percent. However, for new or widened roadways and their appurtenances, the density of the upper 2 feet, as well as any fill within 2 feet of the sub-grade, shall also be at least 95 percent, or as directed by the Project Manager. If work is beyond the road prism and outside the R/W, the minimum compaction density shall be 90 percent.

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PART 300 – STREETS AND RELATED WORK

Section 301 Subgrade Preparation

301.2 Preparation of Subgrade:

Add to include the following:

The subgrade, on which the base course or asphalt concrete is to be placed, as prepared by the Contractor, shall be smooth, firm, and true-to-grade and cross-section as shown on the plans and within the tolerances contained herein and shall be so maintained throughout the period of base course or asphalt concrete placement. All irregularities such as humps or high spots shall be removed in order to provide a smooth base of uniform grade and cross-section so that subsequent base course and asphalt surfacing will be of uniform thickness. All work to correct irregularities in the subgrade shall be considered incidental and included in the contract price.

301.3 Relative Compaction:

Note (B), revise to read as follows:

Below detached sidewalk not subject to vehicular traffic……..……90 percent

Add to include the following:

Moisture content of subgrade materials shall be brought to that required for compaction by addition of water, by the addition and blending of dry, suitable material, or by the drying of existing material. The Contractor shall provide means of proof-roll roadway subgrade at the direction of the PM utilizing a minimum 18,000 pound live axle load. Area containing highly expansive clays within the roadway cross section may be compacted in place without scarification as directed by the PM. Subgrade containing soft or excessively wet areas shall be removed and replaced with suitable materials under the direction of the PM. In this event, the Soils Engineer shall also be notified. All subgrade shall be approved by the PM prior to placement of ABC or select materials.

Section 310 Placement and Construction of Aggregate Base Course

310.2 Placement and Construction:

Third paragraph, revise to read as follows:

After placement, the aggregate base course surface shall be true, even and uniform conforming to the grade and cross-section specified. In no case shall the aggregate base course vary by more than 1/4 inch above or below required grade and in accordance with ASTM D698. Care shall be exercised in connection with watering operations to avoid wetting the subgrade or any lower base course to a detrimental extent.

310.3 Compaction:

Note (C), revise to read as follows:

All other areas not subject to vehicular traffic shall be 90 percent compaction.

Add to include the following:

One compaction test will be required on the compacted base material every 300 feet of pavement or fraction thereof. Lengths less than 500 feet will require a minimum of 2 tests. The Community or its authorized representative will choose the location and depth of in-place density tests. If any test made should fail, the area must be reworked and 2 additional tests shall be taken at the Contractor's expense.

The compacted base material shall be compacted to 100 percent of maximum density for the full depth when tested in accordance with MAG Sections 301.3 and 310.2. Aggregate base material shall not be placed on subgrade until final compaction tests of the subgrade have confirmed that the subgrade meets the compaction requirements of these specifications.

Section 321 Placement and Construction of Asphalt Concrete Pavement

321.3 Weather and Moisture Conditions:

Revise to read as follows:

Asphalt concrete shall be placed only when the surface is dry and when the ambient air temperature in the shade is 40 degrees Fahrenheit (50 degrees Fahrenheit for Asphalt Concrete lifts less than 2 inches thick) and rising. No asphalt concrete shall be placed when the weather is foggy or rainy, or when the untreated base (aggregate base course, select material, etc.) or subbase on which the material is to be placed is unstable. Asphalt concrete shall be placed only when the PM determines that weather conditions are suitable.

321.8.2 Joints:

First paragraph, add to include the following:

The existing transverse joint shall be cut/trimmed to a 10 to 15 degree skew and not a straight joint across the roadway.

321.8.5 Smoothness:

First paragraph, second sentence, revise to read as follows:

An acceptable surface shall not vary more than 1/4 inch from the lower edge of a 12-foot straight edge when the straightedge is placed parallel or perpendicular to the centerline of the roadway.

Add to include the following:

The following transverse surface tolerance shall apply at right angles to the centerline where the plans call for a straight transverse grade. The transverse surface shall not vary more than 1/4 inch from the lower edge of a 12-foot straight edge when placed at right angles or radially to the centerline where the approved plans call for a uniform transverse finish grade. This surface specification shall not apply where the plans call for a break in transverse grade, such as at a

roadway crown or swale.

321.10 Acceptance

321.10.3 Surface testing:

First paragraph, third sentence, revise to read as follows:

An acceptable surface shall not vary more than 1/4 inch from the lower edge of a 12-foot straightedge when the straightedge is placed parallel or perpendicular to the centerline of the roadway.

Second paragraph, add to include the following:

Finish pavement shall be water tested. The Contractor shall supply and distribute water from a hydrant, tank truck or other source. After 1 hour of water supply being shut off or water has stopped flowing, the pavement shall be inspected for evidence of ponding. The work shall be deemed deficient if water is found ponded in the pavement to a depth greater than ¼ inch.

321.14 Asphalt Core Method: Core Drilling of Hot Mix Asphalt (HMA) for Specimens of 4" or 6" diameter

321.14.4 Process:

Add to include the following:

Core holes shall be immediately replaced by the Contractor with either HMA or High Strength Non-Shrink Grout with black dye. The patch shall be smooth and flush with finish pavement.

Section 330 Asphalt Chip Seal

330.4.1 Preparation of Surfaces:

Add to include the following:

The Contractor shall protect all manhole covers, water valve boxes, survey monuments, etc., so no bituminous material or cover material remains and so covers can be easily accessed after sweeping. All adjacent sidewalks and driveways shall be swept and maintained clear of loose cover material. All excess chips from chip seal process shall be swept up and hauled off site. Chip seal haul off shall be included in contract bid price.

Section 336 Pavement Matching and Surface Replacement

336.2.1 Pavement Widening or Extensions:

Second paragraph, add to include the following:

After the final lift of asphalt is in place, all new seams/edges at tie-ins shall be crack sealed with an approved sealant material per MAG Section 337.

336.2.4.2 Adjustments:

First paragraph, add to include the following:

After the final lift of asphalt is in place, all new seams/edges at tie-ins shall be crack sealed with an approved sealant material per MAG Section 337.

336.3 Types and Locations of Trench Surface Replacement

First paragraph, revise to read as follows:

Trench backfill shall be in place and compacted to the density required in Table 601-2 of the SRP-MIC Supplements to MAG Specifications, prior to the placement of the asphalt concrete structural section or other surfacing.

Add to include the following:

Asphalt concrete replacement for open cut trenching, transverse and longitudinal, in any existing paved street, shall be a Community approved ½, or ¾" Marshall Mix or EVAC Mix. Mix designs shall be submitted for Community approval.

Section 340 Concrete Curb, Gutter, Sidewalk, Curb Ramps, Driveway and Alley Entrance

340.2 Materials:

First paragraph, revise to read as follows:

Concrete shall be Class A and conform to the requirements of MAG Section 725.

340.3.4 Joints:

Third paragraph, revise to read as follows:

The space between contraction joints in curbs and gutters shall not be less than 5 feet and shall not exceed 10 feet.

340.3.10 Deficiencies:

Add to include the following:

Remove and replace any concrete that is cracked, broken, damaged, defective, discoloration, or does not meet the requirements of this section. Removal shall be from joint to joint. During replacement, an additional piece of bituminous expansion joint material shall be placed along one side of the replacement piece.

Small chips, scrapes, gouges and other similar deficiencies may be patched with a Community approved epoxy based patching compound (Road Ware 10 Minute Concrete Mender) or may require replacement at the Communities discretion. Replacement and patch repair shall be at no additional cost to the Community.

Poor or sloppy workmanship may require replacement at the Community's discretion.

Section 342 Interlocking Concrete Paver Installations

342.2.2 Portland Cement Concrete:

Revise to read as follows:

Portland cement concrete used for headers or underlying base slabs for pavers shall be a minimum of Class A per MAG Section 725, regardless of location and being subject to vehicular traffic.

Section 345 Adjusting Frames, Covers and Valve Boxes

345.1 Description:

Add to include the following:

Water valve boxes within the Community shall be per MAG Detail 391-1 Type 'C'.

345.4 Adjusting Valve Boxes:

Add to include the following:

Water valve boxes that are located in the shoulder of the road shall have a Foam Mud and Debris Plug installed in the top section of the box.

Section 350 Removal of Existing Improvements

350.2.1 Utilities:

Add to include the following

In areas where asbestos cement pipe (ACP) water line will need to be cut or removed, the Contractor shall comply with the following ACP water line removal and disposal requirements.

ACP, also known as transite pipe, is defined under the National Emission Standard for Hazardous Air Pollutants (NESHAP). All abandoned asbestos cement pipes encountered during excavation operations or designated for removal in the project plans shall be removed and disposed of by the Contractor in accordance with federal and state regulations pertaining to hazardous materials.

The Contractor shall provide EPNR certification of the proper disposal of the ACP. The Contractor shall further make available to EPNR detailed plans for the excavation, handling, interim storage and disposal of the ACP. Additional information can be obtained by contacting EPNR at (480) 362-7500.

The Contractor shall provide the PM with delivery tickets and certification that all non-friable ACP has been disposed of at an appropriate facility, and that the disposal facility takes adequate provisions to ensure the ACP does not become a regulated asbestos-containing material.

In locations were the existing ACP water line is to be cut and capped, the capped and buried end is to be 1 slurry backfilled (1 foot x 1 foot x 1 foot).

Particular attention to storage, handling, identification, personnel training, competent person requirements and disposal of the material shall be considered. The Contractor shall be aware that there are requirements for delivery of this material to particular landfills, such as bagging and wetting of the materials.

ACP only becomes a concern once it is made friable. In its normal condition, ACP is considered a non-friable asbestos containing material, meaning that when dry, it cannot be crumbled, pulverized or reduced to powder by hand pressure. Non-friable asbestos containing material is considered a non-regulated material. The Contractor shall take all measures and precautions necessary to remove the ACP in its non-friable condition.

Removed ACP that has become friable is classified as a regulated asbestos-containing material and shall be handled, containerized, transported, and disposed of in accordance with NESHAP 40 CFR 61.150 by a qualified, licensed asbestos abatement consultant.

Category I (CAT I) non-friable asbestos-containing material (ACM) – means asbestos-containing packing, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section I, Polarized Light Microscopy.

Category II (CAT II) non-friable ACM – means any material, excluding Category I non-friable ACM, containing more than 1 percent asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section I, Polarized Light Microscopy that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Category I non-friable ACM and Category II non-friable ACM that remain non-friable Category I and non-friable Category II ACM shall be removed and transported to the disposal site so as not to create visible dust emissions.

The Contractor shall prepare and submit the NESHAP-10 day notification form. This notification must be submitted to SRP-MIC EPNR, 10079 East Osborn Road, Scottsdale, AZ 85256, Environmental Specialist (NESHAP Coordinator), at least 10 days prior to the commencement of removal and demolition activities.

350.2.2 Others:

Add to include the following:

When roadway construction requires the removal or the revision of existing pavement markings, it shall be the Contractor's responsibility to remove existing pavement markings using sand, high pressure water, or reclaimed shot blasting. After removal, all areas affected by the removal shall be resealed as approved by the PM.

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PART 400 – RIGHT-OF-WAY AND TRAFFIC CONTROL

Section 401 Traffic Control

401.1 Description:

Add to include the following:

Contractor shall submit traffic control plans to PWD for review, 3 days prior to any construction affecting public traffic. Traffic control plans shall meet the requirements of the MUTCD, latest edition.

401.5 General Traffic Regulations:

Second paragraph, add to include the following:

Any construction within 300 feet of a signalized intersection requires the presence of a Salt River Police Officer.

Add new section in its entirety as follows:

Section 402 Pavement Markings

402.1 General:

All pavement marking construction shall conform to Arizona Department of Transportation (ADOT) specifications unless noted otherwise in the SRP-MIC Details, contract documents, or the MUTCD, latest edition.

Any striping, other than the replacement of pre-existing striping, shall be done in accordance with a plan prepared by a registered Engineer and approved by PWD and/or ECS Compliance Division.

Privately owned facilities where the public is able to travel without restrictions shall meet the requirements of the MUTCD.

At least 48 hours prior to the installation of any permanent pavement markings, the Contractor shall be responsible for scheduling an on-site meeting with PWD and/or ECS Compliance Division and the PM to review pavement layout markings. Approval and sign-off of pavement layout markings by PWD and/or Compliance must be obtained by the Contractor prior to the installations of any permanent pavement markings.

Obliteration of any existing pavement markings required for new work shall be accomplished per SRP-MIC Section 350.2.2.

402.2 Materials:

402.2.1 Permanent Pavement Markings:

Pavement marking paint shall be used in parking lots, on all median noses, and at temporary

pavement marking locations where indicated on the plans and standard details. Reflectorized paint materials shall be white or yellow as noted and shall meet ADOT Section 708, latest edition.

402.2.2 Thermoplastic Pavement Markings:

Permanent markings shall be used as the final markings within the Community R/W or as indicated on the approved plans. The markings shall be 90 mil extruded thermoplastic material, conforming to all requirements of ADOT Section 704, latest edition.

402.2.3 Permanent Pavement Tape:

Pavement symbols, arrows and legends shall be performed markings, Type I (Permanent) pavement tape conforming to ADOT Section 705, latest edition, unless noted otherwise on the plans. Tape shall meet or exceed the specifications of 3M 380-IES series and applicable ADOT Specifications.

402.2.4 Raised Pavement Markers:

Raised pavement markers shall conform to requirements of ADOT Section 706, latest edition.

No separate measurement or payment will be made for removal of existing raised pavement markers, the cost will be considered incidental to the contract.

Add new section in its entirety as follows:

Section 403 Signage

403.1 General:

All signage shall be in accordance with the latest edition of the MUTCD, SRP-MIC Standard Details, or as otherwise specified in the contract documents. Privately owned facilities which are open for public travel without restrictions shall meet the requirements specified herein, including the MUTCD.

403.2 Sign Installation and Mounting:

All signage shall be installed after the roadway improvements are completed.

Two posts are required for signs that are 48 inches or wider.

Sign posts shall be perpendicular plus or minus 2 degrees. Signage shall be level within 2 degrees and mounted on square tubular sign posts secured with a minimum of 2 each 5/16-inch corner bolt with self-locking nut and flat washers.

Where appropriate, signs mounted to traffic signals or other poles shall be secured with a minimum of 2 each ¾-inch Type 201 stainless steel bands, brackets, bolts and washers.

Sign mounting heights and offset from edge of roadway shall be in accordance with the MUTCD. When appropriate, sign mounting height in rural areas shall be increased to 7 feet

from the top of pavement to the bottom of the sign.

403.3 Workmanship:

All items shall be new with the material and workmanship of the best quality for the purpose. The finished sign shall be clean and free from all burrs, sharp edges and aluminum marks. Signs with any defects or damage that affect their appearance and serviceability will not be accepted. No repairs shall be made to the sign face without the approval of the Community Inspector or PM.

403.4 Sign Salvaging:

All existing signs shall be inventoried prior to roadway work. Salvaged signs shall remain the property of the SRP-MIC and shall be carefully removed and delivered to the PWD. The Contractor shall remove any existing concrete bases using care not to damage the post. Any existing signs that are to be relocated shall be stored safely and protected against damage at the Contractor's job site. The relocated sign shall be leveled, squared and set in accordance with SRP-MIC Section 403.

403.5 Sign Post Assembly:

The sign post assembly shall be square tubular steel in accordance with SRP-MIC Detail 4107. Use of an alternate sign posts located outside the R/W shall be submitted for approval.

403.5.1 Materials:

Tubing shall be roll formed of 12-gauge steel or of a gauge sufficient to supply a minimum yield strength of 40,000 psi. Tubing shall be commercial quality and conform to the standard specifications for cold-rolled carbon steel sheets, ASTM A-570 Grade 33 for plain finish and ASTM A-446 Grade A for galvanized finish.

403.5.2 Finish:

Galvanized: All steel tubing shall be given a hot dipped zinc (galvanized) coating conforming to ASTM A-525, G-90. All exterior, interior, and corner weld surfaces shall be thoroughly coated.

Painted: Galvanized tubing shall be cleaned and phosphate prior to application of a powder coat finish. The tubing shall be coated with polyester powder bake/fused or electrodeposited to the galvanized surface.

403.5.3 Shape:

A cross section of the post shall be a square tube carefully rolled to size. Tubing shall be corner welded by high intensity resistance welding in such a manner that neither the weld nor flash shall interfere with telescoping properties.

403.5.4 Holes or Knockouts:

Holes or knockout diameter shall be 7/16 inch plus or minus 1/64 inch on 1 inch centers on all 4 sides of the post for its entire length. Holes or knockouts shall be on the centerline of each side

in true alignment and placed opposite and adjacent to each other. Tolerance on the hole or knockout spacing is plus or minus 1/8 inch in 4 feet. The sleeve and post tubing shall have the first 2 sets of knockouts pre-punched on one end.

403.5.5 Telescoping Properties:

The finished post, sleeve and anchor shall be straight and have a smooth uniform finish. It shall be possible to telescope the post with each consecutive larger and smaller size of square tube freely and for not less than 10 feet of their length without the necessity of matching any particular face to any other face. All ends shall be free from burrs and shall be cut square.

403.5.6 Anchor/Sleeve Installation:

The Contractor shall install the anchor/sleeve by encasing in Class B concrete a minimum of 36 inches deep and 12 inches in diameter. The top of the concrete shall be 2 inches below the finished grade.

403.6 Sign Panel:

Retroreflective sheeting, sign-making inks, and opaque films shall conform to the requirements of ADOT Section 1007. Street Name Signs shall be in accordance with SRP-MIC Details 4105 and 4106.

403.6.1 Materials:

Sign blank shall be 0.125 inch thick chemically treated anodized aluminum and meet ASTM B449 specification for corrosion resistance. ASTM Type XI sheeting or better shall be used for all signs. All sign sheeting shall carry a manufacture's guarantee to not lose more than 20 percent of the initial reflectivity by the end of a 10-year period. The appearance of the sign face shall be uniform throughout and shall be free of wrinkles, gel, hard spots, streaks, extrusion marks, air bubbles or blemishes that may impair the serviceability, detract from the general appearance or color-matching of the sign when viewed from a distance of 25 feet. All signage shall have a 3M 1160 or equivalent anti-graffiti overlay film.

Section 405 Survey Monuments

405.1 Description:

First paragraph, revise to read as follows:

This work shall consist of furnishing and installing R/W monuments and survey monuments at the locations shown on the plans or directed by the Engineer and/or ECS Surveyor.

Second paragraph, revise to read as follows:

Monuments shall conform to MAG Detail 120, Type "B".

405.2 Materials:

First paragraph, revise to read as follows:

All concrete shall be Class A and conform to applicable requirements of SRP-MIC Section 725.

Second paragraph, add to include the following:

Brass caps shall be blank and then stamped by ECS Surveyors after installation. Brass caps shall be at least 3 inches in diameter. No bronze caps allowed.

405.3 Construction:

Second paragraph, revise to read as follows:

All survey monuments shall be set firmly and vertically in the ground to a depth of at least 30 inches and be magnetically detectable.

Third paragraph, add to include the following:

Survey monuments shall be set in position after the last course of asphalt concrete.

Add to include the following:

SRP-MIC ECS Surveyors shall locate position for monument with PK nail and 4 PK nail straddlers that will also intersect the center position of the monument. The center point (intersection point) is the location for the Contractor to drill and install the monument. The PK nail straddlers will be used by the Contractor to center the monument.

SRP-MIC ECS Surveyors will stamp the monument with proper nomenclature after proper installation and when concrete has set.

Section 440 Landscape Irrigation

440.5 Trenching Excavation and Backfill

Third paragraph, revise to read as follows:

Trenches and excavations shall be backfilled so that the specified thickness of topsoil is restored to the upper part of the trench. Compaction shall be in accordance with SRP-MIC Supplement to MAG Specifications Table 601-2.

Fourth paragraph, revise to read as follows:

Water settling of trench backfill will not be permitted by SRP-MIC.

PART 600 – WATER, SEWER, STORM DRAIN AND IRRIGATION

Section 601 Trench Excavation, Backfilling and Compaction

601.2.3 Trench Grade:

First paragraph, add to include the following:

Alignment and elevation stakes shall be furnished by the Contractor at a minimum of 50 foot intervals and agreed upon offsets.

Second paragraph, first sentence, revise to read as follows:

For all pipe sizes, the Contractor shall excavate for and provide minimum 6 inches ABC bedding per MAG Detail 200-3 and per SRP-MIC Section 601.4.6.

601.2.9 Shoring and Sheathing:

Add to include the following:

It shall be the Contractor's responsibility to provide such trench bracing, sheeting, or shoring as may be necessary to protect existing improvements outside the trench and to support and ensure the ground alongside the excavation will not slide, settle or undermine. Existing improvements outside the trench, either public or private, damaged due to lack of adequate trench bracing, sheeting, or shoring shall be removed and replaced in kind at the Contractor's expense.

601.3.1 Utilities:

Fourth paragraph, add to include the following:

During the underground utility installation, if other utility lines cross and compaction cannot be obtained with mechanical compaction, then, 1/2 sack CLSM shall be placed between the utility lines to the bottom of the highest utility (for pipe 12 inches and larger). The limits of slurry placement shall be directed by the PM or Community Inspector.

601.4.2 Bedding:

Add to include the following:

For all water, sewer, storm drain and irrigation lines, bedding is the material from foundation to bottom of pipe (material upon which a pipe is to be placed). The bedding material shall be minimum of 6 inches of ABC per MAG Section 702 unless otherwise specified, compacted to minimum 95 percent compaction density and within 2 percentage points of its optimum moisture content.

601.4.3 Haunching:

Add to include the following:

For all water, sewer, storm drain and irrigation lines haunching is the material placed between the bedding and springline. The haunching material shall be ABC per MAG Section 702 unless otherwise specified, compacted to minimum 95 percent compaction density and within 2 percentage points of its optimum moisture content.

601.4.4 Initial Backfill:

Add to include the following:

Initial backfill, is the material placed between the springline to 12 inches above top of pipe.

Initial backfill material shall be ABC per MAG Section 702 unless otherwise specified, compacted to minimum 95 percent compaction density and within 2 percentage points of its optimum moisture content.

Mechanical compaction is the accepted method to compact the pipe embedment zone. Mechanical compaction shall occur in lifts not to exceed 8-inch compacted lifts.

601.4.5 Final Backfill

Add to include the following:

Final backfill is the material placed above the initial backfill to the top of the trench or to the bottom of the road base material.

The Community Inspector may require all or any part of the trench to be load tested for stability with Contractors' equipment prior to placement of sub-base material and/or asphalt or Portland cement concrete pavement. Unstable areas as determined by the Community Inspector shall be corrected by the Contractor at no increase in cost to the Community.

Third paragraph, add to include the following:

Backfill under street pavement, the trenches within the intersection (from curb return to curb return) and transverse trenches shall be backfilled with ½ sack controlled low strength material (CLSM). Longitudinal trenches shall be backfilled with ABC material, native backfill material may be used with PM approval.

Failure trench areas under existing pavement shall be excavated a minimum of 5 foot depth and replaced with 1 sack CLSM. Pavement replacement shall match existing asphalt thickness. The area of repair shall be approved by the PWD.

601.4.6 Compaction Densities:

Add to include the following:

The Contractor shall excavate the compacted backfill where directed by the Community Inspector or its authorized representative for the purpose of conducting the following density tests outlined below. The cost of all excavation, trench safety/access, including backfill and re-compaction, shall be the Contractor's responsibility. The materials being compacted shall have the densities outlined in the respective sections of the specifications. The Community Inspector or its authorized representative will choose the location and depth for the in-place density tests. The Contractor shall meet the required optimum moisture content specification and control the moisture accordingly with assistance from the testing agency.

Table 601-2, revise to read as follows:

TABLE 601-2
MINIMUM TRENCH COMPACTION DENSITIES

Backfill Type	Location	From Surface to 2 Feet Below Surface	From 2 Feet Below Surface to 1 Foot Above Top of Pipe	From 1 Foot Above Top of Pipe to Bottom of Bedding
I	Under any existing or proposed pavement, parking lot, driveway, curb, gutter, sidewalk, roadway shoulders, or such construction included in the contract; or when any part of the trench excavation is within 2 feet of the above.	100% for Granular 95% for Non-Granular	95%	95%
II	On any utility easement, street, road or alley R/W outside limits of Type I backfill and from R/W up to 5 feet from commercial or residential building.	95%	90%	95%
III	Around any structures (manholes, etc.) or exposed utilities outside limits of Type I backfill.	95% in all cases		

Note: The backfill type required will generally be shown on the plans and the plans will govern. Where no backfill type is shown on the plans the backfill type shall comply with the above.

601.4.7 Water Consolidation:

Replace section with the following:

Water consolidation (flooding, jetting, etc.) will not be permitted.

Section 610 Water Line Construction

610.3 Materials:

Second and third paragraphs, revise to read as follows:

(A) 4-inch through 12-inch diameter pipe shall be AWWA C350 ductile iron or AWWA C900 Polyvinyl Chloride (PVC) class 235.

(B) 16-inch and larger pipe shall be either AWWA C350 class 250 ductile iron or AWWA C905 Polyvinyl Chloride (PVC) class 200.

610.4 Construction Methods:

Add to include the following:

Contractor shall uncover and verify the location and elevation of all existing water lines and water stubs that are being tied into as part of the project prior to trenching.

Polyvinyl Chloride pipe shall be installed in accordance with AWWA C605.

Copperhead Waterline Locating System:

Materials: All system components, including tracer wire, connectors, ground rods and access points, shall be per PWD Approved Materials List.

Tracer Wire Installation: Copperhead High Strength Tracer Wire shall be installed on top of all water mains including fire lines, dead-ends and stubs. Secured with 10 mil tape at minimum ten (10) foot intervals to prevent movement during backfill. Tracer wire system shall be installed as a single continuous wire. No looping or coiling of wire is allowed. All service lateral tracer wire shall be a single wire, connected to the mainline tracer wire using a three-way mainline-to-service connector, installed without cutting/splicing the mainline tracer wire. In occurrences where an existing tracer wire is encountered on an existing utility that is being extended or tied into, the new tracer wire and existing tracer wire shall be connected using approved connectors. One foot of excess/slack wire is required at all tracer wire access points and ground rods.

Connectors: All connections shall be kept to a minimum and shall be Copperhead SnakeBite Locking Connectors and/or Mainline-to-Service Connectors. The entire system shall be interconnected from end to end.

Grounding: Tracer wire shall be properly grounded at all fire hydrants, mainline dead-ends and stubs. Grounding of tracer wire shall be achieved by using the approved connectors to the Copperhead Ground Rod with a minimum 20 feet #12 red HDPE insulated copper-clad steel wire connected to the rod. The Ground Rod shall be shall be driven into virgin soil and backfilled with native material.

Termination and Access Points: Copperhead Cobra Access Points shall be installed at all fire hydrants, properly affixed to the hydrant flange and shall be installed a minimum of 500-foot and

maximum of 1000-foot' spacing.

Testing: All new tracer wire installations shall be functional tested using a Copperhead locator, performed by the Community Inspector. The verification shall be performed prior to placing sub-base material and final pavement. Cost of repairs or corrections necessary to confirm to the testing requirements will be borne by the Contractor at no additional cost to the Community.

Detectable water line marking tape (per PWD Approved Materials List) shall be installed over all water lines and water services.

Tracer wire and marking tape shall be the APWA color code and utility legend printed with: "POTABLE WATER LINE".

Marking tape shall be buried 12 inches to 24 inches below the subgrade and over the center of the pipe. The backfill shall be sufficiently leveled so that the tape is installed on a flat surface. The tape shall be centered in the trench with printed side up.

610.4.3 Blocking and Restraints:

First paragraph, revise to read as follows:

All pipe lines, valves fire hydrants and fittings 16 inches and smaller in diameter shall be installed with joint restrain system per MAG Standard Detail 303-1 and 303-2. All pipe lines, valves, fire hydrants and fittings larger than 16 inches in diameter shall be installed per the details shown on the plans. Concrete thrust block shall be placed behind all tapping sleeves and valves per MAG Detail 340, all other concrete thrust blocks system shall have prior approval by PM.

610.6.1 Polyethylene Corrosion Protection-General:

Replace first sentence with the following:

Ductile Iron pipe, valves, and fittings shall be protected from corrosion by encasement in a Polyethylene protective wrapping referred to hereafter as Polywrap.

610.7 Valves:

Seventh paragraph, add to include the following:

Refer to MAG Detail 391-1 Type 'C'.

610.9 Fire Hydrants:

Add to include the following:

All hydrants shall be Waterous Pacer with APLHA Base (5-1/4 inch) by American Flow Control as per PWD Approved Materials List.

Fire hydrant spacing is from center to center of fire hydrant with a maximum spacing of 330 feet

for commercial area and 500 feet residential areas.

The Contractor shall schedule inspections with the Community Inspector and Salt River Fire Department 48-hours in advance for all fire hydrants, fire lines and FDCs prior to placing pipe shading and for pressure testing of the new fire lines.

A black, poly wrap bag with a tie-down or an “Out-of-Service” ring shall be placed over/on all new hydrants and shall be left in-place until the system has been approved by the Community Inspector.

610.11 Connection to Existing Mains:

Add to include the following:

For connection to existing water mains, the restraint coupling shall be the ROMAC ALPHA restraint joint.

When there is a new water main being connected to an existing water main that requires a horizontal and/or vertical alignment and there are no utility conflicts, the new pipe shall be the same material as the pipe being installed per plan. If there are utility conflicts, MAG Standards shall apply.

Community Inspector, Public Works and Fire Department shall be contacted 48 hours prior to all water system shutdowns. The Contractor shall have all materials and equipment necessary to do the work at the jobsite prior to the shutdown occurring. The Contractor may be needed to assist with providing a written notice of the proposed shutdown to all affected water customers a minimum of 24 hours in advance except in an emergency.

Only PWD personnel shall operate existing valves. PWD personnel will close existing valves, but will not guarantee a bone-dry shutdown.

610.12 Fire Line Service Connections:

Add to include the following:

Coordinate with the Fire Marshall on Community’s Fire Code Requirements at the FDC and fire lines.

Fire department connections (FDC) shall be remote and located 40 feet away or one and one half times the height of the building being protected, whichever is less, or as approved by the fire code official. The fire department connection line shall be wet line with check valve at the hose connection above grade. The access to the fire department connection shall be at curb grade. Reference SRFD IFC 903.3.7.

Fire department connection (FDC) for all occupancies shall be within 100 feet to a fire hydrant. All FDC connections shall be 4 inch Storz connections with KNOX locks installed. All FDC connection shall be properly signed with address and name of business. In Group H Occupancies, the distance shall be a minimum of 150 feet but not more than 200 feet. Reference SRFD IFC 903.3.1.1.

Section 611 Water, Sewer and Storm Drain Testing

611.2.2 Hydrostatic Testing:

Add to include the following:

Water lines shall not be hydrostatic tested for acceptance until all the underground utilities have been installed and backfilled and prior to placement of the finish surface material. The Hydrostatic test shall be witnessed by the Community Inspector. The Community requires 100 percent of the entire water line installation to be hydrostatic pressure tested per MAG Specification Section 611.2.2. (A).

611.3.3 Final Flushing, Sampling and Testing:

Replace entire section with the following:

PUBLIC WATER MAIN REQUIREMENTS for Community Capital Improvement Projects

General Requirements

For all public water mains, disinfection and testing shall be in accordance with this SOP and the American Water Works Association (AWWA) Standard C651 Disinfection Water Mains, latest edition.

Water mains shall be flushed, pressure and leak tested and passed prior to disinfection, and under no circumstances shall a water main that has not passed bacteriological testing shall be connected to the existing water system.

Minimum Requirements

Flushing Plan: The Contractor shall provide a written flushing plan prior to starting any flushing activities. The plan shall include and indicate all locations for the connection feed point, backflow prevention device, hydrant meter, all valves and fire hydrants, testing ports, discharge outlets, proper de-chlorination procedure for final flushing, and disposal location of flushed water.

Sample Locations: The SRP-MIC PWD Water Resources Section shall determine the minimum number of samples to be taken and the location of the sample points. The Contractor shall be responsible to provide the sufficient sample locations and each location will require the installation of a hose bib with riser, to allow samples to be collected in a safe manner.

Contractor shall secure water line sampling risers from possible public access.

Disinfection Plan: The Contractor shall provide a written disinfection plan prior to performing disinfection. The disinfection plan shall include the following:

1. All source water for filling and disinfection shall be provided through approved fire hydrant with hydrant meter and backflows.
2. Method of disinfection, location and number of sample locations.
3. Method of de-chlorination and location of flushing discharge. All chlorinated water used

for disinfection shall be de-chlorinated prior to discharge into an approved location.

Sampling: The SRP-MIC PWD Water Resources Section are available to sample new water mains Monday through Wednesday from 7:00 am to 11:00 am. The Contractor may employ the services of a private laboratory to collect samples and perform required analytical testing at their expense. Must be approved laboratory and testing method and submit result to PM and PWD Water Resources Section at PWWaterResources@srpmic-nsn.gov.

PUBLIC WATER MAIN PROCEDURE:

Determine the Minimum Number of Samples Locations:

1. Water lines up to but less than 150 feet in length require one sampling riser installed as near the end as possible.
2. Water lines 150 feet to 300 feet in length, two sampling risers, one near each end of the line.
3. Water lines 300 feet to 2,640 feet in length, a minimum of three sampling risers. In addition, dead ends on main lines should be represented with sampling riser.
4. Water lines greater than 2,640 feet in length shall require a minimum of one additional sampling riser per 1,000 feet.
5. Risers and hose bibs (pointing down) will be required at each approved sampling location.

Preliminary Flushing:

1. After the pressure test has passed, ensure that all water mains are flushed, prior to chlorination. Hydrant meter with backflow preventer shall be used for filling and flushing to ensure no contamination into the supply water main.
2. Under no circumstances shall a water main be fill and flush directly from the water system by opening any system valve.

High Chlorination and Residual Measurement:

1. All water mains will be treated (per submitted disinfection plan), using continues feed with a solution made with NSF/ANSI-60 approved liquid chlorine of not less than 25 ppm but not greater than 50 ppm of chlorine solution.
2. High chlorine samples will be collected at each sample location after standing in the pipe for 24 hours but **not more than 48 hours** after chlorination to verify a minimum of 10 ppm chlorine remains at each sample location.
3. Failure to achieve the 10 ppm or higher residual at any sample location will require re-chlorination.

Final Flushing and Low Chlorine Residual:

1. Once the minimum chlorination has been verified at 10 ppm or higher, all treated water must be de-chlorinated and flushed (per submitted flushing plan) until a chlorine residual of 2 ppm or lower is obtained.
2. High chlorine greater than 10 ppm shall not remain in the pipe for longer than 48-hours after verification.
3. High chlorinated water must be de-chlorinated prior to discharge to the approved

location.

Sample Collection:

1. The water should be clear and representative of the water quality in the distribution system. ** Samples will NOT be collected if the water is discolored, turbid, or dirt is seen in the water sample. **
2. A chlorine residual will be collect at each sample location and record it to verify that the chlorine residual is below 2 ppm. Failure to meet the 2 ppm or less requirement will require the water main to be flushed again.
3. Collect bacteriological sample at all sample locations and tests for total and fecal coliform.
4. While waiting for test results, the Contractor will be responsible for water remains isolated within the new water main(s) and no water is permitted to flow in or out of the sections being tested.

Result Process:

1. Upon receiving of laboratory results final report, submit report to PM and PWD Water Resources Section at PWWaterResources@srpmic-nsn.gov.
2. If total or/and fecal coliform result are positive (present) at any sample location, the bacteriological test is considered a fail and repeat sampling is required.
3. The Contractor must repeat the following procedures.
    - Preliminary Flushing
    - High Chlorination and Residual Measurement
    - Final Flushing and Low Chlorine Residual Measurement
4. If sections of the water mains are isolated by control valves then the entire project does not require resampling in the event an individual section fails the bacteriological testing.
5. Bacteria samples must pass total and fecal coliform tests at each sample locations prior to the release of the new water mains and placed into service. If bacteria samples do not pass after second attempt the testing requirements will be borne by the Contractor at no additional cost to the Community.

Schedule for New Water Main Disinfection and Sampling:

All debris flushing and hydrostatic pressure test must be completed before any disinfection or bacteriological sampling can begin. Contractor shall pre-test the chlorine in the water lines prior to scheduling with the Community Inspector.

All work must be completed in consecutive days following the timeline below.

Day 1: Contractor to inject high chlorine and notify Community Inspector for verification of high chlorine (not less than 25 ppm but not greater than 50 ppm of chlorine solution) is present at all sample locations.

Day 2: After 24 hours but **not more than 48 hours** after chlorination to verify a minimum of 10 ppm chlorine remains at each sample location. Once the minimum chlorination has been verified at 10 ppm or higher, all treated water must be de-chlorinated (contractor is responsible for de-chlorination) and flushed (per submitted flushing plan) until a chlorine residual of 2 ppm or

lower is obtained. After chlorine residual is verified at 2 ppm or lower, then the new water mains is to be isolated or closed off so that no water can be introduced or flushed. Failure to meet the 10 ppm or higher after the 24 hours will require re-chlorination.

Day 3: After 16-24 hours, will re-verify chlorine residual reading 2 ppm or lower and take bacteriological sample at each location. Failure to meet the 2 ppm or less requirement will require the water main to be flushed again.

Day 4: After 48 hours, will receive results from laboratory and notify of pass or fail. If pass, contractor may proceed with work. If fail then, process to repeats until all the results have pass.

Reporting and Recordkeeping Requirements:

All plans, documents and testing reports must be submitted to PM and PWD Water Resources Section at PWWaterResources@srpmic-nsn.gov.

PUBLIC WATER MAIN REQUIREMENTS for Private Development Projects

Water line disinfection shall be sampled and tested by a private testing laboratory and sampled and tested, as per MAG Section 611, at the Contractor's expense. Community Inspector shall be scheduled to witness the sampling procedure. Test results shall be submitted to Community Inspector for review prior to placing the water line into service.

611.4 Sewer Line Testing:

Add to include the following:

Sewer lines shall not be tested for acceptance until all the underground utilities have been installed and backfilled and prior to placement of the finish surface material.

The Community requires 100 percent of the entire installation to be tested by low pressure air test, deflection test (5%) for HDPE and PVC Pipe and Video Inspection (CCTV) as per MAG Section 611.3. Cost of repairs or corrections necessary to confirm to the testing requirements will be borne by the Contractor at no additional cost to the Community.

Replace subparagraph (D) with the following:

(D) Closed Circuit T.V. Inspection:

The Contractor shall provide Community Inspector with an annotated video inspection record (on DVD) of the interior of the sewer line. The video shall clearly show all joint, seal, service wyes and manholes. The video system used shall have the 360 degree capabilities. The video shall be approved by the Community prior to final acceptance. No separate payment shall be made for this video inspection; the cost shall be included in the cost of the pipe installation. Any repairs or corrections required as a result of the video inspection shall be at no cost to the Community and the Community may require additional video inspection, at the Contractor's expense, to confirm the repairs or corrections.

611.6 Post Installation Inspection of New Mainline Storm Drains:

Add to include the following:

Video inspection and deflection testing will be at SRP-MIC PWD discretion.

Section 615 Sanitary Sewer Line Construction

615.2 Materials:

Add to include the following:

All pipe for sewer lines shall be as specified below.

A. All sewer pipe shall be polyvinylchloride (PVC) SDR 26.

615.5 Pipe Installation:

Add to include the following:

Detectable sewer line marking tape shall be installed over all sewer mains and sewer services. Detectable pipe marking tape shall be a minimum 4 mil thick, 3 inches wide, inert Polyethylene plastic that is impervious to all known alkalis, acids, chemical reagents and solvents likely to be encountered in the soil.

Marking tape shall be the APWA color code and utility legend printed with: “SEWER LINE”.

Marking tape shall be buried 12 inches to 24 inches below the subgrade and over the center of the pipe. The backfill shall be sufficiently leveled so that the tape is installed on a flat surface. The tape shall be centered in the trench with printed side up.

Section 625 Manhole Construction and Drop Sewer Connections

625.1.1 Manholes:

Revise to read as follows:

Construction shall consist of furnishing all materials and constructing manholes complete in place, as detailed, including foundation walls, manhole frames, covers, protective coating system and any incidentals thereto, at locations shown on the plans.

625.2 Materials:

Add to include the following:

Corrosion coating for manholes SRP-MIC Section 626.

625.3.1 Manholes:

Add to include the following:

Five foot diameter manholes are required wherever the sewer main diameter is 12 inches or

greater, whenever there are two or more inlets, whenever the manhole depth is 12 feet or greater or whenever the manhole is designed with a drop sewer connection.

48-inch diameter manholes shall have a 24-inch diameter frame and cover and 60-inch diameter manholes shall have a 30-inch diameter frame and cover.

Pipe entering a 4-foot diameter manhole shall be 21 inches from center of manhole and pipe entering a 5-foot diameter manhole shall be 27 inches from center of manhole.

Pour in place manhole base shall be poured on native sub-grade compacted to 95 percent density and within 2 percentage points of its optimum moisture content.

Pre-cast manhole base shall be placed on 6 inches of ABC material compacted to 100 percent density and within 2 percentage points of its optimum moisture content.

Last paragraph, add to include the following:

Backfill around manholes shall consist of the following; manholes shall be compacted with on-site soil as per MAG Section 601. Backfill to be installed with mechanical compacted lifts in excess of one foot will not be allowed without the approval of the Community Inspector. Backfill compaction density shall be per revised SRP-MIC Supplements to MAG Table 601-2. Compaction density tests will be taken on every other compacted lift, alternating sides of manhole.

The Community requires 100 percent of the new manholes to be exfiltration (vacuum) and spark tested. Cost of repairs or corrections necessary to confirm to the testing requirements will be borne by the Contractor at no additional cost to the Community.

Section 626 Corrosion Protective Coating of Sanitary Sewer Manholes and Structures

626.2 Products:

626.2.1 Coating Materials:

Add to include the following:

Approved Materials: Coating materials shall be one of the following pre- approved types or an approved material equal to or better:

1. Sauereisen corrosion-clad polymer lining No. 210, underlayment. No. F-120, as manufactured by Sauereisen Cements, Pittsburgh, PA 15238. The underlayment shall be used to repair the cleaned surfaces in accordance with the manufacturer's recommendations. The number 210 lining shall be applied to a minimum thickness of 1/8-inch (125 Mills) according to the manufactures recommended procedures.
2. Sewer Shield 150 topcoat with C120 calcium aluminate cement underlayment as manufactured by Environmental Coating, Mesa, AZ 85207. The C120 Calcium Aluminate cement shall be trowel applied to repair the cleaned surfaces in accordance with the manufacturer's recommendations. The sewer shield 150 topcoat shall be spray applied to a minimum thickness of 1/8-inch (125 mils) according to the manufacturer's recommended procedures.

626.3.3 Inspection and Testing:

Add to include the following:

The Community requires 100 percent of manhole installation to be tested by Holiday testing. Cost of repairs or corrections necessary to confirm to the testing requirements will be borne by the Contractor at no additional cost to the Community.

Paragraph C, revise to read as follows:

Acceptance for holidays testing and adhesion testing shall be witnessed by a Community Inspector.

Section 627 Painting Sanitary Sewer Manholes with Insecticide

627.2 Insecticide Paint:

Add to include the following:

The Contractor shall provide an insect barrier to all newly installed manholes. The coating shall be the following pre-approved type. A material substitution can be requested by the Contractor during the submittal phase for an approved material equal to or better:

Insecticide Coating by Insecta Marketing, Inc.

Section 630 Tapping Sleeves, Valves and Valve Boxes on Water Lines

630.2 General:

Add to include the following:

Tapping into a Community water main, shall be a minimum of two sizes smaller than the existing water main source. Tapping into the Community water main source with size on size taps is not allowed.

SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY
SUPPLEMENT TO MAG UNIFORM STANDARD SPECIFICATIONS
FOR PUBLIC WORKS CONSTRUCTION

PART 700 – MATERIALS

Section 725 Portland Cement Concrete

725.1 General:

Add to include the following:

Class AA concrete shall be used for all valley gutters and utility adjustments and as specified on the plans.

Class A concrete shall be used for concrete structures, either reinforced or non-reinforced, for all curb, gutter, sidewalks, sidewalk ramps, and driveway and exposed structures except as may be specified otherwise.

Class B concrete may be used for thrust blocks, encasements, fill or over excavation, etc.

725.8.1 Field Sampling and Tests:

Fourth paragraph, add to include the following:

The consistency of the concrete shall be determined and regulated on the basis of the slump test as described by ASTM C-143. Concrete shall be of the class and strength indicated on the Contract Plan Drawing or as otherwise directed by these Specifications.

725.8.2 Concrete Cylinder Test:

Add to include the following:

Not less than 4 cylinder specimens shall be made for each 50 cubic yards of each class of concrete with a minimum of 4 specimens for each class placed or not less than 4 specimens for each half-day of placement. Specimens shall be tested in accordance with ASTM C-39. One cylinder shall be tested at 7 days. Two cylinders shall be tested at 28 days. The fourth cylinder shall tested at 28 days, if the tested strength meets or exceeds the minimum 28-day requirement. If the requirements are not met at 28 days, the fourth cylinder shall be tested at 56 days. Retesting as a result of failure shall be done at the Contractor’s expense.

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SUPPLEMENT TO MAG UNIFORM STANDARD DETAILS

Shall be modified as follows:

All Portland cement concrete exposed to weather shall be a minimum of Class A (3000 PSI). This requirement shall apply to all sidewalk, curb and gutter, etc.), as well as all other construction items exposed to weather. This change includes, but is not limited to, concrete specified on the following MAG Standard Details: 150, 203, 204, 220-1, 220-2, 221, 222, 223, 224, 225, 227, 230, 234, 238-1, 238-2, 238-3, 272 506, 533-2, 534-2, 536-1, 536-2, 538, 541, 550, 552, 607-3, 611-1 and 611-2.

The following MAG Standard Details shall have Class AA (4000 PSI) concrete: 240, 250-1, 250-2, 251, 252, 260, 262, 263 and 391-2.

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100 SERIES: GENERAL INFORMATION

Detail 120 Survey Marker

Add to include the following:

Survey Marker Type 'A' and 'C' shall not be used on SRP-MIC.

Delete notes 1, 5, 8 and 9.

Note 2, revise to read as follows:

Type 'B' to be used throughout the entire SRP-MIC at intersection of street centerlines, PC's, PT's and PI's of curves, 1/16 section corners, subdivision corners, change in alignment of subdivision boundaries, and at other points as shown on the plans.

Note 4, revise to read as follows:

Cap to be constructed of red brass and installed with no markings. ECS Survey shall install all stamped markings.

Type B Detail, revise to include:

¾" galvanize pipe or 5/8" rebar 30" long

Detail 145 Safety Rail

Add to include the following:

Safety rail shall be installed on headwalls, wing walls, retaining walls or structures where the following occur:

- All locations where the distance between the top of the structure is 30 inches (2.5 feet) or greater.
- Any location where pedestrians may be present.

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200 SERIES: STREET INFORMATION

Detail 200-3 Trench Backfill and Surface Replacement

Add to include the following:

Copperhead High Strength Tracer Wire (part # 1230-HS) 12-gauge stranded copper or copper clad steel tracer wire insulated with high molecular weight polyethylene shall be installed on top of all water mains including fire lines, refer to SRP-MIC Supplement to MAG Section 610.4

Detectable water line marking tape shall be installed over all water lines and water services, refer to SRP-MIC Supplement to MAG Section 610.4.

Detectable sewer line marking tape shall be installed over all sewer mains and sewer services, refer to SRP-MIC Supplement to MAG Section 615.5.

Detail 201 Asphalt Pavement Edge Details

Add to include the following:

Asphalt Pavement Edge Detail Type ‘A’ shall not be used on SRP-MIC.

Detail 220-1 Curb and Gutter Types A, B, C, and D

Contraction joint spacing notes, revise to read as follows:

Contraction joint spacing 5’ minimum and 10’ maximum.

Detail 220-2 Curb and Gutter Types E and F

Contraction joint spacing notes, revise to read as follows:

Contraction joint spacing 5’ minimum and 10’ maximum.

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SUPPLEMENT TO MAG UNIFORM STANDARD DETAILS
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300 SERIES: WATER INFORMATION

Detail 360-1 and 360-2 Dry Barrel and Wet Barrel Fire Hydrant Installation

Finish grade note, revise to read as follows:

Finish grade shall be (1) top of adjacent sidewalk, (2) top of adjacent curb or (3) top of finish ground level.

Detail 391-1 Valve Box Installation and Grade Adjustment

Add to include the following:

Valve Box Installations Type ‘A’ and ‘B’ shall not be used on SRP-MIC.

Detail 392 Debris Cap Installation

Add to include the following:

Debris cap shall be IN FACT Corporation Waterworks Product-Foam Mud Plug-Valve box debris plug or approved equal.

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SUPPLEMENT TO MAG UNIFORM STANDARD DETAILS
FOR PUBLIC WORKS CONSTRUCTION

400 SERIES: SEWER INFORMATION

Detail 420-2, 420-3 and 421 Pre-Cast Concrete and Offset Sanitary Sewer Manhole Base

Revise to include the following:

Manholes that have either two or more inlets or inlet/outlet pipes ranging between 12 inches and 18 inches in diameter shall be constructed using 60-inch inside diameter manhole material. Manholes having inlet/outlet pipes 24 inches to 36 inches in diameter shall be constructed using 72-inch inside diameter manhole material. Manholes for pipes greater than 36 inches in diameter shall be specially designed.

Pipe entering a 4-foot diameter manhole shall be 21 inches from center of manhole and pipe entering a 5-foot diameter manhole shall be 27 inches from center of manhole.

Pour in place manhole base shall be poured on native sub-grade compacted to 95 percent density.

Pre-cast manhole base shall be placed on 6 inches of ABC material compacted to 100 percent.