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 2018

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
SWPPP	Storm Water Pollution Prevention Plan

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:

Revise second paragraph 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:

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
MAG Uniform Standard Specifications and Details for Public Works Construction
SRP-MIC Construction Details

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 an account with the Finance Department and pay a security deposit and turn on/removal fee to obtain use of a hydrant meter. Account set up shall be made in person at the cashier's office, 1st floor, Two Waters Complex Building A, 10005 E. Osborn Road, Scottsdale, Az. Requests and payments cannot be made over the phone. Relocations will acquire additional fees. Monthly rate is imposed for domestic water service by hydrant meter, whether or not any domestic water is used. A monthly meter base fee will be charged, plus a tier water usage rate fee per 1,000 gallons.

All hydrant meters require a backflow prevention device. User must provide documentation of current annual certification of the backflow device as well as documentation of the tester's Backflow Prevention Assembly Tester Certification before the hydrant meter can be activated.

User 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 user less any charges identified.

Refer to SRP-MIC Detail 4306 for further information.

104.1.4 Cleanup and Dust Control:

Add to include the following:

The Contractor shall prevent any dust nuisance due to construction operations in accordance with MAG Section 104 Scope of Work-Cleanup and Dust Control.

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 Project Manager prior to beginning operations. Contractor shall not begin operations until Dust Control Plan has been approved by the Environmental Protection and National Resources (EPNR).

Tracking dirt onto streets is not allowed and if it occurs it must be cleaned immediately. Gravel track-out pads or other approved method, shall be used at all construction entry points.

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.

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 Engineering and Construction Services (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 five (5) business days prior to commencing all major phases of work. The meeting shall include SRP-MIC Compliance Division, PWD, all affected Government agencies and 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 right of way.

105.6 Cooperation with Utilities:

Second paragraph to include the following:

In addition to contacting Arizona 811 (or 602-659-7500), the Contractor shall contact SRP-MIC PWD five (5) working days prior to any construction for blue stake of all water and wastewater utilities (480-362-5600) or e-mail to (pwcustomerservice@srpmic-nsn.gov).

Following 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

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.

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" 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 and horizontal site improvements with reference to a verified local benchmark. Additionally, all material deviations from the final approved plans shall be referenced and annotated within revision clouds. "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. The "As-Built" construction documents shall be provided to ECS Compliance Division and PWD, electronically in PDF and AutoCAD format. The As-Built Plans shall include all underground utility construction.

For infrastructure improvements constructed within a Community right-of-way or easement, supplemental documentation shall also be provided to the Community with the final "As-Built" submittal. The supplemental documentation shall be provided in electronic copy. This documentation shall be arranged according to the following supplemental documentation types:

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

The ECS Compliance Division shall verify completeness and approve the final "As-Built" submittal.

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 Community Project Manager 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/Project Manager. 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 Project Manager, 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 ECS Compliance for review, at least three (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 hour, seven (7) day (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 right-of-way including water, sewer, drainage, streets, and landscaping related items shall be under warranty for a period of two (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 (30) calendar days prior to the end of the two (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, all pavement and street related work, waterlines and facilities, sewer related facilities, street light, traffic signals, ROW landscaping, signage and pavement markings shall be re-inspected for damage of failure. Repairs shall be performed as outlined above.

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PART 200 – EARTHWORK

Section 211 Fill Construction

211.3 Compacting:

Fifth paragraph; revise last sentence to read as follows:

The loose thickness of each layer of fill material before compacting shall not exceed eight (8) inches, except as provided in the following paragraph for rocky material. Each layer shall be compacted in accordance with the following requirements to a uniform density of not less than 95 percent, except that where a new or widened roadway and appurtenances are required, density of the upper two (2) feet and when the fill is within two (2) feet of the above shall be not less than 95 percent, or as directed by the Engineer or Project Manager.

If work is beyond the road prism and outside the Right-of-Way 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:

Revise note B to read:

Below detached sidewalk, Shall be 90% compaction.

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 Community Project Manager utilizing a minimum eighteen thousand (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 Community Project Manager. Subgrade containing soft or excessively wet areas shall be removed and replaced with suitable materials under the direction of the Community Project Manager. In this event, the Soils Engineer shall also be notified. All subgrade shall be approved by the Community Project Manager 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. Upon completion, the base surface shall be true, even and uniform conforming to the grade and cross-

section specified in the plans and specifications.

310.3 Compaction:

Note (C), revise to read as follows:

All other areas not subject to vehicle traffic shall be 90% compaction.

Add to include the following:

One (1) 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 two (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 two (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 F for Asphalt Concrete lifts less than 2 inch 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 Project Manager determines that weather conditions are suitable.

321.8.2 Joints:

First paragraph, first sentence, 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 one-quarter (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.

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 one-quarter (1/4) inch from the lower edge of a 12-foot straightedge 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

321.10.1 Acceptance Criteria:

The acceptance laboratory will take representative samples of the asphalt concrete from each sublot (divided into sublot of 500 ton) to allow for testing of gradation, binder content, air voids, pavement thickness, and compaction of base and surface courses. Acceptance of each sublot will be based on the test data from the samples from that sublot. All acceptance samples shall be taken using random locations or times designated by the Community or its authorized representative.

Asphalt pavement cores shall be taken in accordance with MAG Section 321.10. If test cores indicate deficiencies, additional cores shall be required per MAG. Any associated additional testing costs shall be the Contractor's responsibility.

321.10.3 Surface testing:

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

An acceptable surface shall not vary more than one-quarter (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 one (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 or ponding extends on the adjacent curb and gutter.

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 Hot Mix Asphalt or High Strength Non-Shrink Grout with black dye. The patch shall be smooth and flush with finish pavement.

Section 322 Decorative Asphalt

322.3 Installation & Surface Patterning:

Fifth paragraph, revise to read as follows:

All asphalt concrete construction materials shall be transported to the job site in clean trucks and in a manner to prevent segregation of materials or inclusion of foreign substances. During transport, the hot-mix asphalt concrete shall have a minimum temperature of 285 degrees F and a maximum temperature of 350 degrees F.

The hot-mix asphaltic concrete shall be placed per the project plans and specifications. The hot-mix asphaltic concrete shall be placed on a dry base course and when the ambient temperature in the shade is 45 degrees F and rising. The hot-mix asphaltic concrete shall not be placed when the weather is foggy, rainy, or when the base course is wet or frozen.

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 as follows:

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

Replace first paragraph with the following:

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 1/2 or 3/4 Marshall Compaction Method. Designs mixes 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 concrete shall conform to the requirements of MAG Section 725.

340.3.4 Joints:

Third paragraph, add to include the following:

Space between contraction Joints in curb and gutter maybe minimum five (5) feet and maximum ten (10) feet. If curb is attached to sidewalk, joints shall match curb.

340.3.10 Deficiencies:

Add the following paragraphs:

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:

Replace paragraph with the following:

All locations, Portland Cement Concrete shall be a minimum Class A per MAG Section 725.

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'.

Section 350 Removal of Existing Improvements

350.2.1 Utilities:

Add to include the following

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

Asbestos cement pipe (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 the Community's Environmental Protection & Natural Resources Department (EPNR) certification of the proper disposal of the asbestos cement pipe. The Contractor shall further make available to the 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 Project Manager 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 one (1) slurry backfilled (1ft x 1ft x 1ft).

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 packings, 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, Environmental Protection & Natural Resources Department, 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 striping or marking, it shall be the Contractor's responsibility to remove existing pavement striping or marking using sand, high pressure water, or reclaimed shot blasting. After removal, all areas affected by the removal shall be resealed as approved by the Project Manager.

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PART 400 – RIGHT-OF-WAY AND TRAFFIC CONTROL

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 otherwise specified in the SRP-MIC Details, the MUTCD, latest edition, or as otherwise specified in the contract documents.

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 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 ECS Compliance Division and the Project Manager to review pavement layout markings. Approval and sign-off of pavement layout markings by 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.

402.2 Materials:

402.2.1 Permanent Pavement Markings:

Pavement marking paint shall be provided 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 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.

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. Sign posts shall be perpendicular plus or minus two (2) degrees. Signage shall be level within two (2) degrees and mounted on square tubular sign posts secured with a minimum of two (2) each zinc plated 3/8-inch steel drives and flat washers. Where appropriate, signs mounted to traffic signals or other poles shall be secured with a minimum of two (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.

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 Project Manager.

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. Any sign posts that are on-site and not in the Right-of Way 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:

Hole or knockout diameter shall be 7/16-inch plus or minus 1/64-inch on one (1) inch centers on all four (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 hole or knockout spacing is plus or minus 1/8-inch in four (4) feet. The sleeve and post tubing shall have the first two (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 six (6) inches in diameter. The top of the concrete shall be two (2) inches below the finished grade.

403.6 Sign Panel:

Sign panels shall conform to ADOT Section 608-2.07. 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 IV sheeting or better shall be used for all warning, regulatory and street name 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 Portland cement concrete and right-of-way monuments and survey monuments at the locations shown on the plans or directed by the Engineer and/or Surveyor as specified.

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 conforming 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 three (3) inches in diameter. No bronze caps allowed.

405.3 Construction:

Second paragraph, revise to read:

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 paragraphs:

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 Sprinkler Irrigation System Installation

440.2 General:

Add to include the following:

Sprinkler irrigation system shall be installed per approved plans and per MAG Section 440.

440.5 Trenching Excavation and Backfill

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

Compaction shall be in accordance with SRP-MIC Supplement to MAG Specifications Table 601-2.

Eight paragraph, revise to read:

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

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

PART 600 – WATER, SEWER, STORM DRAIN AND IRRIGATION

Section 601 Trench Excavation, Backfilling and Compaction

601.2.3 Trench Grade:

First paragraph, revise the first sentence to read as follows:

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

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

For all pipe sizes, the Contractor shall excavate for and provide minimum six inches (6") ABC bedding per MAG Detail 200-2 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 or settle. 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.

601.4.2 Bedding:

Add to include the following:

For all water, sewer and storm drain 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 six inches (6") of ABC per MAG Section 702 unless otherwise specified, compacted to minimum 95% 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 and storm drain 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% 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 (12") above top of pipe.

Initial backfill material shall be ABC per MAG Section 702 unless otherwise specified, compacted to minimum 95% 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 eight inches (8") 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.

If, during the underground utility installation, other utility lines cross and compaction cannot be obtained with mechanical compaction, then, half sack slurry shall be placed between the utility lines to the bottom of the highest utility. The limits of slurry placement shall be directed by the Project Manager or Community Inspector.

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.

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 determine the required optimum moisture content and control the moisture accordingly with assistance from the testing agency.

The minimum number of in-place density tests required will be as follows:

Test Location	Sampling & Testing Frequency: Quick Summary Table
Pipe Embedment Zone and Backfill	1 Test / 300 LF of Trench / Compacted Lift
Manhole Backfill	1 Test / Every Other Compacted Lift – Alternating Sides of Manhole
Structural Backfill or Retaining Wall Backfill	1 Test / 200 LF / Compacted Lift
Finished Subgrade Beneath On-Site Pavements	1 Test / 300 LF of Pavement or Fraction Thereof
ABC Beneath On-Site Pavements	1 Test / 300 LF of Pavement or Fraction Thereof
Beneath Proposed Curb, Gutter and Sidewalk	1 Test / 300 LF of Pavement or Fraction Thereof

Table 601-2, revise to read:

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, 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 right-of-way outside limits of (I) and from right-of-way up to 5 feet from commercial building.	90%	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:

Revise the second and third paragraphs to read:

(A) 4 inch through 12 inch diameter pipe shall be AWWA C150 ductile iron or AWWA C900 Polyvinyl Chloride (PVC) class 235.

(B) 16 inch and larger pipe shall be either AWWA C150 class 250 ductile iron or AWWA C905 Polyvinyl Chloride (PVC) class 200.

610.4 Construction Methods:

Add to include the following paragraphs:

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 High Strength Tracer Wire (per PWD Approved Materials List) shall be installed on top of all water mains including fire lines and secured with industrial grade non-adhesive, waterproof tape at minimum ten (10) foot intervals to prevent movement during backfill. All connections shall be kept to a minimum and shall be per PWD Approved Materials List. The entire system shall be interconnected and shall be tested for continuity prior to placing sub-base material and final pavement.

Tracer Wire Connection Station (per PWD Approved Materials List) shall be installed a minimum of 500' and Maximum of 1000' spacing at all fire hydrant locations. Install Tracer Wire Connection Station a minimum of three feet from fire hydrant as directed by SRP-MIC Public Works Department. A Magnesium Drive Anode (per PWD Approved Materials List) shall be connected to the tracer wire at the Tracer Wire Connection Station, buried two feet below finish grade.

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.

610.6.1 Polyethylene Corrosion Protection-General:

Replace first sentence with the following:

All 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:

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

610.9 Fire Hydrants:

Add to include the following:

All hydrants shall be per PWD Approved Materials List.

Fire hydrant spacing is from center to center of fire hydrant with a minimum spacing of 330 feet for commercial area and 500 feet for residential area.

The Contractor shall schedule inspections with the Community Inspector and Salt River Fire Department 24-hours in advance for all fire hydrants, fire lines and FDCs prior to placing pipe shading.

A black, heavy duty 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.

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:

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

Section 611 Water, Sewer and Storm Drain Testing

611.1 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.

611.2.11 Final Flushing, Sampling and Testing

Add to include the following:

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.

611.3 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.

611.4 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 the following paragraph:

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 four (4) mil thick, three (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 four-foot diameter manhole shall be 21-inches from center of manhole and pipe entering a five-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 six (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 Coating of Sanitary Manholes

Add new section in its entirety as follows:

626.1 General:

Insect Barrier Coating Material

Approved Materials:

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.

Product Data:

The Contractor shall provide the following information:

1. License and/or certification of the Contractor's Sub-Contractor selected to do the insect barrier application.
2. Manufacturer's Data specific to the insect barrier referenced in SRP-MIC Section 626.2:
    a. Manufacturer's technical literature on coating material
    b. Description of installation method including:
        i. Product material safety data sheets (SDS)
3. Warranty information on the insect barrier coating.

626.1.1 Description:

All manholes including the bench, bench to pipe transition, upper adjusting rings and all other exposed internal concrete and mortar surfaces, shall be coated per the requirements contained in this section and per the manufacturer's recommendations.

Requirements

1. The Contractor shall furnish all labor, materials, and equipment required to clean and line the manholes.
2. The Contractor shall comply with the local authority and all Occupation Safety and Health Administration (OSHA) requirements for confined space entry.
3. All materials specified by name brand or manufacturer shall be delivered unopened to the job in original containers.
4. All Safety precautions recommended by the manufacturer in printed instructions or

special bulletins shall be obtained and followed.

5. The work shall be carried out after the sewer is installed.

626.1.2 Quality Assurance:

Standardization: Materials and supplies provided shall be the standard products of manufacturers. The standard products of manufacturers other than those specified will be accepted when it is demonstrated to the Community Inspector that they are equal in composition, durability, and usefulness for the purpose intended. Requests for submission shall include directions for the application, descriptive literature, safe storage, handling and disposal of the product.

Warranty:

1. A written warranty against coating failure shall be provided for the entire coating system, including all repair material, defect fillers, primers, intermediate, and finish coats. The minimum duration of the warranty shall be five (5) years. The product and the installation may be both covered by the manufacturer's warranty, or separate warranties may be issued by the manufacturer and installer.
2. This warranty shall state that the coating will not fail for a minimum period of five years. Coating failure is defined as blistering, cracking, embrittlement, or softening, or failure to adhere to the substrate. The warranty shall also apply to any repair materials, primers, or other products used in the application. If any repair or replacement is necessary within the warranty period, a new five (5) year warranty period shall start at the date that the manhole is placed back into service.

626.1.3 Submittals:

Contractor shall submit:

1. Manufacturer's Data:
    a. Manufacturer's technical literature on coating material.
    b. Description of installation method including:
        i. Product material safety data sheets (SDS).
        ii. Maximum storage life and storage requirements.
        iii. Mixing and proportioning requirements (as applicable).
        iv. Environmental requirements for application and worker safety, including ventilation, humidity and temperature ranges.
        v. Application film thickness PM coat of primer and finish coat.
        vi. Curing time required.
2. Sample of finished product showing final color. Lining color shall be white.

626.2 Products:

626.2.1 Coating Material:

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.

626.2.2 Product Data:

The Contractor shall provide the following information:

1. Manufacturer certification of applicators used for the coating installation work, including spray operators as applicable.
2. Samples of coating and color chart.
3. Coating applicator shall be an Arizona licensed Contractor.

626.3 Execution:

626.3.1 Manhole Cleaning:

The Contractor shall remove all sediment, rocks, debris, roots, grease accumulations, and obstructions from the manholes. Cleaning of the manhole walls, bench, and channel shall remove all grease, scale encrustation and loose mortar so that no foreign intrusion shall cause imperfections in the coating. Cleaning methods shall include washing with high-pressure water, mechanical removal or other as approved by the Community.

The Contractor shall use water blasting with a minimum water pressure of 3,000 PSI to clean the manhole prior to applying the coating. The Contractor shall also be responsible for any additional surface preparation beyond water blasting as required by the coating system manufacturer. Where additional preparation is required, the Contractor shall provide all labor materials and equipment as necessary at no additional cost to the Community.

Before installation of the coating system, the surface must be clean.

Excess water shall be blown from the surface using compressed air equipment with oil-trapping filters. Suitable heaters shall be used as needed to produce a surface-dry condition. The surface shall be vacuumed to make sure that loose particles are not present.

Any sediment or debris from cleaning operations larger than U.S. #8 sieve shall not be deposited downstream in the sewer. Sedimentation deposited downstream, as determined by the Community, shall be removed at no cost to the Community.

626.3.2 Inspection and Testing:

The Contractor shall give the Community Inspector a minimum of three days' advance notice on start of field surface preparation work or coating application work, and a minimum of

seven (7) days advance notice start on any shop surface preparation work.

All work shall be performed in presence of the Community Inspector, unless the Community Inspector has granted prior approval to perform work in absence. The Contractor shall provide testing performed by an independent Special Inspection Testing Agency or Laboratory approved by the Community. Cost of this special inspection and testing shall be the responsibility of the Contractor.

Inspection by Community Inspector or waiver of inspection in any particular portion of work shall not relieve the Contractor of the responsibility to perform work in accordance with the specifications and the manufacturer's recommendations.

Scaffolding shall be erected and moved to locations by the Contractor to facilitate Community Inspection. Additional illumination shall be furnished when the Community Inspector requests.

The Contractor shall furnish (until final acceptance of coatings) inspection devices in good working condition for detection of holidays and measurement of wet and dry-film thickness of protective coatings. Wet and dry-film thickness gauges shall be available for the Community Inspector's use until acceptance of coating process is complete and final acceptance of coatings made. The Contractor shall furnish services of trained operator in holiday detection devices until final acceptance of coatings. Holiday detection devices shall be operated in presence of the Community Inspector.

The Contractor shall holiday test all coated surfaces in the presence of the Community Inspector. Holiday testing equipment and procedures shall be performed in strict accordance with latest edition of NACE "Standard Recommended Practice-Discontinuity (Holiday) Testing of Protective Coatings". Areas containing holidays shall be repaired or re-coated and re- tested in the presence of the Community Inspector in accordance with coating manufacturer's printed instructions. Holiday detectors shall be:

High voltage pulse-type holiday detectors as manufactured by Tinker & Rasor or D.E. Stearns Co. Unit shall be adjusted to operate at voltage required to cause sparks to jump across an air gap equal to twice the specified coating thickness.

Wet film thickness measurement shall be supplemented by report submitted by the Contractor. The report shall be presented after completion of underlayment, top coating operations, and shall state number of manufacturer's product units used and total square footage of surface area covered. The Community Inspector shall have the option of requiring the Contractor to document number of units (coating materials) on hand before and after coating operations to verify actual minimum dry film thickness applied. All film thicknesses not meeting required minimums will be re-coated per manufacturer's recommendations.

626.3.3 Measurement:

There will be no separate measurement or payment for the application of the sewer lining described herein, the cost is considered as part of the manhole installation.

Multiple trips for the application to the sewer lining due to adjustment rings or final paving will be the Contractor's responsibility to coordinate as the cost is considered as part of the manhole installation.

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 Tests and Test Methods:

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.

Not less than four (4) cylinder specimens shall be made for each 50 cubic yards of each class of concrete with a minimum of four (4) specimens for each class placed or not less than four (4) specimens for each half-day of placement. Specimens shall be tested in accordance with ASTM C-42. Two (2) cylinders shall be tested at 14 days. If the tested strength meets or exceeds the minimum 14 day requirements, the Community may accept the concrete. The Community or its authorized representative may have the other two cylinders tested at 28 days, or discard at 60 days. Retesting as a result of failure shall be done at her Contractor’s expense.

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

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, driveways, and adjustment collars (water valves, manholes, survey monuments, 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, 202, 203, 204, 206-1, 206-2, 206-3, 220-1, 220-2, 221, 222, 223, 224, 225, 230, 234, 236-1, 236-2, 236-3, 236-4, 236-5, 237-1, 237-2, 237-3, 238-1, 238-2, 238-3, 250-1, 250-2, 251, 252, 260, 262, 263, 440-4, 501-1, 501-2, 501-3, 501-4, 501-5, 502-1, 502-2, 506, 507, 530, 531, 532, 533-1, 533-2, 534-1, 534-2, 535, 536-1, 536-2, 537, 538, 541, 550, and 552.

This requirement does not include MAG Standard Detail 240 Valley Gutter, concrete shall be Class AA (4000 PSI).

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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.

Revise note 2 to read:

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.

Revise note 4 to read:

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

Revise Type B Detail to include:

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

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200 SERIES: STREET INFORMATION

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 200-2 Trench Backfill and Surface Replacement

Add to include the following:

Copperhead High Strength Tracer Wire (part # 1230-HS) Twelve (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 220-1 Curb and Gutter Types A, B, C, and D

Revise contraction joint spacing notes to read:

Contraction joint spacing shall be minimum five (5) feet and maximum ten (10) feet.

Detail 220-2 Curb and Gutter Types E and F

Revise contraction joint spacing notes to read:

Contraction joint spacing shall be minimum five (5) feet and maximum ten (10) feet.

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300 SERIES: WATER INFORMATION

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

Revise finish grade note to read:

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-Mud Plug-Valve box debris plug or approved equal.

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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 paragraphs:

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 four (4) foot diameter manhole shall be 21 inches from center of manhole and pipe entering a five (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% density.

Pre-cast manhole base shall be placed on six (6) inches of ABC material compacted to 100% density.