SPECIAL PROVISIONS

SURPRISE
ARIZONA

City of Surprise

C.I.P. Number
21509

Streetscape Landscape and Irrigation Improvements for

Reems Rd – Peoria-Cactus
Waddell Rd – Citrus Road -175th Ave
Sarival Lane – South of Bell Road
Bullard Ave – Peoria-Cholla

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PART A: SCOPE OF WORK

1. PROPOSED WORK

This project is located in the City of Surprise. The project is located along four separate sections of roadway:

Reems Road – Peoria to Cactus

Waddell Road between 175th Ave and Citrus

Sarival Lane south of Bell Road approximately 800 linear feet

Bullard Ave between Peoria and Cholla.

The work will consist of landscape and irrigation improvements to existing roadway/ streetscape medians.

The work herein shall be performed in accordance with the requirements of the following separate documents except as modified in these Special Provisions or on the Contract Plans. If a bid item is identified by more than one Standard Specification, the following is listed in priority.

City of Surprise Engineering Development Standards, Feb. 2008, Revised Aug. 2008

City of Surprise Supplemental Standard Details, Feb. 2008, Revised Aug. 2012

City of Surprise Temporary Work Zone Traffic Management Policy, Nov. 2007

Maricopa County Department of Transportation Supplement to the Maricopa Association of Governments' Uniform Standard Specifications (January 2015)

Maricopa Association of Governments "Uniform Standard Specifications for Public Works Construction" (1998, Revised thru 2015)

Maricopa Association of Governments "Uniform Standard Details for Public Works Construction", (2008, Revised thru 2015)

Arizona Department of Transportation, Standard Specifications for Road and Bridge Construction, Edition of 2000, Revised 2008.

Arizona Department of Transportation, Highways Division, Traffic Signals & Lighting Standard Drawings, 2013.

Arizona Department of Transportation, Signing and Marking Standard Drawings, 2013.

Arizona Department of Transportation, Structures Standard Drawings, 2013.

Arizona Department of Transportation, Roadway Design Guidelines, May 2012.

Manual on Uniform Traffic Control Devices for Streets and Highways, 2009 edition and Arizona Supplement to the USDOT FHWA 2009 edition

All other City of Surprise Department policies and procedures where applicable.

Irrigation Association standards

Arizona Landscape Contractors Association Standards

The above Items of work along with the construction requirements are adequately described and defined in the Uniform Standard Specifications for Public Works Construction sponsored and distributed by the Maricopa Association of Governments (MAG) along with the MAG Uniform Standard Details and the City of Surprise Supplements thereto, latest revisions, or within these special provisions. In the event of conflict, the City of Surprise Supplements will prevail.

The information written into these special provisions will:

Describe any special or unusual conditions.

Explain details of the work not covered in the MAG Specifications and Details or the City of Surprise supplements thereto.

Relate certain work to specific bid Items or payment quantities.

General construction notes for City of Surprise Public Works projects are included in the plan set and shall be representative, unless specifically noted otherwise, to all plan sheets.

PART B: GENERAL INFORMATION

1. SALES AND USE TAXES

The Contractor shall not include sales or use taxes on certain materials and equipment to be installed on this project as described in Arizona Revised Statutes 42-1316 and 42-1409.

The Contractor shall furnish the City with a list of suppliers including materials and equipment furnished by each, which are applicable to this exemption.

2. PRECONSTRUCTION CONFERENCE/WEEKLY MEETINGS

Preconstruction Conference: The Contractor and all subcontractors shall attend a preconstruction conference meeting at a time and location designated by the City of Surprise (City). The Contractor shall be prepared and ready to present to the City all required schedules, plans, etc., as described elsewhere in these special provisions and within the MAG Standard Specifications.

Weekly Meetings: The Contractor shall plan for and attend weekly meetings with the City at a location and designated time determined by the City. The Contractor shall include in the construction schedule adequate time for weekly construction progress meetings.

Contractor shall submit a 2-week schedule at each meeting and prepare and distribute meeting minutes within 48 hours following the meeting.

Contract Documents: Approved drawings, submittals with review comments, data, mixes and certificates as they are returned to the Contractor will become a portion of the Contract Documents.

3. PUBLIC NOTIFICATION

Unless otherwise directed by the City, the Contractor shall notify all residents, businesses, and schools located along the frontage (1/4 mile radius) of a specific project by handbill or door-hanger, no later than 48 hours and no earlier than 2 weeks prior to commencement of the work phase. The handbill shall include the Contractor's phone number, and alternate work day schedule in case of delay due to weather. The Contractor shall re-notify all areas where work was not performed as scheduled. Door-

hangers shall be bright yellow with red lettering and shall be 3 to 5 inches wide by 10 to 12 inches long. Door-hangers shall be pre-cut to be readily secured to doorknobs and pulls, so that they cannot be inadvertently detached or blown off. Any costs associated with notification or re-notification shall be considered incidental to the project.

The Contractor shall provide black-on-orange pre-construction advisory signs to be placed on commuter streets to be serviced, two full calendar weeks prior to start of the project. The signs shall state that a pedestrian connectivity project is to take place, the planned dates of start and finish, and shall state that an alternate route of travel is suggested. Sign dimensions may vary according to application and will be determined by the City. This provision is for use on streets where handbill notification is not practical. This requirement is not a separate pay Item.

The City will require the stationing of lighted variable message signs (VMS) prior to and during the work phase for pre-notice and to facilitate traffic movement and promote work zone safety. The costs of these VMS signs, and all other traffic control costs, shall be reimburse to the Contractor through existing bid items.

Contractor to coordinate with the City Engineer or their Representative for Public Notification Guidelines, and shall not move forward with notifications until written approval from City is provided.

4. CONSTRUCTION PRACTICE

All construction practices and procedures shall conform to Section 107 of the Contract Works Hours and Safety Standards Act (US Stat. 96, 40 USC 327); the latest revisions shall prevail.

5. INSPECTION

Inspectors may be stationed on the work to report to the City, or his Designee, as to the progress of the work, the manner in which it is being performed, and also to report whenever it appears that material furnished or work performed by the Contractor fails to fulfill the requirements of the specifications and contract documents. The Inspector may direct the attention of the Contractor to such failure or infringement but such inspection shall not relieve the Contractor from any obligation to furnish acceptable materials and labor or to provide completed construction that is satisfactory in every particular.

In case of any dispute arising between the Inspector and the Contractor as to material furnished or the manner of performing the work, the Inspector shall have the authority to reject materials or suspend the work until the question and issue can be referred to and decided by the City. Inspectors are not authorized to revoke, alter, enlarge, relax, or release any requirements of the specifications. Inspectors shall in no case act as foremen or perform other duties for the Contractor or interfere with the management of the work by the Contractor.

Inspection or supervision by the City or Designee shall not be considered as direct control of the individual workman and his work. The direct control shall be solely the responsibility of the Contractor.

6. WORKMANSHIP

Where not more specifically described, workmanship shall conform to all of the methods and operations of best standards and accepted practices of the trade or trades involved and shall include all Items of fabrication, construction or installation regularly furnished or required for completion.

All work shall be executed by tradesmen skilled in their respective lines of work.

When completed, all work shall have been durably and substantially built and shall present a neat, workmanlike appearance.

7. LIMITS OF WORK

The Contractor, in cooperation with the City's Inspector, shall verify and agree to the boundaries of the work prior to the start of construction. Upon starting construction, the Contractor shall be responsible for replacing all missing, removed or damaged boundary delineating materials, such as walls, fences, etc. Boundaries of work are hereby established as the furthest line distant left or right of the construction centerline as existing right-of-way, new right-of-way, drainage easement or temporary construction easement as shown on the plans. Once construction activities have commenced, no disturbance of the existing ground beyond such delineated line shall take place. ***Intrusion outside of the limits by the Contractor will be penalized $100 per square yard. Any aggregated amount shall be deducted from the Contractor's final payment.***

8. PLANS AND SHOP DRAWINGS

Plans and Shop drawings shall conform to Section 105.2 of the MAG Standard Specifications except as modified as follows:

The Contractor shall furnish to the City of Surprise's Construction Coordinator, product data, material certificates, mix designs and shop drawings in sufficient detail to show complete compliance with all specified requirements, including but not necessarily limited to the following:

The Contractor shall furnish to the City of Surprise's Project Manager material certificates, mix designs, shop drawings and samples in sufficient detail to show complete compliance with all specified requirements, including but not necessarily limited to the following:

Product Data:

Material and product data shall include information such as the manufacturer's printed recommendations, compliance with recognized trade association standards, application of testing agency labels and seals, product dimensioning, and notation of coordination requirements, operations manuals, and manufacturer's warranty's.

Certificates, Warranty's, Close Out Documentation:

The certificates shall be prepared by the Manufacturer or testing agency thereof and should include technical specifications and compliance with industry trade association and testing agency standards.

The contractor shall include as part of the close out documents all manufacturer's warranty's completed and verified including start of warranty dates, company representatives, and contact information regarding equipment warranty's and guarantees.

Submittals and Shop Drawings:

Shop drawings shall include the name of the project, project number, date prepared, name of the Preparer, Contractor, and Subcontractor, if applicable. All dimensions and identification of products and materials included, along with notation of any coordination requirements and established field dimensions/measurements/verifications shall be clearly shown or noted.

Drawings of minor or incidental fabricated material and/or equipment may not be required by the City of Surprise. The Contractor shall furnish the City tabulated lists of such fabrications, showing the names of the manufacturers and catalog numbers, together with samples and cut sheets for all proposed materials and data as may be required to permit determination by the City as to their acceptability of all proposed materials and for incorporation into the work.

Samples:

Samples shall be representative of the materials to be incorporated into the project and submitted in sufficient quantity to permit evaluation and/or comparison.

Distribution and Review:

The Contractor shall anticipate and schedule for a two week (calendar days) review period by the City of Surprise and/or its designee during which time will either approve, disapprove, or request modifications. The latter two will require re-submittal of the material and a subsequent additional review period. This process shall be repeated until all submitted materials have been approved.

Shop drawings shall be on sheets in standard size increments between 8 1/2" x 11" and 11" x 17" or 24" x 36". All drawings shall indicate the name of the job, the City's job number, date, names of the Contractor, Subcontractor and Preparer, and the date of approval by the Contractor. All other data, certificates or mix design reports shall be presented on 8 ½" x 11" format, or as provided by the Supplier/Manufacturer.

Five (5) Contractor approved copies along with a letter of transmittal shall be delivered to the City's Construction Coordinator. The Contractor shall first review all submitted data for compliance with specification and job requirements. Any Contractor comments, recommendations, etc. shall be clearly noted on the submitted data.

If the submittal is acceptable, three (3) copies will be stamped approved, dated, initialed by the Reviewer, and returned to the Contractor.

If the submittal requires corrections or is rejected, three (3) copies along with an explanation of the outstanding concerns will be returned to the Contractor for revision and resubmittal as described above. Re-submittal of any required corrections shall be made within ten working days.

Contract Documents:

Approved drawings, data, mixes and certificates as they are returned to the Contractor will become a portion of the Contract Documents.

9. COOPERATION WITH UTILITIES

The following utility companies are known to have facilities in the area of this project. The appropriate individuals to contact and their telephone numbers are listed for the Contractor's convenience:

Utility Provider	Contact Person	Phone Number
Epcor	Marc Allen	(623) 445-2451
Arizona Public Service (APS)	Ronnie Gandara	(602) 371-7546
Cox Communication (Fiber)	Randy Simms	(623) 328-4058
CenturyLink	Eric Hitchcock	(602) 460-1233
Southwest Gas	Yvonne Aguire	(602) 484-5338

Cooperation of Utilities shall conform to Section 105.6 of the MAG Standard Specifications except as modified as follows:

Utility locations shown on the plans are approximate. The Contractor shall be responsible for identifying all underground utility locations where construction occurs. The Contractor shall notify Blue Stake (602-263-1100) at least two (2) working days prior to beginning construction for field location of existing utilities. Should a utility be hit during construction activities, the Contractor shall contact Blue Stake and

the utility company immediately.

The Contractor shall exercise special care and shall follow the utility company's procedures while working near high pressure gas lines or high voltage overhead or underground electric facilities.

The locations of existing underground utilities have been shown on the plans to the best of the Design Engineer's knowledge; however, it shall be the Contractor's responsibility to field verify all utility locations and to coordinate in a timely manner with the pertinent utility companies so that any obstructing utility installation may be adjusted without delay to the Contractor's project schedule. Contractor shall adequately protect and maintain all existing utilities. Any utility, whether shown or not, damaged due to construction shall be repaired immediately at the Contractors expense.

In addition, the City of Surprise shall not consider additional compensation requests from the Contractor to perform any potholing, utility company coordination, etc. needed to locate/verify utility location, to adjust contract work items as necessary to avoid utility line conflict, to cooperate with utilities in adjusting schedule as needed to allow for utility company work, relocations, etc.

10. COMMENCEMENT, PROSECUTION AND PROGRESS

Commencement, Prosecution and Progress shall conform to Section 108.2 of the MAG Standard Specifications except as modified as follows:

The Contractor shall perform, within his own organization, work amounting to not less than **50%** of this contract.

11. CONSTRUCTION SCHEDULE

Construction Schedule shall conform to Section 108.4 of the MAG Standard Specifications except as modified as follows:

The Contractor shall furnish the City a construction schedule for review. The City's review of the Contractor's schedule is for the purposes of 1) the City's staffing the project as may be required; 2) to insure general compliance with the contract documents as it relates to the completion of the work; and 3) to monitor and evaluate the construction status for purposes of approving progress payments. In the event the schedule does not contain sufficient information to meet the above purpose, as determined by the City, the Contractor shall resubmit a new schedule with the additional information requested by the City. The construction schedule shall not be changed without the written consent of the City. The orderly procedure of all work to be performed shall be the responsibility of the Contractor.

The schedule shall identify the work to be performed, including the location and duration of planned activities. Submittals shall be made a minimum of seven days prior to the planned work to allow sufficient time for the City to review and schedule any necessary inspections.

The Contractor shall provide weekly updates to the construction schedule for review with the Construction Coordinator or duly authorized representative. Failure to provide such weekly updates will result in retention of monthly progress payments until the schedule is updated.

Review of a submitted schedule by the City shall in no way be construed as an affirmation or admission that the schedule is reasonable or workable which responsibilities remain the obligations-of the Contractor. When the schedule shows a completion prior to the contract completion date, this extra time between the contract completion date and the scheduled completion date (float), may be used by the City without additional compensation to the Contractor. The City shall not be liable to the Contractor for any damages for delay if the Contractor completes the work prior to the expiration of the original Contract completion date or as modified by approved change orders, if any.

12. LIMITS OF OPERATIONS

Section 108.5, Limitations of Operations of the MAG Standard Specifications are modified as follows:

The project may be sequenced as the Contractor desires, subject to review by the City.

The Contractor shall schedule his work in such a manner that once construction begins, it shall be completed in an expeditious manner. Access to businesses and residences must be maintained between the hours of 5:00 AM and 10:00 PM. Periodic, infrequent closures of short duration (less than two-hours) must be coordinated with the affected businesses and residents. Prior to any closures of accesses, the Contractor shall give adjacent businesses and residences 48 hours' notice and provide them with a schedule as to when they would have full access restored. Access to fire lane shall remain open at all times.

The Contractor shall publish and distribute a monthly update letter to all affected businesses and residences. The update letter shall be reviewed by the City's Project Manager prior to printing and distribution. The first letter shall be distributed the business day after the Pre-Construction Conference.

Contractor to coordinate limits of operations with the City Engineer or their Representative.

13. ADDITIONAL CONSIDERATIONS

Irrigation systems in landscaped areas, as well as the landscape/hardscape items, disturbed by the Contractor's operations shall be restored to original functioning order. Contractor shall salvage Hardscape material, including pavers and DG, reinstall to limits and per details on plans and these special provisions, and dispose of unused quantities.

14. SAWCUTTING

Sawcutting shall be required at all pavement, curb & paver tie-in locations. Any location where concrete is sawcut and new concrete shall be installed adjacent to it, expansion material shall also be installed.

Sawcutting of existing improvements shall conform to Section 336 and 350 of the MAG Standard Specifications. There will be no separate measurement or payment for Sawcutting of existing improvements, the cost of which shall be inclusive of other bid items.

15. MATERIAL SAFETY DATA SHEETS

Contractor to supply Material Safety Data Sheets to the City Engineer or their Representative for all items utilized on the project.

16. PERMITS

Permitting Section 107.2 of the MAG Standard Specifications shall be deleted and the following inserted:

It shall be the responsibility of the Contractor to obtain **all** required permits for construction, dust control, relocation of native plants, utility relocations, etc. including no cost permits from the City of Surprise. Any other permits or fees needed for the work will be paid for by the Contractor, Reimbursement to Contractor shall be made under appropriate bid items.

A special grading permit at the Contractor's expense will be required when using spoils to fill private property. No grading will be allowed until a Grading and Drainage Plan/Concept has been approved by the City.

All haul routes for removals; excavation and dirt moving must be approved by the City of Surprise prior

to commencement of operations.

This project is subject to the Maricopa County Air Pollution Control Regulations. The Contractor shall comply with the provisions of Surprise MAG Supplemental Specification Subsection 107.2.2.

This project is subject to the National Pollutant Discharge Elimination System (NPDES) storm water requirements for construction sites under the Environmental Protection Agency (EPA) General Permit for Arizona.

17. SCHEDULE OF LABOR AND EQUIPMENT

Contractor to provide a Schedule of Labor and Equipment Costs on a Time and Material Basis with their construction bid. This should include Project Manager, Project Engineer, Superintendent, Foreman, Laborers, Operators, Drivers, etc. to the City Representative 2-weeks after notification of award.

18. SPECIALTY SIGNS

General: This item shall be required by the City as part of this project, and as part of traffic control. This item will be used at the City's request.

Authorization: The use of this bid Item shall be through the written direction of the City. The City will provide the language to be noted on the specialty signs, and the location for the installation of the signs.

Signs: Specialty signs are construction signs consisting of orange reflective background with black construction lettering conforming to the City of Phoenix Barricade Manual, or other signage as specified by the governing jurisdiction. Each construction sign will have two signs posts, two flashers, two flags, and be ballasted with sandbags and will generally be 18 to 24 square feet, depending on the need.

The total amount indicated on the schedule of bid Items will be adjusted accordingly by the City through a change order to reflect the actual amount used.

19. RECORD DRAWINGS

Contractor shall provide Record Drawings which shall clearly show all differences between the contract work as drawn and as installed for all work, as well as work added to the contract which is not shown on the Contract Drawings.

The Contractor shall maintain one set of Record Drawings at the job site. These shall be kept legible and shall be available for inspection at all times by the City. Show all changes in the contract work, or work added, on these Record Drawings in a contrasting color (red) including work changed by Addendum or Approved Change Order.

City shall review the Record Drawings on a monthly basis and shall be the sole judge of the acceptability of these drawings. Update Record Drawings showing all as-built construction shall accompany each progress payment submittal.

Upon completion of the project, submit final Record Drawings to the City for final review. Upon receiving approval by the City of the Record Drawings, deliver them together with one set of prints to the City's Project Manager. Final acceptance of the project will not be given until all such information is submitted.

20. CONTRACT TIME

The Contractor shall complete all project work within 90 working days beginning with the start date specified by the Notice to Proceed.

PART C: BID ITEMS

The following bid Items are numbered to correspond to the Schedule of Bid Items and are included to explain details of work not covered by applicable Standard Specifications and to relate work and pay quantities to the specific Bid Item.

Any Items of work shown on the plans but not covered by bid Items, as shown on the bid schedule, shall be considered incidental to the project.

Item 1 - Mobilization / Demobilization, Complete

Description: Mobilization/Demobilization shall be per Section 109 of the MCDOT Supplement to MAG Standard Specifications.

Measurement and Payment: Payment for Mobilization/Demobilization will be paid at the unit price bid per lump sum as specified in the Bid Schedule and shall include all labor and materials.

Item 2 - As-Builts, Complete

Description: As-Builts shall conform to Section 105.2 of the MAG Standard Specifications except as modified as follows:

General:
The City of Surprise will provide the Contractor with the original bond plan sheets for use in preparing final As-Builts. Information shall be shown on these originals and then scanned to mylars, depicting the constructed dimensions, elevations, grades and materials including locations of existing underground utilities found during construction.

The Contractor shall maintain one set of As-Builts at the job site. These shall be kept legible and shall be available for inspection at all times by the City. Show all changes in the contract work, or work added, on these Record Drawings in a contrasting color (red) including work changed by Addendum or Approved Change Order.

The Contractor shall exercise extreme care in handling the originals and will return them to the City in like new condition. In the event the originals are damaged or determined by the City to be unacceptable, the Contractor shall replace the originals by contacting the Design Engineer of record and have new drawings produced. All costs incurred as the result of replacing the originals shall be borne by the Contractor. The City will be the sole judge in determining whether the As-Builts are acceptable.

The As-Built drawings shall be certified by the registered Contractor. As-Built drawings shall be delivered to the City of Surprise within thirty (30) days from the date of final inspection and acceptance by the City of the work completed under this contract. Final payment will be made only after submitted As-Builts are accepted by the City.

City shall review the As-Builts on a monthly basis and shall be the sole judge of the acceptability of these drawings. Update Record Drawings showing all as-built construction shall accompany each progress payment submittal.

Upon completion of the project, submit final As-Builts to the City for final review. Upon receiving approval by the City of the As-Builts, deliver them together with one set of prints to the City's project manager. Final acceptance of the project will not be given until all such information is submitted.

Measurement and Payment: As-Builts will be measured as a single complete Item of work and paid at the lump sum price indicated on the Schedule of Bid Items, which amount shall be considered full

compensation for the work as described herein. Payment for work under this bid item will be made when the City accepts the final as-built mylars prior to final acceptance of the project and after all punch list items are complete. Should the Contractor fail to submit acceptable As-Builts within the maximum 30 calendar day period noted above, the City will execute a deduct change order for 10% of the As-Built bid Item total from the contract (or $2,500.00, whichever is greater) for every 5 working day period that the Contractor fails to provide acceptable As-Builts (not including City review time). If the Contractor fails to submit acceptable As-Builts after the 3rd submittal, the City will deduct 50% from the As-Built bid Item total from the contract (or $10,000.00, whichever is greater) and execute a final change order noting the City's justification for penalizing the Contractor for unacceptable as-built preparation.

Item 3 - Traffic Control, Complete

Description: MAG Standard Specifications shall be modified to include:

It shall be the responsibility of the contractor to develop and implement a traffic control plan for the project. The Contractor shall use the current City of Surprise "Temporary Work Zone Traffic Management Policy" available on the City's website. If there is a discrepancy between the following traffic specifications and the City of Surprise "Temporary Work Zone Traffic Management Policy" the City policy shall govern. Part IV of the "Manual On Uniform Traffic Control Devices For Streets And Highways" (U.S. Department of Transportation, Federal Highway Division) and all revisions thereto, the Traffic Manual from the City of Phoenix and all revisions thereto, shall serve as a guideline in Contractor's application of traffic control.

The Contractor shall submit a traffic control plan for approval, showing placement of all traffic control devices, including all conflicting signs to be covered/removed or relocated, or other features that may conflict with the placement of temporary signage. This plan shall be professionally drawn on a 24" x 36" reproducible medium, and shall be submitted to the Engineer at the pre-construction meeting. Traffic control plans must be provided for review and approval by the City of Surprise, for each individual segment of the streetscape landscape improvement project.

It shall be the Contractor's responsibility to provide, erect and maintain and remove after completion of the work all necessary signs, barricades, temporary traffic signals, barriers, berms, lights, high level warning devices, delineators, and any other required devices, uniformed officers, and flagman, necessary to properly mark and control the construction area for the safe and efficient movement of traffic. Temporary traffic control devices shall be installed prior to the start of any work.

It shall be the Contractor's responsibility to construct the required by pass lanes in order to make the road available to traffic. The City of Surprise's approval of the Contractor's traffic control method shall not relieve the Contractor of its responsibility to protect the work, Contractor's personnel, or the general public.

The Contractor must notify the Traffic Engineering Division at phone (623) 222-6150 of all traffic restrictions of City roads and streets. The notification may be by FAX submittal at phone number (623) 222-1701. The Traffic Control Plans (TCP) and notification must be submitted for review at least two working days (48 hours) prior to start of construction. Form TE-1 shall be completed in full and submitted with the TCP to begin review. Construction is not authorized to proceed without the City's approval of the TCP and concurrence that construction can precede with minimum public and traffic impact. Once Form TE-1 is approved and returned, any changes to the TCP or specific information approved in a previous submittal shall require a re-submittal of Form TE-1 and the TCP.

The Contractor shall provide and maintain all necessary signs, barricades and centerline vertical panels for five (5) working days beyond the concrete cure time or acceptance of the project by the Engineer, whichever period is greater.

Measurement and Payment: Payment for Traffic Control shall be made at the lump sum bid price in equal payments distributed over the entire duration of the project. **Payment for Traffic Control shall be full compensation for all labor, pilot cars, flagmen, materials, traffic control devices and miscellaneous incidental items necessary to complete the work. No additional payment will be made for the off duty police officer required when working within 150 ft of the signalized intersection.** Contractor is required to include the same in the price of traffic control item. .No additional payment will be made for obliterating the striping for traffic control.

Item 4 – Grading, Trenching, Excavation, Compaction, and Export of On-Site Soil to Grade

Description: Grading Cut, Trenching, Excavation and Export of on-site soil shall conform to Section 205 of the MAG Standard except as modified as follows:

The work under this Item shall consist of earthwork within median islands including excavating, sloping, swaling, setting grade for sub-grade to allow for the correct distance between the top of decomposed granite (compacted to 2" depth) and the top of curb per details. Grading shall consist of all rounding/smoothing tops and ends of excavations, hauling, loading, depositing, raking, conditioning, spreading and compacting to maximum 85% all planting areas and, setting sub-grade relative to top of curb, and providing material complete in place, and disposal of surplus material.

Materials: Materials shall be per MAG Standard Specifications Part 200.

Construction Requirements: The Contractor shall haul off and dispose all surplus material in accordance with federal, state and local regulations. On site disposal will not be available for this project.

All landscape areas inside the curb line shall be native soils in which materials larger than 1-1/2" inches in diameter have been removed. Contractor shall remove materials such as pavement construction debris, toxic and deleterious materials.

Compact trenches, foundation backfill or other filled excavations before planting. Loosen all areas to receive planting, and areas that have been previously paved (including areas previously that were streets) which will become planting areas to 85% maximum. Commencement of work indicates acceptance of job conditions if no notice is given to the owner stating otherwise. Remove all rock and material not conducive to plant growth that exceeds 1 ½" diameter.

Cooperate with other contractors working in and adjacent to landscape work areas.

Provide potable water to complete planting and maintenance activities. Water obtained off site is incidental to work. No separate payment shall be made.

Mark and maintain clearance along routes designated for public vehicular and pedestrian travel. Coordinate pedestrian and vehicular access with all other contractors and in accordance with City of Surprise requirement or concrete remnants. If imported, material shall conform to MAG Section 210. Clean fill soil is intended for those areas inside the curb line where landscaping and irrigation will be installed. Non-organic materials encountered in the course of construction shall be exported with material at no additional cost to the City of Surprise.

Measurement and Payment: Measurement and payment for earth work shall be on cubic yard basis and shall include excavating, sloping, rounding tops and ends of excavating, sloping, rounding tops and ends of excavations, hauling, loading, depositing, raking, conditioning, spreading and compacting planting areas to maximum 85%, setting sub-grade relative to top of curb, and providing material complete in place, and disposal of surplus material.

Item 5 – Soil Testing, Preparation, Amendments, Backfill, Chemicals, and Fertilizers

Description:

Contractor to perform soils investigation to include agronomy and bioassay tests to verify needed soil amendments and any presence of contaminants and/or soil sterilants to ensure better survival of new plantings. Contractor shall allow sufficient time in the construction schedule to complete the bioassay tests and any subsequent mitigation should it be required. At least one test per median shall be conducted; and conducted on soil that will remain in place for planting. Samples shall be taken from 6' minimum depth of soil that is proposed to remain in place. Contractor shall record location of sample taken on As Built drawings with date and lab performing testing and analysis. Lab results shall be provided to owner or owner's representative, via hard copy or email at time received by the contractor. Lab test reports shall indicate the soils lab, name of lab technician and descriptive locations where samples were taken which correspond to the As Built plans.

Should any conflicts arise between soils lab report and plans, the project landscape architect shall be contacted for clarification. Contractor shall submit corrective materials and quantities for all amendments needed which need to be added to the project.

Inform project inspector 48 hours prior to performing tilling operations. All materials to be tilled in shall be available for inspection to assure proper quantities and procedures. Delivery tickets for all materials shall be required to be provided to indicate date of delivery, material, cost, source, and quantity to receive payment approval for these items. Pre-packaged materials shall be stored in original packaging until incorporation. Compact planter soil to 85% and adjust grade as necessary by providing additional planter soil.

Materials:

Pre-emergent Herbicide: Provide 40.4 percent oryzlin and 59.6 percent inert ingredients, or 75% dimethyl tetrachloroterephthalate and 25 percent inert ingredients, applied in accordance with manufacturer's instructions. Surflan or equal.

Round-Up or approved equal for weed and/or grass control on existing weeds for the duration of construction and maintenance and guarantee period.

Commercial Fertilizer: Complete fertilizer of neutral character, with 50% of elements derived from organic sources and containing not less than 16% total nitrogen, 20% available phosphoric acid and 0% soluble potash. Ammonium Phosphate: Commercial product with an N-P-K value of 16-20-0. Incorporate into planting area soil at minimum rate of 2 pounds per 1000 sf.. Additional quantity may be needed per soils lab report.

Gypsum: Calcium sulfate dehydrate as supplied and packaged for landscape use. Incorporate into planting area soil at 20 pounds per 1000 sf and into tree and shrub planting pits. Additional quantity may be needed per soils lab report.

Soil Sulphur: Elemental Sulphur (99.5% pure), commercially prepared so that 100% passes a 15 mesh screen and 50% passes a 50 mesh screen. Incorporate into planting area soil at 10 pounds per 1000 square feet. Additional quantity may be needed per soils lab report.

Planting Pit Mulch Backfill Mix

Tree and Shrub Backfill Mix: Imported mulch backfill mix for all at grade planting areas on site. Supplier shall be local and reputable as a provider of horticultural grade planting materials and soil amendments. Planter soil mix shall be as follows:

1. Components shall contain naturally aged and composted ponderosa pine bark, sawdust and gypsum. All components of soil mix shall be horticultural grade material.
2. PH of all components shall be between 5.5 and 7.5.
3. Soluble salts shall not exceed 1000.
4. Plasticity index shall be between 3 and 9 inclusive.

Backfill mix shall be obtained from a single source location. Supplier shall deliver to site as homogeneous mixture. Backfill Mix Certification: The contractor shall obtain current lab test results for the backfill mix, which are dated to align with construction, and any imported materials brought onto any segment of the project. Certification shall provide original source, supplier, and address for all materials.

Consider settlement and compaction and bring to level specified. Excess material shall be removed from job site.

Construction Requirements: Soil Testing, Preparation, Amendments, Backfill, Chemicals, and Fertilizers shall consist of ripping or tilling top soil to a minimum depth of 8" to loosen soil and remove materials larger than 2" from the soil profile. Incorporate soil amendments after soil is sufficiently loose so as to allow even distribution of the amendments specified at the rates given in the drawings. Water in all amendments prior to planting.

After sub grade is established per project plans and details, contractor shall incorporate soil amendments in accordance with lab test reports. Areas of the medians receiving plant materials shall be tilled to a minimum 8" depth. Soil preparation, amendments, and conditioners shall be added to the areas being tilled to fully incorporate the amendments for a homogenous mixture of soil and amendments. The Contractor shall be responsible to remove materials and debris not acceptable for horticultural purposes during this operation.

Measurement and Payment: Measurement and payment shall be made at the price bid per square foot the item to include all labor, materials, deliveries, lab tests, and equipment to complete the work to provide soil preparation, amendments, backfill, conditioners, chemicals, and fertilizers. Work shall create a level subgrade suitable for planting at the elevations provided on plan details and drawings.

Item 6 – Remove Existing Decomposed Granite, to be hauled to City Stockpile Yard

Description: Where existing granite is in excess of what is needed to complete a segment of the project per specified grades, the Contractor shall confirm with owner's representative that the excess quantity be delivered to the City's materials yard located at Bullard and Waddell.

Construction Requirements: Contractor shall provide labor and equipment to load, transport, and unload material at the designated location.

Measurement and Payment: Measurement and payment shall be made as an allowance for time and materials for the item Remove Existing Decomposed Granite to be hauled to city stockpile yard, if it is applicable.

Item 7 – Sawcut and Remove and Replace Existing Asphalt Pavement per MAG Section 710 (To include vertical curb and gutter replacement as needed)

Description: The project involves providing connections to existing water and electrical services under existing asphalt pavement, curbs and gutters. The Contractor shall conduct relevant work for providing these connections with MAG Section 710 and other related sections, for operations to sawcut, remove, and replace existing asphalt pavement. Contractor shall remove, and replace vertical curb and gutter as needed to make the proper connections.

Measurement and Payment:

Measurement and payment shall be made at the price bid per square yard for the item to include all labor, materials, deliveries, lab tests, and equipment to complete the work. No separate measurement and payment shall be made for removal and replacement of vertical curb and gutter if this work is done to make proper connections.

Item 8 – Trench Excavation Backfill and Compaction per MAG Section 601

Description: Trench sizes and depths, backfill materials and compaction shall be completed per MAG Section 601.

Measurement and Payment:

Measurement and payment shall be made at the price bid per linear foot for the item to include all labor, materials, deliveries, lab tests, compaction testing, and equipment to complete the work.

Item 9 – New Water Meter Service and Box 1", to include all Associated Development Fees

Description: The project requires application and installation of new water meters for landscape irrigation systems. The Contractor shall apply to appropriate agency for and coordinate all relevant work, communications, inspections and testing required to install new water meters, and include any fees or costs associated with water meter installation to include testing, applications, development fees, permits and inspections.

Construction Requirements:

Contractor shall provide labor and equipment to complete work to comply with MAG Section 631.

Measurement and Payment:

Measurement and payment shall be made at the price bid per each for the item, New Water Meter Service and Box, to include all labor, materials, deliveries, inspections, testing, and equipment to complete the work to provide new water meters.

There will no separate measurement and payment for water meter development fees as charged by any agency. Contractor is required to verify and pay for all fees associated with installation of the water meter.

Item 10 Relocate Existing Water Meter Service and Box 1"

Description: The contractor shall move an existing water meter a new location as noted on plans.

Construction Requirements:

The contractor shall provide and install a new copper service line to the new backflow prevention unit location per project plans and to comply with MAG Section 610.

Measurement and Payment:

Measurement and payment shall be made at the price bid per each for the item, Relocate Existing Water Meter Service and Box 1", to include all labor, materials, deliveries, inspections, and equipment to complete the work to relocate the existing water meter service and box.

Item 11 Type K Copper Pipe Water Service Line Includes: trenching, bedding, backfill, compaction & fittings per MAG

Description: The contractor shall extend the copper water service line from an existing water meter to the location for a new backflow prevention unit.

Construction Requirements:

The contractor shall provide and install a new copper service line to the new backflow prevention unit location per project plans and to comply with MAG Section 610.

Measurement and Payment:

Measurement and payment shall be made at the price bid per each for the item, Extend Water Meter Service Line, to include all labor, materials, deliveries, inspections, and equipment to complete the work to extend the water meter service line.

Items 12 Solar Controller 6 Station with Locking Pedestal Cabinet

Description: The contractor shall provide 6 station solar controllers in the quantity and locations as indicated on project plans.

Construction Requirements:

The contractor shall provide all materials, labor, and equipment for the solar controllers, to include: trenching, wire, in accordance with plans and manufacturer's requirements for positioning, footings, solar panels, cabinets, locks, pedestals, supports, testing of all relevant equipment, and approvals by owner. The solar panel shall be integral to the cabinet for the controller and delivered to the site complete and pre-installed by the manufacturer. Solar controllers shall include latching solenoids and soil sensors, one for shrubs and one for trees for each solar controller. Contractor to obtain approval for location of sensors and documents locations on As Built drawings.

Measurement and Payment:

Measurement and payment shall be made at the price bid per each for the items Solar Controllers 4 and 6 station with wire, to include all labor, materials, deliveries, inspections, testing, and coordination, completed warranty's and guarantees, and equipment to complete the work to install the solar controllers.

Items 13, 14, 15, 16 Electrical Centrally Operated Controllers and Cabinet, 6 Station, 12 Station & Wireless Solar and Soil Moisture Sensor

Description: The contractor shall provide 6 and 12 station electrical, centrally operated controllers, two wire systems, with decoders, and hand held decoder remote controls, manufacturer provided, in the quantity and locations as indicated on project plans. The contractor shall provide also solar/soil moisture sensors with sensor inputs on controllers and all connections and coordination for a compatible and complete controller system. Equipment and materials shall be compatible, installed, tested and supplied as recommended by the manufacturer. Controllers shall include wireless solar sync, and soil clik moisture sensors, one for shrubs and one for trees for each solar controller.

The contractor shall install the irrigation system in accordance with plans, details, and specifications to provide a complete operational system that delivers irrigation to all plant materials on the project. Materials and equipment for the entire system shall be submitted as part of the submittal packet for the project for approval. The contractor shall install materials and equipment which are approved for installation. Testing and review of materials and equipment shall be conducted throughout

construction. Materials and equipment not operating properly shall be replaced by the contractor for approval by the owner's representative. The contractor shall be responsible to contact manufacturer's representatives to acquire information regarding install, testing, and operation of all components.

Construction Requirements:

Section 440.9 Automatic Control System Installation: of the Standard Specifications is modified to add:

Wiring for valves and sensor to controller:

- Bury control wiring, between controller and electric valves in common trenches, strung as close as possible to main line pipe. Locate wires consistently below and to one side of pipe. If necessary, place wire in separate trenches. Obtain approval from City of Surprise for proposed location.
- Bundle wires at 10-foot intervals.
- Provide expansion loop at every electric control valve location (round valve box if needed). Form expansion loop by wrapping wire at least eight times around 3/4-inch pipe and withdrawing pipe to leave neatly coiled loop in round box.
- Make all splices and connections with a dry splice method.
- Install all control wire splices not occurring at control valve in separate round box.
- Install two wire system and decoders, 1 per valve.
- Provide decoder remote control unit per manufacturer.
- Install and test wireless solar and soil moisture sensors with irrigation system.
- Setup for controller system to operate with central irrigation system software programs as used by the City of Surprise.

The contractor shall provide all trenching, wire, materials, labor, and equipment for electrical centrally operated controllers in accordance with plans and manufacturer's requirements. Controllers shall be installed and include all work and materials for positioning, footings, pads, electrical connections, service entrance panels, sensor inputs, latching solenoids, wires and decoders, cabinets, locks, pedestals, conduits, supports, software installation/coordination with City system, communication ports, and testing, coordination with owner's representative for installation and software programming, testing of all relevant equipment, and approvals by owner. The contractor shall be responsible to make application to power company to acquire necessary power connections, panels, services, and addresses, and approvals by the power company.

The contractor shall install, confirm and demonstrate a complete and operational centrally controlled system that is compatible with the City of Surprise's centrally controlled system, including operation by remote controls, solar and soil sensors, and computer software methods.

Electrical Control Wiring: Low Voltage:

Electrical Control Wire, Connections and Splices: AWG UF UL approved No. 14 (1500 linear foot runs max) and No. 12 (2000 linear foot runs max) direct burial copper wire or larger, if required to operate system as designed.

Wire color system shall be as recommended by manufacturer for use with solar controller as approved.

Measurement and Payment:

Measurement and payment shall be made at the price bid per each for the items Electrically Centrally operated Controllers 6 and 12 station with wire, to include all labor, materials, deliveries, inspections, completed warranty's and guarantees, and equipment to complete the work to install the electrically centrally operated controllers.

Item 17 1" Reduced Pressure Backflow Prevention Unit and Enclosure with Concrete Pad

Description: The Contractor shall install backflow prevention units in accordance with City of Surprise details and specifications and project plans and details.

Construction Requirements: The contractor shall install, schedule, document and provide certification and testing for all backflow prevention units, including flow and pressure readings after installation of the water meters and prior to installing the irrigation system in accordance with project plans. The contractor shall notify the owner and/or owner's representative for the date, time and location where certification and testing will be conducted.

Pressure readings shall also be documented with date, time, and a photo of the pressure gauge for each backflow prevention unit. Notice of testing shall be provided 48 hours prior to conducting the test. Documentation of testing results shall be provided to the owner or owner's representative within 24-hours of conducting test.

The Contractor shall provide as part of the submittal packet a site specific list of water taps to be tested. The list shall be prepared as a log sheet and have spaces designated for test dates, results, and approvals/disapprovals, and acceptance. This information shall also be provided on final As-Built drawings for review and approval.

Measurement and Payment:

Measurement and payment shall be made at the price bid per each for the item backflow prevention unit and enclosure with concrete pad, to include all labor, materials, deliveries, inspections, completed warranty's and guarantees, and equipment to complete the work to install the electrically centrally operated controllers.

Items 18-33 Irrigation System

Description:

The irrigation system for the landscape shall consist of the items below and be installed per project plans and details:

1" Brass Master Valve
1" Sch 40 Flow Sensor
1" Remote Control Valve and Assembly w/Wye Strainer, Pressure Regulator, and Box (Purple)
1 ½" Sch 40 PVC Mainline (Purple)
1" Sch 40 PVC Irrigation Pipe (Purple)
¾" Sch 40 PVC Irrigation Pipe (Purple)
½" Sch 40 PVC Irrigation Pipe (Purple)
Metal Locator Tape
Flush Caps and 7" Round Box (Purple)
Pull Box for Wire, 7" Round Box (Purple)
Mainline Gate Valve and 10" Round Box (Purple)
Isolation Valve and Box for Lateral Lines (Purple)
Single Port Emitter and Riser Assembly w/Bug Cap
Multi-Port Port Emitter and Riser Assembly w/Bug Cap
4" Sch 40 PVC Irrigation Sleeve
3" Sch 40 PVC Irrigation Sleeve

Construction Requirements:

These items are for providing, installing and testing all irrigation system components as shown on the plans and equipment as specified, including application for water meters, installation of solar controllers, copper and PVC piping, sleeves, conduit, backflow prevention assemblies, enclosures, valves, valve boxes, pressure regulators, wye strainers, fittings, emitters, boxes, wiring and all other appurtenances for a fully functional irrigation system. Items of work include but are not limited to:

Confirmation and Blue Staking for the location for all existing utility lines and sources. Provision of connection to existing utilities for new irrigation system at locations as shown and approved by the City of Surprise.

Assurance that private systems adjacent to and affected by work are in operating condition and approved by adjacent property owner or designated representative at final completion.
Clean up, inspection, and adjustments for complete coverage.
Required regulatory tests, inspections, maintenance, and warranty.
Provision of As-Built Drawings in hard copy and electronic (PDF) format.
Completion of punch list, final walk through and acceptance.
Warranty and maintenance periods.

Materials: Conform to Section 440 and 757 of the MAG Standard Specifications, except as modified herein.

Section 440.3 Materials: of the Standard Specifications is modified to add:

General Piping:

Pressure Supply Line (from point of connection through backflow prevention unit): Type K, hard tempered Copper.
Pressure Supply Lines (downstream of backflow prevention units): Schedule 40 PVC.
All Lateral Piping: As shown on plans and colored purple.
Emitter Tubing: Per Detail – Not to exceed 5' in length.

Copper Pipe and Fittings:

Copper Pipe: Type K, hard tempered.
Fittings: Wrought copper, solder joint type.
Joints: Soldered with solder, 45% silver, 15% copper, 15% zinc and 24% cadmium and solids at 1125° F and liquids at 1145° F.

Brass Pipe and Fittings:

Brass Pipe: 85% red brass, ANSI Schedule 40 screwed pipe.
Fittings: Medium brass, screwed 125-pound class.

Plastic Pipe and Fittings:

Identify all pipes with the following indelible markings such as Manufacture's name, nominal pipe size, Schedule of class, Pressure Rating (PSI), NSF (National Sanitation Foundation) seal of approval, and Date of Extrusion.

Solvent Weld Pipe: Manufactured from virgin polyvinyl chloride (PVC) compound in accordance with ASTM D2241 and ASTM DI784; cell classification 12454-B, Type 1, Grade

Pipe shall be purple.

Fittings: Standard weight, Schedule 80, injection molded PVC; complying with ASTM DI784 and D2466, cell classification 12454-B.
Threads: Injection molded type (where required).
Tees and ells: Side gated
Threaded Nipples: ASTM D2464, Schedule 80 with molded threads.
Joint Cement and Primer: Type as recommended by manufacturer of pipe and fittings.

Low Pressure/Volume Systems:

Fittings: Type and make recommended by tubing manufacturer.
Drip Emitter Assembly to include solenoid valve, wye strainer, and pressure regulator as one unit as manufactured and supplied by the manufacturer. Hunter Industries or approved equal.
Emitter: Single and Multiport, by Bowsmith or approved equal. Type, size and placement as shown on drawings.

Valve Boxes and Hardware:

For pull boxes for control wiring splices: round boxes manufactured by Carson Industries, or approved equal. All in-ground boxes with shall be colored purple for reclaimed water use in the future.

Valve lids shall have bolt down tops and stainless steel hardware. Provide submittal and proof of stainless steel hardware with submittals and at time of installation.

For valves, wye strainers and pressure regulator assembly, jumbo size rectangular boxes as manufactured by Carson Industries, or approved equal. Only one valve will be approved per box.

For pull boxes for control wiring splices: As manufactured by Carson Industries, or approved equal with stainless steel hardware.

Section 440.5 Trench Excavation and Backfill: of the Standard Specifications is modified to add:

Do not begin backfilling operations until required system tests have been completed.

Provide material and compact to assure flush grades after settlement. Level finish grade at trenches before placement of decomposed granite.

Material not suitable for backfill shall be hauled away. Provide non-toxic and suitable backfill if excavated material is unacceptable or not sufficient to meet backfill, compaction and final grade requirements.

Do not leave trenches open more than 48 hours. Protect excavations in compliance with OSHA regulations.

Compact backfill to 85% maximum density, determined in accordance with ASTM D155-7, utilizing the following methods:

- Mechanical tamping.
- Puddling or ponding and/or jetting is prohibited.

Section 440.6 Pipe installation: of the Standard Specifications is modified to add:

PVC Piping: Snake pipe in trench as much as possible to allow for expansion and contraction. Do not install pipe when air temperature is below 40°F. Place manual drain valves or flush caps at low points and dead ends of pressure supply piping to ensure complete drainage of system. When pipe laying is

not in progress, or at end of each day, close pipe ends with tight plug or cap.

Solvent Weld PVC Pipe: Lay pipe and make all plastic to plastic joints in accordance with manufacturer's recommendations.

PVC Primer: Specifically formulated for pipe and type of connection, as recommended by pipe manufacturer. Deliver in new and unopened containers. Solvent welds shall be allowed to cure at least 24 hours before testing. Potable water supply shall be used for all testing.

Sleeves: All piping under paving shall be sleeved with minimum 3" schedule 40 sleeve as noted and detailed. Contractor shall up size sleeves if pipe cannot move freely inside sleeves. Do not install couplings and fittings on pipe that runs through sleeves.

Install sleeves and pipe at depth required by local codes. Compact backfill material in 6 inch lifts. Set in place, cap and pressure test all piping under paving, in presence of Owner's Representative prior to backfilling and paving operations.

For pipe fittings up to and including 2 ½", fittings and couplings are slip fitting tapered socket solvent weld type. Tapered socket solvent weld fittings are Schedule 80, or equal to or greater than schedule and pressure rating of plastic pipe being joined.

Size tapered fittings so dry, un-softened taper cannot be inserted more than halfway into socket. Plastic saddles and flange fittings are not permitted.

Section 440.7 Valves, Valve Boxes, and Special Equipment Installation and Section 440.8 Sprinkler Head Installation and Adjustment of the Standard Specifications are modified to add:

Place BFPU, irrigation equipment and controller with coordination and approval with other trades and with owner.

Valve Boxes:

Install one valve box for each type of valve installed as detailed. Valve box extensions are not acceptable except for master valves if needed. Cutting of valve boxes is not allowed. Install pea gravel sump after compaction of all trenches. Place final portion of gravel inside valve box after valve box is backfilled and compacted.

Valve boxes shall be molded non-corrosive plastic, ASTM D638, D-356.
Brand or rout controller letter and station number of lid on each valve box. Letter and number size: 1 inch to 1-1/2 inches. Depth of branding 1/8 inch into valve box lid. Create consistently sized and appearing letters that are clearly readable.

Electric Control Valves: Install at depth below finished grade and box lid, and above pea gravel as shown on drawings and as detailed. When grouped together, allow no more than 12 inches between valve boxes. Install each remote control valve in a separate valve box. Install individual valve box flush with ground and perpendicular (longitudinally) to adjacent curb. Secure approval from Owner for valve box locations and positioning prior to installation. Place clean pea gravel in bottom of each box below valve, a minimum of 2 cubic feet.

Include brick supports, one at each valve box corner.

Provide stainless steel hardware and certification that hardware is stainless steel (i.e. bolts and washers) to secure all lids to boxes.

Drip Valve Assemblies: Install drip valve assembly as detailed with minimum 2 cubic feet of pea gravel in bottom of valve box.

Drip Emitters: Place emitters as detailed. Flag each plant location to direct placement of emitters and provide layout for all plant materials. Use different color flags for trees. Secure owner's acceptance for plant locations prior to completing irrigation system installation. Use multi-port emitters for trees and shrubs. Add single ports as needed to provide irrigation to all installed plant material.

Section 440.10 Flushing and Testing: of the Standard Specifications is modified to add:

Construction Review: The owner's representative shall periodically observe work in progress and the contractor' interpretation of the construction documents and to address questions with regards to the installation.

The contractor shall schedule reviews for irrigation system layout and testing prior to covering work and prior to backfilling around trees. Impromptu reviews by owner or owner's representative may occur at any time during the project. Final review will occur at the completion of the irrigation system installation and As-Built Drawing submittals. The contractor is responsible maintain As-Built Drawings on a daily basis for review by the owner's representative. As-Built drawings shall be provided in hard copy and electronic on a compact disc (CD) prior to project acceptance. CD shall be labeled with client name, project name, number and date.

Flushing: After piping, risers, and valves are in place and connected, before installation of distribution equipment, thoroughly flush piping system from dead end fittings under full head of water pressure. Maintain flushing for ten minutes through furthermost valves. Cap risers after flushing.

Testing: Notify owner representative in advance of all testing. Supply force pump and all other test equipment as needed.

After backfilling and installation of all control valves, fill pressure supply line with water and pressurize to 40 PSI over designated static pressure or 120 PSI, whichever is greater, for two hours. All pressure tests shall be done with PITO tube and gauge.

Leakage/Pressure Loss: Test is acceptable if no leakage or loss of pressure is evident during test period. Leakage will be detected and documented by inspection with system in full operation. Replace defective pipe, fitting, joint, valve or appurtenance. Cement of caulking to seal leaks will not be allowed. Repeat testing until the pipe is approved by the owner's Representative.

Retest system until test pressure can be maintained for duration of tests. Before final acceptance, pressure supply line shall remain under pressure for 48 hours. Record and document time and date for all pressure testing whether or not the owner is able to be present. Photographs of pressure readings are acceptable with a time date stamp. Provide readings to owner as soon as complete via email. Include pressure readings and documentation as part of the close out documents.

Final Acceptance: Upon completion of installation, "fine-tune" entire system by regulating valves, adjusting patterns and break-up arms, and setting pressure reducing vales at proper and similar pressure to provide optimum and efficient coverage. Flush and adjust distribution heads for optimum performance and to prevent overspray onto walks, roadways and buildings. Heads of same type shall be operating at same pressure. Make all adjustments before Final Acceptance, as directed. Arrange for owner's representative's presence 48 hours in advance of walk-through. Show evidence to owner's representative that owner has received all accessories, charts, testing documentation, and equipment as required.

Operate each zone in sequence from controllers, using remotes if available, for owner's representative at time of walk-through to insure correction of all incomplete items. The owner's representative will

visually observe operation, water application patterns and leakage. Adjust items deemed not acceptable by owner's representative. Owner's representative will do only one final acceptance walk-through. Set irrigation clock appropriate for season. Provide schedule of clock operation including each station, run time, run duration and frequency of irrigation.

Measurement and Payment

Measurement and payment shall be made at the price bid per each for the items comprising the irrigation system. Measurement and payment shall include all labor, materials, deliveries, inspections, completed warranties and guarantees, and equipment to complete the work to install a complete irrigation system.

Items 34–36 Plant Materials

Description:

Plant materials shall consist of types and sizes as indicated on the project plans and details:

Shrubs 3 Gallon
Shrubs 5 Gallon
2" Caliper Trees (container size per ANA Standards)

Description: These items are for furnishing all labor, materials, supplies, equipment, tools and transportation, to perform all operations to complete installation of landscape planting as shown on drawings and as specified. Items of work include but are not limited to:

- Procurement of all applicable licenses, permits, and fees.
- Coordinate all work with other contractors.
- Preparation of existing soil in all landscape areas to include tilling, grading for swales, and preparation of soil for addition of amendments and construction of aggregate profile per plans.
- Contractor to perform soils investigation to include agronomy and bioassay tests to verify needed soil amendments and any presence of contaminants and/or soil sterilants to ensure better survival of new plantings. Contractor shall allow sufficient time in the construction schedule to complete the bioassay tests and any subsequent mitigation should it be required. At least one test per median should be conducted; and conducted on the soil that will remain in place for planting. Should any conflicts arise between the soils investigation report and these plans, the project landscape architect shall be contacted for clarification
  Import soil mix, amendments, and aggregates, in types and quantities for project that have been certified and tested by an independent, local lab specializing in testing of planter soil mix for horticultural use.
- Provide fertilizers and other backfill materials in original packaging with current labels.
- Application of pre-emergent (2 applications) herbicide per label instructions by Certified Pesticide Applicator and in accordance with State Regulations.
  Application of weed killer per label instructions by Certified Pesticide Applicator in accordance with State Regulations.
- Installation/application of backfill planting soil mix and amendments per details and specifications.
- Construct aggregate profile per layout and depths on project plans.
- Fine grading of all landscape areas.
- Installation of plant materials.
- Apply second application of pre-emergent.

Materials: Conform to Section 430 and 795 of the MAG Standard Specifications, except as modified herein.

Construction Requirements:

The contractor shall install plant materials in accordance with plans, details, and specifications. A plant materials list proposed shall be submitted as part of the submittal packet for the project for approval. The contractor shall install plant materials which have been approved for installation prior to delivery to the site.

The contractor shall locate, tag, and otherwise secure all plant materials at the time of construction award. The list of the plant materials shall include: source, address, and contact name and phone number for each plant type. It is the contractor's responsibility to verify that selected plant materials are available in the size, type, species, variety, and quality to comply with project plans and details.

The contractor shall notify owner's representative when all plants are located so an inspection and tagging can be performed.

Trees, Shrubs, Groundcover, and Accents: Provide trees, shrubs, groundcovers, and accents of quantity, size, genus, species and variety shown and scheduled for landscape work and complying with recommendations and requirements of references. Provide healthy, vigorous stock, grown in a recognized nursery in accordance with good horticultural practice, and free of disease, fungus, root-bound condition, insects, eggs, larvae and defects such as knots, sunscald, injuries, abrasions or disfigurement.

Do not prune plants before delivery. Trees with damaged or crooked leaders or multiple leaders (unless specified) will be rejected. Trees with fresh cuts of limbs over ¾" which have not completely calloused will be rejected. Provide copy of delivery ticket for each source for all plant material.

Label each plant with securely attached waterproof tag bearing legible designation of botanical and common name, including variety or cultivar. Delivery tickets and purchase orders verifying quantities of plants planted on this project will be required for payment on plant material items.

Stakes and Wire Ties: Provide stakes of sound new 2" diameter x 10' cedar, redwood or Lodge pole pine, free of knotholes and other defects. Provide wire ties of 2-strand, twisted, pliable zinc coated galvanized iron wire not lighter than 12 gauge. Provide not less than 2" diameter reinforced rubber or plastic hose, cut to required lengths and of uniform color, material and size to protect tree trunks from damage by wires. Place stakes and trim stakes as required avoiding contact with limbs and trunk(s). Do not drive stake through root balls. Place stakes in position and quantity shown on details.

Layout for Plant Materials: Layout plant locations and re-stake if necessary per layout approved with irrigation installation. Secure Owner's Representative acceptance before start of planting. Make minor adjustments to plant locations on site as requested by Owner's Representative.

Setting and Backfilling for Trees, Shrubs and Accents: Set plant material stock plumb and in center of pit with top of ball at elevation necessary to accomplish finished landscape grades as per details. Remove pallets or containers before setting. Cut cans on two sides with a metal cutter or other cutting device; remove bottoms of wooden boxes before setting. Do not use spade to cut cans. Do not handle container plants by foliage, branches or trunks.

After removing plant from container, lightly scarify side of rootball to eliminate root-bound condition.

Do not use nursery stock if ball is cracked or broken before or during planting operation. When set, place additional backfill around base and sides of ball. Work each layer to settle backfill and eliminate voids and air pockets. When excavation is approximately two-thirds full, water thoroughly before placing remainder of backfill. Repeat watering until no more is absorbed. Water again after placing final layer of backfill. Do not set so top of rootball is below top of subgrade.

Include all fertilizing materials and other amendments in backfill mix. Do not apply to top of soil surface. Obtain inspection for procedures and materials as described in 3.02 B.

Remove all nursery plant labels and nursery stakes from plants.

Prune plants only if directed by Owner's Representative.

Stake all trees as shown on details. Set stakes vertical and space to avoid penetrating root balls or root masses. Allow enough slack to avoid rigid restraint of tree.

Begin maintenance of plant material.

Measurement and Payment

Measurement and payment shall be made at the price bid per each for the plant materials at the size per plans. Materials, equipment, labor, including staking and backfill shall be considered incidental with no additional payment made. Measurement and payment shall include all labor, materials, deliveries, inspections, and equipment to complete the work to install plant materials. Refer also to specifications for Plant Establishment, Maintenance and Guarantee Period.

Items 37-40 Decomposed Granites and Rock

Description:

½" Screened Desert Brown Decomposed Granite
½" Screened Madison Gold Decomposed Granite
1 ½" – 3" Pit Run Rock, Desert Brown where median noses are less than 4' wide
1 ½" – 3" Pit Run Rock, Madison Gold where median noses are less than 4' wide

Construction Requirements:

The contractor shall install rock items (decomposed granite and pit run rock) in accordance with plans, details, and specifications. Rock material samples shall be submitted as part of the submittal packet for the project for approval. The contractor shall install rock materials which have been approved for installation prior to delivery to the site.

The contractor shall locate and secure all rock materials at the time of construction award. The submittal packet for rock items shall include: source, address, and contact name and phone number for each rock type. It is the contractor's responsibility to verify that selected rock materials are available in the size, type, color, and quantity to comply with project plans and details.

Decomposed granite color and gradation shall be as shown on drawings. Color to be approved by Owner's Representative. Provide decomposed granite with no lumps or balls of clay, caliche, organic matter, calcareous coating or any substance deleterious to plant life. Submit sample as required by these specifications.

Once area designated to receive decomposed granite or pit run rock, has been graded, compacted to proper level, and accepted, apply one application of pre-emergent to area and thoroughly water in. After first application of pre-emergent herbicide, install decomposed granite and pit run rock. Place decomposed granite and pit run rock in landscape areas as noted on drawings and water settle. After water settling, rake to provide uniform smooth surface. Remove decomposed granite, which in the opinion of Owner's Representative, has undesirable contaminants. Add decomposed granite to areas that are thin. Do second application of pre-emergent to decomposed granite and pit run rock area and

thoroughly water in. Decomposed granite shall be spread to consistent depth and level below all tops of adjacent planters or sidewalks. Delivery tickets and purchase orders will be required for material delivered and purchased for this project for payment.

Measurement and Payment

Measurement and payment shall be made at the price bid per each for the rock materials per plans. Materials, equipment, labor, including pre-emergent applications (2) shall be considered incidental and covered by a separate item, with no additional payment made.

Item 41- Plant Establishment Maintenance and Guarantee Period

Description:

The Contractor shall maintain the landscape areas for 6-months after the Final Completion date is established.

Construction Requirements:

The site shall be maintained continuously as areas are completed during construction and after Final Completion. Personnel shall be provided to keep the site free of debris, keep the site free of weeds using chemical controls, applying fertilization at the proper time, and cultivating planted areas.

Plants shall be kept in healthy and growing condition by watering, removing weeds, and pruning only as needed to prevent conflicts with pedestrians and vehicles. The site shall be inspected at a minimum of once per week for maintenance considerations by the Contractor's superintendent and a written weekly comprehensive maintenance report provided to the Owner's representative.

The irrigation system shall be maintained by making any necessary repairs regardless of cause, to assure a complete and operational system as originally constructed. Repairs shall be made immediately upon detection of a malfunction. The Contractor shall be responsible to provide proper protection for pedestrians and vehicles in the case of water runoff onto paved surfaces. The entire irrigation system shall be tested weekly and reported in the weekly maintenance report.

The Contractor shall provide 48 hours advance notification for all chemical applications. The Owner's Representative shall provide approval for all applications prior to spraying. The Contractor shall take necessary precautions to protect the public or other users from chemical drift or overspray. Spraying shall be done during times of low site occupation and when it is not windy.

Chemical applications shall be performed by a Certified Pesticide Applicator and in accordance with State Regulations. The contractor shall provide the name of the chemical being sprayed, application rate, date and time of application.

Plant materials shall be replaced within one week of detection of their demise, death, or decline in condition for any reason. Replacement of plant material shall be tracked in the weekly maintenance report.

Open pits shall be filled in immediately by the Contractor if plants are removed for any reason at any time.

Replace plants lost to frost or heat/sun damage during guarantee period at no additional cost to the City of Surprise. There is no limit to number of replacements due to frost damage. Contractor is responsible for complete removal of undesirable species such as but not limited to: Dallas, Bermuda, Johnson, and Nut Grasses or other undesirable weeds from the project area. Chemicals for nutgrass shall be pre-approved.

Replenish decomposed granite to match project in planting areas to remain so there is a 2" depth consistent throughout. This replenishing shall occur as needed and within seven days if notification is given by owner. Project shall have 2" consistent depth of d.g. at the end of the one year maintenance period.

Re-stake trees as necessary to maintain proper support. Remove stakes only if directed by City of Surprise. If stakes are removed, fill cavity with clean soil only, not decomposed granite.

Guarantee Period

Guarantee all work for planting and irrigation for one year from date of Final Acceptance against defects including death and unsatisfactory growth, except for defects resulting from unusual phenomena or incidents beyond Contractor's control. Loss due to frost shall not be considered unusual phenomena. Contractor is responsible to protect plant materials from loss due to freeze throughout the one-year guarantee period.

Remove and replace trees and shrubs or other plants found to be dead or in unhealthy condition at any time during guarantee period or as directed by Owner's Representative.

Replace plants in doubtful condition during guarantee period, within seven days of plant's demise or notification thereof. Replacement of plants shall be tracked in the weekly maintenance report.

Final payment for project maintenance will not be made until plants and project are approved and accepted by Owner.

Measurement and Payment

Measurement and payment shall be made at the unit price bid for the item Plant Establishment, Maintenance and Guarantee Period.

Add Alternate Bid Item 1 – 4"x8" Decorative Pavers

Alternate item quoted on the bid form will be reviewed and accepted or rejected at the Owner's option. Accepted alternates will be identified in final Owner Contract Agreement.

Coordinate related work and modify surrounding work as required.

Add Alternate 1 Bid Item

State a bid item price to provide 4"x8" Holland Stone Antique Terra Cotta by Pavestone, (or approved equal) pavers installed over prepared compacted grade and on slurry mix per detail. Slurry mix shall serve as the base course for decorative pavement, where installed, and consist of a cement enriched aggregate base slurry with one sack Type II Portland cement per cubic yard of aggregate base course material. Aggregate base slurry shall be installed over sub-grade soil compacted to a minimum of 95% density. The surface elevation of the aggregate base slurry shall be set to bring the 1-inch sand laying course, plus the thickness of the paving stones or bricks to the desired finish elevation of the decorative pavement. The surface of the aggregate abase slurry shall not vary more than 1/8" in 10 feet.

If selected by the Owner, decorative pavers shall be installed in place of, pit run rock in median noses where noted on plans. Pavers shall be cut to size as needed. Soil compaction test results and proposed mix for slurry will be required for review and approval prior to installation of paver areas.

Measurement and Payment will be made at the unit price bid per square foot for this item if selected by the Owner.

Add Alternate Bid Item 2 – 8"x8" Concrete Header (At End of Each Section of Pavers)

Alternate item quoted on the bid form will be reviewed and accepted or rejected at the Owner's option. Accepted alternates will be identified in Owner Contract Agreement.

Coordinate related work and modify surrounding work as required.

Add Alternate 2 Bid Item

State a bid item price to provide 8"x8" gray concrete curb, materials per MAG Detail 222 Type B-modified per detail on drawing. Curb shall be formed and poured on grade set per detail provided in drawing and at edges of paver installation in median noses. Provide mix for approval with project submittals.

If selected by the Owner, concrete curbs shall be installed at the ends of all decorative paver installation, over compacted subgrade.

Measurement and Payment will be made at the unit price bid per linear foot for this time if selected by the Owner.

Deduct Alternate Bid Item 1 – Shrub 3 Gallon

Alternate item quoted on the bid form will be reviewed and accepted or rejected at the Owner's option. Accepted alternates will be identified in final Owner Contract Agreement.

Coordinate related work and modify surrounding work as required.

Deduct Alternate 1 Bid Item

If selected by the Owner, decorative pavers shall be installed in place of, 3 gallon shrubs in median noses where noted on plans. Pavers shall be cut to size as needed. Soil compaction test results and proposed mix for slurry will be required for review and approval prior to installation of paver areas.

Measurement and Deduction in price will be made at the unit price bid per each for this item if selected by the Owner.

Deduct Alternate Bid Item 2 – Multiport Emitter and Riser Assembly w/ Bug Cap

Alternate item quoted on the bid form will be reviewed and accepted or rejected at the Owner's option. Accepted alternates will be identified in Owner Contract Agreement.

Coordinate related work and modify surrounding work as required.

Deduct Alternate 2 Bid Item

If selected by the Owner, decorative pavers shall be installed in place of, Multiport Emitter and Riser Assembly w/ Bug Cap in median noses where noted on plans. Pavers shall be cut to size as needed. Soil compaction test results and proposed mix for slurry will be required for review and approval prior to installation of paver areas.

Measurement and Deduction in price will be made at the unit price bid per each for this time if selected by the Owner.

Deduct Alternate Bid Item 3 – ¾" PVC Pipe

Alternate item quoted on the bid form will be reviewed and accepted or rejected at the Owner's option. Accepted alternates will be identified in final Owner Contract Agreement.

Coordinate related work and modify surrounding work as required.

Deduct Alternate 3 Bid Item

If selected by the Owner, decorative pavers shall be installed in place of, ¾" PVC Pipe in median noses where noted on plans. Pavers shall be cut to size as needed. Soil compaction test results and proposed mix for slurry will be required for review and approval prior to installation of paver areas.

Measurement and Deduction in price will be made at the unit price bid per linear foot for this item if selected by the Owner.

End of Special Provisions