TECHNICAL PROVISIONS AND SPECIFICATIONS
FOR

MILLER ROAD – LOWER BUCKEYE ROAD TO PIMA STREET ROADWAY IMPROVEMENTS

Buckeye Project No.: 105260

MARCH 2024

PREPARED FOR:

BUCKEYE, AZ

Prepared By:

Kimley»Horn

1001 W Southern Ave, Unit 131
Mesa, Arizona 85210
Phone: 480-207-2666 and Fax: 602-944-7423

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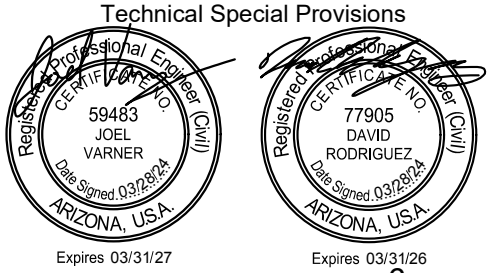

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PART A: SCOPE OF WORK

GENERAL

This project is located in the City of Buckeye. The limits of improvements are from Miller Road from Lower Buckeye Road to Pima Street and Lower Buckeye Road from 1,000 feet west of Miller Road to 1,200 feet east of Miller Road. The work consists of constructing grading for new roadway alignment and profile, pavement, curb, gutter, drainage, street lighting, new traffic signal at Miller Road and Lower Buckeye Road and accompanying power service, signing, pavement marking, APS overhead relocations, signal interconnect conduit, and sewer stubs as shown in the project plans.

The work described in these Special Provisions and shown on the plans for this project shall be performed in accordance with the current City of Buckeye Engineering Design Standards and Standard Details Supplement, Maricopa Association of Governments (MAG) Uniform Standard Specifications for Public Works Construction, and these special provisions.

In the event a conflict exists on the plans or between the plans and referenced specifications or these construction special conditions, then the most stringent requirement shall apply. The order of precedence shall be as follows:

1. Written direction from the City of Buckeye, Engineer, or their authorized representative
2. These special provisions
3. City of Buckeye Standard Details (Latest Edition) and City of Buckeye Engineering Design Standards (Latest Edition)
4. Construction Plans
5. Uniform Standard Specifications for Public Works Construction (2023 Edition) sponsored and distributed by the Maricopa Association of Governments (MAG) Arizona along with the MAG Uniform Standard Details
6. MCDOT Supplement to the MAG Uniform Standard Specifications for Public Works Construction (2023 Edition)
7. ADOT Standard Specifications for Road and Bridge Construction 2021

Full and safe access shall be provided during major events.

No night work may be planned adjacent to residential areas.

Ensure no stoppage of traffic, no full intersection or full driveway closures shall be permitted by the City. One lane of traffic and access in each direction shall be maintained at a minimum during length of construction. Always maintain access to driveways and onsite flow of traffic. All restrictions shall be approved by the City Engineer or their authorized Representativeprior to start of construction.

For hazard protection, a concrete barrier or other pre-approved device shall be used where the new trench construction or other hazard is in close proximity to the traffic flow.

Construction activity generated noise higher than existing ambient level shall be adequately mitigated to prevent public inconvenience.

Provide safe, ADAAG accessible/compliant pedestrian access where access currently exists, or where access is re-routed as necessary to accommodate construction activities. Temporary concrete barrier or other pre-approved devices shall be used to protect pedestrians from traffic or where the new construction is in close proximity with a City approved temporary traffic control plan.

The Contractor shall be prepared to meet with the local businesses, schools, residents, and/or property owners to resolve traffic control issues on a weekly basis, either by having a separate field meeting or by inviting them to the regular weekly construction meeting.

Contractor shall provide sturdy, secure & closed off temporary fencing at any locations where site walls/fences cannot be removed and reconstructed same day. This work shall be incidental to the project.

A Storm Water Pollution Prevention Plan (SWPPP) shall be developed and the necessary permit from Arizona Department of Environmental Quality (ADEQ) shall be obtained prior to beginning of any construction activity.

Final erosion control/soil stabilization/seeding shall not be installed until all construction items are complete and no areas are anticipated to be disturbed.

CONTRACT STANDARD SPECIFICATIONS AND DRAWINGS

The following Standard Specifications and Standard Drawings referenced in the project contract documents are required for construction of this project:

1. City of Buckeye Engineering Design Standards (Latest Edition)
2. City of Buckeye Standard Details (Latest Edition)
3. Maricopa Association of Governments Uniform Standard Specifications for Public Works Construction (Latest Edition)
4. Maricopa Association of Governments Uniform Standard Details for Public Works Construction (Latest Edition)
5. Manual on Uniform Traffic Control Devices (Latest Edition)
6. Maricopa County Department of Transportation Supplement to the Maricopa Association of Governments Uniform Standard Details for Public Works Construction (Latest Edition)
7. ADOT Standard Specifications for Road and Bridge Construction (Latest Edition)

8. ADOT Traffic Signal and Lighting Standard Drawings (Latest Edition)

LOCATION OF THE WORK

This project is located in portions of Sections 17, 18, 19, & 20, Township 1 North, Range 3 West of the Gila and Salt River Base and Meridian, Maricopa County, Arizona at the intersection of Miller Road and Lower Buckeye Road.

PART B: GENERAL INFORMATION (MILLER ROAD – LOWER BUCKEYE ROAD TO PIMA STREET)

SUBGRADE PREPARATION

MAG Section 301.7 is revised to read:

Measurement for grading under pavement will not be measured separately.

MAG Section 31.8 is replaced with the following:

Payment for subgrade preparation shall be included in the cost of the items of ABC or asphalt pavement (refer to plans and these special provisions). This includes areas of excavation, fill or anywhere existing dirt or paved roadways exist.

There will be no separate measurement and payment for grading and surface preparation of areas outside of roadway pavement, the work being included in the cost of adjacent work items.

ROADWAY EXCAVATION

Conform to MAG Section 205 except as modified herein.

Replace Section 205.1 Description with the following:

Roadway excavation shall consist of excavation or fill construction required or part of the grading and construction of roadways, sidewalks, ramps, medians, scuppers, spillways, driveways, driveway tie-ins, private drives, maintenance roads, matching existing behind back of walks, adjacent to existing parcels, or at edges of pavement (except for retention basins and roadside swales/ditches), & restoring landscape areas. Contractor is responsible for utilizing material from excavations (from or for roadway & drainage) or new material in the construction of roadway structural sections in fill construction situations. Roadway excavation includes finished grading against all hardscape items, such as curb, sidewalk, edge of pavement, headwalls, ramps, driveways, pull boxes, equipment, equipment pads, pole foundations, utility vaults/manholes/valves, etc. and shall extend to any and all tie-in or match existing grades/locations. Work under this item shall be level with back of walk grade.

All stockpile/compaction work for excess material and/or any haul off (including dump fees) is included in this section. Excavated material from retention basin, wash, roadside swale, etc. shall be utilized for roadway excavation/grading. Excess material should be stockpiled relatively close to where excavation occurred. Contractor shall contact landowners adjacent to excavation and receive permission of where to place stockpile materials prior to hauling the material to another location. Placement shall not adversely impact the existing condition, specifically drainage patters,

and shall be placed, compacted, moisture conditioned, etc. per City of Buckeye requirements or MAG Specifications.

No separate Measurement or Payment for roadway excavations shall be included in the Contractor's bid. The costs shall be considered in the price bid for the construction or installations of the items that roadway excavation is incidental or appurtenant for the completion of that construction item.

SECTION 105 CONTROL OF WORK

105.6 COOPERATION WITH UTILITIES

Add the following:

The locations of existing underground utilities are shown on the plans to the best of the Design Engineer's knowledge from information provided by respective utilities or discovered in the field. 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 shall be protected, not damaged or dislocated and may be adjusted with prior utility agency approval; without delay to the Contractor's project schedule.

The City will 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. The Contractor's bid shall allow for and include the above coordination/work/adjustments based on the best available information known/provided in bid documents.

The Contractor shall coordinate unresolved conflicts with the owning utility and the City's Construction Coordinator prior to the construction of the proposed improvements.

The Contractor will investigate and pothole as necessary to verify the location of underground utility facilities ahead of construction activities. Locations of utility facilities shown on drawings furnished by the City are to be regarded as preliminary information only, subject to further investigation by the Contractor. The City and Design Engineer do not warrant the accuracy of these locations, and the Contractor, by entering into this Contract, expressly waives and disclaims any claim or action against the City or Design Engineer under any theory for damage resulting from location of utility facilities.

The Contractor shall be responsible for obtaining all Blue Stake utility location information, and for performing all requirements as prescribed in A.R.S. 40-360.21 through A.R.S. 40-360.29, for all underground facilities, including those that have been installed on the current project, until the project is accepted by the City.

At least two (2) working days prior to commencing any excavation, the Contractor shall call the Blue Stake Center, between the hours of 7:00 a.m. and 4:30 p.m., Monday through Friday, for information relative to the location of buried facilities. The number to be called is as follows: Maricopa County, (602) 263-1100.

Failure to contact the Blue Stake Center may result in violations of A.R.S. SS 40-360.21 and A.R.S. SS 40-360.22A.

Contacts: The following utilities are expected to be located within the limits of this project. The information below is provided for the Contractor to contact the appropriate personnel:

Utility Company	Contact Person	Phone
City of Buckeye Water & Sewer	N/A	(623) 349-6800
Arizona Public Service (APS) – Electrical	Bobby Garza	(602) 371-7546
CenturyLink (Lumen)	John Nevlis	(602) 579-1105
Cox Communications	Nancy Manns	(623) 328-3884
Salt River Project (SRP) - Transmission	Henry Soliz	(602) 236-0890
Western Arizona Power Administration (WAPA) - Transmission	Rodney Fehlman	(602) 605-2468

Coordination: Construction activities shall be coordinated and scheduled to incorporate applicable utility construction or adjustment activities. Payment will not be made to the Contractor for delays to the Contractor's schedule due to delays resulting from utility relocations. The following activities shall be incorporated:

Arizona Public Service (APS)

APS owns overhead 12kV and 69kV electrical facilities that generally run north-south on the east side of Miller Road as shown on the project plans.

The project will require the relocation of the 12kV and 69kV lines outside of the right-of-way within the roadway improvement limits. The project will include a new primary line to provide traffic signal service for the intersection of Miller Road and Lower Buckeye Road. The project will include

installation of new APS street lighting conduit on the east side of Miller Road as shown on the project plans.

APS meter installation, underground service, trenching, grounding, and bonding, and other requirements can be found in the Electrical Service Requirements Manual (ESRM) which can be accessed at the web address below:

https://www.aps.com/esrm

All fencing and gates shall be grounded inside APS and USBR easements and shall match the fencing and grounding detail provided in the plans. No trees shall be installed in the APS easement. Minimum OSHA safe working distances shall be maintained at all times (see OSHA Standard 1926.1408). Full overhead safety requirements are in the APS Safety Letter provided in **Appendix D**. **No work can be done until safe work arrangements have been made with APS.** All references and standards to be provided by APS upon request.

To be provided and installed by the Contractor:

- Trench and conduit installation, including APS primary conduit, APS street lighting conduit, Cox Communications conduit, fiber optic conduit, pull boxes, tracer wire, pull tape, and installation of concrete pads as shown on the plans.

- Trench, conduit and pull boxes are shown in the project plans. Trench and conduit vary as described below and as shown on the project plans:

- All trench related work including, but not limited to, trenching, boring, backfill material and compaction shall be constructed per APS Transmission and Distribution Construction Standards section 86010, MAG section 601 and ADOT section 501, whichever is more stringent.

- All conduit, appurtenances and labor to install all associated conduit, including conduit sweeps, conduit caps, conduit plugs, primer, glue, conduit spacers, rebar, concrete encasement and mandrelling of the system. The conduit material requirements shall match those in the APS ESRM (Section 502). All conduits shown to be ending in energized APS equipment shall be stubbed 4 feet from either the equipment or the Blue Stake marking for underground electric cables in the vicinity. The conduit is to be capped and marked for APS crews to connect to equipment.

- All miscellaneous work including barricading, shoring, steel plating and traffic control shall be in accordance with City requirements and approved by the City prior to installation.

- Labor to install APS provided pull boxes and ground rods (or alternate grounding material).

- Construction centerline staking, all vertical control and staking of depth requirements for all APS equipment and trenches. Trench alignment and depths shall be adjusted to provide a minimum of twelve-inch vertical clearance from proposed utilities and two-foot vertical clearance from existing utility conflicts.

To be provided by APS and installed by the Contractor:

- Street light related materials limited to ground rods (or alternate grounding material), secondary j-boxes, pull line, warning tape, plugs and electronic markers. The Contractor must schedule an appointment with APS warehouse for material pick up. Contract Bobby Garza at 602-371-7546.

To be provided and installed by APS:

- Survey for horizontal control of APS related trenching and equipment.
- Conduit system inspection for trench work and conduit installation.
- All trench, bell holes, and backfill as required to splice APS cables from the point at which the Contractor ended to the APS equipment cabinet.
- Connections to the Contractor's conduit after the system has been mandrelled and accepted.
- All conduit and sweeps from the point at which the Contractor installed conduit ends to the existing energized electrical equipment.
- Street lighting conductors
- Primary power service conductors

APS will be responsible for removal of existing APS power poles, power connections, primary conductors, traffic signal conductors, and street lighting conductors.

CenturyLink (Lumen)

CenturyLink has underground facilities that run along the east and west side of Miller Road and along the north side of Lower Buckeye Road. CenturyLink (Lumen) has an under-build facility along Miller Road that will need to be relocated. Existing CenturyLink (Lumen) pull boxes shall be relocated that are in conflict with improvements along Miller Road and along Lower Buckeye Road.

The Contractor shall invite CenturyLink (Lumen) to the overall pre-construction meeting (contact Mike Ambrosio at 602 614-3569) to determine safe working clearances prior to any construction activity in the immediate area.

To be provided and installed by the Contractor:

All conduit, conduit related material and labor to install all associated conduit, including conduit sweeps, conduit caps, conduit plugs, primer, glue, conduit spacers, and pull tape.

Cox Communications

Cox Communications has underground facilities that run along the east and west side of Miller Road.

Existing Cox Communications pull boxes shall be relocated that are in conflict with improvements along Miller Road and along Lower Buckeye Road.

The Contractor shall invite Cox Communications to the overall pre-construction meeting (contact Garette Golding at (888) 751-9138 to determine safe working clearances prior to any construction activity in the immediate area.

To be provided and installed by the Contractor:

All conduit, conduit related material and labor to install all associated conduit, including conduit sweeps, conduit caps, conduit plugs, primer, glue, conduit spacers, and pull tape.

SRP

SRP has existing overhead power transmission that are located within the project limits.

SRP Transmission has existing overhead 230kV lines that are located just south of Lower Buckeye Road running east to west. These overhead lines are not in conflict and will be protected in place.

WAPA

WAPA has existing overhead power transmission that are located within the project limits.

SRP Transmission has existing overhead 230kV lines that are located just south of Lower Buckeye Road running east to west. These overhead lines are not in conflict and will be protected in place.

SECTION 107 LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC

107.2 PERMITS, add the following:

The Contractor shall comply with all City of Buckeye and any applicable ADOT and MCDOT permitting requirements.

Contractor is made aware that a FEMA floodplain use permit is required when working in all floodplains, and that Contractor will need to pay for and secure permit prior to start of work.

It shall be the responsibility of the Contractor to obtain and provide payment for all required permits for construction, dust control, relocation of native plants, erection of signs, etc.

The Contractor shall be responsible for securing and payment for any necessary hydrant meters including deposits and all fees for water usage.

The Contractor shall be responsible for payment of any City fees associated with water main shutdowns or miscellaneous charges for optional City provided services.

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 has been approved by the City.

All haul routes for removals; excavation and dirt moving must be approved by the City prior to commencement or operations.

The Contractor shall be responsible for payment of any fees associated with the City for any work within their right-of-way and for adjusting or relocating their facilities.

107.2.1 AZPDES (NPDES) CONSTRUCTION GENERAL PERMIT REQUIREMENTS

Add the following:

This project is subject to the Arizona Pollutant Discharge Elimination System (AZPDES) program's permit requirements for construction sites. The Contractor is responsible for obtaining applicable permits and complying with permit requirements.

The Storm Water Pollution Prevention Plan (SWPPP) must be submitted with the Notice of intent (NOI). Within 32 business days receipt, Arizona Department of Environmental Quality (ADEQ) will notify the operator whether:

1. It is acceptable to proceed under the general permit;
2. The SWPPP needs revision; or
3. There is cause for eligibility denial. If notification is not received in this time-frame, the operator may assume coverage under this permit.

To prevent potential permitting delays, the Contractor is encouraged to prepare and submit the NOI and SWPPP to ADEQ upon receipt of notice of award from the City. Additional information may be obtained from the ADEQ website: http://www.azdeq/gov/environ/water/permits/stormwater.html

107.2.5 SAFETY, HEALTH AND SANITATION PROVISIONS

Add the following:

The Contractor shall provide and maintain portable toilet facilities in each area of work. Portable toilet facilities shall be cleaned not less than once weekly. The associated costs of this requirement shall be incidental to the project.

SECTION 210 BORROW EXCAVATION

210.4 MEASUREMENT:, is revised to read:

Quantities of borrow excavation will NOT be measured.

210.5 PAYMENT

Is revised to read:

No separate payment will be made for Borrow Excavation. Any work required under this or any related, item shall be included in the cost of adjacent work items.

SECTION 211 FILL CONSTRUCTION

211.5 MEASUREMENT, is revised to read:

Quantities of fill construction will NOT be measured.

211.6 PAYMENT, is revised to read:

No separate payment will be made for Fill Construction. Any work required under this or any related, item shall be included in the cost of adjacent work items.

SECTION 401 TRAFFIC CONTROL

401.5 GENERAL TRAFFIC REGULATIONS, add the following:

Contractor will be required to provide permanent and temporary traffic control to accommodate project, and as also indicated in the Contract Documents. Contractor shall coordinate, and receive written approval of from the City, all traffic control layouts and equipment prior to start of construction or prior to making any changes. Contractor shall modify traffic control, at any time, when requested by the City, and without any additional compensation.

There will be no full street, intersection, or driveway closures allowed at any time during the course of construction activities. Contractor must maintain one lane of traffic in each direction at all times throughout existing roadways. Contractor must also maintain access to all properties within the

limits of construction activities at all times. Any full or partial restrictions or diversions shall be coordinated and approved by the City and property owner a minimum of 7 working days prior to the implementation date(s). Temporary traffic control (TTC) devices shall be installed only when the work is ready to begin. All the TTC devices shall be promptly removed or covered when no longer needed. All TTC devices must be inspected regularly throughout the day. The City shall approve the Traffic Control Plan for concept only and accepts no liability for errors or omissions.

Variable Message Signs (VMS) shall be placed on the project along arterial roadways adjacent and connected to the project limits, in either direction, per the direction of the Project Manager, a minimum of ten days prior to the start of construction and shall remain active for the duration of the project.

The Contractor shall notify the Streets Superintendent and the Civil Inspector Supervisor or their representative seven days in advance of the time work will be started in areas requiring the rerouting of traffic, traffic lane striping or removal of street signs. The foregoing shall apply to progressive modifications of traffic routing within an area in which work is in progress.

401.5.1 TEMPORARY LANE DIVERSIONS, add the following:

Traffic shall be maintained on paved surfaces. All temporary lane diversions shall be paved and shall be delineated with vertical flashing panels.

SECTION 601 TRENCH EXCAVATION, BACKFILLING AND COMPACTION

Add the following:

Construction requirements:

Locations indicated on the construction plans where storm drain pipes and irrigation pipes extends into the roadway structural section shall require CLSM backfill. Backfill limits shall include all parallel pipes at each location, and CLSM shall extend a minimum of 10 feet beyond section of pipe that is no longer within the pavement structural section.

When a pipe collar is required, the top dimension/limit of the concrete shall not be less than 4 inches below the bottom of the asphalt base course.

All other provisions of Section 618 Storm Drain Construction shall remain.

PART C: BID ITEMS

The following bid items are numbered to correspond to the Schedule of Bid Items and are included to explain the details of work not covered by applicable Standard Specifications & Details as outlined in PART A, and to relate work and pay quantities to the specific bid item.

Any work shown on the Project Plans implied or specific in the Special Provisions but not listed in the bid item shall be included in the cost of the project.

ITEM 1 CONSTRUCTION SURVEYING AND LAYOUT

MAG Section 105.8, Construction Stakes, Lines and Grades is hereby deleted and replaced with the following:

General:

The Contractor shall furnish all the materials, personnel, and equipment necessary to perform all the surveying, staking, control line layout and the accurate verification of all existing control points which are delineated in the Contract Documents. The work shall be done under the direction of a Registered Land Surveyor licensed to practice in the State of Arizona.

Staking Outline:

Prior to beginning any survey operations, the Contractor shall furnish to the City Inspector for approval a written outline detailing the method of staking, interval of stakes, marking of stakes, grade control for various courses of materials, referencing, structure control, and any other procedures and controls necessary for survey completion. A part of this outline shall also be a schedule which will show the sequencing of the survey and layout work, throughout the course of the contract, listing a percentage of completion for each month.

Traffic Control for Survey and Staking Operations:

The Contractor shall furnish all traffic control equipment, including flagging for survey and staking operations, the cost being considered included in the applicable bid item for **Item 6 Traffic Control**.

Field Books:

The Contractor shall furnish field books to be used for recording survey data, swing ties, and field notes. These books shall be available for inspection by the City at any time and shall become the property of the City upon completion of the work.

Survey Control Verification:

(A.) Control Points (horizontal and vertical) - The existence and location of all survey monuments, benchmarks and control points shall be verified prior to demolition or

construction activity. Immediately notify the Engineer when location discrepancies greater than two-hundredths (0.02) foot horizontal or one-hundredth (0.01) foot vertical are found. All datum shall be City's, as indicated on the Project Plans.

(B.) Control Lines - Construction control lines with grade breaks, transition points, horizontal and vertical curves, etc., shall be established and referenced prior to construction.

(C.) Temporary Benchmarks - Temporary benchmarks shall be established and referenced at prior to construction.

Pre-Construction Location Survey:

All existing features which are located prior to construction shall be referenced to survey monuments along control lines by stationing in accordance with the Construction Documents and by offset distance from the control lines. All features shall be re-locatable after construction. Distances measured shall be within one-hundredth (0.01) feet.

Field Staking of Land Easements:

Prior to commencement of any field activities, the Contractor shall provide construction survey stakes to clearly define the limits of the Right-of-Way, Temporary Construction Easements (TCE), Drainage Easements, and other existing and new easements needed for the project as shown in the legal descriptions and exhibits as applicable for the adjacent properties. These stakes shall be maintained in good, legible condition at all times throughout the construction of the project. Stakes disturbed or destroyed by construction shall be replaced within 48 hours.

Survey Staking:

(A.) Survey monuments - All survey monuments that lie within the construction area that may be disturbed shall be referenced to a specific point on at least four (4) stable objects by distance measurement. Reference objects shall be located no greater than three-hundred (300) feet from the survey monument that is being referenced.

(B.) Water and Sewer line appurtenances - Water and sewer line surface appurtenances such as manholes, valves and cleanouts that lie within the construction area shall be located and noted on the Contractor's approved construction documents prior to any demolition or excavation.

(C.) Match Points and Removals - Verify the location (horizontal and vertical) of existing facilities to which the project connects including saw cut lines and adjacent projects. Immediately notify the City Project Manager when discrepancies of connecting facilities greater than one-tenth (0.10) foot horizontal or two-hundredths (0.02) foot vertical are found.

(D.) Right-of-Way (Right-of-Way and Easements) – Shall be laid out at 100-foot intervals and at any point of intersection (P.I.) for a change in right-of-way width. Legals and exhibits for right-of-way acquired for this project are provided in **Appendix X** of these specifications.

Construction Stakes:

The Contractor shall set construction stakes and marks establishing lines and grades for road work, curbs, gutters, sidewalks, structures, buildings, centerlines for utilities and necessary appurtenances and other work as indicated in the Contract Documents and shall be responsible for their conformance with the plans and specifications. The stakes shall be established in accordance with the following guidelines which represent the minimum standard and the Contractor shall provide additional stakes and controls necessary to perform the work. The Contractor shall be held responsible for the preservation of all stakes and marks and will replace, at no additional cost to the City, any construction stakes or marks which have been carelessly or willfully destroyed by acts of nature or other parties.

Curbs, Curb and Gutter, Valley Gutter:

Curb and gutter shall be staked and installed prior to sidewalk, driveway, and corner ramp construction. Cut/fill stakes for rough grade shall be set at one hundred (100) foot intervals with cuts to the top of curb.

Finish grade stakes shall be set to curb grade at twenty-five (25) foot intervals, at grade breaks, angle points, transitions, returns, driveways, alley entrances, sidewalk ramps, and other curb control points. The stakes shall be tacked for line on a 2-foot offset to the back of curb. Face of curb forms shall be checked for grade at flow line prior to placing concrete where longitudinal grades are one-tenth percent (0.10%) or less.

Face of curb forms shall be checked for grade at gutter line prior to placing concrete for transitions at 30-foot intervals. Valley gutter stakes shall be set offset five (5) feet from the centerline of the valley gutter at twenty-five (25) foot intervals, marked with cuts to the flowline of the valley gutter.

Roadway:

Subgrade stakes shall be set to subgrade elevation at fifty (50) foot intervals on straight sections, twenty-five (25) foot intervals through vertical curves, on horizontal curves with radius of six-hundred (600) feet or less, and/or slopes of less than four-tenths of one percent (0.4%), the beginning and end of horizontal and vertical curves, and grade breaks. Stakes shall be set at crown lines, at grade break lines, and at edges of pavement which do not abut concrete curb and gutter or at the edge of pavement abutting vertical curbs or other structures whose surface grade will not be flush with the finished pavement grade. Quarter lines will be staked where the distance between the crown line staked and the curb and gutter face exceeds twenty (20) feet.

Aggregate Base Course (AB) stakes shall be set to ABC elevation at thirty-three (33) foot intervals on straight sections, twenty-five (25) foot intervals through vertical curves, on horizontal curves

with radius of six-hundred (600) feet or less, and/or slopes of less than four-tenths of one percent (0.4%), the beginning and end of horizontal and vertical curves, and grade breaks. Stakes shall be set at crown lines, at grade break lines, and at edges of pavement which do not abut concrete curb and gutter or at the edge of pavement abutting vertical curbs or other structures whose surface grade will not be flush with the finished pavement grade. Quarter lines will be staked where the distance between the crown line staked and the curb and gutter face exceeds twenty (20) feet.

Pavement edges shall be controlled by utilizing a wire control mechanism or screeding along a concrete gutter or other structure whose surface grade is flush with the finished pavement grade. Stakes shall be set to finished elevations thirty-three (33) foot intervals on straight sections, twenty-five (25) foot intervals on curves with radius of six-hundred (600) for or less, and/or slopes of less than four-tenths of one percent (0.4%), the beginning and end of horizonal and vertical curves, and grade breaks.

Sidewalks:

Stakes are not required for sidewalks five (5) feet or less in width which are adjoining existing curb and gutter.

Sidewalk stakes shall be set to grade on an offset and tacked for line at twenty-five (25) foot intervals at the beginning and end of horizontal and vertical curves and grade breaks.

Traffic Signing, Striping:

The Contractor shall delineate the procedures and controls to be utilized in the Staking Outline.

Landscaping:

The Contractor shall delineate the procedures and controls to be utilized in the Staking Outline.

Re-establishment Survey:

Monument locations will be marked with “straddlers” (four nails with metal “shiners”) driven into the pavement, placed in pairs approximately six feet apart and opposite to each other. Lines connecting opposing pairs shall form a ninety-degree cross with three foot legs. The center of the cross will signify the exact location of the center of the monument to be set. Monuments will be drilled or punched after they have been set.

Manhole, valve box, and cleanout locations shall be painted on the pavement.

Inspection and Acceptance of Work:

The City reserves the right to make inspections and random checks of any portion of the staking and layout work. If, in the City’s opinion, the work is not being performed in a manner that will assure proper control and accuracy of the work, the City will order any or all of the staking and layout work to be redone at no additional cost.

Measurement and Payment:

Construction Surveying and Layout will be measured as a single complete item of work and paid at the lump sum price included in the bid schedule, which amount shall be considered full compensation for the work as described herein and required to provide all necessary survey stakes and control. The approved schedule showing the sequencing and percentage of the survey and layout work shall be the basis on which monthly progress payments shall be made. This schedule shall be subject to periodic review, at the request of either party, if the survey and layout work lags or accelerates. If necessary, the schedule will be revised to reflect changes in survey and layout progress. When approved, the revised schedule will become the basis for payment.

ITEM 2 AS-BUILTS

General:

A full-size set of project red line drawings shall be kept on-site and updated on a weekly basis with a red pencil or red ink to reflect any field adjustments, changes, omissions, additions, etc. as they occur on the project. The City's inspector will check site as-builts on a weekly basis to ensure all modified project elements have been properly recorded on the field plan set.

The Contractor shall provide plan sheets for use in preparing final as-builts. Information shall be shown on these plans in red opaque ink, depicting the construction dimensions, elevations, grades, and materials including locations of existing underground utilities found during construction.

The Contractor shall exercise extreme care in handling any provided originals and will return them to the City in like 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 a 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 in either condition or detail.

All work included in the contract documents as well as changes to the contract shall be noted as correct or modified by either checking off the information if it is correct, or by drawing a neat line through the original data and writing in the correct information in red opaque ink if the information is incorrect. Unless noted otherwise below in the minimum as-built requirement section, station/offset measurement will be from construction centerline/monument line both parallel and transverse to roadway; added items or location changes shall be physically drawn at revised or new location on the as-builts; and all measurements and station should be to the nearest tenth foot.

The minimum requirements for as-built acceptance are as follows:

Project Drawing Quantity Notations:

Any project drawing or quantity summary sheet that shows a quantity on it that is incorrect shall be corrected by drawing a neat line through the original quantity and writing in the correct information. When space on the drawing does not allow room to indicate the corrections, a separate table may be drawn on a separate sheet with reference on both plan sheets to the plan sheet that the table refers to or to the sheet where the table is located.

Existing/New Utilities:

All underground infrastructure utilities, whether depicted on the Project Plans or not, shall be verified, corrected, or added to the as-builts noting the beginning and ending station/offset location and elevation of utility relative to finished roadway grade or other identifiable ground or permanent roadway/project feature. Any electrical installation work for street lighting or power connection shall be located relative to construction centerline/monument line or relative to back of curb and gutter (whichever is closer) including the depth of the facility.

Removals:

Dimensions and/or other volumetric descriptions and station/offset location of all removed items.

Curb/Gutter/Valley Gutter:

Beginning and ending station/offset location of straight curb/gutter/valley gutter runs relative to construction centerline/monument line; flow line elevation; and station/offset location of PCs and PTs.

Driveway/Alley Entrances:

Beginning and ending station/offset including driveway wings.

Sidewalk:

Beginning and ending station/offset and any other modification necessary to incorporate or avoid existing facility conflicts.

Pipelines:

When pipeline parallels the construction centerline/monument line, verify or correct the perpendicular distance between the two. When pipeline angles relative to the construction centerline/monument line or is in a curved roadway section, as-built measured straight pipe run distances, angle points, changes in size, fitting/tee locations tied-in with practical known construction centerline/monument line location or other easily verifiable permanent point.

Distances between fittings are from fitting centerline. Fire hydrant and catch basin branch lines are to be shown on profile including pipeline bends and collars. All project drawing pipeline cross-sections and profiles are to be corrected to reflect modified pipeline locations/alignments. Station and offset locations for sewer line laterals are from main line to ROW line with beginning/ending

line location tied to a monument or to a property corner. Locations where waterline cross curb and gutter are to be noted by stations. Where waterline run parallel to curb and gutter, note locations relative to back of curb or construction centerline/monument line (whichever is closer) including angle points and elevation.

Manhole/Catch Basin/Valve/Cleanout/Tee:

Beginning/ending station and offset. Stationing is to commence at the downstream manhole (or as depicted on drawings) with location of tap/wye/tee/lateral locations clearly noted.

Landscaping and Irrigation:

Note the beginning and ending station/offset/elevation including size of pipe, sleeve/pull-box, valve, water-service meter, water-service tap, bubbler & drip-line locations.

Traffic Signal:

Signal pole station/offset; electrical conduit, sleeve, controller cabinet, meter pedestal, battery back up, and pull box station/offset with distances of electrical conduit runs noted and tied in with known points.

Roadway Striping/Signing:

Any relocated signs shall be located by station/offset from construction centerline. Any change in roadway marking is to be noted on as-builts.

Roadway Street Lighting:

Street light poles are to be located by station and offset from construction centerline.

Linear Items:

Fences, walls, ditches, etc. should be located by station/offset and tied in with a permanent point.

The as-built drawings shall be certified by an Arizona Registered Land Surveyor. As-built drawings shall be delivered to the City's Contract Administrator within 30 calendars days from the date of final inspection and acceptance by the City of the work completed under this contract. Work under this bid item includes transfer of all information noted by the Contractor on the on-site as-built drawing set described above. Final payment will be made only after submitted as-builts are accepted by the City.

Measurement and Payment:

As-Builts will be measured as a single complete item of work and paid at the Lump Sum price for a complete item of work after approval by the City Engineer, and after the as-builts have been sealed by a registered surveyor, and as indicated on the Bid Schedule, which amount shall be considered full compensation for the work as described herein and required to clearly indicate all specific as-built information.

Final payment for work under this bid item will be made when the City accepts the final as-built. 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 percent of the bid item total from the contract (or $2,500, whichever is greater) for every five (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 bid item total from the contract (or $10,000, whichever is greater) and execute a final change odder nothing the City's justification for penalizing the contractor for unacceptable as-built preparation.

ITEM 3 CONTRACTOR QUALITY CONTROL

Description:

The work under this section shall include the furnishing of all materials, personnel, and equipment necessary to price acceptable quality control in the production, handling, and placement of all materials in accordance with the MAG Uniform Standard Specifications Section 106 and these Special Provisions. The Contractor shall make arrangements to accommodate up to three (3) testing agencies for any given sample/test taken to correlate results. The City will, when necessary, provide Quality Assurance and/or Independent Assurance testing agencies to supplement the Contractor Quality Control testing agency.

Measurement and Payment:

Contractor Quality Control shall be measured as a single complete item of work and shall be paid at the lump sum price indicated on the Bid Schedule, which price shall be full compensation for the work as described herein. Contractor shall be required to provide an approved Quality Control Sample Checklist outlining the required testing and percentage of the Contractor Quality Control work, in which this checklist shall be the basis on which monthly progress payments shall be made. The Quality Control Sample Checklist shall be subject to periodic review, at the request of either party, if the actual progress lags or accelerates, the percentage may be revised to reflect changes of the overall progress of the project. When approved, the revised Checklist will become the basis for payment for subsequent monthly progress payments.

ITEM 4 SWPPP/EROSION CONTROL

Section 107.2.1 of MAG Standard Specifications is modified as follows:

ADD:

A. General Requirements:

The Project Plans may include preliminary erosion control measures and additional information to be included in the project's Storm Water Pollution Prevention Plan

(SWPPP). The contractor shall finalize the SWPPP before submitting a Notice of Intent (NOI) to ADEQ. Except for the NOI, all signatures required of the Contractor by the AZPDES Construction General Permit (CGP), including those required for the NOT, SWPPP, and inspection reports, shall be provided by a duly authorized representative of the Contractor, as defined in Part VIII.J.2 of said permit. Signature of the NOI shall be by a responsible corporate office, as defined by Part VIII.J.1 of the CGP.

The Project Plans may include descriptions of temporary and permanent erosion control measures; a project description; and site-specific diagrams indicating proposed locations where erosion and sediment control devices or pollution control measures may be required during successive construction stages. The Project Plans may also include an initial schedule detailing the proposed sequence of construction and related erosion control measures.

B. Submittals:

The Contractor shall submit two copies of the SWPPP, including all information specified herein, to the Construction Coordinator at the pre-construction conference, if possible, for approval. The SWPPP shall contain an executed letter of delegation which delegates the responsibilities for compliance with Arizona Construction General Permit and Site Storm Water Pollution Prevention Plan to the Contractor.

Submission of the Contractor's NOI shall certify that the Contractor and tis subcontractors have read and will comply with all provisions of the project specific SWPPP and the (current) ADEQ Arizona Pollutant Discharge Elimination System Construction General Permit (CGP).

The Contract Administrator shall withhold the Notice to Proceed until an Authorization to Discharge from ADEQ has been issued to the Contractor, and a copy has been provided to the Contract Administrator.

C. Contractor's Responsibilities

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

The Contractor shall designate the erosion control coordinator as an authorized representative of the Contractor in accordance with Part VIII.J.2 of the CGP. The erosion control coordinator shall be responsible for finalization and implementation of the SWPPP as well as all other applicable requirements of the CGP.

The SWPPP shall include all information required in the CGP, including a site map; identification of receiving waters and wetland impacted by the project; a list of potential pollutant sources; inspection schedule; any onsite or off-site material storage sites; additional or modified stormwater, erosion, and sediment controls; procedures for maintaining temporary and permanent erosion control measures; a list of the contractor's "good housekeeping practices"; and other permit requirements as stipulated in the CGP as well as other applicable state or local programs.

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

Temporary or permanent sedimentation basins may be required for reducing or eliminating sediment for stormwater runoff. When required, such basins shall be completed before any clearing and grubbing of the site is initiated. The Contractor shall evaluate the need and attainability of installing sediment basins as described in the CGP and, if approved by the Construction Coordinator, incorporate the basins into the SWPPP as appropriate. The Project Plans may include sediment basins as part of the preliminary information. No additional payment will be made for such basins, the cost being considered as included in contract items.

The SWPPP shall identify and address erosion and pollution control at on-site fueling operations, waste piles, material storage sites, concrete washout areas, and off-site dedicated asphalt and concrete plants, contractor-use areas, storage areas, and support activity locations which are used solely for the project and are covered by the CGP. The SWPPP shall accommodate all requirements for the Contractor's "good housekeeping" procedures. In addition, the SWPP shall specifically identify the erosion control measures proposed by the Contractor during any vegetation removal and salvaging phases of the project.

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

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

Within 10 calendar days from the SWPPP submittal, the Construction Coordinator will review the Contractor's SWPPP; the Contractor will include any additional revisions directed by the Construction Coordinator. The finalized SWPPP shall meet the terms and conditions of the CGP and be compatible with construction. Upon approval of the SWPPP, the Contractor shall file an NOI.

No clearing, grubbing, earthwork, or other work elements affected by the erosion control requirements in the SWPPP, shall be started until the SWPPP has been approved, the NOI completed and filed, copies of the NOI and Authorization to Discharge from ADEQ provided to the Contract Administrator, and the SWPPP implemented. The Contractor shall post the ADEQ Authorization Number in a conspicuous location, near the construction entrance or construction yard, whichever is more visible to the public.

The Contractor shall give attention to the effect of the Contractor's operations upon the landscape and shall take care to maintain natural surroundings undamaged and keep all operations within the project limits as defined on the Project Plans.

The Contractor shall maintain all related erosion control elements in proper working order throughout the project. Work under this section also includes inspections, record-keeping, and implementation of "good housekeeping". If existing erosion and sediment control measures (BMPs) need to be repaired, modified, or increased, implementation shall be completed with seven (7) calendar days or before the next rain event (whichever is sooner).

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

The Contractor's erosion control coordinator shall maintain the SWPPP along with the completed inspection forms and other SZPDES records in a three-ring binder. The erosion control coordinator shall maintain a current copy of the SWPPP, including all associated records and forms, at the job site from the time construction begins until completion of the project. The SWPPP shall be available for public inspection and for use by the Construction Coordinator. The Contractor's erosion control coordinator shall maintain two copies of the SWPPP, in two separate binders, including amendments, inspection records, and all data used to complete the NOI and Notice of Termination (NOT) to the Construction Coordinator throughout the project. The Contractor shall submit one complete copy of the

SWPPP binder to the Construction Coordinator with the as-built plans and retain its own records for a period of at least three years from the filing of the Contractor's NOT.

No condition of the CGP or the SWPPP shall release the Contractor from any responsibilities or requirements under the other environmental statues or regulations.

D. Minimum Stormwater Control Measures:

BMPs for Impaired or Unique Waters

- Construction Entrances and Exits

Construction entrances and exits must be built using a bottom layer of filter fabric, covered by either coarse aggregate or large rock (approximately 3" in size) or an equivalent structural track-out device adequate to shake dirt loose from vehicles leaving the site. Additional measures must be taken if necessary to prevent vehicle track-out of dirt to the street. Any track-out to the street must be swept up daily. Construction entrances and exits must be permanently stabilized at the end of construction.

- Soil Stockpiles

Topsoil stockpiles, excavation spoils, and any other sedimentary piles must be covered with a tarp and contained by silt fence or other structural measure down-slope of the pile at the end of every work day. Stockpiles and spoils must be placed as far as possible away from the watercourse and other drainage ways. Unless the entire project site is located within the floodplain, stockpiles, and spoils must also be placed above the floodplain.

- Up-Slope Areas (Soil and Slope Stabilization)

The areas disturbed by construction that are located up-slope of the watercourse must be stabilized along contour lines at the toe of the slope by silt fence, vegetative cover, or other slope stabilization measure. All drainage paths drainage to the watercourse must be stabilized. Stabilization of these areas must be maintained throughout construction and until final stabilization is achieved.

- Construction Material and Equipment Storage Areas

Construction materials and equipment must be stored as far as possible away from the watercourse and other drainage ways. Unless the entire project site is located within the floodplain, construction materials and equipment must also be stored above the floodplain. Construction materials that contain toxic substances that may be washed away by rainfall must be covered to protect these materials from precipitation and elevated above-ground to prevent the runoff of pollutants.

"Good housekeeping" procedures must be used with any chemicals stored on site. Secondary containment must be installed around any chemical storage areas. Equipment storage areas must be contained using a protective structural BMP down gradient from the storage area. All unused construction materials must be removed from the construction site upon completion of the project.

- Waste Management

A designated area for collection of construction wastes and trash must be identified and used waste collection areas must be located as far as possible away from the watercourse and other drainage ways. Unless the entire project site is located within the floodplain, waste collection areas must also be located above the floodplain. The waste collection areas must be contained within a protective structural BMP to capture runoff. All dumpsters on the site must be covered to minimize contact with rainfall. Secondary containment must be provided around dumpsters to capture leakage. All waste materials must be removed from the construction site upon completion of the project.

- Vehicle and Equipment Maintenance

Vehicle and equipment maintenance areas must be located as far as possible away from the watercourse and other drainage ways. Unless the entire project site is located within a floodplain, vehicle and equipment maintenance areas must also be located above the floodplain. Any on-site vehicle and equipment maintenance areas must be contained within a protective structural BMP to capture leaks and spills. On-site maintenance areas must be lined with a strong, impervious material that will contain petroleum hydrocarbons and withstand mechanical stress due to vehicle traffic.

Vehicle or equipment break-downs that require repair at other locations on the site must be performed using drip pans or absorbent material to contain liquids. Maintenance of leaking vehicles or equipment must be performed immediately. Maintenance wastes must be promptly cleaned up, adequately contained, and properly disposed.

Vehicle or equipment washing areas must be located above the floodplain and as far as possible away from the watercourse and other drainage ways. Washing areas must be designed to contain wash water (lined) and prevent runoff (enclosed). No soap, solvents, or petroleum are allowed for washing equipment or vehicles on site. No steam cleaning of equipment or vehicles is allowed on site. All vehicle and equipment maintenance and washing areas must be removed from the construction site upon completion of the project.

- Concrete Wash-Out Area(s)

A designated area for concrete truck washing must be identified and used. The concrete wash-out area must also be located above the floodplain. The washout area must be

contained by constructing a temporary sub-surface pit or by using impervious structural barriers to contain concrete waste while it hardens. The wash-out area must be lined with an impervious material to hold water while it evaporates. The wash-out area must be built with adequate capacity to hold concrete wastes and potential rainfall and prevent overtopping and runoff.

Concrete transit mixers must be cleaned in the designated wash-out area only. Only concrete from the mixer truck chutes should be washed into the wash-out area. No other vehicles should be washed in the concrete wash-out area. Concrete wastes must be properly disposed of off-site upon completion of the project. All materials used to construct the temporary wash-out area must be removed from the construction site following construction. Ground disturbance at the wash-out area must be permanently stabilized at the end of construction.

- Concrete Handling

Materials and equipment used for mixing and pouring concrete must be stored as far as possible away from the watercourse and other drainage ways. Unless the entire project site is located within the floodplain, concrete materials and equipment must also be stored above the floodplain. Materials that may be washed away in rainfall must be covered to protect these materials from precipitation and stored above ground to prevent the runoff of pollutants. Avoid mixing excess amounts of fresh concrete on site to minimize wastes. Excess concrete must be disposed of in designated areas only. Runoff of wash water from washing and finishing concrete must be controlled by directing water to a contained area for storage and evaporation.

Apply concrete curing compounds during dry weather to prevent contaminants from washing away in stormwater runoff. Curing compounds must be applied carefully to prevent drift and runoff of toxic substances. Apply curing compounds close to the surface to minimize drift. Apply curing compounds carefully to prevent overspray. Cure water from concrete curing activities must be contained and properly handled as liquid waste.

Residue from grinding operations should be vacuumed and properly disposed. Saw cutting residue must be removed form the surface to prevent it from washing away in stormwater. Slurry residue must be contained and properly disposed of as liquid waste. Minimize drift of dust and blast material from blasting operations by working close to the surface. Waste water from blasting activity must be contained and disposed of properly.

- Pavement Construction/Asphalt Handling

Pavement materials and equipment must be stored as far as possible away from the watercourse and other drainage ways. Unless the entire project site is located within the floodplain, paving materials and equipment must also be stored above the floodplain.

Paving materials and equipment must be stored to prevent the runoff of pollutants in stormwater. Asphalt and sealants must be applied during dry weather to prevent contaminants from washing away in stormwater runoff. Spoils from existing roadways must be stockpiled above the floodplain and as far as possible away from the watercourse.

Use only non-toxic substances (no soaps) to coat asphalt transport trucks and asphalt spreading equipment. Drips and leaks from paving machines and equipment must be promptly cleaned up and properly disposed. Paving machines and equipment must be parked over drip pans or absorbent material to contain drips and leaks between uses.

If paving involves asphaltic concrete (AC), prevent sand or gravel placed over new asphalt from washing away in stormwater. Vacuum or sweep loose sand and gravel from the pavement and properly dispose of the wastes. During seal application and sweeping operations, contain petroleum or petroleum-covered aggregate and dispose of it properly to prevent runoff of pollutants in stormwater.

- Sanitary Waste Facilities

Provide a sufficient number of portable toilets on the site as necessary for construction personnel. Portable toilets must be located as far as possible away from the watercourse and other drainage ways. Unless the entire project site is located within the floodplain, portable toilets must also be located above the floodplain. Portable toilets must be secured to prevent overturning if there is any risk for high winds. Portable toilets must be maintained in good operating condition and regularly services to prevent overflow. Use only licensed sanitary and septic waste haulers for service.

Measurement and Payment:

Measurement and payment for work performed under this Bid Item shall be measured as a single complete item of work and paid at the lump sum price indicated on the Bid Schedule, which price shall be full compensation for the work as described herein. Contractor reimbursement shall be made in equal payment installments spanning the construction contract period. Contractor shall submit anticipated payment request table for approval in advance of first payment request submittal.

Price bid shall include all labor, materials, and equipment necessary to provide approved and acceptable SWPPP and Erosion Protection, in accordance with the Project Plans and these Special Provisions.

ITEM 7 REMOVE TREE, DIAMETER > 12”

Description

Trees and other plant material that are to be removed shall be completely unearthed, including the root structure. The resultant void shall be filled with soil and compacted.

Payment, Removal and Disposal of Trees:

Payment for removal of trees will be on a unit price for each tree measured and removed, in accordance to the specifications. Payment shall include full compensation for furnishing all material, labor, tools, permits, and equipment to accomplish tree removal, including backfilling and compacting voids and hauling and disposal.

ITEM 8 SUBGRADE PREPARATION

Conform to MAG Section 301 except as modified herein.

Measurement:

Subgrade Preparation will be measured by the square yard of area of new asphalt concrete pavement and shall include the amount needed to construct all subgrades for which permanent surfaces will be placed.

Project earthwork quantities shall not be measured separately with the exception for grading for drainage as provided in Items 59 and 60. Payment for earthwork items including roadway excavation, grading, and embankment shall be included in the unit price for Subgrade Preparation.

Prior to bidding the work, the Contractor shall thoroughly satisfy himself as to the actual conditions and earthwork quantities. No claim shall be made for any excess or deficiency therein.

ITEM 9 AGGREGATE BASE COURSE, 8” THICK
ITEM 10 AGGREGATE BASE COURSE, 12” THICK

Conform to MAG Section 310 except as addended herein.

Aggregate base course (ABC) shall consist of new material only and shall be furnished from an approved supplier. No recycled material, asphalt, concrete, organic, etc. material shall be used to haul, prepare, construct, or compact aggregate base course or native material as detailed in the Project Plans and these Special Provisions unless previously authorized in writing by the City.

Measurement and Payment shall be made on the basis of the contract unit price bid per square yard basis at the thicknesses indicated on the Project Plans and the Bid Schedule, complete in place.

ITEM 11 1.5" ASPHALT CONCRETE PAVEMENT (A12.5mm ARTERIAL SUPERPAVE)
ITEM 12 3" ASPHALT CONCRETE PAVEMENT (A12.5mm ARTERIAL SUPERPAVE)
ITEM 13 4" ASPHALT CONCRETE PAVEMENT (A19.0mm ARTERIAL SUPERPAVE)
ITEM 14 3" ASPHALT CONCRETE PAVEMENT (R12.5mm RESIDENTIAL MIX)

Conform to MAG Section 325 and MAG Section 336 except as modified herein.

Measurement and Payment shall be made on the basis of the contract unit price bid per square yard at the thicknesses indicated on the Project Plans and the Bid Schedule, complete in place.

ITEM 15 PORTLAND CEMENT CONCRETE PAVEMENT (PCCP) 9" THICK MODIFIED WITH FIBER MESH, CLASS A, MAG SECTION 725

Conform to MAG Section 324 and MAG Section 725 except as modified herein.

Materials:

Concrete pavement shall be constructed as 9 inch thick concrete, Class A in accordance with MAG Section 725 including all City of Buckeye supplements.

Concrete pavement shall be constructed with fiber mesh. Fiber mesh shall be in compliance with the City of Buckeye Master Approved Materials List.

Measurement and Payment:

Measurement and Payment shall be made on the basis of the contract unit price bid per square yard at the thickness indicated on the Project Plans and the Bid Schedule, complete in place.

ITEM 16 BITUMINOUS TACK COAT SS-1h, DILUTED

Conform to MAG Section 315 and MAG Section 713.

Measurement and Payment shall be made on the basis of the contract unit price bid per ton at the thicknesses indicated on the Project Plans and the Bid Schedule, complete in place. No additional payment shall be made for applying bituminous tack coat, the costs being considered included in this item.

CONCRETE CURB & GUTTER TRANSITIONS

Concrete curb and gutter transitions shall be constructed in accordance with the Project Plans and any applicable MAG Uniform Standard Details and Specifications. No separate measurement and payment will be provided for concrete curb and gutter transitions, the price is considered included in the price of adjacent curb and gutter.

ITEM 21 MEDIAN PAVERS PER COB DTL 63206

Conform to MAG Section 342 and MAG Section 725 except as modified herein.

Construction Requirements:

Median Pavers shall be constructed to the specifications of COB Dtl 63206 and details shown on the Project Plans.

Colors and Patterns: Median Pavers shall be colors of vegas brown and charcoal. Pattern per the City of Buckeye Arterial Gateway Guide – Appendix G Hardscape Tool: Pavers-Nature: Mountain Paver Theme.

Measurement and Payment shall be made on the basis of the contract unit price bid per square feet at the thickness indicated on the Project Plans and the bid schedule, complete in place.

CONCRETE CURB RAMPS

ITEM 22 INTERSECTION MEDIAN CURB RAMP PER DETAIL SHEET 45
ITEM 23 DIRECTIONAL CURB RAMP PER DETAIL SHEETS 47 & 48
ITEM 24 CURB RAMP PER SPECIAL DETAIL SHEET 48

Concrete curb ramps shall be constructed in accordance with MAG Uniform Standard Specification Section 340, except as modified herein.

Concrete curb ramps shall be constructed in accordance with MAG Uniform Standard Specification Section 340 and MAG Section 725 applicable MAG Uniform Standard Details, City of Buckeye Engineering Design Standards and Details Section 6-3.209, Addendum No. SP 5, and details shown on the Project Plans.

Item 22 is in reference to the curb ramps at the Miller Road and Lower Buckeye Road intersection. The ramp geometry and grading information can be found on sheet 45 of the Project Plans.

Item 23 is in reference to the curb ramps at the Magnolia Lane, Watkins Street, Hess Lane, Durango Street, and Pima Street intersections. The ramp geometry and grading information can be found on sheets 46, 47, and 48 of the Project Plans.

Item 24 is in reference to the curb ramp at Driveway STA 52+80, located at the Chevron Gas Station on the southeast corner of Miller Road and Durango Street. The ramp geometry and grading information can be found on sheet 48 of the Project Plans.

Contractor shall verify all curb ramps constructed comply with the design specifications indicated in the 2011 Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG). Longitudinal slopes of ramp runs shall not exceed 12:1 at any location, and no ramp, landing, or other pedestrian pathway cross shape shall exceed 2.0% maximum.

Measurement and Payment for concrete curb ramps shall be made on the basis of the contract unit price bid per each curb ramp indicated on the Project Plans, complete in place, which shall include ramp landing, ramp curb, detectable warnings, subgrade preparation, and other ancillary items necessary for installation.

ITEM 25 CONCRETE APRON AND VALLEY GUTTER , MAG DETAIL 240

Conform to MAG Section 340 except as modified herein.

Concrete apron and valley gutter shall be constructed with fiber mesh. Fiber mesh shall be in compliance with the City of Buckeye Master Approved Materials List. No separate measurement or payment will be made for the fiber mesh, the price is considered included in the contract unit price of the valley gutter.

ITEM 26 BUS BAY TYPE 1, COP DTL P1256-1

Conform to MAG Section 340 and Section 725 except as modified herein.

Bus bays shall be constructed in accordance with MAG Uniform Standard Specification Section 340, MAG Section 725, City of Phoenix Detail P1256-1, applicable MAG Uniform Standard Details, and any details shown on the Project Plans.

Measurement and Payment for bus bays shall be made on the basis of the contract unit price bid per each bus bay indicated on the Project Plans, complete in place, which shall include curb, concrete pavement, subgrade preparation, and other ancillary items necessary for installation.

ITEM 27 CONCRETE BUS PAD PER COP DTL P1261

Conform to MAG Section 340 and Section 725 except as modified herein.

Bus pads shall be constructed in accordance with MAG Uniform Standard Specification Section 340, MAG Section 725, City of Phoenix Detail P1261, applicable MAG Uniform Standard Details, and any details shown on the Project Plans.

Measurement and Payment for bus pads shall be made on the basis of the contract unit price bid per each bus pad indicated on the Project Plans, complete in place, which shall include concrete pad, subgrade preparation, and other ancillary items necessary for installation.

ITEM 28 ADJUST MANHOLE FRAME & COVER PER MAG DET 422

Conform to MAG Section 625 and Section 626 except as modified herein.

Contractor shall use MAG Detail 422-2 for all sewer manhole adjustments to grade. Contractor shall use corrosion resistant rings for all sewer manhole adjustments to grade.

Should the manhole adjustment conflict with proposed curb & gutter, the contractor shall contact the City Engineer prior to forming the curb & gutter and adjusting the manhole to grade, and provide the City Engineer the location of the manhole cone structure. The contactor shall rotate the manhole cone section to position the manhole frame & cover outside of the curb & gutter prior to adjusting manhole frame and cover to grade. Should the manhole cone structure not be able to rotate outside of the curb & gutter, the contractor shall retrofit the manhole per MAG Standard Detail 272 at no additional cost. The Contractor shall verify the adjustment with the City Engineer prior to completing any work.

REMOVAL OF ITEMS

Conform to MAG Section 350 in its entirety except as modified herein.

Saw cuts at the points of abutting existing pavements will be required. This shall include existing bituminous pavement, Portland cement concrete pavement, sidewalks, driveways, and parking lots where new construction shall match the grade of existing surfaces that are to remain where called for on the Project Plans or where designated by the Engineer. No separate measurement or payment will be made for sawcutting of concreate or asphalt.

Existing pavements which are to be matched by pavement widening or pavement extension shall be trimmed to a neat true line with straight vertical edges free from irregularities with a saw specifically designed for this purpose. No wheel cutting will be allowed. Saw cuts shall be made to a minimum depth of 1½ inches and in all cases deep enough to insure a neat vertical joint.

The existing pavement shall be cut and trimmed after placement of the required ABC and just prior to placement of asphalt concrete for pavement of widening or extension, and the trimmed edges shall be painted with a light coat of asphalt cement or emulsified asphalt immediately prior to constructing the new abutting asphalt concrete pavements.

Removal of Concrete Curb & Gutter, Valley Gutter, Sidewalk, Driveways and Slabs shall be to the nearest existing expansion or tooled joints unless otherwise approved by the Construction Manager. If adjacent curb or sidewalk has previously been cracked or damaged by no fault of the

Contractor, and with direction of the Construction Manager, additional sections may be removed and replaced.

Remove and Salvage Traffic Sign Assembly shall consist of salvaging existing sign panels and posts, removing and disposing of the existing foundations, backfilling and compacting all voids, and restoring the existing surface to match previous existing conditions. The sign panels and posts shall be dismantled in a manner that will prevent damage. Concrete sign foundations shall be disposed of by the contractor. The quantity measured for Remove and Salvage Traffic Sign Assembly includes all sign panels and posts that are a part of the assembly.

Remove and salvage of existing traffic signal equipment at Miller Road/Lower Buckeye Road, Miller Road/Durango Street, and Miller Road/Pima Street shall be completed as shown in the project removal plan sheets. Removal of poles shall include removal of the signal pole foundations a minimum of 3 feet below finished grade. Removal of foundations for Type A or Type PB poles shall be removed completely. Traffic signal equipment to be removed shall be carefully removed and delivered at no additional cost to the City of Buckeye Public Works Department at 23454 W. MC Highway 85 Buckeye, AZ. Traffic signal equipment designated to be relocated shall be carefully removed and relocated to the location shown on the plans without damage. Damaged or destroyed traffic signal equipment as a result of the Contractor's operations shall be replaced by the Contractor at no additional cost to the City. The work associated with this item includes the materials, tools, and labor necessary to patch existing signal poles and equipment. Patching is considered incidental to the removal item. Summary of the removal items is provided below for each location and shall include all other items associated with removing and salvaging traffic signals.

Location	Traffic Signal Removal Items
Miller Road/Lower Buckeye Road	No. 7 with extension pull boxes Control Cabinet and Foundation Meter Pedestal and Foundation Battery Backup and Foundation Type Q Pole and Foundation ADOT Signal Mast Arm 5-Section Signal Heads 3-Section Signal Heads Internally Illuminated Street Name Signs Luminaires Emergency Vehicle Pre-Emption Mounting Assemblies
Miller Road/Durango Street	No. 7 with extension pull box Type A Poles and Foundations Manhole Cover 5-Section Signal Heads 3-Section Signal Heads Mounting Assemblies

Location	Traffic Signal Removal Items
Miller Road/Pima Street	Type PB Poles and Foundations Push Buttons 5-Section Signal Heads 3-Section Signal Heads

Measurement and Payment of removal items includes:

- Remove Ditch Concrete Lined Ditch, Concrete Irrigation Ditch, Wall, and Fence shall be measured and paid for by the linear feet, which shall include backfill of voids, compaction, hauling and disposal.
- Remove Sidewalk, Concrete Driveways and Slabs shall be measured and paid for per square foot.
- Remove Existing Pavement will be measured and paid for per square yard, which shall include all pavement removal as shown on the Project Plans.
- Remove and Salvage Traffic Sign Assembly shall be measured and paid for each sign assembly, which shall include removal of the sign foundation.
- Remove and salvage of existing traffic signal equipment shall be measured and paid as a lump sum cost for each intersection with signal equipment removed and salvaged.

The accepted quantities of the items provided above, measured as provided above, will be paid for at the contract unit price per units provided above which price shall be full compensation for the work, complete in place.

No payment will be made for saw cutting. The cost shall be incidental to the respective price for bid items to remove asphalt or concrete.

ITEM 50 NEW FENCE, MATCH IN-KIND

Contractor shall identify and verify the material of existing fence being replaced along the property and replace in-kind with the approval of the City Engineer and Property Owner. Prior to removal of the existing fence, the Contractor shall take photographs to document the existing fence type and condition, which shall be provided to the Engineer.

Measurement and Payment for new fence shall be made on the basis of the contract unit price bid per linear feet fence indicated on the Project Plans, complete in place, which shall include fence material, fence posts, subgrade preparation, and other ancillary items necessary for installation.

ITEM 51 DECOMPOSED GRANITE, 1” AGG. SIZE, 2” THICK, SADDLEBACK BROWN COLOR

Conform to MAG Section 430 and MAG Section 795 except as modified herein.

Construction Requirements:

Decomposed Granite shall be placed in accordance to details shown on the Project Plans.

Decomposed Granite shall be screened to an aggregate size of 1-inch. Installed decomposed granite shall be raked to remove any irregularities. Installation shall provide a 2-inch depth of decomposed granite after compacting.

Colors: Decomposed Granite shall be Saddleback Brown color per COB Arterial Gateway Guide Appendix G Hardscape Tool: Inert Material Nature: Mountain Theme.

Measurement and Payment for new Decomposed Granite shall be made on the basis of the contract unit price bid per square yard indicated on the Project Plans, complete in place, which shall include subgrade preparation, placement, and other ancillary items necessary for installation.

ITEM 52 SCHEDULE 80 PVC 6" IRRIGATION SLEEVE, SPEARS OR EQUAL, SEE DETAIL SHEET 7

Conform to MAG Detail 612-2 as modified herein.

Construction Requirements:

Contractor shall install Irrigation Sleeve as shown in the Irrigation Sleeving Detail as shown in the Project Plans on sheet 7.

Measurement and Payment for new Irrigation Sleeving shall be made on the basis of the contract unit price bid per linear feet indicated on the Project Plans, complete in place, which shall include subgrade preparation, placement, and other ancillary items necessary for installation.

ITEM 53 HEADWALL, MAG DET 501, 'U' TYPE, 36" PIPE

Conform to MAG Section 601, MAG Section 618, and MAG Section 725 except as modified herein.

Contractor shall provide a detail for attaching and tying-in the existing concrete lined irrigation ditch to the new headwall for approval by the City Engineer prior to construction.

ITEM 59 EARTHWORK FOR RETENTION BASINS
ITEM 60 CHANNEL EXCAVATION

For excavation and construction of retention basins, channels/washes, roadside swales, berms, ditches, and irrigation channels, conform to MAG Sections 210, 211, and 215 except as modified herein:

Earthwork/grading for drainage for retention/detention basins, channels/washes, roadside swales, berms, ditches, earthen irrigation channels, etc. shall include clearing/grubbing, stripping, excavation, fill, backfill, removal of unsuitable materials, grading, and disposal of excavated and removed material. Limits shall extend from limits of roadway excavation, where adjacent to proposed roadway construction, and extend to locations where grading will match existing. Scope under this item shall also include all associated work necessary to excavate, transport, grade, and compact excess haul material to adjacent City properties where directed by City staff.

Open channels and ditches for the purposes of this section shall mean open lined (concrete, rip rap, or other material) or unlined channels and lined or unlined trapezoidal, triangular, or irregular channels or ditches.

All retention/detention basins shall have sideslopes and adjacent tops of berms compacted per MAG Standard Specifications. All basin bottoms shall be compacted then overexcavated at the time of final project acceptance by the City Engineer. Basin bottom material shall be loose and overexcavated to a depth of no less than 12 inches to allow for natural percolation. Percolation rates will need to be collected by the contractor during time of construction for each retention/detention basins. A minimum percolation rate of 2.1 in/hr must be achieved for each retention/detention basin. If minimum percolation cannot be achieved contractor must scarify existing soil or import soil with increased permeability and reperform the percolation test. Bottom windrows shall be parallel to adjacent roadways.

Structural backfill shall be placed against all concrete structures, including collars and manholes, and compacted per MAG Standard Specifications Section 226, and not less than 100%. All other compaction shall be no less than 95% when not within the roadway excavation limits.

Measurement of earthwork for retention basins and channel excavation will be measured by the cubic yard as indicated on Project Plans. Payment shall be made on the basis of the contract unit price per cubic yard and shall include all labor, materials, equipment, hauling & removal, and disposal of excess excavated material and debris necessary to provide earthwork for drainage in accordance with the Project Plans and these Special Provisions.

ITEM 71 RELOCATE SIGN ASSEMBLY
ITEM 72 RELOCATE TYPE III BARRICADE

Conform to MAG Section 772 and MCDOT Supplement to MAG Specifications Section 351, except as modified herein.

Relocation of the sign assembly shall consist of the Contractor removing the existing sign post foundation, disposing of the existing sign post, storing the existing sign assembly, and reinstalling the sign assembly on a new sign post and foundation.

Relocation of Type III Barricade shall consist of the Contractor removing the existing sign foundations, storing the barricade panels and sign posts, and reinstalling on new sign post foundations.

Measurement and payment of relocate sign assembly shall be made on the basis of each assembly relocated, which shall include removal of sign post foundation, disposing of the existing sign post, and relocating the sign assembly. This item does not include the cost of new sign posts or sign post foundations, which is included as separate bid items.

Measurement and payment of relocate Type III barricade shall be made on the basis of each barricade relocated, which shall include removal of sign post foundation, and relocating the sign assembly and posts. This item does not include the cost of new sign post foundations, which is included as a separate bid item.

ITEM 73 REMOVE THERMOPLASTIC STRIPE
ITEM 74 REMOVE THERMOPLASTIC LEFT ARROW
ITEM 75 REMOVE THERMOPLASTIC RIGHT ARROW
ITEM 76 REMOVE THERMOPLASTIC LEGEND ONLY
ITEM 77 REMOVE RAISED PAVEMENT MARKER

Conform to MCDOT Supplement to MAG Specifications Section 460, except as modified herein.

The Contractor shall remove all existing pavement markings and striping in conflict with the final striping plan by ultra high pressure water (36,000 psi) or by sand blasting. All removal methods shall be done in conformance with EPA requirements. If the removal of striping causes a depression of 1/8 inch or greater in the pavement surface the Contractor shall fill and slurry seal the area per MAG specifications 713 and 715, Type II. Black paint will not be accepted.

The Contractor shall remove raised pavement markers in conflict with the final striping plan by approved methods authorized by the City Inspector.

ITEM 78 4 IN WHITE TRAFFIC PAINT STRIPE
ITEM 79 4 IN YELLOW TRAFFIC PAINT STRIPE
ITEM 80 PAINT SYMBOL LEFT TURN ARROW
ITEM 81 PAINT SYMBOL RIGHT TURN ARROW
ITEM 82 PAINT SYMBOL STRAIGHT ARROW
ITEM 83 PAINT SYMBOL BIKE LANE MARKING SET
ITEM 84 PAINT MEDIAN NOSE
ITEM 85 PAINT SLIP LANE NOSE
ITEM 86 PAINT LEGEND ONLY
ITEM 87 PAINT YIELD MARKING ARROW SET

Conform to MCDOT Supplement to MAG Specifications Section 461, except as modified herein.

All traffic paint stripes shall meet City of Buckeye standards and requirements.

Paint Slip Lane Nose shall conform to Detail PM1 in the Plans.

ITEM 88 4 IN WHITE THERMOPLASTIC TRAFFIC STRIPE
ITEM 89 4 IN YELLOW THERMOPLASTIC TRAFFIC STRIPE
ITEM 90 THERMOPLASTIC/PREFORMED SYMBOL LEFT TURN ARROW
ITEM 91 THERMOPLASTIC/PREFORMED SYMBOL RIGHT TURN ARROW
ITEM 92 THERMOPLASTIC/PREFORMED SYMBOL BIKE LANE MARKING SET
ITEM 93 THERMOPLASTIC/PREFORMED LEGEND ONLY
ITEM 94 THERMOPLASTIC/PREFORMED YIELD MARKING ARROW SET
ITEM 95 PORTLAND CEMENT, REMOVAL OF CURING COMPOUND FOR THERMOPLASTIC APPLICATION
ITEM 96 PORTLAND CEMENT, APPLICATION OF PRIMER-SEALER FOR THERMOPLASTIC APPLICATION

Conform to MCDOT Supplement to MAG Specifications Section 462.

ITEM 97 REFLECTORIZED RAISED PAVEMENT MARKER (TYPE D, YELLOW, 2-WAY)
ITEM 98 REFLECTORIZED RAISED PAVEMENT MARKER (TYPE G, CLEAR, 1-WAY)
ITEM 99 REFLECTORIZED RAISED PAVEMENT MARKER (TYPE BB, BLUE, 2-WAY)

Conform to MCDOT Supplement to MAG Specifications Section 463.

ITEM 100 PERFORATED SIGN POST (2" SQUARE)
ITEM 101 PERFORATED SIGN POST FOUNDATION (COB DTL 65120)
ITEM 102 PERFORATED SIGN POST FOUNDATION (ADOT DTL S-3)

Conform to MCDOT Supplement to MAG Specifications Section 464, except as modified herein.

All perforated sign posts shall be 2" square and shall adhere to City of Buckeye standards.

All sign post foundations will adhere to City of Buckeye standards, with the exception of the relocated Type III barricades, which will require ADOT standard sign post foundations.

ITEM 103 FLAT SHEET ALUMINUM SIGN PANEL, DIAMOND GRADE

Conform to MCDOT Supplement to MAG Specifications Section 465, except as modified herein.

All signage within the project limits shall be constructed with Diamond Grade retroreflective sheeting.

ITEM 107 INTERNALLY ILLUMINATED STREET NAME SIGN

Description:

The work under this section shall also consist of furnishing and installing Internally Illuminated Street Name Signs (IISNS) and all roadside sign panel as indicated on the plans and constructed in accordance with City of Buckeye Standard Details, City of Buckeye Specifications, and the plans.

Construction Requirements:

All IISNS cabinets shall be mounted on traffic signal poles or on Trombone style mast arms as shown on the Plans and per the City of Buckeye Standard Details.

The contractor shall drill a 0.5-inch hole in the traffic signal pole for the primary on the side of the pole that will display the front side of the sign cabinet. The hole shall be tapped for threaded fitting. The final tapped fitting shall be fitted with a watertight seal when the sign cabinet is installed.

All screws and bolts used for mounting sign cabinets shall have a threaded locking compound applied prior to installation.

The IISNS cable shall run unspliced from each IISNS to the nearest pull box.

Method of Measurement:

Internally Illuminated Street Names Signs will be measured at the unit price for each item furnished and installed, complete and in place, as specified in the Bid Schedule.

Basis of Payment:

Payment for Internally Illuminated Street Names Signs will be made at the unit price for each item furnished and installed, which price shall be full compensation for the items, complete as described and as shown on the plans.

ITEM 109 NO. 9 PULL BOX
ITEM 110 NO. 7 PULL BOX WITH EXTENSION
ITEM 111 ELECTRICAL CONDUIT (2") (PVC)
ITEM 112 ELECTRICAL CONDUIT (2-2") (PVC)
ITEM 113 ELECTRICAL CONDUIT (2-3") (PVC)
ITEM 114 ELECTRICAL CONDUIT (3-3") (PVC)
ITEM 115 ELECTRICAL CONDUIT (2 ½") (PVC)
ITEM 151 ITS CONDUIT (3-2") (PVC) (TRENCH)
ITEM 152 ITS CONDUIT (2 7-WAY MICRODUCT) (TRENCH)
ITEM 153 ITS CONDUIT (2 7-WAY MICRODUCT) (DIRECTIONAL DRILL)
ITEM 156 APS PULL BOX (APS FURNISHED, CONTRACTOR INSTALLED)
ITEM 157 ELECTRICAL CONDUIT (1") (CARFLEX LIQUID TIGHT FLEXIBLE NON-METALLIC)
ITEM 158 SCH. 40 PVC ELECTRICAL CONDUIT, 2½ IN WITH ¼ IN NYL PR #8 BARE COPPER WIRE TRENCH

General:

Electrical underground shall be done in accordance with ADOT Traffic Signal and Lighting Standard Details current edition, ADOT Standard Specifications for Road and Bridge Construction, current edition, Section 732, except as specified herein, the City of Buckeye Engineering Design Standards, City of Buckeye Standard Details, APS Standard Specifications, where applicable, and the traffic signal and street lighting plans.

Description:

The work under this section consists of the furnishing and installing electrical conduit, conductors and pull bull boxes for traffic signal, ITS, and street lighting including excavating, drilling, backfilling, and compacting at the locations designated on the plans, details, and these specifications.

Materials:

a) 7-Way Multi-Duct:

The 7-Way Multi-Duct materials shall be the following with no substitutions allowed:

a. Dura Line Corporation FuturePath® Non-Armored with Red HDPE - 0.070-in Sheath, 7-way x 18/14 mm Micro-ducts, ADDD 2177:

    i. Micro-ducts Colors: Blue, Brown, Green, Grey, Orange, Red & White

    ii. Dura-Line Part Numbers:

        1. 10016272 (2,500’ on a 90” reel)

        2. 10016273 (3,500’ on a 96” reel)

        3. 10016274 (4,000’ on a 102” reel)

        4. 10016275 (4,500’ on a 102” reel)

b. Straight Couplers: Dura Line Corporation 18/14mm, Part Number 20001518

c. MicroDuct/MicroCable Sealing End Cap

    i. Dura-Line Part Number 20005189 (18/14mm Sealing End Cap)

    ii. Other Dura-Line products needed to fit proposed fiber optic cables

d. MicroDuct End Cap

    i. Dura-Line Part Number 20001485 (18/14mm End Cap)

e. Sealing Voids in FuturePath® Located Between the MicroDucts and Oversheath

    i. Per Dura-Line TECHNICAL BULLETIN: DCEB-08008 called FuturePath® - Recommended Void Sealing Methods

The 7-Way Multi-Duct shall be furnished in one continuous length, with no couplings or splicing outside pull boxes, and of lengths sufficient to complete runs between No.9 Pull Boxes.

b) PVC and HDPE Conduit:

All street lighting, and traffic signal conduit shall meet the specifications for Schedule 40 PVC per City of Buckeye Standard Details and Approved Materials List.

All street lighting pull boxes shall meet all City of Buckeye Engineering Design Standards and Details and APS Standard Specifications.

Pull tape shall have a minimum of 2500 lbs pulling capacity and shall be installed in all unused conduits.

Fiber optic conduit warning tape shall be 4 mil non detectable plastic warning tape and shall be placed 12 inches to 16 inches below finished subgrade. Tape shall have a continuous permanently imprinted message every 36 inches with, “CAUTION BURIED FIBER OPTIC LINE BELOW”.

Tracer wire shall be THW wire 12 AWG. One 12 AWG tracer wire is required to be installed in each 2 inch conduits.

c) Plugs and Caps:

All plugs or caps used on the ends of occupied and unoccupied conduits, innerducts, and microducts shall be corrosion-proof, removable, reusable, water-tight, and vermin resistant end treatment recommended by the manufacturer to prevent intrusion of water, mud, gravel, rodents, etc. Duct tape or similar material shall not be used for sealing conduit ends.

The 7-Way Multi-Duct shall be capped and sealed in the following areas:

a. Between each microduct and microcable
b. With an end cap for any exposed unoccupied microducts
c. Voids in 7-Way Multi-Duct located between the microducts and oversheath
d. Around 7-Way Multi-Duct when placed into a conduit or sleeve

Construction Requirements:

All construction shall be performed in accordance with the Project Plans. Where not included in the Project Plans, the work under this item shall be installed per Section 732 of the ADOT Standard Specifications.

Pull Boxes:

All traffic signal and ITS pull boxes, except APS electrical junction boxes, shall be provided and installed by the Contractor as specified on the plans and in accordance with ADOT, the City of Buckeye Standard Details, these specifications, and the plans.

Traffic Signal Pull Box covers shall be marked as “TRAFFIC SIGNAL”.

Interconnect Conduit Splice Box cover shall be marked as “COB ITS”.

All street lighting pull boxes shall be provided by APS shall and installed by the Contractor as specified in the plans and in conformance to APS standards and specifications. Work under these items includes coordination, picking up, and/or delivery to the site, installation of each APS supplied pull box, and all appurtenance required by APS to be installed on conformance with APS specifications.

APS Electrical Junction Box Cover shall be marked “C.O.B. STREET LIGHTING”.

All City of Buckeye No. 7 pull boxes with extension shall be a Christy Fibrelyte 20-inch-deep box with an 8-inch extension, with bolt down lids and Pentahead locking bolts.

Conduit:

The electric power company is Arizona Public Service (APS). The Contractor shall contact Bobby Garza at (602) 371-7989 at least thirty-days (30) prior to construction for APS traffic signal and street lighting to coordinate installation requirements for the APS conduit installation and service point of delivery (POD).

The Contractor shall provide and install 2-1/2-inch conduit for APS street lighting conduit and traffic signal service connection conduit from the POD to the traffic signal meter pedestal and street lighting junction box.

The Contractor shall trench, bore, and install street lighting and traffic signal conduit at the locations indicated on the Project Plans. The conduit size shall be provided and installed at a depth per City of Buckeye Standard Details.

Prior to construction, the Contractor shall pothole all electrical conduit runs at locations where potential conflicts exist ahead of all underground work to allow for sufficient time to resolve any conflicts without impact to construction schedule. The cost associated with this item shall be incidental to the work and shall NOT have a separate pay item. Hand digging is considered a form of potholing and is included in the cost associated with this item. Trenching, back filling, replacing pavement, temporary pavement/subgrade/subbase curb and gutter, sidewalk and any additional traffic control including steel plates are considered incidental to this item and not paid separately.

Prior approval from the City is necessary to install conduit under existing pavement using an open trench. Open trench excavation shall be done in accordance with City of Buckeye requirements and per the construction plans. The Contractor shall replace all pavement structural section layers removed during excavation, within the limits of the excavation and using methods and materials, which will not in any way diminish the pavement performance.

New runs of HDPE and 7-Way Multi-Duct conduit shall be continuous from pull box to pull box, except at Engineer approved splicing locations.

7-way Multi-duct:

The 7-Way Multi-Duct shall be installed in one continuous length, between No.9 pull boxes, with no couplings or splicing outside the pull boxes, unless approved by the Engineer. All proposed 7-Way Multi-Duct locations shall be pre-approved by the Engineer.

Six of the seven micro-ducts (colors: Blue, Brown, Green, Grey, Red & White) shall be installed in one continuous length through the No.9 pull boxes. A straight coupler for each micro-duct is permitted within the No.9 pull box to achieve the continuous lengths.

The Orange micro-duct shall be cut within each No.9 pull box, leaving a minimum length of 2 feet inside the pull box with 1 foot or more accessible from each side of the pull box.

Mid-span splices of the 7-Way Multi-Duct shall be approved by Engineer prior to splicing.

Mid-span splices, Grounding of the armored sheath (if required), and bonding of the 7-Way Multi-Duct shall follow Dura-Line Technical Bulletin: DCEB-09003. Bonding clamps shall be used to create a continuous electrical bond of the armored sheathing between No. 9 pull boxes (if required)

Measurement:

Pull Boxes

Pull boxes shall be measured as each, which includes providing the specified pull boxes, picking up of APS provided pull boxes, and installation in accordance with the specifications identified with this document and on the plans.

Conduit

Conduit shall be measured per linear foot of trenching or directional boring for each diameter size and type. Conduit shall be measured in accordance with the ADOT Standard Specifications, Section 732-4.

Directional drilled electrical conduit will be measured by the linear foot from the nearest edge of drill pit to the nearest edge of drill pit.

Payment:

Pull Boxes

Payment for pull boxes will be paid for at the unit price as measured above and indicated in the Schedule of Bid items. Payment will be made for work complete in place, as described herein and on the plans, including any excavation, backfilling, materials, labor, tools, and equipment necessary to complete the work in place.

Payment for trench or direction bore of conduit will be paid for at the contract unit price as measured above and indicated on the Schedule of Bid items. Payment will be made for the work complete in place, including excavation, backfilling, boring, conduit, slurry, fittings, pull rope, restoration of the surface, materials, labor, tools, and equipment necessary to complete the work in place.

No measurement or direct payment will be made for tracer wire, pull tape, vertical conduits and conduit sweeps, conduit in pull boxes, conduit in foundations, expansion joints, clearing and grubbing, hand digging if required, concrete encasement, felt paper or use of ABC slurry (if required to meet utility company requirements), the costs being considered as included in the contract price for the conduit items.

No measurement or direct payment shall be made for saw cutting, boring, trenching, pavement removal, disposal and pavement replacement done as part of conduit installation, the cost being considered as included in the contract unit price for the conduit items.

ITEM 116 POLE FOUNDATION (TYPE A)
ITEM 117 POLE FOUNDATION (TYPE G)
ITEM 118 POLE FOUNDATION (TROMBONE 50 FT SMA TO 55 FT SMA)
ITEM 119 POLE FOUNDATION, TYPE PB (PUSH BUTTON)

Description:

The work under these items is for the installation of new traffic signal pole foundations.

Construction Requirements:

Traffic signal pole foundations for Type A and Type G poles shall follow ADOT traffic signal standard details and specifications. Traffic signal pole foundations for City of Buckeye Trombone poles and ped push button posts shall follow City of Buckeye standard details and specifications.

Method of Measurement:

Foundations will be measured as a unit for each foundation constructed. This includes the concrete, reinforcing steel, conduit, ground system, anchor bolts, mounting hardware, and all incidentals necessary to complete the foundation.

Basis of Payment:

The accepted quantities of foundations, measured as provided above, will be paid for at the contract unit price, which shall be full compensation for the work, complete in place.

ITEM 120 METER PEDESTAL FOUNDATION
ITEM 121 CONTROL CABINET FOUNDATION
ITEM 122 BATTERY BACKUP FOUNDATION

Description:

The work under these items is for the installation of new electric service cabinet and foundation.

The foundations shall include excavation, pouring of concrete, installation of conduit and anchor bolts, backfilling, grading, restoration of surrounding area, and a grounding system.

The Contractor shall install a concrete technician pad with minimum dimensions 48”x48”x4” in front of the cabinet. This work shall be considered included with the control cabinet foundation.

Construction Requirements:

All materials and installation shall conform to the City of Buckeye Standard Details, approved products list, and the Plans.

A) Electric Service Cabinet Foundation

The Contractor shall be responsible for determining the correct size, shape, anchor bolt pattern and conduit alignment for the foundation with the following stipulations:

- The top of the foundation shall be 6-8 inches above finished grade
- The depth of the foundation shall be 32-36 inches below finished grade
- Monolithic with the exposed surfaces formed and finished to present a neat, smooth appearance
- The top shall be level within 1/8”

Before the concrete for the cabinet foundation has set, depressions shall be made around the anchor bolts for adjustment for the cabinet leveling nuts.

Forms for the concrete shall be rigid and securely braced in place. Templates shall be used to properly position and hold in place necessary conduit and anchor bolts. Immediately prior to pouring the concrete, both forms and earth shall be thoroughly moistened and the concrete allowed to cure at least 12 hours and shall be hardened sufficiently to prevent damage before the forms are removed.

B) Electric Service Cabinet

The meter pedestal shall be installed by the Contractor in accordance with the utility’s requirements. The utility company shall install the conductors from the power source to the meter pedestal. The Contractor shall coordinate connection of the electrical power to the meter pedestal with the utility company. Wiring procedures shall be in accordance with Section 32-3.02 of the ADOT Standard Specifications. No splices will be allowed anywhere on the circuit, other than the required terminations at the meter pedestal.

C) Grounding

The Contractor shall meet the requirement of Section 732-3.03 of the ADOT Standard Specifications to bond the meter pedestal to ground.

Method of Measurement:

Foundations will be measured as a unit for each foundation constructed. This includes the concrete, reinforcing steel, conduit, ground system, anchor bolts, mounting hardware, concrete maintenance pad, and all incidentals necessary to complete the foundation.

Basis of Payment:

The accepted quantities of foundations, measured as provided above, will be paid for at the contract unit price, which shall be full compensation for the work, complete in place.

ITEM 123 PEDESTRIAN PUSH BUTTON WITH SIGN

Description:

This work shall consist of furnishing and installing audible pedestrian push buttons and placards as specified on the plans and per the City's Approved Product List.

Construction Requirements:

Pedestrian Push Buttons shall be Campbell Guardian APS and must be audible and vibrotactile. The center of the push button shall be mounted at a height of 42" on center from concrete sidewalk/ramp surface adjacent to pole/foundation. Contractor shall ensure push buttons are mounted no more than 10 inches from edge of concrete surface or face of curb.

Push button placards shall be R10-3e or as specified on the Plans.

Method of Measurement:

Pedestrian push buttons will be measured as a unit for each push button furnished and installed, complete in place.

Basis of Payment:

The accepted quantities of pedestrian push buttons, measured as provided above, will be paid for at the contract unit price for each item furnished and installed, which price shall be full compensation for the work, including pedestrian push button housing and placard, and shall include all labor and materials required to install the equipment, complete in place.

ITEM 125 RELOCATE GRIDSMART CAMERA

Description:

This work shall consist of relocating an existing gridsmart camera to a new locations as shown on the plans.

Construction Requirements:

Relocation of the camera shall include all materials and labor to install the camera, install cabling from the new pole to the signal cabinet, and test the functionality and field of vision of the new camera location.

Method of Measurement:

Relocate Gridsmart Camera will be measured as a unit for each camera relocated, complete in place.

Basis of Payment:

The accepted quantities of Relocate Gridsmart Camera, measured as provided above, will be paid for at the contract unit price for each item furnished and installed, which price shall be full compensation for the work, including mounting brackets and cables.

ITEM 126 TYPE A SIGNAL POLE 8 FT
ITEM 127 TYPE G SIGNAL POLE
ITEM 128 RELOCATE TYPE A SIGNAL POLE
ITEM 129 RELOCATE TYPE G SIGNAL POLE
ITEM 130 TROMBONE TYPE B SIGNAL POLE W/ 55 FT MAST ARM
ITEM 131 PEDESTRIAN PUSH BUTTON POST
ITEM 132 20 FT MAST ARM (LUMINAIRE)
ITEM 133 50 FT MAST ARM

Description:

This work shall consist of furnishing, installing, and relocating traffic signal poles and mast arms as specified on the plans.

Construction Requirements:

Type A and Type G poles and signal mast arms shall follow the ADOT standard details and specifications.

Relocation of Type A and Type G poles shall consist of removal of the existing poles, storing the existing poles, and reinstalling poles on a new foundation as shown on the plans.

Trombone Type B poles and Type PB poles and mast arms shall follow City of Buckeye standard details and specifications.

All traffic signal poles and mast arms shall be painted with two coats of white enamel paint (Buckeye White) meeting manufacture recommendations.

Method of Measurement:

Traffic signal poles and mast arms will be measured as a unit for each pole or mast arm furnished and installed, complete in place.

Relocation of traffic signal poles and mast arms will be measured as a unit for each pole relocated, complete in place.

Basis of Payment:

The accepted quantities of traffic signal poles and mast arms, measured as provided above, will be paid for at the contract unit price for each item furnished and installed, which price shall be full

compensation for the work, and shall include all labor and materials required to install the equipment, complete in place.

The accepted quantities of traffic signal pole relocations, measured as provided above, will be paid for at the contract unit price for each item relocated, which price shall be full compensation for the work, and shall include all labor and materials required to install the equipment, complete in place. The foundations required for this work shall be bid separately.

ITEM 134 METER PEDESTAL CABINET
ITEM 135 POWER SUPPLY (BATTERY BACKUP)
ITEM 136 CONTROL CABINET (TYPE IV)

Description:

This work shall consist of furnishing and installing meter pedestals, battery backup cabinets, and control cabinets as specified on the plans.

Construction Requirements:

The meter pedestal shall be Meyers MEUG-16-M100-ADOT

The battery backup cabinet shall be Alpha SE48-2216 with FXM 2000 Rugged UPS Module

The control cabinet shall be a white Econolite R77 with Econolite Cobalt controller

Method of Measurement:

Meter pedestals and Cabinets will be measured as a unit for each pedestal or cabinet furnished and installed, complete in place.

Basis of Payment:

The accepted quantities of pedestals and control cabinets, measured as provided above, will be paid for at the contract unit price for each assembly furnished and installed, which price shall be full compensation for the work, and shall include all labor and materials required to install the equipment, complete in place.

ITEM 137 OPTICOM PRE-EMPTION UNIT

Description:

This work shall consist of furnishing and installing Opticom Pre-Emption Units at locations as specified on the plans.

Construction Requirements:

All receivers shall be GTT 722, dual sensor-dual direction detectors. Phase selector shall be GTT Model 764. The following model numbers shall apply:

1. Model 722, Detector
2. Model 764 Phase Selector Global Traffic Technologies (GTT)
3. Opticom Belden 3C20 cable (B, O, Y)
4. Astro Mini-Brac Clamp Kit

Method of Measurement:

Measurement for the furnishing and installation of Opticom Pre-Emption Unit described herein shall be at the unit price for each unit furnished and installed, complete in place, as specified in the Bid Schedule.

Basis of Payment:

The accepted quantities of Opticom Pre-Emption Unit, measured as provided above, will be paid for at the contract unit price for each unit furnished and installed, and shall include all labor and materials required to install, integrate, and test the equipment.

ITEM 124 PEDESTRIAN SIGNAL INDICATION
ITEM 138 TRAFFIC SIGNAL FACE (TYPE F)
ITEM 139 TRAFFIC SIGNAL FACE (TYPE R)
ITEM 140 TRAFFIC SIGNAL FACE (TYPE Q)

Description:

This work shall consist of furnishing and installing traffic signal heads and pedestrian signal indications as specified on the plans.

Construction Requirements:

Traffic signal heads shall follow ADOT Standard Specifications and ADOT Standard Details.

All vehicle traffic signal heads shall have 12-inch lenses and a 5-inch metal louvered backplate. All traffic signal heads shall be black.

Pedestrian signals shall be GE LED countdown.

Method of Measurement:

Traffic signal heads will be measured as a unit for each signal head furnished and installed, complete in place.

Signal heads mounted on trombone mast arms shall include appropriate mounting assemblies, which shall be considered included in the cost of the signal head.

Basis of Payment:

The accepted quantities of traffic signal faces, measured as provided above, will be paid for at the contract unit price for each item furnished and installed, which price shall be full compensation for the work, and shall include all labor and materials required to install the equipment, complete in place.

ITEM 141 TRAFFIC SIGNAL MOUNTING ASSEMBLY (TYPE II)
ITEM 142 TRAFFIC SIGNAL MOUNTING ASSEMBLY (TYPE V)
ITEM 143 TRAFFIC SIGNAL MOUNTING ASSEMBLY (TYPE VII)
ITEM 144 TRAFFIC SIGNAL MOUNTING ASSEMBLY (TYPE XI)
ITEM 145 TRAFFIC SIGNAL MOUNTING ASSEMBLY (TROM)

Description:

This work shall consist of furnishing and installing traffic signal mounting assemblies as specified on the plans.

Construction Requirements:

Traffic signal mounting assemblies shall follow City of Buckeye Standard Specifications and Standard Details, and ADOT Standard Specifications and ADOT Standard Details.

Trombone mounting assemblies will include all labor, materials, and equipment required to mount traffic signal faces to the trombone-type traffic signal mast arms.

Method of Measurement:

Traffic mounting assemblies will be measured as a unit for each mounting assembly furnished and installed, complete in place.

Basis of Payment:

The accepted quantities of traffic signal mounting assemblies, measured as provided above, will be paid for at the contract unit price for each assembly furnished and installed, which price shall be full compensation for the work, and shall include all labor and materials required to install the equipment, complete in place.

ITEM 146 LUMINAIRE (130W LED) (HORIZONTAL MOUNT)(TRAFFIC SIGNAL)
ITEM 147 LUMINAIRE (37W LED) (HORIZONTAL MOUNT)(TRAFFIC SIGNAL)
ITEM 162 LUMINAIRE (130W LED) (HORIZONTAL MOUNT)(DKBZ)
ITEM 163 LUMINAIRE (87W LED) (HORIZONTAL MOUNT)(DKBZ)

Description:

This work shall consist of furnishing and installing luminaires on luminaire mast arms as specified on the plans.

Materials:

Luminaires shall be GE Evolve LED or approved equal. Luminaire models shall follow requirements as shown in the Project plans.

Construction Requirements:

Luminaire wire connections will only be made in pull boxes and not brought into the signal controller cabinet.

Measurement:

Luminaires will be measured as a unit for each luminaire furnished and installed, complete in place.

Payment

The accepted quantities of luminaires, measured as provided above, will be paid for at the contract unit price for each luminaire furnished and installed, which price shall be full compensation for the work, and shall include all labor and materials required to install the equipment, complete in place. The cost of luminaire pole adaptor brackets shall be considered included in the luminaire bid items.

ITEM 148 ELECTRICAL CONDUCTORS (MILLER RD AND LOWER BUCKEYE RD)
ITEM 149 ELECTRICAL CONDUCTORS (MILLER RD AND DURANGO ST)
ITEM 150 ELECTRICAL CONDUCTORS (MILLER RD AND PIMA ST)

Description:

This work shall consist of furnishing and installing conductors and cables related to traffic signal equipment, except for those related to the video detection system, emergency vehicle pre-emption, AND CCTV.

Construction Requirements:

The following requirements, in addition to the standards previously identified, apply to conductors to be installed:

IMSA 19-1 stranded wire cable shall be used for all signal and pedestrian conductors. Two (2) 25-Conductor cables shall be installed in all street crossings and in the cabinet home run. Dedicated cables will be provided from the nearest pull box to the signal heads as indicated:

a. Install 7-conductor cables to each Type G, Type Q, and Type Q-2 vehicle head

b. Install 4-conductor cables to each Type R and Type F vehicle head and pedestrian signal head

c. Install 2-conductor cables to each pedestrian push button. Cable shall run unspliced from pedestrian push button to controller and cabinet.

Signal conductor grounding wire shall be #8 green stranded for all runs.

Do not splice wires except in pull boxes. All conductors shall run continuous from the signal indication to the pull box. Do not splice conductors and do not loop conductors through the side mount termination block.

Conductors and cables shall have a minimum of 72 inches of slack in all pull boxes.

All future conduits and mast arm tenons shall have a detectable pull strap installed and be capped with a 2-inch cap to prevent contaminants from entering the mast arm.

Conductors shall be installed per the manufacturer’s instruction, and in accordance with the City of Buckeye Requirements.

Method of Measurement:

Conductors as described herein and as required for the project will be measured on a lump sum basis and will be paid for at the lump sum amount indicated on the Schedule of Bid Items. Payment will be considered full compensation for the work complete as described herein and on the plans.

Basis of Payment:

Payment for Conductors will be considered full compensation for the work complete as described herein and on the plans.

ITEM 154 RELOCATE CCTV CAMERA

Description:

This work shall consist of relocating a CCTV camera assembly at locations shown on the plans.

Construction Requirements:

The CCTV camera shall be removed from the existing signal pole, stored, and relocated to the new signal pole location as shown in the Project Plans. The CCTV Camera Assembly shall conform to the following requirements:

a. The CCTV camera shall be AXIS Q6075-E Mk II PTZ Dome Network Camera, unless otherwise approved by the Traffic Operations Division.

b. AXIS T91L61 Wall-and-Pole Mount shall be used for mounting.

c. A Power-Over-Ethernet surge protector shall be used for connection to the CAT5e STP RJ45 connector to the CCTV (Part# DTK-MRJPOE).

Method of Measurement:

Relocate CCTV Camera will be measured as a unit for each CCTV assembly relocated, configured, and tested completed with all required brackets, cabling, surge suppressors and all incidentals necessary to complete the work.

Basis of Payment:

Relocate CCTV Camera shall be paid on a unit basis for each camera system successfully relocated and tested to the City's approval.

ITEM 155 REMOVE AND SALVAGE STREET LIGHT

Descriptions:

The work under this item shall consist of furnishing all labor, equipment, and material necessary to remove existing streetlights at locations as shown on the project plans. The contractor shall coordinate with the City for the de-energizing and energizing the existing circuits that are located within the nearest existing pull boxes or light pole locations. The work shall be done in accordance with MAG Uniform Standard Specifications Section 350 in its entirety, City of Buckeye Standards, APS requirements, the project plans, requirements of these specifications, and as directed by the Engineer.

Construction Requirements:

The contractor shall remove the existing light pole assembly (pole, mast-arm, and fixture) at the location as designated in the Project Plans. All equipment removed shall be returned to the City

of Buckeye. The contractor shall be responsible for any damage occurred to the light pole assembly during relocation. The contractor shall remove and dispose of existing pole foundation. The work shall include removing any existing pull boxes, grounding system, and conduits that are only serving the previous light location; installing new pull boxes and conduits, as necessary for existing lighting circuits to by-pass this light pole location; and coordinating with the City, APS for having existing conductors removed and new conductors installed as necessary.

Contractor shall be responsible for coordinating de-activation with the City prior to removing or de-energizing any existing lights.

Measurement:

Remove Light Pole will be measured on each basis for each streetlight assembly removed as shown on the Project Plans.

Payment:

The accepted quantities of Remove Light Pole, measured as provided, will be paid for at the contract unit price each, which price shall be in full compensation for the work, complete in place, including excavation, backfill, finish surface restoration, and removal of lighting pole assembly, removal of foundation, pull boxes, conduits, and conductors.

ITEM 159 STREET LIGHTING POLE (ARTERIAL, CITY OF BUCKEYE STREET LIGHTING STANDARD DETAIL #1)
ITEM 160 POLE FOUNDATION (CITY OF BUCKEYE STREET LIGHTING STANDARD DETAIL #1)
ITEM 161 8 FT MAST ARM (CITY OF BUCKEYE STREET LIGHTING STANDARD DETAIL #4)

Description:

The work for these items consists of the furnishing all the necessary materials, labor, tools, and equipment to install traffic signal modular poles and street lighting poles in accordance with the plans, the City of Buckeye Standard Details, APS Standard Details, and specifications presented herein.

Street light poles, mast arms, and foundations shall be furnished and installed by the Contractor.

Materials:

Contractor shall not order any material for this item until the exact locations for the new poles have been identified by the Contractor and approved by the City. In addition, no equipment shall be ordered until approval of equipment submittals is provided by the City of Buckeye. Any equipment purchase/order without written approval of the submittals by the City shall be at the

contractor's own risk. Associated appurtenances necessary to provide a complete in place and functional item is considered inclusive of each bid item.

Construction Requirements:

Street lighting poles to be standard dark bronze square poles with 8' x 8' mast arms installed on foundations and shall conform to the current City of Buckeye Street Lighting Standard Details #1 and #4 and as indicated in the Project Plans.

Street lighting poles shall be installed plumb and straight. The base of the pole shall be oriented so that the hand hole is aligned with the mast arm and as far away from vehicular traffic as possible.

The Contractor shall furnish and install all necessary grounding, wiring, fusing and metal tagging to provide a complete in place and functional street light pole in accordance with City of Buckeye Street Lighting Standard Detail #6 and as indicated on the project plans.

Measurement and Payments:

Payment for Poles will be paid for at the unit price indicated on the Schedule of Bid items on a per each basis, which includes furnishing and installation of each item in accordance with plans, details, and specifications. Payment will be made when the work is completed as described herein and on the plans and include the materials, labor, tools, and equipment necessary to complete the work.

ITEM 164 MISCELLANEOUS (PROVIDE ELECTRICAL SERVICE)

General:

The purpose of this item is to provide a funding source for coordination and paying all necessary fees for permit and hook up to APS to install a complete functioning electrical service to power traffic signal equipment and street lighting.

Description:

This item shall include providing all permits, connection fees, foundations, junction boxes, conduit risers, conduit sweeps, coordination, and required protection when working near overhead lines required by APS to provide the electrical connection from the APS transformer to the proposed service meter pedestal.

Construction Requirements:

All work shall conform to the requirements of APS. The Contractor shall contact the APS to coordinate power service and construction requirements.

The Contractor shall secure the necessary utility company permits, pay the related fee(s) for said permit including utility company connection fees, and coordinate the installation of the required power services.

The meter will be energized and have the account established in the name of the City of Buckeye.

Measurement and Payment:
Payment for this item will be made on an incremental basis from allowance in accordance with the requirements of City of Buckeye.

ITEM 169 CLASS 350 16" DIP WATERLINE W/ POLYWRAP

Description:

The work under this section consists of furnishing and installing a new 16" ductile iron waterline at the location shown on the plans and as shown in the 16" waterline vertical realignment detail on sheet 133 of the Project Plans. 16" waterline vertical realignment shall be done in accordance with MAG Standard Details and Specifications, where applicable, the City of Buckeye Engineering Design Standards and Details, where applicable, and the private irrigation plans and details.

Materials:

All ductile iron pipe and fittings shall be Class 350 DIP and conform to the City of Buckeye Engineering Design Standards and Details, and Approved Materials List. Thrust blocks shall conform to MAG Standard Specifications and Details.

Construction Requirements:

All work and materials shall comply with the appropriate City of Buckeye Engineering Design Standards and Details, MAG Sections 601 and 610, and as shown on the Project Plans.

Contractor shall prepare a Maintenance of Plant Operation (MOPO) that provides sufficient detail on the required sequencing to ensure the continuous operation of the existing waterlines and the numerous services that are fed from the existing waterlines along the existing 16" waterline located along Miller Road. These include individual water services, fire hydrants, pipeline feeds, and fire department connections. The Contractor is hereby advised that long term shutdowns of the existing waterlines will not be permitted.

The MOPO shall at the minimum include the following:

- Timing and method for each waterline tie in.

- Method of keeping existing line functioning prior to connecting water services, fire hydrants, pipeline feeds, and fire department connections to the new waterline. This may include temporary tie-ins, temporary valving, and temporary thrust restraint.
- Detailed schedule for overall installation of the waterline and removal of existing waterline, including the preparation of a construction sequencing plan. The schedule for the waterline construction and removal work shall align with the sequencing plans or a revised sequencing plan approved by City Representatives.
- Timing and method of removal of temporary improvements necessary for providing continuous water service such as temporary tie-ins, temporary valving, and temporary thrust restraint. Detail shall be provided as to the material used including, but not limited to size and material of pipe and valves, size of thrust blocks, and size and manufacturer of adaptor couplings.

Contractor shall submit MOPO to the Engineer, and the City of Buckeye for review and approval prior to starting waterline construction.

Work under this item shall also include work necessary to meet the requirements of the approved MOPO including temporary tie-ins, temporary valving, and temporary thrust restraint. Improvements are anticipated to include at a minimum piping, valves, thrust blocks, trenching, excavation, temporary pavement, traffic control, coordination with property owners, and coordination with City of Buckeye staff.