

## **INVITATION FOR BIDS**

### **SOLICITATION INFORMATION AND SCHEDULE**

|                                  |  |
|----------------------------------|--|
| Solicitation Number:             | <b>EN19-166</b>  |
| CIP Project Number:              | <b>ST 1381</b>   |
| Solicitation Title:              | <b>Traffic Signal- Maricopa Street &amp; Avondale Boulevard</b>  |
| Release Date:                    | <b>April 22, 2019</b>  |
| <b>NON-MANDATORY</b>             | <b>April 30, 2019</b>  |
| Prospective Bidders' Conference: | <b>9:00 a.m.</b> (local-time, Phoenix, Arizona)<br>Avondale City Hall<br>First Floor- Mojave Conference Room<br>11465 West Civic Center Drive<br>Avondale, Arizona 85323 |
| Final Date for Inquiries:        | <b>May 06, 2019 at 6:00 p.m.</b>   |
| Bid Deadline and Opening:        | <b>May 13, 2019</b><br><b>5:00 p.m. (local-time, Phoenix, Arizona)</b>   |
| Procurement Administrator:       | <b>Tiffany Copp</b> <a href="mailto:tcopp@avondaleaz.gov">tcopp@avondaleaz.gov</a>   |

In accordance with the City of Avondale Procurement Code, competitive sealed Bids for the services specified herein will be received by the City Clerk at the City Clerk's Office at the above-referenced location until the date and time referenced above (the "Bid Deadline"). Bids received by the Bid Deadline shall be publicly opened and the Bid Price read. Bids must be in the actual possession of the City Clerk on, or prior to, the Bid Deadline. Late Bids shall not be considered, except as provided in the City Procurement Code. Each Bid shall be submitted in a sealed envelope with the Solicitation Number and the Bidder's name and address clearly indicated on the front of the envelope.

**\* The City of Avondale reserves the right to amend the solicitation schedule as necessary.**

**OFFER**

The undersigned (the “Bidder”) hereby offers this Bid as an offer to contract with the City under the terms and conditions set forth below and certifies that Bidder has read, understands and agrees to fully comply with, and be contractually bound by, all terms and conditions as set forth in this Invitation For Bids (“IFB”), the Contract formed hereby (as defined below) and any amendments thereto, together with all Exhibits, Specifications, Plans and other documents included as part of this Contract (the “Contract Documents”).

|  |  |
|--|--|
| Arizona Transaction (Sales) Privilege<br>Tax License Number: _____<br><br>Federal Employer Identification<br>Number: _____<br><br><div style="text-align: center;">Contractor Name</div> <hr/> <div style="text-align: center;">Address</div> <hr/> <div style="display: flex; justify-content: space-between;"> <span>City</span> <span>State</span> <span>Zip Code</span> </div>   | For Clarification of this Bid contact:<br><br>Name: _____<br><br>Telephone: _____<br><br>Facsimile: _____<br><br>Email: _____<br><br>_____<br><div style="text-align: center;"><b>Authorized Signature for Contractor</b></div> <hr/> <div style="text-align: center;">Printed Name</div> <hr/> <div style="text-align: center;">Title</div> |
| <b>ACCEPTANCE OF OFFER (FOR CITY OF AVONDALE USE ONLY)</b>   |  |
| Effective Date: _____ Contract No. _____ Official File: _____  |  |
| CITY OF AVONDALE, an Arizona municipal<br>corporation<br><br><hr/> Charles A. Montoya, City Manager<br><br><div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">           ATTEST:<br/><br/> <hr/>           Marcella Carrillo, City Clerk         </div> <div style="width: 45%;">           APPROVED AS TO FORM:<br/><br/> <hr/>           Andrew J. McGuire, City Attorney         </div> </div> |  |

**CITY OF AVONDALE  
ACKNOWLEDGMENT OF PLANS AND SPECIFICATIONS RECEIVED**

**INVITATION FOR BIDS**

**TRAFFIC SIGNAL- MARICOPA STREET AND AVONDALE BOULEVARD  
EN19-166**

Vendor certifies that it has reviewed and verified the following plans and specifications were included as part of IFB EN19-166, released on April 22, 2019, and that the information contained therein has been incorporated in formulating the Vendor's Offer:

\_\_\_\_\_, \_\_\_\_\_ 2019  
Signed Date

\_\_\_\_\_  
Print Name and Title

\_\_\_\_\_  
Company Name

**ARTICLE I - DEFINITIONS**

For purposes of this Invitation for Bids, the following definitions shall apply:

- 1.1 “Bid” or “Offer” means a responsive bid or quotation submitted by a Bidder in response to this Invitation for Bids.
- 1.2 “Bid Deadline” means the date and time set forth on the cover of this IFB for the City Clerk to be in actual possession of the sealed Bids.
- 1.3 “Bid Opening” means the date and time set forth on the cover of this Invitation for Bids for opening of sealed Bids.
- 1.4 “Bidder” means any person or firm submitting a competitive Bid in response to this IFB.
- 1.5 “City” means the City of Avondale, an Arizona municipal corporation.
- 1.6 “City Representative” means the City employee who has specifically been designated to act as a contact person to the City’s Procurement Administrator, and who is responsible for monitoring and overseeing the Contractor’s performance under this Contract and for providing information regarding details pertaining to the Work.
- 1.7 “Confidential Information” means that portion of a Bid, proposal, Offer, Specification or protest that contains information that the person submitting the information believes should be withheld, provided (i) such person submits a written statement advising the City of this fact at the time of the submission and (ii) the information is so identified wherever it appears.
- 1.8 “Contract” means, collectively, (i) the executed Offer/Bid, (ii) the executed Acknowledgment of Plans and Specifications, (iii) this IFB, including all completed exhibits, (iv) the Notice of Award, (v) the Notice to Proceed or Purchase Order(s), (vi) any approved Addendum, Change Order or Amendment, (vii) the Contractor’s Certificates of Insurance and a copy of the Declarations Page(s) of the insurance policies, (viii) the Certificate of Completion and (ix) any Plans, Specifications, Reference Documents or other documents attached, appended or incorporated herein by reference. Alternate or optional bid items will become part of this Contract only if they are accepted by the City in writing on the Price Sheet.
- 1.9 “Contractor” means the individual, partnership, corporation or limited liability company who has submitted a Bid in response to this IFB and who, as a result of the competitive bidding process, is awarded a contract for Materials or Services by the City.
- 1.10 “Contract Time” means the time period during which the Contractor must complete all of the Work related to the Project.
- 1.11 “Day(s)” means calendar day(s) unless otherwise specified.
- 1.12 “Engineer” means the City Engineer or authorized designee.
- 1.13 “Final Completion” shall be defined as set forth in Section 3.18 and shall occur not later than 30 Days from the date of Substantial Completion unless otherwise designated by the Engineer and subject to modification by changes in the Work as provided in Section 3.16 below.
- 1.14 “Invitation for Bids” or “IFB” means this request by the City for participation in the competitive bidding process according to all documents, including those attached or incorporated herein by reference, utilized for soliciting Bids for the Materials and/or Services in compliance with the City’s Procurement Code.

1.15 “MAG Specifications” means, collectively, the “Uniform Standard Specifications for Public Works Construction,” current edition as of the date of Contract award and the “Uniform Standard Details for Public Works Construction,” current edition as of the date of Contract award, which are sponsored and distributed by the Maricopa Association of Governments (“MAG”) and any amendments or supplements adopted by the City.

1.16 “MAG Supplement” means the City of Avondale Supplement to the MAG Uniform Standard Specifications and Details for Public Works Construction, dated April, 2008.

1.17 “Materials” means any personal property, including equipment, materials, replacements and supplies provided by the Contractor in conjunction with this Contract and shall include, in addition to Materials incorporated in the Project, equipment and other material used and/or consumed in the performance of the Work.

1.18 “Multiple Award” means an award of an indefinite quantity contract for one or more similar products, commodities or Services to more than one Bidder.

1.19 “Plans” means drawings relating to the Project, prepared by or on behalf of the City, bearing the seal of the professional who is responsible for their preparation.

1.20 “Price” means the total expenditure for the defined Project, inclusive of all Materials, commodities or Services.

1.21 “Procurement Administrator” means a City employee, as designated on the cover of this IFB, who has specifically been designated to act as a contact person to the Bidders and/or Contractor relating to their IFB.

1.22 “Procurement Agent” means the City Manager or authorized designee.

1.23 “Procurement Code” means the City’s Procurement Code, as amended from time to time.

1.24 “Project” means the purpose and Work described as set forth in Section 2.1, in the “Purpose/Scope of Work” of the IFB.

1.25 “Punch List” means that list of items provided by City to Contractor at the time of Substantial Completion indicating items to be completed or corrected, including the time for completion or correction by Contractor after Substantial Completion.

1.26 “Reference Documents” means information provided by the City relating to the Project that must be evaluated by the Contractor and incorporated into its Bid.

1.27 “Services” means the furnishing of labor, time or effort by a Contractor, not involving the delivery of a specific end product other than reports which are merely incidental to the required performance and as further defined in this Contract. This term does not include “professional and technical services” as defined in the Procurement Code.

1.28 “Specification” means any description of the physical characteristics, functional characteristics, or the nature of a commodity, product, supply or Services. The term may include a description of any requirements for inspecting, testing, or preparing a supply or service item for delivery.

1.29 “Subcontractor” means those persons or groups of persons having a direct contract with the Contractor to perform a portion of the Work and those who furnish Materials according to the plans and/or Specifications required by this Contract.

1.30 “Substantial Completion” shall be defined as set forth in Section 3.17 below and shall occur not later than the date set forth in the Schedule, subject to modification by changes in the Work as provided in Section 3.16 below.

1.31 “Substitutions” means Contractor’s proposed changes in products, materials, equipment and methods of construction from those required by the Contract Documents.

1.32 “Substitutions for Cause” means changes proposed by Contractor that are required due to changed product conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.

1.33 “Substitutions for Convenience” means changes proposed by Contractor or City that are not required in order to meet other Project requirements, but which may offer advantage to Contractor or City.

1.34 “Vendor” means any firms, entities or individuals desiring to prepare a responsive Bid in response to this Invitation for Bids.

1.35 “Work” means all labor, Materials and equipment incorporated or to be incorporated in the Project that are necessary to accomplish the construction required by this Contract.

## ARTICLE II – BID PROCESS; BID AWARD

2.1 Purpose/Scope of Work. The Work included in this Project consists of the installation of a traffic signal, ADA ramp and sidewalk modifications, installation of fiber optic communications and other related miscellaneous work as further described in the Price Sheet attached hereto as Exhibit C. The City is issuing this IFB to secure a qualified Engineering Contracting (Commercial) Class A Licensed Contractor to perform the Work and provide Materials as more particularly described in the Specifications attached hereto as Exhibit A and incorporated herein by reference. Bidders must submit Bids encompassing the entire Project, inclusive of the related Plans, Specifications, related construction drawings and Reference Documents. Failure to do so may result in a determination that the Bid is non-responsive.

2.2 Amendment of IFB. Except as set forth in Section 3.57 below, no alteration may be made to this IFB or the resultant Contract without the express, written approval of the City in the form of an official IFB addendum or Contract amendment. Any attempt to alter this IFB/Contract without such approval is a violation of this IFB/Contract and the City Procurement Code. Any such action is subject to the legal and contractual remedies available to the City including, but not limited to, Contract cancellation and suspension and/or debarment of the Bidder or Contractor.

2.3 Preparation/Submission of Bid. Bidders are invited to participate in the competitive bidding process for the Project specified in this IFB. Bidders shall review their Bid submissions to ensure the following requirements are met.

A. Irregular/Non-responsive Bids. The City will consider as “irregular” or “non-responsive” and shall reject any Bid not prepared and submitted in accordance with the IFB and Specifications, or any Bid lacking sufficient information to enable the City to make a reasonable determination of compliance with the Specifications. Unauthorized or unreasonable exceptions, conditions, limitations, or provisions shall be cause for rejection. Bids may be deemed non-responsive at any time during the evaluation process if, in the sole opinion of the Procurement Agent, any of the following are true:

1. Bidder does not meet the minimum required skill, experience or requirements to perform the Work or provide the Materials.
2. Bidder has a past record of failing to fully perform or fulfill contractual obligations.

3. Bidder cannot demonstrate financial stability.

4. Bid submission contains false, inaccurate or misleading statements that, in the opinion of the Procurement Agent, are intended to mislead the City in its evaluation of the Bid.

B. Specification Minimums. Bidders are reminded that the Specifications in this IFB are the minimum levels required and that Bids submitted must be for products that meet or exceed the minimum level of all features specifically listed in this IFB. Bids offering less than the minimums specified will be deemed not responsive. It shall be the Bidder's responsibility to carefully examine each item listed in the Specifications.

C. Required Submittal. Bidders must provide the following completed pages/documents to be considered a responsive Bid:

1. Offer, signed in ink by a person authorized to bind the Bidder (Page i).

2. Acknowledgement of Plans and Specifications signed in ink (Page ii).

(The full set of Plans and Specifications **does not** need to be returned with the IFB.)

3. Price Sheet (Exhibit C).

4. Licenses; DBE/WBE Status (Exhibit D).

5. References (Exhibit E).

6. Bid Bond (Exhibit F).

7. Key Personnel/Subcontractor Listing (Exhibit G).

8. Acknowledgment page, signed in ink, for each Addendum issued (Exhibit J).

(Revised Plans and Specifications attached to the Addendum do not need to be returned with the Acknowledgment.)

D. Bidder Responsibilities. All Bidders shall (1) examine the entire Bid package, (2) seek clarification of any item or requirement that may not be clear, (3) check all responses for accuracy before submitting a Bid and (4) submit the entire completed Bid package, in accordance with Subsection 2.3(C) above, by the official Bid Deadline. Late Bids shall not be considered. Bids not submitted with an **original, signed** Offer page by a person authorized to bind the Bidder shall be considered non-responsive. Negligence in preparing a Bid shall not be good cause for withdrawal after the Bid Deadline.

E. Sealed Bids. All Bids shall be sealed and clearly marked with the IFB title and number on the lower left-hand corner of the mailing envelope. A return address must also appear on the outside of the sealed Bid.

F. Address. All Bids shall be directed to the following address: Tiffany Copp c/o City Clerk, 11465 West Civic Center Drive, Suite 200, Avondale, Arizona 85323, or hand-delivered to the City Clerk's office.

G. Bid Forms. All Bids shall be on the forms provided in this IFB. It is permissible to copy these forms if required. Telegraphic (facsimile), electronic (email) or mailgram Bids will not be considered.

H. Modifications. Erasures, interlineations, or other modifications in the Bid shall be initialed in original ink by the authorized person signing the Bid.

I. Withdrawal. At any time prior to the specified Bid Opening, a Bidder (or designated representative) may amend or withdraw its Bid. Facsimile, electronic (email) or mailgram Bid amendments or

withdrawals will not be considered. No Bid shall be altered, amended or withdrawn after the specified Bid Deadline, unless otherwise permitted pursuant to the City Procurement Code.

2.4 Inquiries; Interpretation of Plans, Specifications and Drawings.

A. Inquiries. Any question related to the IFB, including any part of the Plans, Specifications, Scope of Work or other Contract Documents, shall be directed to the Procurement Administrator whose name appears on the cover page of this IFB. Verbal or telephone inquiries directed to City staff **will not be answered**. Questions shall be submitted via email by the date indicated on the cover page of this IFB; the City will not respond to any inquiries submitted later than the Final Date for Inquiries. Any correspondence related to the IFB shall refer to the title and number, page and paragraph. However, the Bidder shall not place the IFB number and title on the outside of any envelope containing questions, because such an envelope may be identified as a sealed Bid and may not be opened until the Bid Opening. Any interpretations or corrections of the proposed Contract Documents will be made only by addenda duly approved and issued by the City. The City will not be responsible for any other explanations or interpretations of the Contract Documents.

B. Addenda. It shall be the Bidder's responsibility to check for addenda issued to this IFB. Any addendum issued by the City with respect to this IFB will be available on the City's website at:

[www.avondaleaz.gov/procurement](http://www.avondaleaz.gov/procurement).

C. Approval of Substitutions. The Materials, products, and equipment described in this IFB establish a standard or required function, dimension, appearance and quality to be met by any proposed substitution. No substitute will be considered unless written Substitution/Equal Request in the form attached hereto as Exhibit B, has been received by the City Representative at least 10 Days prior to the Bid Deadline. Each such request shall include the name of the Material or equipment for which it is to be substituted and a complete description of the proposed substitute, including any drawings, performance and test data and any other information necessary for evaluation of the substitute. If a substitute is approved, the approval shall be by written addendum to the IFB. Bidder shall not rely upon approvals made in any other manner.

D. Use of Equals. When the Specifications for materials, articles, products and equipment include the phrase "*or equal*," Bidder may bid upon and use materials, articles, products and equipment that will perform equally the requirements imposed by the general design. The Engineer will have the final approval of all materials, articles, products and equipment proposed to be used as an "equal." No such "equal" shall be purchased or installed without prior, written approval from the Engineer. No "equal" will be considered unless a written Substitution/Equal Request, in the form attached hereto as Exhibit B, has been received by the City Representative at least 10 Days prior to the Bid Deadline. The request shall include the name of the material or equipment for which the item is sought to be considered an equal and a complete description of the proposed equal including any drawings, cuts, performance and test data and any other information necessary for evaluation of the equal. All approval of equals shall be issued in the form of written addendum or amendment, as applicable, to this IFB or the Contract.

E. Bid Quantities. It is expressly understood and agreed by the parties hereto that the quantities of the various classes of Services and/or Materials to be furnished under this Contract, which have been estimated as stated in the Bidders' Offer, are only approximate and are to be used solely for the purpose of comparing, on a consistent basis, the Bidders' Offers presented for the Work under this Contract. The selected Contractor agrees that the City shall not be held responsible if any of the quantities shall be found to be incorrect and the Contractor will not make any claim for damages or for loss of profits because of a difference between the quantities of the various classes of Services and/or Materials as estimated and the Services and/or Materials actually provided. Contractor is responsible for ensuring that all Materials contained in the Plans for the project are bid on the Price Sheet. Contractor shall bring any potential discrepancy between the Plans and the Price Sheet to the City's attention, either at the Prospective Bidders' Conference or by written inquiry, as set forth in Subsection 2.4(A) above. If any error, omission or misstatement is found to occur, the same shall not (1) invalidate



this Contract or the whole or any part of the Scope of Work, (2) excuse Contractor from any of the obligations or liabilities hereunder or (3) entitle Contractor to any damage or compensation except as may be provided in this Contract.

2.5 Prospective Bidders' Conference. A Prospective Bidders' Conference may be held. If scheduled, the date and time of the Prospective Bidders' Conference will be indicated on the cover page of this IFB. The Prospective Bidders' Conference may be designated as mandatory or non-mandatory on the cover of this IFB. Bids shall not be accepted from Bidders who do not attend a mandatory Prospective Bidders' Conference. Bidders are strongly encouraged to attend those Prospective Bidder's Conferences designated as non-mandatory. The purpose of the Prospective Bidders' Conference will be to clarify the contents of the IFB in order to prevent any misunderstanding of the City's requirements. Any doubt as to the requirements of this IFB or any apparent omission or discrepancy should be presented to the City at the Prospective Bidders' Conference. The City will then determine if any action is necessary and may issue a written amendment or addendum to the IFB. Oral statements or instructions will not constitute an amendment or addendum to the IFB.

2.6 New Materials. All Materials to be provided by the Contractor and included in the Bid shall be new, unless otherwise stated in the Specifications.

2.7 Prices. Work shall be performed at the unit prices as set forth in the Price Sheet attached hereto as Exhibit C and incorporated herein by reference. Bid prices shall be submitted on a per unit basis by line item, when applicable and include all applicable transaction privilege, sales or use tax. In the event of a disparity between the unit price and extended price, the unit price shall prevail. **NOTE: All pricing blanks must be filled in. Empty or unfilled spaces in the Bid Price Sheet shall result in a determination that a Bid is non-responsive.**

2.8 Payment; Discounts. Any Bid that requires payment in less than 30 Days shall not be considered. Payment discounts of 30 Days or less will not be deducted from the Bid Price in determining the low Bid. The City shall be entitled to take advantage of any payment discount offered, provided payment is made within the discount period. Payment discounts shall be indicated on Price Sheet.

2.9 Taxes. The City is exempt from Federal Excise Tax, including the Federal Transportation Tax. Please be advised that ARIZ. REV. STAT. § 42-5075(P) applies to the Project contemplated within this Contract. Transaction privilege tax, sales tax and use tax, if any, shall be included in the unit price for each line item. It shall not be considered a lump sum payment item. Bidder should not include tax on any allowances. It is the sole responsibility of the Bidder to determine any applicable tax rates and calculate the tax accordingly. Failure to accurately tabulate any applicable taxes may result in a determination that a Bid is non-responsive. The Bidder shall not rely on, and shall independently verify, any tax information provided by the City.

2.10 Federal Funding. It is the responsibility of the Bidder to verify and comply with federal requirements that may apply to the Work (the "Federal Requirements"). It is also the responsibility of the Bidder to incorporate any necessary amounts in the Bid to accommodate for required federal record-keeping, necessary pay structures or other matters related to the Federal Requirements. In addition to any applicable Federal Requirements, this procurement is subject to a number of state and City regulations. In general, where these rules conflict, the more stringent law or rule applies.

2.11 Cost of Bid/Proposal Preparation. Bids submitted for consideration should be prepared simply and economically, providing adequate information in a straightforward and concise manner. The City does not reimburse the cost of developing, presenting or providing any response to this solicitation; the Bidder is responsible for all costs incurred in responding to this IFB. All materials and documents submitted in response to this IFB become the property of the City and will not be returned.

2.12 Public Record. All Bids shall become the property of the City. After Contract award, Bids shall become public records and shall be available for public inspection in accordance with the City's Procurement Code,

except that any portion of a Bid that was designated as confidential pursuant to Section 2.13 below shall remain confidential from and after the time of Bid opening to the extent permitted by Arizona law.

2.13 Confidential Information. If a Vendor/Bidder believes that a Bid, Specification, or protest contains information that should be withheld from the public record, a statement advising the Procurement Agent of this fact shall accompany the submission and the information shall be clearly identified. The information identified by the Vendor or Bidder as confidential shall not be disclosed until the Procurement Agent makes a written determination. The Procurement Agent shall review the statement and information with the City Attorney and shall determine in writing whether the information shall be withheld. If the City Attorney determines that it is proper to disclose the information, the Procurement Agent shall inform the Vendor or Bidder in writing of such determination.

2.14 Vendor Licensing and Registration. Prior to the award of the Contract, the successful Bidder shall (A) be registered with the Arizona Corporation Commission and authorized to do business in Arizona and (B) have a completed Vendor Registration Packet on file with the City Finance and Budget Department. Bidders shall provide license and certification information with the Bid, attached as Exhibit D and incorporated herein by reference. Upon the City's request, corporations and limited liability companies shall provide Certificates of Good Standing from the Arizona Corporation Commission.

2.15 Bidder Qualifications.

A. Experience and References. Bidder must demonstrate successful completion of at least three similar projects within the past 60 months, one of which must have a dollar value of at least 75% of the total bid for this Project as set forth in the Price Sheet, attached as Exhibit C. Total bid price does not include any City allowances identified. For the purpose of this Solicitation, "successful completion" means completion of a project within the established schedule and budget and "similar projects" resemble this Project in size, nature and scope. References for these three projects shall be listed on the sheet attached hereto as Exhibit E and incorporated herein by reference. *These references will be checked*, and it is Bidder's responsibility to ensure that all information is accurate and current. Bidder authorizes the City's representative to verify all information from these references and releases all those concerned from any liability in connection with the information they provide.

B. Investigation. The City's representative may conduct any investigation deemed necessary to determine the Bidder's ability to perform the Work in accordance with the Contract Documents. The three lowest Bidders may be requested to submit additional documentation within 72 hours (or as specified) to assist the City in its evaluation.

2.16 Certification. By submitting a Bid, the Bidder certifies:

A. No Collusion. The submission of the Bid did not involve collusion or other anti-competitive practices.

B. No Discrimination. It shall not discriminate against any employee or applicant for employment in violation of Federal Executive Order 11246.

C. No Gratuity. It has not given, offered to give, nor intends to give at any time hereafter, any economic opportunity, future employment, gift, loan, gratuity, special discount, trip favor or service to a City employee, officer, agent or elected official in connection with the submitted Bid or a resultant Contract. In the event that the resultant Contract is canceled pursuant to this provision, the City shall be entitled, in addition to any other rights and remedies, to recover and withhold from the Contractor an amount equal to 150% of the gratuity.

D. Financial Stability. It is financially stable, solvent and has adequate cash reserves to meet all financial obligations including any potential costs resulting from an award of the Contract.

E. No Signature/False Statement. The signature on the Bid and the Vendor Information Form is genuine. Failure to sign the Bid and the Vendor Information Form, or signing either with a false statement, shall void the submitted Bid and any resulting Contract, and the Bidder may be debarred from further bidding in the City.

2.17 Bid Bond. All Vendors desiring to prepare a responsive Bid shall submit a non-revocable bid security payable to the City in the amount of ten percent (10%) of the total Bid Price. This security shall be in the form of a bid bond, certified check or cashier's check and must be in the possession of the City Representative by the Bid Deadline. All bid security from Contractor(s) who have been issued a Notice of Award shall be held until the successful execution of all required Contract Documents and bonds. If the Contractor fails to execute the required contractual documents and bonds within the time specified, or 10 Days after Notice of Award if no period is specified, the Contractor may be found to be in default and this Contract terminated by the City. In case of default, the City reserves all rights inclusive of, but not limited to, the right to purchase material and/or to complete the Work and to recover any actual excess costs associated with such completion from the Contractor. All bid bonds shall be executed in the form attached hereto as Exhibit F, duly executed by the Bidder as Principal and having as Surety thereon a Surety company holding a Certificate of Authority from the Arizona Department of Insurance to transact surety business in the State of Arizona. Individual sureties are unacceptable. All insurers and sureties shall have, at the time of submission of the proposal, an A.M. Best's Key Rating Guide of "A-" or better as currently listed in the most recent Best Key Guide, published by the A.M. Best Company. As soon as is practicable after the completion of the evaluation, the City will (A) issue a Notice of Award for those Offers accepted by the City and (B) return all checks or bonds to those Bidders who have not been issued a Notice of Award.

2.18 Award of Contract.

A. Multiple Award. The City may, at its sole discretion, accept Bidder's Offer as part of a Multiple Award.

B. Evaluation. The evaluation of this Bid will be based on, but not limited to, the following: (1) compliance with Specifications, (2) tax-inclusive Price, including alternates selected by the City, if any, and taxes, but excluding "as-needed" services requested by the City and (3) Bidder qualifications to perform the Work.

C. Waiver, Rejection, Reissuance. Notwithstanding any other provision of this IFB, the City expressly reserves the right to: (1) waive any immaterial defect or informality, (2) reject any or all Bids or portions thereof and (3) cancel or reissue an IFB.

D. Offer. A Bid is a binding offer to contract with the City based upon the terms, conditions and Specifications contained in this IFB and the Bidder's responsive Bid, unless any of the terms, conditions, or Specifications are modified by a written addendum or Contract amendment. Bids become binding Contracts when the Acceptance of Offer and Notice of Award is executed in writing by the City. Bidder Offers shall be valid and irrevocable for **90** Days after the Bid Opening.

E. Protests. Any Bidder may protest this IFB, the proposed award of a Contract, or the actual award of a Contract. All protests will be considered in accordance with the City Procurement Code.

ARTICLE III – GENERAL TERMS AND CONDITIONS

PART A - GENERAL

3.1 Reference Standards and Reference Documents. The Contractor shall perform the Work required in conformance with MAG Specifications and the MAG Supplement, each of which is incorporated herein by reference. In the event of a conflict between the MAG Specifications and the MAG Supplement, the MAG Supplement shall prevail. The Contractor shall also perform the Work in accordance with the Reference Documents, a list of which is attached hereto as part of Exhibit A.

3.2 Contract Time. The Contract Time for this Project shall be 113 days from the Notice to Proceed. All Work on the Project shall be completed on or before the expiration of the Contract Time.

3.3 Pre-Construction Conference. Within 30 Days of the issuance of the Notice of Award, the Contractor shall attend a pre-construction conference. The City will contact the Contractor to schedule a specific date, time and location for the pre-construction conference. The purpose of this conference is to outline specific items and procedures and to address items that require special attention on the part of the Contractor. The Contractor may also present proposed variations in procedures that the Contractor believes may (A) improve the Project, (B) reduce cost or (C) reduce inconvenience to the public. Any necessary coordination and procedures for construction inspection and staking will be addressed during the pre-construction conference. The Contractor will be required to provide the following items at, or prior to, the pre-construction conference, each of which is subject to review and approval by the Engineer:

A. Key Personnel; Subcontractors. A list of the names and emergency telephone numbers of all proposed key personnel, Subcontractors and suppliers that the Contractor intends to utilize on the Project, in the form attached hereto as Exhibit G and incorporated herein by reference. The term "Key Personnel" means individuals who will be directly assigned to this Project and includes, but is not limited to, the owner, principals, project manager, project superintendent, scheduler, construction engineer and supervisory personnel. At least two of the Bidder's Key Personnel must have a minimum of three years' experience in similar projects (defined above) and the scheduler must have experience in employing scheduling techniques appropriate for this Project. Resumes of Key Personnel shall be submitted upon request by the City's representative. Proposed Subcontractors shall be qualified and have the requisite professional or technical licenses and be licensed to do business in the State of Arizona. The list shall include such information on the professional background of each of the assigned key individuals as may be requested by the City Representative. Such key personnel and Subcontractors shall be satisfactory to the Engineer and shall not be changed except with the consent of the Engineer. Additionally, the Engineer shall have the right to request that the Contractor personnel and Subcontractors be removed from the Project if, in the Engineer's sole discretion, such personnel or Subcontractor(s) are detrimental to the Project delivery process. Upon receipt of such request, the Contractor shall remove such personnel or Subcontractor(s) unless the Contractor can provide the City with sufficient documentation to prove it is commercially impractical to replace the personnel or Subcontractor(s) with substitute personnel possessing similar qualifications. The Engineer's approval of substituted personnel or Subcontractor(s) shall not be unreasonably withheld.

B. Progress Schedule. A construction progress schedule showing the estimated time for start and completion of the major items of Work.

C. Payment Schedule. A payment schedule showing the estimated dollar volume of Work for each calendar month during the life of the Project.

D. Traffic Control. A written proposal, prepared by an individual who is IMSA or ATSSA certified, outlining the intended plans for traffic control and for maintaining continuous access to residences and businesses along the construction site.

E. Drawings, Materials & Equipment. An itemized list of all required shop drawings, material and equipment submittals and a schedule indicating the dates each of these items will be transmitted to the City for review.

3.5 Notice to Proceed. Within 45 Days of the issuance of the Notice of Award the City may issue a written Notice to Proceed. The Notice to Proceed shall stipulate the actual Contract start date, the Contract Time and the dates of Substantial Completion and Final Completion. The time required for the Contractor to obtain permits, licenses and easements shall be included in the Contract Time and shall not be justification for a delay claim by the Contractor. The time required for the Contractor to prepare, transmit and obtain approval of applicable submittals shall be included in the Contract Time and shall not be justification for a delay claim by the Contractor.

No Work shall be started until after all required permits, licenses, and easements have been obtained. The Contractor shall notify the Engineer, in writing, at least 72 hours before the following events:

- A. Commencement. The start of construction.
- B. City Services Shut Down. Shutdown of City water, sewer, drainage, irrigation and/or traffic control facilities.
- C. Well or Pump Shut Down. Shutdown of existing water wells and booster pumps. Such shutdown shall not exceed 72 hours of any facility and only one facility may be shutdown at any one time.
- D. Water Lines. All draining and filling of water lines and irrigation laterals and all operations of existing valves or gauges. The City will furnish all required water meters; provided however, that the meter provided is only for construction purposes. Any domestic water meter necessary for the Project shall be included in the Bid.
- E. Start-up and Testing. Start-up or testing of any water well or booster pump to be connected to any part of the existing City water system. This includes operation of existing valves necessary to accommodate the water.

3.6 Laws and Regulations. The Contractor shall keep fully informed of all rules, regulations, ordinances, statutes or laws affecting the Work herein specified, including existing and future (A) City and County ordinances and regulations, (B) State and Federal laws and (C) Occupational Safety and Health Administration (“OSHA”) standards.

3.7 Affirmative Action Report. It is the policy of the City that suppliers of goods or services to the City adhere to a policy of equal employment opportunity and demonstrate an affirmative effort to recruit, hire, and promote regardless of race, color, religion, gender, national origin, age or disability. On any Contract in excess of six months, the Contractor shall provide an annual report to the Engineer highlighting its activities to comply with this Section 3.7.

3.8 Rights-of-Way. The Contractor shall obtain a right-of-way permit for any of the Work completed in the public right-of-way. The Contractor will be responsible for any required Maricopa County permits or other agency permits. The City will provide any necessary easements for Work specified under this Contract, and the Contractor shall not enter or occupy with workers, tools, equipment or materials any private ground outside the property of the City without the written consent of the owner thereof. The Contractor, at its own expense, is responsible for the acquisition of any additional easements or rights-of-way.

3.9 Inspection and Compliance. Each Contractor must inform itself fully of the conditions relating to the construction of the Project and the employment of labor thereon. Failure to do so will not relieve the Contractor of its obligation to furnish all material and labor necessary to carry out the provisions of this Contract. Insofar as possible in carrying out its work, the Contractor must employ such methods or means as will not cause any interruption of or interference with the Work of any other contractor. Contractor affirms that it has inspected the jobsite and has thoroughly reviewed this Contract including, without limitation, the Specifications listed on Exhibit A, as the same may be revised by the City, and is not relying on any opinions or representations of City. Contractor agrees to perform and complete such Work in strict accordance with this Contract and under the general direction of the City. Contractor agrees that any exclusions of any Work must be approved in writing by the City prior to acceptance of this Contract or same shall not be excluded hereunder. Contractor shall provide all competent supervision necessary to execute all Work and any Work incidental thereto in a thorough, first-class, workmanlike manner. It is Contractor’s responsibility that all of the Work and any Work incidental thereto conforms to, and is performed in accordance with, all applicable Federal, State, County and City laws, codes, ordinances, regulations (including National Pollutant Discharge Elimination System and air pollution standards) and orders of public authorities bearing on performance of the Work.

3.10 Safety Plan. Contractor is responsible for all safety precautions and programs and shall perform the Work in accordance with a safety plan that is compliant with OSHA, American National Standards Institute and National Institute for Occupational Safety and Health standards. Contractor shall provide all protection and necessary supervision to implement said safety plan. Contractor shall take all reasonable precautions for the safety of and provide reasonable protection to prevent damage, injury or loss to: (A) employees or others on the Project, (B) the Work and materials and (C) other property at the Project or adjacent thereto. Contractor shall designate a responsible person on the Project whose duty shall be prevention of accidents.

3.11 Traffic Regulations. All traffic affected by the Work under this Contract shall be regulated in accordance with the then-current version of the *City of Phoenix-Traffic Barricade Manual* (the "Barricade Manual") which is incorporated herein by reference; provided, however, that this Contract shall govern in a conflict with the terms of the Barricade Manual. At the time of the pre-construction conference, the Contractor shall designate an employee who is well qualified and experienced in construction traffic control and safety to be responsible for implementing, monitoring and altering traffic control measures, as necessary. At the same time, the City will designate a representative who will be responsible to see that all traffic control and any alterations are implemented and monitored to the extent that traffic is carried through the Work area in an effective manner and that motorists, pedestrians, bicyclists and workers are protected from hazard and accidents.

A. Major Streets. The following shall be considered major streets: All major parkway, mile (section line), arterial and collector (mid-section line and quarter section line) streets so classified by the City.

B. Traffic Control Devices. All traffic control devices required for the Work under this Contract shall be the responsibility of the Contractor. The Contractor shall place advance warning signs (such as REDUCE SPEED, LOOSE GRAVEL, 25 MPH SPEED LIMIT and DO NOT PASS) in accordance with the Barricade Manual. The Contractor shall provide, erect and maintain all necessary flashing arrow boards, barricades, suitable and sufficient warning lights, signals and signs and shall take all necessary precautions for the protection of the Work and safety of the public. The Contractor shall provide, erect and maintain acceptable and adequate detour signs at all closures and along detour routes. All barricades and obstructions shall be illuminated at night, and all safety lights shall be illuminated from sunset until sunrise. All barricades and signs used by the Contractor shall conform to the standard design generally accepted for such purposes and payment for all such services and materials shall be considered as included in the other pay items of this Contract.

C. Existing Signs. The Contractor shall ensure that all existing traffic signs are erect, clean and in full view of the intended traffic at all times. Street name signs at major street intersections shall be maintained erect at all times. If these signs should interfere with construction, the Contractor shall notify the Engineer, in writing, at least 48 hours in advance for City personnel to temporarily relocate or cover said signs. The Engineer will direct the Contractor as to the correct positions to re-set all traffic and street name signs to permanent locations when notified by the Contractor that the interfering construction is complete.

D. Manual Traffic Control. Manual traffic control shall be in conformity with the Barricade Manual, except that the designated liaison officer shall be contacted at the Avondale Police Department. When construction activities or traffic hazards at the construction site require the use of flagmen, it shall be the Contractor's responsibility to provide trained flagmen to direct traffic safely. When traffic hazards at construction sites warrant the use of certified police personnel to direct traffic, arrangements must be made with the liaison officer at the Avondale Police Department.

E. Contractor Equipment. The assembly and turnarounds of the Contractor's equipment shall be accomplished using adjacent local streets when possible. Equipment used and/or directed by the Contractor shall travel with traffic at all times. Supply trucks shall travel with traffic except when being spotted. Contractor shall provide a flagman or off-duty, uniformed Avondale officer to assist with spotting.

F. Traffic Alterations. During construction, it may be necessary to alter traffic control. Any such alterations shall be in accordance with the Barricade Manual. No street within the Project area may be closed

to through traffic or to local emergency traffic without prior, written approval of the Engineer. Written approval may be given if sufficient time exists to allow for notification of the public at least 72 hours in advance of such closing. Partial closure of streets within the Project shall be done in strict conformity with the Barricade Manual and the Engineer's written directions.

G. Intersections. Caution should be used when excavating near intersections with traffic signal underground cable. Contractor shall notify the Engineer, in writing, 72 hours in advance of any Work at such intersections. The Contractor shall install and maintain temporary overhead traffic signal cable as specified by the Engineer when underground conduit is to be severed by excavations at intersections. The Contractor shall provide an off-duty, uniformed Avondale police officer to direct traffic while the traffic signal is turned off and the wiring is transferred. All damaged or modified traffic signal overhead and underground items shall be repaired and restored to the Engineer's satisfaction. Magnetic detector loops shall, under no circumstances, be spliced.

H. Adjacent Property Access. The Contractor shall maintain access to all businesses, schools and residences along the Project alignment at all times in accordance with the MAG Supplement, Section 107.7.1 (Access).

I. Covered Crossings. Where crossings of existing pavement occurs, no open trenches shall be permitted overnight, but plating may be permitted if conditions allow, as determined by the Engineer in his sole discretion. If plates cannot be used, crossings shall either be back-filled or the Contractor shall provide a detour.

3.12 Indemnification. To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the City and each council member, officer, employee or agent thereof (the City and any such person being herein called an "Indemnified Party"), for, from and against any and all losses, claims, damages, liabilities, costs and expenses (including, but not limited to, reasonable attorneys' fees, court costs and the costs of appellate proceedings) to which any such Indemnified Party may become subject, under any theory of liability whatsoever ("Claims") to the extent that such Claims (or actions in respect thereof) are caused by the negligent acts, recklessness or intentional misconduct of the Contractor, its officers, employees, agents, or any tier of subcontractor in connection with Contractor's work or services in the performance of this Agreement. The amount and type of insurance coverage requirements set forth below will in no way be construed as limiting the scope of the indemnity in this Section.

3.13 Insurance.

A. General.

1. Insurer Qualifications. Without limiting any obligations or liabilities of Contractor, Contractor shall purchase and maintain, at its own expense, hereinafter stipulated minimum insurance with insurance companies authorized to do business in the State of Arizona pursuant to ARIZ. REV. STAT. § 20-206, as amended, with an AM Best, Inc. rating of A- or above with policies and forms satisfactory to the City. Failure to maintain insurance as specified herein may result in termination of this Contract at the City's option.

2. No Representation of Coverage Adequacy. By requiring insurance herein, the City does not represent that coverage and limits will be adequate to protect Contractor. The City reserves the right to review any and all of the insurance policies and/or endorsements cited in this Contract but has no obligation to do so. Failure to demand such evidence of full compliance with the insurance requirements set forth in this Contract or failure to identify any insurance deficiency shall not relieve Contractor from, nor be construed or deemed a waiver of, its obligation to maintain the required insurance at all times during the performance of this Contract.

3. Additional Insured. All insurance coverage, except Workers' Compensation insurance and Professional Liability insurance, if applicable, shall name, to the fullest extent permitted by

law for claims arising out of the performance of this Contract, the City, its agents, representatives, officers, directors, officials and employees as Additional Named Insured as specified under the respective coverage sections of this Contract.

4. Coverage Term. All insurance required herein shall be maintained in full force and effect until all Work or Services required to be performed under the terms of this Contract are satisfactorily performed, completed and formally accepted by the City, unless specified otherwise in this Contract.

5. Primary Insurance. Contractor's insurance shall be primary insurance with respect to performance of this Contract and in the protection of the City as an Additional Insured.

6. Claims Made. In the event any insurance policies required by this Agreement are written on a "claims made" basis, coverage shall extend, either by keeping coverage in force or purchasing an extended reporting option, for three years past completion and acceptance of the services. Such continuing coverage shall be evidenced by submission of annual Certificates of Insurance and necessary endorsements citing applicable coverage is in force and contains the provisions as required herein for the three-year period.

7. Waiver. All policies, except for Professional Liability, including Workers' Compensation insurance, shall contain a waiver of rights of recovery (subrogation) against the City, its agents, representatives, officials, officers and employees for any claims arising out of the Work or Services of Contractor. Contractor shall arrange to have such subrogation waivers incorporated into each policy via formal written endorsement thereto.

8. Policy Deductibles and/or Self-Insured Retentions. The policies set forth in these requirements may provide coverage that contains deductibles or self-insured retention amounts. Such deductibles or self-insured retention shall not be applicable with respect to the policy limits provided to the City. Contractor shall be solely responsible for any such deductible or self-insured retention amount.

9. Use of Subcontractors. If any Work under this Contract is subcontracted in any way, Contractor shall execute written agreement with its Subcontractors containing the indemnification provisions set forth above and insurance requirements set forth herein protecting the City and Contractor. Contractor shall be responsible for executing any agreements with its Subcontractor and obtaining certificates of insurance verifying the insurance requirements.

10. Evidence of Insurance. Contractor will provide to the City within 10 business days after receipt of the executed Agreement, and prior to commencing any Work or Services under this Contract, suitable evidence of insurance in the form of certificates of insurance and a copy of the declaration page(s) of the insurance policies as required by this Contract, issued by Contractor's insurance insurer(s) as evidence that policies are placed with acceptable insurers as specified herein and provide the required coverages, conditions and limits of coverage specified in this Contract and that such coverage and provisions are in full force and effect. Confidential information such as the policy premium may be redacted from the declaration page(s) of each insurance policy, provided that such redactions do not alter any of the information required by this Contract. The City shall reasonably rely upon the certificates of insurance and declaration page(s) of the insurance policies as evidence of coverage but such acceptance and reliance shall not waive or alter in any way the insurance requirements or obligations of this Contract. If any of the policies required by this Contract expire during the life of this Contract, it shall be Contractor's responsibility to forward renewal certificates and declaration page(s) to the City 30 Days prior to the expiration date. All certificates of insurance and declarations required by this Contract shall be identified by referencing this Contract. A \$25.00 administrative fee shall be assessed for all certificates or declarations received without a reference to this Contract. Additionally, certificates of insurance and declaration page(s) of the insurance policies submitted without referencing this Contract will be subject to rejection and may be returned or discarded. Certificates of insurance and declaration page(s) shall specifically include the following provisions:



a. The City, its agents, representatives, officers, directors, officials and employees are Additional Insureds as follows:

(i) Commercial General Liability - Under Insurance Services Office, Inc., ("ISO") Form CG 20 10 03 97 or equivalent.

(ii) Auto Liability - Under ISO Form CA 20 48 or equivalent.

(iii) Excess Liability - Follow Form to underlying insurance.

b. Contractor's insurance shall be primary insurance with respect to performance of this Contract.

c. All policies, except for Professional Liability, including Workers' Compensation, waive rights of recovery (subrogation) against City, its agents, representatives, officers, officials and employees for any claims arising out of Work or Services performed by Contractor under this Contract.

d. ACORD certificate of insurance form 25 (2014/01) is preferred. If ACORD certificate of insurance form 25 (2001/08) is used, the phrases in the cancellation provision "endeavor to" and "but failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents or representatives" shall be deleted. Certificate forms other than ACORD form shall have similar restrictive language deleted.

11. Endorsements. Contractor shall provide the City with the necessary endorsements to ensure City is provided the insurance coverage set forth in this Subsection.

B. Required Insurance Coverage.

1. Commercial General Liability. Contractor shall maintain "occurrence" form Commercial General Liability insurance with an unimpaired limit of not less than \$1,000,000 for each occurrence, \$2,000,000 Products and Completed Operations Annual Aggregate and a \$2,000,000 General Aggregate Limit. The policy shall cover liability arising from premises, operations, independent contractors, products-completed operations, personal injury and advertising injury. Coverage under the policy will be at least as broad as ISO policy form CG 00 010 93 or equivalent thereof, including but not limited to, separation of insured's clause. To the fullest extent allowed by law, for claims arising out of the performance of this Contract, the City, its agents, representatives, officers, officials and employees shall be cited as an Additional Insured under ISO, Commercial General Liability Additional Insured Endorsement form CG 20 10 03 97, or equivalent, which shall read "Who is an Insured (Section II) is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of "your work" for that insured by or for you." If any Excess insurance is utilized to fulfill the requirements of this subsection, such Excess insurance shall be "follow form" equal or broader in coverage scope than underlying insurance.

2. Vehicle Liability. Contractor shall maintain Business Automobile Liability insurance with a limit of \$1,000,000 each occurrence on Contractor's owned, hired and non-owned vehicles assigned to or used in the performance of the Contractor's Work or Services under this Contract. Coverage will be at least as broad as ISO coverage code "1" "any auto" policy form CA 00 01 12 93 or equivalent thereof. To the fullest extent allowed by law, for claims arising out of the performance of this Contract, the City, its agents, representatives, officers, directors, officials and employees shall be cited as an Additional Insured under ISO Business Auto policy Designated Insured Endorsement form CA 20 48 or equivalent. If any Excess insurance is utilized to fulfill the requirements of this subsection, such Excess insurance shall be "follow form" equal or broader in coverage scope than underlying insurance.

3. Professional Liability. If this Contract is the subject of any professional Services or Work, or if the Contractor engages in any professional Services or Work in any way related to performing the Work under this Contract, the Contractor shall maintain Professional Liability insurance covering negligent errors and omissions arising out of the Services performed by the Contractor, or anyone employed by the Contractor, or anyone for whose negligent acts, mistakes, errors and omissions the Contractor is legally liable, with an unimpaired liability insurance limit of \$2,000,000 each claim and \$2,000,000 annual aggregate.

4. Workers' Compensation Insurance. If Contractor employs anyone who is required by law to be covered by workers' compensation insurance, Contractor shall maintain Workers' Compensation insurance to cover obligations imposed by Federal and State statutes having jurisdiction over Contractor's employees engaged in the performance of Work or Services under this Contract and shall also maintain Employers Liability Insurance of not less than \$500,000 for each accident, \$500,000 disease for each employee and \$1,000,000 disease policy limit.

5. Builder's Risk Insurance. Unless expressly waived by the City Manager in a written addendum or amendment to this Contract, the Contractor shall be responsible for purchasing and maintaining insurance to protect the Project from perils of physical loss. The insurance shall provide for the full cost of replacement for the entire Project at the time of any loss. The insurance shall include as named insureds the City, the Contractor, the Contractor's Subcontractors and subsubcontractors and shall insure against loss from the perils of fire and all-risk coverage for physical loss or damage due to theft, vandalism, collapse, malicious mischief, transit, flood, earthquake, testing, resulting loss arising from defective design, negligent workmanship or defective material. The Contractor shall increase the coverage limits as necessary to reflect changes in the estimated replacement cost.

C. Cancellation and Expiration Notice. Insurance required herein shall not expire, be canceled, or be materially changed without 30 Days' prior written notice to the City.

3.14 Performance Bond. The Contractor shall be required to furnish non-revocable security binding the Contractor to provide faithful performance of this Contract in the amount of one hundred percent (100%) of the total Contract Price payable to the City. Performance security shall be in the form of a performance bond, certified check, cashier's check or irrevocable letter of credit. This security must be in the possession of the Engineer within 10 business days after receipt of the executed Agreement from the City. If the Contractor fails to execute and deliver the security instrument as required, the Contractor may be found in default and this Contract terminated by the City. In case of default the City reserves all rights. All performance bonds shall be executed in the form attached hereto as Exhibit H, duly executed by the Contractor as Principal and having as Surety thereon a Surety company approved by the City and holding a Certificate of Authority to transact surety business in the State of Arizona by the Arizona Department of Insurance. Individual sureties are unacceptable. All Insurers and Sureties shall have, at the time of submission of the performance bond, an A.M. Best's Key Rating Guide of "A-" or better as currently listed in the most recent Best Key Guide, published by the A.M. Best Company.

3.15 Payment Bond. The Contractor shall be required to furnish non-revocable security for the protection of all persons supplying labor and material to the Contractor or any Subcontractor for the performance of any Work related to this Contract. Payment security shall be in the amount of one hundred percent (100%) of the total Contract Price and be payable to the City. Payment security shall be in the form of a payment bond, certified check, cashier's check or irrevocable letter of credit. This security must be in the possession of the Engineer within 10 business days after receipt of the executed Agreement from the City. If the Contractor fails to execute and deliver the security instrument as required, the Contractor may be found in default and this Contract terminated by the City. In case of default the City reserves all rights. All payment bonds shall be executed in the form attached hereto as Exhibit Ha, duly executed by the Contractor as Principal and having as Surety thereon a Surety company approved by the City and holding a Certificate of Authority to transact surety business in the State of Arizona by the Arizona Department of Insurance. Individual sureties are unacceptable. All Insurers and Sureties shall have, at the time of submission

of the payment bond, an A.M. Best's Key Rating Guide of "A-" or better as currently listed in the most recent Best Key Guide, published by the A.M. Best Company.

3.16 Changes in the Work. The City may, without invalidating this Contract, order changes in the Work consisting of additions, deletions or other revisions to this Contract and the Contract Price and the Contract Time shall be adjusted as provided below. The Contract Price and/or the Contract Time may only be changed by the City's written approval authorizing said change and said changes shall be performed under the applicable conditions of this Contract. The Contract Price shall be adjusted as a result of a change in the Work as follows:

A. Additions. When the City increases the scope of the Work, Contractor will perform the increased work pursuant to Contractor's unit prices set forth on the Price Sheet.

B. Deletions. When the City decreases the Work resulting in a decrease in Contractor's quantity of the Work, the City shall be allowed a decrease in the Contract Price amounting to the quantity of the deleted Work multiplied by the Contractor's unit prices.

C. Estimating. Whenever the City is considering a change to the Work, Contractor shall promptly, and in any event within five business days, estimate the price of the contemplated additional or deleted Work in good faith and as accurately as is then-feasible. The estimate shall show quantities of labor, material and equipment and shall be pursuant to the rates set forth in the Contractor's Bid.

3.17 Substantial Completion. When the Contractor considers that the Work is Substantially Complete, the Engineer shall prepare and submit to the Contractor a comprehensive list of Punch List items, which the Contractor may edit and supplement. The Contractor shall proceed promptly to complete and correct Punch List items. Failure to include an item on the Punch List does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. The City shall determine when the Project and the Contractor's Work is substantially complete. "Substantial Completion" means construction has been completed in accordance with the Contract Documents to the extent that the City can use or occupy the entire Project, or the designated portion of the Project, for the use intended without any outstanding, concurrent construction at the site, except as may be required to complete or correct Punch List items. A prerequisite for Substantial Completion, over and above the extent of construction completion required, is receipt by the City of acceptable documentation that Contractor has successfully tested and demonstrated all systems for their intended use. The date of Substantial Completion shall be confirmed by a Certificate of Substantial Completion signed by the City and Contractor. The Certificate of Substantial Completion signed by the City and Contractor shall state the respective responsibilities of the City and the Contractor for security, maintenance, utilities, damage to the Work and insurance. The Certificate of Substantial Completion shall also include the Punch List as created by the Contractor and modified by the City and establish the time for completion and correction of all Punch List items. If the City and the Contractor cannot agree as to the appropriate date of Substantial Completion, such issue shall be submitted for dispute resolution in accordance with the procedures set forth in Article III, Part B below. Notwithstanding such disagreement, the Contractor shall diligently proceed with completion of the Punch List items.

3.18 Final Completion. The City shall determine when the Project and the Contractor's Work is finally completed. "Final Completion" means completion of the Project by the Contractor in accordance with the Contract Documents, certified to the City by the Contractor. Final Completion shall be achieved only upon the City's written acceptance of (A) the construction, (B) all testing, (C) demonstration by Contractor that the Work functions as required by the Contract Documents and meets all Contract requirements, (D) resolution of all outstanding system deficiencies and Punch List items, if any, (E) delivery of all as-built documentation, drawings, completed record documents (with revisions made after Substantial Completion), annotated submittals and design document deliverables, (F) submittal, acceptance, and delivery of the one hundred percent (100%) complete O&M manuals, (G) delivery of warranties, inspection certificates, bonds and all other required documents, (H) all pre-requisites for final payment and (I) submittal of Contractor's request for final payment and acceptance enclosing all required documentation. Upon Final Completion the Engineer shall issue a Certificate of Final Completion to the Contractor

on behalf of the City. Following receipt of payment from the City, the Contractor shall make all payments due to the Subcontractors.

3.19 Payments to Contractor. Payment shall be conditioned upon Contractor's compliance with the payment terms and conditions set forth below. Contractor expressly acknowledges and agrees that (A) the Contract Price is an estimated amount based upon an engineer's estimate of the quantities of the Materials deemed necessary to perform the Work and (B) the amount of any payment to be made pursuant to this Contract shall be determined by the field-measured quantities of Materials actually installed by Contractor. Material or equipment delivered to the Project by or on behalf of Contractor shall not constitute material or equipment furnished in the performance of the Work until same has been incorporated into the improvements constituting the Project. Payment shall not constitute acceptance by the City or evidence thereof of any Work performed.

A. Progress Payments.

1. On or before the 15th day of each month after construction has commenced, the Contractor shall submit to the City an application for payment consisting of the cost of the Work performed up to the end of the prior month, including the cost of material stored on the site or at other locations approved by the City. The application shall be deemed approved and certified for payment seven Days after it is submitted unless before that time the City prepares and issues a specific written finding setting forth those items in detail that are not approved for payment under this Contract. Prior to submission of the next application for payment, the Contractor shall make available at the request of the City a statement accounting for the disbursement of funds received under the previous application for purposes of audit. The extent of such statement shall be as agreed upon between the City and Contractor.

2. Within 30 Days after approval of each monthly application for payment, the City shall pay directly to the Contractor the appropriate amount for which application for payment is made, less amounts (a) previously paid by the City, (b) sufficient to pay expenses the City reasonably expects to incur in correcting deficiencies which are set forth in writing and provided to the Contractor and (c) any retainage as set forth in subsection 3.19(B) below.

3. The City's progress payment, occupancy or use of the Project, whether in whole or in part, shall not be deemed as acceptance of any Work not conforming to the requirements of this Contract.

4. Upon Substantial Completion of the Work, the City shall pay the Contractor the unpaid balance of the cost of the Work, less a sum equal to the Contractor's estimated cost of completing any unfinished items as agreed to between the City and the Contractor as to extent and time for Final Completion. The City thereafter shall pay the Contractor monthly the amount retained for unfinished items as each item is completed.

B. Retainage. With respect to the Work, the City shall retain ten percent (10%) of the amount of each estimate until Final Completion and acceptance of all Material, equipment and Work covered by this Contract.

1. Any securities submitted by Contractor in lieu of retainage as may be allowed by law, shall be deposited in an escrow account by the City. The City shall be listed as payee or multiple payees with Contractor on all such securities.

2. When the Work is fifty percent (50%) completed, one-half of the amount retained including any securities substituted pursuant to subsection 3.19 (B)(1) shall be paid to the Contractor upon the Contractor's request, provided the Contractor is making satisfactory progress on the Work and there is no specific cause or claim requiring a greater amount to be retained. After the construction Work is fifty percent (50%) completed, no more than five percent (5%) of the amount of any subsequent progress

payments made under this Contract may be retained, provided the Contractor is making satisfactory progress on the Project. If, at any time, the City determines satisfactory progress is not being made, ten percent (10%) retention shall be reinstated for all progress payments made under this Contract after the determination.

C. Payment for On-site and Off-site Stored Materials. Payment shall be made on account of Materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. Payment may similarly be made for Materials and equipment suitably stored off the site, conditioned upon the Contractor furnishing evidence to the City that (1) title to the Materials and equipment will pass to the City upon payment therefore, (2) the Materials and equipment are adequately safeguarded and insured, including during transit from the off-site location to the Project site and (3) such other matters as the City may reasonably request in order to protect its interests. With the prior, written approval of the City, Contractor may advance order the bulk delivery of Materials to be incorporated into the Work over the course of this Contract. Upon delivery and receipt of supplier invoice, the City shall pay for the bulk delivery, either directly to the Contractor or to the vendor or by joint check to Contractor and vendor and shall receive a full release for the amount paid from vendor and Contractor. Contractor agrees to assume full responsibility for the safekeeping of all such Materials and shall guarantee to the City that such Materials shall remain safe from theft or damage from any and all causes (unless caused by the sole negligence of the City). Contractor shall immediately replace, repair or restore said Materials to their original condition so as to not cause any delay in the Work, and Contractor shall indemnify and hold harmless the City for, from and against any and all loss, cost, liability or expense resulting from any loss or damage to any of the Materials described herein from any cause unless due to the City's sole negligence. Should the City have reason to believe Contractor is not properly safeguarding any of the Materials, the City shall have the right, but not the affirmative duty, to immediately take such steps as it deems necessary to do so, including removing Contractor from the job, replacing any Materials or expending any sums to properly carry out Contractor's responsibility hereunder, and any amounts so expended shall be billed back to Contractor or deducted from any sums then or thereafter due to Contractor. Contractor shall fully insure all Materials stored on site as required by the City, and if such insurance is not obtained due to a lack of insurable interest, the City shall have the right to obtain such insurance and charge the amount thereof back to Contractor or deduct said amount from any funds then or thereafter due to Contractor.

D. Title to Construction Work. The Contractor warrants that title to all Work covered by an application for payment shall pass to the City no later than the time of payment. The Contractor further warrants that upon submittal of an application for payment, all Work for which applications for payment have been previously issued and payments received from the City shall be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, Materials and equipment relating to the Work.

E. Final Payment.

1. Final payment, consisting of the unpaid balance of the cost of the Work shall be due and payable at Final Completion and acceptance by the City. Before issuance of final payment, the City may request satisfactory evidence that all payrolls, Materials bills and other indebtedness connected with the Work have been paid or otherwise satisfied.

2. In making final payment the City waives all claims except for:

- a. Outstanding liens.
- b. Improper workmanship or defective Materials.
- c. Work not in conformance with this Contract or Work not completed.
- d. Terms of any special warranties required by this Contract.

e. Delivery to City of all warranties, operation and maintenance manuals, “AS-BUILT” record drawings and other documents as required by this Contract.

f. Right to audit Contractor records for a period of three years.

g. Claims previously made in writing and which remain unsettled.

3. Acceptance of final payment by the Contractor shall constitute a waiver of affirmative claims by the Contractor, except those previously made in writing and identified as unsettled at the time of final payment.

F. Warranty. Contractor or its assignee shall give to the City a one-year warranty against deficiencies in material and workmanship for all Work on the Project or other such warranty as required by the City Engineer, which warranty shall begin on the date that the City accepts the Work as provided in this Section. Any material deficiencies in material or workmanship identified by City staff during the one-year warranty period shall be brought to the attention of the Contractor or its assignee that provided the warranty, which shall promptly remedy or cause to be remedied such deficiencies to the reasonable satisfaction of the City Engineer. Continuing material deficiencies in any portion of the Work shall be sufficient grounds for the City to require (1) an extension of the warranty for an additional one-year period and (2) the proper repair of or the removal and reinstallation of, that portion of the Work that is subject to such continuing deficiencies. Regardless of whether the applicable warranty period has expired, the Contractor agrees to repair any damage to the Work caused by Contractor’s construction activities on the Property. Nothing contained herein shall prevent the City or Contractor from seeking recourse against any other third party for damage to the Work caused by such third party.

#### 3.20 Offset.

A. Offset for Damages. In addition to all other remedies at law or equity, the City may offset from any money due to the Contractor any amounts Contractor owes to the City for damages resulting from breach or deficiencies in performance or breach of any obligation under this Contract.

B. Offset for Delinquent Fees or Taxes. The City may offset from any money due to the Contractor any amounts Contractor owes to the City for delinquent fees, transaction privilege use taxes and property taxes, including any interest or penalties.

### PART B - PERFORMANCE OF THE WORK

3.21 Project Videotape. The Contractor shall produce and provide a project videotape to the Engineer as required by MAG Supplement Section 105.5.3. All costs associated with the Project videotape produced in accordance with this Section shall be deemed incidental.

3.22 Soil and Subsurface Conditions. In addition to conformance to MAG Specifications, Section 102.4 (Examination of Plans, Special Provisions and Site Work), the Contractor shall make its own determinations as to the soil and subsurface conditions, including rock, caliche and ground water and shall complete the Work in whatever material and under whatever conditions may be encountered or created, without extra cost to the City pursuant to the provisions of the MAG Supplement Section 102.4.1.

3.23 Work Scheduling. Time is of the essence for this Contract. Contractor shall provide the Engineer with any requested scheduling information and a proposed schedule for performance of the Work within the Contract Time in a form acceptable to the Engineer and approved by the Engineer, in his sole and absolute discretion, providing for commencement and completion of the Work (the “Schedule”). The Schedule shall include the date for Substantial Completion of the Work. The Engineer may revise the Schedule during the course of the Work. Contractor, to induce the City to enter into this Contract, has and does hereby agree to fully perform and complete the Work for the Contract Price within the Schedule.

3.24 Contractor's Representative. The Contractor or his authorized representative shall be present at the Work site at all times during working hours. Instructions and information provided by the Engineer to the Contractor's representative shall be considered as having been given to the Contractor, per MAG Supplement Section 105.5.2.

3.25 Prosecution of the Work. The Contractor shall prosecute the Work so that the portion of the Work completed at any point in time shall be not less than as required by the Schedule. If the delay is an Inexcusable Delay, as defined below, the Contractor shall prepare a recovery schedule for the Engineer's review and approval, showing how the Contractor will compensate for the delays and achieve Substantial Completion by the date(s) shown on the Schedule. If the Contractor is unable to demonstrate how it will overcome Inexcusable Delays, the Engineer may order the Contractor to employ such extraordinary measures as are necessary to bring the Work into conformity with the Substantial Completion date(s) set forth therein, the costs of which shall be included as part of the Cost of the Work. If the delay is an Excusable Delay, as defined below, the Engineer shall either (A) authorize an equitable extension in the Schedule to account for such delay, and equitably adjust the contract sum on account of such delay or (B) request that the Contractor prepare a recovery schedule showing how (if possible) the Contractor can achieve Substantial Completion by the applicable date shown on the Schedule, and equitably adjust the Contract Price in accordance with the provisions of this Contract on account of any extraordinary activities required of the Contractor on account of such recovery schedule.

3.26 Extensions of Time.

A. Allowable Extensions. An extension in the scheduled date of Substantial Completion will only be granted in the event of Excusable Delays affecting the Schedule for the Work. The Contractor shall be entitled to general condition costs and extra costs related to the Excusable Delay for idle labor, equipment inefficiency and lost productivity of the performance of the Work. The Contractor must submit evidence reasonably satisfactory to the City substantiating such costs. Such adjustment to the Price and Substantial Completion date shall be issued in a Change Order or Contract amendment, as applicable.

B. Excusable Delay. To the extent any of the following events results in an actual delay in the Work, such shall constitute an "Excusable Delay" (to the extent not set forth below, a delay will be considered an "Inexcusable Delay"):

1. Delays resulting from Force Majeure.
2. Differing, unusual or concealed site conditions that could not reasonably have been anticipated by the Contractor in preparing the Schedule, including, without limitation, archaeological finds and unusual soil conditions (including rock or other geological conditions), underground foundations, abandoned utility lines and water conditions.
3. Delays resulting from the existence or discovery of Hazardous Materials on the Site not brought to the Site by the Contractor.
4. Delays resulting from changes in Applicable Laws occurring after the date of execution of this Contract.
5. Delays occurring due to the acts or omissions of the City and those within the control of the City.
6. Delays occurring due to the acts or omissions of a utility, so long as Contractor has coordinated with the utility causing the delay and the delay occurs despite reasonable steps taken by Contractor to avoid the delay.
7. Delays resulting from weather conditions that make it unreasonable to perform the Work in accordance with the Schedule; provided, however, that Contractor's Schedule shall be deemed to

include 5 Days for weather delays (the “Expected Delay Days”), regardless of whether such weather delays are specifically set forth in the Schedule. Contractor shall notify the City within 24 hours in writing of a weather-related delay. If Contractor fails to give the required 24-hour notice, no such weather delay will be subtracted from the Expected Delay Days. Weather delays shall not be deemed “Excusable” unless all of the Expected Delay Days have been exhausted.

8. Delays resulting from Additional Work (defined below) that cannot be performed concurrently with the Work on the Schedule.

C. Required Notice. In order to obtain an extension of time due to an Excusable Delay, the Contractor shall comply with the following requirements. The Contractor shall notify the Engineer in writing of the Excusable Delay as soon as practicable, but in no event more than seven Days after the Contractor becomes aware of the occurrence of the Excusable Delay. Such notice shall describe the Excusable Delay and shall state the approximate number of Days the Contractor expects to be delayed. After the cessation of the Excusable Delay, the Contractor shall notify the Engineer of the number of Days the Contractor believes that its activities were in fact delayed by the Excusable Delay. In the event that the delay arises as a result of a Change Order request by the City, the request for an extension of time contained in the resulting Change Order proposal shall be deemed sufficient for purposes of this subsection.

D. Determination. Within 10 Days after cessation of an event giving rise to either an Excusable Delay or Inexcusable Delay, the parties will use good faith efforts to agree on the extent to which the Work has been delayed and whether the delay is an Excusable Delay or an Inexcusable Delay. In the absence of agreement between the parties as to the then-current status of Excusable Delays and Inexcusable Delays, the Engineer will provide the Contractor with written notice of Engineer’s determination of the respective number of Days of Excusable Delay and/or Inexcusable Delay. The Engineer’s determination may be issued at such time as the Engineer deems reasonable, but not later than 10 Days after receipt by the Engineer of the Contractor’s written request for such determination. The Contractor shall not, however, deem an issuance by the Engineer of such a determination to be a concurrence of the matters set forth in the Contractor’s request. The Contractor may invoke the dispute resolution procedures set forth in Part D below with respect to such determination.

E. Concurrent Delay. To the extent the Contractor is entitled to an extension of time due to an Excusable Delay, but the performance of the Work would have been suspended, delayed or interrupted by the fault or neglect of the Contractor or by an Inexcusable Delay, the Contractor shall not be entitled to any additional costs for the period of such concurrency.

3.27 Liquidated Damages. It is expressly understood that should Contractor fail to complete the Work covered hereby within the Contract Time, the Contractor agrees to pay and shall pay to the City upon request therefore for each Day of delay beyond the original or revised scheduled time of completion of Contractor’s Work as liquidated damages, and not as a penalty, in the amount per day as set forth in MAG Specifications for each Day of delay.

A. Prior to Termination. If this Contract is not terminated, the Contractor shall continue performance and be liable to the City for the liquidated damages until the Work is complete.

B. After Termination. In the event the City exercises its right of termination, the Contractor shall be liable to the City for any excess costs and, in addition, for liquidated damages until such time as the City may reasonably obtain delivery or performance of similar Services.

3.28 Suspension by the City for Convenience.

A. City Determination. The City may order the Contractor in writing to suspend, delay or interrupt all or any part of the Work without cause for such period of time as the City may determine to be appropriate for its convenience.



B. Contract Adjustments. Adjustments caused by suspension, delay or interruption shall be made for increases in the applicable contract sum and/or the date(s) of Substantial Completion. No adjustment shall be made if the Contractor is or otherwise would have been responsible for the suspension, delay or interruption of the Work, or if another provision of this Contract is applied to render an equitable adjustment.

3.29 Termination by the City for Convenience. The City may, upon 30 Days' written notice to the Contractor, terminate this Contract, in whole or in part, for the convenience of the City without prejudice to any right or remedy otherwise available to the City. Upon receipt of such notice, the Contractor shall immediately discontinue all Services affected unless such notice directs otherwise. In the event of a termination for convenience of the City, the Contractor's sole and exclusive right and remedy shall be payment for all Work performed through the date of termination. The Contractor shall not be entitled to be paid any amount as profit for unperformed Services or consideration for the City's termination by convenience.

3.30 Termination by the City for Cause.

A. Default; Cure. If the Contractor refuses or fails to supply sufficient properly skilled staff or proper Materials, or disregards laws, ordinances, rules, regulations, or orders of any public authority jurisdiction, or otherwise substantially violates or materially breaches any term or provision of this Contract, and such nonperformance or violation continues without cure for 15 Days after the Contractor receives written notice of such nonperformance or violation from the City, then the City may, without prejudice to any right or remedy otherwise available to the City, terminate this Contract.

B. Substitute Performance. Upon termination of this Contract by the City, the City shall be entitled to furnish or have furnished the Services to be performed hereunder by the Contractor by whatever method the City may deem expedient. Also, in such case, the Contractor shall not be entitled to receive any further payment until completion of the Work, and the total compensation to the Contractor under this Contract shall be the amount that is equitable under the circumstances. If the City and the Contractor are unable to agree on the amount to be paid under the foregoing sentence, the City shall fix an amount, if any, that it deems appropriate in consideration of all of the circumstances surrounding such termination, and shall make payment accordingly. The Contractor may dispute the City's assessment of the termination amount pursuant to the dispute resolution process set forth in in Part D of this Contract.

C. Contractor Insolvency. Upon the appointment of a receiver for the Contractor, or if the Contractor makes a general assignment for the benefit of creditors, the City may terminate this Contract, without prejudice to any right or remedy otherwise available to the City, upon giving three business days' written notice to the Contractor. If an order for relief is entered under the bankruptcy code with respect to the Contractor, the City may terminate this Contract by giving three business days' written notice to the Contractor unless the Contractor or the trustee completes all of the following:

1. Promptly cures all breaches within such three-day period.
2. Provides adequate assurances of future performance.
3. Compensates the City for actual pecuniary loss resulting from such breaches.
4. Assumes the obligations of the Contractor within the established time limits.

3.31 Contract Subject to Appropriation. The City is obligated only to pay its obligations set forth in this Agreement as may lawfully be made from funds appropriated and budgeted for that purpose during the City's then current fiscal year. The City's obligations under this Agreement are current expenses subject to the "budget law" and the unfettered legislative discretion of the City concerning budgeted purposes and appropriation of funds. Should the City elect not to appropriate and budget funds to pay its Agreement obligations, this Agreement shall be deemed terminated at the end of the then-current fiscal year term for which such funds were appropriated and

budgeted for such purpose and the City shall be relieved of any subsequent obligation under this Agreement. The parties agree that the City has no obligation or duty of good faith to budget or appropriate the payment of the City's obligations set forth in this Agreement in any budget in any fiscal year other than the fiscal year in which this Agreement is executed and delivered. The City shall be the sole judge and authority in determining the availability of funds for its obligations under this Agreement. The City shall keep Contractor informed as to the availability of funds for this Agreement. The obligation of the City to make any payment pursuant to this Agreement is not a general obligation or indebtedness of the City. Contractor hereby waives any and all rights to bring any claim against the City from or relating in any way to the City's termination of this Agreement pursuant to this section.

3.32 Additional Work, Materials and/or Overtime. Contractor expressly agrees that if overtime or additional workers or materials are necessary to meet the Schedule, that such overtime will be performed or additional workers or materials will be procured by the Contractor, and the additional expense thereof shall be borne by Contractor unless the delay requiring overtime was directly caused by the City, in which event Contractor shall be entitled to compensation for such overtime Work. If the City requests Contractor to perform additional Work in connection with the Project ("Additional Work"), Contractor shall charge the City a negotiated fixed amount for the Additional Work. In the event a fixed amount cannot be negotiated, Contractor shall invoice the City on a time and materials basis for the Additional Work at the unit prices set forth in the price sheet.

3.33 No Damage for Delay or Additional Work by the City. Contractor shall adjust its operations to conform to any progress schedule changes and hereby waives and releases the City from any liability for damages or expenses that may be caused to or sustained by Contractor by reason of such changes or by reason of delays in the Work, whether caused in whole or in part by conduct on the part of the City, including without limitation, any breach of this Contract or delays by other contractors or Subcontractors. Contractor's exclusive remedy in the event of delay or Additional Work by the City shall be an extension of time hereunder to complete the Work.

3.34 Risk of Loss. Contractor shall assume the risk of loss occasioned by fire, theft or other damage to Materials, machinery, apparatus, tools and equipment relating to the Work prior to actual installation in final place on the Project and acceptance by the City. Contractor shall be responsible for damage to the Materials, machinery, apparatus, tools, equipment and property of the City and other contractors resulting from the acts or omissions of its Subcontractors, employees, agents, representatives Subcontractors, and for payment of the full costs of repair or replacement of any said damage.

3.35 Protection of Finished or Partially Finished Work. The Contractor shall properly guard and protect all finished or partially finished Work and shall be responsible for the same until the entire Contract is completed and accepted by the Engineer. The Contractor shall turn over the entire Work in full accordance with this Contract before final settlement shall be made.

3.36 Character and Status of Workers. Only skilled foremen and workers shall be employed on portions of the Work requiring special qualifications. When required by the Engineer, the Contractor shall discharge any person who is, in the opinion of the Engineer, disorderly, dangerous, insubordinate, incompetent or otherwise objectionable. The Contractor shall indemnify and hold harmless the City from and against damages or claims for compensation that may occur in the enforcement of this Section. The Contractor shall be responsible for ensuring the legal working status of its employees and its Subcontractor's employees. The Contractor agrees that once assigned to Work under this Contract, key personnel shall not be removed or replaced without written notice to the City. If key personnel are not available for Work under this Contract for a continuous period exceeding 30 Days or are expected to devote substantially less effort to the Work than initially anticipated, the Contractor shall immediately notify the City and shall, subject to the concurrence of the City, replace such personnel with personnel of substantially equal ability and qualifications.

3.37 Work Methods. The methods, equipment and appliances used on the Work shall be such as will produce a satisfactory quality of Work and shall be adequate to complete this Contract within the Contract Time. Except as is otherwise specified in this Contract, the Contractor's procedure and methods of construction may, in

general, be of its own choosing, provided such methods (A) follow best general practice and (B) are calculated to secure results which will satisfy the requirements of this Contract. The Work covered by this Contract shall be carefully laid out in advance and performed in a manner to minimize interference with normal operation and utilization of the City's right-of-way. The Contractor shall exercise caution during the course of this Work to avoid damage to all known existing or possible unknown existing underground utilities. It shall conduct its operations in such a manner as to avoid injury to its personnel and to avoid damage to all utilities. Any damage done will be repaired without delay and at the expense of the Contractor.

3.38 Safety Fencing Requirement for Trenches and Excavations. The Contractor shall provide safety construction fencing around all open trenches and excavations during all non-working hours. In addition, the Contractor shall provide safety fencing around the Project site during working hours in order to ensure public safety. The Contractor shall provide for the safety and welfare of the general public by adequately fencing all excavations and trenches that are permitted by the Engineer to remain open when construction is not in progress. Fencing shall be securely anchored to approved steel posts located not less than six feet on center, having a minimum height of six feet, and shall consist of wire mesh fabric of sufficient weight and rigidity to adequately span a maximum supporting post separation of six feet. The fencing, when installed about the periphery of excavations and trenches, shall form an effective barrier against intrusion by the general public into areas of construction. The Contractor, at all times when construction is not in progress, shall be responsible for maintaining the fencing in good repair, and upon notification by the Engineer, shall take immediate action to rectify any deficiency. Prior to the start of any excavation or trenching required for the execution of the proposed Work, the Contractor shall submit to the Engineer for approval, detailed plans showing types of materials and methods of fabrication for the protective fencing. There will be no separate measurement or payment for furnishing, installing, or maintaining protective fencing. The cost shall be considered incidental to the cost of the pipe, bridge, and any other structures for which trenching is necessary.

3.39 Plans and Shop Drawings, Samples and Substitution of Materials. All submittals shall conform to MAG Specifications, Section 105.2 (Plans and Drawings) as modified by the MAG Supplement. Contractor shall furnish, within three business days following request therefore by the City, detailed drawings of the Work, samples of Materials and other submittals required for the performance or coordination of the Work. Substitutions shall be equal or superior to Materials specified in the Contract Documents, shall be clearly identified on submittals as "proposed substitutions" and shall be approved by the City in accordance with Section 2.4 above. Contractor shall be fully responsible for the adequacy, completeness and promptness of all such submittals. Materials shall not be furnished to the jobsite unless same is in strict compliance with the Specifications or otherwise approved in writing by the City. Approval by the City shall not relieve Contractor of full responsibility for compliance with scope, intent and performance in accordance with this Contract.

3.40 Cooperation with Utilities. The Contractor shall comply with the requirements of MAG Specifications 105.6, as modified by the MAG Supplement.

3.41 Sampling and Testing. Sampling and testing shall conform to the requirements of the MAG Specifications, Section 106, as modified by the MAG Supplement.

3.42 Cooperation between Contractors. The Contractor shall comply with the requirements of MAG Specifications, Section 105.7, as modified by the MAG Supplement.

3.43 Outdoor Construction Time Restrictions. Unless otherwise permitted by the Engineer, construction will be restricted as listed in the following table:

| <b>May 1 – October 31</b> | <b>November 1 – April 30</b> |
|---------------------------|------------------------------|
| 5:00 a.m. to 7:00 p.m.    | 6:00 a.m. to 7:00 p.m.       |

Construction Work shall not begin Work prior to 7:00 a.m. and shall stop by 7:00 p.m. on Saturdays, Sundays and all City, State and Federal holidays.

3.44 Construction Survey. Construction survey and as-built record drawings shall conform to the requirements of the MAG Specifications, Section 105.8 (Construction Stakes, Lines and Grades), as modified by the MAG Supplement.

3.45 Survey Control Points. Existing survey markers (either brass caps or iron pipes) shall be protected by the Contractor or removed and replaced under direct supervision of the Engineer. Survey monuments shall be constructed to the requirements of MAG Specifications, Section 405. Lot corners shall not be disturbed without knowledge and consent of the property owner. The Contractor shall replace benchmarks, monuments or lot corners moved or destroyed during construction at no expense to the City. Contractor and its sureties shall be liable for correct replacement of disturbed survey benchmarks except where the City elects to replace survey benchmarks using its own forces.

3.46 Stockpile of Materials.

A. Engineer Approval. The Contractor may, if approved by the Engineer, place or stockpile Materials in the public right-of-way provided such Materials do not prevent access to adjacent properties or prevent compliance with traffic regulations.

B. No Traffic Interference. Traffic shall not be required to travel over stockpiled Materials and proper dust control shall be maintained.

3.47 Excess Materials. When excavations are made, resultant loose earth shall be (A) utilized for filling by compacting in place or (B) disposed of off-site. Excess or unsuitable material, broken asphaltic concrete and broken portland cement concrete excavated from the right-of-way shall be removed from the Project Site and disposed of by the Contractor. Disposal of material within the Avondale City Limits or Planning Area must be approved by the Engineer. Waste material shall not be placed on private property without express permission of the property owner. The Contractor shall, at all times, keep the premises free from accumulation of waste materials or rubbish caused by its operations. At the completion of the Work, Contractor shall remove all equipment, tools and surplus materials, and shall completely clean the premises, removing and disposing of all debris and rubbish and cleaning all stains, spots, marks, dirt, smears or other blemishes. When the Work premises are turned over to the City, they shall be thoroughly clean and ready for immediate use. Clean-up shall include removal of all excess pointing mortar materials within pipes and removal of oversized rocks and boulders left after finish grading. The Contractor shall provide for the legal disposal of all waste products and debris and shall make necessary arrangements for such disposal.

3.48 Dust Control and Water. Contractor shall implement dust control measures in accordance with MAG Specifications, Section 104.1, and the MAG Supplement. Installation and removal of fire hydrant meters should be scheduled at least three business days in advance through the City Water Billing Department. Watering shall conform to the provisions of MAG Specifications, Section 225. A deposit and installation fee in amounts set forth in the City's fee schedule is required for each meter. The cost of the water is at the prevailing rate.

3.49 Temporary Sanitary Facilities. The Contractor shall provide ample toilet facilities with proper enclosures for the use of workers employed on the Work site. Toilet facilities shall be installed and maintained in conformity with all applicable State and local laws, codes, regulations and ordinances and shall be properly lit and ventilated and kept clean at all times. Adequate and satisfactory drinking water shall be provided at all times and under no circumstances and under no conditions will the use of common cups be permitted. The Contractor must supply sanitary drinking cups for the benefit of all employees.

3.50 Electric Power, Water and Telephone. Unless otherwise specified, the Contractor shall make its own arrangements for electric power, water and telephone. Subject to the convenience of the utility, it may be permitted to connect to existing facilities where available, but Contractor shall meter and bear the cost of such power or water, and installation and disconnect of such power, water and telephone services.

3.51 Energized Aerial Electrical Power Lines. Utility companies may maintain energized aerial electrical power lines in the immediate vicinity of this Project. Contractor shall not presume any such lines to be insulated. Construction personnel working in proximity to these lines may be exposed to an extreme hazard from electrical shock. Contractor shall ensure that its employees and all other construction personnel working on this Project are warned of the danger and instructed to take adequate protective measures, including maintaining a minimum ten feet of clearance between the lines and all construction equipment and personnel. (see: OSHA Std. 1926.550 (a) 15, as amended). As an additional safety precaution, Contractor shall call the affected utility companies to arrange, if possible, to have these lines de-energized or relocated when the Work reaches their immediate vicinity. The cost of such temporary arrangements shall be borne by the Contractor. Contractor shall account for the time necessary to cause such utility disconnection in the preparation of its Bid. Electrical utility companies may maintain energized underground electrical power lines in the immediate vicinity of this Project. These power lines represent an extreme hazard of electrical shock to any construction personnel or equipment coming in contact with them. Arizona law requires all parties planning excavations in public rights-of-way to contact all utility firms for locations of their underground facilities. Contractor shall ensure that its employees and all other personnel working near any underground power lines must be warned to take adequate protective measure. (see: OSHA Std. 1926-651 (A), as amended).

3.52 Site Clean Up. Contractor shall at all times, but not less than daily unless otherwise agreed by City Representative, keep the premises on which the Work is being performed clean and free from accumulation of any waste materials, trash, debris and excess dirt, and at all times shall remove Contractor's implements, machinery, tools, apparatus and equipment from the jobsite when not needed on the jobsite. Should the City Representative find it necessary in his/her opinion to employ help to clean up, remove or store any of the foregoing due to failure of Contractor to do so, the expense thereof shall be charged to Contractor. Verbal notice from the City Representative on clean-up or removal is considered adequate notice hereunder, and failure to conform with his/her request within 24 hours thereof will be construed as a breach of this Contract by the Contractor and such charges will be made against Contractor's account as are necessary to accomplish the clean-up or removal. The cost of cleanup, removal or storage by the City, if not deducted by the City from monies due Contractor, shall be paid by Contractor within five business days of written demand by the City.

3.53 Use of the Site. Contractor shall at all times comply fully with all laws, orders, citations, rules, regulations, standards and statutes with respect to occupational health and safety, the handling and storage of hazardous materials, accident prevention and safety equipment and practices, including any accident prevention and safety program of the City; provided, however, that the City shall not be required to impose any safety requirements or administer any such programs and the review or requirement of any safety plan by the City shall not be deemed to release Contractor or in any way diminish its liability, by way of indemnity or otherwise, as assumed by it under this Contract. Contractor shall conduct inspections regularly to determine that safe working conditions and equipment exist and accepts sole responsibility for providing a safe place to Work for its employees and employees of its Subcontractors, laborers, suppliers of material and equipment and any other person visiting the Site, for adequacy of and required use of all safety equipment and for compliance herewith. When so ordered, Contractor shall stop any part of the Work that the City deems unsafe until corrective measures satisfactory to the City have been taken. Should Contractor neglect to adopt such corrective measures, the City may do so and deduct the cost from payments due Contractor. Contractor shall timely submit copies of all accident or injury reports to the City.

3.54 Public Information and Notification. The Contractor shall submit a public information and notification plan for this Project (the "Notification Plan") to the City Representative at the first pre-construction meeting held prior to start of construction. The Notification Plan shall include, at a minimum, the items set forth in this Section 3.54; provided, however, that the Engineer may waive any portion of the requirements of this Section upon a written determination that the Project scope does not warrant such notification. Contractor shall provide Project information to affected residents and homeowners' associations prior to and throughout the Project's duration. The Contractor shall use the Notification Plan to inform the local citizens, businesses and City officials, not less than five business days in advance, of (A) necessary operations that create high noise levels, (B) street

closures, (C) detour locations, (D) haul routes and material delivery routes and (E) disruption of bus routes, mail routes and other delivery/pick-up routes.

A. Neighborhood Notification. Prior to the start of any Work on the Project, the Contractor shall distribute a preliminary “Dear Neighbor” letter (8-1/2”x11”), as submitted to and subject to the approval of the Engineer, to all businesses, property owners and residents within 600 feet of any portion of this Project. This “Dear Neighbor” letter shall include, at a minimum, the following information:

1. Contractor’s name, business telephone number and the 24-hour “Hot Line” telephone number for this Project.
2. Name of Contractor’s Project Manager.
3. Name of Contractor’s Project Superintendent.
4. Brief description of the Project.
5. Construction schedule, including anticipated Work hours.
6. Anticipated lane restrictions, including the expected duration thereof.
7. Name of City’s Project Manager.
8. Name of the Engineer.

The Engineer shall provide the Contractor with a distribution list for this “Dear Neighbor” letter. Contractor shall (1) ensure that the letter is distributed to all persons and businesses indicated on the list provided by the Engineer and (2) provide the Engineer with a copy of the letter sent and sufficient proof of mailing. Subsequent to delivery of the “Dear Neighbor” letter, the Contractor shall distribute bi-monthly construction progress updates, including construction schedule and any additional information the Engineer deems important as a result of construction activities, to all persons and businesses included on the aforementioned distribution list. At the request of the Engineer, Contractor may be required to distribute additional public notifications. At the end of construction, a final “Dear Neighbor” letter shall be distributed to the persons and businesses on the aforementioned distribution list highlighting the Contractor’s and the City’s appreciation for their patience during construction of the Project.

B. Project Signs. Unless otherwise directed by the Engineer, the Contractor shall furnish and install at least 2 Project signs, not less than five business days before beginning construction, at locations determined by the Engineer, to inform the public of the forthcoming Project, construction dates and 24-Hour Hotline number. The Contractor shall submit the proposed layout of the Project signs to the Engineer for approval prior to fabrication of the signs. The Contractor shall maintain the signs as necessary and update the information as directed by the Engineer. At the Final Completion of the Project, the Contractor shall remove and dispose of the signs. The Project signs shall be fabricated as follows: (1) the vinyl sheeting for the background, legend, and border shall be applied by heat bonding, except that the decal and legend for the project title, cost, and Contractor’s name shall be pressure sensitive application; (2) the four foot by eight foot (4’ x 8’) signs shall be mounted four feet above the ground level and anchored three feet into the ground with concrete backfill around the posts; and (3) sign colors shall be black letters on white background, over a ghost image of the City of Avondale logo. The information on the Project signs shall be in the format and fonts proportions as depicted on the sample sign below. The image template may be obtained from the City of Avondale Engineering Department as a computer image file.

|  |   |
|--|---|
| <h1 style="margin: 0;">PROJECT NAME</h1> <p style="margin: 0; font-size: small;">YOUR TAX DOLLARS AT WORK</p>  |   |
| <b>Project No.</b><br><b>Project Cost:</b><br><b>Contractor:</b><br><b>Engineer:</b><br><b>City Engineering Department</b><br><b>24-Hour Project Hotline</b><br><b>Begin Construction:</b> | <b>Telephone:</b><br><b>Telephone:</b><br><b>Telephone: (623) 333-4200</b><br><b>Telephone:</b><br><b>End Construction:</b> |
| <h2 style="margin: 0;">PROGRESS AS PROMISED</h2>   |   |

C. 24-Hour Project Hotline. The Contractor shall be required to furnish a private 24-hour telephone line to be used solely for receiving incoming calls from local citizens or businesses with questions or complaints concerning Project construction operations or procedures (the “Hotline”). The Contractor shall include this Hotline telephone number on all public information distributed throughout the duration of the Project. Contractor shall ensure that Contractor personnel man the Hotline during all hours that there is any Work being performed on this Project; the Hotline shall be answered by a live answering service during all other hours. The Contractor shall maintain a log of incoming calls, responses and action taken that shall be submitted to the Engineer weekly and upon request.

D. Public Meetings. The Contractor shall attend such public meetings as deemed necessary by the Engineer.

E. Press Releases. The Contractor shall, at the request of the Engineer, prepare press releases regarding the Project.

F. Payment for Public Notification. The City will pay, based on time and materials invoices, an amount not to exceed the amount designated in the Price Sheet and entitled COMMUNITY RELATIONS, for Work performed in accordance with the Notification Plan. Work that is eligible for reimbursement includes: the Project signs; the “Dear Neighbor” letters; bi-monthly progress reports; meetings with impacted businesses, residents, schools, churches or other groups; scheduling newsletter when necessary (at least monthly); temporary signs for local access; and maintaining the Hotline. No payment will be made under this item for any Day during which there are substantial deficiencies in compliance, as determined by the Engineer. The Contractor shall submit a final report/evaluation of its Notification Plan process performed for this Project. The report shall be submitted before the Contractor receives final payment.

### PART C - MISCELLANEOUS

3.55 Applicable Law; Venue. This Contract shall be governed by the laws of the State of Arizona and suit pertaining to this Contract may be brought only in courts in Maricopa County, Arizona.

3.56 Conflict of Interest. This Contract is subject to the provisions of ARIZ. REV. STAT. § 38-511. The City may cancel this Contract without penalty or further obligations by the City or any of its departments or agencies if any person significantly involved in initiating, negotiating, securing, drafting or creating this Contract on behalf of the City or any of its departments or agencies is, at any time while this Contract or any extension of this Contract is in effect, an employee of any other party to this Contract in any capacity or a consultant to any other party of this Contract with respect to the subject matter of this Contract.

3.57 Contract Amendments. This Contract may be modified only by a written amendment signed by persons duly authorized to enter into contracts on behalf of the City and the Contractor; provided, however, that Change Orders may be issued and approved administratively by the City when such changes do not alter the Contract Price.

3.58 Provisions Required by Law. Each and every provision of law and any clause required by law to be in this Contract will be read and enforced as though it were included herein and, if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party, this Contract will promptly be physically amended to make such insertion or correction.

3.59 Severability. The provisions of this Contract are severable to the extent that any provision or application held to be invalid by a Court of competent jurisdiction shall not affect any other provision or application of this Contract which may remain in effect without the invalid provision or application.

3.60 Independent Contractor. It is clearly understood that each party will act in its individual capacity and not as an agent, employee, partner, joint venturer, or associate of the other. An employee or agent of one party shall not be deemed or construed to be the employee or agent of the other for any purpose whatsoever. The Contractor acknowledges and agrees that the Services provided under this Agreement are being provided as an independent contractor, not as an employee or agent of the City. Contractor, its employees and subcontractors are not entitled to workers' compensation benefits from the City. The City does not have the authority to supervise or control the actual work of Contractor, its employees or subcontractors. The Contractor, and not the City, shall determine the time of its performance of the services provided under this Agreement so long as Contractor meets the requirements of its agreed scope of work and the Specifications, Plans/construction drawings and Reference Documents as set forth in Section 2.1 above and Exhibit A. Contractor is neither prohibited from entering into other contracts nor prohibited from practicing its profession elsewhere. City and Contractor do not intend to nor will they combine business operations under this Agreement.

3.61 Entire Agreement; Interpretation-Parol Evidence. This Contract represents the entire agreement of the parties with respect to its subject matter, and all previous agreements, whether oral or written, entered into prior to this Contract are hereby revoked and superseded by this Contract. No representations, warranties, inducements or oral agreements have been made by any of the parties except as expressly set forth herein, or in any other contemporaneous written agreement executed for the purposes of carrying out the provisions of this Contract. This Contract shall be construed and interpreted according to its plain meaning, and no presumption shall be deemed to apply in favor of, or against the party drafting this Contract. The parties acknowledge and agree that each has had the opportunity to seek and utilize legal counsel in the drafting of, review of, and entry into this Contract.

3.62 Assignment; Delegation. No right or interest in this Contract shall be assigned or delegated by Contractor without prior, written permission of the City, signed by the City Manager. Any attempted assignment or delegation by Contractor in violation of this provision shall be a breach of this Contract by Contractor.

3.63 Subcontracts. No subcontract shall be entered into by the Contractor with any other party to furnish any of the Materials, Services or construction specified herein without the prior, written approval of the City. The Contractor is responsible for performance under this Contract whether or not Subcontractors are used.

3.64 Rights and Remedies. No provision in this Contract shall be construed, expressly or by implication, as waiver by the City of any existing or future right and/or remedy available by law in the event of any claim of default or breach of this Contract. The failure of the City to insist upon the strict performance of any term or condition of this Contract or to exercise or delay the exercise of any right or remedy provided in this Contract, or by law, or the City's acceptance of and payment for Materials or Services, shall not release the Contractor from any responsibilities or obligations imposed by this Contract or by law, and shall not be deemed a waiver of any right of the City to insist upon the strict performance of this Contract.



3.65 Attorneys' Fees. In the event either party brings any action for any relief, declaratory or otherwise, arising out of this Contract or on account of any breach or default hereof, the prevailing party shall be entitled to receive from the other party reasonable attorneys' fees and reasonable costs and expenses, determined by the court sitting without a jury, which shall be deemed to have accrued on the commencement of such action and shall be enforced whether or not such action is prosecuted through judgment.

3.66 Notices and Requests. Any notice or other communication required or permitted to be given under this Contract shall be in writing and shall be deemed to have been duly given if (A) delivered to the party at the address set forth below, (B) deposited in the U.S. Mail, registered or certified, return receipt requested, to the address set forth below or (C) given to a recognized and reputable overnight delivery service, to the address set forth below:

If to the City:                      City of Avondale  
   11465 West Civic Center Drive  
   Avondale, Arizona 85323  
   Attn: Charles A. Montoya, City Manager

With copies to:                      City of Avondale  
   11465 West Civic Center Drive  
   Avondale, Arizona 85323  
   Attn: Tiffany Copp, Procurement Administrator

   City of Avondale  
   11465 West Civic Center Drive  
   Avondale, Arizona 85323  
   Attn: City Attorney

If to Contractor:                      \_\_\_\_\_  
   \_\_\_\_\_  
   \_\_\_\_\_  
   Attn: \_\_\_\_\_

or at such other address, and to the attention of such other person or officer, as any party may designate in writing by notice duly given pursuant to this Section. Notices shall be deemed received (A) when delivered to the party, (B) three business days after being placed in the U.S. Mail, properly addressed, with sufficient postage or (C) the following business day after being given to a recognized overnight delivery service, with the person giving the notice paying all required charges and instructing the delivery service to deliver on the following business day. If a copy of a notice is also given to a party's counsel or other recipient, the provisions above governing the date on which a notice is deemed to have been received by a party shall mean and refer to the date on which the party, and not its counsel or other recipient to which a copy of the notice may be sent, is deemed to have received the notice.

3.67 Overcharges by Antitrust Violations. The City maintains that, in practice, overcharges resulting from antitrust violations are borne by the purchaser. Therefore, to the extent permitted by law, the Contractor hereby assigns to the City any and all claims for such overcharges as to the goods and services used to fulfill this Contract.

3.68 Force Majeure. Except for payment for sums due, neither party shall be liable to the other nor deemed in default under this Contract if and to the extent that such party's performance of this Contract is prevented by reason of force majeure. The term "*force majeure*" means an occurrence that is beyond the control of the party affected and occurs without its fault or negligence. Without limiting the foregoing, force majeure includes acts of God; acts of the public enemy; war; riots; strikes; mobilization; labor disputes; civil disorders; fire; floods; lockouts, injunctions-intervention-acts, or failures or refusals to act by government authority; and other similar occurrences beyond the control of the party declaring force majeure which such party is unable to prevent by exercising reasonable diligence. The force majeure shall be deemed to commence when the party declaring force majeure notifies the other party, in accordance with Section 3.66, of the existence of the force majeure and shall be deemed

to continue as long as the results or effects of the force majeure prevent the party from resuming performance in accordance with this Contract. Force majeure shall not include the following occurrences:

A. Late Delivery. Late delivery of equipment or materials caused by congestion at a manufacturer's plant or elsewhere, an oversold condition of the market, inefficiencies or similar occurrences.

B. Late Performance. Late performance by a Subcontractor unless the delay arises out of a force majeure occurrence in accordance with this Section 3.68.

Any delay or failure in performance by either party hereto shall not constitute default hereunder or give rise to any claim for damages or loss of anticipated profits if, and to the extent that such delay or failure is caused by force majeure. If either party is delayed at any time in the progress of the Work by force majeure, then the delayed party shall notify the other party in accordance with Section 3.66 and shall make a specific reference to this Section, thereby invoking its provisions. The delayed party shall cause such delay to cease as soon as practicable and shall notify the other party in writing. The time of Substantial Completion or Final Completion shall be extended by written Contract amendment for a period of time equal to the time that the results or effects of such delay prevent the delayed party from performing in accordance with this Contract.

3.69 Confidentiality of Records. The Contractor shall establish and maintain procedures and controls that are acceptable to the City for the purpose of ensuring that information contained in its records or obtained from the City or from others in carrying out its obligations under this Contract shall not be used or disclosed by it, its agents, officers, or employees, except as required to perform Contractor's duties under this Contract. Persons requesting such information should be referred to the City. Contractor also agrees that any information pertaining to individual persons shall not be divulged other than to employees or officers of Contractor as needed for the performance of duties under this Contract.

3.70 Records and Audit Rights. To ensure that the Contractor and its Subcontractors are complying with the warranty under Section 3.71 below, Contractor's and its Subcontractors' books, records, correspondence, accounting procedures and practices, and any other supporting evidence relating to this Contract, including the papers of any Contractor and its Subcontractors' employees who perform any Work or Services pursuant to this Contract (all of the foregoing hereinafter referred to as "Records"), shall be open to inspection and subject to audit and/or reproduction during normal working hours by the City, to the extent necessary to adequately permit (1) evaluation and verification of any invoices, payments or claims based on Contractor's and its Subcontractors' actual costs (including direct and indirect costs and overhead allocations) incurred, or units expended directly in the performance of Work under this Contract and (2) evaluation of the Contractor's and its Subcontractors' compliance with the Arizona employer sanctions laws referenced in Section 3.71 below. To the extent necessary for the City to audit Records as set forth in this Section, Contractor and its Subcontractors hereby waive any rights to keep such Records confidential. For the purpose of evaluating or verifying such actual or claimed costs or units expended, the City shall have access to said Records, even if located at its Subcontractors' facilities, from the effective date of this Contract for the duration of the Work and until three years after the date of final payment by the City to Contractor pursuant to this Contract. Contractor and its Subcontractors shall provide the City with adequate and appropriate workspace so that the City can conduct audits in compliance with the provisions of this Section. The City shall give Contractor or its Subcontractors reasonable advance notice of intended audits. Contractor shall require its Subcontractors to comply with the provisions of this Section by insertion of the requirements hereof in any subcontract pursuant to this Contract.

3.71 E-verify Requirements. To the extent applicable under ARIZ. REV. STAT. § 41-4401, the Contractor and its Subcontractors warrant compliance with all Federal immigration laws and regulations that relate to their employees and their compliance with the E-verify requirements under ARIZ. REV. STAT. § 23-214(A). Contractor's or its Subcontractors' failure to comply with such warranty shall be deemed a material breach of this Contract and may result in the termination of this Contract by the City.

3.72 Israel. Contractor certifies that it is not currently engaged in and agrees for the duration of this Agreement that it will not engage in a “boycott,” as that term is defined in ARIZ. REV. STAT. § 35-393, of Israel.

3.73 Right to Inspect Plant. The City may, at reasonable times, inspect the part of the plant or place of business of the Contractor or Subcontractor that is related to the performance of this Contract.

3.74 Warranties. Contractor warrants to the City that all Materials and equipment furnished shall be new unless otherwise specified and agreed by the City and that all Work shall be of first-class quality, free from faults and defects and in conformance with this Contract. If at any time within one year following the date of Final Completion and acceptance of the entire Project (or such longer period as may be provided under warranties for equipment or Materials): (A) any part of the Materials furnished in connection with the Work shall be or become defective due to defects in either labor or Materials, or both, or (B) Contractor’s Work or Materials, or both, are or were not in conformance with original or amended Plans and Specifications, or supplementary shop drawings, then the Contractor shall upon written notice from the City immediately replace or repair such defective or non-conforming Material or workmanship at no cost to the City. Contractor further agrees to execute any special guarantees as provided by this Contract or required by law. Contractor shall require similar guarantees from all vendors and from all its Subcontractors. Contractor further agrees, upon written demand of the City and during the course of construction, to immediately re-execute, repair or replace any Work that fails to conform to the requirements of this Contract, whether caused by faulty Materials or workmanship, or both. In the event Contractor shall fail or refuse to make such change upon the City’s written demand, the City shall have the right to have such Work re-executed, repaired or replaced, to withhold from or back charge to Contractor all costs incurred thereby.

3.75 Inspection. All Materials and/or Services are subject to final inspection and acceptance by the City. Materials and/or Services failing to conform to the Specifications of this Contract will be held at Contractor’s risk and may be returned to the Contractor. If so returned, all costs are the responsibility of the Contractor. Upon discovery of non-conforming Materials or Services, the City may elect to do any or all of the following by written notice to the Contractor: (A) waive the non-conformance; (B) stop the Work immediately; or (C) bring material or service into compliance and withhold the cost of same from any payments due to the Contractor.

3.76 No Replacement of Defective Tender. Every tender of Materials shall fully comply with all provisions of this Contract. If a tender is made which does not fully conform, this shall constitute a breach of this Contract as a whole.

3.77 Shipment Under Reservation Prohibited. Contractor is not authorized to ship Materials under reservation and no tender of a bill of lading will operate as a tender of the Materials.

3.78 Liens. All Materials, Service or construction shall be free of all liens and, if the City requests, a formal release of all liens shall be delivered to the City.

3.79 Licenses. Contractor shall maintain in current status all Federal, State and Local licenses and permits required for the operation of the business conducted by the Contractor as applicable to this Contract.

3.80 Patents and Copyrights. All Services, information, computer program elements, reports and other deliverables, which may be patented or copyrighted and created under this Contract are the property of the City and shall not be used or released by the Contractor or any other person except with the prior written permission of the City.

3.81 Preparation of Specifications by Persons other than City Personnel. All Specifications shall seek to promote overall economy for the purposes intended and encourage competition and not be unduly restrictive in satisfying the City’s needs. No person preparing Specifications shall receive any direct or indirect benefit from the utilization of Specifications, other than fees paid for the preparation of Specifications.

3.82 Advertising. Contractor shall not advertise or publish information concerning this Contract without prior, written consent of the City.

**PART D - ALTERNATIVE DISPUTE RESOLUTION**

3.83 Scope. Notwithstanding anything to the contrary provided elsewhere in the Contract Documents, except for subsection 3.86(G) below, the alternative dispute resolution (“ADR”) process provided for herein shall be the exclusive means for resolution of claims or disputes arising under, relating to or touching upon this Contract, the interpretation thereof or the performance or breach by any party thereto, including but not limited to original claims or disputes asserted as cross claims, counterclaims, third party claims or claims for indemnity or subrogation, in any threatened or ongoing litigation or arbitration with third parties, if such disputes involve parties to contracts containing this ADR provision.

3.84 Neutral Evaluator, Arbitrators. The City will select a Neutral Evaluator to serve as set forth in this ADR process, subject to the Contractor’s approval, which approval shall not be unreasonably withheld. In the event that the City and the Contractor are unable to agree upon a Neutral Evaluator, the neutral evaluation process shall be eliminated, and the parties shall proceed with the binding arbitration process set forth in Section 3.86 below. The City and Contractor shall each select an arbitrator to serve as set forth in this ADR process. Each arbitrator selected shall be a member of the State Bar of the State of Arizona and shall have experience in the field of construction law. None of the arbitrators nor any of the arbitrator’s firms shall have presently, or in the past, represented any party to the arbitration.

3.85 Neutral Evaluation Process. If the parties have been unable to resolve the disputes after discussions and partnering, but the parties have agreed to a Neutral Evaluator, the following neutral evaluation process shall be used to resolve any such dispute.

A. Notification of Dispute. The City through its Engineer shall notify the Neutral Evaluator in writing of the existence of a dispute within 10 Days of the City or the Contractor declaring need to commence the neutral evaluation process.

B. Non-Binding Informal Hearing. The Neutral Evaluator shall schedule a non-binding informal hearing of the matter to be held within seven Days from receipt of notification of the existence of a dispute. The Neutral Evaluator may conduct the hearing in such manner as he deems appropriate and shall notify each party of the hearing and of its opportunity to present evidence it believes will resolve the dispute. The Neutral Evaluator shall require that each party submit a written outline of the issues and evidence intended to be introduced at the hearing and the proposed resolution of the dispute to the Neutral Evaluator before the hearing commences. Arbitrators shall not participate in such informal hearing or proceedings process. The Neutral Evaluator is not bound by the rules of evidence when admitting evidence in the hearing and may limit the length of the hearing, the number of witnesses or any evidence introduced to the extent deemed relevant and efficient.

C. Non-Binding Decision. The Neutral Evaluator shall render a non-binding, written decision as soon as possible, but not later than five Days after the hearing.

3.86 Binding Arbitration Procedure. The following binding arbitration procedure, except as provided in subsection 3.86(G) below, shall serve as the exclusive method to resolve a dispute if (A) the parties cannot agree to a Neutral Evaluator as set forth in Section 3.84 above or (B) any party chooses not to accept the decision of the Neutral Evaluator. The party requesting binding arbitration shall notify the Neutral Evaluator of a request for arbitration in writing within three business days of receipt of the Neutral Evaluator’s decision. If the Contractor requests arbitration or if Contractor rejects the City’s selection of a Neutral Evaluator, it shall post a cash bond with the Neutral Evaluator in an amount agreed upon by the parties or, in the event of no agreement, the Neutral Evaluator shall establish the amount of the cash bond to defray the cost of the arbitration as set forth in subsection 3.86(M) and the proceeds from the bond shall be allocated in accordance with subsection 3.86(M) by the Arbitration Panel.

A. Arbitration Panel. The Arbitration Panel shall consist of three arbitrators: the City's appointed arbitrator, the Contractor's appointed arbitrator and a third arbitrator (or "Neutral Arbitrator") who shall be selected by the parties' arbitrators as set forth in subsection 3.86(B) If more than one consultant or contractor is involved in a dispute, the consultants and/or contractors shall agree on an appointee to serve as arbitrator. The Neutral Evaluator shall not participate in the proceedings.

B. Selection of Neutral Arbitrator. The parties' arbitrators shall choose the Neutral Arbitrator within five business days of receipt of notification of a dispute from the Neutral Evaluator. The Neutral Arbitrator shall have the same qualifications as those of the arbitrators set forth in Section 3.84. In the event that the selected arbitrators cannot agree on the Neutral Arbitrator as set forth above, the Neutral Arbitrator shall be the "Default Neutral Arbitrator," a person or entity jointly selected by the City and the Contractor. If the City and the Contractor cannot agree on a Default Neutral Arbitrator, the City and the Contractor shall each submit two names to an appropriate judge who shall select one person to serve as the Default Neutral Arbitrator."

C. Expedited Hearing. The parties have structured this procedure with the goal of providing for the prompt, efficient and final resolution of all disputes falling within the purview of this ADR process. To that end, any party can petition the Neutral Evaluator to set an expedited hearing. If the Neutral Evaluator determines that the circumstances justify it, the Neutral Evaluator shall contact the selected Arbitration Panel and arrange for scheduling of the arbitration at the earliest possible date. In any event, the hearing of any dispute not expedited will commence as soon as practical but in no event later than 20 Days after notification of request for arbitration having been submitted. This deadline can be extended only with the consent of all the parties to the dispute, or by decision of the Arbitration Panel upon a showing of emergency circumstances.

D. Procedure. The Arbitration Panel will select a Chairman and will conduct the hearing in such a manner that will resolve disputes in a prompt, cost efficient manner giving regard to the rights of all parties. Each party shall supply to the Arbitration Panel a written pre-hearing statement which shall contain a brief statement of the nature of the claim or defense, a list of witnesses and exhibits, a brief description of the subject matter of the testimony of each witness who will be called to testify, and an estimate as to the length of time that will be required for the arbitration hearing. The Arbitration Panel shall review and consider the Neutral Evaluator decision, if any. The Chairman shall determine the nature and scope of discovery, if any, and the manner of presentation of relevant evidence consistent with deadlines provided herein and the parties' objective that disputes be resolved in a prompt and efficient manner. No discovery may be had of any materials or information for which a privilege is recognized by Arizona law. The Chairman, upon proper application, shall issue such orders as may be necessary and permissible under law to protect confidential, proprietary or sensitive materials or information from public disclosure or other misuse. Any party may make application to the Maricopa County Superior Court to have a protective order entered as may be appropriate to confirm such orders of the Chairman.

E. Hearing Days. In order to effectuate parties' goals, the hearing once commenced, will proceed from business day to business day until concluded, absent a showing of emergency circumstances.

F. Award. The Arbitration Panel shall, within 10 Days from the conclusion of any hearing, by majority vote, issue its award. The award shall include an allocation of fees and costs pursuant to subsection 3.86(M) herein. The award is to be rendered in accordance with this Contract and the laws of the State of Arizona.

G. Scope of Award. The Arbitration Panel shall be without authority to award punitive damages, and any such punitive damage award shall be void. The Arbitration Panel shall be without any authority to issue an award against any individual party in excess of 20% of the original Contract amount, but in no event shall any award exceed \$2,000,000, exclusive of interest, arbitration fees, costs and attorneys' fees. If an award is made against any individual party in excess of \$100,000, exclusive of interest, arbitration fees, costs and attorneys' fees, it must be supported by written findings of fact, conclusions of law and a statement as to how damages were calculated. Any claim in excess of 20% of the original Contract amount or in excess \$2,000,000 shall be subject to the jurisdiction of the Superior Court of Arizona, Maricopa County. Any party can contest the validity of the amount claimed if an action is filed in the Superior Court.

H. Jurisdiction. The Arbitration Panel shall not be bound for jurisdictional purposes by the amount asserted in any party's claim but shall conduct a preliminary hearing into the question of jurisdiction upon application of any party at the earliest convenient time, but not later than the commencement of the arbitration hearing.

I. Entry of Judgment. Any party can make application to the Maricopa County Superior Court for confirmation of an award, and for entry of judgment on it.

J. Severance and Joinder. To reduce the possibility of inconsistent adjudications: (1) the Neutral Evaluator or the Arbitration Panel may, at the request of any party, join and/or sever parties, and/or claims arising under other contracts containing this ADR provision, and (2) the Neutral Evaluator, on his own authority, or the Arbitration Panel may, on its own authority, join or sever parties and/or claims subject to this ADR process as they deem necessary for a just resolution of the dispute, consistent with the parties' goal of the prompt and efficient resolution of disputes, provided, however, that the Contractor, Architect/Engineer and Project professionals shall not be joined as a party to any claim made by a Contractor. Nothing herein shall create the right by any party to assert claims against another party not germane to this Contract or not recognized under the substantive law applicable to the dispute. Neither the Neutral Evaluator nor the Arbitration Panel are authorized to join to the proceeding parties not in privity with the City. Contractor cannot be joined to any pending arbitration proceeding, without Contractor's express written consent, unless Contractor is given the opportunity to participate in the selection of the non-City appointed arbitrator.

K. Appeal. Any party may appeal (1) errors of law by the Arbitration Panel if, but only if, the errors arise in an award in excess of \$100,000, (2) the exercise by the Chairman or Arbitration Panel of any powers contrary to or inconsistent with this Contract or (3) on the basis of any of the grounds provided in ARIZ. REV. STAT. § 12-1512, as amended. Appeals shall be to the Maricopa County Superior Court within 15 Days of entry of the award. The standard of review in such cases shall be that applicable to the consideration of a motion for judgment notwithstanding the verdict, and the Maricopa County Superior Court shall have the authority to confirm, vacate, modify or remand an award appealed under this Section, but not to conduct a trial, entertain the introduction of new evidence or conduct a hearing de novo.

L. Uniform Arbitration Act. Except as otherwise provided herein, binding arbitration pursued under this provision shall be governed by the Uniform Arbitration Act as codified in Arizona in ARIZ. REV. STAT. § 12-1501, *et seq.*

M. Fees and Costs. Each party shall bear its own fees and costs in connection with any informal hearing before the Neutral Evaluator. All fees and costs associated with any arbitration before the Arbitration Panel, including without limitation the Arbitration Panelists' fee, and the prevailing party's reasonable attorneys' fees, expert witness fees and costs, will be paid by the non-prevailing party, except as provided for herein. In no event shall any Arbitrator's hourly fees be awarded in an amount in excess of \$200 per hour and (1) costs shall not include any travel expenses in excess of mileage at the rate paid by the City, not to exceed a one way trip of 150 miles, and (2) all travel expenses, including meals, shall be reimbursed pursuant to the travel policy of the City in effect at the time of the hearing. The determination of prevailing and non-prevailing parties, and the appropriate allocation of fees and costs, will be included in the award by the Arbitration Panel. Fees for the Neutral Evaluator shall be divided evenly between the City and the Contractor.

N. Confidentiality. Any proceeding initiated under ADR shall be deemed confidential to the maximum extent allowed by Arizona law and no party shall, except for disclosures to a party's attorneys or accountants, make any disclosure related to the disputed matter or to the outcome of any proceeding except to the extent required by law, or to seek interim equitable relief, or to enforce an agreement reached by the parties or an award made hereunder.

O. Equitable Litigation. Notwithstanding any other provision of ADR to the contrary, any party can petition the Maricopa County Superior Court for interim equitable relief as necessary to preserve the status

quo and prevent immediate and irreparable harm to a party or to the Program pending resolution of a dispute pursuant to ADR provided herein. No court may order any permanent injunctive relief except as may be necessary to enforce an order entered by the Arbitration Panel. The fees and costs incurred in connection with any such equitable proceeding shall be determined and assessed in ADR.

P. Change Order. Any award in favor of the Contractor against the City or in favor of the City against the Contractor shall be reduced to a Change Order and executed by the parties in accordance with the award and the provisions of this Contract.

Q. Merger and Bar. Any claim asserted pursuant to this ADR process shall be deemed to include all claims, demands, and requests for compensation for costs and losses or other relief, including the extension of this Contract performance period which reasonably should or could have been brought against any party that was or could have been brought into this ADR process, with respect to the subject claim. The Arbitration Panel shall apply legal principles commonly known as merger and bar to deny any claim or claims against any party regarding which claim or claims recovery has been sought or should have been sought in a previously adjudicated claim for an alleged cost, loss, breach, error, or omission.

R. Inclusion in Other Contracts. The Contractor shall cooperate with the City in efforts to include this ADR provision in all other Project contracts. Subject to Contractor's reasonable agreement, the Contractor agrees that any modification to this ADR provision that is included in the construction or other contracts shall also apply to the Contractor. It is the intent of the parties that any changes to this ADR provision in later contracts will be evolutionary and designed to incorporate the terms of this ADR provision without material changes to the substance or procedure of this ADR provision.

EXHIBIT A  
TO  
INVITATION FOR BIDS NO. EN 19-166

[Specifications, Plans/Construction Drawings/Reference Documents]

See following pages.





## **TECHNICAL SPECIFICATIONS**

### **AVONDALE BOULEVARD AND MARICOPA STREET TRAFFIC SIGNAL (PROJECT ST1381) SOLICITATION #**

**Prepared by:**

**J2 Engineering and Environmental Design  
4649 E Cotton Gin Loop, Suite B2  
Phoenix, Arizona 85040**

**April 19, 2019**



# TECHNICAL SPECIFICATIONS

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## **PART 100 - GENERAL CONDITIONS**

### **SECTION 104 – SCOPE OF WORK**

#### ***104.01000 – Location and Project Boundaries:***

The project is located along Avondale Boulevard, from Maricopa Road to Coldwater Springs Boulevard, in the City of Avondale, Arizona (City).

#### ***104.02000 – Scope of Work Overview:***

The work consists of the installation of a traffic signal, ADA ramp and sidewalk modifications, installation of fiber optic communications, and other related miscellaneous work. Additional information is provided in ART. II, Section 2.1 of the IFB. Specific Scope of Work items are itemized as Bid Items in the PRICE SHEET, Exhibit “B”, of the IFB.

### **SECTION 105 – CONTROL OF WORK**

#### ***105.01000 – Additional Reference Standards:***

The following reference standards are added to Article III, Section 3.1 of the IFB’s General Terms and Conditions and are incorporated by reference.

The “ADOT Specifications” is more particularly defined as the Arizona Department of Transportation (ADOT), Standard Specifications for Road and Bridge Construction, 2008 Edition.

U.S. Department of Transportation, Manual on Uniform Traffic Control Devices (MUTCD), latest edition.

Latest revisions of ASTM, AWWA, ANSI or Federal specifications, standards and details, as applicable.

Latest revisions of MCDOT supplement to the MAG Uniform Specifications and Details for Public Works Construction, 2011, as applicable.

In the event of a conflict between the Construction Drawings and the Contract language, the Contract language shall prevail.

In the event of a conflict between (i) the ASTM, AWWA, ANSI or Federal specifications, standards and details and (ii) the MAG Uniform Standard Specifications and Details for Public Works Construction and the City Supplement to MAG Uniform Standard Specifications and Details for Public Works Construction, the MAG Uniform Standard Specifications and Details for Public Works Construction and City Supplement to MAG Uniform Standard Specifications and Details for Public Works construction shall prevail.

In the event of a conflict between the AWWA, ANSI or Federal specifications, standards and details and the Contract, the Contract shall prevail.

In the event of a conflict between the City of Phoenix Traffic Barricade Manual and the U.S. Department of Transportation Manual on Uniform Traffic Control Devices (MUTCD), the City of Phoenix Traffic Barricade Manual shall prevail.

***Bid Item 105.30010– As-built Documentation:***

The work under this item shall consist of furnishing all materials, equipment, and labor necessary for providing complete and competent as-built record document plans to the City. As-built plans shall reflect all in-place field dimensions, horizontal locations and vertical elevations for all constructed or installed improvements. All changes, additions and deletions shall be depicted graphically and represented numerically. All dimensions and elevations on the plan sheets must be verified.

The Contractor shall be required to keep a clean and current set of as-built plans during the Project's construction duration. The as-built plans must be kept up to date for each phase of construction throughout the Project's construction duration, especially for all underground utilities and improvements. These as-built plans shall be subject to review each month by the City's Engineering Inspector to verify compliance with this specification and will be part of the approval process for each of the Contractor's monthly progress payments.

Unless otherwise provided for, the Contractor shall be responsible for preparing and providing to the City all final as-built record documents for the Project using the most recent City approved plan sheets. An Arizona registered civil engineer or Arizona registered land surveyor shall seal the final as-built record documents. The final as-built record documents shall conform to the requirements of MAG Specifications Sections 105.8 and 105.15; and as specified in the City MAG Supplement. Final as-built plan sheets shall be prepared on 4 MIL, double matte, MYLAR material. A CD/DVD back-up copy of the as-builts in [.tiff] digital file format shall also be required.

**Measurement** for the As-built Record Document Plans will be Lump Sum and will be prorated (overall project percent completion) each month over the Project's duration.

**Payment** shall be made at the Lump Sum price bid and shall be considered full compensation for this work item.

***105.60010 – Cooperation with Utilities:***

The following utility companies may have facilities in the area of this Project. It shall be the Contractor's responsibility to determine the exact location of the utilities prior to any construction operations and to notify the below mentioned utility companies a minimum of five (5) working days prior to commencing any work on the project. Use caution and always follow all local Blue Stake laws.

**Salt River Project (SRP)**

**Distribution Services**

**Land Rights Power**

**Water Engineering Services**

**Water Engineering Services**

**Water Land Rights Irrigation**

**Jolie Donahue (602) 236-3782**

**Henry A. Soliz (602) 236-0890**

**Susana Ortega (602) 236-5799**

**Carissa Scharrer (602) 236-8533**

**Henry A. Soliz (602) 236-0890**

The Contractor shall comply with the following construction requirements received from SRP specific to this project.

New conduit crossings of existing SRP irrigation pipes shall be in accordance with SRP Standard Drawing WES-02604-001.

**Cox Communications****Cory Day (602) 769-3979**

The Contractor shall comply with the following construction requirements received from Cox Communications specific to this project.

When crossing Cox Communications facilities the Contractor shall pothole to determine depth and maintain a minimum of 12 inches vertical and horizontal separation from the proposed facility. Support and protect all Cox Communications facilities during construction. Notify Cox Communications Engineering Department of all utility coordination meetings, pre-construction meetings, and construction schedule including the anticipated construction start date.

**CenturyLink****Brett Beaty (480) 239-3257**

The Contractor shall comply with the following construction requirements received from CenturyLink specific to this project.

In accordance with state law, Blue Staking for location of CenturyLink™ facilities must be completed prior to any construction. When crossing CenturyLink™ facilities you will be required to pothole to determine depth and maintain a minimum of 12 inch vertical and horizontal separation from facilities. Pursuant to state law, support and protection is required for all CenturyLink™ facilities during construction.

Should the Contractor locate or expose an unknown CenturyLink™ facility, please contact CenturyLink™ as soon as possible.

**Kinder Morgan****Cory Talmage-Gray (719) 520-4266****Southwest Gas****Valerie Gallardo-Weller (602) 484-5342**

The Contractor shall comply with the following construction requirements received from Southwest Gas specific to this project.

The Contractor shall carefully evaluate each existing Southwest gas line crossing, including potholing to determine exact elevations.

Once mechanical trenching is in progress, do no dig within two feet of a gas pipe. This trenching shall be done by hand in order to prevent any damage to the gas pipe. In the event the Contractor should “hook” or otherwise strain a gas pipe while excavating, a call should be placed to (602) 271-4277.

Even though there may not be any apparent damage, the strain may have damaged the wrap or a portion of the buried pipe or fittings at other locations causing a leak in the surrounding area. Also, if a steel facility is exposed and the pipe coating is found to be in need of repair, please contact the Southwest Gas office so a crew can be dispatched to rewrap the pipe. This is a service provided by Southwest Gas at no cost to the Contractor so Southwest Gas can monitor their steel facilities and minimize the possibility of corrosion.

When the excavations are complete, all exposed gas pipes should be protected. If the trench is more than three feet wide, the pipe must be supported in a manner where the supporting material does not damage the

pipe of its protective wrapping.

When backfilling, Southwest Gas requires both six inches of bedding and six inches of shading with sand or material free of rocks and able to pass through a 3/8-inch screen.

This will provide a firm support under the facility and prevent damage to the pipe or pipe coating from the backfilling operation. Do not drop backfill directly over the gas pipe. During the compaction process, use extra care when directly over the gas pipe in order to avoid any damage.

Please be aware that there may be abandoned steel gas lines within your project limits that are potentially coated or wrapped in unidentified materials. Southwest Gas treats its steel gas pipe with unidentified coating/wrapping materials as potentially containing asbestos. Extreme care must be taken when working near and exposing these lines, additionally, whenever such pipe is in direct conflict and requires removal, it must only be done so by a Southwest Gas NESHAP certified contractor. Please contact Southwest Gas in advance to coordinate any removal.

Prior to beginning construction and for actual up to date utility locations, call Arizona 811 at 1-800-782-5348 or 811, pursuant to the “Blue Stake Law” (ARIZONA REVISED STATUTES (State Law), Chapter 2, Sections 40-360.21 through 40-360.32).

***Bid Item 105.80010 – Construction Staking, Survey and Layout:***

The Work under this item shall consist of furnishing all Materials, equipment, and labor necessary for providing construction survey, staking and layout for the Project. This item shall comply with MAG Specification 105.8 and as modified by the City’s MAG Supplement.

**Method of Measurement:**

Measurement for survey, staking and layout will be lump sum and will be prorated (overall Project percent completion) each month over the Project’s duration.

**Basis of Payment:**

Payment shall be made at the lump sum price bid and shall be considered full compensation for this Work item.

## SECTION 107 – LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC

### ***Bid Item 107.02000 - AZPDES (NPDES) SWPPP***

The work under this item shall include all material, labor, equipment and other incidental costs related to furnishing, installing, and maintaining the Storm Water Pollution Prevention Plans (SWPPP) during the project construction. Maintenance shall include but is not limited to cleaning, repair and disposal of debris and compromised devices following storm events or other water runoff on the project. All administrative costs including plan and document preparation shall also be included.

This project is subject to the Arizona Pollutant Discharge Elimination System (AZPDES) Construction General Permit (CGP) requirements under the EPA General Permit for Arizona. All subcontractors shall comply with all AZPDES CGP requirements under the supervision of the General Contractor and shall submit a completed, signed subcontractor certification form, thereby designating themselves as co-permittees. The Contractor will be expected to develop the SWPPP following the most recent City of Avondale Approved SWPPP Template found on City of Avondale website. Completed SWPPPs must be submitted to the City's NPDES coordinator for review before a construction permit will be issued by the City. All sections of the most recent City of Avondale Approved SWPPP Template must be complete in order for the City's NPDES coordinator to initiate a review of the submitted SWPPP. Any structural or non-structural best management practices included in the SWPPP that are not included in the City of Avondale Approved BMP List (found on the City of Avondale website) will be subject to the standards deviation process, and are not guaranteed approval.

Subsequent to approval by the City's NPDES coordinator, the Contractor will be expected to update/revise the approved SWPPP as necessary throughout the construction of the Project in order to ensure compliance with EPA, AZPDES, and CGP permit requirements. Revisions to the SWPPP requiring use of the SWPPP bid item, or any other additional items, shall be subject to approval by the City prior to implementation. The SWPPP document shall be kept at the project site at all times. The final SWPPP document shall be retained by the Contractor for three years following project completion and final acceptance by the City.

The contractor will be responsible to make submittals to the appropriate agencies. In addition to review by the City and Maricopa County Department of Transportation (MCDOT), portions of this project may be in the urbanized, non-incorporated area governed by Maricopa County Environmental Services Department. This department requires a submittal, fees, and process in addition to the standard NPDES requirements. In addition, portions of this project are within a quarter mile of the Gila River, which is an impaired waterway, and may require a special review or process from ADEQ.

The Contractor shall submit a completed, signed Notice of Intent (NOI) form (including the signed subcontractor certification forms) to the Arizona Department of Environmental Quality (ADEQ), Water Permits Section/Storm Water NOI (5415B-3), 1110 W. Washington Street, Phoenix, Arizona 85007; or fax to (602) 771-4674, or online at ADEQ's Smart NOI Web site at: <http://az.gov/app/smartnoi/>. The NOI shall be posted at the construction site at all times.

Failure by the Contractor (or any applicable subcontractors) to submit the NOI forms and certifications to ADEQ, and/or the SWPPP to the City's NPDES coordinator for review, by the start of construction activities will lead to delays in meeting EPA requirements, which will result in delay of the start of construction. The Contractor will not be entitled to any additional compensation for costs resulting from such delay of the construction start date and/or any construction activities. No construction activities shall begin until all applicable storm water pollution control devices are in place. Any additional work or costs caused by the

Contractor's (or subcontractor's) failure to properly implement the SWPPP shall not be considered for compensation. The Contractor shall keep a copy of the latest STORM WATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITIES as printed in the Federal Register at the job site at all times. The Contractor shall keep a copy of the STORM WATER BASELINE CONSTRUCTION GENERAL PERMIT COVERAGE NOTICE received from the EPA (after submittal of the NOI) at the job site at all times.

All SWPPP reports required under this contract shall be available to the public in accordance with the requirements of Section 308(b) of the Clean Water Act. The Contractor shall make plans available to the public upon request through the EPA. No conditions of the Arizona General Permit or the SWPPP shall release the Contractor from any responsibilities or requirements under other environmental statutes or regulations. Asphalt plant and concrete plants (including mobile plants) require separate AZPDES industrial permits.

Upon completion and acceptance of the work performed by a subcontractor co-permittee, either the Contractor or other subcontractors shall absolve such subcontractor of any involvement in, or responsibility for, any subsequent AZPDES violations on the project. After project completion, acceptance, and de-mobilization, the Contractor shall submit a completed, signed Notice of Termination (NOT) form to the ADEQ Water Permits Section/Storm Water NOT (5415B-3), 1110 W. Washington Street, Phoenix, Arizona 85007 or fax to (602) 771-4674, or online at ADEQ's Smart NOI Web site at: <http://az.gov/app/smartnoi/>.

As a minimum, the Contractor shall perform inspections in accordance with the scope and schedule specified in the most recent CGP Inspection and Corrective Action Report Form found on the ADEQ website. The Contractor is also encouraged to inspect all best management practices following all rainfalls, as it is the Contractor's responsibility to ensure the proper operation of each best management practice at all times. The Contractor shall maintain a record of each inspection. No other separate measurements or payments will be made relative to SWPPP items.

The Lump Sum price bid for this SWPPP work item shall include all material, labor, equipment and other incidental costs related to furnishing, installing, and maintaining the SWPPP during the project construction. Maintenance shall include but is not limited to cleaning, repair and disposal of debris and compromised devices following storm events or other water runoff on the project. All administrative costs including plan and document preparation shall also be included.

**Measurement** for AZPDES (NPDES) SWPPP will be Lump Sum and will be prorated (overall project percent completion) each month over the project's duration.

**Payment** shall be made at the Lump Sum bid price and shall be considered full compensation for this work item.

***Bid Item 107.15000 – Community Relations (Allowance):***

The work under this item shall consist of furnishing all necessary materials, equipment, labor, services and incidentals for providing public information and notification in accordance with **Article III, General Terms and Conditions, Part B Performance of the Work, Section 3.53**, "Public Information and Notification" of the Contract Documents. The cost for providing a 24-hour project hot-line number service shall be reimbursed through this work item. The cost for furnishing, installing and maintaining two project information signs, in accordance with the contract documents, shall be reimbursed through this work item. The Contractor shall also be responsible for removing the project information signs once the Project has reached final completion. **Payment** will be based on City-approved time and material invoices for an amount not to exceed five thousand dollars (\$5,000.00) and shall be considered full compensation for this work item.



***107.20010 – Permits:***

The City of Avondale Engineering Right-of-Way Permit fee will be waived for this project. All other required permits shall be the Contractor's responsibility to obtain and pay for which may include but not be limited to: MCDOT ROW permit, Maricopa County Environmental Dust Control permit, and City fire hydrant meter fees. There will be no separate measurement or payment for permits, the cost being considered as included in the Contractor's bid price for other pay items.

**SECTION 108 – COMMENCEMENT, PROSECUTION AND PROGRESS**

***108.50010 – Limitation of Operations and Sequencing of Construction:***

The Contractor shall be aware of and coordinate this Project's Work with any other ongoing construction and/or traffic control in the immediate vicinity of the Project area.

Night and weekend work is not allowed unless specifically pre-approved by the City. The Contractor shall assume no night or weekend work for bidding purposes.

A minimum of two thru lanes, one each direction, shall remain open at all times. Provisions shall be made to allow for left turns including dedicated turn bays at all signalized intersections and other major collector cross-street intersections, unless otherwise specifically pre-approved by the City.

Any activities that will affect peak time traffic shall be pre-approved for times, days, and method by the City prior to implementation. Generally, no activities that affect peak time traffic on major collector and arterial streets will be allowed between 7:00 a.m. - 9:00 a.m. and from 4:00 p.m. - 6:00 p.m. Deviations may only occur when specifically approved by the City Engineer.

All work within the rights-of-way of the following streets must be stopped, equipment removed and all barricades removed during the following dates November 5 – 11, 2018 for PIR race week. Work may resume on November 12, 2018.

All milling, crack sealing and pavement replacement shall be completed before any preservative seals or slurry/micro seals can be applied.

**SECTION 109 - MEASUREMENT AND PAYMENT**

***109.00010 – General***

Bid Item Numbers listed herein correspond to the Item Numbers listed in the Price Sheet of the IFB's Exhibit "C".

Measurement for each bid item shall be done in the units installed or percent complete as indicated in the Price Sheet of the IFB's Exhibit "C". Measurement shall be for all work that is satisfactorily completed in place, with no allowance for waste, and that which is verified by field measurements as applicable.

In general, payments to the Contractor shall be in accordance with Article 3, General Terms and Conditions, Section 3.13, "Payments to Contractor" of the Contract Documents. Specific bid item payment guidelines shall be in accordance with the MAG Specifications as applicable unless as revised or more particularly described in these Technical Specifications. Payment will be made at the Unit Price or Lump

Sum price that was bid and as shown in the Price Sheet of the IFB's Exhibit "B" and shall constitute payment in full for furnishing all materials, equipment, appurtenances, labor, plant and tools necessary to provide a complete Project in a workmanlike and satisfactory manner as shown by the Plan Drawings and in the Contract Documents described herein.

***Bid Item 109.09000 – Mobilization/Demobilization:***

The work under this item shall consist of furnishing all materials, equipment, and labor necessary to provide the Contractor a one-time, round trip mobilization/demobilization of the Contractor's personnel equipment, supplies and incidentals, establishment of offices, buildings and other facilities, required for the performance of the work on the Project, including preparatory work and operations prior to the commencement of the work on the Project site. **Measurement and Payment** for mobilization and demobilization shall be done in two equal parts of the Contractor's Bid Item Lump Sum price. The first half payment shall be included in the Contractor's initial invoice and the second half payment shall be made after the Project has reached Substantial Completion as declared by the City and shall be considered full compensation for this work item.

***Bid Item 109.50010 - Miscellaneous Reimbursable (Allowance):***

The work under this item shall consist of furnishing all necessary materials, equipment, and labor for work not covered by the Contract plans or documents due to an unforeseen field condition or other circumstance that has been identified during the construction phase as necessary to complete the Project. No work shall be performed under this item unless it is authorized, in writing, by the City or authorized representative. The scope of work, conditions, completion schedule and pricing for any extra work must be mutually agreed on and approved by the City before the work can commence.

**Method of Measurement:**

Measurement shall be based on City-approved time and material invoices or on a pre-approved, mutually agreed on price.

**Basis of Payment:**

Payment shall be for an amount not to exceed Fifty Thousand dollars (\$50,000.00) based on the approved time and material invoices or the pre-determined, pre-approved price for each separate extra work item and shall be considered full compensation for the work item.

## SECTION 300 – STREETS AND RELATED WORK

### ***Bid Item 321.01330 – Asphalt Pavement Per Structural Section No. 1 (3" AC/6" ABC)***

The work under this item shall consist of furnishing all materials, equipment, and labor for the placement and compaction of a 3"AC and 6" ABC in accordance with the City of Avondale Supplement to the MAG Specification Section 321 and MAG Section 321. The mix shall be provided in accordance with MAG Section 710.

#### **Method of Measurement:**

Measurement for Asphalt Pavement Per Structural Section No. 1 (3" AC/6" ABC) will be per each **SQUARE YARD** installed in place.

#### **Basis of Payment:**

Payment shall be made at the unit price bid and shall be considered full compensation for this work item.

### ***Bid Item 340.01110 – 6" Vertical Curb and Gutter, MAG Standard Detail 220-1, Type "A":***

The work under this item shall consist of furnishing all materials, equipment, and labor necessary for the construction of new Portland Cement concrete curb and gutter at the locations, grades and elevations shown on the project plan documents. All curb and gutter work shall be constructed in accordance with MAG Specification Section 340, the designated MAG Detail No., and the City of Avondale Supplement to the MAG Specifications as applicable. The Contractor shall verify line and grade prior to placing any concrete.

#### **Method of Measurement:**

Measurement for Curb and Gutter will be per each **LINEAR FOOT** installed in place.

#### **Basis of Payment:**

Payment shall be made at the unit price bid and shall be considered full compensation for this work item.

***Bid Item 340.01210 – Concrete Sidewalk, MAG Standard Detail 230 (4" thick):*** The work under this item shall consist of furnishing all materials, equipment, and labor necessary for the construction of concrete sidewalk at the locations, grades and elevations shown on the project plan documents. The sidewalk width shall be five-foot minimum, match existing or as otherwise shown on the plans. All concrete sidewalk work shall be constructed in accordance with MAG Specification Section 340 and MAG Detail No. 230.

#### **Method of Measurement:**

Measurement for concrete sidewalk will be per each **SQUARE FOOT** installed in place.

#### **Basis of Payment:**

Payment shall be made at the unit price bid and shall be considered full compensation for this work item.

### ***Bid Item 340.01305-ADA Ramp Per MAG Standard Detail 240***

***Bid Item 340.01600 – Concrete Valley Gutter and Apron:*** The work under this item shall consist of furnishing all materials, equipment, and labor necessary for the construction of concrete valley gutter and apron at the locations, grades, elevations and dimensions shown on the project plan documents. All Concrete Valley Gutter and Apron work shall be constructed in accordance with MAG Standard Specification Section 340 and MAG

Standard Detail No. 240. The Contractor shall verify line and grade prior to placing any concrete.

**Method of Measurement:**

Measurement for concrete valley gutter and apron will be per each **SQUARE FOOT** installed in place.

**Basis of Payment:**

Payment shall be made at the unit price bid and shall be considered full compensation for this work item.

***Bid Item 350.01315 – Removal of Existing Asphalt Concrete Pavement (For general patch areas incl remnant sections < 48” and transverse trench excavation):***

The work under this item shall consist of furnishing all materials, equipment, and labor necessary for removing existing asphalt concrete pavement as shown on the project plan documents. Pavement removal shall be in accordance with MAG Standard Specification Sections 336 and 350. The Contractor is responsible for protecting all adjacent pavement and concrete. The pavement removal operation shall not damage any underground utilities that are to remain in place. The Contractor shall include all removal related costs in this bid item work including saw cut, milling, loading, hauling, off-site disposal and clean-up.

**Method of Measurement:**

Measurement for Existing Asphalt Concrete Pavement Removal shall be per each **SQUARE YARD** removed. Measurement for removal of existing AC pavement for transverse trench excavation shall be per each **SQUARE YARD** of area removed based on the field measured trench length and the MAG Pay Width per MAG Specifications Section 336.4 using Table 601-1; except that all pay widths shall be computed per Section 336.4 (B); unless otherwise specified by a specific trench cross-section Plan Detail.

**Basis of Payment:**

Payment shall be made at the unit price bid and shall be considered full compensation for this work item.

***Bid Item 350.01800 – Remove Existing Concrete Curb and Gutter:*** The work under this item shall consist of furnishing all materials, equipment, and labor necessary for the removal of existing concrete curb and gutter as shown on the project plan documents including roll, vertical and ribbon type curbing. Concrete curb and gutter removal shall be in accordance with MAG Standard Specification Section 350. The Contractor shall include all removal related costs in this bid item work including saw cut, loading, hauling and off-site disposal. Locations, limits and quantities shall be per plan and/or as designated by the City’s Engineering Representative.

**Method of Measurement:**

Measurement for removal of existing concrete curb and gutter will be per each **LINEAR FOOT** removed.

**Basis of Payment:**

Payment shall be made at the unit price bid and shall be considered full compensation for this work item.

***Bid Item 350.01900 – Remove Existing Concrete Sidewalk, Ramp, Driveway and Slab:*** The work under this item shall consist of furnishing all materials, equipment, and labor necessary for the removal of existing concrete sidewalk, ramp, driveway and slab as shown on the project plan documents. All flat concrete removals shall be in accordance with MAG Standard Specifications Section 350. The Contractor shall include all removal related costs in this bid item work including saw cut, loading, hauling and off-site disposal. Locations,

limits and quantities shall be per plan and/or as designated by the City's Engineering Representative.

**Method of Measurement:**

Measurement for removal of existing concrete sidewalk, ramp, driveway and slab will be per each **SQUARE FOOT** removed.

**Basis of Payment:**

Payment shall be made at the unit price bid and shall be considered full compensation for this work item.

***Bid Item 350.04004 – Remove & Salvage Street Light Pole:*** The work under this item shall consist of furnishing all materials, equipment, and labor necessary for removing and salvaging existing street lights, where shown on the Project Plans. As part of this work, the Contractor shall coordinate with SRP to de-energize the streetlight prior to the removal. The Contractor shall carefully remove the existing Street Light poles and equipment, as identified in the plans, in a manner so as to prevent any damage to the removed equipment, existing conductors, or the existing foundations and pull boxes. The re-installation of any existing equipment will be according to the requirements of the Arizona Department of Transportation Standard Specifications for Road and Bridge Construction, 2000. Salvaged equipment that is not re-installed on the new pole shall be delivered to the City of Avondale. Contact Traffic Operations Supervisor, Bennie Robinson at (623) 333-4231 at least two (2) business days in advance of delivery for location.

**Method of Measurement:**

Measurement for Remove & Salvage Street Light Pole will be per **EACH**. No separate measurement or payment will be made for additional materials or hardware required to complete this work, the cost considered included in the contract price.

**Basis of Payment:**

Payment will be paid at the unit price bid per each street light pole removed, and such payment shall be compensated in full for the completed work in-place and delivery of the salvaged items to the City of Avondale

***Bid Item 351.04000 Removal of Sign, Post and Base (Salvage Sign and Post – not base or foundation), MCDOT Dtl. 2060:***

***Bid Item 351.46000 Relocate Existing Sign:***

Existing signage shall be removed or relocated as noted on the plans, in accordance with MCDOT standard details, City of Avondale requirements, and the plans. Prior to actual removal or relocation the contractor shall have new signage installed or temporary signage in-place keeping the roadway signage current with existing or improved conditions. Prior to removal the contractor shall contact the City for inspection and approval of proposed signage. This item shall also include removal of sign posts, bases, backfill, and repair of all paved surfaces. Removal of existing signage will include salvage of removed signs and posts. The Contractor will store the signs at their construction site until delivering to the City's Municipal Operations Service Center (MOSC).

City of Avondale MOSC Contact: Bennie Robinson, Traffic Operations Supervisor, 623-333-4231

**Method of Measurement:**

Signage removal shall be measured per **EACH** sign removed, including all posts and foundations, which shall

include the work, complete, including furnishing all labor and equipment required.

Relocate existing sign shall be measured per **EACH** sign relocated, including post, which shall include the work, complete, including furnishing all labor and equipment required.

**Basis of Payment:**

Payment shall be made at the unit price bid and shall be considered full compensation for this work item.

***Bid Item 351.46100 – Remove Existing Electrical Junction Box:***

***Bid Item 351.46150 – Relocate Existing Traffic Signal Junction Box:***

The work under this item shall consist of furnishing all materials, equipment, and labor necessary to remove or relocate existing traffic signal junction box as shown on the Project plans. This item shall also include backfill of any resulting cavities. Removal of existing electrical junction boxes will include salvage of removed junction boxes.

**Method of Measurement:**

Junction box removal shall be measured per **EACH** box removed, which shall include the work, complete, including furnishing all labor and equipment required.

Junction box relocation shall be measured per **EACH** box relocated, which shall include the work, complete, including furnishing all labor and equipment required.

**Basis of Payment:**

Payment shall be made at the unit price bid and shall be considered full compensation for this work item.

## **SECTION 400 – RIGHT OF WAY & TRAFFIC CONTROL**

### ***Bid Item 401.01000– Traffic Control:***

The Work performed under this Bid Item shall consist of providing all required traffic control barricades, devices, signage, temporary paint pavement markings (striping), flagmen set-ups, pilot cars and other related maintenance as necessary, in accordance with MAG Standard Specification Section 401 and as amended by the City's "Traffic Regulations" Section of the General Terms and Conditions of the Contract Documents and the City's MAG Supplement as applicable. Traffic control set-up and maintenance shall be the responsibility of the contractor. Traffic Control shall be further defined by site specific pre-approved traffic control plans (TCPs) and such costs consisting of preparing and submitting ATSSA certified traffic control plans for approval shall be included. Plans must be submitted to the City of Avondale for review and approval a minimum of three Avondale Business Days (M – TH) prior to the start of the related work. The plans must be complete, detailed and meet the City's submittal guidelines. Work requiring traffic restrictions shall not start until the traffic control plans have been approved by the City.

Road closures for convenience of the Contractor shall not be allowed. During construction activities, a minimum of two thru lanes, one each direction, shall remain open at all times. Provisions shall be made to allow for left turns including dedicated turn bays at all signalized intersections and other major collector cross-street intersections, unless otherwise specifically pre-approved by the City. Any activities that will affect peak time traffic shall be pre-approved for times, days, and method by the City prior to implementation. Generally, no activities or traffic restrictions that affect peak time traffic on major collector and arterial streets will be allowed between 6:00 a.m. - 9:00 a.m. and from 4:00 p.m. - 7:00 p.m., M-F. Deviations may only occur when specifically pre-approved by the City. The Contractor shall maintain 24hr access for all Emergency vehicles through the project; no exceptions.

It shall be the responsibility of the Contractor to provide, erect, maintain, remove and/or relocate all temporary and existing traffic control devices and signal indications necessary to properly mark and control the construction area(s) for the safe and efficient movement of all roadway users including pedestrians. The Contractor shall inspect and maintain all installed temporary traffic control devices at least once during a twenty-four (24) hour period. More frequent intervals of inspection and maintenance shall be made during periods of high winds or other detrimental conditions including a continuing problem maintaining the signs and devices. All temporary traffic control devices shall be ballasted with sandbags.

If traffic cones are approved to be used in lieu of barricades for day-time pavement related work only, 28" tall, high visibility orange cones may be permitted until the streets are opened up to traffic. Traffic cones shall not be allowed for any over-night traffic control. The spacing of the cones and/or signs to be used shall be per the City of Phoenix Traffic Barricade Manual. The number of cones on hand must be sufficient for an entire day's work, including any patchwork done that same day. When construction activities require the use of flagmen, it shall be the contractor's responsibility to provide ATSSA certified and trained personnel to serve as flagmen. Payment for uniformed off-duty police officers, if required, shall be paid under a separate bid item as an allowance.

Streets with new pavement or new pavement surface treatments shall not be open for public use until all permanent lane striping is complete, or until temporary striping and/or temporary traffic control (barricades) have been provided in accordance with an approved plan.

The Contractor shall maintain local access to all side streets, access roads, driveways and alleys, at all times and

shall notify all affected residents 48 hours in advance of any restrictions which will affect their access. The Contractor shall restore full access as soon as possible. Short term residential driveway closures for actual material placement (laydown) or application of surfacing materials shall be limited to 30 minutes max. If access cannot be restored in a timely manner, the Contractor shall provide an alternative which shall be pre-determined with the residents prior to imposing any restrictions. Access to driveways shall be provided during all non-working hours. Any local street restrictions imposed shall be such that local area traffic circulation and emergency vehicle access is maintained. The Contractor shall ensure that all existing sidewalks on this project that remain open are fully accessible and safe for pedestrian access. The Contractor shall coordinate for affected residents by relocating trash containers and coordinate early or alternate pick-ups with the Solid Waste Division of the City Public Works Department. The contractor shall place temporary no parking signs on scheduled collector and residential roadways to be micro sealed 48 hours in advance of the application. There will be a minimum of ten per block per side or enough to provide clear and concise information to ensure no residential parking on scheduled roadways.

**Method of Measurement:**

Traffic Control will be prorated (overall project percent completion) each month over the project's duration. The Contractor is responsible for all costs incurred in replacing lost or damaged traffic control devices and traffic control warning signs.

**Basis of Payment:**

Traffic Control shall be made at the lump sum price bid and shall be considered full compensation for this work item.

***Bid Item 430.01002 –Landscape Restoration:***

The work under this item shall consist of furnishing all materials, equipment, and labor necessary for the restoration of existing landscape and irrigation related to the relocation or replacement of water meter boxes, concrete replacement, work related to the installation or relocation of street lights including underground electric conduit, pull boxes, and any related fence work as specified on the project plan documents. All landscape restoration work shall be in accordance with MAG Standard Specification Sections 430 and 440.

**Method of Measurement:**

Measurement will be based on completed restoration work as a percent complete related to the water meter box work, concrete replacement work, street light, pull box, and underground electric work and fence related work items. Completed landscape restoration work shall be field verified by the City Engineering Inspector.

**Basis of Payment:**

Payment shall be made at the lump sum price bid and shall be considered full compensation for this work item.

***Bid Item 460.02000 – Remove Thermoplastic Stripe:***

***Bid Item 460.02110 – Remove Thermoplastic Arrow (Left & Right Turn):***

Striping in conflict with new striping shall be obliterated in accordance with Avondale guidelines and the plans. Prior to removal contact the City for inspection. This item shall also include re-striping of existing pavement markings which are not in conflict with the new markings and thus remain in place but which may have been faded or worn out during the construction work. The type and extent of such striping shall be field determined by the Engineer or his representative. Such striping shall not be measured as a separate pay item and shall be



considered as incidental to this item.

**Method of Measurement:**

Remove Thermoplastic Stripe shall be measured and paid as **LINEAR FOOT** four-inch equivalent.

Remove Thermoplastic Arrow (Left & Right Turn) shall be measured as **EACH** removal.

**Basis of Payment:**

Payment for Remove Thermoplastic Stripe and Remove Thermoplastic Arrow (Left & Right Turn) shall be full compensation for the work, complete, including furnishing all labor and equipment required and restoring the pavement surface to a condition acceptable to the City of Avondale.

***Bid Item 461.01511 – Left Turn Arrow Symbol; Preformed:***

This item consists of providing all materials, equipment, and labor for the preparation and application of all permanent traffic paint and preformed pavement markings on new and/or existing pavement surfaces. Application of traffic paint and preformed pavement markings shall conform to the project plan documents, replace previous or restore existing pavement markings or as otherwise directed by the City Engineer or authorized representative. Application of traffic paint and preformed pavement markings shall be in accordance with the City of Avondale General Signing and Striping Notes, Part 1000 of the City of Avondale Supplement to the MAG Specifications and Details, and Section 461 of the latest MCDOT Supplement to the MAG Specifications and Details. Longitudinal lane striping, stop bars, cross-walks, and other lane delineation markings shall be paint. Arrow symbols and other various legends shall be preformed tape, Type I, in accordance with Arizona Department Of Transportation (ADOT) Standard Specifications For Road And Bridge Construction, Section 705; “Preformed Plastic Pavement Markings”.

The Contractor shall be required to survey and layout all the pavement markings including lane striping start/stops, spacing, symbol/legend locations, cross-walks and stop bars per the project plan documents or as otherwise directed. All temporary markings, layout markings and any associated temporary signage shall be provided by the Contractor at no additional cost to the City. After layout, the Contractor shall request a City field inspection to verify and approve the pavement markings layout. The City requires a minimum of two (2) Avondale business days (Monday - Thursday; daytime only) to schedule striping field inspections. Upon approval, the Contractor shall precede with application of the permanent traffic paint pavement markings. For asphalt pavement overlays and other asphalt pavement surface treatments on existing streets, the Contractor shall be responsible for measuring, documenting, setting off-set references and/or whatever necessary to re-establish location and alignment of any existing striping and pavement markings.

Traffic control set-up and maintenance shall be the responsibility of the Contractor. Unless otherwise directed, streets with new pavement or new pavement re-surface treatments shall not be open for public traffic use until all permanent pavement marking is complete, or until temporary striping and/or temporary traffic control (barricades) have been provided in accordance with an approved plan.

**Method of Measurement:**

Left Turn Arrow Symbol; Preformed shall be measured in accordance with the MCDOT MAG Supplement Spec Section 461.4 with lane striping by the **LINEAR FOOT** and symbols and legends by **EACH** unit applied.

**Basis of Payment:**

Left Turn Arrow Symbol; Preformed shall be made per the unit price(s) bid in accordance with the MCDOT MAG Supplement Specification Section 461.5 and shall be considered full compensation for this work item.

***Bid Items 462.01100 – 100 mm (4”) Thermoplastic Traffic Stripe:***

These Bid Items consist of furnishing all materials, equipment, and labor for the application of temporary paint and permanent thermoplastic striping, on new and/or existing pavement surfaces, and to replace or restore previous road striping or as otherwise directed by the City. All pavement marking installations shall conform to the Contract Documents, including the City of Avondale General Signing and Striping Notes, the latest ADOT Signing and Marking Details as applicable, Part 1000 of the MAG Supplemental Specifications, the MCDOT Supplement to the MAG Uniform Standard Specifications and Details for Public Works Construction, 2008, these Technical Specifications, and as shown on the Project Plans.

The Contractor shall be required to survey, layout and provide temporary marking and provide any associated temporary signage at no additional cost to the City. After layout, the contractor shall request City field inspection to verify and approve the layouts. The City requires two (2) Avondale business days (M-Th; daytime only) to schedule striping field inspections. Upon approval, the Contractor shall install temporary paint based striping. After a 30 day period, the Contractor shall return and install permanent thermoplastic striping. The Contractor shall proceed to complete installation if the permanent thermoplastic line striping only after the City has approved the layout. For asphalt pavement overlays and other asphalt pavement surface treatments on existing streets, the Contractor shall be responsible for measuring, documenting, setting off-set references and/or whatever necessary to re-establish location and alignment of any existing striping and pavement markings. The Contractor shall replace any striping that has been obliterated or removed during construction. Traffic control set-up and maintenance shall be the responsibility of the contractor. Streets with new pavement or new pavement surface treatments shall not be open for public use until all permanent lane striping is complete, or until temporary striping and/or temporary traffic control (barricades) have been provided in accordance with an approved plan.

**Method of Measurement:**

100 mm (4”) Thermoplastic Traffic Stripe shall be measured per **LINEAR FOOT** and will be completed in accordance with the Arizona Department of Transportation Standard Specifications Section 708. Costs for striping lay-out, any additional surface prep including cleaning/sweeping as necessary and removal of raised pavement markers, if required, shall be included in the unit bid price for this item. If required, any striping obliteration shall be paid for under Bid Item.

**Basis of Payment:**

100 mm (4”) Thermoplastic Traffic Stripe, measured as described above, will be paid for at the unit bid price which shall be full compensation for the work, complete, including furnishing all labor and equipment required to a condition acceptable to the City of Avondale.

***Bid Item 465.01002 – Flat Sheet Aluminum Sign Panel, High Intensity Sheeting:***

Signing installation shall conform to applicable City of Avondale and MCDOT Signing standards, the Project plans, and these Technical Specifications.

**Method of Measurement:**

Flat Sheet Aluminum Sign Panel, High Intensity Sheeting shall be measured per **SQUARE FOOT**.

**Basis of Payment:**

Flat Sheet Aluminum Sign Panel, High Intensity Sheeting, measured as described above, will be paid for at the unit bid price which shall be full compensation for the work, complete, including furnishing all labor and equipment required to a condition acceptable to the City of Avondale.. There shall be no direct measurement or payment for the flags or flashers on the TRAFFIC CONTROL CHANGE signs.

***Bid Item 464.02000, and 464.01001– Perforated Sign Post and Perforated Sign Posted Foundation, MCDOT Det. 2058:*** Signing installation shall conform to the City of Avondale General Signal and Striping Notes, ADOT Signing and Marking Details, the plans, and these special provisions. All materials for signing shall be in accordance with Section XI of the City of Avondale Supplement to MAG Uniform Standard Specifications and Details for Public Works Construction.

**Method of Measurement:**

Perforated Sign Post shall be measured per linear foot, complete in place provided and constructed per MCDOT Detail 2058 signing details.

Perforated Sign Posted Foundation, MCDOT Det. 2058 shall be measured per **EACH** foundation complete in place, constructed per the MCDOT Detail 2058 signing detail.

**Basis of Payment:**

Payment of these items described above shall be measured paid for the work complete in place as described above.

***Bid Items 471.61280, 471.61285, 471.61380, and 471.61482, – Sch.80 PVC Electrical Conduit, (2”, 2.5”, 3”, 2-4”) w/ # 8 Bond Copper Wire & Nylon rope:***

Conduit shall be measured per linear foot of trenching or bore, not actual conduit pipe length. Conduit crossing the roadway shall be installed by directional boring, unless otherwise specified on the plans. All directional boring shall be measured as bored footage with two conduit runs, but not the total length of individual runs added together. All conduits shall be schedule 80 PVC. All new conduit runs shall have a #8 bond wire and pull rope. The wire, rope, materials, tools, labor and equipment associated with this item shall be considered incidental to the unit cost for providing and installing conduit. Trenching, back filling, replacing pavement, curb and gutter, sidewalk etc and any additional traffic control including steel plates are considered incidental to this item and not paid separately. All transverse trenches and trenches through the intersection shall be backfilled with one (1) sack CLSM per MAG specifications section 728 and pavement replacement shall be type B with the “T” top in accordance with MAG standard detail 200. Pavement replacement for all longitudinal trenches outside the intersection shall be type A with the “T” top in accordance with MAG standard detail 200. (Refer to MAG standard specifications, section 336). Directional boring of conduit should only be conducted under all existing roadways and driveways. All directional drilling shall comply with MAG Specification 608. The Contractor shall pot hole conduit runs at locations where potential conflicts exist. The cost 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. Furnish and install conduit, except when otherwise indicated in these Technical

Specifications or on the Project Plans.

**Basis of Payment:**

Payment of this item described above shall be measured per linear foot and paid for the work complete in place as described above.

***Bid Item 472.61100, 472.61350, and 472.61450 - Pole Foundations (Type A, Q or R): Bid Item 472.62005 & 472.63005 – Service Pedestal Foundation and Control Cabinet Foundation:*** The work under this item shall consist of furnishing all labor, equipment and materials required to construct the traffic signal pole foundations as called for in the Project Plans, including foundations for traffic signals, cabinet and electrical service pedestal for the traffic signals and intersection lighting system. Type A pole foundation shall be constructed in accordance with ADOT Standard Drawing T.S. 4-1. The Type Q and Type R foundations shall be constructed in accordance with COA Standard Detail No. A1074 and/or Section 472 of the MCDOT Supplement to MAG Specifications, except when otherwise indicated in these Technical Specifications or the Project Plans. The Contractor is responsible for furnishing all anchor bolts and rebar as shown in applicable standard details. All foundation reinforcement cages shall be furnished and installed by the Contractor. No separate measurement or payment will be made for additional materials or hardware required to complete this work, the cost considered included in the contract price.

**Method of Measurement:**

Pole and cabinet foundations shall be measured as a unit for **EACH** foundation furnished and installed.

**Basis of Payment:**

The accepted quantity of pole and cabinet foundations, as measured above, will be paid for at the contract unit price for each type of foundation designated in the bid schedule, complete in place.

***Bid Items 472.62120 – Electrical Service Pedestal/UPS Combination Cabinet:*** The work under this item shall consist of furnishing and installing electrical service pedestal/UPS combination cabinet conforming to the MCDOT Supplement to the MAG Uniform Standard Specifications and Details for Public Works Construction, 2008, Section 475, MCDOT Standard Detail 4731-1 and 4731-2, as specified on the plans. The location shall be as shown on the plans. Exact location and orientation of the cabinet shall be field verified and approved by the City of Avondale (Bennie Robinson, 623-333-4231) and coordinated with SRP.

**Method of Measurement:**

Electrical service pedestal/UPS combination cabinet shall be measured per **EACH** cabinet furnished and installed, which includes transporting and installing cabinet, UPS unit, batteries, breakers, etc. in accordance with these Technical Specifications, and as shown on the Project plans.

**Basis of Payment:**

The accepted quantity of electrical service pedestal/UPS combination cabinets, as measured above, will be paid for at the contract unit price for each cabinet designated in the bid schedule, complete in place.

***Bid Item 474.60100–Signal Pole, Type A:*** The work under this item shall consist of furnishing all labor, equipment and materials required to install traffic signal poles, connecting bolts, and equipment, as called

for in the plans. Signal Pole, Type A, shall be in accordance with ADOT Standard Drawing T.S. 4-1.

**Method of Measurement:**

Signal Pole, Type A, equipment and installation shall be measured per each. No separate measurement or payment will be made for additional materials or hardware required to complete this work, the cost considered included in the contract price.

**Basis of Payment:**

Payment for Signal Pole, Type A, will be made at the contract unit price per each pole provided and installed, and such payment shall be compensation in full for the item complete in place.

***Bid Item 474.61570 - Type Q Traffic Signal Pole w/ 35' Mast Arm & 15' Luminaire Mast Arm, and Bid Item 474.61770 - Type R Traffic Signal Pole w/ 55' Mast Arm and 15' luminaire Mast Arm:*** The work under this item shall consist of all labor, equipment, and materials necessary to install traffic signal poles, mast arms, connecting bolts, and equipment, as called for in the plans, and shall conform to the City of Avondale Standard Details A1000 series. The signal poles and mast arms shall be furnished by the City for contractor transport to the Project site and installation. The signal poles and mast arms will be stored by the City at the Avondale Municipal Operations Service Center, located at 399 E. Lower Buckeye Road, Avondale, AZ 85323. The contractor shall coordinate signal pole and mast arm pick-up with Bennie Robinson.

Type Q and Type R Traffic Signal Poles shall have a special 30" tall hand hole with 22 thermoplastic power blocks.

**Method of Measurement:**

Traffic signal poles with mast arms, shall be measured as a complete unit of work for **EACH** pole and mast arm assembly installed.

**Basis of Payment:**

The accepted quantities of traffic signal poles with mast arms, measured as provided above, will be paid at the contract unit price designated in the bid schedule, for all work complete in place.

***Bid Item 474.63005 – Pedestrian Pushbutton & Signs:***

The work under this item shall consist of all labor, equipment, and materials to furnish and install pedestrian push buttons and associated pedestrian button signs conforming to the MCDOT Supplement to the MAG Uniform Standard Specifications and Details for Public Works Construction, 2008, Section 473, shall be furnished by the City of Avondale for Contractor transport to the Project site and installation. Pedestrian push buttons shall be mounted on the poles in a manner accessible by ADA requirements and applicable MCDOT standards.

**Method of Measurement:**

Pedestrian Pushbutton & Signs shall be measured per **EACH**, which includes materials and installation of the buttons, frameworks and pedestrian button signs in accordance with these Technical Specifications, and as shown on the Project plans.

**Basis of Payment:**

Payment for Pedestrian Pushbutton & Signs will be paid for at the contract unit price each for the

completed work in-place.

***Bid Item 475.62010 Traffic Signal Controller Unit:***

The work under this item shall consist of all labor, equipment, and materials necessary to furnish and install an Econolite Cobalt RM Controller with a No Touch screen in the existing traffic signal cabinet located at the Avondale Boulevard/Coldwater Springs Boulevard intersection. The existing traffic signal cabinet is a model 332 type cabinet. The controller unit shall include all components and accessories necessary for a full NEMA 8-phase operation in accordance with City of Avondale standards. The existing controller unit shall be removed and salvaged to the City of Avondale. The removal of the old controller and installation of the new controller shall be coordinated with Bennie Robinson, City of Avondale Traffic Operations Supervisor (623-333-4231). The contractor shall notify Bennie Robinson a minimum of seventy-two hours prior to the date the scheduled change-out of the controller.

**Method of Measurement:**

Traffic Signal Controller Unit will be measured as a unit for **EACH** controller furnished and installed.

**Basis of Payment:**

The accepted quantities of Traffic Signal Control Unit, measured as provided above, will be paid at the contract unit price which will be full compensation for a complete and operational controller unit.

***Bid Item 475.62050 – Traffic Signal Control Cabinet Assembly (Type 332 with Cobalt Controller):***

The work under this item shall consist of all labor, equipment, and materials necessary to furnish and install an Econolite Safetran Model 332 Traffic Controller Cabinet Assembly with an Econolite Cobalt RM Controller with a No Touch screen. The assembly shall include all components and accessories necessary for a full NEMA 8-phase operation in accordance with City of Avondale standards. The prewired cabinet and all components shall be delivered to the City of Avondale for initial set-up, inspection, and testing. Once testing and inspection is complete, the contractor shall pick-up the cabinet for installation in the field. The field installation shall be verified by Bennie Robinson, City of Avondale Traffic Operations Supervisor. The contractor shall notify Bennie Robinson a minimum of seventy-two hours prior to the date the controller unit and other accessories are to be installed in the cabinet for final turn-on of the traffic signal.

**Method of Measurement:**

Traffic Signal Control Cabinet Assembly will be measured as a unit for **EACH** control cabinet assembly furnished and installed.

**Basis of Payment:**

The accepted quantities of Traffic Signal Control Cabinet Assembly, measured as provided above, will be paid at the contract unit price which will be full compensation for a complete and operational control cabinet assembly.

***Bid Item 475.62085 – Traffic Signal Control Cabinet Power Supply:***

The work under this item shall consist of all labor, equipment, and materials necessary to furnish and install a new traffic signal control cabinet power supply for the existing traffic signal cabinet located at the Avondale Boulevard/Coldwater Springs Boulevard intersection. The existing traffic signal cabinet is a model 332 type cabinet.

**Materials:**

The power supply shall be an EDI Model 206L, or approved equal. The power supply shall be plug-in compatible with the existing traffic signal cabinet. The power supply shall provide full output regulation across changes in AC line voltage and output load over the full operating temperature range of -34C to +74C and operate in input voltage of 80 VAC to 270 VAC at 60 or 50 Hz. The power supply shall have separate green LED indicators to display AC input status, 24VDC output status, and associated fuse integrity. The output shall be fused for over-current protection and also protected against voltage transients by a 1500 Watt suppressor. The power supply shall have a Power Factor Correction circuit to ensure a full load power factor of 0.98 or better. The overall dimension of the power supply shall be 6 inches high by 5.5 inches wide by 7.5 inches deep, excluding the handle.

**Construction Requirements:**

The existing power supply shall be removed and salvaged to the City of Avondale. The removal of the old power supply and installation of the new power supply shall be coordinated with Bennie Robinson, City of Avondale Traffic Operations Supervisor (623-333-4231). The contractor shall notify Bennie Robinson a minimum of seventy-two hours prior to the date the scheduled change-out of the power supply.

**Method of Measurement:**

Traffic Signal Control Cabinet Power Supply will be measured as a unit for **EACH** power supply furnished and installed.

**Basis of Payment:**

The accepted quantities of Traffic Signal Control Cabinet Power Supply, measured as provided above, will be paid at the contract unit price which will be full compensation for a complete and operational power supply.

***Bid Items 475.83010 – Emergency Vehicle Preemption System with Confirmation Light:***

The work under this item shall consist of all labor, equipment, and materials necessary to furnish and install a Tomar Opticom II emergency vehicle preemption system, as shown on the Project plans. The system shall have the model 4140 Optical Signal Processor (OSP) and be compatible with the Type 332 traffic signal control cabinet assembly specified under item 475.62050. The system shall include four 4090-1-ST optical preemption detectors with confirmation lights as well as the necessary M913 detector cable and M3880 confirmation light cable. The cable shall be installed such that each cable runs un-spliced from the traffic signal mast arm mounted detector to the traffic signal controller cabinet.

The Contractor is responsible for all aiming and adjustment of the detectors until the system is aimed and adjusted properly, as verified by the traffic signal technician setting up the emergency vehicle preemption system in the controller cabinet. The contractor shall maintain appropriate work zone traffic control while aiming and adjusting the detectors.

**Method of Measurement:**

Emergency Vehicle Preemption Systems shall be measured as a complete unit for **EACH** system furnished and installed.

**Basis of Payment:**

The accepted quantities of Emergency Preemption Systems, measured as provided above, will be paid at the contract unit price which will be full compensation for a complete and operational system.

***Bid Items 476.61100, 476.01300, and 476.01350 – Traffic Signal Face (Type F, Type Q, and Type Q-2), and Bid Item 476.62020 Countdown Style Pedestrian Head:***

Signal indications and associated mountings, backplates and visors conforming to the MCDOT Supplement to the MAG Uniform Standard Specifications and Details for Public Works Construction, 2008, Section 476, shall be furnished and installed by the Contractor as shown on the Project plans.

**Method of Measurement:**

Signal indications which have two heads on a single mounting assembly shall be counted as one pay unit. All other signal indications shall be measured per **EACH**, by type of assembly, which includes transporting and installing signal head(s), mountings, visors and backplates, complete in place, and in accordance with these Technical Specifications, and as shown on the Project plans.

**Basis of Payment:**

Payment will be paid for at the contract unit price each for the completed work in-place.

***Bid Items 476.93040 and 476.93050 – Traffic Signal Mounting Assembly (Type IV and Type V):***

Traffic Signal Mounting Assemblies conforming to the ADOT Standard Drawings, shall be furnished and installed by the Contractor as shown on the Project plans.

**Method of Measurement:**

Traffic Signal Mounting Assembly shall be measured per **EACH**, by type of assembly, which includes transporting and installing mounting assemblies complete in place, and in accordance with these Technical Specifications, and as shown on the Project plans.

**Basis of Payment:**

Payment will be paid for at the contract unit price each for the completed work in-place.

***Bid Item 477.70060 – LED Luminaire Major Roadway, Horizontal Mount:***

LED Luminaire Minor Roadway, Horizontal Mount and LED Luminaire Major Roadway, Horizontal Mount shall be furnished and installed by the Contractor as specified on the plans. The luminaires shall be the American Electric Lighting Autobahn series ATBM F MVOLT R3, 4000K CCT, MOV pack surge protection, NEMA label indicating wattage, and P7 control option.

Luminaire wiring shall run directly from main pull box to service pedestal. Coordinate with Bennie Robinson, City of Avondale Traffic Operations Supervisor at (623) 333-4231 for control with a photoelectric cell mounted in the service pedestal.

**Method of Measurement:**

The work under this item shall consist of furnishing all labor, equipment and materials required to install LED Luminaire Major Roadway, Horizontal Mount shall be measured per **EACH**.

**Basis of Payment:**

LED Luminaire Major Roadway, Horizontal Mount, as measured above, will be paid for at the Contract unit



price each for the completed work in-place.

***Bid Item 477.90060 – Internally Illuminated Street Name Sign (City of Avondale Detail A1077):***

Internally illuminated street name signs shall be furnished and installed by the Contractor as specified on the plans, and conform to the City of Avondale Supplement to the MAG Uniform Standard Specifications and Details for Public Works Construction, 2008, Section 901.4. The Contractor is responsible for providing and installing double-face internally illuminated street name signs as specified in the plans and in accordance with these Technical Specifications. The signs shall be manufactured by Fluoresco Lighting-Sign Maintenance Corporation, Phoenix, Arizona (or approved equal) and shall be designed per City of Avondale Standard Detail A1077. The contact person at Fluoresco Corporation is Gary Gryder (602) 276-0600. Internally illuminated street name signs shall be LED.

Sign panel background shall be typical street name sign green with white legend and the signal panel frame shall be painted brown to match the traffic signal poles and mast arms. Prior to painting, the Contractor shall contact the City's Traffic Engineering Department at 623-333-4231 to obtain exact color.

Coordinate with Bennie Robinson, City of Avondale Traffic Operations Supervisor at (623) 333-4231 for how the signs will be controlled with a photoelectric cell mounted in the service pedestal.

All conductors providing power to sign shall be THN or XHHW type wire. In-line fuses for the conductor cable shall be provided in pull boxes.

**Method of Measurement:**

The work under this item shall consist of furnishing all labor, equipment and materials required to install internally illuminated street name signs shall be measured per **EACH**.

**Basis of Payment:**

Install internally illuminated street name signs, as measured above, will be paid for at the Contract unit price each for the completed work in-place.

***Bid Item 478.01000 – Electrical Conductors:***

All conductors not specified as furnished by others elsewhere in the Technical Specifications (video detection and emergency vehicle preemption system cables) or Project plans shall be furnished and installed by the Contractor as specified on the plans, and conform to the MCDOT Supplement to the MAG Uniform Standard Specifications and Details for Public Works Construction, 2008, Section 478.

Conductors furnished by others, but installed by the Contractor, are not a part of this item, those installations considered to be a component of the cost of the associated item or system for which the conductors were furnished.

**Method of Measurement:**

Conductors shall be measured as a **LUMP SUM** for all conductors not otherwise accounted for in other specific bid items, in accordance with MCDOT Supplement Section 478, these Technical Specifications, and as shown on the Project plans.

**Basis of Payment:**

Electrical Conductors, as measured above, will be paid for at the Contract lump sum price for the completed work in-place.

***Bid Item 480.01112 – Single Mode Fiber Optic Cable (12 Fibers):*** The work under this item consists of furnishing all labor, equipment, and materials for the installation of single mode fiber optic (SMFO) communication cables in conduit according to these Technical Specifications and the Project Plans.

The SMFO communication subsystem shall be completed using 12-fiber branch cable for connecting the existing main trunkline to the field devices at the intersections of Avondale Boulevard/Coldwater Springs Boulevard and Avondale Boulevard/Maricopa Road, as shown on the plans. The branch cables shall be terminated using Poli-MOD patch and splice modules with twelve (12) ultra-polished LC type connectors and required jumper cables as shown in the plans.

The contractor shall provide certification that the cables furnished and installed are in conformance with the appropriate specifications. This certification shall be in two parts:

The contractor shall secure a certification from the cable manufacturer that the cable is in conformance with the Rural Electrification Administration (REA) Bulletin 1753F-601 (where applicable) and these Special Provisions.

The contractor shall certify that the installation of the communication cable subsystem is in accordance with the cable and splice manufacturer's recommendations and these Special Provisions.

**Warranty:**

Each item of the communication cable subsystem shall be warranted by the contractor against all defects in material and workmanship.

**Technical Requirements:**

The SMFO shall be a continuous cable of sufficient length to permit the associated runs shown on the plans to be made without full cable splices between specified splice vault and cabinet locations. Any proposed full cable splices shall be submitted to the Engineer for approval. The cable shall be wound on the reel in such a manner as to provide access to both ends of the cable to enable testing to be performed while the cable is on the reel. Where cable is pulled through an intermediate pull box, the contractor shall ensure that the cable is protected from sharp edges and excessive bends. The contractor shall not cause the cable to violate the minimum bending radius for which the cable was designed. If the contractor violates the bending radius, the entire length of cable shall be removed from the project and new cable shall be pulled at no additional cost to the project.

Cables shall be pulled in the conduit with a cable grip designed to provide a firm hold on the exterior covering of the cable. Split-mesh cable grip shall not be used to pull outside sheath of cable. The cable shall be pulled per manufacturer's recommendation. A pre-activity meeting shall be scheduled and held with the Engineer prior to pulling any fiber optic cable. The Engineer will review proposed methods and approve acceptable methods prior to use.

Cable shall not drag on the ground or pavement during installation. The contractor shall ensure that the tensile load on the cable does not exceed the allowed maximum by using a system that includes a means of alerting the installer when the pulling tension approaches the limit and displays the actual tension on the cable. The contractor may supplement this procedure with a breakaway tension limiter set below the recommended tensile limit of the cable being pulled.

During pulling, the cable shall be lubricated at each pull box or vault location. The contractor shall use a pre-lubrication and continuous lubrication method. The lubricant used shall be compatible with the cable jacket as

recommended by the cable manufacturer. Liquid detergent shall not be used. The contractor shall supply documentation identifying either the manufacturer recommendation or a published standard recommending the maximum pulling tension and speeds and these values shall not be exceeded. The contractor shall have this documentation on site during each pull. If the contractor fails to continuously lubricate the cable, the work shall be stopped until a meeting is held between the contractor and the Engineer to discuss compliance with this specification. No compensation for the work stoppage shall be given.

Cable shall not be installed in any conduit runs until the associated pull boxes are installed.

#### **Technical Specifications:**

The SMFO cable furnished and installed by the contractor shall be designed for underground, in-conduit, and building installation applications and shall meet the following requirements:

|                                   |                                     |
|-----------------------------------|-------------------------------------|
| Fibers per cable:                 | 12 for branch cables                |
| Cladding diameter:                | 125.0 microns                       |
| Core diameter:                    | 8.3 microns nominal                 |
| Core eccentricity:                | < 1.0 micron (0.3 typical)          |
| Temperature range:                | -34°C to +74°C.                     |
| Coating diameter:                 | 50 ±15 microns                      |
| Cable construction:               | Loose tube                          |
| Outer jacket:                     | Polyethylene                        |
| Bending radius:                   | 20 x Dia. minimum                   |
| Tensile strength:                 | 600 pounds                          |
| Strength member:                  | Dielectric                          |
| Mode field diameter:              | 9.3 ±0.5 microns                    |
| Zero dispersion wavelength:       | 1300 to 1320 nm                     |
| Zero dispersion slope:            | < 0.092 picosec/nm <sup>2</sup> -km |
| Cutoff wavelength:                | 1260 nm                             |
| Point discontinuities at 1310 nm: | < 0.1 dB                            |

The 12-fiber cable shall be fusion spliced to the trunkline in a new splice enclosure and connectorized with female LC connectors in a preterminated patch panel in conjunction with a drop cable serving as the attachment point from the controller cabinet to the trunkline cable. The new splice enclosure and fusion splicing will be paid for under item 482.00096.

The preterminated patch panel shall be comprised of a factory terminated drop cable integrated into a protective housing and a custom length of drop cable. The patch panel shall be an ABS Plastic housing with nominal dimensions of 10.4" long, 1.5" wide and overall depth of 1.4" from coupler tip to the base of the unit. The Patch Panel shall have twelve female CL couplers with ceramic inserts arrayed at a 45 degree angle along the length of the housing. The couplers shall be configured in a stair-stepped arrangement to facilitate easy access to each coupler pair. Each coupler port shall have a label affixed to designate the port number. The fiber optic connectors on the inside of the housing shall be factory terminated to a PC finish (< -40dB) with a maximum insertion loss of 0.40 dB. The inside of the housing shall be filled with an environmentally and temperature stable epoxy to permanently secure the connectors and the cable on the inside of the housing and to protect the fiber optic components from vibration and shock. The housing shall incorporate a 2.5-inch strain relief boot around the exiting drop cable to provide bend radius protection and short term cable retention of at least 200 lbf. The housing shall have integrated mounting notches for field mounting.

Each patch and splice module shall be provided with factory test results for back reflection and insertion loss. This test report shall reference the serial number of the module. The test report shall be provided to the

Engineer after installation.

Attenuation shall be less than 0.35 dB per km at 1310 nm. The contractor shall not exceed the fiber optic cable manufacturer's guidelines for receiving signal input level. The contractor shall be responsible for all damages caused by an excessive input signal level. A violation of the power limit may damage equipment.

### **Installation Procedure:**

Each fiber splice vault shall have a minimum of 100 feet of slack cable, and 30 feet of slack cable in a No. 7 pull box, or cabinet, loosely looped. The slack shall be from each cable entering the pull box or vault.

All fiber optic cable shall be pulled in conduit except as specified on the plans. Care shall be exercised during cable pulls through conduit bends, poles and cabinets, and looping in junction boxes. In the event the minimum fiber optic radius cannot be maintained during the installation, the contractor shall submit alternative resolutions to the Engineer for review.

To reduce the possibility of damage to the outer jacket of the fiber optic cable, protective measures shall be used when the cable is installed. The requirements, herein, shall be followed but do not limit the installation to only those identified. The purpose of the installation specifications is to ensure protection of the fiber optic cable when it is installed. Other protective measures, not specified herein, may be taken during installation if it will ensure protection of the cable.

Repair of cable jacket will not be permitted. Jacket damage will require a new cable run.

A cable feeder guide shall be used between the cable reel and the face of the duct and conduit to protect the cable and guide it off the reel and into the duct. The cable shall be carefully inspected for jacket defects as it is removed from the reel. If defects are noticed, the pulling operation shall be stopped immediately and the Engineer notified.

Precautions shall be taken during installation to prevent the cable from being kinked or crushed.

A pulling eye shall be attached to the cable end and shall be used to pull the cable through the duct and conduit system.

As the cable is pulled off the reel and into the cable feeder guide, it shall be sufficiently lubricated with a lubricant that shall be of the water-based type and approved by the cable manufacturer.

Dynamometers or break-away pulling swivels shall be used to ensure the pulling-line tension does not exceed the installation tension values specified by the cable manufacturer. The mechanical stress placed upon the cable during installation shall not be such that the cable is twisted or stretched.

The pulling of the cable shall be hand-assisted and monitored at each pull box or vault. Failure to comply with this requirement shall result in an immediate stop of work and immediate need for a meeting with the Engineer to resolve methodology requirements. No compensation will be given for stoppage time. The cable shall not be crushed, kinked or forced around sharp corners.

At each pull box and at each cabinet the cable shall be visibly marked - "CAUTION - FIBER OPTIC CABLE". The markings shall be affixed with nylon ties and shall be a warning label that will never fade or rub off.

The length of cable being pulled shall not exceed the maximum cable tension as specified by the cable manufacturer.

The supplier of the fiber optic cable shall provide assistance and/or supervision in the installation process unless the installing company meets the requirements of the supplier.

Where applicable each cable shall be labeled and attached to the cable racks with Ty-Raps immediately upon entering the box. Cables should be looped independently of one another. Ty-Raps shall contain the cable loops of one cable. Ty-Raps should be tightened so that they prevent cable slippage but do not deform or damage the cable sheath. Ty-Raps shall be used as necessary to neatly and independently rack the cables.

Splicing of the SMFO cable shall be done only at pull boxes as shown on the project plans, by fusion splicing. All splices and connectors shall be prepared in accordance with the cable manufacturers, splice manufacturers, or connector manufacturer's recommendations. Splices shall introduce less than 0.2 dB attenuation and

connectors shall introduce less than 0.5 dB attenuation.

**Cable Marking:**

The completed (trunk or branch) cables shall have sequential length markers in a contrasting color to the cable jacket, at regular intervals of three (3') feet along the outside of the jacket. Printed on the jacket shall be the cable code to identify the number and type of fibers, the manufacturer's name, manufacture's part number, the year of manufacture and the sequential length markings. The marking shall be readable and proportionate in height to the cable and must be permanent and weatherproof.

**Colors:**

The color of the outer jacket shall be black, and the cable must be outdoor rated. The single mode trunk cable "buffer tube" outer jackets and fiber jackets shall be colored in accordance with EIA-598.

Each fiber optic cable shall be coiled at a minimum radius of 20 times the outer diameter of the fiber cable in pull boxes. For example, if the cable has a diameter of .5 inches, the minimum radius shall be no less than 10 inches. At no time will any fiber optic cable be direct buried.

**Fiber Optic Jumper Cable:**

Fiber optic jumper cables shall conform the subsection 482.2.1 (E) of the 2018 Maricopa County Department of Transportation Supplemental to the MAG Specifications & Details.

**Construction Requirements:**

**General Requirements:**

Installation and testing of all equipment shall be accomplished by the contractor in conformance with these Special Provisions.

**Test Requirements for Fiber Optic Cable:**

The SMFO cable shall be tested after installation to verify the integrity of the fiber optic cable plant and its performance. The contractor shall test all terminated fibers of each SMFO cable using an Optical Time Domain Reflectometer (OTDR) in accordance with EIA/TIA-455. Splices testing -0.1 dB or greater or connectors testing -0.5dB or greater shall be remade. If any fibers are out of specification, the entire SMFO cable run shall be replaced at no additional cost. Records of all fiber installation attenuation measurements shall be logged and supplied to the City prior to final acceptance. These records will be used as a future reference.

**Method of Measurement:**

Fiber optic cables will be measured by the linear foot (LF) for each size cable furnished and installed, measured horizontally along the route between center of pull box to center of pull box, center of pull box to center of cabinet, and center of pull box to the termination point in the building. No measurement will be made for cable that is below ground in vertical conduit stub-ups or for slack cable in pull boxes, fiber splice vaults and field equipment cabinets. No separate measurement or payment will be made for patch and splice modules and jumper cables. The contractor shall account for cable slack, patch and splice modules, and jumper cables in the bid unit price and in the quantity of cable ordered.

**Basis of Payment:**

Fiber optic cables, measured as described above, will be paid at the contract unit price for fiber optic cable furnished and installed. Payment shall be full compensation for the cable described and specified herein, complete in place, including splices, terminations, testing, pull wire, and lubricant. Use of equipment required to install cable, including equipment to limit pull-tension and speed will be incidental to the cable item and will

not be measured or paid. The installation equipment will remain the property of the contractor. No separate measurement or payment will be made for additional materials or hardware required to complete this work.

***Bid Item 482.00096 – Fiber Optic Splice Closure and Fusion Splices:*** The work in this item includes all labor, equipment, and materials needed to furnish and install fiber optic splice closures at locations shown in the Project Plans. These splice closures will be used to house and protect the splices for branch and trunk cable fibers to the ITS devices and/or cabinets, and provide for future splicing to the City of Avondale traffic signal system and ITS communications system.

**Materials:**

Underground splice closures shall be either shell design or cylindrical, butt-end style, corrosion resistant, watertight, and meet the requirements of GR-771-CORE. Underground splice closures shall seal, bond, anchor, and provide efficient routing, storage, organization, and protection for fiber optic cable and splices. The splice closure shall provide an internal configuration and end cap with a minimum of two express ports for entry and exit of backbone cable and a minimum of three additional ports for distribution and branch cables.

Splice closures shall be furnished with heat-shrink fusion splice trays in sufficient quantities to perform the required number of splices. At a minimum, the splice closure shall accommodate 144 splices.

Splice closures shall have a reliable dual seal design with both the cable jackets and core tubes sealed, without the use of water-blocking material. The splice closures shall be capable of being opened and completely resealed without loss of performance.

The splice closure maximum dimensions shall not exceed 32" L x 10" W.

**Spare Parts:**

The splice closures shall be supplied with at least one spare heat shrink fusion splice tray and the hardware to terminate at least one additional branch cable.

**Construction Requirements:**

At the locations shown in the Project Plans, the contractor shall perform the required fusion splicing, as an item covered under the splice closure bid item, regardless of number of fusion splices, and not measured or paid as separate items.

The contractor shall install the splice closure such that the two trunk cable entries are on the same side of the end cap so if additional cables are installed at a later date, the two existing seals remain undisturbed.

**Method of Measurement:**

Splice closures will be measured as a unit for each (EA) splice closure furnished, installed, secured to the hooks in the pull boxes, and tested during the SMFO installation tests.

**Basis of Payment:**

Splice Closures will be paid, as described above, for the contract unit price each (EA) shall be full compensation for the work described in these Special Provisions and as shown on the Plans, complete in place. No separate measurement or payment will be made for additional materials or hardware required to complete this work, the cost considered included in the contract price.

***Bid Item 483.00040 – CCTV Camera Assembly, HD Digital:***

The work under this item includes furnishing and installing a Closed Circuit Television (CCTV) Camera Assembly in accordance with these technical specifications. The CCTV Camera Assembly shall include camera, power supply, all mounting hardware, cabling, surge protector, and other components necessary to provide a

complete and operational video detection system. The CCTV camera assembly shall be the AXIS Q6054-E Mk III PTZ network camera with the AXIS T91L61 and T91A57 pole mounting accessories, or approved equal.

The camera casing shall be aluminum, with a polycarbonate clear dome and sunshield, and shall be IP66, NEMA 4X, and IK10 rated. The camera assembly shall operate on 100 – 240 VAC. Typical camera power consumption shall be 16 W and a maximum of 60 W. The camera shall operate in the temperature range of minus 50 degrees C to plus 50 degrees C with 60 W midspan and at a maximum intermittent temperature of 60 degrees C. The camera assembly shall have 512 MB RAM and 256 MB flash memory.

The camera pan/tilt/zoom (PTZ) shall be capable of 360 degree endless pan, 220 degree tilt, 30x optical zoom, and 12x digital zoom for a total 360x total zoom. The camera PTZ shall be capable of up to 256 preset positions, up to ten tour recordings of 16 minute duration each. The camera shall have on-screen directional indicators and adjustable zoom speed. The video resolution shall be HDTV 720p at a frame rate up to 50/60 frames per second.

The power supply and surge protector shall conform to the camera manufacturer's requirements.

The CCTV camera assembly shall be installed in accordance with the camera manufacturer's recommendations.

**Method of Measurement:**

The CCTV Camera Assembly, as described above, shall be measured as a unit for **EACH** system provided and installed.

**Basis of Payment:**

The CCTV Camera Assembly, as measured above, shall be paid for at the contract unit price for the completed system in place.

***Bid Item 485.20000 - Video Detection System (4-Camera System):***

This item includes providing a video detection system in accordance with these technical specifications. The video detection system shall include all cameras, mounting hardware, central control unit, cabling, and other components necessary to provide a complete and operational video detection system. One system will serve as an upgrade to the existing video detection system at the Avondale Boulevard/Coldwater Springs Boulevard intersection. The existing traffic signal cabinet at the Avondale Boulevard/Coldwater Springs Boulevard intersection is a City of Avondale type 332 traffic signal cabinet. The second system will be a complete and operational system for the new traffic signal at the Avondale Boulevard/Maricopa Road intersection. The video detection system shall be Iteris Vantage Next system, or approved equal.

The following specifications describe the minimum requirements for providing a complete Video Detection System that will be fully compatible and fully integrated with the City of Avondale's controller, both hardware and the intersection firmware. Initially, the system shall be capable of providing presence vehicle detection at signalized intersections in the project limits. The system shall also be capable of providing motor vehicle turning movement count data, bicycle count data, and pedestrian count data at some point in the future, as requested by the City of Avondale. The video system shall be expandable without removing or replacing existing units.

The purpose of the Video Unit is to detect the presence of vehicles over optical detection zones, which are placed on a standard video image (CCIR or EIA). Using standard image sensor optics and in the absence of occlusion, the system shall be able to detect vehicle presence with 98% accuracy under normal conditions (days and nights), and 96% accuracy under adverse conditions (fog, rain, snow).

The camera shall operate in the temperature range of -35 degrees F to +165 degrees F and a humidity range of 0% to 95%. The camera shall operate on 48VDC power. The camera imager shall have 768 x 494 effective pixels and automatic white balance. The camera shall be adjustable/auto focus capable. All camera connections shall be terminal block type connections. The camera dimensions shall be 16 inches long by 6.25 inches wide by 7 inches high, not including the mounting bracket. The weight of the camera assembly shall not exceed 4.8 pounds.

The video system platform shall be easy to install, configure and maintain, with CAT5 cable connections. The video processor shall have compressed video stream video output with status indicators for primary power, video input status, and detection outputs. Video output shall be MPEG-4 and H.264 with a fixed frame rate of 15 fps. The video processor shall be the 19 inch rack mount type, compatible with the City of Avondale type 332 traffic signal cabinet.

All items and materials furnished shall be new, unused, current production models installed and operational in a user environment and shall be items currently in distribution. The detection algorithms shall have a proven record of field use prior to installation. Video cameras shall be available commercially, no sole source cameras will be allowed.

The video detection system shall be installed in accordance with the system manufacturer's recommendations.

**Method of Measurement:**

The video detection system, as described above, shall be measured as a unit for **EACH** system provided and installed.

**Basis of Payment:**

The video detection system, as measured above, shall be paid for at the contract unit price for the system, complete in place.

***Bid Item 486.10050 – Field Hardened Ethernet Switch (Furnish and Install):***

The work under this item consists of a labor, equipment, and materials necessary to furnish and install field hardened Ethernet switches in accordance with these technical specifications and as shown on the project plans. The field hardened Ethernet switch shall be a Siemens RUGGEDCOM RS900G rugged communications switch model HI-P-2LC25-C01 with a six foot RUGGEDCOM power cord, or approved equal. This item shall also include a power strip with a minimum of six outlets and a six foot cord.

The hardened Ethernet switch shall be a 10-port utility-grade, fully managed Ethernet switch with dual fiber optical Gigabit Ethernet ports and eight fast Ethernet copper ports. The switch shall be designed to operate reliably in harsh environments with a high level of immunity to electromagnetic interference and heavy electrical surges typical of environments found in traffic signal control cabinets. The switch shall be rated to operate in the temperatures ranging from -40 degrees C to +85 degrees C and shall meet or exceed standard



IEEE 1613 and NEMA TS-2. The switch shall have a fully integrated power supply with a universal high-voltage range of 88-300 VDC or 85-264 VAC and dual low-voltage inputs of 24 or 48 VDC. The power supply shall be CSA/UL 60950 safety approved to +85 degrees C.

**Method of Measurement:**

The field hardened Ethernet switch, as described above, shall be measured as a unit for **EACH** switch furnished and installed.

**Basis of Payment:**

The field hardened Ethernet switch, as measured above, shall be paid for at the contract unit price, for the switch, complete in place.

\* \* \* \*

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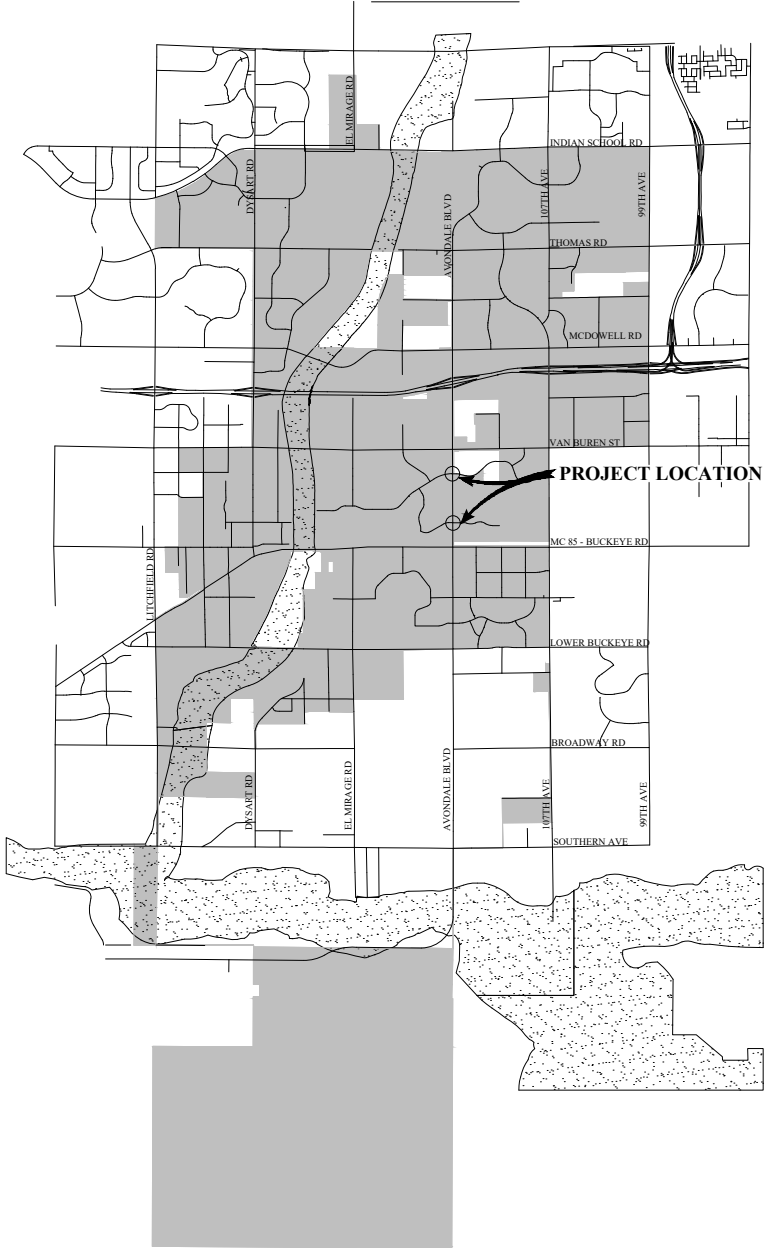


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## AVONDALE BOULEVARD AND MARICOPA STREET TRAFFIC SIGNAL AVONDALE PROJECT NO. ST1381

### AREA MAP



### Utility Notification

THESE PLANS HAVE BEEN SUBMITTED TO THE FOLLOWING UTILITY COMPANIES. WHERE THE WORK TO BE DONE CONFLICTS WITH ANY OF THESE UTILITIES, THE CONFLICTS SHALL BE RESOLVED AS SPECIFIED IN THE SPECIAL NOTES AND/OR AS OTHERWISE NOTED ON THESE PLANS. CONFLICTS ARISING DURING THE COURSE OF CONSTRUCTION FROM UNFORESEEN CIRCUMSTANCES SHALL BE REPORTED TO THE INTERESTED UTILITY COMPANY AND BE RESOLVED BY THEM AND THE DESIGN ENGINEER.

|                             |                        | CONTACTED | REPLIED  |
|-----------------------------|------------------------|-----------|----------|
| CTLQL - CENTURY LINK        | BRETT BEATY            | 11/15/18  | 12/05/18 |
| PHONE NUMBER:(480) 239-3257 | COMPANY REPRESENTATIVE | DATE      | DATE     |
| COX COMMUNICATIONS          | CORY DAY               | 11/15/18  | 12/21/18 |
| PHONE NUMBER:(602) 769-3979 | COMPANY REPRESENTATIVE | DATE      | DATE     |
| KINDER MORGAN               | CORY TALMAGE-GRAY      | 11/15/18  | 01/08/19 |
| PHONE NUMBER:(719) 520-4266 | COMPANY REPRESENTATIVE | DATE      | DATE     |
| SALT RIVER PROJECT          | SRP BLUE STAKE         | 11/15/18  | 02/04/19 |
| PHONE NUMBER:(602) 236-0826 | COMPANY REPRESENTATIVE | DATE      | DATE     |
| SOUTHWEST GAS               | ADAM SHOCHAT           | 11/15/18  | 02/05/19 |
| PHONE NUMBER:(623) 780-3350 | COMPANY REPRESENTATIVE | DATE      | DATE     |

### CITY OF AVONDALE

#### MAYOR

KENNETH WEISE

#### VICE MAYOR

BRYAN KILGORE

#### COUNCIL MEMBERS

TINA CONDE  
PAT DENNIS  
VERONICA MALONE  
MIKE PINEDA  
LORENZO SIERRA

#### CITY MANGER

CHARLES A. MONTOYA

#### CITY CLERK

CARMEN MARTINEZ

#### ENGINEER

J2 ENGINEERING & ENVIRONMENTAL DESIGN  
MARK POPPE, PE  
4649 E COTTON GIN LOOP, SUITE B2  
PHOENIX, ARIZONA 85040  
PHONE: (602) 438-2221  
FAX: (602) 438-2225

#### OWNER

CITY OF AVONDALE  
DAVID A. JANOVER, PE, F.NSPE, CFM (CITY ENGINEER)  
11465 W CIVIC CENTER DRIVE  
AVONDALE, ARIZONA 85323  
PHONE: (623) 333-4217  
FAX: (623) 333-0420

#### SURVEYOR

CONSULTANT REGISTERED SURVEYING, INC.  
CARL SITTERLEY  
3370 N. HAYDEN, SUITE 123 PMB 567  
SCOTTSDALE, AZ 85251  
PHONE: (480) 620-1382

### APPROVALS

CITY ENGINEERING DEPARTMENT \_\_\_\_\_ DATE \_\_\_\_\_

THE CITY APPROVES THESE PLANS FOR CONCEPT ONLY  
AND ACCEPTS NO LIABILITY FOR ERRORS OR OMISSIONS

### "AS-BUILT CERTIFICATION"

I HEREBY CERTIFY THAT THE "AS-BUILT" INFORMATION SHOWN HEREON  
WAS OBTAINED UNDER MY DIRECT SUPERVISION AND IS CORRECT AND  
COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF

REGISTERED LAND SURVEYOR/ENGINEER \_\_\_\_\_

REGISTRATION NUMBER \_\_\_\_\_ DATE \_\_\_\_\_

COMPANY NAME:

ADDRESS:

PHONE NUMBER:

#### NOTE:

ALL CONSTRUCTION SHALL BE IN ACCORDANCE  
WITH THE MOST RECENT EDITION OF THE CITY OF  
AVONDALE'S SUPPLEMENT TO  
M.A.G. SPECIFICATIONS AND STANDARD DETAILS  
CURRENTLY ON FILE AND AVAILABLE AT THE CITY  
OF AVONDALE'S ENGINEERING DEPARTMENT OR  
ONLINE AT THE CITY OF AVONDALE'S WEBSITE.



DRAWN BY:  
DESIGNED BY:  
CHECKED BY:  
SHEET:  
DRAWING SCALE:

J2 ENGINEERING AND ENVIRONMENTAL DESIGN  
4649 EAST COTTON GIN LOOP, SUITE B2  
PHOENIX, AZ 85040  
(602) 438-2221  
www.j2design.us

**J2**

COVER SHEET  
AVONDALE BOULEVARD AND MARICOPA STREET SIGNAL  
PROJECT NUMBER:

Professional Engineer  
CERTIFICATE NO. 28175  
MARK J. POPPE  
Expires: 09/30/2021

03/04/2019  
ORIGINAL PLAN DATE  
LATEST REVISION DATE

SHEET NUMBER  
1 OF 13  
PROJECT NUMBER

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CITY OF AVONDALE GENERAL NOTES:

1. A GRADING PERMIT IS REQUIRED.
2. EXCAVATING CONTRACTOR MUST GIVE LOCATION WASTING EXCESS EXCAVATION AND LETTER FROM THE OWNER GIVING PERMISSION FOR DUMPING PRIOR TO STARTING ON-SITE CONSTRUCTION.
3. CITY OF AVONDALE ENGINEERING DIVISION SHALL BE NOTIFIED BEFORE ANY ON-SITE CONSTRUCTION BEGINS, TELEPHONE (623) 932-1909.
4. STAKING FOR PAD AND/OR FINISH FLOOR ELEVATIONS IS THE RESPONSIBILITY OF THE DEVELOPER AND HIS ENGINEER. DEVELOPERS ENGINEER SHALL SUBMIT CERTIFICATION OF CONSTRUCTED BUILDING PAD ELEVATIONS PRIOR TO REQUEST FOR FINAL INSPECTION.
5. A SEPARATE PERMIT IS REQUIRED FOR ANY OFFSITE CONSTRUCTION.
6. AN APPROVED GRADING AND DRAINAGE PLAN SHALL BE ON THE JOB SITE AT ALL TIMES. DEVIATIONS FROM THE PLAN MUST BE PRECEDED BY AN APPROVED PLAN REVISION.
7. DRYWELLS MUST BE DRILLED A MINIMUM OF 5 (FIVE) FEET INTO PERMEABLE POROUS STRATA OR PERCOLATION TESTS WILL BE REQUIRED. INSPECTION IS REQUIRED FOR THE DRYWELLS BEFORE BACKFILL AND TO VERIFY INSTALLATION OF DRAIN PIPES AND APPURTENANCES BEFORE PLACEMENT OF ROCK.
8. GRADING AND DRAINAGE PLAN APPROVAL INCLUDES: THE CONSTRUCTION OF ALL SURFACE IMPROVEMENTS SHOWN ON THE APPROVED GRADING AND DRAINAGE PLAN, INCLUDING BUT NOT LIMITED TO RETENTION AREAS AND/OR OTHER DRAINAGE FACILITIES, DRAINAGE PATTERNS, RETAINING WALLS, WALLS REQUIRED DRAINAGE STRUCTURES, SUBGRADE FOR CURB & GUTTER, SUBGRADE FOR ASPHALT PAVEMENT, AND BUILDING FLOOR ELEVATION.
9. CONTRACTOR SHALL PROVIDE A LEVEL BOTTOM IN ALL RETENTION BASINS AT ELEVATIONS SHOWN ON PLANS. RETENTION BASINS SIDE SLOPES SHALL NOT EXCEED 4:1 ON PRIVATE PROPERTY UNLESS OTHERWISE NOTED ON PLANS.
10. CONTRACTOR IS RESPONSIBLE FOR BLUE STAKE LOCATING AND CONFIRMING DEPTHS OF ALL EXISTING UTILITY LINES WITHIN PROPOSED BASIN AREAS. IF THE BASIN CANNOT BE CONSTRUCTED AS PER PLAN BECAUSE OF CONFLICT WITH UNDERGROUND UTILITIES, THE CONTRACTOR SHOULD REQUEST MODIFICATION OF BASIN CONFIGURATION BY PLAN REVISION.
11. ALL DRAINAGE PROTECTIVE DEVICES SUCH AS SWALES, INTERCEPTOR DITCHES, PIPES, PROTECTIVE BERMS, CONCRETE CHANNELS OR OTHER MEASURES DESIGNED TO PROTECT HOMES FROM STORM RUNOFF MUST BE COMPLETED PRIOR TO ANY STRUCTURE BEING BUILT.
12. SOILS COMPACTION TEST RESULTS MUST BE SUBMITTED TO THE CITY OF AVONDALE ENGINEERING DIVISION FOR BUILDING PADS THAT HAVE ONE (1) FOOT OR MORE OF FILL MATERIAL INDICATED. THIS INFORMATION MUST BE SUPPLIED PRIOR TO REQUEST FOR FINAL INSPECTION.
13. THE DESIGN ENGINEER SHALL LOCATE AND SHOW ALL EXISTING UNDERGROUND UTILITIES WITHIN RETENTION AREAS. THE BASIN SHALL BE DESIGNED TO MAINTAIN A MINIMUM OF 15" COVER OVER UTILITY LINES.
14. CLEARANCE FOR OCCUPATION OF ANY BUILDING IS DENIED UNTIL GRADING AND DRAINAGE IMPROVEMENTS ARE COMPLETED.
15. TEMPORARY DRAINAGE CONTROL MEASURES MAY BE REQUIRED DURING AND AFTER CONSTRUCTION UNTIL FINAL LOT BUILD-OUT IN ACCORDANCE WITH THE APPROVED PLANS AND IN ACCORDANCE WITH ANY ESTABLISHED OR REQUIRED FOR BEST MANAGEMENT PRACTICES (B.M.P.'S) AS PART OF THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (N.P.D.E.S.) PERMIT REQUIREMENTS. IT IS THE OWNER/CONTRACTOR'S RESPONSIBILITY TO MEET ALL REQUIREMENTS.
16. NO CONCRETE REMOVALS AT EXISTING STREETS UNTIL PAVING OPERATIONS. CONTRACTOR IS RESPONSIBLE FOR "RAMPING" OR PROTECTING ALL EXISTING CONCRETE/ASPHALT. IN ADDITION, CONTRACTOR MUST PROVIDE FOR PROPER GUTTER DRAINAGE FLOW UNDER RAMPS BY USING STEEL OR PVC (SCHEDULE 80) PIPE. RAMPS TO BE CONSTRUCTED OF ABC OR ASPHALT. DIRT IS NOT ALLOWED. RAMPS SHALL EXTEND A MINIMUM OF 25' INTO THE PARCEL AND WIDE ENOUGH TO HANDLE ALL CONSTRUCTION TRAFFIC, 16' MINIMUM.
17. ALL GRADING BEHIND SIDEWALK OR CURB & GUTTER TO BE LEFT DOWN 3" BELOW CONCRETE FOR NEW AND EXISTING AREAS, ALL LOCATIONS.
18. ALL CONSTRUCTION ACCESS LOCATIONS TO THE PARCELS ARE SUBJECT TO CITY ENGINEER APPROVAL.
19. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING PROPER AND ADEQUATE ACCESS ROADS INSIDE AND THROUGHOUT THE PARCEL ALLOWING FOR INSPECTION ACCESSIBILITY. THIS INCLUDES GRADING, GRAVEL FILL, TRENCH PLATES AND DUST CONTROL.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL RELATED TO THE PROJECT CONSTRUCTION AND SHALL TAKE WHATEVER MEANS NECESSARY TO CONTROL ANY ABNORMAL CONDITIONS.
21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAILY AND FINAL CLEANUP OPERATIONS OF ADJACENT EXISTING PAVED STREETS USED BY CONSTRUCTED TRAFFIC, THIS WORK INCLUDES STREET SWEEPING, POWER BROOM AND WATER AS NEEDED.
22. THE CONTRACTOR IS REQUIRED TO SUBMIT A TRAFFIC CONTROL AND BARRICADE PLAN TO THE CITY FOR APPROVAL, BEFORE THAT PARTICULAR WORK CAN TAKE PLACE. A HAUL PLAN IS ALSO REQUIRED FOR DIRT MATERIAL IMPORT OR EXPORT.
23. THE CONTRACTOR IS RESPONSIBLE FOR BLUE STAKE AND LOCATING ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL DAMAGE THAT MAY BE INCURRED TO THE UTILITIES AND BE LIABLE FOR ANY REPAIR COST INCLUDING ACCIDENTAL COSTS. THE CONTRACTOR AND/OR DEVELOPER WILL BE RESPONSIBLE FOR CONTACTING THE OWNER OF EACH VARIOUS UTILITY AND FACILITY WITH WHICH THERE ARE CONFLICTS WITH THE NEW CONSTRUCTION AND MAKING ALL NECESSARY ARRANGEMENTS WITH THE OWNER FOR RELOCATION OR ABANDONING THE UTILITY OR FACILITY AS REQUIRED BY ITS OWNER.
24. DAMAGED ASPHALT AND/OR DISPLACED CONCRETE CURB, GUTTER, SIDEWALK, OR DRIVEWAY SLAB THAT IS WITHIN THE RIGHT-OF-WAY SHALL BE REPLACED AS DIRECTED BY THE CITY BEFORE FINAL ACCEPTANCE OF THE WORK BY THE CITY.
25. GRADING CONTRACTOR RESPONSIBLE FOR COMPACTION OF PERIMETER FENCE WALL FOUNDATIONS, 90% DENSITY REQUIRED. DEVELOPED/OWNER OR ENGINEER TO STAKE LOCATIONS. CERTIFIED GEOTECHNICAL TESTING LAB, PROVIDED FOR BY THE DEVELOPER/OWNER OR ENGINEER, TO BE RETAINED FOR TESTING.

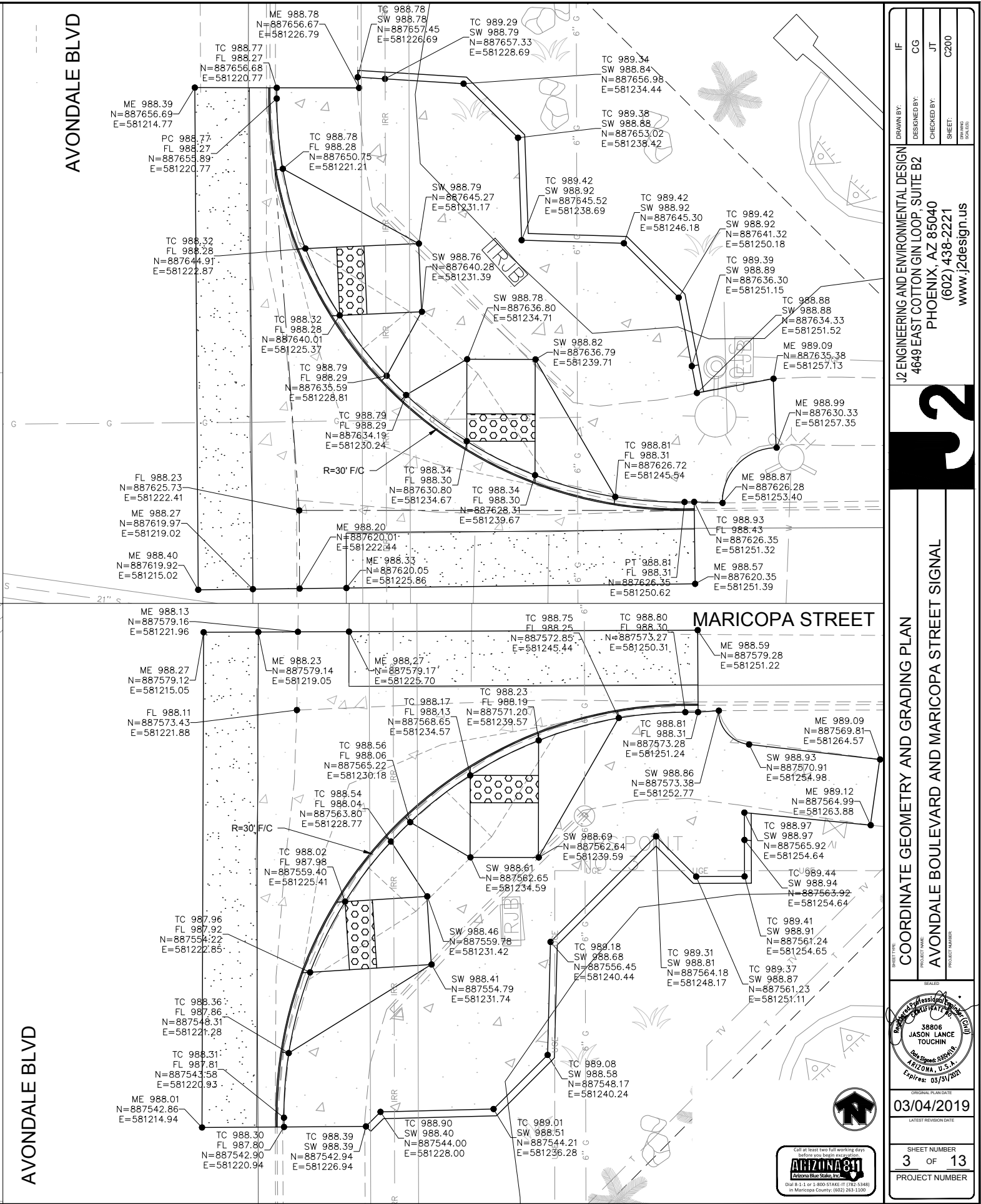
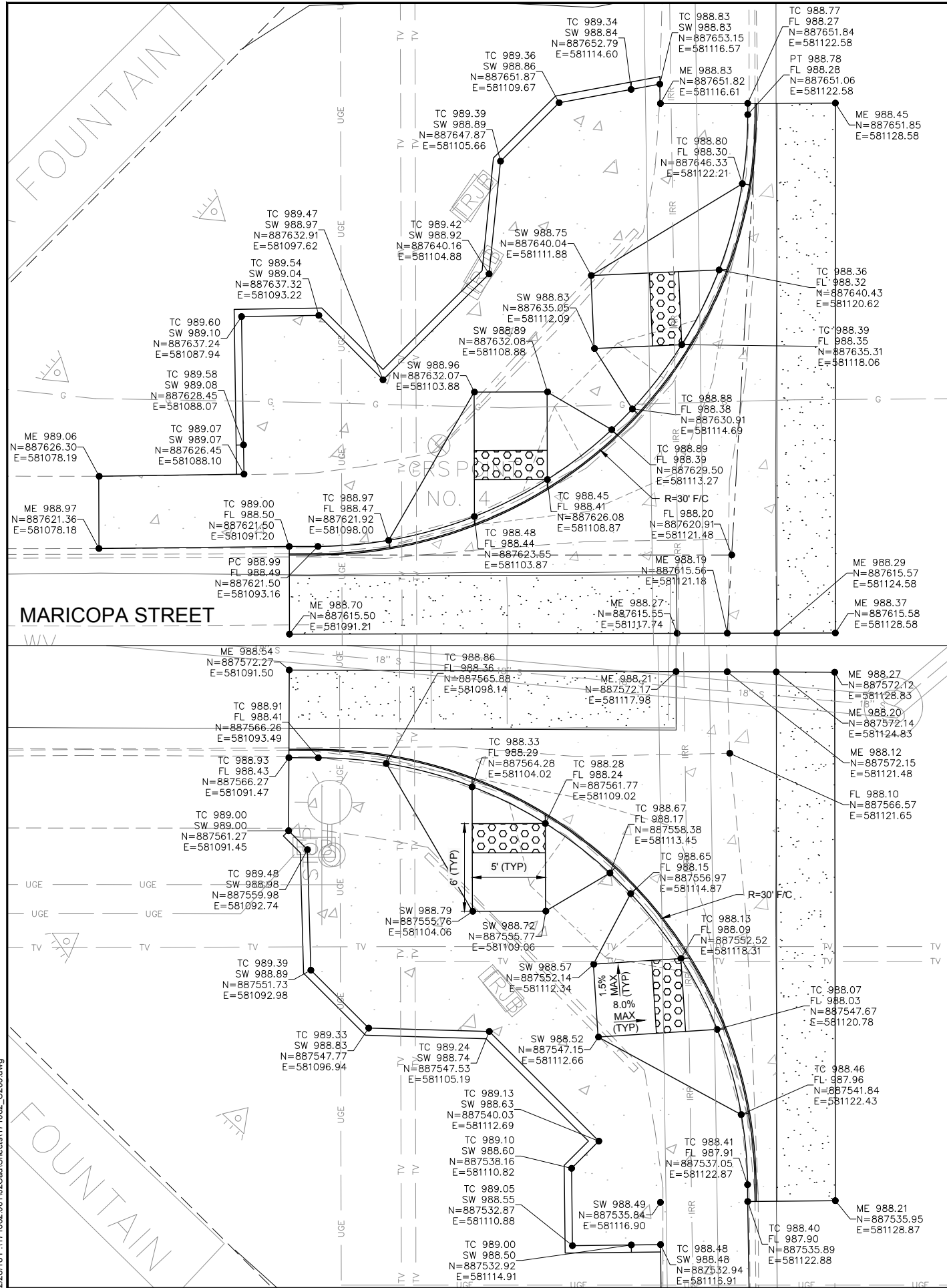
CITY OF AVONDALE GENERAL NOTES:

ALL IMPROVEMENT PLAN NOTES AND SPECIFICATIONS ON THESE DRAWINGS COMPILED FROM THE CITY OF AVONDALE'S SPECIFICATIONS. IF ANY SPECIFICATIONS ON THESE DRAWINGS DO NOT COMPLY WITH CITY OF AVONDALE SPECIFICATIONS, THEY SHALL BE SUPERCEDED BY ANY CITY OF AVONDALE SPECIFICATIONS THAT APPLIES.



|   |  |   |  |
|---|--|---|--|
| DRAWN BY: IF  |  | J2 ENGINEERING AND ENVIRONMENTAL DESIGN                     |  |
| DESIGNED BY: CG   |  | 4649 EAST COTTON GIN LOOP, SUITE B2                         |  |
| CHECKED BY: JT  |  | PHOENIX, AZ 85040   |  |
| SHEET: C100   |  | (602) 438-2221  |  |
| DRAWING SCALE: 1"=10'   |  | www.j2design.us   |  |
| 2   |  |   |  |
| SHEET TYPE: GENERAL NOTES AND QUANTITIES SHEET                        |  | PROJECT NAME: AVONDALE BOULEVARD AND MARICOPA STREET SIGNAL |  |
| PROJECT NAME: AVONDALE BOULEVARD AND MARICOPA STREET SIGNAL           |  | PROJECT NUMBER:   |  |
| SEAL: 38806 JASON LANCE TOUCHIN, ARIZONA, U.S.A., Expires: 03/31/2021 |  |   |  |
| ORIGINAL PLAN DATE: 03/04/2019  |  |   |  |
| LATEST REVISION DATE:   |  |   |  |
| SHEET NUMBER: 2 OF 13   |  | PROJECT NUMBER:   |  |

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|--|----|----|------|
| IF   | CG | JT | C200 |
| J2 ENGINEERING AND ENVIRONMENTAL DESIGN<br>4649 EAST COTTON GIN LOOP, SUITE B2<br>PHOENIX, AZ 85040<br>(602) 438-2221<br>www.j2design.us |    |    |      |
| COORDINATE GEOMETRY AND GRADING PLAN<br>AVONDALE BOULEVARD AND MARICOPA STREET SIGNAL  |    |    |      |
| 38806 JASON LANCE TOUCHIN<br>Arizona State Seal<br>Expires: 03/31/2021   |    |    |      |
| 03/04/2019   |    |    |      |
| SHEET NUMBER<br>3 OF 13  |    |    |      |
| PROJECT NUMBER   |    |    |      |

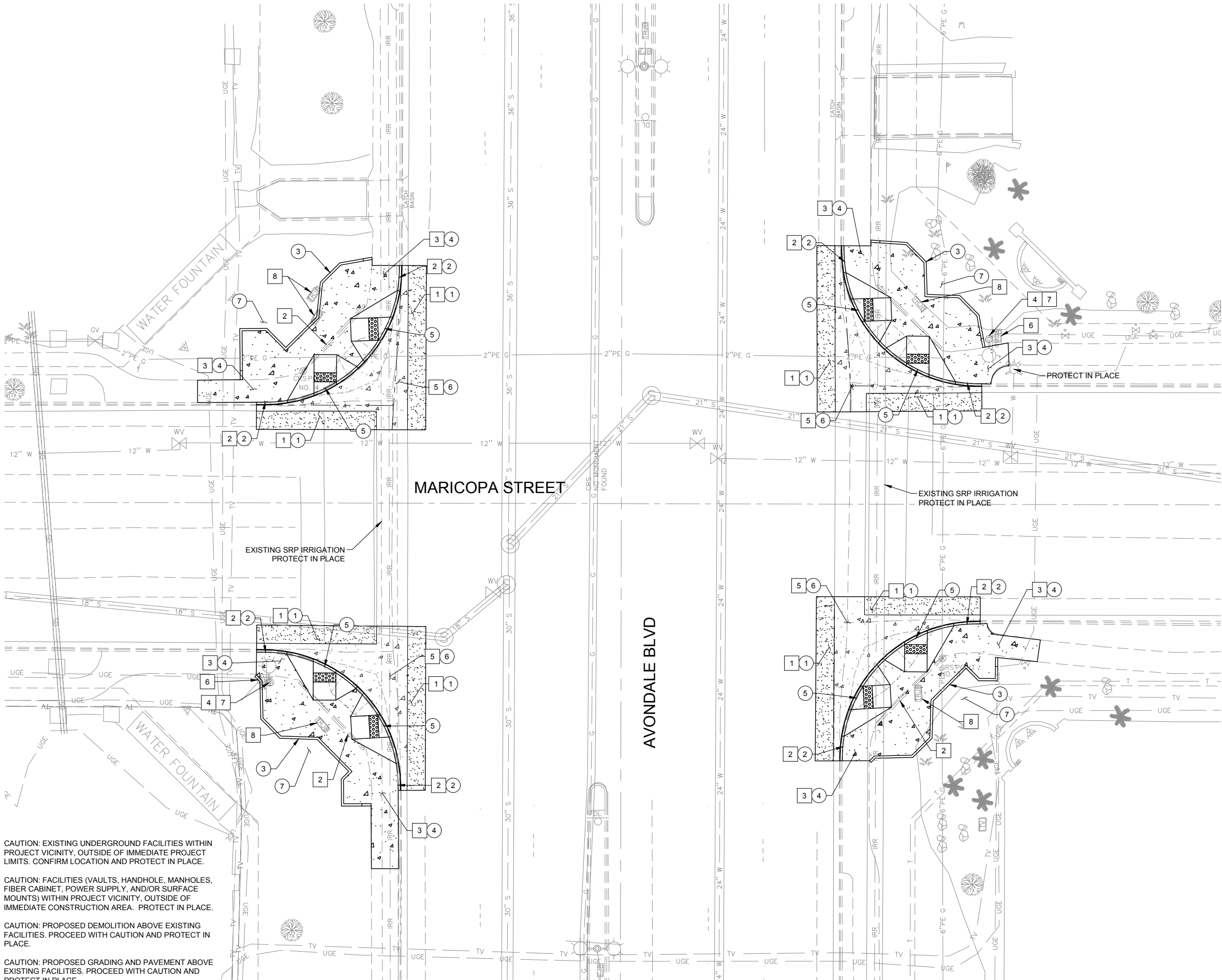
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CAUTION: EXISTING UNDERGROUND FACILITIES WITHIN PROJECT VICINITY, OUTSIDE OF IMMEDIATE PROJECT LIMITS. CONFIRM LOCATION AND PROTECT IN PLACE.

CAUTION: FACILITIES (VAULTS, HANDHOLE, MANHOLES, FIBER CABINET, POWER SUPPLY, AND/OR SURFACE MOUNTS) WITHIN PROJECT VICINITY, OUTSIDE OF IMMEDIATE CONSTRUCTION AREA. PROTECT IN PLACE.

CAUTION: PROPOSED DEMOLITION ABOVE EXISTING FACILITIES. PROCEED WITH CAUTION AND PROTECT IN PLACE.

CAUTION: PROPOSED GRADING AND PAVEMENT ABOVE EXISTING FACILITIES. PROCEED WITH CAUTION AND PROTECT IN PLACE.

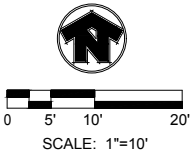


REMOVALS

|   |  |          |
|---|--|----------|
| 1 | 4' SAWCUT AND REMOVE EXISTING ASPHALT PAVEMENT | 111 SY   |
| 2 | REMOVE EXISTING VERTICAL CURB                  | 278 LF   |
| 3 | SAWCUT AND REMOVE EXISTING SIDEWALK            | 1,407 SF |
| 4 | REMOVE AND SALVAGE STREET LIGHT POLE           | 2 EA     |
| 5 | REMOVE EXISTING VALLEY GUTTER                  | 1,244 SF |
| 6 | REMOVE ELECTRICAL JUNCTION BOX                 | 2 EA     |
| 7 | REMOVE AND SALVAGE SIGN                        | 2 EA     |
| 8 | RELOCATE TRAFFIC SIGNAL JUNCTION BOX           | 5 EA     |

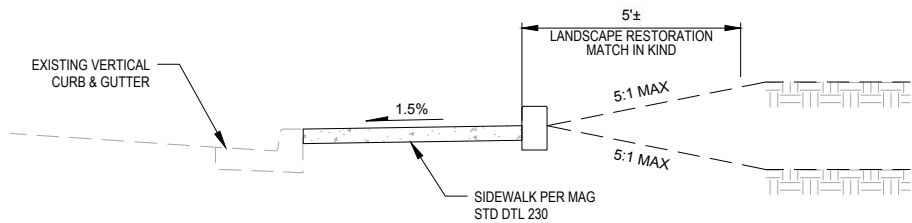
CONSTRUCTION NOTES

|   |  |          |
|---|--|----------|
| 1 | ASPHALT PVMT PER PVMT STRUCTURAL SECTION NO.1 (3" AC/6" ABC) (INCLUDES SUBGRADE PREPARATION) | 111 SY   |
| 2 | VERTICAL CURB & GUTTER TYPE A PER MAG DTL 220-1  | 198 LF   |
| 3 | SINGLE CURB, TYPE A, PER MAG STD DTL 222   | 190 LF   |
| 4 | SIDEWALK PER MAG STD DTL 230   | 1,893 SF |
| 5 | ADA RAMP PER MAG STD DTL 237-1   | 8 EA     |
| 6 | CONCRETE VALLEY GUTTER PER MAG STD DTL 240   | 1,244 SF |
| 7 | DECOMPOSED GRANITE RESTORATION PER SHEET C400 DTL 1, 2 & 3                                   | 1 LS     |

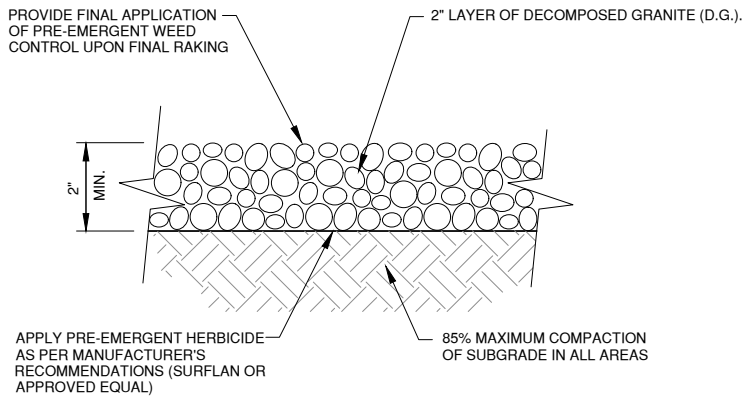


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|--|---|
| J2 ENGINEERING AND ENVIRONMENTAL DESIGN<br>4649 EAST COTTON GIN LOOP, SUITE B2<br>PHOENIX, AZ 85040<br>(602) 438-2221<br>www.j2design.us |   |
| CIVIL PLAN   | AVONDALE BOULEVARD AND MARICOPA STREET SIGNAL |
| DATE: 03/04/2019   | PROJECT NUMBER: 13                            |
| DESIGNED BY: CG  | CHECKED BY: JT                                |
| DRAWN BY: IF   | SHEET: C300                                   |

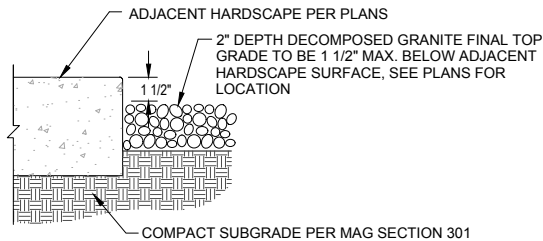
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1 TYPICAL VERTICAL CURB & SIDEWALK SECTION  
NTS



2 DECOMPOSED GRANITE DETAIL  
NTS



- NOTES:
1. DECOMPOSED GRANITE - MATCH EXISTING COLOR & SIZE. CONTRACTOR SHALL PROVIDE SAMPLES FOR APPROVAL BY CITY OF AVONDALE REPRESENTATIVE AND ENGINEER PRIOR TO ORDERING AND INSTALLATION.
  2. PLACE AND ROLLER COMPACT TO 2" TOTAL DEPTH OVER 85% COMPACTED SUBGRADE.
  3. PRE-EMERGENT HERBICIDE SURFLAN, DACTHAL, OR APPROVED EQUAL SHALL BE APPLIED BEFORE AND AFTER GRANITE PLACEMENT. CONTRACTOR SHALL CONTACT INSPECTOR PRIOR TO HERBICIDE PLACEMENT SO INSPECTOR CAN OBSERVE INSTALLATION.
  4. CONTRACTOR SHALL SUBMIT DECOMPOSED GRANITE SAMPLES IN RIGID PLASTIC OR METAL CONTAINERS. GRANITE GRADATION & COLOR, PROJECT NUMBER, AND SUPPLIER NAME SHALL BE CLEARLY LABELED ON CONTAINER.

3 DECOMPOSED GRANITE AT CONCRETE  
NTS











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|---|-------------------------------------|-------------------|----------------|
| IF  | CG                                  | JT                | C400           |
| DRAWN BY:                                     | DESIGNED BY:                        | CHECKED BY:       | SHEET:         |
| J2 ENGINEERING AND ENVIRONMENTAL DESIGN       | 4649 EAST COTTON GIN LOOP, SUITE B2 | PHOENIX, AZ 85040 | (602) 438-2221 |
| www.j2design.us                               |                                     |                   |                |
| J2  |                                     |                   |                |
| CIVIL DETAILS                                 |                                     |                   |                |
| AVONDALE BOULEVARD AND MARICOPA STREET SIGNAL |                                     |                   |                |
| PROJECT NUMBER:                               |                                     |                   |                |
| SEAL  |                                     |                   |                |
| 38806 JASON LANCE TOUCHIN                     |                                     |                   |                |
| ARIZONA, U.S.A.                               |                                     |                   |                |
| Expires: 03/31/2021                           |                                     |                   |                |
| ORIGINAL PLAN DATE                            |                                     |                   |                |
| 03/04/2019                                    |                                     |                   |                |
| LATEST REVISION DATE                          |                                     |                   |                |
| SHEET NUMBER                                  |                                     |                   |                |
| 5 OF 13                                       |                                     |                   |                |
| PROJECT NUMBER                                |                                     |                   |                |

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## SIGNING AND STRIPING GENERAL PLAN NOTES

1. PAVEMENT MARKING DRAWINGS ARE SCHEMATIC ONLY AND NOT TO SCALE. THE CONTRACTOR SHALL FOLLOW ALL DIMENSIONS, NOTES, DETAILS AND STANDARDS WHEN INSTALLING PAVEMENT MARKINGS AND MARKERS. TRAVEL LANES SHALL BE AS SHOWN ON PLANS OR 10' MINIMUM WIDTH WHERE REQUIRED. BIKE LANES SHALL BE 6' MINIMUM MEASURED FROM FACE OF CURB.
2. THE CITY OF AVONDALE ENGINEERING DEPARTMENT SHALL BE NOTIFIED THREE (3) BUSINESS DAYS PRIOR TO STARTING ANY SIGNING OR STRIPING WORK.
3. UNLESS OTHERWISE SPECIFIED, ALL PAVEMENT MARKINGS AND TRAFFIC CONTROL SIGNING INSTALLATIONS AND REMOVALS SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN THE CITY OF AVONDALE "CONSTRUCTION SPECIFICATIONS" SECTION XI. ITEMS NOT COVERED UNDER THE CITY SPECIFICATIONS SHALL CONFORM TO ARIZONA DEPARTMENT OF TRANSPORTATION (ADOT) STANDARD DRAWINGS, DETAILS AND SPECIFICATIONS OR THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) LATEST EDITION, AS APPLICABLE. SIGN REQUIREMENTS, GUIDELINES AND WARRANTIES SHALL BE IN ACCORDANCE WITH THE MUTCD MOST RECENT EDITION.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT AND INSTALLATION OF THE PERMANENT PAVEMENT MARKINGS FOLLOWING CONTROL POINTS THAT HAVE BEEN SET NO MORE THAN 50 FEET APART ALONG THE LINES TO BE STRIPED. PAVEMENT MARKING DIMENSIONS ARE TO CENTER OF THE STRIPE FOR SINGLE LINE STRIPING, AND TO CENTER OF THE SPACE BETWEEN THE TWO LINES FOR DOUBLE LINE STRIPING. WHERE CURB AND GUTTER IS PRESENT, DIMENSIONS ARE TO THE FACE OF CURB. THE CONTRACTOR SHALL SCHEDULE INSPECTION OF THE PAVEMENT MARKING LAYOUT AT LEAST THREE (3) BUSINESS DAYS PRIOR TO LAYOUT AND INSTALLATION OF PERMANENT PAVEMENT MARKINGS. INSPECTIONS SHALL TAKE PLACE DURING DAYTIME AND ON A BUSINESS DAY PRIOR TO INSTALLATION OF PERMANENT PAVEMENT MARKINGS.
5. UNLESS OTHERWISE DIRECTED, ALL FINAL LOCATION LANE STRIPING INCLUDING CROSSWALKS AND STOP BARS SHALL BE THERMOPLASTIC MATERIAL APPLIED AT A MINIMUM THICKNESS OF 60 MIL. ALL PAVEMENT SYMBOLS, ARROWS, AND LETTERING SHALL BE THERMOPLASTIC, TYPE I (PERMANENT) PREFORMED PAVEMENT MARKINGS. TEMPORARY PAVEMENT MARKINGS SHALL BE REFLECTORIZED TRAFFIC PAINT.
6. ALL SIGNS SHALL CONFORM TO THE MUTCD AND SHALL BE MADE FROM .080 INCH THICK ALUMINUM. SIGN POSTS AND EXTENSIONS SHALL BE GALVANIZED SQUARE PERFORATED STEEL TUBING PER CITY STANDARDS. HEIGHT REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE MUTCD.
7. ANY SIGNS, INCLUDING STREET NAME SIGNS, WHICH MAY BE LOCATED WITHIN TEN (10) FEET OF AN EXISTING STREET LIGHT POLE, MAY BE PROPERLY MOUNTED TO THE POLE WITH APPROVAL FROM THE CITY. SIGN LOCATIONS AND OFFSETS MAY BE ADJUSTED BY THE CITY TO IMPROVE VISIBILITY.
8. ALL SIGNS SHALL HAVE A MINIMUM CLEARANCE FROM EDGE OF SIGN TO THE FACE OF THE CURB OF AT LEAST TWO (2) FEET. IF NO CURB EXISTS, THE MINIMUM CLEARANCE SHALL BE AT LEAST TEN (10) FEET FROM THE EDGE OF THE PAVEMENT. ALL SIGNS SHALL BE PLACED SO AS NOT TO INTERFERE WITH PEDESTRIAN MOVEMENT.
9. ALL CONCRETE MEDIAN CURB NOSES SHALL BE PAINTED WITH YELLOW REFLECTIVE SAFETY PAINT FROM THE FRONT OF THE BULLNOSE BACK TEN (10) FEET.
10. RAISED PAVEMENT MARKERS (RPMs) SHALL BE INSTALLED ON ARTERIAL ROADWAYS AND ROADWAYS WITHOUT FULL STREET LIGHTING UNLESS OTHERWISE INDICATED ON THE DRAWINGS. ALL RAISED PAVEMENT MARKERS SHALL BE INSTALLED IN ACCORDANCE WITH ADOT STANDARD DRAWINGS (M-19, REV JUNE 2014) (SHEETS 5 & 6) . TWO-WAY TYPE M RAISED MARKERS SHALL BE INSTALLED ADJACENT TO FIRE HYDRANTS PER CITY OF AVONDALE STANDARDS DETAIL A1037.
11. ANY EXISTING SIGNAGE THAT IS REQUIRED TO BE RELOCATED BY THE CONTRACTOR SHALL BE REMOVED, PROTECTED AND STORED FOR REINSTALLATION BY THE CONTRACTOR. DAMAGED SIGNAGE SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. ANY EXISTING SIGNS REQUIRED TO BE PERMANENTLY REMOVED BY THE CONTRACTOR SHALL BE SALVAGED FOR RETURN TO THE CITY.
12. 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 PER MAG SPECIFICATIONS). ALL REMOVAL METHODS SHALL BE DONE IN CONFORMANCE WITH EPA REQUIREMENTS. IF THE REMOVAL OF THE 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 STANDARD SPECIFICATION 713 & 715, TYPE II.
13. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE TO THE SATISFACTION OF THE CITY BY POWER BROOM, STREET SWEEPING, AIR JET BLOWING AND/OR WATER JET/TRUCK PRIOR TO THE PLACEMENT OF ALL PAVEMENT MARKINGS. THE ROAD PAVEMENT SURFACE SHALL BE ABSOLUTELY DRY. THE AIR AND PAVEMENT TEMPERATURES SHALL NOT BE LESS THAN 55° F AND 61° F FOR THE PLACEMENT OF THERMOPLASTIC MARKING AND TYPE I MARKING TAPE, RESPECTIVELY.
14. STREET NAME SIGNS LOCATED AT ALL INTERSECTIONS SHALL HAVE BLOCK NUMBERS. BLOCK NUMBERS SHALL BE AS ASSIGNED BY THE CITY'S BUILDING DIVISION. BLOCK NUMBERS SHALL BE INSTALLED PER CITY SPECIFICATIONS.
15. ALL TRAFFIC CONTROL SIGN FACES SHALL BE CONSTRUCTED OF DIAMOND GRADE REFLECTIVE SHEETING SUCH AS 3M STANDARD, UNLESS OTHERWISE NOTED.
16. TEMPORARY TRAFFIC CONTROL SHALL CONFORM TO THE MOST RECENT EDITION OF CITY OF PHOENIX "TRAFFIC BARRICADE MANUAL," THE "MUTCD," AND/OR AS DIRECTED BY THE CITY OF AVONDALE.

## LEGEND

|   |  |   |
|---|--|---|
|  | 8" SOLID WHITE LINE  |  |
|  | 12" SOLID WHITE LINE   |  |
|  | 18" SOLID WHITE LINE   |  |
|  | LEFT TURN ARROW PER ADOT STD. DTL. M-10 AND CITY OF AVONDALE STD. DTL. A1050 |  |



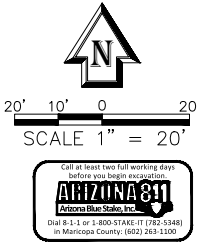
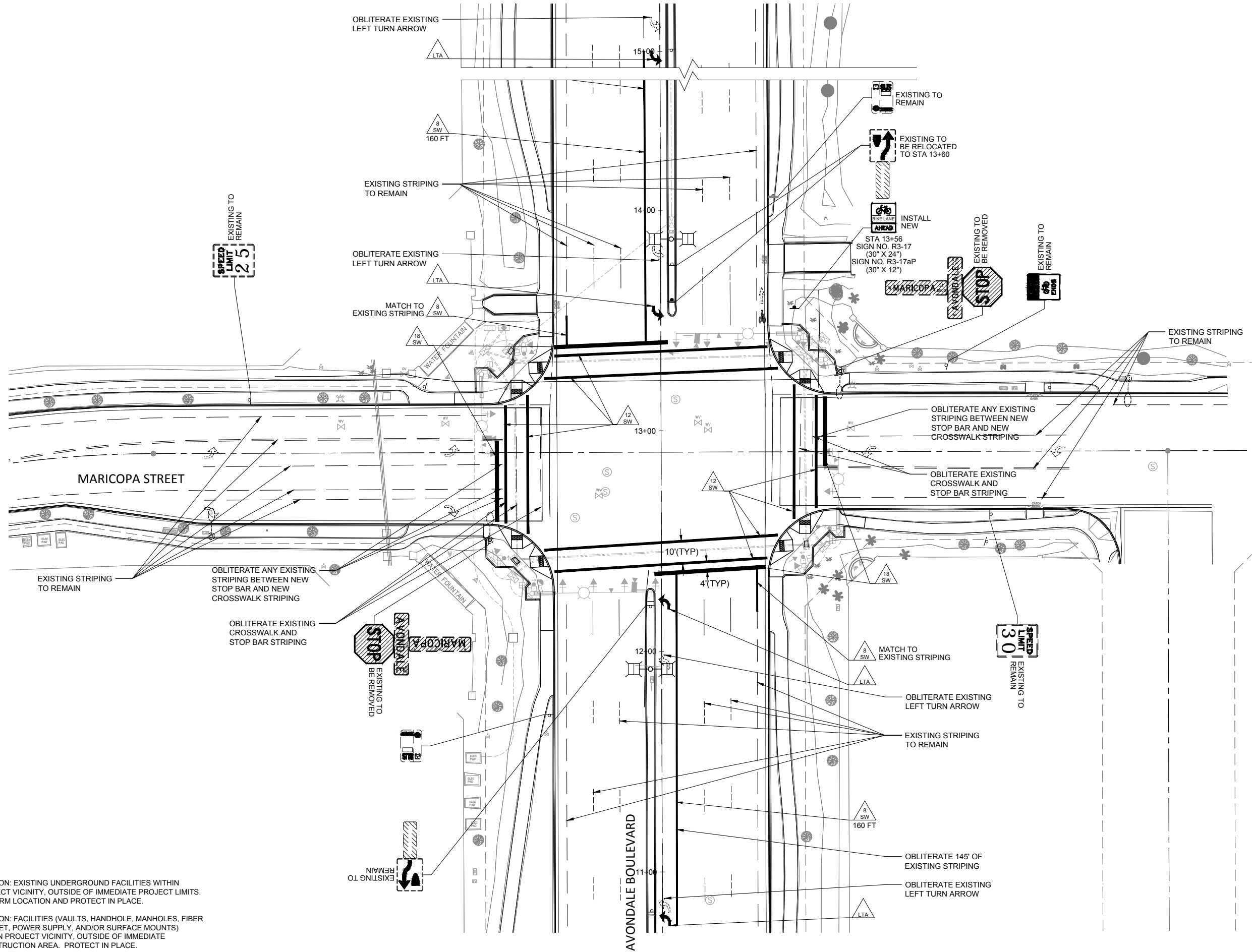
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|--|---|----------------|--|--------------------|-----------------|
| SHEET TYPE<br>SIGNING AND STRIPING GENERAL NOTES   | PROJECT NAME<br>AVONDALE BOULEVARD AND MARICOPA STREET SIGNAL | PROJECT NUMBER | SEALING<br> | DESIGNED BY:<br>GT | DRAWN BY:<br>IF |
|  |   |                |  | CHECKED BY:<br>MJP | SHEET:<br>T100  |
| J2 ENGINEERING AND ENVIRONMENTAL DESIGN<br>4649 EAST COTTON GIN LOOP, SUITE B2<br>PHOENIX, AZ 85040<br>(602) 438-2221<br>www.j2design.us |   |                |  | SHEET<br>6 OF 13   |                 |
| ORIGINAL PLAN DATE<br>03/04/2019   |   |                |  | PROJECT NUMBER     |                 |



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CAUTION: EXISTING UNDERGROUND FACILITIES WITHIN PROJECT VICINITY. OUTSIDE OF IMMEDIATE PROJECT LIMITS. CONFIRM LOCATION AND PROTECT IN PLACE.

CAUTION: FACILITIES (VAULTS, HANDHOLE, MANHOLES, FIBER CABINET, POWER SUPPLY, AND/OR SURFACE MOUNTS) WITHIN PROJECT VICINITY. OUTSIDE OF IMMEDIATE CONSTRUCTION AREA. PROTECT IN PLACE.



|   |  |  |              |             |        |
|---|--|--|--------------|-------------|--------|
| SHEET TYPE                                    |  | IF   | GT           | MJP         | T101   |
| SIGNING AND STRIPING PLAN SHEET               |  | DRAWN BY:  | DESIGNED BY: | CHECKED BY: | SHEET: |
| AVONDALE BOULEVARD AND MARICOPA STREET SIGNAL |  | J2 ENGINEERING AND ENVIRONMENTAL DESIGN<br>4649 EAST COTTON GIN LOOP, SUITE B2<br>PHOENIX, AZ 85040<br>(602) 438-2221<br>www.j2design.us |              |             |        |
| PROJECT NAME                                  |  | 2  |              |             |        |
| PROJECT NUMBER                                |  | 7 OF 13  |              |             |        |
| ORIGINAL PLAN DATE                            |  | 03/04/2019   |              |             |        |
| LATEST REVISION DATE                          |  |  |              |             |        |
| SHEET NUMBER                                  |  | 7 OF 13  |              |             |        |
| PROJECT NUMBER                                |  |  |              |             |        |



TRAFFIC SIGNAL GENERAL PLAN NOTES

1.

ALL TRAFFIC SIGNAL EQUIPMENT AND CONSTRUCTION SHALL CONFORM TO THE CITY OF AVONDALE GENERAL ENGINEERING REQUIREMENTS MANUAL, LATEST EDITION, ARIZONA DEPARTMENT OF TRANSPORTATION (ADOT) "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), MAG SPECIFICATIONS AND DETAILS, THE SPECIAL PROVISIONS, AND THESE PLANS.
2.

ALL UTILITIES SHALL BE BLUE STAKED PRIOR TO THE START OF CONSTRUCTION, CONTACT BLUE STAKE A MINIMUM OF 72 HOURS IN ADVANCE OF CONSTRUCTION AT (602)263-1100 OR 1-800-STAKE-IT (OUTSIDE OF MARICOPA COUNTY).
3.

FOR ELECTRICAL SERVICE REQUIREMENTS, CONTACT THE SALT RIVER PROJECT (SRP) CONTACT, LUKE MAESTAS (602) 329-9361, AT LEAST FORTY-FIVE (45) WORKING DAYS BEFORE SERVICE IS REQUIRED.
4.

VIDEO DETECTION TO BE PROVIDED & INSTALLED BY CONTRACTOR IN ACCORDANCE WITH THE SPECIAL PROVISIONS. VIDEO DETECTION ZONES, AS SHOWN ON THE PLANS, SHALL BE CENTERED IN THE TRAFFIC LANES. VIDEO DETECTION SHALL BE MOUNTED ON SIGNAL MAST ARM WITH A COMPLETE ITERIS VANTAGE NEXT FOUR CAMERA INTERSECTION, WITH ALL REQUIRED CABLING, USING PELCO 6' EXTENSION BRACKET WITH 1 PIECE GALAXY CABLE MOUNT ON SIGNAL MAST ARM, SEE SPECIAL PROVISIONS.
5.

TOP OF ALL SIGNAL STRUCTURE FOUNDATIONS SHALL BE AT THE SAME ELEVATION AS THE ADJACENT TOP OF CURB AS SPECIFIED ON THE PLANS, OR NOT LESS THAN FOUR (4) INCHES ABOVE THE ADJACENT ROADWAY CROWN, WHERE CURBING DOES NOT EXIST.
6.

TRAFFIC CONTROL PLANS SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST, PER MAG SPECIFICATIONS SECTION 107.7, AS AMMENDED BY THE CITY OF AVONDALE MAG SUPPLEMENTAL SPECIFICATIONS AND DETAILS, AND MAG SPECIFICATION SECTION 401.2, THE MUTCD, AND/OR AS DIRECTED BY THE CITY OF AVONDALE.
7.

GROUND ROD SHALL BE INSTALLED ADJACENT TO ELECTRICAL SERVICE PANEL AND IN CENTER OF CONTROLLER ASSEMBLY FOUNDATION WITH BARE BOND #8 CONDUCTOR ATTACHED.
8.

CITY ENGINEERING & STREETS DEPARTMENTS SHALL BE NOTIFIED SEVENTY-TWO (72) HOURS IN ADVANCE OF EVERY MAJOR PHASE OF CONSTRUCTION WORK AT (623) 333-4200.
9.

THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING NEW ECONOLITE COBALT CONTROLLER AND MODEL 332 CABINET WITH 6" EXTENSION. ASSEMBLY AND ACCESSORIES REQUIRED TO RUN AN 8 PHASE OPERATION PER CITY OF AVONDALE STANDARDS. THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR DELIVERY OF CONTROLLER AND CABINET TO THE CITY FOR ASSEMBLY, PROGRAMMING, AND TESTING PRIOR TO INSTALLATION. ONCE PROGRAMMED AND TESTED, THE CONTRACTOR SHALL PICK UP, DELIVER AND INSTALL THE CABINET. THE CONTRACTOR SHALL NOTIFY THE CITY TRAFFIC DEPARTMENT AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO HAVING THE CITY INSTALL THE CONTROLLER.
10.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING THE FINAL AS-BUILT DRAWINGS FOR THE TRAFFIC SIGNAL PLANS. THE DRAWINGS SHALL BE SEALED BY AN ARIZONA REGISTERED CIVIL ENGINEER. FINAL AS-BUILT PLANS SHALL BE ON 4-MIL, DOUBLE MATTE, MYLAR SHEETS, THE CONTRACTOR SHALL PROVIDE ONE (1) SET MYLAR AND THREE (3) SETS BLUELINES.
11.

ANY PAVEMENT MARKINGS SHOWN ON THESE PLANS ARE FOR REFERENCE ONLY. SEE PAVEMENT MARKING SHEETS FOR DETAILS.
12.

METER PEDESTAL SHALL INCLUDE PHOTO ELECTRIC CELL (PEC) FOR STREET LIGHTS & INTERNALLY ILLUMINATED STREET NAME SIGNS (IISNS) PER CITY OF AVONDALE SPECS. CABINET EXTERIOR TO BE ANODIZED ALUMINUM. METER PEDESTAL SHALL BE TESCO PADMOUNT TYPE 27-000/22-000BBS SERIES ANODIZED ALUMINUM METERED SERVICE ENCLOSURE, SEE SPECIAL PROVISIONS.
13.

THE CONTROLLER CABINET SHALL BE WIRED AND LABELED WITH THE SAME PHASE NUMBER DESIGNATION AS SHOWN IN THE PHASE DIAGRAM. EACH CONNECTOR SHALL HAVE ITS PINS BROUGHT TO CABINET TIE POINTS. CONTROLLER CABINET WIRING SHALL BE PER CITY OF AVONDALE COLOR CODING STANDARDS.
14.

THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING EMERGENCY VEHICLE PREEMPTION (TOMAR MODEL 4140). THE CONTRACTOR SHALL COORDINATE THE INSTALLATION LOCATION WITH THE CITY OF AVONDALE. THE PRE-EMPTION CABLE SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR AND SHALL BE TOMAR M913 PREEMPTION OPTICAL DETECTOR CABLE OR EQUAL, SEE SPECIAL PROVISIONS.
15.

SIGNAL POLES, SIGNAL AND LUMINAIRE MAST ARMS, EXPOSED BASE PLATES, AND ANCHOR NUTS AND BOLTS TO BE PROVIDED AND INSTALLED BY THE CONTRACTOR AND SHALL BE PAINTED "COCOA BROWN" PER VALMONT POWDER COATED STANDARDS AND SPECIFICATIONS. MINIMUM ACCEPTANCE PAINTING SPECIFICATION SHALL COMPLY WITH VALMONT PAINT SPECIFICATIONS.
16.

THREE (3) SUBMITTAL SETS ARE REQUIRED FOR ALL MATERIALS AND EQUIPMENT. ALL SUBMITTALS MUST BE CITY OF AVONDALE APPROVED BEFORE ORDERING EQUIPMENT MATERIALS AND CONSTRUCTION.
17.

STREET LIGHTING LUMINAIRES SHALL BE ATBM F MVOLT R3 4000K MP P7 - 15,700 LUMENS, WITH A BRONZE FINISH, PROVIDED AND INSTALLED BY THE CONTRACTOR.

18.

SIGNAL TESTING AND TURN ON PROCEDURE: SEE SPECIAL PROVISIONS FOR TRAFFIC CONTROL DURING TESTING AND TURN ON.  
  
(A) THE CONTRACTOR SHALL NOTIFY THE CITY TWENTY-FOUR (24) HOURS PRIOR TO ACTIVATION OF THE TRAFFIC SIGNAL. THE CONTRACTOR SHALL CONDUCT A TEST, WITH THE CITY OF AVONDALE TRAFFIC SIGNAL TECHNICIAN TO ENSURE THAT THE INDIVIDUAL TRAFFIC AND PEDESTRIAN SIGNAL HEADS AND INDICATIONS ARE OPERATING FOR THE APPROPRIATE PHASE AND IN THE APPROPRIATE SEQUENCES.  
  
(B) THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF 36" X 36" W32-1AZ, Y/B, W/FLAGS AND FLASHERS PER CITY OF AVONDALE STANDARDS ON ALL APPROACHES TO THE NEW SIGNALIZED INTERSECTION. THE SIGNS SHALL BE INSTALLED A MINIMUM OF 500 FEET IN ADVANCE OF THE INTERSECTION AT THE BACK OF SIDEWALK, OR BACK OF CURB, PRIOR TO SIGNAL ACTIVATION ON ALL APPROACHES. SIGNS SHALL REMAIN IN PLACE FOR A MINIMUM OF 30 DAYS.
19.

ANY TRAFFIC SIGNAL CONSTRUCTION, PRIVATE OR PUBLIC, MUST BE SUPERVISED BY A CERTIFIED IMSA LEVEL II TECHNICIAN ON SITE.
20.

THE CONTRACTOR SHALL TRENCH TO WITHIN TWO (2) FEET OF THE SRP POWER SOURCE AND PROVIDE A 4' X 4' WORKING PIT AS SHOWN ON THE SRP PLANS. THE CONTRACTOR WILL PROVIDE AND INSTALL A 2½ INCH CONDUIT FROM THE POWER SOURCE TO THE ELECTRICAL SERVICE CONDUIT. SRP WILL PULL THE SERVICE WIRE TO THE ELECTRICAL SERVICE CABINET AND TERMINATE.
21.

ALL TYPE V & VII MOUNTING BRACKETS SHALL HAVE TERMINAL STRIPS ON THE POLE.
22.

ALL CONDUIT SHALL BE SCHEDULE 80 PVC.
23.

RED, YELLOW, GREEN, ARROW SIGNAL, AND PEDESTRIAN HEAD INDICATIONS SHALL BE PROVIDED & INSTALLED BY THE CONTRACTOR. ALL INDICATIONS SHALL MEET "LED" TECHNOLOGY.
24.

ALL NEW AND EXISTING RAMPS SHALL PROVIDE PROPER ADA ACCESS TO PEDESTRIAN PUSH BUTTONS.
25.

ALL EXISTING STOP SIGNS, ADVANCED WARNING SIGNS, AND STREET LIGHTS SHALL REMAIN IN OPERATION UNTIL THE NEW TRAFFIC SIGNAL IS ENERGIZED AND FULLY OPERATIONAL.
26.

PRIOR TO ACCEPTANCE BY THE CITY OF AVONDALE, DAMAGE TO ANY SIGNAL EQUIPMENT, POLE, ETC., SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE, IN CONFORMANCE WITH THE SPECIFICATIONS.
27.

PAVEMENT REPLACEMENT TO CONFORM TO CITY OF AVONDALE STANDARD DETAILS.
28.

THE ELECTRICAL SERVICE ADDRESS IS AS FOLLOWS: 634 S. AVONDALE BOULEVARD. THE CONTRACTOR SHALL CONTACT SRP (602-236-0676) A MINIMUM OF FIVE (5) WORKING DAYS IN ADVANCE TO SCHEDULE FINAL METER CONNECTION.
29.

ALL SIGNAL POLE FOUNDATIONS SHALL BE CONSTRUCTED BY THE CONTRACTOR IN ACCORDANCE WITH THE CITY OF AVONDALE FOUNDATION DETAIL PROVIDED IN THE SPECIAL PROVISIONS.
30.

ALL TROMBONE STYLE SIGNAL POLES AND ARMS SHALL BE MANUFACTURED BY VALMONT. ALL SIGNALS SHALL HAVE 24" DIAMETER BOLT PATTERN ON BASE PLATE.
31.

ALL PULL BOXES SHALL HAVE FIBRELYTE LIDS, AND NEW PULL BOXES SHALL BE NO. 7 DETAIL (19¼" X 32¼" X 24" DEEP, 17½" X 30½" PULL BOX LID, WITH A 6" X 12" WINDOW EACH END, PER CITY OF AVONDALE STANDARD DETAIL A1717).
32.

THE CONTRACTOR SHALL REMOVE AND SALVAGE TO THE CITY OF AVONDALE EXISTING STREET LIGHT POLES AV211598 AND AV226397, AS SHOWN ON THE PLANS. THESE STREET LIGHTS SHALL REMAIN IN-PLACE AND FULLY OPERATIONAL UNTIL THE TRAFFIC SIGNAL IS FULLY OPERATIONAL. THE CONTRACTOR SHALL CONTACT SRP (602-236-0676) A MINIMUM OF FIVE (5) WORKING DAYS IN ADVANCE TO SCHEDULE POWER DISCONNECT TO THE EXISTING STREET LIGHT POLES IDENTIFIED FOR REMOVAL.
33.

INSTALL 12 STRAND SMFO CABLE IN NO. 9 VAULT WITH 100' SLACK.
34.

INSTALL 12 STRAND SMFO CABLE IN NO. 7 PULL BOX WITH 30' SLACK.
35.

POLI-MOD (PM-L-12-ULC-0-S-01), RS900G HARDENED ETHERNET SWITCH (RS900G-H1-P-2LC25-C01), (43-10-0008 POWER CORD). FIBER PATCH CABLES/JUMPERS (GBLC2-D1-03 LC-LC, 3 METER). ALL SMFO SHALL BE LC-LC.
36.

INSTALL CCTV CAMERA ON TRAFFIC SIGNAL LUMINAIRE MAST ARM, 10' MINIMUM FROM STREET LIGHT.
37.

INSTALL CCTV CAT5 SHIELDED TWISTED PAIR 24AWG SOLID BARE COPPER OUTDOOR CABLE, POE MODULE, SURGE PROTECTION (DTK-MRJPOE).
38.

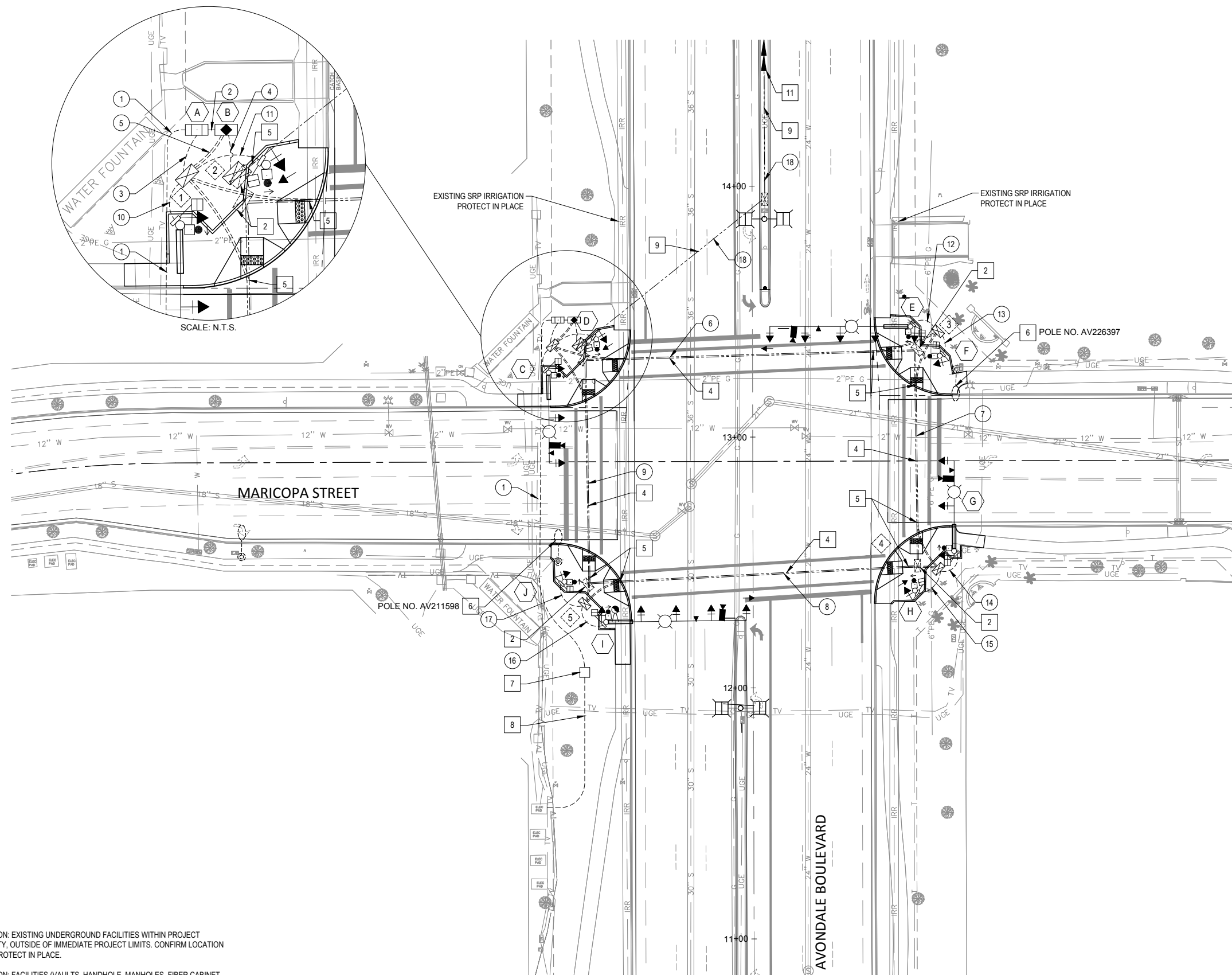
PROVIDE AND INSTALL 6 RECEPTACLE ELECTRICAL SURGE PROTECTOR FOR COMMUNICATION EQUIPMENT POWER.

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









|   |  |   |  |                    |  |                      |  |
|---|--|---|--|--------------------|--|----------------------|--|
| DRAWN BY: IF                            |  | DESIGNED BY: GT                               |  | CHECKED BY: MJP    |  | SHEET: T200          |  |
| J2 ENGINEERING AND ENVIRONMENTAL DESIGN |  | 4649 EAST COTTON GIN LOOP, SUITE B2           |  | PHOENIX, AZ 85040  |  | (602) 438-2221       |  |
| TRAFFIC SIGNAL GENERAL NOTES            |  | AVONDALE BOULEVARD AND MARICOPA STREET SIGNAL |  | PROJECT NUMBER:    |  | www.j2design.us      |  |
| PROJECT NAME                            |  | PROJECT NUMBER                                |  | ORIGINAL PLAN DATE |  | LATEST REVISION DATE |  |
| 28175                                   |  | MARK J. POPPE                                 |  | 03/04/2019         |  | 8 OF 13              |  |
| SHEET NUMBER                            |  | PROJECT NUMBER                                |  | SHEET NUMBER       |  | PROJECT NUMBER       |  |

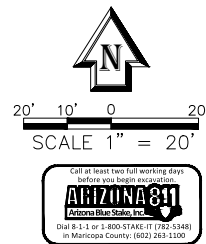
Professional Engineer  
CERTIFICATE NO. 28175  
MARK J. POPPE  
Expires: 09/30/2021  
ARIZONA, U.S.A.

Call at least two full working days before you begin inscription.  
**ARIZONA 811**  
Arizona Blue Stakes, Inc.  
Dist # 4-11 or 1-800-STAKE-IT (772-5346)  
in Maricopa County: (602) 243-1100



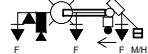

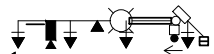

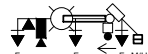

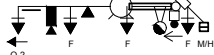



CAUTION: EXISTING UNDERGROUND FACILITIES WITHIN PROJECT VICINITY, OUTSIDE OF IMMEDIATE PROJECT LIMITS. CONFIRM LOCATION AND PROTECT IN PLACE.

| TRAFFIC SIGNAL LEGEND   |  |
|---|--|
| SYMBOL  | DESCRIPTION  |
| -----   | EXISTING CONDUIT   |
| -----   | NEW CONDUIT  |
|  | METER PEDESTAL   |
|  | CONTROLLER CABINET WITH 6" EXTENSION RISER                     |
|  | EXISTING NO. 7 PULL BOX WITH EXTENSION                         |
|  | TRAFFIC SIGNAL HEAD  |
|  | EMERGENCY VEHICLE DETECTOR                                     |
|  | TRAFFIC SIGNAL AND EQUIPMENT (SEE POLE AND EQUIPMENT SCHEDULE) |
|  | CONDUIT RUN NUMBER (SEE CONDUCTOR SCHEDULE)                    |
|  | CONSTRUCTION NOTES   |
|  | PULL BOX (SEE PULL BOX SCHEDULE)                               |
|  | CCTV CAMERA, CAT5 CABLE, POE, SURGE PROTECTION                 |



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| POLE AND EQUIPMENT SCHEDULE   |           |                                 |      |                               |                             |  |  |                   |  |
|---|-----------|---------------------------------|------|-------------------------------|-----------------------------|--|--|-------------------|--|
| CABINETS  |           |                                 |      |                               |                             |  | REMARKS  | LOCATION          |  |
| CABINET   | TYPE      | EQUIPMENT                       |      | ASSEMBLY NOTES                |                             |  |  |                   |  |
| <div>A</div> <div>NEW METERED PEDESTAL</div> <div></div>                               | METER PAD | TESCO METER PEDESTAL/UPS COMBO. |      | WITH PEC                      |                             | SERVICE ADDRESS:<br>634 S. AVONDALE BLVD<br>AVONDALE, AZ 85323   | STA 13+47, 78' LT  |                   |  |
| <div>B</div> <div>NEW CONTROL CABINET</div> <div></div>                                | MODEL 332 | ECONOLITE COBALT                |      | WITH 6" EXTENSION FOR CABINET |                             | 1. CONTROLLER SHALL CONTAIN ALL SIGNAL SYSTEM SPECIFICATIONS TO RUN AN 8 PHASE OPERATION PER CITY OF AVONDALE STANDARDS<br>2. CABINET FOUNDATION TO BE INSTALLED IN ACCORDANCE WITH CITY OF AVONDALE STANDARDS<br>3. ORIENTATION OF CABINET TO BE APPROVED BY THE CITY PRIOR TO INSTALLATION | STA 13+47, 71' LT  |                   |  |
| POLES   |           | MAST ARM                        |      | SIGNALS                       |                             | SIGN   | REMARKS  | LOCATION          |  |
| NO.   | TYPE      | SIG.                            | LUM. | MTG.                          | FACE                        |  |  |                   |  |
| <div>C</div> <div>NEW TYPE "Q" POLE<br/>(COA STD DETAIL A1075)</div> <div></div>       | Q         | 35'                             | 15'  | 1 - V<br>1 - V                | 3 - F<br>1 - M/H            | I.S.N.S<br>R10-3e<br>(L)   | 1. TYPE "F" SIGNAL FACES TO BE MOUNTED ON MAST ARM WITH COUPLINGS PER COA STD. DETAIL A1746-1<br>2. PROVIDE & INSTALL (1) ADA PEDESTRIAN PUSH BUTTON<br>3. PROVIDE & INSTALL VIDEO DETECTION CAMERA ON SIGNAL MAST ARM<br>4. PROVIDE & INSTALL EMERGENCY VEHICLE PREEMPTION<br>5. PROVIDE & INSTALL LUMINAIRE<br>6. PROVIDE & INSTALL ISNS PER COA STD. DETAIL A1747 AND DETAIL 2 ON THIS SHEET<br>7. POLE TO HAVE 30" HANDHOLE WITH 22 THERMOPLASTIC POWER BLOCKS   | STA 13+26, 81' LT |  |
| <div>D</div> <div>NEW TYPE "A" POLE<br/>(ADOT STD DETAIL T.S. 4-1)</div> <div></div>   | A 12'     | -                               | -    | 1 - IV<br>1 - V               | 1 - Q<br>1 - M/H            | R10-3e<br>(R)  | 1. PROVIDE & INSTALL NEW TYPE "A" POLE PER ADOT STD. DETAIL T.S. 4-1<br>2. PROVIDE & INSTALL (1) ADA PEDESTRIAN PUSH BUTTON  | STA 13+39, 62' LT |  |
| <div>E</div> <div>NEW TYPE "R" POLE<br/>(COA STD DETAIL A1075)</div> <div></div>       | R         | 55'                             | 15'  | 1 - V<br>1 - V                | 3 - F<br>1 - Q-2<br>1 - M/H | I.S.N.S<br>FYA<br>R10-3e<br>(L)  | 1. TYPE "F" SIGNAL FACES TO BE MOUNTED ON MAST ARM WITH COUPLINGS PER COA STD. DETAIL A1746-1<br>2. PROVIDE & INSTALL (1) ADA PEDESTRIAN PUSH BUTTON<br>3. PROVIDE & INSTALL VIDEO DETECTION CAMERA ON SIGNAL MAST ARM<br>4. PROVIDE & INSTALL EMERGENCY VEHICLE PREEMPTION<br>5. PROVIDE & INSTALL LUMINAIRE<br>6. PROVIDE & INSTALL ISNS PER COA STD. DETAIL A1747 AND DETAIL 1 ON THIS SHEET<br>7. POLE TO HAVE 30" HANDHOLE WITH 22 THERMOPLASTIC POWER BLOCKS<br>8. PROVIDE & INSTALL FLASHING YELLOW ARROW (FYA) SIGN PER DETAIL 3 ON THIS SHEET   | STA 13+44, 63' RT |  |
| <div>F</div> <div>NEW TYPE "A" POLE<br/>(ADOT STD DETAIL T.S. 4-1)</div> <div></div>   | A 12'     | -                               | -    | 1 - IV<br>1 - V               | 1 - F<br>1 - M/H            | R10-3e<br>(R)  | 1. PROVIDE & INSTALL NEW TYPE "A" POLE PER ADOT STD. DETAIL T.S. 4-1<br>2. PROVIDE & INSTALL (1) ADA PEDESTRIAN PUSH BUTTON  | STA 13+32, 75' RT |  |
| <div>G</div> <div>NEW TYPE "Q" POLE<br/>(COA STD DETAIL A1075)</div> <div></div>      | Q         | 35'                             | 15'  | 1 - V<br>1 - V                | 3 - F<br>1 - M/H            | I.S.N.S<br>R10-3e<br>(L)   | 1. TYPE "F" SIGNAL FACES TO BE MOUNTED ON MAST ARM WITH COUPLINGS PER COA STD. DETAIL A1746-1<br>2. PROVIDE & INSTALL (1) ADA PEDESTRIAN PUSH BUTTON<br>3. PROVIDE & INSTALL VIDEO DETECTION CAMERA ON SIGNAL MAST ARM<br>4. PROVIDE & INSTALL EMERGENCY VEHICLE PREEMPTION<br>5. PROVIDE & INSTALL LUMINAIRE<br>6. PROVIDE & INSTALL ISNS PER COA STD. DETAIL A1747 AND DETAIL 1 ON THIS SHEET<br>7. POLE TO HAVE 30" HANDHOLE WITH 22 THERMOPLASTIC POWER BLOCKS   | STA 12+54, 80' RT |  |
| <div>H</div> <div>NEW TYPE "A" POLE<br/>(ADOT STD DETAIL T.S. 4-1)</div> <div></div> | A 12'     | -                               | -    | 1 - IV<br>1 - V               | 1 - Q<br>1 - M/H            | R10-3e<br>(R)  | 1. PROVIDE & INSTALL NEW TYPE "A" POLE PER ADOT STD. DETAIL T.S. 4-1<br>2. PROVIDE & INSTALL (1) ADA PEDESTRIAN PUSH BUTTON  | STA 12+39, 64' RT |  |
| <div>I</div> <div>NEW TYPE "R" POLE<br/>(COA STD DETAIL A1075)</div> <div></div>     | R         | 55'                             | 15'  | 1 - V<br>1 - V                | 3 - F<br>1 - Q-2<br>1 - M/H | I.S.N.S<br>FYA<br>R10-3e<br>(L)  | 1. TYPE "F" SIGNAL FACES TO BE MOUNTED ON MAST ARM WITH COUPLINGS PER COA STD. DETAIL A1746-1<br>2. PROVIDE & INSTALL (1) ADA PEDESTRIAN PUSH BUTTON<br>3. PROVIDE & INSTALL VIDEO DETECTION CAMERA ON SIGNAL MAST ARM<br>4. PROVIDE & INSTALL EMERGENCY VEHICLE PREEMPTION<br>5. PROVIDE & INSTALL LUMINAIRE<br>6. PROVIDE & INSTALL ISNS PER COA STD. DETAIL A1747 AND DETAIL 2 ON THIS SHEET<br>7. POLE TO HAVE 30" HANDHOLE WITH 22 THERMOPLASTIC POWER BLOCKS<br>8. PROVIDE & INSTALL FLASHING YELLOW ARROW (FYA) SIGN PER DETAIL 3 ON THIS SHEET<br>9. PROVIDE AND INSTALL CCTV, POE, SURGE PROTECTION, CAT5 OUTDOOR CABLE | STA 12+26, 59' LT |  |
| <div>J</div> <div>NEW TYPE "A" POLE<br/>(ADOT STD DETAIL T.S. 4-1)</div> <div></div> | A 12'     | -                               | -    | 1 - IV<br>1 - V               | 1 - F<br>1 - M/H            | R10-3e<br>(R)  | 1. PROVIDE & INSTALL NEW TYPE "A" POLE PER ADOT STD. DETAIL T.S. 4-1<br>2. PROVIDE & INSTALL (1) ADA PEDESTRIAN PUSH BUTTON  | STA 12+43, 75' LT |  |

 - VIDEO DETECTION CAMERA

 - CCTV CAMERA

 - EMERGENCY PRE-EMPTION DETECTOR

NOTES:

- AVONDALE BLVD STATIONS AND OFFSETS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS ARE TO BE FIELD VERIFIED BY THE SIGNAL INSPECTOR PRIOR TO SIGNAL POLE AND EQUIPMENT INSTALLATION.
- ANY WORK PERFORMED WITHOUT THE APPROVAL OF THE CITY OF AVONDALE TRAFFIC ENGINEER AND/OR ALL WORK AND MATERIAL NOT IN CONFORMANCE WITH THE SPECIFICATIONS IS SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
- ALL LUMINAIRES AND ILLUMINATED STREET NAME SIGNS (I.S.N.S.) ARE LED.

| PULL BOX SCHEDULE |             |                        |                              |
|-------------------|-------------|------------------------|------------------------------|
| NO.               | TYPE        | AVONDALE BLVD. STATION | REMARKS                      |
| <b>1</b>          | NO. 7 W/EXT | 13+37, 80' LT          | RELOCATED FROM 13+31, 67' LT |
| <b>2</b>          | NO. 7 W/EXT | 13+37.5, 69.5' LT      | RELOCATED FROM 13+36, 68' LT |
| <b>3</b>          | NO. 7 W/EXT | 13+42, 74' RT          | RELOCATED FROM 13+35, 66' RT |
| <b>4</b>          | NO. 7 W/EXT | 12+47, 74' RT          | RELOCATED FROM 12+48, 66' RT |
| <b>5</b>          | NO. 7 W/EXT | 12+34, 67' LT          | RELOCATED FROM 12+41, 66' LT |

Avondale Blvd  
700 S

1

I.S.N.S. - AVONDALE BOULEVARD

SCALE: N.T.S.

Maricopa St  
11500 W

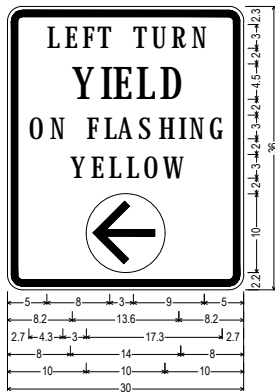
2

I.S.N.S. - MARICOPA STREET

SCALE: N.T.S.

NOTES:

- SIGNS SHALL BE PER CITY OF AVONDALE STANDARD DETAIL A1747
- MOUNT WITH BRACKETS ON SIGNAL POLE PER CITY OF AVONDALE STANDARD DETAIL A1745
- SIGN MESSAGES ARE BACK TO BACK
- SIGNS SHALL BE 10'-3/4" X 48"
- SIGNS SHALL BE LED



FYA:  
1.5" Radius, 0.8" Border, 0.5" Indent, Black on White;  
[LEFT TURN] C 146% spacing;  
[YIELD] C 97% spacing;  
[ON FLASHING] C 145% spacing;  
[YELLOW] C 145% spacing;  
Rounded Rectangle 5.0" Radius;

3

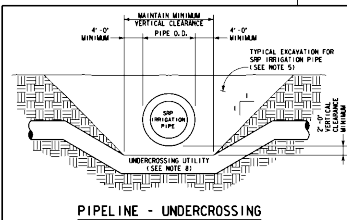
FLASHING YELLOW ARROW SIGN

SCALE: N.T.S.

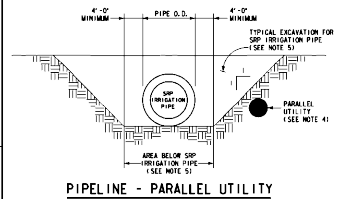
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SRP STD DWG WES-02604-001

SCALE: N.T.S.



PIPELINE - UNDERCROSSING



PIPELINE - PARALLEL UTILITY

| OUTSIDE DIAMETER SRP IRRIGATION PIPE | MINIMUM CLEARANCE |
|--------------------------------------|-------------------|
| 4"                                   | 3"                |
| 6"                                   | 4"                |
| 8"                                   | 5"                |
| 10"                                  | 6"                |
| 12"                                  | 7"                |
| 14"                                  | 8"                |
| 16"                                  | 9"                |
| 18"                                  | 10"               |
| 20"                                  | 11"               |

OUTSIDE DIAMETER SRP IRRIGATION PIPE

| REFERENCES |     | REVISIONS |     | SALT RIVER PROJECT WATER ENGINEERING STANDARD |      |
|------------|-----|-----------|-----|---|------|
| REV        | NO. | DATE      | BY  | CHK   | DATE |
| 1          | 1   | 12/08/18  | REL |   |      |
| 2          | 2   | 12/08/18  | REL |   |      |
| 3          | 3   | 12/08/18  | REL |   |      |
| 4          | 4   | 12/08/18  | REL |   |      |
| 5          | 5   | 12/08/18  | REL |   |      |
| 6          | 6   | 12/08/18  | REL |   |      |
| 7          | 7   | 12/08/18  | REL |   |      |
| 8          | 8   | 12/08/18  | REL |   |      |
| 9          | 9   | 12/08/18  | REL |   |      |
| 10         | 10  | 12/08/18  | REL |   |      |
| 11         | 11  | 12/08/18  | REL |   |      |
| 12         | 12  | 12/08/18  | REL |   |      |
| 13         | 13  | 12/08/18  | REL |   |      |
| 14         | 14  | 12/08/18  | REL |   |      |
| 15         | 15  | 12/08/18  | REL |   |      |
| 16         | 16  | 12/08/18  | REL |   |      |
| 17         | 17  | 12/08/18  | REL |   |      |
| 18         | 18  | 12/08/18  | REL |   |      |
| 19         | 19  | 12/08/18  | REL |   |      |
| 20         | 20  | 12/08/18  | REL |   |      |

UTILITIES CROSSING OR PARALLEL TO SRP IRRIGATION PIPE

IF

GT

MJP

T202

DRAWN BY:

DESIGNED BY:

CHECKED BY:

SHEET:

DATE:

J2 ENGINEERING AND ENVIRONMENTAL DESIGN

4649 EAST COTTON GIN LOOP, SUITE B2

PHOENIX, AZ 85040

(602) 438-2221

www.j2design.us

POLE AND EQUIPMENT SCHEDULE

AVONDALE BOULEVARD AND MARICOPA STREET SIGNAL

28175

MARK J. POPPE

Professional Engineer

Arizona, U.S.A.

Expires: 09/30/2021

03/04/2019

LATEST REVISION DATE

10

OF 13

SHEET NUMBER

PROJECT NUMBER

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| CONDUCTOR SCHEDULE                          |  |                     |   |   |   |     |      |      |      |      |    |    |    |    |    |    |    |    |    |    |    |    |
|---|--|---------------------|---|---|---|-----|------|------|------|------|----|----|----|----|----|----|----|----|----|----|----|----|
| #14<br>SIGNAL HEADS<br>PED HEDS<br>PED PB'S | CONDUIT RUN NUMBER   | 1                   | 2 | 3 | 4 | 5   | 6    | 7    | 8    | 9    | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|   | CONDUIT SIZE IN INCHES   | 2.5                 | 3 | 3 | 3 | 2-4 | 2-3" | 2-3" | 2-3" | 2-3" | 3  | 2  | 3  | 2  | 3  | 2  | 3  | 2  | E* |    |    |    |
|   | CIRCUIT PHASE  |                     |   |   |   |     |      |      |      |      |    |    |    |    |    |    |    |    |    |    |    |    |
|   | IMSA 19-1, 20 COND   |                     |   |   |   | 4   | 2    | 1    |      | 1    | 1  |    | 1  |    | 1  |    | 1  |    |    |    |    |    |
|   | IMSA 19-1, 7 COND  |                     |   |   |   |     |      |      |      |      |    | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |    |    |    |
|   | IMSA 19-1, 5 COND  |                     |   |   |   |     |      |      |      |      | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  |    |    |    |    |
| #12   | LIGHTING 240V  |                     |   |   |   |     | 2    | 2    |      |      | 2  | 2  |    | 2  |    | 2  |    | 2  |    |    |    |    |
|   | I.I.S.N.S 120V   |                     |   |   |   |     | 2    | 2    |      |      | 2  | 2  |    | 2  |    | 2  |    | 2  |    |    |    |    |
|   |  |                     |   |   |   |     |      |      |      |      |    |    |    |    |    |    |    |    |    |    |    |    |
| #8  | SIGNAL 120V  |                     | 2 |   |   |     |      |      |      |      |    |    |    |    |    |    |    |    |    |    |    |    |
|   | LIGHTING 240V  |                     |   | 2 |   |     |      |      |      |      |    |    |    |    |    |    |    |    |    |    |    |    |
|   | I.I.S.N.S 120V   |                     |   | 2 |   |     |      |      |      |      |    |    |    |    |    |    |    |    |    |    |    |    |
|   | WHITE, THW, COM, SOLID   |                     |   |   |   | 1   | 1    | 1    |      | 1    | 1  |    | 1  |    | 1  |    | 1  |    |    |    |    |    |
|   | GREEN, THW, SOLID  | 1                   | 1 |   |   | 1   | 1    | 1    |      | 1    | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  |    |    |    |    |
|   | SERVICE 120/240V ●   |                     |   |   |   |     |      |      |      |      |    |    |    |    |    |    |    |    |    |    |    |    |
| VIDEO DETECTION CAMERA                      | CAT 5  |                     |   |   |   | 4   | 2    | 1    |      |      | 1  | 1  |    | 1  |    | 1  |    | 1  |    |    |    |    |
|   | PRE-EMPTION  | M913 DETECTOR CABLE |   |   |   |     | 4    | 2    | 1    |      |    | 1  | 1  |    | 1  |    | 1  |    |    |    |    |    |
| 12-STRAND FIBER OPTIC CABLE                 |  |                     |   |   | 1 |     |      |      |      |      |    |    |    |    |    |    |    |    |    | 1  |    |    |
| 96-STRAND FIBER OPTIC CABLE                 |  |                     |   |   |   |     |      |      |      |      |    |    |    |    |    |    |    |    |    |    |    |    |
| CCTV CAMERA                                 | CAT 5, POE, SURGE PROTECTOR, GRAY BAR PART # 2516456<br>UPC PART # 78298051073 |                     |   |   |   |     | 1    |      |      |      | 1  |    |    |    |    |    | 1  |    |    |    |    |    |
| TRACER WIRE AND 2500 LB MULE TAPE           |  |                     |   |   |   |     |      |      | 1    | 1    |    |    |    |    |    |    |    |    |    |    |    |    |

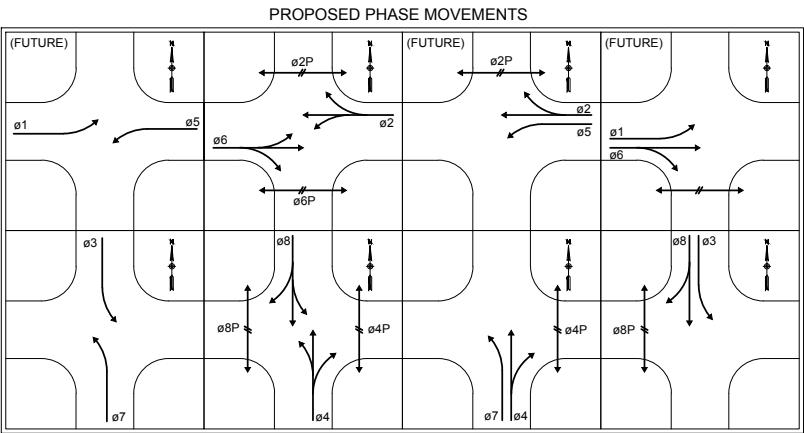
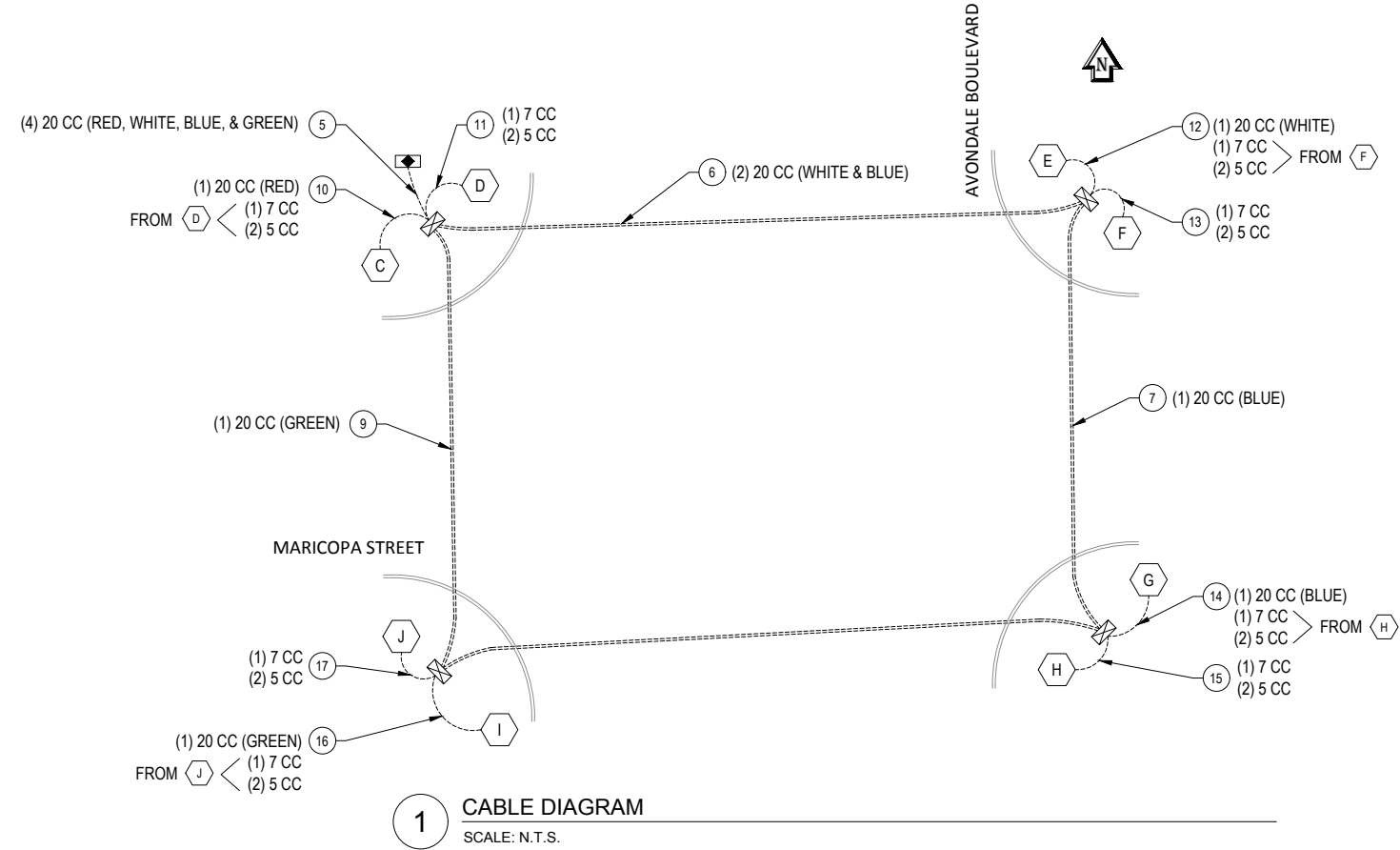
- \* - EXISTING CONDUIT WITH NEW CONDUCTORS  
● - INSTALLED BY SRP
- CONDUCTOR NOTES:
1. THE IMSA 20-CONDUCTOR, 7-CONDUCTOR, AND 5-CONDUCTOR CABLES SHALL BE #14 AWG IMSA 19-1 SOLID.
  2. ALL EMPTY AND SPARE CONDUITS SHALL HAVE TRACER WIRE AND 2500 LB MULETAPE.\*\*
  3. EMERGENCY PRE-EMPTION CABLE SHALL BE M913 STROBECOM DETECTOR CABLE OR APPROVED EQUAL.
  4. VIDEO DETECTION CABLE SHALL BE PULLED UNSPLICED FROM CONTROL CABINET TO CAMERA.
  5. CCTV CABLE SHALL BE CCTV MANUFACTURER OR APPROVED EQUAL.

| IMSA CABLE 19-1, #14 AWG SOLID, 20-CONDUCTOR |                 |                 |               |                 |
|--|-----------------|-----------------|---------------|-----------------|
| CABLE #1                                     | CABLE #2        | CONDUCTOR COLOR |               | SIGNAL INTERVAL |
|  |                 | BASIC COLOR     | TRACER STRIPE |                 |
| Ø1   | Ø5 OR OVERLAP A | RED             | ---           | RED             |
|  |                 | ORANGE          | ---           | YELLOW          |
|  |                 | GREEN           | ---           | GREEN           |
| Ø2   | Ø6 OR OVERLAP A | RED             | BLACK         | RED             |
|  |                 | ORANGE          | BLACK         | YELLOW          |
|  |                 | GREEN           | BLACK         | GREEN           |
| Ø3   | Ø7 OR OVERLAP A | RED             | WHITE         | RED             |
|  |                 | BLUE            | WHITE         | YELLOW          |
|  |                 | GREEN           | WHITE         | GREEN           |
| Ø4   | Ø8 OR OVERLAP A | RED             | RED           | RED             |
|  |                 | ORANGE          | RED           | YELLOW          |
|  |                 | GREEN           | RED           | GREEN           |
| Ø2 PED.                                      | Ø6 PED.         | BLUE            | ---           | WALK            |
|  |                 | BLACK           | ---           | DON'T WALK      |
|  |                 | WHITE           | RED           | PUSH BUTTON     |
| Ø4 PED.                                      | Ø8 PED.         | BLUE            | BLACK         | WALK            |
|  |                 | BLACK           | WHITE         | DON'T WALK      |
|  |                 | BLACK           | RED           | PUSH BUTTON     |
| ALL Ø'S                                      | ALL Ø'S         | WHITE           | ---           | P.B. COMMON     |
|  |                 | WHITE           | BLACK         | SPARE           |

CABLES SHALL BE MARKED IN ACCORDANCE WITH CITY OF AVONDALE STANDARDS

| IMSA CABLE 19-1, #14 AWG SOLID, 5-CONDUCTOR & 7-CONDUCTOR |                 |                      |                 |
|---|-----------------|----------------------|-----------------|
| 5 SECTION SIGNAL HEADS OUTBOARD & FAR LEFT (FYA)          |                 | SIGNAL HEADS INBOARD |                 |
| 7-CONDUCTOR CABLE   |                 | 5-CONDUCTOR CABLE    |                 |
| BASIC COLOR   | SIGNAL INTERVAL | BASIC COLOR          | SIGNAL INTERVAL |
| RED   | RED ARROW       | RED                  | RED             |
| BLACK   | YELLOW ARROW    | ORANGE               | YELLOW          |
| GREEN   | GREEN ARROW     | GREEN                | GREEN           |
| ORANGE  | SPARE           | WHITE                | VEH. COM.       |
| BLUE  | SPARE           | BLACK                | SPARE           |
| WHITE   | VEH. COM.       |                      |                 |
| WHT/BLK TR  | FY. ARROW       |                      |                 |

| POLE COLOR CODE IMSA CABLE |       |
|----------------------------|-------|
| POLE LOCATION              | COLOR |
| CONTROLLER CORNER          | RED   |
| FIRST POLE CLOCKWISE       | WHITE |
| SECOND POLE CLOCKWISE      | BLUE  |
| THIRD POLE CLOCKWISE       | GREEN |



|   |              |             |        |
|---|--------------|-------------|--------|
| IF  | GT           | MJP         | T203   |
| DRAWN BY:                                     | DESIGNED BY: | CHECKED BY: | SHEET: |
| J2 ENGINEERING AND ENVIRONMENTAL DESIGN       |              |             |        |
| 4649 EAST COTTON GIN LOOP, SUITE B2           |              |             |        |
| PHOENIX, AZ 85040                             |              |             |        |
| (602) 438-2221                                |              |             |        |
| www.j2design.us                               |              |             |        |
| CONDUCTOR SCHEDULE                            |              |             |        |
| AVONDALE BOULEVARD AND MARICOPA STREET SIGNAL |              |             |        |
| PROJECT NUMBER                                |              |             |        |
| SHEET NUMBER 11 OF 13                         |              |             |        |
| PROJECT DATE 03/04/2019                       |              |             |        |
| LATEST REVISION DATE                          |              |             |        |
| SHEET NUMBER 11 OF 13                         |              |             |        |
| PROJECT NUMBER                                |              |             |        |

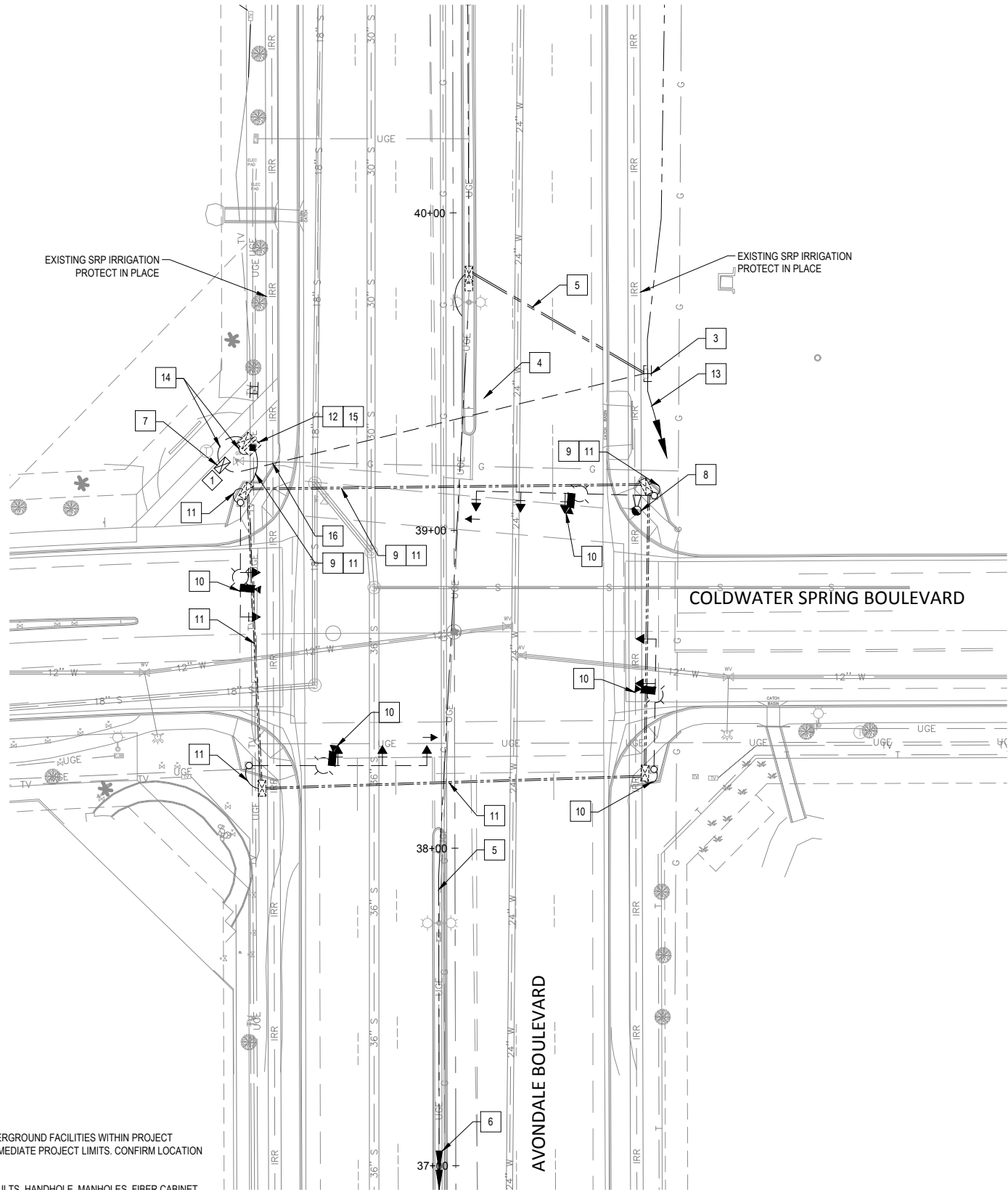
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CAUTION: EXISTING UNDERGROUND FACILITIES WITHIN PROJECT VICINITY, OUTSIDE OF IMMEDIATE PROJECT LIMITS. CONFIRM LOCATION AND PROTECT IN PLACE.

CAUTION: FACILITIES (VAULTS, HANDHOLE, MANHOLES, FIBER CABINET, POWER SUPPLY, AND/OR SURFACE MOUNTS) WITHIN PROJECT VICINITY, OUTSIDE OF IMMEDIATE CONSTRUCTION AREA. PROTECT IN PLACE.

CAUTION: PEDESTAL WITHIN PROJECT VICINITY, OUTSIDE OF IMMEDIATE CONSTRUCTION AREA. DROPS SERVICE IN THE AREA, PROTECT IN PLACE.

CAUTION: PROPOSED CONSTRUCTION CROSSING EXISTING FACILITIES. MAINTAIN 12" VERTICAL VARIANCE AND PROTECT IN PLACE. POTHOLE REQUIRED.



PULL BOX SCHEDULE

| NO. | TYPE        | AVONDALE BLVD. STATION | REMARKS     |
|-----|-------------|------------------------|-------------|
| 1   | NO. 7 W/EXT | 39+21, 73' LT          | INSTALL NEW |

TRAFFIC SIGNAL LEGEND

| SYMBOL   | DESCRIPTION                                    |
|----------|--|
| ---      | EXISTING CONDUIT                               |
| ----     | NEW CONDUIT                                    |
| [Symbol] | EXISTING METER PEDESTAL                        |
| [Symbol] | EXISTING CONTROLLER CABINET                    |
| [Symbol] | EXISTING NO. 7 PULL BOX WITH EXTENSION         |
| [Symbol] | EXISTING NO. 9 VAULT                           |
| [Symbol] | CCTV CAMERA, CAT5 CABLE, POE, SURGE PROTECTION |
| [Symbol] | VIDEO DETECTION CAMERA                         |
| [Symbol] | PULL BOX (SEE PULL BOX SCHEDULE)               |
| [X]      | CONSTRUCTION NOTES                             |

CONSTRUCTION NOTES:

- 1 THE CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS AND CONDITION OF ALL EXISTING CONDUIT RUNS AND PULL BOXES, PRIOR TO CONSTRUCTION.
- 2 ALL PULL BOXES SHALL BE LEFT IN CLEAN CONDITION, FREE OF DIRT AND DEBRIS, UPON COMPLETION OF WORK.
- 3 EXISTING NO. 9 VAULT. SPLICE NEW TWO (2) 12 STRAND SMFO TO EXISTING 96 STRAND SMFO. SEE FIBER OPTIC SPLICE DETAIL 2 ON SHEET T205. COIL 100 FEET OF 12 STRAND SMFO IN VAULT.
- 4 FURNISH AND INSTALL 3" CONDUIT WITH NEW 12 STRAND SMFO. SEE FIBER OPTIC CABLE DETAIL ON SHEET T205.
- 5 EXISTING CONDUIT WITH NEW 12 STRAND SMFO. SEE FIBER OPTIC CABLE DETAIL ON SHEET T205.
- 6 12 STRAND SMFO TO BE INSTALLED IN EXISTING CONDUIT ALONG AVONDALE BOULEVARD, FROM COLDWATER SPRING BOULEVARD TO MARICOPA STREET. SEE DETAIL 1 ON SHEET T205. COIL 30 FEET OF 12 STRAND SMFO IN PULL BOX.
- 7 FURNISH AND INSTALL NO. 7 PULL BOX AND COIL 30 FEET OF FIBER OPTIC CABLE.
- 8 INSTALL NEW CCTV CAMERA ON EXISTING TRAFFIC SIGNAL POLE.
- 9 EXISTING CONDUIT WITH NEW POWER OVER ETHERNET (POE) CABLE FOR NEW CCTV CAMERA, CAT5 OUTDOOR SHIELDED CABLE, POE, AND SURGE PROTECTION.
- 10 REMOVE EXISTING VIDEO DETECTION CAMERA. INSTALL NEW VIDEO DETECTION CAMERA ON EXISTING BRACKET ON SIGNAL MAST ARM.
- 11 REMOVE EXISTING VIDEO DETECTION CAMERA CABLE FROM EXISTING CONDUIT. INSTALL NEW CAT5E SHIELDED OUTDOOR CABLE.
- 12 FURNISH AND INSTALL NEW POWER SUPPLY, NEW VIDEO DETECTION, CCTV, AND COMMUNICATIONS SYSTEMS. (RS900G SWITCH, LC TO LC JUMPERS GBLC2-D1-03 3 METER, POLI-MOD PM-L-12-ULC-0-S-01.
- 13 EXISTING 96 STRAND SMFO TO CITY OF AVONDALE CIVIC CENTER. COORDINATE WITH CITY OF AVONDALE I.T. DEPARTMENT FOR CONNECTION TO EXISTING SERVER.
- 14 REMOVE EXISTING BATTERY. INSTALL 3" CONDUIT FOR FIBER PATH INTO EXISTING BATTERY VAULT, AND TO ESTABLISH FIBER PATH INTO TRAFFIC SIGNAL CABINET.
- 15 PROVIDE NEW COBALT ECONOLITE RACK MOUNT CONTROLLER.
- 16 CONDUIT CROSSING OF EXISTING SRP IRRIGATION PIPE SHALL BE IN ACCORDANCE WITH SRP STD. DWG. WES-02604-001. SEE DETAIL 4 ON SHEET T-2.02.

20' 10' 0' 20'  
SCALE 1" = 20'



|              |      |    |
|--------------|------|----|
| DRAWN BY:    | GT   | J2 |
| DESIGNED BY: | MJP  |    |
| CHECKED BY:  | T204 |    |
| SHEET:       |      |    |
| DATE:        |      |    |

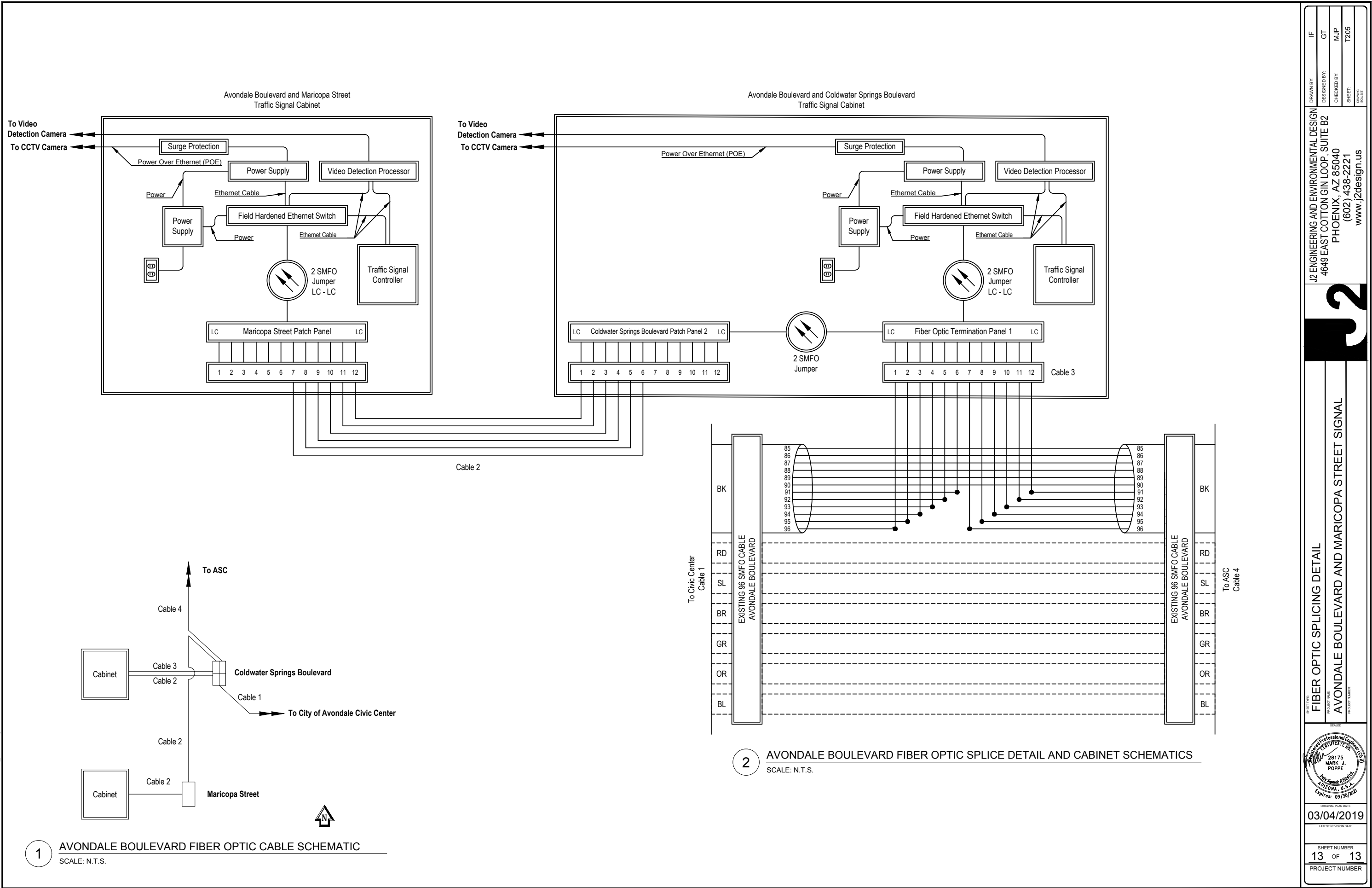
J2 ENGINEERING AND ENVIRONMENTAL DESIGN  
4649 EAST COTTON GIN LOOP, SUITE B2  
PHOENIX, AZ 85040  
(602) 438-2221  
www.j2design.us

COLDWATER SPRINGS BOULEVARD FIBER OPTIC PLAN SHEET  
AVONDALE BOULEVARD AND MARICOPA STREET SIGNAL

03/04/2019  
LATEST REVISION DATE

SHEET NUMBER  
12 OF 13  
PROJECT NUMBER

2/28/18 P:\171062.001\2Cadd\Sheets\171062\_T205.dwg



|   |                                     |                   |                |
|---|-------------------------------------|-------------------|----------------|
| IF  | GT                                  | MJP               | T205           |
| DRAWN BY:                                     | DESIGNED BY:                        | CHECKED BY:       | SHEET:         |
| J2 ENGINEERING AND ENVIRONMENTAL DESIGN       | 4649 EAST COTTON GIN LOOP, SUITE B2 | PHOENIX, AZ 85040 | (602) 438-2221 |
| www.j2design.us                               |                                     |                   |                |
| FIBER OPTIC SPLICING DETAIL                   |                                     |                   |                |
| AVONDALE BOULEVARD AND MARICOPA STREET SIGNAL |                                     |                   |                |
| 28175   |                                     |                   |                |
| MARK J. POPPE                                 |                                     |                   |                |
| AZ 28175                                      |                                     |                   |                |
| Expires: 09/30/2021                           |                                     |                   |                |
| 03/04/2019                                    |                                     |                   |                |
| 13 OF 13                                      |                                     |                   |                |
| PROJECT NUMBER                                |                                     |                   |                |

EXHIBIT B  
TO  
INVITATION FOR BIDS NO. EN 19-166

[Substitution/Equal Request Form]

See following pages.

## SUBSTITUTION/EQUAL REQUEST FORM

Traffic Signal- Maricopa Street & Avondale Boulevard  
EN 19-166

Bidder \_\_\_\_\_ hereby submits for City's consideration the following product, instead of the specified item, for the above Project.

1.      Section              Page              Paragraph/Line              Specified Item

Proposed Substitution: \_\_\_\_\_

Statement indicating why specified product, fabrication or installation cannot be provided, if applicable:

(NOTE: See Article II – Bid Process; Bid Award, Section 2.4(C), Approval of Substitutions, or Section 2.4(D), Use of Equals, as applicable, for additional criteria concerning prior approval for substitutions or use equals of material and equipment.)

2.      Attach complete product description, drawings, photographs, performance and test data, and other information necessary for evaluation, indicating by highlighting all comparable data between specified item and proposed substitution or equal. Identify specific model numbers, finishes, options, etc.

A.      Will changes be required to Project design (architecturally, structurally, mechanically or electrically) in order to properly install proposed substitution? Yes \_\_\_\_\_ No \_\_\_\_\_ If Yes, explain:

B.      Will the undersigned pay for changes to the Project design, including engineering and drawing costs, caused by requested substitution? Yes \_\_\_\_\_ No \_\_\_\_\_

C.      List differences between proposed substitution and specified item. Include annotated copy of applicable Specification Section.

Specified Item

Proposed Substitution

D.      Does substitution affect Drawing dimensions? Yes \_\_\_\_\_ No \_\_\_\_\_ If Yes, explain:

E.      What effect does substitution have on other trades? \_\_\_\_\_

F.      Does manufacturer's warranty of proposed substitution differ from that specified?  
Yes \_\_\_\_\_ No \_\_\_\_\_ If Yes, explain: \_\_\_\_\_



G. Will substitution affect progress schedule? Yes \_\_\_\_\_ No \_\_\_\_\_ If Yes, explain:

H. Will substitution require more license fees or royalties than specified product?  
Yes \_\_\_\_\_ No \_\_\_\_\_ If Yes, explain: \_\_\_\_\_

I. Will maintenance and service parts be locally available for substitution?  
Yes \_\_\_\_\_ No \_\_\_\_\_ If Yes, explain: \_\_\_\_\_

J. Will substitution be compatible with all adjacent material and/or applications to or on the proposed substitution? Yes \_\_\_\_\_ No \_\_\_\_\_ If no, explain what material substitutions will be required to make your proposed substitution compatible: \_\_\_\_\_

List materials that will be required to provide compatibility: \_\_\_\_\_

3. The undersigned hereby assumes all responsibility for all provisions indicated herein and agrees that, if adequate comparable information is not provided as required by Section 2.4(C), Approval of Substitutions, or Section 2.4(D), Use of Equals, as applicable, and this Form, the proposed substitution or equal shall be subject to rejection.
4. The undersigned understands and agrees that the substitution requested, including all supporting data, will only be considered if it is submitted to the City Representative 10 full Days prior to the Bid Deadline. Telegraphic (facsimile) or electronic (email) copies will **not** be considered.

Submitted by:

For City's Use Only:

\_\_\_\_\_  
Signature

☐ Accepted

\_\_\_\_\_  
Print Name

☐ Rejected

\_\_\_\_\_  
Title

Remarks: \_\_\_\_\_

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Address

\_\_\_\_\_  
Signature

\_\_\_\_\_  
City, State, Zip Code

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Date

\_\_\_\_\_  
Telephone No.

\_\_\_\_\_  
Date

EXHIBIT C  
TO  
INVITATION FOR BIDS NO. EN 19-166

[Price Sheet]

See following pages.

# PRICE SHEET

Traffic Signal- Maricopa Street & Avondale Boulevard  
EN 19-166

**NOTE: All pricing blanks must be filled in. Incomplete or unfilled spaces in the Bid Price Sheet shall result in a determination that a Bid is non-responsive.**

| Item No.  | Description of Materials and/or Services                     | Unit  | Quantity | Unit Price  | Total Price |
|-----------|--|-------|----------|-------------|-------------|
| 105.30010 | As-Built Documentation                                       | LS    | 1        |             |             |
| 105.80010 | Construction Staking and Surveying and Layout                | LS    | 1        |             |             |
| 107.15000 | Community Relations (Allowance)                              | ALLOW | 1        | \$5,000.00  | \$5,000.00  |
| 107.02000 | Storm Water Pollution Prevention Plan, Maintenance Permits   | LS    | 1        |             |             |
| 109.50010 | Miscellaneous Reimbursable (Allowance)                       | ALLOW | 1        | \$50,000.00 | \$50,000.00 |
| 109.09000 | Mobilization/Demobilization                                  | LS    | 1        |             |             |
| 401.01000 | Traffic Control  | LS    | 1        |             |             |
| 321.01330 | Asphalt Pavement Per Structural Section No. 1 (3" AC/6" ABC) | SY    | 111      |             |             |
| 340.01110 | Vertical Curb & Gutter Type A Per MAG Standard Detail 220-1  | LF    | 198      |             |             |
| 340.01170 | Single Curb, Type A, Per MAG Standard Detail 222             | LF    | 190      |             |             |
| 340.01210 | Sidewalk Per MAG Standard Detail 230                         | SF    | 1,893    |             |             |
| 340.01305 | ADA Ramp Per MAG Standard Detail 237-1                       | EA    | 8        |             |             |
| 340.01600 | Concrete Valley Gutter Per MAG Standard Detail 240           | SF    | 1,244    |             |             |
| 350.01315 | Remove Existing Asphalt Concrete Pavement                    | SY    | 111      |             |             |
| 350.01800 | Remove Existing Concrete Curb and Gutter                     | LF    | 278      |             |             |
| 350.01900 | Remove Existing Concrete Sidewalk, Ramp, Driveway and Slab   | SF    | 1,407    |             |             |
| 350.01920 | Remove Existing Valley Gutter                                | SF    | 1,244    |             |             |
| 350.04000 | Removal of Sign, Post and Base                               | EA    | 2        |             |             |

| Item No.  | Description of Materials and/or Services                                    | Unit | Quantity | Unit Price | Total Price |
|-----------|---|------|----------|------------|-------------|
| 351.46004 | Remove and Salvage Street Light Pole  | EA   | 2        |            |             |
| 351.46100 | Remove Existing Electrical Junction Box                                     | EA   | 2        |            |             |
| 351.46150 | Relocate Existing Traffic Signal Junction Box                               | EA   | 5        |            |             |
| 430.01002 | Landscape Restoration   | LS   | 1        |            |             |
| 351.46000 | Relocate Existing Sign  | EA   | 1        |            |             |
| 460.02000 | Remove Thermoplastic Stripe   | LF   | 1,400    |            |             |
| 460.02110 | Remove Thermoplastic Arrow (Left & Right Turn)                              | EA   | 4        |            |             |
| 461.01511 | Left Turn Arrow Symbol; Preformed   | EA   | 4        |            |             |
| 462.01100 | 100mm (4") White Thermoplastic Traffic Stripe                               | LF   | 3,760    |            |             |
| 465.01002 | Flat Sheet Aluminum Sign Panel, High Intensity Sheeting                     | SF   | 22.5     |            |             |
| 464.02000 | Perforated Sign Post  | LF   | 11.0     |            |             |
| 464.02001 | Perforated Sign Post Foundation, MCDOT Det. 2058                            | EA   | 1.0      |            |             |
| 471.61280 | Sch. 80 PVC Electrical Conduit, 2" w/1/4" Nylon Pull Rope and #8 Copper     | LF   | 75       |            |             |
| 471.61285 | Sch. 80 PVC Electrical Conduit, 2-1/2" w/1/4" Nylon Pull Rope and #8 Copper | LF   | 250      |            |             |
| 471.61380 | Sch. 80 PVC Electrical Conduit, 3" w/1/4" Nylon Pull Rope and #8 Copper     | LF   | 75       |            |             |
| 471.61482 | Sch. 80 PVC Electrical Conduit, 2-4" w/1/4" Nylon Pull Rope and #8 Copper   | LF   | 10       |            |             |
| 472.61100 | Pole Foundation, Type A   | EA   | 4        |            |             |
| 472.61350 | Pole Foundation Trombone, Type J or Q                                       | EA   | 2        |            |             |
| 472.61450 | Pole Foundation Trombone, Type K or R                                       | EA   | 2        |            |             |
| 472.62005 | Electrical Service Pedestal/UPS Combination Cabinet Foundation              | EA   | 1        |            |             |
| 472.62120 | Electrical Service Pedestal/UPS Combination Cabinet                         | EA   | 1        |            |             |

| Item No.  | Description of Materials and/or Services  | Unit | Quantity | Unit Price | Total Price |
|-----------|---|------|----------|------------|-------------|
| 472.63005 | Traffic Signal Controller Cabinet Assembly (Naztec 332) Foundation  | EA   | 1        |            |             |
| 474.60100 | Signal Pole, Type A (12')   | EA   | 4        |            |             |
| 474.61570 | Type Q Trombone Signal Pole w/ 10.7 m (35') Mast Arm & (15') Luminaire Mast Arm- Pickup and Installation Only | EA   | 2        |            |             |
| 474.61770 | Type R Trombone Signal Pole w/ 16.8 m (55') Mast Arm & (15') Luminaire Mast Arm- Pickup and Installation Only | EA   | 2        |            |             |
| 474.63005 | Pedestrian Pushbutton & Signs   | EA   | 8        |            |             |
| 475.62010 | Traffic Signal Controller Unit  | EA   | 1        |            |             |
| 475.62050 | Traffic Signal Control Cabinet Assembly (Type 332 with Cobalt   | EA   | 1        |            |             |
| 475.62085 | Traffic Signal Control Cabinet Power Supply   | EA   | 1        |            |             |
| 475.83010 | Tomar Emergency Vehicle Pre-emption System w/ Confirmation Light  | EA   | 1        |            |             |
| 476.01100 | Traffic Signal Face (Type F)  | EA   | 14       |            |             |
| 476.01300 | Traffic Signal Face (Type Q)  | EA   | 2        |            |             |
| 476.01350 | Traffic Signal Face (Type Q-2)  | EA   | 2        |            |             |
| 476.62020 | Countdown Style Pedestrian Head   | EA   | 8        |            |             |
| 476.93040 | Traffic Signal Mounting Assembly (Type IV)  | EA   | 4        |            |             |
| 476.93050 | Traffic Signal Mounting Assembly (TypeV)  | EA   | 12       |            |             |
| 477.70060 | LED Luminaire Major Roadway, Horizontal Mount   | EA   | 4        |            |             |
| 477.90060 | Internally Illuminated Street Name Sign (City of Avondale)  | EA   | 4        |            |             |
| 478.01000 | Electrical Conductors (New Signal Installation)   | LS   | 1        |            |             |
| 482.00096 | Fiber Optic Splice Enclosure and Fusion Splices   | EA   | 1        |            |             |
| 482.01112 | Single Mode Fiber Optic Cable (12 Fibers)   | LF   | 3,100    |            |             |

| Item No.  | Description of Materials and/or Services                | Unit | Quantity | Unit Price  | Total Price |
|-----------|---|------|----------|-------------|-------------|
| 483.00040 | CCTV Camera Assembly, HD Digital                        | EA   | 2        |             |             |
| 485.20000 | Video Detection (4 Camera System)                       | EA   | 2        |             |             |
| 486.10050 | Field Hardened Ethernet Switch<br>(Furnish and Install) | EA   | 2        |             |             |
|           | SUBTOTAL  |      |          |             |             |
|           | ALLOWANCES  |      |          | \$55,000.00 | \$55,000.00 |
|           | TOTAL CONSTRUCTION COST*                                |      |          |             |             |

**\* ALL BIDS ARE PRESUMED TO INCLUDE ALL APPLICABLE TAXES. PLEASE BE ADVISED THAT ARIZ. REV. STAT. § 42-5075(P) APPLIES TO THE PROJECT CONTEMPLATED WITHIN THIS CONTRACT. CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL WORK CONTEMPLATED BY THE PLANS FOR THE PROJECT IS BID ON THE PRICE SHEET.**

Company Name: \_\_\_\_\_

Date: \_\_\_\_\_

EXHIBIT D  
TO  
INVITATION FOR BIDS NO. EN 19-166

[Licenses; DBE/WBE Status]

See following page.

LICENSES; DBE/WBE STATUS

Traffic Signal- Maricopa Street and Avondale Boulevard  
EN 19-166

☐

**Attach a copy of your Contractor's License to your bid submittal.**

☐

**Attach a copy of your Business License to your bid submittal.**

\* Business License must be a current Arizona Transaction Privilege (Sales) Tax License reflecting City as a reporting jurisdiction or current City Business License.

Has your firm been certified by any jurisdiction in Arizona as a minority or woman owned business enterprise? Yes \_\_\_\_\_, No \_\_\_\_\_.

If yes, please provide details and documentation of the certification.



EXHIBIT E  
TO  
INVITATION FOR BIDS NO. EN 19-166

[References]

See following page(s).

## REFERENCES

### Traffic Signal- Maricopa Street & Avondale Boulevard EN 19-166

Provide the following information for three clients for whom Bidder has successfully completed similar projects as set forth in Section 2.15 within the past 60 months. Failure to provide three accurate and suitable references will result in disqualification. Bidder may also attach another sheet with additional references.

1.   Company: \_\_\_\_\_  
      Address                    \_\_\_\_\_  
      City/State/Zip Code       \_\_\_\_\_  
      Contact:                   \_\_\_\_\_  
      Telephone Number:       \_\_\_\_\_  
      Date of Contract Initiation: \_\_\_\_\_  
      Date of Contract Expiration: \_\_\_\_\_  
      Final Project Cost:       \_\_\_\_\_  
      Project Description:      \_\_\_\_\_  
  
2.   Company: \_\_\_\_\_  
      Address                    \_\_\_\_\_  
      City/State/Zip Code       \_\_\_\_\_  
      Contact:                   \_\_\_\_\_  
      Telephone Number:       \_\_\_\_\_  
      Date of Contract Initiation: \_\_\_\_\_  
      Date of Contract Expiration: \_\_\_\_\_  
      Final Project Cost:       \_\_\_\_\_  
      Project Description:      \_\_\_\_\_  
  
3.   Company: \_\_\_\_\_  
      Address                    \_\_\_\_\_  
      City/State/Zip Code       \_\_\_\_\_  
      Contact:                   \_\_\_\_\_  
      Telephone Number:       \_\_\_\_\_  
      Date of Contract Initiation: \_\_\_\_\_  
      Date of Contract Expiration: \_\_\_\_\_  
      Final Project Cost:       \_\_\_\_\_  
      Project Description:      \_\_\_\_\_

EXHIBIT F  
TO  
INVITATION FOR BIDS NO. EN 19-166

[Bid Bond]

See following page.

BID BOND

Traffic Signal- Maricopa Street & Avondale Boulevard  
EN 19-166

KNOW ALL PERSONS BY THESE PRESENTS:

THAT, \_\_\_\_\_ (hereinafter called Principal), as Principal, and \_\_\_\_\_, a corporation organized and existing under the laws of the State of \_\_\_\_\_ with its principal office in the City of \_\_\_\_\_, (hereinafter called the Surety), as Surety, are held and firmly bound unto the City of Avondale, (hereinafter called the Obligee) in the penal sum of Ten Percent (10%) of Bid Amount, \_\_\_\_\_ (Dollars) (\$ \_\_\_\_\_) lawful money of the United States of America, to be paid to the order of the City of Avondale, for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents and in conformance with A.R.S. Section 34-201.

WHEREAS, the Principal has submitted a bid/proposal for: \_\_\_\_\_.

NOW, THEREFORE, if the Obligee accepts the proposal of the Principal and the Principal enters into a Contract with the Obligee in accordance with the terms of the proposal and gives the Bonds and Certificates of Insurance as specified in the Standard Specifications with good and sufficient surety for the faithful performance of the Contract and for the prompt payment of labor and materials furnished in the prosecution of the Contract, or in the event of the failure of the Principal to enter into the Contract and give the Bonds and Certificates of Insurance, if the Principal pays to the Obligee the difference not to exceed the penalty of the Bond between the amount specified in the proposal and such larger amount for which the Obligee may in good faith contract with another party to perform the Work covered by the proposal then this obligation is void. Otherwise it remains in full force and effect provided, however, that this Bond is executed pursuant to the provisions of Section 34-201, Arizona Revised Statutes, and all liabilities on this Bond shall be determined in accordance with the provisions of the section to the extent as if it were copied at length herein.

The prevailing party in a suit on this bond shall recover as part of the judgment reasonable attorney fees that may be fixed by a judge of the Court.

Witness our hands this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_.

\_\_\_\_\_  
Principal Seal

By: \_\_\_\_\_

\_\_\_\_\_  
Surety Seal

By: \_\_\_\_\_

\_\_\_\_\_  
Agency of Record

EXHIBIT G  
TO  
INVITATION FOR BIDS NO. EN 19-166

[Key Personnel/Subcontractor Listing]

See following page.

KEY PERSONNEL/SUBCONTRACTOR LISTING

Traffic Signal- Maricopa Street & Avondale Boulevard  
EN 19-166

Key Personnel and Subcontractors listed herein shall be utilized on this Project.

| Category: | Personnel/ Subcontractor Name, Contact Information: |
|-----------|---|
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EXHIBIT H  
TO  
INVITATION FOR BIDS NO. EN 19-166

[Performance Bond]

See following page.

PERFORMANCE BOND

Traffic Signal- Maricopa Street & Avondale Boulevard  
EN 19-166

KNOW ALL PERSONS BY THESE PRESENTS:

THAT, \_\_\_\_\_ (hereinafter called Principal), as Principal, and \_\_\_\_\_, a corporation organized and existing under the laws of the State of \_\_\_\_\_, with its principal office in the City of \_\_\_\_\_ (hereinafter called the Surety), as Surety, are held and firmly bound unto the City of Avondale (hereinafter called the Obligee) in the amount of \_\_\_\_\_ (Dollars) (\$ \_\_\_\_\_), for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written Contract with the Obligee, dated the \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_, for the material, service or construction described as \_\_\_\_\_ is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal faithfully performs and fulfills all of the undertakings, covenants, terms, conditions and agreements of the Contract during the original term of the Contract and any extension of the Contract, with or without notice to the Surety, and during the life of any guaranty required under the Contract, and also performs and fulfills all of the undertakings, covenants, terms, conditions and agreements of all duly authorized modifications of the Contract that may hereafter be made, notice of which modifications to the surety being hereby waived, the above obligation is void. Otherwise it remains in full force and effect.

PROVIDED, however, that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, and all liabilities on this bond shall be determined in accordance with the provisions of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, to the extent as if it were copied at length in this agreement.

The prevailing party in a suit on this bond shall recover as part of the judgment reasonable attorney fees that may be fixed by a judge of the Court.

Witness our hands this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_.

\_\_\_\_\_  
Principal Seal

By: \_\_\_\_\_

\_\_\_\_\_  
Surety Seal

By: \_\_\_\_\_

\_\_\_\_\_  
Agency of Record



EXHIBIT I  
TO  
INVITATION FOR BIDS NO. EN 19-166

[Payment Bond]

See following page.

PAYMENT BOND

Traffic Signal- Maricopa Street & Avondale Boulevard  
EN 19-166

KNOW ALL PERSONS BY THESE PRESENTS:

THAT, \_\_\_\_\_ (hereinafter called Principal), as Principal, and \_\_\_\_\_, a corporation organized and existing under the laws of the State of \_\_\_\_\_, with its principal office in the City of \_\_\_\_\_ (hereinafter called the Surety), as Surety, are held and firmly bound unto the City of Avondale (hereinafter called the Obligee) in the amount of \_\_\_\_\_ (Dollars) (\$ \_\_\_\_\_), for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written Contract with the Obligee, dated the \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_, for the material, service or construction described as \_\_\_\_\_ which Contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal promptly pays all monies due to all persons supplying labor or materials to the Principal or the Principal's Subcontractors in the prosecution of the Work provided for in the Contract, this obligation is void. Otherwise it remains in full force and effect.

PROVIDED, however, that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, and all liabilities on this bond shall be determined in accordance with the provisions, conditions and limitations of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, to the same extent as if they were copied at length in this agreement.

The prevailing party in a suit on this bond shall recover as a part of the judgment reasonable attorney fees that may be fixed by a judge of the Court.

Witness our hands this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
Principal Seal

By: \_\_\_\_\_

\_\_\_\_\_  
Surety Seal

By: \_\_\_\_\_

\_\_\_\_\_  
Agency of Record

EXHIBIT J  
TO  
INVITATION FOR BIDS NO. EN 19-166

[Acknowledgments of Addenda received]

See following page(s).