

**PROJECT MANUAL**  
**FOR**  
**CITY OF SAN LUIS**  
**JUAN SANCHEZ BOULEVARD**  
**SEWER LIFT STATION PROJECT**

**CITY OF SAN LUIS**

1090 East Union Street  
P.O. BOX 1170  
San Luis, Arizona, 85349

APPROVED BY:

**City Manager:**  
Robert A. Eads

**Mayor:**  
Gerardo Sanchez

**Vice Mayor:**  
Matias Rosales

**Council Members:**  
Africa Luna-Carrasco  
Gloria Torres  
Maria C. Ramos  
Mario Buchanan Jr.  
Ruben Walshe

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**REQUEST FOR PROPOSALS  
CITY OF SAN LUIS, ARIZONA  
JUAN SANCHEZ BOULEVARD  
SEWER LIFT STATION PROJECT**

NOTICE IS HEREBY GIVEN THAT sealed proposals or bids will be received in the Office of the City Clerk, City Hall, 1090 E. Union Street, City of San Luis, Arizona until 3:00 P.M. (M.S.T.) on October 15, 2015 for furnishing all labor, materials, equipment, tools and performing all services required for the construction of the **City of San Luis Juan Sanchez Boulevard Sewer Lift Station Project**, and work incidental thereto. Proposals will then be publicly opened and read aloud. Each Bid should be submitted on the Proposal Form and be accompanied by a certified or cashier's check or bid bond in the amount of ten (10%) percent of the total amount of the bid.

The proposed work is located within the limits of the City of San Luis, Arizona. The work consists of, but is not limited to furnishing and installing all equipment for a lift station and installing approximately 16,600 lineal feet of 14-inch diameter PVC sewer force main, all necessary appurtenances and associated work. Work will be performed per specifications in the Contract Documents and Project Plans. The project shall be complete and in place within 180 calendar days from the date of Notice to Proceed.

Plans, specifications and contract documents may be obtained at the office of Dahl, Robins & Associates, Inc., 1560 S. 5<sup>th</sup> Avenue Yuma, Arizona, 85364, telephone (928) 819-0825, [crobins@dahlrobins.com](mailto:crobins@dahlrobins.com) with 24 hours advanced notice.

A non-mandatory Pre-Bid Conference will be held at the City of San Luis Pedro Julian Conference Room in City Hall on October 5, 2015 at 2:00 P.M. (M.S.T.) to discuss specifications and any questions Bidders may have.

All bids must be in a sealed envelope and plainly marked: "City of San Luis Juan Sanchez Boulevard Lift Station."

The City of San Luis reserves the right to cancel this procurement and/or to reject any or all bids and/or to waive any informality in any bid. No bidder may withdraw his bid for a period of thirty (30) days after the date set for the bid opening thereof:

CITY OF SAN LUIS, ARIZONA

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ROBERT EADS, CITY ADMINISTRATOR

Dates Advertised: Yuma Sun September XX and xx, 2015.

# INSTRUCTIONS TO BIDDERS

## CITY OF SAN LUIS JUAN SANCHEZ BOULEVARD SEWER LIFT STATION PROJECT

To be considered, bids must be made in accordance with these Instructions to Bidders.

### 1. DEFINITIONS

- 1.1 All definitions set forth in the General Conditions, are applicable to these Instructions to Bidders.
- 1.2 Bidding Documents include the Advertisement for Bids, Instructions to Bidders, Bid Form, Bid Bond Form, and the proposed Contract Documents, including any Addenda issued prior to the receipt of bids.
- 1.3 Addenda are written or graphic instructions issued prior to the execution of the contract which modify or interpret the Bidding Documents, including Drawings, conditions of the Contract and Specifications, by additions, deletions, clarifications or corrections. Addenda will become part of the Contract Documents when the Construction Contract is executed.
- 1.4 The term "Engineer" shall be interpreted to mean the City's consultant, Dahl, Robins & Associates, Inc., representing the City.

### 2. BIDDER'S REPRESENTATION

- 2.1 Before submitting a bid, bidders shall carefully examine the Drawings, Bidding Requirements, Bid Document Contract Forms, General Conditions, Supplementary General conditions, Specifications, and Related Documents, visit the site of the work, and fully inform themselves as to all existing conditions and limitations and shall include in the bid a sum sufficient to cover the cost of all items included in the Contract. The Bidder, if awarded the Contract, shall not be allowed any extra compensation by reason of any matter or thing concerning the Project, which said Bidder might have fully informed himself prior to the bidding.

### 3. BIDDING DOCUMENTS

- 3.1 Bidders may obtain copies of the bidding Documents at:

***Dahl, Robins & Associates, Inc.***  
1560 S. 5<sup>th</sup> Avenue  
Yuma, Arizona 85364  
Phone: (928) 819-0825  
Email: crobins@dahlrobins.com

- 3.2 A \$50.00 refundable deposit for Plans and Specifications (Contract Documents) shall be made payable to Dahl Robins & Associates. Bidders not submitting a bid will forfeit said deposit unless sets are returned in good order at least seven days before bid date. Unsuccessful Bidders shall return all Construction Documents within five days after bid date.

- 3.3 Copies of bidding Documents: Sub-contractors and Major suppliers may be issued copies or full sets at the cost of printing.

#### 4. INTERPRETATION OF BIDDING DOCUMENTS

- 4.1 Should a Bidder find discrepancies, inconsistencies or obscurities in, or omissions from the bidding documents, or should he be in doubt as to their meaning, he shall, at once, notify the Engineer by fax or email, who will issue a written Addendum, clarifying the intent of the documents. Any such item not brought to the Engineer's attention during the bidding period shall be done in accordance with the Engineer's interpretation for the good of the work in accordance with the intent and meaning of the Contract Documents. Neither owner nor Engineer will be responsible for oral instruction or information. Addenda may not be issued less than 48 hours before the time specified for receipt of bids. Questions received less than four days prior to the assigned bid date cannot be answered in writing. Should any discrepancies not be clarified by Addendum, the Contractor shall use the most expensive condition shown or specified in bid.
- 4.2 Prior to the receipt of bids, each person or firm recorded by the Engineer as having received the bidding documents will be notified of any addendum. Addenda will also be available for inspection wherever the bidding documents are kept available for that purpose. Bidders may also elect to check the City of San Luis website for information updates and addenda notices at: [www.cityofsanluis.org](http://www.cityofsanluis.org) (recommended to check daily). Once in the City's website, click on "On-line Documents" and then on "RFPs and RFQs".
- 4.3 All Addenda issued by the Engineer during the time of bidding are to be included in the bid, and shall become a part of the bidding documents (bidder's responsibility to check for addendums). Acknowledge receipt of Addenda on the Bid form in the space provided.
- 4.4 Point of Contact for questions is: Christopher D. Robins, P.E.  
[crobins@dahlrobins.com](mailto:crobins@dahlrobins.com)  
(928) 819-0825

#### 5. SUBSTITUTIONS

- 5.1 When a specific manufacturer, trade name or material is specified, or indicated, it is to establish a standard of quality and shall not be construed as limiting competition. However, components of electrical systems shall be standard items and/or interchangeable with specified manufacturer to facilitate repairs and upkeep by the Owner.
- 5.2 It shall be the Contractor's responsibility to provide materials of equal standards to those specified. The Engineer shall be the sole judge as to whether or not the products meet the established standards. The Contractor MUST request written approval of equal materials from the Engineer prior to the bid date.

## 6. BIDDING PROCEDURES

- 6.1 A bid is invalid if it has not been deposited at the designated location prior to the time and date for receipt of bids indicated in the Invitation to Submit Proposals, or prior to any extension thereof issued to the bidders.
- 6.2 All bids must be prepared on the "Bid Form" with all blank spaces filled, the signature in longhand, and without alterations or erasures. All amounts must be in words as well as figures. Should any difference in words and figures occur, the amount stated in words shall govern. The form must be executed in either ink or type written. Where bidder is a corporation, the Bid Form must be signed by the legal name of the corporation followed by the name of state of incorporation, date of incorporation and the legal signature of an officer authorized to bind the corporation to a contract.
- 6.3 Bids shall be resubmitted as follows:
- A. Submit one original and one (1) copy in a **sealed** envelope. This is to be put inside a shipping envelope or box that is clearly marked "City of San Luis Juan Sanchez Boulevard Lift Sewer Station Project" on the outside and addressed as indicated immediately below:
1. If submitter is sending the proposal by US Mail, the proposal package should be sent only to:  
Sonia Cornelio  
Office of City Clerk  
City of San Luis  
P.O. Box 1170  
San Luis, AZ 85349
  2. If submitter is sending the proposal package via a delivery service, the proposal should be sent only to:  
Sonia Cornelio  
Office of City Clerk  
City of San Luis  
City Hall  
1090 E. Union St.  
San Luis, AZ 85349
  3. Proposal package may be hand delivered to:  
Sonia Cuello  
Office of City Clerk  
City of San Luis  
City Hall  
1090 E. Union St.  
San Luis, AZ 85349
- Deadline for receipt of proposals is at 3:00 PM local time on October 15, 2015. Late proposals will be returned unopened.
  - FAX and Internet submissions are NOT acceptable and will be rejected.
- B. The Bid envelope shall also contain the following:

1. Bid Security.
  2. Subcontractors list form.
  3. Non-Collusion Affidavit form.
- C. Bidders Contact Information - It is important that the City of San Luis keeps accurate records of potential bidders. It is the bidder's responsibility to make sure the City has their contact information so that any addendums or supplementary information can be delivered to them. Provide Name, Phone Number, and e-mail to:  
Christopher D. Robins, P.E.  
[crobins@dahlrobins.com](mailto:crobins@dahlrobins.com)  
(928) 819-0825

6.4 Bid Security:

- A. Each bidder is required to submit, with his bid, a certified or cashier's check upon a solvent bank, or a surety bond for ten percent (10%) of the amount of the Base Bid made payable to the Owner.
1. If more than one proposal is submitted, only one Bid Security is required for the largest base Bid amount, however, this bond shall apply to any and/or all bids submitted.
- B. The Bid Security shall be given as a guarantee that the bidder will enter into a contract to perform the work, if awarded to him, and provide a satisfactory Performance Bond and Payment Bond as required under the provisions of Title 34, Chapter 2, Article 2, Arizona Revised Statutes. Bid Security shall be declared forfeited as liquidated damages if he refuses to enter into said contract upon request to do so by the Owner.
- C. Bid Security will be returned to the unsuccessful bidders, and to the successful bidder upon the execution of a satisfactory Performance Bond and Payment Bond and Construction Contract.
- D. Bidders may withdraw their bid at any time prior to bid opening, but may not resubmit them. No bid may be modified or withdrawn after the bid opening for a period of 30 days except where the award of the contract has been delayed at least 31 days.

6.5 A non-mandatory pre-bid conference will be held at 2:00PM at the Pedro Julian Conference Room in the San Luis City Hall on October 5, 2015. City Hall is located at 1090 E. Union St., San Luis, AZ 85349.

## 7. SUBCONTRACTOR LIST FORM

- 7.1 Complete the Subcontractor List Form, listing a single company, firm, or organization name only for each branch of the work. Blank lines or the entry of "Estimate" shall not be acceptable. Submit the same in a separate, sealed, opaque envelope with bid.
- 7.2 If a change occurs in the list, brought about by the exercising of ANY of the alternates (if applicable) involved in the bidding, the bidder must show said changes on the list. If no name appears other than those listed under the Base

Bid, adherence to those names shall be mandatory, no matter which alternate, if any, is exercised.

- 7.3 The competency and responsibility of bidders and their proposed subcontractors will be considered in making the award.
- 7.4 The Contractor shall pay the cost of all permits, changes, meters, connections, fees, etc., directly to governmental agencies having jurisdiction to comply with the law of the place of the Project in order to complete the work. The bidders' attention is directed to the fact that all applicable state laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction shall apply to the Contract.

## **8. REJECTION OF BIDS**

- 8.1 The Bidder acknowledges the right of the Owner to reject any or all bids, to waive any informality or irregularity in any bid received, or to withhold the award for any reason he determines. In addition, the Bidder recognizes the right of the Owner to reject a bid if the Bidder failed to furnish any required Bid Security or to submit the data required by the Bidding Documents, or if the bid is in any way incomplete or irregular. Bidders shall understand that the Owner will not be responsible for any errors or omissions in the preparation of the bid.

## **9. AGREEMENT**

- 9.1 The form of Agreement which the successful Bidder will be required to execute in four (4) original counterparts. Progressed payments will be made to the Contractor by the Owner in an amount equal to 90% of that due until the final payment.

## **10. WARRANTY**

- 10.1 The Contractor certifies by submitting his bid that he has familiarized himself with all specified products, materials, and systems which are proposed for inclusion in the required work, and that said materials, products, and systems are appropriate for the use(s) intended. He additionally certifies by submitting this bid that he shall, in fact, install said materials, products, and systems in the work properly and in rigid compliance with the terms and conditions of the Contract Documents, and shall issue his written warranty applicable to the work as required by the applicable Supplementary General Conditions. If the Bidder determines that the proposed materials, products, and/or systems are not appropriate for the use(s) intended, he shall submit his written exceptions attached to the Bid Form.

## **11. PERFORMANCE AND PAYMENT BONDS**

- 11.1 The Contractor is hereby required to provide and pay for Performance and Payment Bonds. Bonds shall secure the faithful performance (100%) of the Contract and the payment of all obligations (100%) arising there under, in such form as the Owner may prescribe and with such sureties that he may approve. Both Bonds shall be active and held by the Owner for duration of the guaranty (warranty).

## **12. CONTRACTOR LICENSE LAW, ELIGIBILITY & PREFERENCE**

- 12.1 The Contractor shall comply with, and require all subcontractors to comply with State of Arizona and City Contractor's License Laws. Contractor shall comply with the provisions of "an Act to Regulate the Business of Contracting", Title 32, Chapter 10, Arizona Revised Statutes with latest adopted revisions and 'Contractor's License Laws and Regulations" dated July, 1981, published by the Arizona State Registrar of Contractors, or the latest revision thereof adopted under the provision of A.R.S. Title 32, Chapter 10, Articles 2 and 3. Contractor shall be current with their license to conduct business within the City of San Luis.

## **13. NONDISCRIMINATION**

- 13.1 In connection with the performance of work under this Contract, the Contractor agrees (as prescribed in A.R.S. Section 23-373) not to discriminate against any employee or applicant for employment because of race, sex, religion, color, or national origin. The aforesaid provision shall include, but not be limited to, the following: employment upgrading, demotion, or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensations and selection for training, including apprenticeship. The Contractor agrees to post hereafter in conspicuous places, available for employees and applicants for employment, notices setting forth the provisions of the nondiscrimination clauses. The contractor further agrees to insert the foregoing provision in all subcontracts hereunder, except subcontracts for standard commercial supplies or raw materials.

## **14. COPIES OF DOCUMENTS FURNISHED.**

- 14.1 The successful Contractor shall be furnished a total of five (5) sets of appropriate Construction Documents free of charge.

Additional copies may be obtained from the Architect or Engineer by paying cost of reproduction of same.

## **15. INSURANCE**

- 15.1 The contractor is required to provide and pay for insurances. He shall file, with his Performance and Payment Bonds, all required Certificates of Insurance.
- 15.2 The Contractor shall not commence work under this Contract until he has obtained all the insurance required under this paragraph and such insurance has been approved by the Owner, nor shall the Contractor allow any Subcontractor to commence work on his subcontract until the insurance required of the subcontractor has been so obtained and approved.
- 15.3 The Contractor shall procure and maintain during the life of this contract, Workmen's Compensation Insurance as required by applicable State or Territorial Law for all of his employees to be engaged in work at the site of the project under this contract, and in any such work sublet, the Contractor shall require the Subcontractor similarly to provide Workmen's Compensation Insurance for all of the latter's employees to be engaged in such work unless

such employees are covered by the protection afforded by the Contractors Workmen's Compensation Insurance. In case any class of the employees engaged in hazardous work on the project under this contract are not protected under the Workmen's Compensation Statute, the Contractor shall provide and shall cause each subcontractor to provide adequate employer's liability insurance for the protection of such of his employees as are not otherwise protected.

- 15.4 The Contractor shall provide public liability insurance and show evidence of the following limits:

Bodily Injury \$1,000,000.00

Property Damage \$ 500,000.00

Auto Liability (owned non-owned. hired) \$ 500,000.00

The insurance policy shall not have more than Five Thousand dollars (\$5000.00) deductible, and shall name **City of San Luis as additionally insured.**

## 16. ADDITIONAL SERVICES

- 16.1 Contractor agrees to pay for additional testing services, additional Engineering services, and any similar related additional costs as designated in the Contract Documents.

## 17. SUMMARY OF THE WORK

- 17.1 Refer to the Request for Proposals for the description of the work.

## 18. FINAL COMPLETION

- 18.1 Final Completion will be accomplished no later than **180 calendar days from dated letter "Notice to Proceed"**.

## 19. LIQUIDATED DAMAGES

- 19.1 Liquidated damages for this project shall be determined by the Schedule of Liquidated Damages in Section 108.11 of the Public Works Standards for Yuma County, Volume II, Latest Edition.

## 20. EVALUATION AND AWARD

- Bid opening will take place on October 15, 2015 immediately after the close of the bidding.
- City staff will convene in the Pedro Julian Conference Room at the San Luis City Hall, open the proposals, and read the bids into the record.
- Award will be made to the lowest qualified responsive bidder.
- Formal award of contract will be as stated in the bid opening (not more than 14 days post bid opening).

## 21. PROTESTS

All responders will receive notification via certified US mail regarding their status vis-a-vis the proposed contract award. Responders not selected have 10 days from the mailing of the letter to initiate protest proceedings. To do this, a dissatisfied party must

lodge a protest with Eulogio Vera, Public Works Director, via receipted e-mail ([evera@cityofsanluis.org](mailto:evera@cityofsanluis.org)) or by certified mail (Attn: Eulogio Vera/City of San Luis/P.O. Box 1170/San Luis, AZ 85349). The City of San Luis will then hold a hearing within five days of the receipt of the protest and make a determination within two days of the hearing. In the absence of a successful protest, the contract will be awarded to the most responsive qualified bidder.

**\*\*\*END OF SECTION\*\*\***

## **BID SUBMITTAL CHECKLIST**

### **CITY OF SAN LUIS JUAN SANCHEZ BOULEVARD SEWER LIFT STATION PROJECT**

At a minimum, responders should include the following:

1. Bid Schedule/Proposal Form  
(Form included. To be filled out, signed and submitted)
2. All Addenda shall be acknowledged  
(Proposal form includes a space for addenda acknowledgement).
3. List of Possible Subcontractors  
(Form included. To be filled out and put into sealed envelope and included in proposal).
4. Bid Bond equal to 10% of bid amount.  
(Bid Bond form to be obtained by Contractor, executed, and included with submission. A so-called "statutory" or "redline" bid bond form will suffice.)
5. Non-collusion affidavit  
(Included. To be completed and submitted.)

## BID FORM

The following proposal is made to furnish all labor, material, and equipment and perform all services necessary to construct **CITY OF SAN LUIS JUAN SANCHEZ BOULEVARD SEWER LIFT STATION PROJECT** in accordance with the Project Plans, Specifications and Related Documents titled: **CITY OF SAN LUIS JUAN SANCHEZ BOULEVARD SEWER LIFT STATION PROJECT**.

The undersigned certifies that the above-mentioned documents, as well as the premises and conditions affecting the work, have been carefully examined, that the amount and nature of the work to be done is thoroughly understood, and at no time will misunderstanding of the Drawings, Specifications or Conditions to be overcome be pleaded.

BASE BID: ALL WORK AS CALLED FOR ON THE PLANS AND SPECIFICATIONS

\_\_\_\_\_ DOLLARS and \_\_\_\_\_ CENTS

Acknowledge receipt of Addendum below:

No.	Dated.
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

**CITY OF SAN LUIS  
JUAN SANCHEZ BOULEVARD  
SEWER LIFT STATION PROJECT**

<b>ITEM NO.</b>	<b>ITEM DESCRIPTION</b>	<b>EST. QTY.</b>	<b>UNIT</b>	<b>UNIT COST</b>	<b>TOTAL COST</b>
1.	Remove/Dispose of Existing Asphalt	247	SY		
2.	Pavement Replacement - Type "B" (3" AC / 8" ABC)	5,786	SY		
3.	3" Asphaltic Concrete Pavement over 8" ABC	284	SY		
4.	6" Aggregate Base Course Shoulder	2,268	SY		
5.	Striping and Pavement Markings	1	LS		
6.	Grading Under Base Course	2,268	SY		
7.	Precast Concrete Parking Bumpers	1	EA		
8.	2" Water Service w/ Water Meter Box & 2" Water Meter	1	LS		
9.	18" Class 235 DR 18 PVC Pipe	133	LF		
10.	14" Class 235 DR 18 PVC Pipe	16,634	LF		
11.	2" Schedule 80 PVC Pipe	55	LF		
12.	6' Dia Precast Reinforced Poly Conc Manhole	2	EA		
13.	6' Dia Precast Reinforced Poly Conc Discharge Manhole	1	EA		
14.	Force Main Cleanout w/ 4' Dia Precast Conc Manhole	29	EA		
15.	Force Main Cleanout w/ 4' Dia Precast Conc MH & ARV	1	EA		
16.	Adjust Manhole Frame and Cover to Final Grade	3	EA		

17.	Lift Station and Lift Station Site Complete	1	LS		
18.	Replace 6' x 50' Quadropole Loop Detectors	1	LS		
19.	12"x12"x6" Tapping Sleeve, GV Fire Line & Fire Hydrant	1	LS		
20.	Furnish, Install and Maintain Traffic Control	1	LS		
21.	Design, Furnish, Install and Maintain Stormwater BMPs	1	LS		
22.	Flat-Tailed Horned Lizard Mitigation Requirements	1	LS		
23.	Material Testing	1	LS		
24.	18" Gate Valve with Anchor, Valve Box and Cover	1	EA		
25.	16" Gate Valve with Anchor, Valve Box and Cover	1	EA		
26.	Decorative Wood and Metal Vehicular 20' Roll Gate and 6' Personnel Swing Gate at Lift Station	1	EA		
27.	Remove Existing 15" Sewer Pipe and Install 16" Class 235 DR 18 PVC Pipe	10	LF		

**TOTAL** \_\_\_\_\_

*CONTINGENCY SUBTOTAL*  
*(Total x 0.05 Rounded upward to nearest 0.01)*

\_\_\_\_\_

**TOTAL CONTRACT PROPOSAL** \_\_\_\_\_

The undersigned further agrees to the following:

1. To retain this proposal for a period of thirty (30) days from the date of Bid Opening.
2. To comply with all other requirements as set forth in the Project Manual and drawings.
3. To enter into and execute a Contract, if awarded on the bases of this bid, within 10 days after date of such notice, and to furnish Bonds and Insurance Certificates in accordance with the Contract Documents.
4. The Owner reserves the right to reject any or all bids and/or waive any informality in any bid.

Respectfully Submitted:

Name of Contractor \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

Phone Number \_\_\_\_\_

BY \_\_\_\_\_

TITLE \_\_\_\_\_

DATE \_\_\_\_\_

(Seal of Corporation)

**BID BOND**

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned \_\_\_\_\_ as Principal, and \_\_\_\_\_ as Surety, are hereby held and firmly bound unto \_\_\_\_\_ as OWNER in the penal sum of \_\_\_\_\_ for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors and assigns.

Signed, this \_\_\_\_\_ day of, 20\_\_\_\_\_. The Condition of the above obligation is such that whereas the Principal has submitted to \_\_\_\_\_ a certain BID, attached hereto and hereby made a part of hereof to enter into a contract in writing, for the

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NOW, THEREFORE,

- (a) If said BID shall be rejected, or
- (b) If said BID shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attachment hereto (properly completed in accordance with said BID) and shall furnish" a BOND for faithful performance of said contract, and for the payment of all persons performing labor furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said BID, then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its BOND shall be in no way impaired or affected by any extension of the time within which the OWNER may accept such BID; and said Surety does hereby waive notice of any such extension

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

\_\_\_\_\_(L.S.)  
Principal

\_\_\_\_\_  
Surety

BY: \_\_\_\_\_

IMPORTANT - Surety companies executing BONDS must appear on the Treasury Departments most current list (Circular 570 as amended) and authorized to transact business in the State where the project is located.

**\*\*\*END OF SECTION\*\*\***

**Include Bid Bond equal to  
10% of bid amount**

# **SUBCONTRACTOR AND MATERIAL SUPPLIERS LIST**

## **CITY OF SAN LUIS JUAN SANCHEZ BOULEVARD SEWER LIFT STATION PROJECT**

Please fill in list below if any subcontractors are being used and or materials suppliers for specialty materials:

	<b>Subcontractor/Supplier</b>	<b>Type of Work/Materials</b>
1		
2		
3		
4		
5		

---

**Company**

---

**Signature/Date**

**NON-COLLUSION AFFIDAVIT**

**CITY OF SAN LUIS  
JUAN SANCHEZ BOULEVARD  
SEWER LIFT STATION PROJECT**

**TO BE EXECUTED  
BY BIDDER AND SUBMITTED WITH BID**

State of Arizona

County of \_\_\_\_\_

\_\_\_\_\_, being duly sworn, deposes and says:

That he or she is the \_\_\_\_\_(position)

of \_\_\_\_\_(name of bidder), the party making the bid; that the bid is not made in the interest of, or on behalf of any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that all bidder has not, directly or indirectly, submitted his or her bid price or any breakdown, or their contents, or divulged relative information or data, or paid, and will not pay, any fee to any corporation, partnership, company, association, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

\_\_\_\_\_(Firm Name)

\_\_\_\_\_(Print Name-Authorized Agent)

\_\_\_\_\_(Signature-Authorized Agent)

Project Identification and Name

\_\_\_\_\_  
\_\_\_\_\_

Subscribed and sworn to before me on \_\_\_\_\_,20\_\_\_\_\_.

\_\_\_\_\_

Notary Seal

Notary Public

## AGREEMENT

THIS AGREEMENT, made this \_\_\_\_\_ day of \_\_\_\_\_, by and between CITY OF SAN LUIS hereinafter called "OWNER" (name of Owner), (an Individual) and doing business as (an individual,) or (a partnership,) or \_\_\_\_\_ (a corporation) hereinafter called "CONTRACTOR". WITNESSETH: That for and in consideration of the payments and agreements herein after mentioned:

1. The CONTRACTOR will commence and complete the construction of: **CITY OF SAN LUIS JUAN SANCHEZ BOULEVARD SEWER LIFT STATION PROJECT.**
2. The CONTRACTOR will furnish all of the materials, supplies, tools, equipment, labor, and other services necessary for the construction and completion of the **PROJECT** described herein.
3. The CONTRACTOR will commence the work required by the CONTRACT DOCUMENTS upon the date specified in the NOTICE TO PROCEED and will complete the same within **180** calendardays unless the period for completion is extended otherwise by the CONTRACT DOCUMENTS.
4. The CONTRACTOR agrees to perform all of the WORK described in the CONTRACT DOCUMENTS and comply with the terms therein for the sum of \$ \_\_\_\_\_ or as shown in the BID schedule.
5. The term "CONTRACT DOCUMENTS" MEANS and includes the following:
  - A. Advertisement For Bids
  - B. Information For Bidders
  - C. Bid
  - D. Bid Bond
  - E. Agreement
  - F. Supplemental General Conditions
  - G. Payment Bond
  - H. Performance Bond
  - I. Notice of Award
  - J. Notice to Proceed
  - K. Change Orders
  - L. Non-Collusion Affidavit
  - M. Special Conditions prepared by: **Dahl Robins & Associates, Inc.**
  - N. Project Drawings prepared by: **Dahl Robins & Associates, Inc.**
  - O. Specifications- Public Works Standards for Yuma County Volume I & II (latest edition)

### ADDENDA

NO. \_\_\_\_\_ DATED \_\_\_\_\_, 20\_\_\_\_\_

NO. \_\_\_\_\_ DATED \_\_\_\_\_, 20\_\_\_\_\_

NO. \_\_\_\_\_ DATED \_\_\_\_\_, 20\_\_\_\_\_

NO. \_\_\_\_\_ DATED \_\_\_\_\_, 20\_\_\_\_\_

6. The OWNER will pay to the CONTRACTOR in the manner and at such times as set forth in the General Conditions such amounts as required by the CONTRACT DOCUMENTS.
7. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns. IN WITNESS WHEREOF, the parties hereto have executed or caused to be executed by their duly authorized official, this Agreement in Two (2) copies each of which shall be deemed an original on the date first above written.

**OWNER:**  
City of San Luis

**CONTRACTOR:**

**BY** \_\_\_\_\_

**BY** \_\_\_\_\_

**NAME** \_\_\_\_\_  
(Please Type)

**NAME** \_\_\_\_\_  
(Please Type)

**TITLE** \_\_\_\_\_

**TITLE** \_\_\_\_\_

(SEAL)

(SEAL)

**ATTEST:**

**ATTEST:**

\_\_\_\_\_

\_\_\_\_\_

**NAME** \_\_\_\_\_  
(Please Type)

**NAME** \_\_\_\_\_  
(Please Type)

**TITLE** \_\_\_\_\_

**TITLE** \_\_\_\_\_

**DATE** \_\_\_\_\_

**DATE** \_\_\_\_\_

**PERFORMANCE BOND**

KNOW ALL PERSONS BY THESE PRESENTS: that

\_\_\_\_\_

(Name of Contractor)

\_\_\_\_\_

(Address of Contractor)

a \_\_\_\_\_, hereinafter called Principal, and  
(Corporation, Partnership, or Individual)

\_\_\_\_\_

(Name of Surety)

\_\_\_\_\_

(Address of Surety)

Hereinafter called Surety, are held and firmly bound unto

\_\_\_\_\_

(Name of Owner)

\_\_\_\_\_

(Address of Owner)

Hereinafter called OWNER in the total aggregate penal sum of \_\_\_\_\_  
\_\_\_\_\_ Dollars

in lawful money of the United States, for the payment of which sum will and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_, a copy of which is hereto attached and made a part hereof for the construction of:

\_\_\_\_\_

\_\_\_\_\_

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the OWNER with or without notice to the SURETY and during the one year guaranty period and if the PRINCIPAL shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said SURETY, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed there under or the SPECIFICATIONS accompanying same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change. Extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that it is expressly agreed that the BOND shall be deemed amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract not increasing the contract price more than 20 percent, so as to bind. The PRINCIPAL and the SURETY to the full and faithful performance of the CONTRACT as so amended. The term "Amendment", wherever used in this BOND, and whether referring to this BOND, the Contract or the Loan Documents shall include any alteration, addition, extension, or modification of any character whatsoever.

PROVIDED, FURTHER, that no final settlement between the OWNER and the PRINCIPAL shall abridge the right of the other beneficiary hereunder, whose claim may be unsatisfied. The OWNER is the only beneficiaries hereunder.

IN WITNESS WHEREOF, this instrument is executed in \_\_\_\_\_

Counterparts, each one of which shall be deemed an original, this the \_\_\_\_\_ day of \_\_\_\_\_

ATTEST:

\_\_\_\_\_

Principal

\_\_\_\_\_

(Principal) Secretary

(SEAL)

By \_\_\_\_\_(s)  
Witness as to Principal  
Address:

Surety  
ATTEST:

\_\_\_\_\_ BY \_\_\_\_\_  
Witness to Surety Attorney – in – Fact  
Address:

NOTE: Date of BOND must not be prior to date of Contract.

If CONTRACTOR is partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the Project is located.

**\*\*\*END OF SECTION\*\*\***

**ARIZONA STATUTORY PAYMENT BOND**  
**PURSUANT TO TITLES 28,34 AND 41, ARIZONA REVISED STATUTES**  
(Penalty of this bond must be 100% of the Contract amount)

KNOW ALL MEN BY THESE PRESENTS THAT: \_\_\_\_\_  
\_\_\_\_\_ (hereinafter "Principal), as Principal,  
and \_\_\_\_\_ (hereinafter "Surety"), a corporation organized and  
existing under the laws of the State of \_\_\_\_\_, with its principal offices in the City of  
\_\_\_\_\_, holding a certificate of authority to transact surety business in  
Arizona issued by the Director of the Department of Insurance pursuant to Title 20, Chapter 2, Article 1,  
as Surety, are held and firmly bound unto \_\_\_\_\_  
\_\_\_\_\_ (hereinafter "Obligee") in the  
amount of \_\_\_\_\_ (Dollars)(\$ \_\_\_\_\_),  
for the payment whereof, 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 \_\_\_\_\_, to 20 \_\_\_\_\_

\_\_\_\_\_ which contract is hereby referred to and made a part of hereof as fully and to the same extent as if copied  
at length herein.

NOW, THEREFORE, THE CONDITION OF THE OBLIGATION IS SUCH, that is the Principal promptly pays all monies due to all persons supplying labor or materials to the Principal of the Principal's subcontractors in the prosecution of the work provided for 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 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

---

AGENCY OF RECORD

---

BY

---

AGENCY OF RECORD

---

SURETY SEAL

---

BY

**\*\*\*END OF SECTION\*\*\***

**CONTRACTOR'S AFFIDAVIT  
REGARDING  
SETTLEMENT OF CLAIMS**

**CITY OF SAN LUIS, ARIZONA**

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

Project: JUAN SANCHEZ BOULEVARD SEWER LIFT STATION PROJECT

To the City of San Luis, Arizona

This is to certify that all lawful claims for materials, rental of equipment and labor used in construction of the above project, whether by subcontractor or claimant in person, have been duly discharged.

The undersigned, for the consideration of \$ \_\_\_\_\_, as set out in the final pay estimate, as full and complete payment under the terms of the contract, hereby waives and relinquishes any and all further claims or right of lien under, in connection with, or as a result of the above-described project. The undersigned further agrees to indemnify and save harmless the City of San Luis, State of Arizona against any and all liens, claims of liens, suits, actions, damages, charges and expenses whatsoever which said City may suffer arising out of the failure of the undersigned to pay of all labor, performance and materials furnished for the performance of said installation.

Signed and dated at , this \_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

Contractor  
BY:

STATE OF ARIZONA        )  
  ) ss  
County of Yuma            )

The foregoing instrument was subscribed and sworn to before me this \_\_\_ day of \_\_\_\_\_, 20\_\_.

Notary Public

My Commission Expires:

## **SPECIAL CONDITIONS**

### **JUAN SANCHEZ BLVD LIFT STATION**

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## **SPECIAL CONDITIONS**

### **1. PROJECT AND WORK DESCRIPTION/SCOPE**

The project is located along Juan Sanchez Blvd. from the new lift station located approximately 100 feet west of 6<sup>th</sup> Drive to Avenue F, and from Avenue F south 1,400 linear feet.

The work includes: Removal of the existing pavement and placement of new asphalt concrete pavement, installation of a new diversion manhole and 18" sewer main to supply the new lift station, installation of new 14" sewer force main with force main pressure cleanouts, sewage air release valve discharge manhole, new lift station, and enclosure, including all associated appurtenances, along with project traffic control, storm water pollution prevention measures; and other miscellaneous construction.

### **2. PURPOSE**

The purpose of this section of the specifications is to change, supplement and/or delete those portions of the General Specifications and Standard Specifications that do not meet the specific requirements of this project

Each bidder is advised to review this document and be completely familiar with the special conditions that apply on this project.

### **3. CONSTRUCTION COMPLIANCE DOCUMENTS**

The Project shall be constructed in accordance with the following documents:

1. Special Conditions
2. Project Plans
3. Yuma County C-3/4 Asphaltic Concrete – Current
4. Yuma County Standard Construction Specifications – Current
5. City of Yuma Construction Standard Detail Drawings - Current

### **4. CONTRACT REQUIREMENTS**

- a. All construction activities shall conform to City of San Luis and City of Yuma Standard Specifications and Construction Standards unless otherwise shown on plans and shall be in compliance with the Arizona Department of Environmental Quality regulations.
- b. In all cases where ASTM, AASHTO, AWWA, ANSI, ACI, MUTCD, FEMA, OSHA, Federal or Arizona Specifications are referred to, the latest revisions shall prevail, unless otherwise noted.
- c. Authority of the Engineer to Advise the Contractor and to stop work—in the event that the Contractor appears neglectful in carrying out any of the requirements of this article, the Engineer may call the Contractor's attention to the matter either verbally or in writing. The Contractor shall immediately rectify the situation. It is the Contractor's sole responsibility to conduct his/her operations in a safe manner and with minimum of inconvenience to the public. Failure of the Engineer to point out such condition shall not relieve the Contractor of this responsibility.
- d. Any items of work called out by the Contract Plans, Specifications, or these Special Conditions and not specifically noted as a Bid Item in the Contract

Proposal shall be considered incidental to and a part of said Bid Items and no additional payment shall be granted for such.

For Example:

Abandoning the existing water asbestos concrete (AC) pipe-in-place and plugging with concrete is an incidental cost to be included in the cost of said Bid Items and no additional payment shall be granted for such.

Existing water valves abandoned in place with/riser filled with lean concrete is an incidental cost to be included in the cost of said Bid Items and no additional payment shall be granted for such.

- e. The Contractor shall guarantee all Work performed under this contract for a period of one (1) year commencing from the date established by the Notice of Project Completion. Any and all defects in workmanship and/or materials shall be replaced at the expense of the Contractor. Contractor shall fully abide by the requirements as set forth in all documents that make up this Contract.

## 5. NOTIFICATION REQUIREMENTS

- a. Contractor shall notify the Engineer immediately of any conditions requiring change to the plans.
- b. It shall be the Contractor's responsibility to keep the Yuma County Sheriff's Department, Rural Metro Fire Department, the City of San Luis Police Department, City of San Luis Fire Department, Arizona Department of Public Safety, and the School Districts, including the transportation authorities, informed of all restrictions to traffic flow due to construction operations.
- c. It shall be the responsibility of the Contractor to notify all local schools in the vicinity of the project limits prior to a change in traffic flow conditions. Prior to any and all changes to the traffic control, the Contractor shall directly coordinate with the proper representative of each school 48 hours (2 school days) in advance, to allow the schools to re-route bus services to and from school.
- d. The Contractor will distribute written Construction Notice Flyers of all construction activities and phases of the project to all residences and businesses, on Juan Sanchez Blvd. between 6<sup>th</sup> Avenue and Avenue F and from Avenue F south 1,400 linear feet at least 7 days in advance of the construction work. The Contractor will furnish a copy of the Construction Notice Flyer to the Engineer, for approval, at least 14 days prior to issuance of the first notice.
- e. The Construction Notice Flyer shall include the Project name, a brief description of the work to be performed, the name of the Contractor, the name(s) and phone number(s) of the person(s) that will be the Contractor's contact, duration of the work in the immediate area, and a 24 hour, 7 days per week, phone number or numbers for the public to contact the Contractor with inquiries. The Construction Notice Flyer shall be in both English and Spanish.

- f. The Contractor shall notify the City of San Luis Water Division Supervisor, Antonio Sandoval (928) 941-1537 at least 48 hours prior to any force main filling, flushing or testing activities. Sewer line and force main filling/flushing activities shall be conducted in the presence of the Engineer.
- g. The City of San Luis's Utility Department personnel shall conduct the operation of existing City of San Luis water valves for activities related to this project. The Contractor shall coordinate sewer main tie-ins or sewer outages for force main and lift station installation with the City of San Luis Wastewater Division Supervisor, Gilbert Torres (928) 920-0589. Such work shall be scheduled for Tuesday through Thursday, excluding holidays, of any workweek unless otherwise approved by the Engineer. A minimum of 48 hours (two working days) advanced notice of such activities is required. The contractor shall verify existing pipe location, depth, material and outside diameter prior to scheduling connections. Additionally, the Engineer may require a coordination meeting prior to major activities to insure minimal disruption to City customers. All costs for connecting to existing sewer lines and testing of new sewer lines and force main shall be considered incidental to pipe installation and shall be incorporated into the appropriate line item costs.
- h. It shall be the Contractor's responsibility to notify the City of San Luis's Fire Department when a fire hydrant is taken out of or returned to service. The Contractor shall obtain an "Out of Service" ring from the Engineer and install said ring on each inoperable hydrant, until that hydrant is returned to service or removed from the project at which time the Contractor shall advise the City of San Luis Fire Department that the hydrant is back in service or has been removed.
- i. Prior to the Notice to Proceed; the Contractor shall provide **ALL** required documents listed in the contract documents to the Engineer. Construction shall **NOT** commence until all required documents are submitted and approved by the Engineer. In the event the Contractor fails to commence construction due to lacking all required documents listed in contract documents, **no** additional contract time shall be granted to the Contractor.
- j. The Contractor shall provide the Engineer with all proposed Project material data sheets and any shop drawings. Any Project material data sheets and any shop drawings supplied by the Contractor that the Engineer deems not to be in conformance with the Specifications shall be rejected.
- k. The Contractor shall have on hand, at the work site, a copy of all required permits or agreements and shall, upon request, furnish the documents to the Engineer for verification. If so requested by the Engineer, the Contractor shall provide clean, neat, and legible copies of all permits obtained by the Contractor.
- l. Prior to Construction, Contractor shall participate in a Pre-Construction Meeting with the Engineer and various City of San Luis department personnel to address any concerns (i.e. local access, water/sewer outages, hours of operation, days of operation, phasing schedule, traffic control, storm water pollution prevention safety, clean up, etc.) prior to the Notice to Proceed.
- m. Prior to Construction, the Contractor shall participate in a neighborhood meeting with the Engineer. This meeting shall include invited members of the general

public. All residents, business owners, school representatives, and religious institution representatives that reside, work, own property, and/or own a business located adjacent and near the project limits are invited to attend the Neighborhood Meeting. The Contractor is required, at the direction of the Engineer to address any project-related concerns/questions presented at the Neighborhood Meeting.

## **6. PUBLIC SAFETY AND CONVENIENCE REQUIREMENTS**

All costs associated with performing the work required as part of the public safety and convenience requirements will be considered incidental to completion of the project and no additional payment shall be granted for such work.

### **1. General Safety Requirements**

The Contractor shall furnish, install and maintain such devices, barricades, fences, railings, signs, lighting, warning lights, personal protection equipment and other devices necessary to ensure the safety of general public, employees of the Contractor, and City personnel on and around or the project limits.

### **2. Public Convenience**

- a. All public vehicle and pedestrian traffic, unless otherwise approved by the Engineer, must be allowed to pass through or around the Contractor's work sites with a minimal inconvenience.
- b. Access to adjacent properties, residences, businesses, parking lots and cross streets must be reasonably maintained during the hours of operation and reestablished at the end of each work day unless otherwise called for in the plans or as approved by the Engineer. Access to businesses shall be maintained at all times. The Contractor may be directed by the Engineer to accommodate access adjustment to address the concerns of or compliance of adjacent residences or businesses.
- c. The Contractor shall not store materials or equipment in locations that will interfere with the safe movement of business access, vehicle, or pedestrian traffic. At the end of each working day or when work is suspended for any reason, the Contractor shall remove all debris, equipment, materials and other obstructions as directed by the Engineer.
- d. At the end of each work day; the Contractor shall backfill any open trenches with either compacted and rolled, ABC or crushed AC millings to provide a drivable surface that is acceptable to the Engineer. Appropriate fencing or barricades shall be in place to secure the end of the section of any exposed pipe and the opened end of the pipe shall be secured and approved by the Engineer.

## **7. CONTRACT DOCUMENTS DISCREPANCIES AND/OR CONFLICTS**

The Special Conditions, Project Plans, Construction Standard Detail Drawings, Standard Construction Specifications, and Addenda are all essential parts of the Contract, and the requirements occurring within one document are as binding as though occurring in all. These requirements are intended to be complimentary and to describe and provide for all the work required on the Project. In case of discrepancy, the documents will govern in the following order of importance:

- a. Addenda
- b. Special Conditions
- c. Project Plans
- d. Construction Standard Detail Drawings
- e. Standard Construction Specifications

## **8. APPLICABLE STANDARD SPECIFICATIONS AND DETAIL DRAWINGS**

The Contractor shall be familiar with the current Yuma County and City of Yuma (Water and Sewer) Standard Construction Specifications and with the current Construction Standard Detail Drawings.

The Standard Construction Specifications and Construction Standard Detail Drawings that are applicable to the construction of the project have been listed in the Plans and Special Conditions and are to be adhered to by the Contractor in accomplishing the respective work.

In the event that the reference to any Specification(s) and/or Detail Drawing(s) that apply to the construction of the Project has been inadvertently omitted, the Contractor is advised that the associated work shall still be accomplished in accordance with the applicable City of Yuma Specification or detail drawing.

## **9. DAVIS-BACON WAGES**

This job is funded wholly by City funds. Therefore, Davis-Bacon Wages and MBE/DBE participation requirements **WILL NOT** be in effect for the construction of this Project.

## **10. DISCOVERY CLAUSE**

In the event that previously unreported cultural resources are encountered during ground disturbing activities, all work must immediately cease within 30 meters (100 feet) until the ASLD archaeologist and BLM Yuma Field Office archaeologist have documented the discovery and evaluated its eligibility for the Arizona and National Register of Historic Places. Work must not resume in this area without approval of the ASLD and BLM.

If human remains are encountered during ground-disturbing activities, all work must immediately cease within 30 meters (100 feet) of the discovery. The ASLD, Arizona State Museum burial coordinator, BLM Yuma Field Office archaeologist, and State Historic Preservation Office must be notified of the discovery within 24 hours (following ASM and/or agency protocol). All discoveries will be treated in accordance with NAGPRA (Public Law 101-601; 25 U.S.C. 3001-3013) or Arizona burial laws (A.R.S. § 41-844 and A.R.S. § 41-865), as appropriate, and work must not resume in this area without proper authorization.

## **11. FLAT-TAILED HORNED LIZARD MITIGATION REQUIERMENTS**

Flat-Tailed Horned Lizard Mitigation Measures: During the earlier EAs and ROWs, the following mitigation measures were agreed upon. City of San Luis will implement these measures:

### Flat-tailed Horned Lizard Mitigation Measures

1. A worker education program shall be developed and implemented. Wallet-cards summarizing this information shall be provided to all construction and maintenance personnel. The education program shall include the following aspects at a minimum:
  - Biology and status of the flat-tailed horned lizard.
  - Protection measures designed to reduce potential impacts to the species.
  - Function of flagging designating authorized work areas.
  - Reporting procedures to be used if a flat-tailed horned lizard is encountered in the field.
  - Importance of exercising care when commuting to and from the project area to reduce mortality of flat-tailed horned lizards on roads.
2. Prior to project initiation, an individual shall be designated as a field contact representative (FCR). The FCR shall have the authority to ensure compliance with protective measures for the flat-tailed horned lizard and will be the primary agency contact dealing with these measures. The FCR shall have the authority and responsibility to halt activities that are in violation of these terms and conditions.
3. All project work areas shall be clearly flagged or similarly marked at the outer boundaries to define the limit of work activities. All construction and restoration workers shall restrict their activities and vehicles to areas which have been flagged to eliminate adverse impacts to the flat-tailed horned lizard and its habitat. All workers shall be instructed that their activities are restricted to flagged and cleared areas.
4. A biological monitor shall be present in each area of active construction throughout the work day from initial clearing through habitat restoration, except where the project is completely fenced and cleared of horned lizards by a biologist.
5. The biological monitors shall have sufficient education and field experience or training with the flat-tailed horned lizard to understand its biology and behavior. The monitor(s) shall perform the following functions:
  - Ensure that all project-related activities are in compliance with these measures. The biological monitor shall have the authority and responsibility to halt activities that are in violation of these terms and conditions.
  - Examine construction areas periodically (at least hourly when surface temperatures exceed 30° C) for the presence of flat-tailed horned lizards. In addition, all hazardous sites (e.g., open pipeline trenches, holes, or other deep excavations) shall be inspected for the presence of flat-tailed horned lizards prior to backfilling.
  - Work with the construction supervisor to take steps, as necessary, to avoid disturbance to flat-tailed horned lizards and their habitat. If avoiding disturbance to a flat-tailed horned lizard is not possible or if a flat-tailed horned lizard is found trapped in an excavation, the affected lizard shall be captured by hand and relocated.
6. Only persons authorized by the California Department of Fish and Game [California] or the Arizona Game and Fish Department [Arizona] shall be permitted to handle flat-tailed horned lizards.

RECEIVED YUMA, ARIZONA  
2008 SEP 25 AM 8:10  
LM-YUMA FIELD OFFICE

EXHIBIT A  
August 2003

7. Relocated flat-tailed horned lizards shall be placed in the shade of a large shrub a short distance from the construction zone and in the direction of undisturbed habitat. If surface temperatures in the sun are less than 30° C or exceed 50° C, the biologist or FCR, if authorized to handle, shall hold the flat-tailed horned lizard for later release. Initially, captured flat-tailed horned lizards shall be held in a cloth bag, cooler, or other appropriate clean, dry container from which the lizard cannot escape. Lizards shall be held at temperatures between 25 and 35° C and shall not be exposed to direct sunlight. Release shall occur as soon as possible after capture and during daylight hours when surface temperatures range from 32 to 40° C. If such conditions do not occur within 48 hours of capture, the lizard shall be transferred to a terrarium containing at least 2 inches of sand from the project area. The terrarium shall be maintained at 10 to 20° C until conditions at the site are appropriate for release. Lizards shall be allowed to acclimate to higher surface temperatures prior to release. The biologist shall be allowed some judgement and discretion to ensure that survival of flat-tailed horned lizards found in the project area is likely.
8. Within flat-tailed horned lizard habitat, the area of disturbance of vegetation and soils shall be the minimum required for the project. [If possible, specify a maximum disturbance allowable based on the specifics of the project.] Clearing of vegetation and grading shall be minimized. Wherever possible, rather than clearing vegetation and grading the right-of-way, equipment and vehicles shall use existing surfaces or previously disturbed areas. Where grading is necessary, surface soils shall be stockpiled and replaced following construction to facilitate habitat restoration. To the extent possible, disturbance of shrubs and surface soils due to stockpiling shall be minimized.
9. Existing roads shall be used for travel and equipment storage whenever possible.
10. Where feasible and desirable, in the judgement of the lead agency, newly created access routes shall be restricted by constructing barricades, erecting fences with locked gates at road intersections, and/or by posting signs. In these cases, maintenance of access control structures and facilities shall be maintained by the project proponent for the life of the project and until habitat restoration is completed, including monitoring.
11. In accordance with the *Flat-tailed Horned Lizard Rangewide Management Strategy* (RMS) (2003 Version) the City will contribute \$4,246.81 into the conservation fund for the flat-tailed horned lizard ( $\$286 \text{ p/acre of impact} \times 14.849 = \$4,246.81$ ). As outlined in the interagency RMS, monies in the conservation fund will be used for conservation measures (e.g., habitat acquisition or restoration) to benefit the FTHL and ensure its long-term viability.

These mitigation measures implement the mitigation measures and concerns as specified in the 2003 FTHL Management Strategy, as reproduced below:

## Mitigation

In accordance with Planning Action 2.1.1, the following mitigation measures shall be incorporated into all projects where applicable based on the Project Evaluation Protocol in Appendix 6. The measures are to be modified to conform to the nature of the project.

1. To the extent possible, surface-disturbing projects shall be located outside of FTHL MAS and the RA, and shall be timed to minimize mortality. If a project must be located within a MA or RA, effort shall be made to locate the project in a previously disturbed area or in an area where habitat quality is poor. A survey of the project site shall be conducted prior to construction in order to assist in locating the project.
2. Prior to project initiation, an individual shall be designated as a field contact representative. The field contact representative shall have the authority to ensure compliance with protective measures for the FTHL and will be the primary agency contact dealing with these measures. The field contact representative shall have the authority and responsibility to halt activities that are in violation of these terms and conditions.
3. All project work areas shall be clearly flagged or similarly marked at the outer boundaries to define the limit of work activities. All construction and restoration workers shall restrict their activities and vehicles to areas that have been flagged to eliminate adverse impacts to the FTHL and its habitat. All workers shall be instructed that their activities are restricted to flagged and cleared areas.
4. Within FTHL habitat, the area of disturbance of vegetation and soils shall be the minimum required for the project. [If possible, specify a maximum disturbance allowable based on the specifics of the project.] Clearing of vegetation and grading shall be minimized. Wherever possible, rather than clearing vegetation and grading the ROW, equipment and vehicles shall use existing surfaces or previously disturbed areas. Where grading is necessary, surface soils shall be stockpiled and replaced following construction to facilitate habitat restoration. To the extent possible, disturbance of shrubs and surface soils due to stockpiling shall be minimized.
5. Existing roads shall be used for travel and equipment storage whenever possible.
6. Where feasible and desirable, in the judgment of the lead agency, newly created access routes shall be restricted by constructing barricades, erecting fences with locked gates at road intersections, and/or by posting signs. In these cases, the project proponent shall maintain, including monitoring, all control structures and facilities for the life of the project and until habitat restoration is completed.
7. A biological monitor shall be present in each area of active surface disturbance throughout the work day from initial clearing through habitat restoration, except where the project is completely fenced and cleared of FTHLS by a biologist (see Measure 8). The biological monitors shall meet the requirements set in Appendix 6. The monitor(s) shall perform the following functions:
  - a) Develop and implement a worker education program. Wallet-cards summarizing this information shall be provided to all construction and maintenance personnel. The education program shall include the following aspects at a minimum:

- biology and status of the FTHL,
  - protection measures designed to reduce potential impacts to the species,
  - function of flagging designating authorized work areas,
  - reporting procedures to be used if a FTHL is encountered in the field, and
  - importance of exercising care when commuting to and from the project area to reduce mortality of FTHLS on roads.
- b) Ensure that all project-related activities comply with these measures. The biological monitor shall have the authority and responsibility to halt activities that are in violation of these terms and conditions.
- c) Examine areas of active surface disturbance periodically (at least hourly when surface temperatures exceed 85°F) for the presence of FTHLS. In addition, all hazardous sites (e.g., open pipeline trenches, holes, or other deep excavations) shall be inspected for the presence of FTHLS prior to backfilling.
- d) Work with the project supervisor to take steps, as necessary, to avoid disturbance to FTHLS and their habitat. If avoiding disturbance to a FTHL is not possible or if a FTHL is found trapped in an excavation, the affected lizard shall be captured by hand and relocated.
8. Sites of permanent or long-term (greater than one year) projects in MAS where continuing activities are planned and where FTHL mortality could occur, may be enclosed with FTHL barrier fencing to prevent lizards from wandering onto the project site where they may be subject to collection, death, or injury. Barrier fencing should be in accordance with the standards outlined in Appendix 7. After clearing the area of FTHLS (also see Appendix 7), no on-site monitor is required (see Measure 7).
9. The project proponent shall develop a project-specific habitat restoration plan under approval by the lead agency. The plan shall consider and include as appropriate the following methods: replacement of topsoil, seedbed preparation, fertilization, seeding of species native to the project area, noxious weed control, and additional erosion control (see Habitat Rehabilitation, p. 67). Generally, the restoration objective shall be to return the disturbed area to a condition that will perpetuate previous land use. The project proponent shall conduct periodic inspection of the restored area. Restoration shall include eliminating any hazards to FTHLS created by construction, such as holes and trenches in which lizards might become entrapped. Disturbance of existing perennial shrubs during restoration shall be minimized, even if such shrubs have been crushed by construction activities.
10. Construction of new paved roads shall include a lizard barrier fence on each side of the road that is exposed to occupied FTHL habitat. Exceptions may occur in accordance with the following evaluation, to be applied separately to each side of the road. This prescription may also be applied to canals or other fragmenting projects.

*Side is made nonviable for FTHLS even if connected to the other side:*

- Compensate for the entirety of the fragmented parcel.

*Side is viable only if connected to the other side:*

- Compensate for the entirety of the fragmented parcel, or

- Provide fencing and effective culverts or underpasses that will maintain connectivity.

*Side is viable even if not connected to the other side:*

- Provide fencing (no culverts).

Specifications for barrier fences are provided in Appendix 7. The FTHL ICC will make the determination of FTHL population viability based on the size, configuration, and habitat condition of the isolated parcel, threats from adjacent lands, and existing scientific evidence of edge effects on FTHL. Culvert design will be provided by the FTHL ICC.

The Flat-tailed Horned Lizard Fence and Monitoring Requirements details are as follow:

The fence shall be placed with only rubber-tired equipment such as tractors, compressors, trailers, pickups, and flatbed trucks shall be used. The intent is to reduce the disruption of surface areas and prevent the disturbance of subsoil's. The temporary barrier fence will be constructed by installing 2"x4"x5 feet wood fence post, buried 6" deep, providing a 30" above the surface. Barrier fence shall be securely attached with staples or wire rings to attach fabric to wire. Barrier fence will include 2"x2" GA Wire fabric (36" in height) with a silt fence material providing a secure barrier for FTHL. The temporary barrier fence shall be constructed along the entire perimeter of the project. The temporary fence will include the installation of 1,500 linear feet of fencing and rotating 500 linear feet of fencing thereby allowing 1,000 linear feet to always be in place during the entire construction of the project. All specifications shall be in accordance with the FTHL mitigation measures included in Appendix 7 of the FTHL Range wide Management Strategy.

Only parties holding a valid Arizona Game and Fish Department (AGFD) Scientific Collecting Permit shall handle and relocate FTHL. A plan shall be submitted to Arizona Game and Fish Department to include a schedule of the work, as well as names, training and experience of the proposed monitors. The plan will include a copy of each monitor's AGFD Scientific Collecting Permit Administrator. Biological monitors will follow the FTHL mitigations measures included in the FTHL Range Wide Management Strategy to include biological monitor's responsibilities, environmental training of personnel, handling and reporting on FTHL during construction operations. All surveys will be conducted from April through September when air temperatures are between 25 and 37 °C (75 and 100°F). A qualified biological monitor will be present during construction activities to oversee the adherence to, and the implementation of, conservation requirements for the FTHL. Biological monitors will have the authority to oversee compliance with protective measures for the FTHL and shall be the primary contact for matters associated with these measures. Biological monitors shall be present to oversee surface-disturbing activities, including the construction, removal of the FTHL fence, and areas the fence was remove from. During construction of the FTHL barrier fence, a monitor shall be present at each site where fence is being installed and removed as temporary barrier. The monitors shall be present in the work area and will remain with the fence crew while the fence construction is active. Once an area has been cleared of FTHL and the fencing is rotated, the contractor shall restrict any ground disturbing activities, including staging, equipment storage, parking, and other activities, to areas which FTHLs have been excluded. If any area of the FTHL habitat that is located outside the right-of-way is disturbed, the contractor shall prepare a habitat restoration plan for the AGFD approval.

The FTHL Management Strategy also calls for compensation to be paid under certain circumstances. The City of San Luis has already made compensation for a portion of this route, as a part of the earlier permitting process, as a mitigation measure. If additional compensation

is owed, the City of San Luis shall pay that additional compensation as calculated according to the specifications in the FTHL Management Strategy.

**Biological Monitors:**

The contractor shall provide biological monitors who are experienced and capable of conducting FTHL field monitoring and migratory bird nest searches. Biological monitors shall have sufficient education and field experience to understand FTHL biology and behavior and to be able to identify FTHL tracks and scat. Only parties holding a valid Arizona Game and Fish Department (AGFD) Scientific Collecting Permit shall handle and relocate FTHL. The contractor shall submit the names and qualifications of biological monitors to the Engineer for approval.

Parties interested in finding holders of AGFD permits to survey for a particular species may contact the AGFD Scientific Collecting Permit Administrator as follows:

email: [Scpermits@azgfd.gov](mailto:Scpermits@azgfd.gov)  
phone: 602-789-3625  
fax: 602-789-3939

A minimum of 15 working days before the start of the FTHL work, the contractor shall submit a plan for the clearing and monitoring of the FTHL. The plan shall include a schedule of the work, as well as the names, training and experience of the proposed monitors. Included in the plan shall be a copy of each monitor's AGFD Scientific Collecting Permit and the present status. Work shall not begin prior to receipt of the Engineer's approval of the plan.

Measurement and Payment. All Flat-Tailed Horned Lizard Mitigation Requirements including Biological Monitors will be measured as a lump sum unit and will be paid for at the lump sum contract price. Partial payments shall be based on the progress of the work, as approved by the Engineer.

**12. BID FORM CONTINGENCY ITEM**

The Contingency amount, constituting 5% of the amount bid by the Contractor and contained in the project contract document, and is to be considered as an 'Owners Contingence" to be used to cover only the cost of item overruns or additional extra work that may be required during construction of the project. The Contingency Funds will be used as directed and approved by the Engineer. Any Contingency Funds remaining at the end of the project will be deleted from the Contract as part of the Final Change Order.

**13. PROJECT PHASING**

Construction shall be phased. Contractor shall submit a Phasing Plan and Schedule to the Engineer, for approval. Construction shall not commence until the Phasing Plan and Schedule are approved by the Engineer. The following is required, but not limited, to be implemented in the Phasing Plan and Schedule prior to approval:

1. Underground Utility Work:
  - a. The Contractor will only be allowed to have a maximum of two (2) blocks or 1,300 feet under construction at a given time which will include all underground utility work and street reconstruction work. If the Contractor elects to trench

through existing pavement to complete the underground utility work prior to removal of all asphaltic pavement then the Contractor will be required to place cold-mix Asphalt in all trenches left open to traffic within 48 hours of completing the utility installation.

- b. The Contractor will be required at the end of each day to provide access to the residences and business within the active construction zone as stated in Section 6 of the Special Conditions.
  - c. The Contractor will be required to place the specified Base Course on the street after the utility installation work has been completed.
  - d. The Contractor shall be required to place the specified 2.5" Asphaltic Concrete Pavement (Single Course) on each block section prior to commencing any construction activities on the next section.
  - e. The contractor will be required to supply a minimum of 6 "business open/access" signs to advice of businesses that can be accessed through the soft closure traffic control sites. Each sign shall be a minimum of 10 square feet in size. Specialty signs are considered an incidental cost and no additional payment shall be granted for such.
  - f. If the rate of progress is not sufficient, at the Engineer's sole discretion, the maximum limits as stated above may be reduced until the Contractor can adequately provide the necessary labor, material and equipment to effectively complete the work in a timely manner.
2. Contractor shall coordinate with adjacent schools and Engineer for all work conducted that may impact the designated bus route.
  3. Contractor shall coordinate with religious institutions and Engineer for all work conducted within a 1-block radius of religious institution during worship/mass times.
  4. The Contractor shall maintain reasonable access to all residences, parking lots and businesses.
  5. All Construction/Work activities implemented in each phase shall be clearly identified.
  6. **Night Work shall not be allowed.**
  7. Weekend Work shall require approval by the Engineer.
  8. Hard Road Closures of short duration along any portion of the Project shall require an approved Traffic Control Plan and approval by the Engineer.
  9. **If any phase of construction indicated Phasing Plan and Schedule requires a change to the Traffic Control Plans included the contract document, a specific Traffic Control Plan for each Phase of Construction shall require an approval by the Engineer. All Traffic Control Plans to be submitted to the Engineer no less than seven (7) calendar days prior to Construction.** Any changes in Traffic Control Plans as part of the Phasing Plan

and Schedule are considered incidental and no additional payment shall be granted for such.

10. All Work performed during Construction shall conform to the approved Phasing Plan and Schedule.

11. Contractor shall, at all times, have a copy of the approved Phasing Plan and Schedule on site.

12. Contractor shall place cold mix along intersections or ending streets to provide transitions from the new work to the existing street surface to reduce the impacts to vehicles.

#### **14. PRECONSTRUCTION, PROGRESS AND PUBLIC INFORMATION MEETINGS, POST CONSTRUCTION**

The Contractor shall attend a preconstruction meeting on a date to be established by the Engineer. The preconstruction meeting will be held at the City of San Luis Public Works complex.

At the time of the preconstruction meeting, the Contractor shall identify to the Engineer, in writing, those personnel authorized to execute Change Orders and/or field generated Extra Work Orders, on behalf of the Contractor. The document furnished by the Contractor to the Engineer shall be executed by an officer of the corporation or other duly authorized individuals in the case of a non-corporate entity and shall identify the position, authority and name of the individuals in the case of a non-corporate entity and shall identify the position, authority and name of the person. The document shall be notarized.

Weekly Progress Meeting will be held during the life of the project. The Contractor will be required to provide a one to two week look-ahead schedule at each meeting and resolve any issues from the prior week.

The Contractor shall attend a Post-Construction meeting no later than 30 days after the final project walk through meeting as scheduled by the Engineer.

The Contractor, at the Post-Construction meeting, shall submit:

1. Copy of the Notice of Termination (NOT) form filed with ADEQ,
2. Consent of Surety.
3. Contractor's Affidavit Regarding Settlement of Claims.

All costs associated with the various meetings shall be considered incidental to completion of the project, and no additional payment shall be granted for such.

#### **15. QUESTIONS AND CLARIFICATIONS**

During this project's bidding phase, all questions concerning these Plans, Specifications, Proposal and Contract Documents are to be addressed in writing to Dahl, Robins & Associates, Inc., Attn: Christopher D. Robins, P.E. 1560 S. 5th Avenue Yuma, Arizona 85364 or at facsimile (FAX) (928) 819-0826 (voice) (928) 819-0825 or email to Christopher D. Robins, P.E. at [crobins@dahlrobins.com](mailto:crobins@dahlrobins.com).

As questions submitted require adequate time for response preparation, Bidders are asked to forward all questions to Dahl, Robins & Associates at least 72 hours prior to the date and time set forth for the opening of bids. The City cannot and will not guarantee that questions advanced within 72 hours of bid opening can or will be addressed. Only Christopher D. Robins, P.E., Dahl, Robins & Associates, Inc., shall respond to submitted questions.

Should any potential Bidder seek and receive information from any other source other than that specified above, any and all information from that source is hereby declared to be invalid in advance of the fact and any and all such information utilized is entirely at the risk of the Bidder.

## **16. CONSTRUCTION NOTICES**

The Contractor, at least **seven (7) days** prior to starting any construction activities or phases, shall distribute Construction Notice Flyers to all affected residences, businesses and other interested parties in the immediate vicinity of the Project. The Contractor shall furnish a copy of the Construction Notice Flyer to the Engineer for approval 14 day prior to issuance of the first Notice.

The Construction Notice Flyer shall include the project name, a brief description of the work to be performed, the name of the Contractor, the name(s) and phone number(s) of the person(s) that will be the Contractor's contact, duration of the work in the immediate area, and a 24 hour, 7 days per week, phone number or numbers for the public to contact the Contractor with inquiries. The Construction Notice Flyer shall be in both English and Spanish.

The Contractor shall maintain a written log of all public inquiries and concerns, including a brief description of the concern, how the issue was resolved, and the day and time of the resolution. Copies of the written log shall be available for review as requested by the Engineer.

All costs associated with the Construction Notices shall be considered incidental to completion of the Project, and no additional payment shall be granted for such.

## **17. PROJECT INFORMATION SIGNS/WORK ZONE IDENTIFICATION SIGNS**

Project Work Zone Identification Signs shall be placed at each end of the Project prior to starting Construction Operations, and shall be installed. Contractor should provide all required information on Work Zone Identification Signs, including the name and contact phone number of the Contractor.

Measurement and Payment. Project information signs/work zone identification signs will be paid for payment under the "Furnish Install and Maintain Traffic Control" Bid Item.

## **18. STAGING AND STORAGE**

- a. Contractor shall be responsible to locate and gain permission for an appropriate location for all equipment and material for Staging & Storing. Contractor shall not utilize any City of San Luis property or right-of-way for the use of staging & storing of equipment nor material of any type for any duration throughout the project without the authorization of the Engineer.

- b. Contractor shall provide the Engineer with copies of all written authorization(s) for use of private property as staging & storing areas for equipment and/or materials. Written authorization shall include address and parcel number, name(s) and signature(s) of property owner(s), contact and mailing information of property owner(s), description of equipment and/or material to be stored, and dates for which authorization is applicable.

All costs associated with Storage and Staging shall be considered incidental to completion of the Project, and no additional payment shall be granted for such

## **19. STREET CLOSURE**

All street closures are to be described in detail as part of Section 12 PHASING PLAN of the Special Conditions and managed in conformation with the PHASING PLAN as approved by the Engineer. Any changes to Street Closures shall be in conformance with Section 12 as approved by the Engineer.

The Contractor shall re-establish access to adjacent properties at the end of each work day. A flagging operation shall be maintained throughout the work zone during construction.

## **20. ACCESS TO ADJACENT PROPERTY**

The Contractor shall coordinate directly with adjacent property residents or businesses for access to their properties. The Contractor shall maintain at least one access at all times during construction for adjacent properties with two driveways. The Contractor shall provide temporary access to adjacent properties with one driveway and re-establish access at the end of each work day.

## **21. MATERIALS TESTING**

The City, at its own cost, will perform or contract all quality assurance and materials testing activities necessary for the completion of the project. The Contractor shall rework, remove or replace, as directed by the Engineer, any material or work that fails until it passes. The cost associated with any subsequent testing of failed materials or work will be borne by the Contractor.

The Contractor is responsible for all quality control testing. Quality control testing shall be considered incidental to completion of the project, and no additional payment shall be granted for such.

## **22. CONSTRUCTION STAKING BY THE CONTRACTOR**

The Contractor shall provide all construction staking on the project.

The basic reference lines, bench marks and control points from which the Contractor shall establish all points and controls needed to construct the project are identified in the plans.

Construction staking shall consist of performing all Construction Staking essential for the control and completion of the Project, in accordance with the specifications and in conformity

with the lines, grades, and details shown on the plans or as established by the Engineer. The Contractor shall establish and lay out the necessary project control points, and shall perform all staking necessary to properly complete and control the work.

Using the data and information provided in the plans, the Contractor shall verify the accuracy of the plans by checking the vertical and horizontal alignments and the plan details. This verification shall be accomplished prior to starting any construction operations and, as a minimum, shall include the verification of all elevations, grades, stationing, distances, offsets, dimensions and any other information shown on the plans.

Any errors, discrepancies or omissions discovered by the Contractor shall immediately be brought to the attention of the Engineer.

Construction Staking by the Contractor will be measured as a Lump Sum unit and will be paid for at the Lump Sum contract price.

Partial payments for completed Construction Staking by the Contractor will be prorated as a percent of the completed construction staking by the Contractor work, as approved by the Engineer.

### **23. INCIDENTAL ITEMS OF WORK**

Following is a partial list of Incidental Items of Work:

Mobilization shall be considered incidental to the completion of the project and there will be no separate measurement or payment made for this item.

All Sawcutting, sweeping of the roadway prior to placing the Final Painted Pavement Markings, the temporary tabs delineating the driving lanes and placing of the cold mix ramps shall be considered incidental to the completion of the project.

Grading Area Back of Improvement shall include all embankment and excavation necessary to construct the roadway sections and slopes and shall be considered incidental to the completion of the project.

Protection of existing roadway features that are to remain in place shall be considered incidental to the completion of the project.

Any other work item not specifically identified above as incidental, but identified as such in the Plans, Specifications, Detail Drawings, or elsewhere in these Special Conditions shall be considered Incidental to completion of the project and no additional payment shall be granted for such.

### **24. PAYMENT**

Payment for the complete installation of all Project Work, and all additional Work, shall be made under the appropriate items in the Bid schedule and, unless called out separately in Contract Documents, shall include all asphalt pavement removal and disposal, excavation, trench box, shoring, pipe, bracing, elbows, fittings, valves, crosses, reducers, tees, joint restraints, adapters, poly-wrap, fire hydrants and pipe, sewer main and force main, bedding, native and imported backfill, embedment, ABC, pipe cover, asphalt pavement replacement, concrete work, pavement markings, tracer wire, compaction, slurry and backfill, grading, pressure testing, pipe flushing, materials testing, inspections, and other items incidental thereto.

## 25. EXISTING UTILITIES

- a. Extra Depth Excavation. Extra depth of excavation to clear underground facilities or utilities will not be measured separately for payment. These costs shall be included in and incidental to the cost for the specific item installed.
- b. Utility Crossing. All work associated with supporting existing utilities during utility crossings is to be considered incidental to the installation of any new piping and will not be considered for additional payment.
- c. Utility Coordination. The Contractor shall contact and coordinate with all utility agencies which may require the presence of a utility representative on-site during construction activities.
- d. Locations of existing utility lines shown on the plans are approximate. The Contractor must verify the locations in the field and take necessary precautions prior to construction activities in the area. Any damage to a utility shall be repaired at the expense of the Contractor.
- e. It shall be the responsibility of the Contractor to verify the existence and location of all Underground Utilities. Omission from, or the inclusion of utility locations on the plans is not to be considered as the non-existence of, or a definite location of, existing underground utilities. Contractor shall be responsible for properly locating all existing utilities in the work area and identifying all potential conflicts. Contractor shall immediately notify the Engineer of all potential, or otherwise, conflicts with existing utilities.
- f. The Contractor, in all cases and in accordance with State Law, shall contact the BlueStakeCenter at least 2 working days (48 hours) prior to commencing excavation at any point. The Contractor shall maintain records of such contacts with dates, times, and names of contacts and ticket number as applicable. The Contractor shall furnish copies of these to the Engineer upon request.

## 26. POLES AND OVERHEAD UTILITY LINES

- a. Overhead Power lines within the Project Limit are owned/operated by Arizona Public Service Company and the Yuma CountyWater User's Association. The Contractor is responsible to locate all Existing Overhead Utility Poles and Lines that are in, and adjacent to, the Work area. The Contractor is fully responsible for maintaining and protecting all overhead utility poles in-place throughout the duration of Construction. All overhead utility poles required to be stabilized by approved methods shall be considered incidental and shall not be paid for separately. All damages occurring to and from overhead utility poles and lines shall be paid for by the Contractor.
- b. Special Attention by the Contractor is required for all work adjacent to existing overhead utility lines and poles. The Contractor shall protect all overhead utility poles in-place and shall protect all Trenches adjacent to all overhead utility poles. Trenches adjacent to all overhead utility poles shall be properly backfilled and

compacted upon completion of work in the area. The Contractor shall be responsible for maintaining stabilization of all overhead utility poles during and after trenching activities are completed. The Contractor shall maintain safe and legal clearances to all overhead utilities as required by local, State, and Federal Regulation.

- c. Contractor shall pay special attention to work conducted near and around the base of utility pole support anchors. In the event work requires the temporary/permanent removal/replacement of utility pole support anchors, the Contractor shall notify the owner of the utility pole prior to any disturbance of the pole anchor(s) and coordinate work in accordance with all applicable owner, local, state, and federal requirements.

All work associated with poles and overhead utility line shall be considered incidental to completion of the project, and no additional payment shall be granted for such.

## **27. COORDINATION WITH UTILITIES AND OTHER AGENCIES OR ENTITIES**

The Contractor shall contact and coordinate the Construction work with all utility companies, governmental agencies and other entities that have facilities within the project limits or are otherwise affected by the project. The Contractor shall ensure that proper and timely notification is provided in the event that a representative from any utility, Agency or entity is required on site during the construction work.

## **28. OPEN TRENCHES/TRENCH SAFETY**

Trench safety is the Contractor's responsibility and shall be the responsibility of the Contractor's "Competent Person" per 29CFR part 1926.32(f). All excavations shall be made in accordance with OSHA regulations. Trench walls shall be firmly braced in contact with the shoring equipment or shall be sloped, both in accordance with OSHA requirements.

Open trenches are to be properly protected throughout the workday in order to protect workers, pedestrians, vehicles, equipment and materials. Protection includes, but is not limited to, the use of shoring, barricades, cones, flaggers, signs, vehicular-rated steel plates, etc., in accordance with applicable OSHA regulations. Trenches are not allowed to be left unattended or unprotected for any duration of time during the workday.

The Contractor shall submit to the Engineer, the name and credentials of the "Competent Person" in charge of trench safety prior to start of construction. The "Competent Person" shall be onsite during all excavation and pipeline installation activities. The Engineer may stop all work if the "Competent Person" is not onsite.

## **29. TRAFFIC CONTROL PLANS, IMPLEMENTATION AND MAINTENANCE**

### Work Zone Traffic Control.

The Contractor shall protect pedestrian, vehicle and bicycle traffic and workers at all times. The Contractor shall furnish, install and maintain such flaggers, barricades, lights, signs, flashers, signals, fences and other devices for the control of vehicle, bicycle and pedestrian traffic in the work site as are necessary to ensure the safety of and facilitate the convenience

of the public, whether or not they are specifically described in the plans or the Special Conditions.

All traffic control devices and their placement shall conform to the requirements of Part VI of the Manual on Uniform Traffic Control Devices (MUTCD), all ADOT supplements to the MUTCD, Arizona and local codes, and Report 350 of the National Cooperative Highway Research Program

The Traffic Control Plan (TCP) shall be installed in accordance with the details established in the plans. The Contractor may modify the existing TCP or may use entirely different plans if approved by the City Engineer. A new TCP, or any modifications to the existing plans, shall be submitted for review and approval by the City Engineer prior to being implemented.

A new TCP, or any modifications to the existing plans, must be prepared by personnel certified in the area of construction traffic control by the American Traffic Safety Services Association (ATSSA) or by the International Municipal Signal Association (IMSA), and each of the different traffic control situations must be submitted to the City Engineer for review and approval at least seven (7) calendar days prior to implementation.

The final determination as to the acceptable Traffic Control and Detour Plans will be made by the City Engineer, and the Contractor shall take this into consideration in developing the plans and in determining a cost for the work

The Contractor shall notify the Engineer at least 48 hours in advance of implementing each different TCP phase to allow the City sufficient time for public notification. The Contractor shall maintain copies of the current Traffic Control Plan on site and it must be available for review upon request by the Engineer.

The TCP shall be installed and maintained by personnel certified in the area of construction traffic control by either ATSSA or IMSA.

The Contractor, in accordance with the approved TCP, shall furnish, erect, maintain, and replace as necessary, all traffic control devices and materials for the duration of the project.

**The Contractor must inspect all construction traffic control installations used in conjunction with this project at least twice daily to ensure that they conform to the approved Traffic Control Plan and are in good condition. This inspection must take place at the start and end of each workday, and approximately the same times on non-working days and at such additional times as felt such inspections are required. Inspections must be made on all weekdays, Saturdays and Sundays, including all holidays. The Contractor must keep a log of all inspections on site and must present this for the review of City representatives when requested. The Contractor must provide the Engineer the name and telephone number of those persons responsible for these inspections and who are available for emergency after-hours call out.**

The Contractor is further advised that during construction the Engineer may determine that the in-place Traffic Control must be modified or that additional traffic control is required. Any such modifications or additions to the existing traffic control shall be accomplished by the Contractor at no additional cost.

Method of Measurement:

Traffic control plans, implementation and maintenance will be measured by the lump sum unit.

Basis of Payment:

Traffic control plans, implementation and maintenance will be paid for at the lump sum contract price.

The Bid Item shall include all associated work and costs necessary to implement and maintain the TCP in compliance with the plans and in accordance with these Special Conditions.

Payment, as requested by the Contractor for this item, will be effected as follows:

1. 30% of the bid item amount will be paid with the first invoice.
2. 30% of the bid item amount will be paid with the second invoice.
3. 40% of the bid item amount will be paid with the Final Invoice.

### **30. REMOVAL OF STRUCTURES AND OBSTRUCTIONS**

This work shall consist of the removal and satisfactory disposal of all items that require removal for the successful completion of the Project.

Removals shown on the Plans reflect the existing conditions and identify removal work that will be necessary to construct the Project. It is the responsibility of the Contractor to visit the project site and become familiar with all items that will require removal as part of the project.

The removed signs and posts shall be salvaged by the Contractor for use by the City. The materials, unless otherwise directed by the Engineer, shall be hauled to and stored by the Contractor at the Public Works facility.

The Removal of structures & obstructions Items will be measured and paid for under the Items established in the bid form.

### **31. REMOVAL OF EXISTING PAVEMENT**

The removed existing pavement shall become the property of the Contractor, and the Contractor shall remove and dispose of the material in accordance with all applicable local, state and federal rules, regulations and laws.

The removed existing asphalt concrete pavement shall not be used by the Contractor for the production of aggregate base course material that will be used on this project.

Method of Measurement and Basis of Payment. Removal of existing pavement (Any Thickness) will be measured by the square yard and will be paid for at the contract price per square yard.

### **32. SAWCUTTING**

All costs for saw cutting shall be considered incidental to other items and shall be incorporated into the appropriate line item costs.

### **33. MATCH EXISTING CONSTRUCTION**

Where new concrete is to butt against existing concrete, the existing concrete shall be saw cut to a true line with straight vertical edges free from irregularities, unless the new concrete will butt against an existing, clean joint.

### **34. EXISTING LANDSCAPING**

During Construction operations, the Contractor shall protect existing landscaping and irrigation systems adjacent to the construction area. Any irrigation systems altered or modified due to the construction operations shall be restored to full operation by the Contractor. Landscaping, plants, vegetation and irrigation systems damaged or disturbed during construction shall be replaced or repaired by the Contractor. In performing these repairs and replacements, the Contractor shall use new and equivalent items and materials.

All costs associated with the landscaping and irrigation systems shall be considered incidental to completion of the Project, and no additional payment shall be granted for such.

### **35. ASBESTOS CEMENT PIPE DISPOSAL**

Disposal of all asbestos cement pipes shall be in accordance with the applicable sections of Chapter 14 - Asbestos of the Environmental & Safety Regulations of the City of San Luis, most current edition. The Contractor shall comply with all federal, state, and local removal requirements including special certifications and documentation required for the removal and disposal of asbestos cement pipe. The Contractor shall dispose of all such materials removed during this project and shall provide documentation to the Engineer in the form required by the City of San Luis. A portion of the City of San Luis Environmental & Safety Regulations requires that all employees involved in AC pipe removal receive annual training for Class II AC pipe work as defined by OSHA Construction Standard 1926.1101. Proof of current employee training in asbestos handling shall be supplied by the Contractor to the City of San Luis Risk Management and the Engineer.

No separate measurement or payment shall be made for the removal and disposal of asbestos cement pipe.

### **36. MANHOLE AND VALVE FRAMES AND COVERS**

New Manhole and Valve Frames and Covers shall be supplied by the Contractor when existing manhole and valves are raised to grade.

The cost for installing new manhole and valve frames and covers will be included in the payment for adjusting existing manholes and valves to grade items and no additional payment shall be granted for such.

The cost of furnishing and installing new manhole frames and covers for the installation of the New 6' diameter precast steel reinforced concrete diversion and discharge manhole items will be measured and paid for under the Items established in the bid form.

### **37. POLYMER CONCRETE MANHOLES**

#### **PART 1 GENERAL**

#### **1.01 SCOPE**

This specification covers acid resistant polymer manholes intended for use in sanitary sewers, storm sewers and water lines, where corrosion resistance is required.

#### **1.02 REFERENCES**

ASTM C 478 (most current) Standard Specification for Precast Reinforced Concrete Manhole Sections.

ASTM C 857 (most current) Standard Practice for Minimum Structural Design Loading for Underground Utility Structures.

ASTM D 648 (most current) Test Method for Deflection Temperature of Plastics Under Flexural Load in Edgewise Position.

ASTM D 6783 (most current) Standard Specification for Polymer Concrete Pipe.

ASTM D 2584 (most current) Test Method for Ignition Loss of Cured Reinforced Resins.

ASTM C 923 (most current) Standard Specifications for Resilient Connectors between Concrete Manholes Structures and Pipe.

ASTM C 990 (most current) Standard Specification for Joints for Concrete Pipe, Manholes and Precast Box Sections using Preformed Flexible Joint Sealants

ASTM C 497 (most current) Test Methods for Concrete Pipe, Manhole Sections, or Tile.

AASHTO LRFD Bridge Design Specifications

### **1.03 SUBMITTALS**

- A. Conform to bid document requirements.
- B. Submit manufacturer's data and details of following items for approval:
  - 1. Shop drawings of manhole sections, base units and construction details, jointing methods, materials and dimensions
  - 2. Summary of criteria used in manhole design including, as minimum, material properties, loadings, load combinations, and dimensions assumed. Include certification from manufacturer that acid resistant polymer manhole design meets or exceeds the load and strength requirements of ASTM C 478 and ASTM C 857
  - 3. Frames, grates, rings and covers
  - 4. Materials to be used in fabricating drop connections
  - 5. Materials to be used for pipe connections at manhole walls
  - 6. Materials to be used for stubs and stub plugs, if required

7. Proof of independent Chemical Resistance testing conducted in accordance with the Standard Specifications for Public Works Construction (California Greenbook) Section 211-2 or equal.

- C. Submitted sealed drawings by a registered Professional Engineer

## **PART 2 PRODUCTS**

### **2.01 ACID RESISTANT POLYMER MANHOLES**

- A. Provide acid resistant polymer manhole sections, base sections and related components conforming to ASTM C 478. ASTM C 478 material and manufacturing is allowed compositional and dimensional differences required by a polymer product.
- B. Provide base riser section with integral floors, unless shown otherwise.
- C. Provide riser sections joined with bell and spigot / ship-lap design seamed with butyl mastic (ASTM C 990) so that on assembly, manhole base, riser and top section make a continuous and uniform manhole.
- D. Construct riser sections for polymer manholes from standard polymer manhole sections of the diameter indicated on drawings.
- E. Use various lengths of manhole sections in combination to provide correct height with the fewest joints.
- F. Design wall sections for depth and loading conditions with wall thickness as required by polymer manufacturer.
- G. Provide tops to support HL-93 vehicle loading and receiving cast iron frame covers, as indicated on drawings.
- H. Where polymer transition slabs are required provide precast base sections with flat polymer slab top sections used to transition to 48-inch diameter manhole access riser sections. Transition can be concentric or eccentric as shown on drawings. Locate transition to provide minimum of 7-foot head clearance from base to underside of transition unless otherwise approved by engineer.

#### **2.01-1 DESIGN CRITERIA:**

Manhole risers, transition slabs, conical tops, grade rings and manhole base sections shall be designed, by manufacturer, to meet the intent of ASTM C 478 with allowable compositional and sizing differences required by a polymer product.

1. AASHTO LRFD HL-93 design live loading applied to manhole cover and transition and base slabs
2. Polymer manholes will be designed based upon live and dead load criteria in ASTM C 857

3. Unit soil weight of 120 pcf located above portions of manhole, including base slab projections
4. Internal liquid pressure based on unit weight of 63 pcf
5. Dead load of manhole sections fully supported by transition and base slabs

#### **2.01-2 DESIGN:**

Manhole risers, transition slabs, conical tops, grade rings and manhole base sections shall be designed, by manufacture, to requirements of ASTM C 478 and ASTM C 857 as modified to accept polymer construction in lieu of concrete as follows:

1. Polymer Mixture - the mixture shall consist solely of thermosetting resin sand and aggregate. No cementitious materials shall be allowed as part of the mix design matrix. All sand and aggregate shall be nonreactive in an acid environment.
2. Required wall thickness for all members will be that stated by polymer manhole manufacturer based upon loading conditions and material properties. The wall thickness of risers and conical tops shall be not less than that prescribed by the manufacturer's design by more than 5%. A wall greater than the prescribed design shall not be cause for rejection.
3. Thermosetting Resin - The resin shall have a minimum of deflection temperature of 158° F when tested at 264 psi (1.820 mPa) following Test Method D 648. The resin content shall not be less than 7% of the weight of the sample as determined by test method D 2584. Resin selection shall be suitable for applications in the corrosive conditions to which the structures will be exposed.
4. Each manhole component shall be free of all defects, including indentations, cracks, foreign inclusions and resin starved areas that, due to their nature and degree or extent, detrimentally affect the strength and serviceability of the component part. The internal diameter of manhole components shall not vary more than 1%. Variations in height of two opposite sides of risers and conical tops shall not be more than 5/8 inch. The under run in height of a riser or conical top shall not be more than 1/4in./ft of height with a maximum of 1/2 inch in any one section.
5. Marketing and Identification - Each manhole shall be marked on the inside and outside with the following information - Manufacturer's name or trademark, Manufacturer's location and Production Date.
6. Manhole joints shall be assembled with a bell/spigot or shiplap butyl mastic joint so that on assembly, manhole base, riser and top section make a continuous and uniform manhole. Joint sealing surfaces shall be free of dents, gouges and other surface irregularities that would affect joint integrity.
7. Minimum clear distance between two wall penetrations shall be a minimum of 6" on 48" to 72" diameter manholes and a minimum of 8" on larger diameter manholes. A clearance of 3" is required between wall penetration and joint.

8. Construct invert channels to provide smooth flow transition waterway with no disruption of flow at pipe-manhole connections. Invert slope through manhole is as indicated on drawings. Provide curves for side inlets and smooth invert fillets for flow transition between pipe inverts. Polymer bench and channel are to be constructed with all resin aggregate material – no alternative fill material is allowed. Extended base footer requirements for buoyancy concerns can be addressed with cementitious concrete material.
9. Provide resilient connectors conforming to requirements of ASTM C 923 or as a required by owner. All connectors are to be water tight. Install approved resilient connectors at each pipe entering and exiting manholes in accordance with manufacturer's instructions.
10. Exceptions to ASTM C 478- components shall be designed for the intended combinations of manufacturing materials. Component designs may be as non-reinforced members or reinforced members as recommended by the manufacturer. Steel reinforcement is not required for circumferential reinforcement, joint reinforcement, base slab reinforcement or hoop reinforcement, but may be placed for the purpose of product handling.
11. Manhole Design and shop drawings shall be provided by the Contractor and sealed by a licensed Professional Engineer.

**Basis of Payment** - This work is measured for payment in Item 12. 6' Dia Precast Reinforced Polymer Concrete Manhole and Item 13. 6' Dia Precast Reinforced Polymer Concrete Discharge Manhole of the Bid Form.

#### **2.01-3 QUALITY CONTROL**

Facility Quality Control should be maintained by adhering to ISO 9001 for manufacturing. All fabricators will be ISO 9001 Certified. All fabrication will take place in an all polymer concrete fabrication facility. At no time will the polymer concrete fabrication facility share the facility with a cementitious precast product production facility. Fabricator is also to provide references of 5 previous projects in the last 5 years performed with both owner and contractor for reference and review by owner.

#### **2.01-4 GROUTING**

All materials needed for grouting and patching will be a polyester mortar compound provided by the manufacturer or an approved equal by the manufacture.

#### **2.01-5 MANUFACTURER'S**

1. Geneva Polymer Products, Boulder City, Nevada [www.genevapolymer.com](http://www.genevapolymer.com)
2. Approved Or Equal

#### **38. PIPES, FITTINGS, FORCE MAIN PRESSURE CLEANOUTS AND VALVES**

- a. Connection of the new sewer main and force main lines shall include providing all necessary labor, material, adaptors, and equipment necessary to connect the sewer and force mains to existing piping at the locations indicated on the plans. Unless specifically called out within the proposal contract documents, these activities are considered incidental to the project and no separate payment shall be made for such activities.
- b. Measurement and payment for pipe installation will be for the linear feet of pipe and fittings, furnished and installed, measured along the centerline of pipe from center of fitting or to appurtenant structures, with no deduction for fittings. All fittings, reducers, transition couplings, Crosses, Tees, blind flanges, Bends, tapping sleeves, mechanical joint restraints, and associated appurtenances required for the installation of new pipe shall be considered incidental.
- c. Payment will be made at the unit price bid per linear foot of the sewer pipe called for in the proposal contract documents. Such payment will be compensation in full for furnishing and installing sewer pipe, fittings, and tracer wire, complete in place including all cost of clearing and grubbing, excavation, dewatering, potholing, protection and restoration of existing utilities, removal of obstructions, sheeting and shoring, trench box, and removal of same, pipe and trench maintenance, flushing, testing, disinfection, commissioning, backfilling of trenches, including placement of any required imported backfill material.
- d. All ferrous and materials shall be properly and securely wrapped with 10mil (min.) in poly-wrap for corrosion protection.
- e. All material to be suitable for sewer, unless otherwise noted.
- f. Unless otherwise noted, all pipe material and fittings furnished for this Project shall be new and approved and shall bear the seal of the National Sanitation Foundation (NSF-PW). Sewer line 18" SDR 35 PVC and 14" Class 235 DR 18 PVC. All sewer line installation must meet or exceed standards established in Arizona Department Health Services (ADHS) ADEQ Bulletin No. 10.
- g. Construction of new PVC sewer lines shall be in conformance with City of San Luis Standard Construction Details and City of San Luis Standard Construction Specifications.

### **39. MECHANICAL JOINT RESTRAINTS**

- a. Mechanical Joint Restraints shall be utilized at pipe joints at the stations and locations as shown in the plans. Mechanical Joint restraints shall be MegaLug, Sigma or approved equal. Contractor to submit Material Data sheet(s) providing full specifications of proposed Mechanical Joint Restraints, for approval by the Engineer.
- b. All Mechanical Joint Restraints shall utilize Grade 304 Stainless Steel components and will be considered incidental to the appropriate Bid Item. See Pipes, Fittings, and Valves Section.

### **40. PIPE BEDDING, EMBEDMENT AND BACKFILL**

Trench backfill within City of San Luis rights-of-way may be obtained from trench excavation and should be clean and free from objectionable material. If clay, caliche, or rock is encountered in the trench excavation it shall be separated and removed and replaced with material meeting the backfill gradation requirements. All earth backfill shall be compacted to at least 95% of maximum dry density as measured by the Standard Proctor Method in accordance with the ASTM D 698. Water settlement is prohibited at all times as a method of trench backfill compaction. In place moisture density tests, concrete testing, ABC slurry testing, and asphalt testing shall be ordered by the Engineer to ensure that all materials comply with the specified requirements. Quality assurance tests will be performed by approved materials testing laboratory with the cost paid for by the City of San Luis.

For trench backfill above pipe bedding and below pavement section aggregate base course, the Contractor shall use clean material from trench excavation meeting the following gradation and PI requirements:

SCREEN SIZE	PERCENT PASSING
1 Inch	100
¾ Inch	90
½ Inch	75
¼ Inch	60
#30	50-100
#200	<12

PI maximum of 2.

For pipe bedding to 6 inches over the top of the pipe the Contractor shall use clean sand backfill meeting the following gradation and PI requirements:

SCREEN SIZE	PERCENT PASSING
#4	100
#30	50-100
#200	<12

PI maximum of 2.

If re-compaction is necessary, additional tests shall be performed at the Contractor's expense. Re-testing costs shall be deducted from monies due or to become due the Contractor. The Contractor shall be required to fill all trenches that settle. If repaved areas settle, the Contractor shall perform all work necessary, at no additional cost to the City, to remove the asphalt, correct the settlement, repave, and re-stripe the affected trench locations.

The Contractor shall submit sand slurry mix designs, concrete mix designs, and asphalt mix designs to the Engineer for approval. Submittal shall be at least 30 days prior to the incorporation of the materials into the work. The Contractor shall make plant facilities available in the event the Engineer elects to sample materials at the source.

Slurry placed as backfill shall be vibrated in place to provide consolidation and uniformity of the slurry material.

Imported sand bedding, embedment, cover, slurry, and backfill utilized for the waterlines and sanitary sewer lines construction shall not be measured and paid for separately.

#### **41. NATIVE SOIL MATERIAL**

- a. Native Soil Material shall be allowed as material for the backfill of trenches where native material fulfills the granular requirements of proper backfill of trenches, per City of San Luis Construction Standard Detail 5-080.
- b. Clean sand bedding and backfill is **required** around **new** underground pipe, per City of San Luis Construction Standards, and City of San Luis Standard Specifications.
- c. Imported backfill material shall be considered incidental to the appropriate bid item and **no** additional payment shall be made.

#### **42. LEAN CONCRETE**

- a. Lean Concrete slurry material shall utilize one (1) sack of cement per cubic yard of sand material, conforming to the requirements and criteria of the 2008 Edition of the Arizona Department of Transportation Standard Specifications for Road and Bridge Construction. This material shall be utilized in filling of abandoned water valve risers, as shown in the Plans and as required by the Engineer.
- b. Lean Concrete slurry material and placement costs will not be measured separately for payment. Such costs are to be considered incidental to the appropriate bid item and **no** additional payment shall be made.

#### **43. TRACER WIRE**

All water lines, water services, sewer lines, and sewer services shall include the installation of tracer wire conforming to Construction Standards. Tracer wire shall not be measured separately for payment but shall be considered incidental to and a part of the pipe to which it is attached. Tracer wire shall be placed upon the top of and centered upon the pipe.

#### **44. TESTING AND FLUSHING**

- a. The testing of PVC sewer lines shall be conducted as follows and in descending order of precedence.
  - i. All visible leaks shall be repaired, regardless of the amount of leakage and regardless of whether the leak develops under test pressure or line pressure.
  - ii. Initial pressure for both the pressure test and allowable leakage test shall be a minimum of 150 psi.
  - iii. A pressure test will be deemed successful if it passes the criteria set forth by AWWA C-600, Section 4 (current edition) and that criteria noted above.
- b. Disinfections of waterlines shall be in accordance with AWWA Standard C651, latest revision.

- c. The flushing tube shall be the same diameter as the main being flushed. At least 48 hours prior to any waterline filling or flushing activities the Contractor shall coordinate such activities with the Water Division. Contractor shall make the necessary arrangement for securing and transporting such water and take such water in a manner at such time that will not produce a harmful drain or decrease of pressure in the existing water system.
- d. The Contractor shall locate a satisfactory disposal site for flushed water and pay for all fees, if any, associated with treating and disposing of flushed water, at no cost to the City.
- e. **The Contractor shall ensure there will be no damage to adjacent property due to any and all flushing activities. Any damage or erosion to adjacent areas and/or properties shall be paid for by the Contractor, at no cost to the City.**

#### **45. BYPASS FLOWS-DIVERSION OF SEWAGE FLOWS**

The Contractor shall provide labor, materials, and supervision to temporarily bypass flow around the Contractor's work.

It is the Contractor's responsibility to arrange all necessary access and temporary construction agreements with all affected parties for the location of the bypass pumping system.

The bypass pumping system shall be designed to normally maintain the wastewater flow below the top of pipe.

The Contractor shall have the entire bypassing system in place and tested before bypassing any sewage.

The Contractor shall notify the Engineer, in writing, 48 hours prior to shutting down or bypassing the pipeline. The bypassed flow shall be continuously monitored. The Contractor is responsible for immediate and proper cleanup should any spill occur, regardless of amount.

The Contractor shall have a backup pumping system on site and available in case the primary system breaks down, before starting bypass activities.

#### Experience:

The Contractor shall utilize staff and/or a subcontractor that has been directly responsible for completion of a project that required the bypass pumping of sewage flows similar to this project.

#### Flow Conditions:

The Contractor is responsible for obtaining current flow condition information at the time of construction. The Owner is not responsible for any deviations in quantity of sewage flow at any time during the construction period. Higher flows may be encountered depending on weather and other upstream conditions.

#### Protection:

In areas where flows are bypassed, all bypassed flow shall be discharged as described above or approved by the Engineer. No flow shall bypass to the ground surface, receiving waters, storm drains, or any area which results in groundwater contamination or creates potential health hazards.

Damages:

The Contractor shall repair, without cost to the Owner, any damage that may result from his negligence, inadequate or improper installation, maintenance and operation of bypassing system, including mechanical or electrical failures.

All bypass pumping activities shall be considered incidental to and a part of the cost for installing new sanitary sewer pipe.

**46. WATER AND/OR SANITARY SEWER OUTAGES**

The Contractor shall provide, in writing, notification to all Property Owners, Schools, Businesses, Religious Institutions, and Residents of upcoming planned water outages. Notification shall be provided a minimum of 24 hours in advance of the water outage and shall be written in Spanish and English. The written notification shall be approved by the Engineer 48 hours prior to implementation. Water Service Outage Notifications shall be considered incidental to the Project. See Notification Requirements section.

**47. GRADING UNDER BASE COURSE**

The top 12" of existing subgrade shall be scarified and compacted to a density of not less than 95% of the maximum density at optimum moisture. Payment for this work will be included in the payment for the Grading Under Base Course item.

**48. CURB AND GUTTER, SIDEWALK AND DRIVEWAY PLACEMENT**

All Curb & Gutter, Sidewalk and Driveways shall be placed on 4" of Clean Sand or ABC, and shall be compacted to a density of not less than 95% of the maximum density.

The Clean Sand or ABC placed underneath the Curb & Gutter, Sidewalk and Driveway shall be considered incidental to the cost of the applicable item.

**49. SIDEWALK RAMPS**

- a. Contractor shall be responsible to remove existing concrete sidewalk ramps, sidewalks, and/or existing curb & gutter (vertical or otherwise), and replace with new sidewalk ramps as shown in the plans.
- b. Sidewalk ramps shall be constructed in conformance with City of San Luis Construction Standard Details 3-280 & 3-291. Measurement shall include all work required to furnish & install all Portland Cement Concrete, detectable warning strip, and aggregate base course (ABC), or clean sand.
- c. All existing landscape neighboring all Work area(s) shall be protected during Construction and shall be returned to original condition, or better, when work in the area has completed.
- d. Work shall include installation, grading, and compaction of new ABC, installation of new concrete sidewalk ramps, detectable warning strips, expansion joints,

construction joints, and finished concrete work. All finished work shall match all grades and elevations adjacent to existing and new concrete sidewalks and shall be in conformance with City of San Luis Standard Construction Details 3-280 & 3-291.

- e. Contractor shall be responsible for accurate measurement of required materials and labor to conduct the Work. All Work shall be considered incidental to the cost of the applicable item.

## **50. CONCRETE**

- a. Ten days prior to use, the Contractor shall submit a concrete mix design for all non-structural concrete Work for review by the Engineer. The concrete mix design shall have a minimum compressive strength ( $f'_c$ ) of 2500 psi in 28 days. The mix design shall comply with the following criteria and shall be in accordance with the Standard Specifications.
  1. 5% (plus or minus 1%) of Air Entrainment
  2. Fly Ash additive not to exceed 18%, by weight
  3. Type II Low Alkali Cement to comply with ASTM C 150

## **51. EMULSIFIED ASPHALT TACK COAT, ASPHALT BINDER AND MINERAL ADMIXTURE**

Payment for the tack coat, asphalt binders, mineral admixtures and any other additives required in the asphalt pavement placement shall be included in the payment for the various pavement items, and no additional payment shall be granted for such.

Tack coat shall be applied to all vertical surfaces that come into contact with the new asphalt concrete pavement. Additionally, if deemed necessary by the Engineer, tack coat shall be applied between successive pavement lifts.

## **52. AGGREGATE BASE COURSE**

Aggregate base course shall be compacted, full depth, to a density of not less than 100% of the maximum density, and shall be placed in layers, with each layer not to exceed 6" in compacted thickness.

## **53. ASPHALTIC CONCRETE PAVEMENT**

- a. Contractor shall be responsible to remove all existing asphaltic concrete pavement and existing aggregate base course material at the locations shown in the plans and in conformance with applicable Yuma County C- 3/4Details and Structural Section No. 1 Detail. Contractor shall properly dispose of all removed material in accordance with governing laws and regulations.
- b. Contractor shall be responsible for removing all milled/removed materials from the project area to an approved site. The Contractor will be responsible for legally disposing of the remaining material that this site cannot take. Asphaltic concrete pavement materials shall not be recycled for use on this project.
- c. Contractor shall be responsible to furnish all labor, equipment, and materials to install new asphaltic concrete pavement as shown in the plans and in

conformance with applicable Yuma County C- 3/4 Standard Construction Details, Structural Section No. 1 Detail, and City of San Luis Standard Construction Specifications.

- d. Contractor shall abide by the phasing schedule during all milling and paving operations. See Phasing Schedule.
- e. New asphaltic concrete pavement shall be installed at the grades and elevations indicated in the plans and in conformance with applicable Yuma County C- 3/4 Standard Construction Details, and Structural Section No. 1 Detail. Unless directed otherwise by the Engineer, the Contractor shall install new asphaltic concrete pavement so that the new crown shall be located half of the width of roadway as measured from the east lip of gutter, in accordance with Structural Section No. 1 Detail in the Plans.
- f. Contractor shall install new asphaltic concrete pavement such that a transition from the new crown to existing concrete cross gutter elevations shall start a minimum of 100 feet from the lip of gutter, as shown in the plans. Grade transitions shall provide the smooth and seamless lateral grade changes from the new crown to the existing slope of concrete cross gutters, and vice versa.

#### **54. INTERIM PAINTED PAVEMENT MARKINGS**

The Contractor, immediately after placing the final pavement lift and prior to placing the final thermoplastic pavement markings, shall place the interim painted pavement markings at the locations where the final thermoplastic pavement markings will be placed. The interim painted pavement markings shall identify all striping, symbols and legends.

The Contractor shall place the interim painted pavement marking in accordance with Section 708 - Permanent Pavement Markings of the ADOT Standard Specifications, 2008 Edition.

Measurement and Payment: The interim painted pavement markings shall be considered incidental to the cost of the applicable item.

#### **55. FINAL PAVEMENT MARKINGS**

The Contractor shall place the final pavement marking in accordance with the attached Section 704 - Thermoplastic Pavement Marking (704 THRMO, 9/24/11) ADOT Specifications. The Specifications shall apply to all striping, symbols and legends.

The final pavement markings shall not be placed until at least 28 days after the top pavement lift has been placed. The raised pavement markers and the thermoplastic markings, symbols and legends shall be placed by the Contractor in a continuous operation until all the work has been completed.

Just prior to placing the final pavement markings the Contractor shall sweep the full width and length of the roadway. The sweeping is considered incidental to the cost of the applicable item.

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

Thermoplastic pavement markings, longitudinal and transverse, will be based on the width of the line and will be measured by the Linear Foot along the center line of the pavement marking line placed. The gaps in broken or dotted lines will not be included in the measurement.

Double marking lines will be measured as two individual marking lines.

Symbols and legends will be measured by the unit per Each. Each legend, regardless of the number of letters, will be considered as a single unit.

Raised Pavement Markers will be measured by the unit per Each and will be based on the type.

**Basis of Payment:**

Thermoplastic pavement markings will be paid for at the contract unit price per linear foot.

Symbols and legends will be paid for at the contract unit price per each.

Raised pavement markers will be paid for at the contract unit price per each.

**56. STREET SURVEY MONUMENTS**

- a. Survey monuments shall be constructed per City of San Luis Construction Standard Details, and in accordance with the Plans.
- b. The Contractor shall provide the brass caps along with the frame and covers for the survey monuments.
- c. The Contractor shall contact the City of San Luis's Registered Land Surveyor prior to the placing of any survey monuments, for direction in identifying the Location of where the survey monument will be set.
- d. Unless otherwise agreed to at the pre-construction conference, the survey monuments shall be stamped by the Contractor or the Sub-Contractor Registered Land Surveyor doing the work.
- e. The Contractor's Registered Land Surveyor shall record the survey monument in a Record of Survey plat for the project, and also as a Survey Corner Record Card, as applicable per Title 33 of the Arizona Revised Statutes.
- f. Payment shall include excavation, furnishing and installing all required materials, backfilling, proper compaction, and final acceptance of survey monuments.
- g. Final payment shall be held the Engineer until all new survey monuments have been accepted by the City of San Luis's Registered Land Surveyor.

**57. TRAFFIC SIGNS**

- a. All Traffic Signs in the project limits shall be removed and salvaged to the City of San Luis Signs Section, except for specific signs designated for re-use, as shown in the Plans. All existing traffic signs shall be replaced, except signs designated for re-use, with new traffic signs, U-channel posts, and mounting hardware in accordance with all applicable City of San Luis Standard Construction Details and as shown in the plans.
- b. The Contractor shall be responsible for the protection of all traffic signs in and around the vicinity of the project limits. Examples of traffic signs shall include, but are not limited to, warning signs, regulatory signs, plaques, street name

signs, and all other temporary/permanent signs.

- c. Existing traffic signs to be re-used and re-located shall be installed in conformance with all applicable City of San Luis Standard Construction details and at the locations shown in the plans. Costs for relocating existing traffic signs shall include removal and disposal of existing U-channel post and mounting hardware, furnishing and installing new U-channel post and new mounting hardware, and proper mounting of Existing Traffic Sign. Such items of Work shall be considered incidental to the appropriate Bid Item.
- d. New traffic signs shall be installed in conformance with all applicable City of San Luis Standard Construction details and at the locations shown in the plans.
- e. New street name signs shall bear the correct name of the Street, Place, and Avenue for which the new street name sign shall be installed. Contractor shall be responsible for removing and replacing all unacceptable and/or incorrect street name signs, free of charge. New street name signs shall be installed in conformance with City of San Luis Standard Construction Details 8-020 and 8-200.
- f. Payment for the removal and installation of all Traffic Signs, New or otherwise, to be installed within the scope of this Project shall include all labor, equipment, and materials to remove existing Traffic Signs, salvage and re-use designated existing signs, and install New Traffic Signs. All items including poles, posts, and mounting hardware shall be incidental. Payment shall be by Unit Basis.

## **58. SALVAGED ITEMS**

The City of San Luis shall reserve the right to any and all items removed from the Project area. Salvaged Items shall include only the items shown in the plans and explicitly expressed by the Engineer.

All items removed, and not salvaged, from the project area shall be properly disposed of in accordance with all governing regulations, laws, and policies. Disposal of all items shall be considered incidental to the appropriate Bid Item and no additional payment shall be granted for such.

## **59. PROJECT CLEANUP**

At reasonable intervals during the progress of the work, cleanup and disposal of waste materials, and debris will be performed on the project site. Waste materials and debris shall be disposed of by the Contractor at legally established landfill areas or private disposal sites located by the Contractor or as directed by the Engineer. The Contractor shall be responsible for and incur all costs for periodic and final cleanup of site during construction. Payment for cleanup and disposal shall be an integral part of associated work items shown on the proposal schedule. No separate or additional payment shall be made for cleanup and disposal, including for existing AC pavement. Should the Contractor dispose of excavated soils on a private property, the Contractor shall first review the site with a representative of the Engineer to determine the impact upon any existing floodplains and/or drainage ways.

## 60. FINAL CLEANUP

- a. Upon Project completion, and **PRIOR** to Final Acceptance by the City of San Luis, the Contractor shall be responsible for the complete cleanup of the Project area as a whole. Final Cleanup shall include, but not limited to, the removal and/or proper disposal of all Construction materials, equipment, barricades, Work Zone Identification Signs, Traffic Control devices, trash of all types, debris, scrap material, excessive soil material, excess ABC material, strapping material, tools of all types, safety equipment, Survey stakes, sandbags, shoring, utility bracing of all types, and unused Project items and materials of all types. The completed Project area shall be left in a clean state with all concrete and asphalt surfaces clean, free of all debris, concrete spills, asphalt spills, tar, mud, sand, and work zone identification signs.
- b. All existing landscaping neighboring all Work area(s) shall be protected during Construction and shall be returned to original condition, or better, when work in the area has completed.
- c. New and existing pavement, concrete driveways sidewalk ramps, sidewalks, curb & gutters, walls, fences, gates, and structures of all types adjacent to, and in, the work area shall be cleaned of all work-related debris **PRIOR** to final acceptance by the City of San Luis.

## 61. EROSION CONTROL AND MAINTENANCE - SWPPP

The Contractor shall implement and maintain the Stormwater BMPs as specified in a BMP plan to be provided by the Contractor, including the Notice of Intent (NOI) and Notice of Termination (NOT) filings with the Arizona Department of Environmental Quality (ADEQ).

The Contractor shall provide, implement and maintain street sweeping measures at the work affected areas to prevent tracking of sediment by vehicular traffic onto all cross streets, adjacent properties and other public roads.

The Contractor shall implement dust control measures to minimize and control dust generation due to construction activities.

Erosion control and maintenance will be measured as a lump sum unit and will be paid for at the lump sum contract price.

After construction is complete and stabilization is achieved the BMPs shall be removed with the approval of the Engineer.

## 62. AIR QUALITY AND NOISE CONTROL

Air Quality: Standard dust control measures, meeting Yuma County Dust Control Standards, to include: Watering of work sites as needed, but at least once per day (or, alternatively, use of soil binders, if needed); limiting exposure during materials handling; and stoppage of work during high wind periods.

Noise Control: No unusual noise is expected to be generated. Standard noise control measures will be used, including: limitation of work hours to daylight hours, and proper muffling of all vehicles and equipment.

Air Quality and Noise Control shall be considered incidental to the appropriate Bid Item and **no** additional payment shall be granted for such.

### 63. PROJECT AS-BUILT PLANS

The Contractor shall prepare and furnish Project As-built Plans to the City of San Luis for use as record drawings. The Contractor shall document, identify and record all changes and additions where the project as constructed differs from the Design Plans. The Project As-built Plans, in addition to reflecting all Design Plan field changes and additions, shall also include all additions and modifications effected by addenda.

All changes or additions to both the underground work and the above ground roadway work shall be reflected on the As-Built-Plans.

The Waterline and Water Services information shall be provided using the GPS system, and shall identify alignment and depth.

The Engineer will provide AutoCAD files of the Design Plans to the Contractor for use in developing the As-built Plans. The Contractor shall, in separate and readily identifiable "As-built" layer(s), reflect all cases where the Construction Work changes, adds to, or differs from the As Designed Plans.

The Contractor shall submit one large set of Mylar As-Built Plans, one reduced set of As-Built Plans and two CDs of the As-Built Plans AutoCAD files to the Engineer upon completion of the Project.

The Final Project Payment will not be processed until the As-Built Plans have been reviewed and accepted by the Engineer.

Measurement and Payment. As-Built Plans will be measured as a lump sum unit and will be paid for at the lump sum contract price.

### 64. THERMOPLASTIC PAVEMENT MARKINGS

#### DOCUMENT 704

(704THRMO, 9/20/10)

#### 704-1 Description: of the Standard Specifications is revised to read:

The work under this section shall consist of cleaning and preparing pavement surfaces and furnishing and applying either white or yellow thermoplastic reflectorized pavement markings using extrusion or ribbon dispensing devices of the required shape and thickness to the prepared pavement surface at the locations and in accordance with the details shown on the project plans, the manufacturer's specifications, and the requirements of these specifications.

#### 704-2.02 Composition: of the Standard Specifications is revised to read:

##### (A) General:

The thermoplastic composition shall conform to the following requirements:

<u>Component</u>	Percent by Weight	
	White	Yellow
Binder (Min.)	20	20

Titanium dioxide (Min.)	10	----
Yellow Lead-Free Pigment (Min.)	----	1.5
Reflective glass inter-mix beads	30 - 45	30 - 45
Calcium carbonate or equivalent filler	20 - 42	20 - 42

The ingredients of the thermoplastic composition shall be thoroughly mixed and in a solid or sectionalized block, or free-flowing granular form. When heated in a melting apparatus, the material shall readily liquefy into a uniform solution. This solution shall be free from all skins, dirt, foreign objects or any other ingredient which would cause bleeding, staining, blotting, or discoloration when applied to the bituminous or concrete pavement surfaces.

The thermoplastic formulation shall utilize an alkyd binder. The alkyd binder shall consist of a mixture of synthetic resins, at least one of which is solid at room temperature, and of high-boiling-point plasticizers. At least one third of the binder composition and no less than eight percent by weight of the entire material formulation shall be solid maleic-modified glycerol ester resin or solid maleic-modified pentaerythritol ester resin. The alkyd binder shall not contain any petroleum-based hydrocarbon resins.

(B) Reflective Glass Beads:

In addition to incorporating glass beads in the thermoplastic mix, glass beads shall be evenly applied to the surface of the molten material as specified in Subsection 704-3.02(G).

(C) Filler:

The filler shall be a white calcium carbonate or equivalent filler with a compressive strength of at least 5,000 pounds per square inch.

(D) Titanium Dioxide:

Titanium Dioxide shall conform to the requirements of ASTM D 476 for Type II (92 percent).

(E) Yellow Pigment:

The yellow pigment shall be heat resistant and lead free. The type of yellow pigment shall be at the option of the manufacturer provided that the material conforms to all color requirements in a stable and durable fashion as specified herein.

**704-2.03(C) Retroreflectance: of the Standard Specifications is revised to read:**

The white and yellow thermoplastic materials shall have the following minimum retroreflectance values at 86.5 degrees illumination angle and 1.5 degrees observation angle as measured by the Department, using an LTL-X Delta Retrometer or similar device, within 30 days after application to the roadway surface:

Product	Retroreflectance (millicandelas)
White	450
Yellow	300

**704-2.03(E) Water Absorption and Specific Gravity last paragraph of the Standard Specifications is revised to read:**

The specific gravity of the material, as determined by Section 16 of AASHTO T 250, shall be between 1.85 and 2.15.

**704-2.03 Physical Characteristics of the Composition of the Standard Specifications is modified to add:**

(P) Color Stability:

Using accelerated weathering per ASTM G 155, Cycle 1, white color stability shall be measured for no color change after 500 hours of exposure, and yellow color stability shall be measured for no color change after 1000 hours of exposure.

**704-2.04 Physical Requirements for Glass Beads second paragraph of the Standard Specifications is revised to read:**

The inter-mix beads shall conform to AASHTO M 247 Type I, and may be coated or uncoated as recommended by the manufacturer. If uncoated beads are used, the thermoplastic formulation shall be configured to minimize settling of the intermix beads when the material is heated and applied.

Drop-on beads shall conform to the gradation requirements of AASHTO M 247 for Type I and Type III beads.

**704-3.02(B) Material Selection and Compatibility second, third, and fourth paragraphs of the Standard Specifications are revised to read:**

All materials shall be properly packaged and stored. Each container to be used on the project shall be clearly labeled to indicate the following information:

Nature, type, and formulation of the material;

Manufacturer, batch number, and date of manufacture;

Application requirements and constraints; and

Compatibility requirements and constraints, particularly those pertaining to equipment, storage, and other materials to be used.

Preparation and application equipment shall be in accordance with the plans and specifications, and shall conform to the recommendations of the materials manufacturer.

**704-3.02(G) Thermoplastic Application first and second paragraphs of the Standard Specifications are revised to read:**

The thermoplastic pavement marking material shall be extruded on to the pavement surface at a material temperature between 385 and 415 degrees F, depending on manufacturer's recommendations, ambient air and pavement temperatures, and the nature of the pavement surface. The contractor shall verify temperature requirements with a non-contact infrared thermometer as directed by the Engineer.

The thermoplastic material temperatures shall not exceed 450 degrees F. Material temperatures exceeding 440 degrees F shall be allowed for short periods of time; however, in no case shall the material be held for more than four hours at temperatures above 440 degrees F. Total heating time for any batch of material shall not exceed six hours. The contractor shall note in the temperature log the time when each batch of thermoplastic material is first heated. The start of heating time shall also be marked on the side of the kettle to which it applies.

**704-3.02(G) Thermoplastic Application fifth and sixth paragraphs of the Standard Specifications are revised to read:**

Drop-on glass beads shall be mechanically deposited into the thermoplastic material immediately after the thermoplastic marking is applied, using a double drop method. Each drop shall be comprised of a minimum of six pounds of glass beads per 100 square feet of line (200 linear feet of six-inch stripe). One drop shall be Type I glass beads and the other drop shall be Type III glass beads. The contractor shall determine which type of glass bead is to be applied in each drop; however, both types shall be used. Double drop methods using all Type I or Type III beads will not be allowed.

The dispensers shall evenly distribute the beads in the thermoplastic material. Both Type I and Type III glass beads shall be embedded in the surface of the thermoplastic to a depth of between 50 and 60 percent of the bead diameter. If the glass beads do not adhere to the thermoplastic marking, operations shall be stopped until the problem has been corrected. All markings which do not meet the requirements of Subsection 704-2.03(C), as determined by the Engineer, shall be removed by the contractor and replaced at no additional cost to the Department.

Unless otherwise specified, all thermoplastic pavement markings shall be extruded, and shall be  $0.090 \pm 0.002$  inches thick. The thermoplastic thickness shall be uniform and consistent throughout the total length of the marking project.

**704-3.02(G) Thermoplastic Application last paragraph of the Standard Specifications is revised to read:**

After application and sufficient drying time, the thermoplastic marking shall show no appreciable deformation or discoloration under local traffic conditions with air and road temperatures ranging from -10 to 180 degrees F. The drying time shall be defined as the minimum elapsed time, after application, when the thermoplastic pavement markings shall have and retain the characteristics required herein, and after which normal traffic will leave no impression or imprint on the newly applied marking. When applied within a temperature range of  $400 \pm 15$  degrees F and thickness of 0.090 inches, the material shall set to bear traffic in not more than two minutes when the air and pavement surface temperatures are approximately  $50 \pm$  three degrees F and not more than 10 minutes when the air and road surface temperatures are approximately  $90 \pm$  three degrees. The Engineer may conduct field tests in accordance with ASTM D 711 to verify actual drying times.

## **65. LIFT STATION AND SHADE STRUCTURE**

### QUALITY ASSURANCE

- A. The pumps and pump station manufacturer must be ISO 9001:2000 revision certified, with scope of registration including design control and service after sales activities.
- B. Upon request from the engineer, the pump station manufacturer shall prove financial stability and ability to produce the station within the specified delivery schedules. Evidence of facilities, equipment and expertise shall demonstrate the manufacturer's commitment to long term customer service and product support.

- C. All pump openings and passages shall be of adequate size to pass 3.15" diameter spheres (minimum) and any trash or stringy material which can pass through an average house collection system.
- D. The manufacturer's technical representative shall inspect the completed installation, correct or supervise the correction of any defect or malfunction, and instruct operating personnel in the proper operation and maintenance of the equipment as described in Section 215-3 of these specifications.

MANUFACTURER'S WARRANTY

- A. The pump station manufacturer shall warrant all equipment to be of quality construction, free of defects in material and workmanship. A written warranty shall include specific details described below.
  - 1. Fiberglass components of the station enclosure shall be warranted for 20 years to resist UV damage, corrosion from moisture or corrosive soils, or physical failures occurring in normal service, without the need for special protective coatings, when installed according to the manufacturer's recommendations.
  - 2. The pumping units installed in this station are warranted for a period of five (5) years or 10,000 hours of operation from the time of shipment from the factory. The conditions of this warranty are predicated on factory approved installation and start-up of equipment in permanent municipal waste water installation. This warranty covers failures due to defects in material and workmanship. The warranty does not cover normal wear and tear on equipment. The pump station manufacturer will pay a percentage of the list price for replacement parts in labor as follows provided the pump with cable attached is returned pre-paid in accordance with the instructions:

Pump Warranty Obligation

Months after Shipment	0-18	19-38	40-60
Hours of Operation	0-2,999	3,000-6,499	6,500-10,000
G-R Share of the Costs	100%	50%	25%

- 3. All remaining equipment apparatus and parts furnished shall be warranted for a period of five (5) years, excepting those items that are normally consumed in service such as light bulbs, oil, grease, packing, gaskets, O-rings, etc. The pump station manufacturer shall be solely responsible for the warranty of the station and all components.
- B. Components failing to perform as specified by the engineer or as represented by the manufacturer, or as proven defective in service during the warranty period, shall be replaced, repaired, or satisfactorily modified by the manufacturer without cost of

parts or labor to the owner.

- C. It is not intended that the station manufacturer assume liability for consequential damages or contingent liabilities arising from failure of any vendor supplied product or part which fails to properly operate, however caused. Consequential damages resulting from defects in design, or delays in delivery are also beyond the manufacturer's scope of liability.
- D. The warranty shall become effective upon the acceptance by the purchaser or the purchaser's authorized agent, or sixty (60) days after installation, or ninety (90) days after shipment, whichever occurs first.
- E. In order to unify responsibility for proper operation of the complete pumping station, it is the intent of these Specifications that all system components be furnished by a single supplier (unitary source). The pumping station must be of standard catalog design, totally warranted by the manufacturer. Under no circumstances will a system consisting of parts compiled and assembled by a manufacturer's representative or distributor be accepted.

#### **EXICUTION**

#### **EXAMINATION**

- A. Contractor shall off-load equipment at installation site using equipment of sufficient size and design to prevent injury or damage. Station manufacturer shall provide written instruction for proper handling. Immediately after off-loading, contractor shall inspect complete pump station and appurtenances for shipping damage or missing parts. Any damage or discrepancy shall be noted in written claim with shipper prior to accepting delivery. Validate all station serial numbers and parts lists with shipping documentation. Notify the manufacturer's representative of any unacceptable conditions noted with shipper.

#### **INSTALLATION**

- A. Install, level, align, and lubricate pump station as indicated on project drawings. Installation must be in accordance with written instructions supplied by the manufacturer at time of delivery.
- B. Check motor and control data plates for compatibility to site voltage. Install and test the station ground prior to connecting line voltage to station control panel.
- C. Prior to applying electrical power to any motors or control equipment, check all wiring for tight connection. Verify that protective devices (fuses and circuit breakers) conform to project design documents. Manually operate circuit breakers and switches to ensure operation without binding. Open all circuit breakers and disconnects before connecting utility power. Verify line voltage, phase sequence and ground before actual start-up.

#### **FIELD QUALITY CONTROL**

A. Operational Test

1. Prior to acceptance by owner, an operational test of all pumps, and control systems shall be conducted to determine if the installed equipment meets the purpose and intent of the specifications. Tests shall demonstrate that all equipment is electrically, mechanically, structurally, and otherwise acceptable; it is safe and in optimum working condition; and conforms to the specified operating characteristics.
2. After construction debris and foreign material has been removed from the wet well, contractor shall supply clear water volume adequate to operate station through several pumping cycles. Observe and record operation of pumps, suction and discharge gage readings, ampere draw, pump controls, and liquid level controls. Check calibration of all instrumentation equipment, test manual control devices, and automatic control systems. Be alert to any undue noise, vibration or other operational problems.

B. Manufacturers Start-up Services

1. Coordinate station start-up with manufacturer's technical representative. The representative or factory service technician will inspect the completed installation. Calibrate and adjust instrumentation, correct or supervise correction of defects or malfunctions, and instruct operating personnel in proper operation and maintenance procedures.

**CLEANING**

- A. Prior to acceptance, inspect interior and exterior of pump station for dirt, splashed material or damaged paint. Clean or repair accordingly. Remove from the job site all tools, surplus materials, scrap and debris.

**PROTECTION**

- A. The pump station should be placed into service immediately. If operation is delayed, station is to be stored and maintained per manufacturer's written instructions.

**SHADE STRUCTURE**

The lift station shade structure referenced in the construction documents is to match the City of San Luis shade structure in their existing East Mesa lift station.

The Contractor is responsible for all items of work associated with the approval and installation of the shade structure. The contractor must provide plans and specifications for the structure that have been sealed for construction by a professional registrant in the State of Arizona.

**66. DECORATIVE WOOD AND METAL 20' VEHICULAR ROLL GATE AND 6' PERSONNEL SWING GATE FORCE ACCOUNT**

The following applies to all Force Account work associated with item 26. DECORATIVE WOOD AND METAL 20' VEHICULAR ROLL GATE AND 6' PERSONNEL SWING GATE FORCE ACCOUNT in the bid form:

- The Contractor shall submit certified payroll for labor; invoices for rental equipment and materials used. Contractor-owned equipment shall be reimbursed at the rates set forth in the Rental Rate Blue Book for construction equipment which is published by the Equipment Guide-Book company, a division of Neilson-Dataquest, 1290 Ridder Park Drive, San Jose, California 95313, Phone [1-800-669-3282](tel:1-800-669-3282).

**67. VAPEX SYSTEM**

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## PRODUCT SPECIFICATIONS

### GENERAL

#### SUMMARY

This section specifies equipment with over 200 installations in the United States designed to destroy odorous compounds and also reduce or eliminate some forms of greases within a wet well, lift station or other enclosed structure to specified flows, temperature and level.

#### SYSTEM DESCRIPTION

The hydroxyl radical fog that consists of air, ozone (oxidant) and <5 micron sized water particles serves to:

- Destroy odorous compounds within the defined space.
- Reduce or eliminate some forms of grease (FOG).
- Reduce or eliminate biofilm or bacterial growth covering the defined structure therefore reducing typical corrosion effects associated with the low pH of the various biological processes.
- Impart a residual oxidant to the defined space to be able to absorb any unexpected events within the influent piping.

#### Each system includes the following items:

- a. Base cabinet – Aluminum powder coated with TGIC polyester
- b. Nozzle package (type and quantity based on application)
- c. Electrical connection (hard wired –standard, cord/receptacle package optional)
- d. Two (2) Operation and Maintenance manuals plus additional manuals as specified
- e. One (1) Nozzle cleaning kit
- f. One (1) Installation Kit
- g. Other options as specified

#### SYSTEM PERFORMANCE

#### The system shall have the following:

- a. Number of Nozzles: 1 to 3 Standard or LV nozzles dependent on application.
- b. Water output per nozzle:

- i. Low Volume (LV) Nozzle (1 CFM) – 1 to 2 gallons per hour (GPH) – for applications with less than 1,000 ft<sup>3</sup> per treatment area
- ii. Standard nozzle (20 CFM) – 5 to 10 GPH with 4 GPH minimum
- iii. Oxidant output ≤ 50 grams per hour @ 10 SCFH
- iv. Cooling air exhaust (max): ≤150 SCFM

**The system shall have the following capabilities for maximum odor treatment:**

- a. Low-Volume (LV) nozzle = up to 1,000 ft<sup>3</sup> per treatment area.
- b. Standard nozzles = maximum odor treatment volume may vary based on production of H<sub>2</sub>S and other site-based factors.
- c. The ability to reduce or eliminate grease buildup.
- d. Reduce or eliminate biofilm or bacterial growth covering the defined structure thereby reducing typical corrosion effects associated with microbial induced corrosion.

Research performed by a University accredited study on the Vapex technology can be provided upon request.

**QUALITY ASSURANCE**

Prior to shipment from the Manufacturer, the odor control system shall be inspected and certified to operate and perform in connection with the usual purpose for which it is designed.

A Manufacturer approved field service agent shall inspect the installation and connection of nozzle components, conduct equipment start-up, test system to ensure proper operation and perform on-site training on operation and maintenance of the equipment.

**DELIVERY, STORAGE AND HANDLING**

The equipment shall be shipped in a sturdy corrugated-cardboard box mounted to a plastic pallet. One copy of the Operation and Maintenance (O&M) manual will be shipped with the unit and a second copy of the O&M manual and warranty information will be shipped separately with signature requirement on receipt.

- a. Unit dimensions/weight: 42”L × 30”W × 40”H  
150 to 165 lbs (average)
- b. Shipping dimensions/weight: 48”L × 40”W × 52”H  
200 to 250 lbs (average)

c. Shipping dimensions with Optional ENV Enclosure:

57"L × 44"W × 67"H

500 to 550 lbs (average)

Prior to installation, equipment shall be stored in a dry environment. If equipment shall be stored for more than 1 month, equipment shall be placed in a climate and humidity controlled environment. The box cover shall remain over the equipment to ensure all components are intact for installation.

**Moving the odor control equipment:**

- a. The equipment shall remain attached to the pallet if the equipment is to be moved via fork lift truck to prevent damage to the equipment.
- b. A lifting strap placed under the equipment shall be used for transport via crane.

**INSTALLATION LOCATION CONDITIONS**

The odor control system is designed to distribute a hydroxyl radical fog into the headspace of an unpopulated, enclosed odorous environment to chemically react with vapor phase hydrogen sulfide and other odorants and/or some fats, oils and grease.

**WARRANTY**

The warranty period is 12 months from equipment startup or 18 months from shipment whichever comes first.

**PRODUCT**

**MANUFACTURER**

The odor control system shall be a Vapex 1500 radical odor control system manufactured solely by Vapex Environmental Technologies, Inc.

**PROCESS**

System Configuration: The equipment will accommodate one (1) to three (3) LV or Standard nozzles with independent control of water output to each nozzle.

The system shall not require withdrawal of the odorous air.

The process shall operate whereby any excess oxidant will convert to oxygen and water that condense and falls back into the waste stream.

The process is intended to utilize the volume of the defined space as the reaction vessel for the odor eliminating reactions to take place. The process will allow for an equilibrium concentration of both oxidants and odorous compounds to exist in the form of a stirred mixed reactor.

The process will consume no external chemicals in its operation nor will there be any waste product to dispose of, and in particular, there will be no increase in total dissolved solids to any waste stream.

The hydroxyl radical fog also controls the accumulation of some fats, oils, and greases as well as neutralizes pH on all wetted surfaces thereby reducing the rate of corrosion of the infrastructure.

## EQUIPMENT

The odor control system consists of two primary subsystems; the base unit and the patented three-fluid injection nozzle assembly. In situations where proper ventilation does not exist, a reaction terminating vent may be required.

The base unit functions to deliver water, compressed air and oxidant to the injection nozzle. The base unit functions shall have the following attributes and capacities:

- a. The base unit is water resistant, sound resistant and conforms to NEMA 3R specifications.
- b. The oxidant generator is capable of producing a maximum ozone output of 50 grams per hour and the oxidant output is modulated within this specified range.
- c. The base unit includes a blower/compressor(s) (based upon nozzle configuration) and an oxygen concentration unit that produces 65-95% oxygen prior to use by the process.
- d. The base unit contains safety interlocks for low water flow, low oxygen concentration, low oxygen flow, low nozzle air pressure and high oxidant generator temperature. Any one of these conditions will cause a shutdown of the oxidant system and will trigger an alarm and the red indicator light on the unit.
- e. The base unit is constructed of Triglycidyl isocyanurate (TGIC) polyester coated Aluminum with sound reduction and access panel gaskets. The cabinet shall be a rain-tight design capable of operating in direct exposure to the elements with no degradation in performance within the temperature limits set out in Section 0.
- f. Flow meters are provided for water and oxygen flow to the nozzles.
- g. The equipment follows the ETL certification standards along with CE or UL testing laboratory approval of all electrical components (ETL certification optional).
- h. All components inside the base unit are modular in design and require only basic tools to remove or maintain.

The patented three-fluid injection nozzle produces the hydroxyl radical fog by combining water particles smaller than 5 microns in size, compressed air and oxidant. The flowing air stream associated also provides the mixing energy for the reactor volume.

- a. The Standard injection nozzle is adjustable to allow an optimization of the air/water dispersion ratio. The adjustment shall be a simple threaded barrel requiring no tools to accomplish the adjustment with the results being obvious when observing the nozzle.
- b. The low-volume injection nozzle does not require adjustment to optimize the air/water dispersion ratio.
- c. The standard nozzle and its related tubing shall be secured via Wet Well Mount to the structure via 4-inch slip fit connection allowing for removal and inspection of the nozzle without the necessity of entering the treatment area or disassembling the injection plumbing. Inspection shall be accomplished without the use of tools or specialized skills.
- d. The Low Volume nozzle and the related tubing shall be secured via hinged hatch mount fastening the nozzle to the inside of the well hatch. The nozzle will be accessible without the necessity of entering the treatment area by opening the well hatch. Inspection shall be accomplished without the use of tools or specialized skills.

The radical odor control system works by filling the airspace inside the defined area with a very dense reactive fog made up of hydroxyl radicals, ozone and H<sub>2</sub>S (and other constituents that may be in the treatment area) at different stages of chemical conversion. In wet well applications, the volume of airspace varies with the fluctuating water levels forcing excess air to exit through the vent. If the well is vented, it is necessary to replace the existing vent with a reaction terminating vent from the Manufacturer. If there is no existing vent, one may be required depending on the installation.

- a. The Reaction Terminating Vent is designed to allow the well to “breathe” without exhausting any of the reaction fog.
- b. The water particles in the fog coalesce on the slotted vent stack terminating the reaction.

## **MATERIALS OF CONSTRUCTION OF SUPPLIED COMPONENTS**

The unit contains the following component materials:

- a. Oxidant piping: 316 SS (internal) and Teflon (external)
- b. Water piping: Linear LDPE (external)
- c. Air piping: PVC (Standard nozzle), Clear Polyurethane (LV nozzle)

- d. Nozzle: Gray PVC (Std Nozzle), Engineered Polymer (LV Nozzle)
- e. Base Unit: Triglycidyl isocyanurate (TGIC) polyester coated Aluminum
- f. Cord (Optional): 220 VAC: 12/94 90C (UL) Water Resistant SOOW CSA 600V
- g. Plug (Optional): 220 VAC: WaterTite Turnex NEMA L14-30 30 Amp 125/250V
- h. Fasteners: Stainless steel

## **EXECUTION**

### **EXAMINATION/INSPECTION**

Manufacturer to provide submittals as required. The manufacturer prefers to present submittals in an electronic format whenever possible. Where paper submittals are required, the manufacturer will present them in 2-sided print format using recycled materials where possible.

### **PREPARATION**

The Manufacturer shall provide site review by reviewing engineering specifications and site drawings for a complete odor control system including the base unit and the injection nozzle. For maximum performance and equipment longevity, the unit shall be placed a minimum of 25' between the system and any foul air source or vent. If the system cannot be located at that minimum distance, Vapex approval of the location is required for warranty to be valid.

The Vapex 1500 radical odor control system produces oxidants in the treated areas. If there are any exposed materials that are susceptible to oxidation, these objects will become oxidized. To avoid the issue the customer shall (a) in the case of an existing structure, coat these surfaces to protect them or (b) in the case of new construction either avoid the use of materials susceptible to oxidation in the design, or coat the objects before installation.

Contractor/Owner shall provide a minimum of 4 foot × 4 foot solid, level surface (6' x 6' for unit with ENV. Enclosure) for system installation (preferred surface materials include concrete, asphalt, etc.). There shall be a 30" clearance around all sides of the system for maintenance access. Total unobstructed installation area should be a minimum of 73"L × 88"W × 50"H.

If the unit is to be installed in a location with extreme temperature and /or high humidity, it is strongly recommended the unit be placed in a climate-controlled environment.

#### Indoor or Outdoor Installations:

Indoor installation is recommended where extreme weather conditions may be present (e.g. excessive heat, snow, rain, etc.).

If the indoor location has any access to the odor source (a hatch or door), the inlet air filter must be located outdoors or in another area where there is fresh air. Mounting the inlet air filter remotely will require an alternate Remote Intake Air Filter package (specified when ordering the Vapex 1500).

- i. The Remote Intake Air Filter Package includes:
  - a) one (1) 36" long 4" PVC pipe
  - b) three (3) 4" PVC elbows.
- ii. Owner/Contractor to provide additional 4" PVC pipe & elbows along with clamps/brackets to secure piping as needed and a 4.5" access opening to the outside of the structure.

If the indoor location does not have adequate ventilation, the exhaust must be plumbed to the outside for safety and prevent equipment damage.

- i. The external exhaust air duct shall not be located where it will feed directly into a remote air intake filter.
- ii. Exhausting the air outside will require an optional Exhaust Air Duct Package. The Exhaust Air Duct Package includes: 36" of 4" diameter duct pipe, one (1) 4" PVC Elbow and one (1) mesh screen insert.
- iii. Owner/Contractor to provide 4" PVC pipe and elbows as needed, and a 4.5" access opening to the outside of the structure.

If the indoor location is a small enclosure with an A/C unit for cooling, a system with standard nozzles may also require an optional Remote Nozzle Intake Air package to prevent the system from using cooled air in the process of generating the hydroxyl radical fog.

- i. The Remote Nozzle Intake Air package includes:
  - a) one (1) air intake pipe with plug

- b) one (1) 2" × 1.5" reducer bushing
  - c) one (1) 4" × 2" reducer coupling
  - d) three (3) 2" sweep elbows
  - e) One (1) 1.5" × 12" aluminum pipe nipple.
- ii. Owner/Contractor to provide 2" PVC pipe and additional elbows as needed and a 2.5" access opening to the outside of the structure.

When possible, the equipment installed outdoors should be mounted in a location that is not exposed to direct sunlight.

The odor control system shall be located in an area that does not obstruct normal site maintenance and minimize tripping hazards.

The system has an auto drain mechanism on the bottom right-hand side to release any residual water from the Flow Meters when the system is OFF to prevent equipment damage in freezing temperatures. The drain shall be routed as needed to avoid a possible slipping hazard.

**Owner/Contractor shall ensure the following conditions are met:**

- a. All access points entering the treated space for cables, wires and sample tubing are sealed to prevent the escape of fog.
- b. All conduit connections into the well are sealed.
- c. Vapex recommends all submersible pump cables be secured in a PVC sleeve. Vapex is not liable or responsible for any damage to cables that are not sleeved.
- d. All metal hardware within the wet well should be non-ferrous 316 stainless steel, most aluminum grades resistant to oxidation or accepted equal.

**Owner/Contractor to provide a dedicated 220VAC, 30A, 1Ø & 60 Hz.**

- a. If used in conjunction with a Vapex ENV Enclosure with A/C, Owner/Contractor to provide a dedicated 220VAC, 30A, 1Ø & 60 Hz.

**Owner/Contractor to provide a ¾" water hose bib within 24" of the installation location.**

- a. Water shall be potable or reclaimed and must meet the following standards:

Water Property	Nozzle Type	Specification
Suspended Solids	Standard	< 20 (<10 preferred) microns
	Low Volume	< 10 (<4 preferred) microns
Chlorine	All nozzles	< 1 ppm
Dissolved Solids	All nozzles	< 500 mg/L
Hardness	All nozzles	< 150 mg/L <sup>1</sup>

**Table 1: Required Water Properties**

- b. Water source shall have a shut-off valve and conform to all local regulations (e.g. back-flow prevention, vacuum breaker, etc.)
- c. Water supply shall have a minimum of 10 GPH per nozzle and a minimum of 20 psi and a maximum of 75 psi.

**Owner/Contractor shall provide the following access openings:**

- a. Standard nozzle opening:
  - i. Surface thickness:  $\leq 1$ " thick = 5" minimum / 10" maximum
  - ii. Surface thickness:  $>1$ " &  $\leq 7$ " thick = 7" minimum / 10" maximum
  - iii. Surface thickness:  $>7$ " thick = 9" minimum / 10" maximum
- b. Low Volume nozzle opening: 5" minimum / 10" maximum
- c. Reaction Terminating Vent openings:
  - i. 4" Reaction Terminating Vent – 5" to 10" opening
  - ii. 6" Reaction Terminating Vent – 7" to 10" opening
  - iii. 8" Reaction Terminating Vent – 9" to 14" opening
  - iv. 10" Reaction Terminating Vent – 11" to 14" opening
  - v. 12" Reaction Terminating Vent – 13" to 14" opening

Owner/Contractor to provide all PVC pipe (specified by manufacturer in the Installation manual, pipe glue, brackets, fasteners and fittings required from the Vapex unit to the nozzle assembly

**END OF SPECIAL CONDITIONS**

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