



**BOARD OF SUPERVISORS AGENDA ITEM REPORT
CONTRACTS / AWARDS / GRANTS**

Award Contract Grant

Requested Board Meeting Date: 07/03/18

* = Mandatory, information must be provided

or Procurement Director Award

***Contractor/Vendor Name/Grantor (DBA):**

The Ashton Company, Inc., Contractors and Engineers (Headquarters: Tucson, AZ)

***Project Title/Description:**

Design-Build Services For TRWRF BioGas Cleaning & Utilization Project (3GAS18)

***Purpose:**

Award: Contract No. CT-WW-18-423. This award of contract is recommended to the highest qualified Design-Build team in the amount of \$663,552.00 for a contract term of 07/03/18 to 12/31/20 for Phase I design and pre-construction services for the TRWRF BioGas Cleaning & Utilization Project. County intends to negotiate with Design-Builder regarding scope, schedule, general conditions, construction fees, and other elements of the Guaranteed Maximum Price (GMP) for construction services and incorporate into this Contract by Amendment. Administering Department: Regional Wastewater Reclamation.

***Procurement Method:**

Solicitation for Qualifications No. 285645 was conducted in accordance with A.R.S. § 34-603 and Pima County Board of Supervisors Policy D 29.1. Three (3) responsive statements of qualifications were received and evaluated by a seven (7) member committee using qualifications and experience-based selection criteria. Based upon the evaluation of the respondents' written representations of their qualifications and necessary due diligence, all three (3) respondents were invited to interviews. As a result of the combined scoring of the written statements of qualifications and interviews, the highest qualified Design-Build team is recommended for award.

Attachments: Notice of Recommendation for Award and Contract.

***Program Goals/Predicted Outcomes:**

This program will provide a means of cleaning to "pipeline quality" the biogas created by the anaerobic digestion of the wastewater solids and injecting it into the Southwest Gas system for use as a renewable resource.

***Public Benefit:**

This program will create a revenue stream by selling the gas in the marketplace. This program also affirms a commitment to Pima County's philosophy of sustainability by creating Renewable Natural Gas (RNG) for reuse.

***Metrics Available to Measure Performance:**

The success of this project will be measured by providing clean biogas that meets Southwest Gas specifications (RNG) and by the return on the capital investment through the revenue generated.

***Retroactive:**

No

JUN 21 10 51 AM '18



To: COB - 6-26-18
Jcr - 1
Jgc - 242

Revised 5/2018 (11)

Addendum

Contract / Award Information

Document Type: CT Department Code: WW Contract Number (i.e.,15-123): 18-423

Effective Date: 07/03/18 Termination Date: 12/31/20 Prior Contract Number (Synergen/CMS): _____

Expense Amount: \$* 663,552.00 Revenue Amount: \$ _____

*Funding Source(s) required: Regional Wastewater Reclamation Obligations

Funding from General Fund? Yes No If Yes \$ _____ % _____

Contract is fully or partially funded with Federal Funds? Yes No

If Yes, is the Contract to a vendor or subrecipient? _____

Were insurance or indemnity clauses modified? Yes No

If Yes, attach Risk's approval.

Vendor is using a Social Security Number? Yes No

If Yes, attach the required form per Administrative Procedure 22-73.

Amendment / Revised Award Information

Document Type: _____ Department Code: _____ Contract Number (i.e.,15-123): _____

Amendment No.: _____ AMS Version No.: _____

Effective Date: _____ New Termination Date: _____

Prior Contract No. (Synergen/CMS): _____

Expense or Revenue Increase Decrease Amount This Amendment: \$ _____

Is there revenue included? Yes No If Yes \$ _____

*Funding Source(s) required: _____

Funding from General Fund? Yes No If Yes \$ _____ % _____

Grant/Amendment Information (for grants acceptance and awards) Award Amendment

Document Type: _____ Department Code: _____ Grant Number (i.e.,15-123): _____

Effective Date: _____ Termination Date: _____ Amendment Number: _____

Match Amount: \$ _____ Revenue Amount: \$ _____

*All Funding Source(s) required: _____

*Match funding from General Fund? Yes No If Yes \$ _____ % _____

*Match funding from other sources? Yes No If Yes \$ _____ % _____

*Funding Source: _____

*If Federal funds are received, is funding coming directly from the Federal government or passed through other organization(s)? _____

Contact: Keith E. Rogers *Keith E. Rogers* *[Signature]* Telephone: 724-3542

Department: Procurement

Department Director Signature/Date: *[Signature]* 6/20/18 *[Signature]* 6/21/18

Deputy County Administrator Signature/Date: *[Signature]* 6/21/18

County Administrator Signature/Date: *[Signature]* 6/21/18
(Required for Board Agenda/Addendum Items)



PIMA COUNTY

JUNE 19, 2018

NOTICE OF RECOMMENDATION FOR AWARD

The Pima County Procurement Department - Design & Construction Division hereby issues formal notice to respondents to **Solicitation No. 285645 – Design Build Services For TRWRF BioGas Cleaning & Utilization Project (3GAS18)**; that the following listed respondent will be recommended for award as indicated below. The award action is scheduled to be performed by the Pima County Board of Supervisors on or after the regularly scheduled meeting **July 3, 2018**.

RECOMMENDED:

The Ashton Company, Inc., Contractors and Engineers

OTHER FINAL-LISTED TEAMS:

Stearns, Conrad and Schmidt, Consulting Engineers, Inc, dba SCS Energy

Tetra Tech, Inc. / T. V. John & Son, Inc.

NOTE: Information regarding this solicitation will be disclosed in accordance with A.R.S. § 34-603(H).

/s/ <Keith E. Rogers

Keith E. Rogers, CPPB
Procurement Officer

Date: June 19, 2018

This notice is in compliance with Pima County Procurement Code.

7.

Pima County Regional Wastewater Reclamation Department	
Project:	Design-Build Services For: TRWRF BioGas Cleaning & Utilization Project (3GAS18)
Contractor:	The Ashton Company, Inc., Contractors and Engineers PO Box 26927 Tucson, AZ 85726
Amount:	\$663,552.00
Funding:	Regional Wastewater Reclamation Department Obligations

CONTRACT

NO. CT-WW-18-423

AMENDMENT NO. _____

This number must appear on all invoices, correspondence and documents pertaining to this contract.

DESIGN-BUILD CONTRACT

1. Parties, Background and Purpose.

- 1.1. Parties. This Contract is between Pima County, a body politic and corporate of the State of Arizona ("County"), and [Legal Name as documented by the ACC or individual's name for sole proprietorship] ("Design-Builder"). County and Design-Builder may also be individually to as a "Party" or collectively as the "Parties."
- 1.2. History. County previously issued Solicitation for Qualifications (SFQ) No. 285645 (hereinafter referred to as the "Solicitation") seeking a Design-Build services provider, the documents, addenda, requirements and specifications of which are all incorporated into this Contract by reference.
- 1.3. Design-Builder Selection. Design-Builder was selected by the County through the evaluation process described in the Solicitation.
- 1.4. Purpose. The Parties desire to enter into this Contract to effect the completion of the Project on a **Guaranteed Maximum Price** ("GMP") basis.

2. Effective Date, Term, and Schedule.

- 2.1. Effective Date. The Effective Date of this Contract is the date last signed below.
- 2.2. Term. Unless otherwise terminated or extended, in writing, pursuant to other provisions of this Contract, the Term of this Contract extends to one calendar year after the final acceptance date or, until December 31, 2020, whichever date is later.
- 2.3. Scheduled Major Milestones. Design-Builder provided County with a Preliminary Schedule covering the planning, design, and construction of the Project which schedule is attached hereto as Contract Exhibit A. That schedule contemplates Phase 1 completion within Two Hundred Sixty-Six (266) Days of the Phase 1 Notice to Proceed; and Phase 2 completion within TBD Days of the Phase 2 Notice to Proceed, with Substantial Completion within TBD Days and Final Acceptance within TBD Days respectively of the Phase 2 Notice to Proceed.

3. Scope of Services.

- 3.1. This Contract is a Design-Build Contract for architectural, engineering, and construction services (collectively, the "Work") for the Project, as more fully set forth in the following documents which are attached hereto and which are integral part of this Contract: Exhibit A –



Preliminary Schedule (1 page); Contract Exhibit B – Phase I Scope of Services and Fee Schedule (13 pages); Appendix "A" – Project Scope of Work (4 pages); Appendix "B" – Design-Builder General Scope of Work (50 pages); Appendix "C" – Technical Specifications; Appendix (49 pages) "D" – Design-Builder Special Conditions (21 pages); Appendix "E" – Design-Builder General Conditions (58 pages); Appendix "F" – Supplemental Provisions – Construction Costing (5 pages); Appendix "G" – Glossary or Terms and Conditions (9 pages). Also incorporated into this Contract by reference are the Pima Association of Governments Standard Specifications for Public Improvements.

- 3.2. Work under this Contract will proceed in two phases: Phase 1 - Design and Pre-Construction Services; and Phase 2 – Construction Services. The initial Contract covers only the Phase 1 portion of the Work as that is defined in the Scope. Prior to any Design-Builder work on Phase 2, Design-Builder will deliver to County a proposed GMP, or multiple GMPs, if construction is divided into multiple phases.
 - 3.3. With respect to the Phase 2 – Construction GMP, Design-Builder acknowledges that the Construction Documents may be incomplete at the time the Design-Builder delivers the GMP proposal, and that the Construction Documents may not be completed until after commencement of the construction phase of the Work. Nevertheless, the GMP proposal shall include all costs for the Work required by the completed Construction Documents, and if the GMP proposal is accepted by the County, the Design-Builder shall be entitled to no increase in the GMP if the Work required by the completed Construction Documents: (i) is required by the Contract for Design-Build Construction; (ii) is reasonably inferable from the incomplete documents; (iii) is consistent with the County's programmatic goals and objectives; (iv) is consistent with the County's Design and Construction Standards and the general industry standards for completion of the Work; (v) is not a substantial enlargement of the scope of Work; or (vi) substantially conforms to the nature, type, kind, or quality of Work depicted in the incomplete documents.
 - 3.4. If a GMP proposal is unacceptable to the County, the County will promptly notify the Design-Builder in writing. Within fourteen (14) calendar days of such notification, the County and Design-Builder will meet to discuss and resolve any differences, inconsistencies, or misunderstandings and to negotiate recommended adjustments to the Work and/or to the proposed GMP.
 - 3.5. The County may, at its sole discretion and based upon its sole judgment: (i) indicate its acceptance of a GMP proposal; (ii) reject a GMP proposal; (iii) terminate the Project; or (iv) proceed to construct the Project using a party or parties other than the Design-Builder.
 - 3.6. If the County rejects a GMP proposal, neither party shall have any further obligation pursuant to this Contract.
 - 3.7. If the County accepts a GMP proposal, the parties will complete and execute an amendment to this Contract, and the County will issue a written Notice to Proceed to the Design-Builder establishing the date the next phase is to commence (the "Phase Commencement Date"). The Design-Builder shall not expend any monies for the new phase prior to receipt of such Notice to Proceed.
4. **Key Personnel.** Design-Builder will employ suitably trained and skilled professional personnel to perform all services under this Contract. Prior to changing any key personnel, especially those key personnel County identified in Design-Builder's Statement of Qualifications relied upon in making this Contract, Design-Builder will obtain the approval of County.
 5. **Compensation and Payment.**
 - 5.1. **Rates.** County will pay Design-Builder at the rates set forth in Contract Exhibit B during the Term of the Contract.
 - 5.2. **Maximum Payment Amount.** County's total payments to Design-Builder for Phase 1 Work, including sales taxes (if applicable), in the not to exceed amount of Six Hundred Sixty-Three Thousand, Five Hundred Fifty-Two Dollars and No Cents (\$663,552.00).

- 5.3. Sales Taxes. The payment amounts or rates in Contract Exhibit B do not include sales taxes. Design-Builder may invoice County for sales taxes that Design-Builder is required to pay on goods supplied to the County under this Contract. Design-Builder will show sales taxes as a separate line item on invoices.
 - 5.4. Timing of Invoices. Design-Builder will invoice County on a monthly basis unless a different billing period is set forth in Appendix "B" Design-Builder General Scope of Work. County must receive invoices no more than 30 days after the end of the billing period in which Design-Builder delivered the invoiced products or services to County. County may refuse to pay for any product or service for which Design-Builder does not timely invoice the County and, pursuant to A.R.S. § 11-622(C), will not pay for any product or service invoiced more than 6-months late.
 - 5.5. Design-Builder will cite the Contract number on all invoices. The pre-printed terms and conditions on the purchase order form do not apply to Work performed under this Contract, which is to be governed solely by the terms of this Contract, including all attached and referenced documents.
 - 5.6. County may, at any time during the Term and during the retention period set forth in Section 30 below, question any payment under this Contract. If County raises a question about the propriety of a past payment, Design-Builder will cooperate with County in reviewing the payment. County may set-off any overpayment against amounts due to Design-Builder under this or any other contract between County and Design-Builder. Design-Builder will promptly pay to County any overpayment that County cannot recover by set-off.
 - 5.7. Design-Builder will not perform work in excess of the GMP without prior authorization by a written Change Order executed by County's Board of Supervisors or Procurement Director pursuant to the Pima County Procurement Code. Work performed in excess of the GMP without a written and properly approved Change Order is done at Design-Builder's own risk.
 - 5.8. Price Guarantees.
 - 5.8.1. Upon acceptance by County of a GMP pursuant to Section 3.8 of this Contract, the Design-Builder guarantees that the sum of: (i) the actual Cost of the Work; (ii) Design-Builder's Contingency; (iii) Design-Builder's Staffing Costs; (iv) General Conditions Cost; and (v) Design-Builder's Overhead and Profit, will not exceed the amount set forth in the agreed upon GMP. All costs or expenses that would cause this sum to exceed the GMP will be borne by the Design-Builder unless adjusted by a County approved Change Order.
 - 5.8.2. Upon acceptance by County of a GMP pursuant to Section 3.8 of this Contract, the Design-Builder guarantees that the actual Cost of the Work, Design-Builder's Staffing Costs, General Conditions Cost, and Design-Builder's Overhead and Profit will not exceed the guaranteed maximum for each such category and that all costs or expenses that would cause any of these individual categories to exceed the guaranteed maximum for each such category in the agreed upon GMP will be borne by the Design-Builder unless adjusted by a County approved change order.
 - 5.8.3. Upon acceptance by County of a GMP pursuant to Section 3.8 of this Contract, the Design-Builder certifies that: all factual unit costs supporting the GMP proposal are accurate, complete, and current at the time of negotiations; and that any other factual unit costs that may be furnished to the County in the future to support any additional amounts that may be authorized will also be accurate and complete. Payments to the Design-Builder will be reduced if the County determines such amounts were included due to materially inaccurate, incomplete, or non-current factual unit costs.
 - 5.8.4. Upon acceptance by County of a GMP pursuant to Section 3.8 of this Contract the Design-Builder guarantees that, to the extent the accepted GMP includes contingency, Design-Builder will not use that contingency unless use has been specifically approved by County by Change Order prior to expenditure by the Design-Builder.
6. **Insurance. The Insurance Requirements contained in Article 6, Paragraph 6.02 through 6.07, of Appendix E - EJCDC Design-Builder General Conditions are superseded by this Section 6, Insurance.**

The Insurance Requirements including coverage scope and limits are considered by Pima County to be minimum requirements. Design-Builder's insurance shall be placed with companies licensed in the State of Arizona and the insureds shall have an "A.M. Best" rating of not less than A- VII. Pima County in no way warrants that the minimum insurer rating is sufficient to protect the Design-Builder from potential insurer insolvency.

6.1 Minimum Scope and Limits of Insurance

Design-Builder shall procure and maintain, until all contractual obligations have been discharged, the insurance coverage with limits of liability not less than stated below.

6.1.1 Commercial General Liability (CGL): Occurrence Form

6.1.1.1 Design-Builder shall maintain CGL and, if necessary, commercial umbrella insurance with a total limit of not less than \$2,000,000 each occurrence. If such CGL insurance contains a general aggregate limit, it shall apply separately to this project described in the scope of work for this contract

6.1.1.2 CGL insurance shall be written on ISO occurrence form CG 00 01 12 07 (or a substitute form providing equivalent coverage) and shall cover liability arising from premises, operations, independent contractors, products-completed operations, personal and advertising injury, and liability assumed under an insured contract (including the tort liability of another assumed in a business contract).

6.1.1.3 Design-Builder's CGL policy shall not be restricted in scope by the attachment of endorsements such as the subcontractor exception.

6.1.1.4 Pima County shall be included as an insured under the CGL, using ISO additional insured endorsements CG 20 10 and CG 20 37 or their equivalent, including coverage for Pima County with respect to liability arising out of the completed operations of Design-Builder.

6.1.2 Business Automobile Liability: Coverage to include Bodily Injury and Property Damage (Form CA 00 01) for any owned, hired, and/or non-owned automobiles used in the performance of this Contract with a Combined Single Limit (CSL) of \$1,000,000 each accident.

6.1.3 Workers' Compensation (WC) and Employers' Liability: Statutory requirements and benefits for Workers' Compensation. In Arizona, WC coverage is compulsory for employers of one or more employees. Employer's Liability coverage- \$1,000,000 each accident and each person - disease.

6.1.4 Professional Liability (Errors and Omissions) Insurance: This insurance is required when the Design-Builder's CGL insurance excludes coverage of the Design-Builder's professional error and omission exposures. The policy limits shall be not less than \$2,000,000 Each Claim and \$2,000,000 Annual Aggregate. The insurance policy shall cover professional misconduct or negligent acts of anyone performing any professional services under this contract.

6.1.5 Claim-Made Insurance Coverage: If any part of the Required Insurance is written on a claims-made basis, any policy retroactive date must precede the effective date of this Contract, and Design-Builder must maintain such coverage for a period of not less than three (3) years following Contract expiration, termination or cancellation.

6.2 Additional Insurance Requirements

The policies shall include, or be endorsed to include, as required by this written agreement, the following provisions:

- 6.2.1 Additional Insured: The General Liability and Business Automobile Liability Policies shall each be endorsed to include Pima County, its departments, districts, boards, commissions, officers, officials, agents, and employees as additional insureds with respect to liability arising out of the activities performed by or on behalf of the Design-Builder.
- 6.2.2 Subrogation: The General Liability, Business Automobile Liability and Workers' Compensation Policies shall each contain a waiver of subrogation endorsement in favor of Pima County, and its departments, districts, boards, commissions, officers, officials, agents, and employees for losses arising from work performed by or on behalf of the Design-Builder.
- 6.2.3 Primary Insurance: The Design-Builder's policies shall stipulate that the insurance afforded the Design-Builder shall be primary and that any insurance carried by Pima County, its agents, officials, or employees shall be excess and not contributory insurance.
- 6.2.4 **Subcontractors' Insurance.** Design-Builder shall cause each subcontractor employed by Design-Builder to purchase and maintain insurance of the type specified above. When requested by Pima County, Design-Builder shall furnish copies of certificates of insurance evidencing coverage for each subcontractor.

6.3 Coverage Verification Requirements

- 6.3.1 Evidence of Insurance: All certificates and endorsements, as required by this written agreement, are to be received and approved by the appropriate County Department before work commences and thereafter upon renewal or replacement of each certified coverage. Design-Builder shall furnish Pima County with a certificate(s) of insurance, executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements set forth above.
- 6.3.2 Certificate of Insurance: All certificates shall include the Pima County project or contract number and project description on the certificate. All certificates shall provide for 30 days written notice to Pima County prior to the cancellation of any insurance referred to therein, except 10-days prior notice is sufficient when the cancellation is for non-payment of a premium.
- 6.3.3 Maintaining Insurance: Failure to maintain the required insurance may result in termination of this contract at Pima County's option. If Design-Builder fails to maintain the insurance as set forth herein, Pima County shall have the right, but not the obligation, to purchase said insurance at Design-Builder's expense.
- 6.3.4 No Representation of Coverage Adequacy: By requiring insurance herein, Pima County does not represent that coverage and limits will necessarily be adequate to protect Design-Builder, and such coverage and limits shall not be deemed as a limitation on Design-Builder's liability under the indemnities granted to Pima County in this contract

6.4 Approval and Modifications

The Pima County Risk Manager may approve a modification of the Insurance Requirements without the necessity of a formal Contract amendment, but the approval must be in writing. Neither the County's failure to obtain a required insurance certificate or endorsement, the

County's failure to object to a non-complying insurance certificate or endorsement, or the County's receipt of any other information from the Design-Builder, its insurance broker(s) and/or insurer(s), constitutes a waiver of any of the Insurance Requirements or the Design-Builder's obligation to maintain such insurance.

6.4.1 Down-the-hole Coverage

6.4.1.1 Limits of coverage \$1,000,000 per occurrence

6.4.2 Design-Builders Pollution Liability

6.4.2.1 Design-Builder shall maintain in force for the full period of this contract insurance covering losses caused by pollution incidents that arise from the operations of the Design-Builder described under the scope of services of this contract.

6.4.2.2 Cover shall apply to bodily injury; property damage, including loss of use of damaged property or of property that has not been physically injured; cleanup costs; and defense, including costs and expenses incurred in the investigation, defense, or settlement of claims. The policy of insurance affording these required coverages shall be written in an amount of at least \$1,000,000 per claim, with an annual aggregate of at least \$2,000,000.

6.4.2.3 Certificate of Insurance shall identify if policy is written on an occurrence or claims-made basis.

6.4.2.4 The policy of insurance as required in this section shall include as an insured the Owner, officers, and employees.

6.4.2.5 If the scope of services as defined in this contract includes the disposal of any hazardous or nonhazardous materials from the job site, the Design-Builder must furnish to the Owner evidence of pollution liability insurance maintained by the disposal site operator for losses arising from the insured facility accepting waste under this contract. Coverage certified to the Owner under this Section for the disposal facility insurance must be maintained in minimum amounts of \$1,000,000 per loss, with an annual aggregate of at least \$5,000,000.

6.4.3 Builder's Risk - Installation Floater (If applicable)

6.4.3.1 Amount equal to the Contract Completed Value \$TBD.

6.4.3.2 Pima County, Design-Builder, subcontractor and any others with an insurable interest in the work **shall be Insureds** on the policy.

6.4.3.3 The Installation Floater must provide coverage from the time the equipment/material becomes the responsibility of the Design-Builder and shall continue without interruption during the installation, including any time during which the equipment/material is being transported to the installation site, or awaiting installation, whether on or off site.

6.4.3.4 Coverage shall be written on an "all risks" coverage on a "replacement cost basis without optional deductibles", replacement cost basis as well as coverage for losses that may occur during equipment testing.

6.4.3.5 Design-Builder shall be responsible for repairing damage to the work and other property not insured if the damage is caused "in whole or in part" by the Design-Builder or any subcontractors.

6.4.3.6 Policy shall be endorsed such that the insurance shall not be canceled or lapse because of any partial use by the County.

- 6.4.3.7 Policy shall be maintained until whichever of the following shall first occur: (1) final payment has been made; or, (2) until no person or entity, other than the County, has an insurable interest in the property required to be covered.
- 6.4.3.8 Policy shall contain a waiver of subrogation endorsement in favor of Pima County, and its departments, districts, boards, commissions, officers, officials, agents, and employees for losses arising from work performed by or on behalf of the Design-Builder.
- 6.4.3.9 Design-Builder is responsible for the payment of all deductibles under the Installation Floater policy.

7 Payment and Performance Bonds. The Payment and Performance Bonds Requirements contained in Article 6, Paragraph 6.01 of Appendix E - EJCDC Design-Builder General Conditions are superseded by this Section 7, Payment and Performance Bonds.

As required by A.R.S. §§ 34-610 and 34-611 and, as a condition precedent to receiving a Notice to Proceed for any new construction phase of the Work, Design-Builder will deliver to County the Performance Bond and the Payment Bond, each in an amount equal to the portion of the GMP attributable to that phase of the construction work, as financial security for the faithful performance and payment of its Design- Build Period obligations hereunder. The Design-Builder will provide for an increase in the Performance Bond and the Payment Bond to reflect any GMP adjustments, as a condition of its entitlement to the GMP adjustment.

- 7.1 The Performance Bond and the Payment Bond must be substantially in the form set forth in Attachment 7 hereto and must be issued by a surety company: (1) verified by the County having a rating of "A-" in the latest revision of the A.M. Best Company's Insurance Report; (2) be listed in the United States Treasury Department's Circular 570, "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsurance Companies"; and (3) holding a certificate of authority to transact surety business in the State of Arizona, issued by the Director of the Department of Insurance.
- 7.2 The Performance Bond and the Payment Bond shall be released only upon the achievement of Final Completion by the Company. In no event shall the Performance Bond or the Payment Bond serve as a limitation on the liability of the Design-Builder under this Contract.
- 7.3 Design-Builder's failure to maintain the Performance Bond and Payment Bond in the required amounts throughout the construction phases of this Contract will constitute material breach of this Contract.

8 Indemnification. The Indemnification Requirements contained in Article 7, Paragraph 7.19 of Appendix E - EJCDC Design-Builder General Conditions are superseded by this Section 8, Indemnification.

To the fullest extent permitted by law, Design-Builder will defend, indemnify, and hold harmless Pima County and any related taxing district, and the officials and employees of each of them (collectively, "County Indemnitees") from and against any and all claims, actions, liabilities, and Losses and Expenses (including reasonable attorney fees) (collectively, "Claims") arising out of actual or alleged injury of any person (including death) or loss or damage to tangible or intangible property caused, or alleged to be caused, in whole or in part, by any act or omission of Design-Builder or any of Design-Builder's directors, officers, agents, employees, volunteers, or subcontractors. This indemnity includes any claim or amount arising or recovered under the Workers' Compensation Law or arising out of the failure of Design-Builder to conform to any federal, state, or local law, statute, ordinance, rule, regulation, or court decree. The County Indemnitees will, in all instances, except for Claims arising solely from the acts or omissions of the County Indemnitees, be indemnified by Design-Builder from and against any and all Claims. Design-Builder is responsible for primary loss investigation, defense, and judgment costs for any Claim to which this indemnity provision applies. This duty to indemnify will survive the expiration or termination of this Contract.

9 Design-Builder's Performance. Design-Builder is responsible for the professional quality, technical accuracy, timely completion, and the coordination of all its efforts and other services furnished by Design-Builder under this Contract. Without additional compensation, Design-Builder will correct or revise any errors, omissions, or other deficiencies in all products of its efforts and other services provided. This will include resolving any deficiencies arising out of the willful or negligent acts or omissions of Design-Builder found during or after the course of the services performed by or for Design-Builder under this Contract, to the extent that such willful or negligent errors, omissions, and acts fall below the standard of care and skill that a professional Design-Builder in Arizona would exercise under similar conditions. Design-Builder is responsible for these corrections or revisions regardless of County having knowledge of or condoning/accepting the products or the services. Any such resolution of deficiencies shall be at no cost to County.

10 Excusable Delays

10.1 Neither Party shall be liable to the other nor deemed in default under this Contract if and to the extent that such Party's performance is prevented or delayed by reason of an Uncontrollable Circumstance.

10.2 For purposes of this Contract, Uncontrollable Circumstance means any act, event, or condition that: (1) is beyond the reasonable control of the party relying on it as a justification for not performing an obligation or complying with any condition required of such party under this Contract; and (2) materially expands the scope of, interferes with, delays, or increases the cost of performing the party's obligations under this Contract, to the extent that such act, event, or condition is not the result of the intentional or negligent act, error, or omission, failure to exercise reasonable diligence, or breach of this Contract on the part of the party claiming the occurrence of an Uncontrollable Circumstance.

10.3 Excusable Delays shall not include late performance by a subcontractor unless the delay arises out of an Uncontrollable Circumstance. The time of completion shall be extended, by a Change Order, for a period of time equal to the time the cause prevented the delayed Party from performing in accordance with this Contract.

11 Liquidated Damages. Design-Builder agrees to achieve Substantial Completion within the number of Days specified in Section 2.2, above (the "Time"). Design-Builder's failure to reach Substantial Completion within the Time will substantially harm the County. Because damages resulting from such a failure cannot be calculated with any degree of certainty, the Parties agree that if the Work is not Substantially Complete within the Time (as may be amended through written Change Orders), Design-Builder will pay to County as Liquidated Damages, and not a penalty, \$8,000.00 for each calendar day elapsing between the Agreed Date for Substantial Completion and the date Substantial Completion is actually achieved. The Parties further agree that the daily Liquidated Damages amount is fair, reasonable, and not subject to later challenge.

12 Unilateral Change Directive. County may issue a Unilateral Change Directive to Design-Builder at any time during the term of the Contract. Upon receipt of a Unilateral Change directive, Design-Builder will promptly proceed with the performance of any change in the Work as instructed and will promptly advise the County in writing of the Design-Builder's agreement (or disagreement) with any price, performance, or schedule relief, if any, as may be proposed by the County in the Unilateral Change Directive. No Unilateral Change Directive will be binding on either Party unless it has been approved by the County Board of Supervisors or, if authorized, the Procurement Director. A Unilateral Change Directive that is signed by Design-Builder and approved by the County Board of Supervisors or Procurement Director reflecting the Scope of Work and any price, schedule, or performance relief, if any, will be deemed a Change Order.

13 Suspension/Termination for Convenience

13.1 Suspension by County for Convenience. County may, without cause, order Design-Builder, in writing, to suspend or interrupt the Work in whole or in part for such period of time as the County

may determine necessary whenever such suspension or interruption would be in the best interest of the County. If County suspends the Work for convenience, an adjustment shall be made for substantiated increases in the cost of performance of the Contract, if any, including profit on the increased cost of performance, caused by suspension or interruption. No adjustment shall be made to the extent:

- 13.1.1 performance is, was, or would have been so suspended or interrupted by another cause for which the Design-Builder is responsible; or
- 13.1.2 an equitable adjustment is made or denied by County.

13.2 Termination by County for Convenience.

- 13.2.1 The performance of the Work under this Contract may be terminated by County, in whole or in part, in accordance with this clause whenever the County reasonably determines that such termination is in the best interest of County. Any such termination will be effected by delivery to Design-Builder of a written Notice of Termination specifying the extent to which performance of the Work is terminated, and the date upon which such termination becomes effective.
- 13.2.2 If the Contract is terminated by the County as provided herein, County will compensate Design-Builder for any Work performed, and accepted, prior to the termination, together with profit in proportion to the Work performed and accepted. The compensation shall include payment for contractual obligations reasonably incurred prior to termination. No amount will be allowed for: anticipated profit on unperformed Work; or consequential damages to Design-Builder resulting from the termination.
- 13.2.3 Termination of the Contract or any portion thereof by County for convenience will not relieve Design-Builder of its contractual responsibilities for Work completed.

14 Termination for Cause. This Contract may be terminated for cause upon the occurrence of one or more Events of Default:

14.1 Events of Default

- 14.1.1 If Design-Builder fails or neglects to carry out the Work in accordance with the provisions of the Contract Documents, and fails, after ten (10) calendar days written notice from County, to correct such failure or neglect and thereafter diligently pursue the Project to completion;
- 14.1.2 If Design-Builder materially breaches this Contract and fails, after ten (10) days written notice from the County, to correct such breach and thereafter diligently pursue the Project to completion; or
- 14.1.3 If a custodian, trustee or receiver is appointed for Design-Builder, or if Design-Builder becomes insolvent or bankrupt, or makes an assignment for the benefit of creditors, or Design-Builder causes or suffers an order for relief to be entered with respect to it under applicable Federal bankruptcy law or applies for or consents to the appointment of a custodian, trustee or receiver for Design-Builder, or bankruptcy, reorganization, arrangement or insolvency proceedings, or other proceedings for relief under any bankruptcy or similar law or laws for the relief of debtors, are instituted by or against Design-Builder, and in any of the foregoing cases such action is not discharged or terminated within sixty (60) Days of its institution.

14.2 Remedies of County Upon an Event of Default.

- 14.2.1 Upon an Event of Default, County has the right to terminate this Contract upon an additional seven (7) Days' written notice to Design-Builder provided Design-Builder has not commenced a cure within such seven (7) Day period.
- 14.2.2 Without prejudice to any other rights or remedies of County, County may:

- 14.2.2.1 Take possession of all data, reports, and work in progress in possession of Design-Builder or to which Design-Builder otherwise has right;
 - 14.2.2.2 Accept assignment of Subcontracts; and
 - 14.2.2.3 Finish the Work by whatever reasonable method County may deem expedient.
- 14.2.3 When the County terminates the Contract as aforesaid, Design-Builder will not be entitled to receive further payment until the Work is finished. If the unpaid balance exceeds costs incurred in finishing the Work, such excess may be paid to Design-Builder, up to the amount due Design-Builder to the date of the termination. If such costs exceed the unpaid balance of the Contract, Design-Builder will pay the difference to County.

15 Dispute Resolution.

- 15.1 In the event of any dispute arising between County and Design-Builder regarding any part of this Contract or the Contract Documents, or the Parties' obligations or performance hereunder, either Party may institute the dispute resolution procedures set forth herein. The Parties shall continue performance of their respective obligations hereunder notwithstanding the existence of a dispute.
- 15.1.1 The Parties are fully committed to working with each other throughout the Project and agree to communicate regularly with each other at all times so as to avoid or minimize disputes or disagreements. If disputes or disagreements do arise, Design-Builder and County each commit to resolving such disputes or disagreements in an amicable, professional, and expeditious manner so as to avoid unnecessary losses, delays, and disruptions to the Work, Design-Builder and County will first attempt to resolve disputes or disagreements at the field level through discussions between Design-Builder's Representative and County's Representative.
 - 15.1.2 Informal Dispute Resolution, Either Party may, from time to time, call a special meeting for the resolution of disputes that would have a material impact on the cost or progress of the Project. Such meeting shall be held at County's offices within three (3) working Days of written request therefor, which request shall specify in reasonable detail the nature of the dispute. The County's Project Manager and Design-Builder's Project Manager will attend the meeting. Such Representatives shall attempt in good faith to resolve the dispute. If unable to resolve the dispute, the Parties may agree to escalation of discussions to a higher level before proceeding to mediation, as described below.
 - 15.1.3 Mediation. If the Parties are unable to resolve the dispute through the special meeting and/or escalation, then either Party may request non-binding mediation. The non-requesting Party may decline the request in its reasonable discretion. If there is concurrence that any matter will be mediated, a mediator, mutually acceptable to the Parties and experienced in design and construction matters as well as in the Design-Build procurement method will be appointed. The Parties will share the cost of the mediator. The mediator will be given any written statements of the Parties and may review the Site and any relevant documents. The mediator will call a meeting of the Parties within ten (10) working days after his/her appointment, which meeting will be attended by the County's Project Manager and Design-Builder's Project Manager. Such Authorized Representatives shall attempt in good faith to resolve the dispute. During such ten (10) Day period, the mediator may meet with the Parties separately.
 - 15.1.4 Mediation Minutes. No minutes will be kept with respect to any mediation proceedings and the comments and/or findings of the mediator, together with any written statements prepared, will be non-binding, confidential, and without prejudice to the rights and remedies of any Party. The entire mediation process shall be completed within twenty (20) Working Days of the date upon which the initial special meeting is held, unless the

Parties agree otherwise in writing. If the dispute is settled through the mediation process, the decision will be implemented by written agreement signed by the Parties,

15.1.5 Litigation. Nothing in this Section will operate to limit, interfere with, or delay the right of either Party to this Contract to commence judicial legal proceedings upon a breach of this Contract by the other Party, whether in lieu of, concurrently with, or at the conclusion on any non-binding litigation.

16 No Consequential or Punitive Damages. In no event will either Party hereto be liable to the other or obligated in any manner to pay to the other any special, incidental, consequential, punitive, or similar damages based upon claims arising out of or in connection with the performance or non-performance of its obligations or otherwise under this Contract, or the material falseness or inaccuracy of any representation made in this Contract, whether such claims are based upon contract, tort, negligence, warranty, or other legal theory; provided, however, that the waiver of the foregoing damages under this Section is intended to apply only to disputes and claims as between the County and the Design-Builder. Nothing in this Section shall limit the obligation of the Design-Builder to indemnify, defend and hold harmless the County Indemnitees for any special, incidental, consequential, punitive, or similar damages payable to third parties resulting from any act or circumstance for which the Design-Builder is obligated to indemnify the County Indemnitees hereunder. In addition, the Parties acknowledge and agree that nothing in this Section will serve as a limitation or defense with respect to any obligation of a party to pay Liquidated Damages specifically provided for under this Contract.

17 Laws and Regulations.

17.1 Compliance with Laws. Design-Builder will comply with all federal, state, and local laws, rules, regulations, standards, and Executive Orders.

17.2 Licensing. Design-Builder warrants that it (directly or through its subcontractors) is appropriately licensed to provide all services required under this Contract and that its subcontractors will be appropriately licensed.

17.3 Choice of Law; Venue. The laws and regulations of the State of Arizona govern the rights and obligations of the parties under this Contract. Any action relating to this Contract must be filed and maintained in the appropriate court of the State of Arizona in Pima County.

18 Independent Contractor. Design-Builder is an independent contractor. Neither Design-Builder, nor any of Design-Builder's officers, agents, or employees will be considered an employee of Pima County for any purpose or be entitled to receive any employment-related benefits, or assert any protections, under the Pima County Merit System. Design-Builder is responsible for paying all federal, state, and local taxes on the compensation received by Design-Builder under this Contract and will indemnify, defend, and hold County harmless from any and all liability that County may incur because of Design-Builder's failure to pay such taxes.

19 Subcontractors. Design-Builder is fully responsible for all acts and omissions of its subcontractors, and of persons directly or indirectly employed by Design-Builder's subcontractors, and of persons for whose acts any of them may be liable, to the same extent that the Design-Builder is responsible for the acts and omissions of its own employees. Nothing in this Contract creates any obligation on the part of County to pay or see to the payment of any money due any subcontractor, except as may be required by law.

20 Assignment. Design-Builder may not assign its rights or obligations under this Contract, in whole or in part, without the County's prior written approval. County may withhold approval at its sole discretion.

21 Non-Discrimination. Design-Builder will comply with all provisions and requirements of Arizona Executive Order 2009-09, which is hereby incorporated into this contract, including flow-down of all provisions and requirements to any subcontractors. During the performance of this Contract, Design-Builder will not discriminate against any employee, client, or any other individual in any way because of that person's age, race, creed, color, religion, sex, disability, or national origin.

- 22 **Americans with Disabilities Act.** Design-Builder will comply with all applicable provisions of the Americans with Disabilities Act (Public Law 101-336, 42 U.S.C. 12101-12213) and all applicable federal regulations under the Act, including 28 CFR Parts 35 and 36.
- 23 **Authority to Contract.** Design-Builder warrants its right and power to enter into this Contract. If any court or administrative agency determines that County does not have authority to enter into this Contract, County will not be liable to Design-Builder or any third party by reason of such determination or by reason of this Contract.
- 24 **Full and Complete Performance.** The failure of either Party to insist, in one or more instances, upon the other Party's full and complete performance under this Contract, or to take any action based on the other Party's failure to fully and completely perform, is not a waiver or relinquishment of the right to insist upon full and complete performance of the same, or any other covenant or condition, either in the past or in the future. The acceptance by either Party of sums less than may be due and owing it at any time is not an accord and satisfaction.
- 25 **Cancellation for Conflict of Interest.** This Contract is subject to cancellation for conflict of interest pursuant to A.R.S. § 38-511, the pertinent provisions of which are incorporated into this Contract by reference.
- 26 **Notice.** Any notice required or permitted to be given under this Contract must be in writing and be served by personal delivery or by certified mail upon the other Party as follows:
- | | |
|--------------------------------------------|---------------------------------------------------|
| <u>County:</u> | <u>Design-Builder:</u> |
| Jackson Jenkins, Director | Shawn Silvester |
| Regional Wastewater Reclamation Department | The Ashton Company, Inc., Contractors & Engineers |
| 201 N Stone Ave, 8 th Floor | PO Box 26927 |
| Tucson, AZ 85701 | Tucson, AZ 85726 |
| Tel: (520) 724-6500 | Tel: (520) 624-5500 |
| Fax: (520) 724-9635 | Fax: (520) 791-9059 |
- 27 **Non-Exclusive Contract.** Design-Builder understands that this Contract is nonexclusive and is for the sole convenience of County. County reserves the right to obtain like services from other sources for any reason.
- 28 **Remedies.** Either Party may pursue any remedies provided by law for the breach of this Contract. No right or remedy is intended to be exclusive of any other right or remedy and each is cumulative and in addition to any other right or remedy existing at law or at equity or by virtue of this Contract.
- 29 **Encumbrances.** Design-Builder will not directly or indirectly create or permit to be created or to remain, and shall promptly discharge or bond any Encumbrance or Lien arising in relation to the Project or the Design-Build Work. The Design-Builder's Subcontracts with all materialmen, suppliers, and Subcontractors shall provide that the sole recourse for such materialmen, suppliers, and Subcontractors for non-payment shall be against the Payment Bond.
- 30 **Severability.** Each provision of this Contract stands alone, and any provision of this Contract found to be prohibited by law will be ineffective to the extent of such prohibition without invalidating the remainder of this Contract.
- 31 **Books and Records.** Design-Builder will keep and maintain proper and complete books, records and accounts, which will be open at all reasonable times for inspection and audit by duly authorized representatives of County. In addition, Design-Builder will retain all records relating to this Contract for at least five (5) years after its expiration or termination or, if later, until any related pending proceeding or litigation has concluded.

32 Public Records.

- 32.1 Disclosure. Pursuant to A.R.S. § 39-121 *et seq.*, and A.R.S. § 34-603(H) in the case of construction or Architectural and Engineering services procured under A.R.S. Title 34, Chapter 6, all documents submitted in response to the solicitation resulting in award of this Contract, including, but not limited to, pricing schedules, product specifications, work plans, and any supporting documents, are public records. As such, those documents are subject to release and/or review by the general public upon request, including competitors.
- 32.2 Records Marked Confidential; Notice and Protective Order. If Design-Builder reasonably believes that some of those records contain proprietary, trade-secret, or otherwise-confidential information, Design-Builder must prominently mark those records "CONFIDENTIAL." In the event a public-records request is submitted to County for records marked CONFIDENTIAL, County will notify Design-Builder of the request as soon as reasonably possible. County will release the records 10 business days after the date of that notice, unless Design-Builder, within that period, secured an appropriate order from a court of competent jurisdiction, enjoining the release of the records. County will not, under any circumstances, be responsible for securing such an order, nor will County be in any way financially responsible for any costs associated with securing such an order.

33 Legal Arizona Workers Act Compliance.

- 33.1 Compliance with Immigration Laws. Design-Builder hereby warrants that it will at all times during the term of this Contract comply with all federal immigration laws applicable to its employment of its employees, and with the requirements of A.R.S. § 23-214 (A) (together the "State and Federal Immigration Laws"). Con Design-Builder further ensure that each subcontractor who performs any work for Design-Builder under this Contract likewise complies with the State and Federal Immigration Laws.
- 33.2 Books & Records. County has the right at any time to inspect the books and records of Design-Builder and any subcontractor in order to verify such party's compliance with the State and Federal Immigration Laws.
- 33.3 Remedies for Breach of Warranty. Any breach of Design-Builder's or any subcontractor's warranty of compliance with the State and Federal Immigration Laws, or of any other provision of this section, is a material breach of this Contract subjecting Design-Builder to penalties up to and including suspension or termination of this Contract. If the breach is by a subcontractor, and the subcontract is suspended or terminated as a result, Design-Builder will be required to take such steps as may be necessary to either self-perform the services that would have been provided under the subcontract or retain a replacement subcontractor, as soon as possible so as not to delay project completion. Any additional costs attributable directly or indirectly to such remedial action are the responsibility of Design-Builder.
- 33.4 Subcontractors. Design-Builder will advise each subcontractor of County's rights and the subcontractor's obligations under this Section by including a provision in each subcontract substantially in the following form:

"Subcontractor hereby warrants that it will at all times during the term of this contract comply with all federal immigration laws applicable to Subcontractor's employees, and with the requirements of A.R.S. § 23-214 (A). Subcontractor further agrees that County may inspect the Subcontractor's books and records to insure that Subcontractor is in compliance with these requirements. Any breach of this Section by Subcontractor is a material breach of this Contract subjecting Subcontractor to penalties up to and including suspension or termination of this Contract."

- 34 **Grant Compliance.** Not Applicable.
- 35 **Israel Boycott Certification.** Design-Builder hereby certifies that it is not currently engaged in, and will not for the duration of this Contract engage in, a boycott of Israel as defined by A.R.S. § 35-393.01. Violation of this certification by Design-Builder may result in action by the County up to and including termination of this Contract.
- 36 **No Third Party Beneficiaries.** Unless explicitly stated otherwise elsewhere in this Contract, no person other than the Parties themselves has any rights or remedies under this Contract.

REMAINDER OF PAGE LEFT BLANK

37 **Entire Agreement.** This document constitutes the entire agreement between the Parties pertaining to the subject matter it addresses, and this Contract supersedes all prior or contemporaneous agreements and understandings, whether oral or written.

PIMA COUNTY

DESIGN-BUILDER

Chairman, Board of Supervisors


Authorized Officer Signature

ATTEST

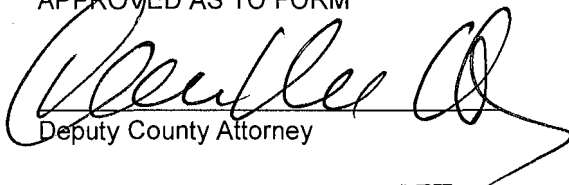
SHAWN SILVESTER, V.P.
Printed Name and Title

Clerk of the Board

6/26/18
Date

Date

APPROVED AS TO FORM


Deputy County Attorney

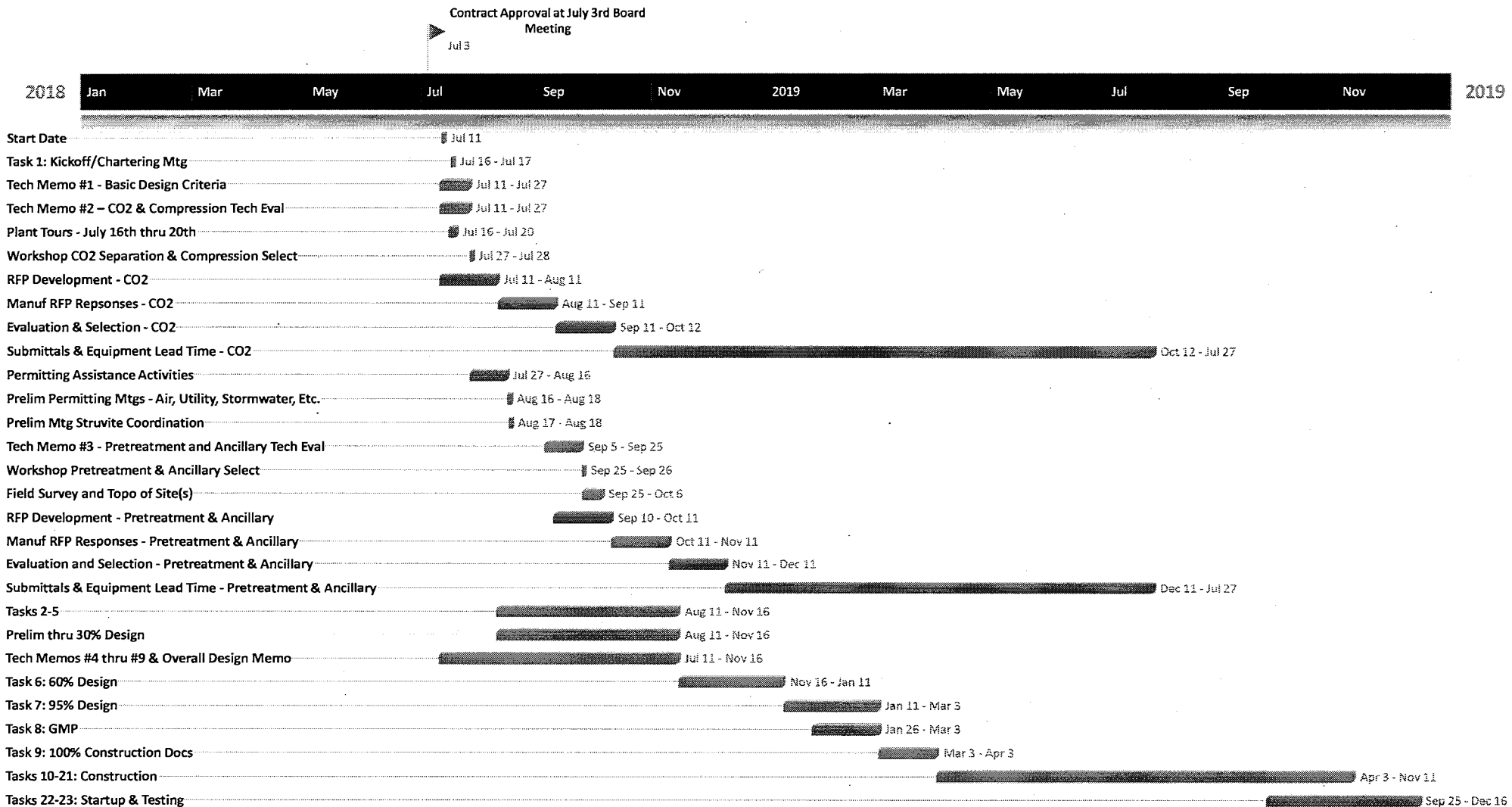
CHARLES WESSELHOFT

Print DCA Name

JUN 19 2018

Date

EXHIBIT A - PRELIMINARY SCHEDULE (1 page)



Design Build Services

Scope of Work – Phase 1

Tres Rios WRF Biogas Cleaning & Utilization Project (3GAS18)

Pima County, Arizona
(Solicitation No. 285645)

Scope of Work

1.0 Project Management

1.1 PROJECT EXECUTION PLAN

Ashton will prepare a Project Execution Plan (PXP) that will be submitted within 60 days of Notice to Proceed (NTP). The PXP will include a Quality Management Plan (QMP) and a Health and Safety Plan (HSP).

1.2 PROJECT KICK-OFF AND CHARTERING MEETINGS

The kick-off meeting and chartering meetings will be held on the same day and will be organized and conducted by Ashton.

1.3 CONTRACT ADMINISTRATION

Ashton will perform internal project administration of the Contract and coordination with the County. It will include communications with the County and others as required. In addition, preparation of invoices, oversight of Project staff, administration of contracts with sub-consultants, maintenance of a decision log, and record keeping are included in this task.

1.4 PROJECT SCHEDULE AND CONTROLS

Ashton will prepare a detailed baseline schedule using MS Project that will be submitted within 60 days of Notice to Proceed and updated on a monthly basis. This schedule will not be cost loaded.

1.5 PROJECT COORDINATION AND PROGRESS MEETINGS

Ashton will conduct bi-weekly meetings between the County and Design-Builder's project team members to discuss design elements of the Project. Meeting agendas will be prepared and distributed 2 days prior to the meeting and meeting minutes will be prepared and distributed within 5 days following the meeting.

1.6 – NOT APPLICABLE

1.7 QUALITY ASSURANCE/QUALITY CONTROL MANAGEMENT

See Task 1.1 – Project Execution Plan.

1.8 PUBLIC INFORMATION ASSISTANCE

Public Information Assistance is assumed to not be required as part of this project.

EXHIBIT B – PHASE I SCOPE OF SERVICES AND FEE SCHEDULE

1.9 CONSTRUCTION COST ESTIMATING/GUARANTEED MAXIMUM PRICE REVIEWS

Ashton will prepare three estimates (30% Design, 60% Design, 95% Design, a Preliminary Opinion Probable Construction Costs (Equipment Procurement Stage), Preliminary Design Report (30% design), Guaranteed Maximum Price (GMP) for construction GMP.

1.10 PROJECT CLOSEOUT

Ashton will provide closeout services for engineering related activities. Electronic copies of design deliverables and CAD will be provided to PCRWRD.

Task 1.0 Deliverables

All Task 1.0 deliverables are assumed to be prepared and submitted by Ashton.

- Project Execution Plan
- Project Kickoff/Chartering Meeting
- Invoices
- Draft Project Baseline Schedule
- Monthly Progress Report
- Bi-weekly Progress Meeting
- Three Cost Estimates

2.0 Permitting Assistance

2.1 PERMITTING WORKPLAN

Ashton will prepare a permitting work plan that will outline the schedule and requirements for the project permits. The plan will list those permits that are necessary, the appropriate contacts for the permits, the time constraints associated with the permits, and a schedule for application of the permits. In addition to the Permitting Plan, permit applications will be developed, as appropriate, for each agency. County will take the lead in the development of the ADEQ Treatment Plant Regulatory related permit applications and the development of all of other construction related permit application will be the responsibility of the DB Firm. The Owner will submit all permit applications and pay the permit fees. As requested by County, the Design-Builder will assist in the negotiation of these permits.

Task 2.0 Deliverables

- Permitting Work plan
- Construction permit applications
- Building permit applications
- Grading permit applications
- AZPDES SWPPP Draft and Final

3.0 Preliminary Design

3.1 DATA AND INFORMATION COLLECTION

Ashton will visit the proposed facility location and meet with PCRWRD plant staff to collect information for the Tres Rios WRF. Information will include as-built drawings for existing facilities, operating data, engineering and geotechnical reports.

3.2 SURVEY AND MAPPING

Ashton shall conduct a horizontal and vertical control survey based on PCRWRD specifications contained within Appendix B of the Request for Proposals. The site is considered too small to support an aerial survey. A static GPS survey will be conducted to ensure accuracy and the set bench marks/site control points and Pima County control points will be tied into the control network. A detailed topographic survey shall be conducted on the Biogas Cleaning Facility site locating visible surface features including valves, meters and covers and other visible signs of utilities. Ashton shall create full documentation including coordinate listings, field notes, GPS static reports and survey drawings in a sealed report.

3.3 AS-BUILT VALIDATION/DEVELOPMENT

Ashton will visit the proposed facility location to compare collected as-built information and field survey information to validate the locations of existing facilities.

3.4 VISUAL INSPECTION AND PHOTOGRAPHY

The site visit will include photographing existing facilities, but will not include laser or 3D scanning of existing facilities. Task 3.4 will be performed concurrently with Task 3.3.

3.5 – NOT APPLICABLE

3.6 DESIGN CRITERIA DEVELOPMENT/CONFIRMATION

3.6.1 LEED Strategies

LEED Strategies are assumed to not be required as part of this project.

3.6.2 Project Design Standards

Ashton will prepare design documents based on meeting PCRWRD standards and Pima County Development Services building permit requirements, augmented by Ashton design standards as necessary.

3.6.3 Design Submittals

Design submittals will conform to the requirements outlined in Appendix B of the SFQ, to include the following considerations:

- Submittal requirements
- Consistency with Technical Specifications
- Identification of deviations
- Verification of submittals
- County review
- Responses to county review
- No time extensions

EXHIBIT B – PHASE I SCOPE OF SERVICES AND FEE SCHEDULE

3.6.4 Design Memoranda

Ashton will prepare a series of Design Memoranda as outlined in Appendix B of the SFQ:

- Technical Memorandum No. 1 - Basic Design Criteria Memo (raw gas flows and quality criteria and finished gas quality criteria).
- Technical Memorandum No. 2 - CO₂ Separation & Compression Technology Evaluation Memo – technology recommendation.
- Technical Memorandum No. 3 - Pretreatment, Ancillary Technology, and Site Layout Evaluation Memo – technology and site layout alternatives evaluation (based on survey and as-built information) and recommendations.
- Technical Memorandum No. 4 - Construction packaging, sequencing and duration: to be prepared and submitted by Ashton.
- Technical Memorandum No. 5 – Structural and Architectural Design Memorandum
- Technical Memorandum No. 6 - Site utility requirements: Based on as-built information.
- Technical Memorandum No. 7 – Mechanical, Electrical, & Plumbing: Based on as-built information.
- Technical Memorandum No. 8 - Instrumentation and Controls System (SCADA): Bartlett & West will meet with PCRWRD I&C staff to discuss SCADA integration and controls.
- Technical Memorandum No. 9 - Maintenance of existing operations (MOPOs) during construction; to be prepared and submitted by Ashton.
- Security: Ashton will meet with the PCRWRD security administrator, and will incorporate safety standards into the design. Ashton will not develop security standards for this facility.
- Pre-purchased equipment and materials: Ashton will prepare technical specification for the Biogas Cleaning Facility equipment and other long lead items. The technical specifications will be performance based specifications and based on approved Technical Memorandum Nos. 1 – 3 and review of Tres Rios WRF operations and performance data.

3.7 PRELIMINARY DESIGN REPORT

The Design Memoranda prepared as part of Task 3.6 will be combined into a single preliminary design report.

Task 3.0 Deliverables

- Sealed survey report.
- Draft and Final Preliminary Design Reports.

4.0 Field Investigations

4.1 GEOTECHNICAL

Ashton will use an existing Geotechnical Report completed by Pattison Evanoff that will be provided by PCRWRD for this project.

4.2 CORROSION

A corrosion investigation is assumed to not be required as part of this project.

4.3 SUBSURFACE UTILITY ENGINEERING (SUE)

Ashton will pothole key tie-in locations for the Biogas Cleaning Facility based on a preliminary

EXHIBIT B – PHASE I SCOPE OF SERVICES AND FEE SCHEDULE

review of existing facilities and as-built drawings

4.4 LEGAL SURVEY

The proposed Biogas Cleaning Facility footprint is wholly contained within the existing Tres Rios WRF site. A legal survey is assumed to not be required as part of this project.

4.5 ENDANGERED SPECIES SURVEY

The proposed Biogas Cleaning Facility has been previously cleared and graded. An endangered species survey is assumed to not be required as part of this project.

4.6 NATIVE PLANT MITIGATION PLAN

The proposed Biogas Cleaning Facility has been previously cleared and graded. A native plant mitigation plan is assumed to not be required as part of this project.

Task 4.0 Deliverables

- Not Applicable

5.0 Schematic Design (30%)

Based on Ashton's understanding of this project and our prior design experience on similar projects, our proposed preliminary plan sheet list is included herein as Attachment No. 1.

Ashton will update the Design Memoranda and Preliminary Design Report developed as part of Tasks 3.6.4 and 3.6.5 to include updates and revisions incorporated during the Schematic Design phase. Additionally, Ashton will provide engineering quantities to assist in the preparation of a 30% construction cost estimate.

Ashton will participate in a schematic design model workshop with PCRWRD. The workshop will include 3D renderings of facilities, including those received from the selected equipment vendor. Ashton will prepare 10 hard copies of half-sized (11x17) drawings and specifications and a PDF version of the same drawings and specifications for PCRWRD review.

6.0 Design Development (60%)

Ashton will update the Design Memoranda and Preliminary Design Report to include updates and revisions incorporated during the Design Development phase.

Ashton will participate in a 3D model workshop with PCRWRD. The workshop will include 3D renderings of facilities, including those received from the selected equipment vendor. ASHTON will prepare 10 hard copies of half-sized (11x17) drawings and specifications and a PDF version of the same drawings and specifications for PCRWRD review.

7.0 Construction Documents (95%)

Ashton will prepare 10 hard copies of half-sized (11x17) drawings and specifications and a PDF version of the same drawings and specifications for PCRWRD review.

Ashton will finalize the MOPOs developed as part of Task 3.6.4. The MOPO design memoranda will be prepared and submitted by ASHTON.

8.0 Construction GMP

Ashton will prepare and submit two GMP's. One for the procurement of early equipment

purchases and the second for the construction GMP.

9.0 100% Construction Document Completion

Ashton will finalize the Design Memoranda and Preliminary Design Report to include updates and revisions incorporated the reviews by PCRWRD and regulatory agencies. Ashton will prepare one 22-inch x 34-inch paper drawings, signed and sealed, and 10 hard copies of full-sized drawings and specifications for PCRWRD. ASHTON will also deliver all CAD, reports, and specifications in electronic format.

This scope replaces the Phase 1 and Phase 2 scope of work in Appendix “B” – DESIGN-BUILDER GENERAL SCOPE OF WORK from the SFQ in its entirety.

Additional Services

The following additional services are not included in the current Scope of Services, but can be provided for a negotiated fee. Some of these additional services are intended to be negotiated within the construction phase of activities.

- Construction and construction phase activities
- Attendance at meetings in addition to those listed above
- Piloting of any equipment or technology
- LEED certification
- Process modeling beyond review of tailgas quality
- Design of fiber optic to the project site (to be provided by County)
- Anaerobic digestion process modeling
- Anaerobic digester inspections, modifications, improvements, plans or specifications, cleaning, or repairs
- Design of CNG fueling station for fueling fleet vehicles
- Local/regional high strength waste feedstock inventory evaluation
- Tipping fee program review or ordinance creation
- Design of septage, high strength waste, or FOG receiving facilities
- Attendance at public information or engagement meetings
- Planimetric Mapping or Orthophoto Imagery of the site
- Legal Surveys
- Geotechnical or soils testing
- Soil corrosivity testing
- Endangered species survey
- Arizona native plant survey and mitigation plan
- Archeological surveys or studies
- Project financing assistance
- Entry into confined spaces, including confined space entry safety gear, gas detection equipment, and ventilation equipment
- Any other service currently undefined which the OWNER may request

EXHIBIT B - PHASE I SCOPE OF SERVICES AND FEE SCHEDULE
 Design Build Services for TRWRWF BioGas Cleaning and Utilization Project (3GAS18)
 Pre-Construction Cost Proposal - Phase IB
 May 24, 2018

		Ashton						Bartlett & West										Dowl										Venture						Architect					
PIMA COUNTY - TRES RIOS WRF Biogas Cleaning & Utilization Project		Position	PM	ENGR	Scheduler	Estimator	Admin	Eng. X	Eng. IX	Eng. VIII	Eng. VI	Eng. V	Eng. IV	Eng. III	Eng. II	Eng. V	Tech III	Admin	Eng VIII	Eng VII	Eng VI	Eng III	Eng II	Eng Tech II	PLS X	Survey Tech IV	Crew Chief	Cooper Aerial	CTO/Exec	PM/Engr VII	Design III	Engr IV	Engr II	A-1					
Sub Totals		Sub-Total	\$142	\$104	104	75	30	Sub-Total	\$200	\$172	\$173	\$135	\$135	\$122	\$109	\$93	\$132	\$108	\$65	Sub-Total	\$188	\$172	\$150	\$126	\$115	\$77	\$185	\$80	\$80	\$6,855	Sub-Total	\$160	\$145	\$107.00	\$99.00	\$88.00	Sub-Total	\$135	
Phase 2	Final Design Services																																						
Task 6	Design Development (60%)																																						
6.1	Civil and Site Development	\$7,694	\$984	4	4			\$200	1											\$6,510	8		16	26														\$0	
6.2	Landscape Architecture	\$904	\$0					\$904	1				4				2			\$0																		\$0	
6.3	Architecture (as applicable)	\$4,320	\$0					\$0												\$0																		\$4,320	
6.4	Structural (as applicable)	\$15,148	\$984	4	4			\$200	1											\$13,964	40			92														\$0	
6.5	Process/Hydraulics (as applicable)	\$5,326	\$416	4	4			\$4,910	4			16	8			6				\$0																		\$0	
6.6	Process Mechanical (as applicable)	\$70,122	\$416	0	4			\$69,706	16		12	100	100		80	30				\$0																		\$0	
6.7	Building HVAC/Plumbing (as applicable)	\$4,081	\$416	4	4			\$3,665	1	4		1	10			6				\$0																		\$0	
6.8	Electrical (as applicable)	\$8,034	\$416	4	4			\$7,618	1	8		1	1	24		12				\$0																		\$0	
6.9	Instrumentation and Control Systems (as applicable)	\$767	\$0					\$767	1			1								\$0																		\$0	
6.10	Ancillary Systems (Included in Process or Instrumentation)	\$0	\$0	0				\$0												\$0																		\$0	
6.11	Project Delivery/Construction Package Analysis	\$1,038	\$568	4				\$470	1			2								\$0																		\$0	
6.12	Updated MOPD Design Memorandum	\$2,854	\$0					\$2,854	1			4	6		8		4			\$0																		\$0	
6.13	Design Development Construction Cost Estimate	\$9,814	\$9,344	16	8		80	\$470	1			2								\$0																		\$0	
6.14	Design Development Review with County	\$1,122	\$0					\$1,122	1			2		4			2			\$0																		\$0	
Sub Total Task 6		\$131,224	\$13,544					\$92,886												\$20,474																		\$4,320	
Task 7	Construction Document Preparation (95%)																																						
7.1	Task 7.1 - Develop 95% Construction Documents	\$118,811	\$3,104	16	8			\$92,187.00	16	32	12	42	96	96	60	60		360	1	\$18,120	4	60		12	16	48												\$5,400	
7.2	Task 7.2 - Construction Documents Construction Cost Estimate	\$11,165	\$10,176	16	8	8	80	\$989.00	1			1		6						\$0																		\$0	
7.3	Task 7.3 - Construction Document Review with County	\$3,757	\$1,968	8	8			\$1,789.00	5			1		6						\$0																		\$0	
7.4	Task 7.4 - Construction Cost Estimate Reconciliation	\$4,569	\$1,136	8				\$2,009.00	1			1	6				8			\$1,424	2	3		3		2												\$0	
7.5	Task 7.5 - Updated MOPO Design Memorandum	\$3,256	\$0					\$2,333.00	1			1	10				6			\$923	2	2		1		1												\$0	
Sub Total Task 7		\$141,558	\$16,384					\$99,307												\$20,467																		\$5,400	
Task 8	Construction GMP	\$1,136	\$1,136	8				\$0.00												\$0																		\$0	
Sub Total Task 8		\$1,136	\$1,136					\$0												\$0																			\$0
Task 9	100% Construction Document Completion																																						
9.1	Final Design Construction Documents	\$22,082	\$568	4				\$16,612.00	4	8	4	6	20	16	8	10				\$2,472	2	3		4	4	8												\$2,430	
9.2	Final Design Report	\$1,779	\$142	1				\$1,372.00	2			4								\$265	1				1													\$0	
Sub Total Task 9		\$23,861	\$710					\$17,984												\$2,737																		\$2,430	
Total Hour Estimates				89	56	8	160	16		60	52	28	172	260	150	178	118	0	716	1	19	108	0	36	46	152	0	0	0	0						90			
Sub Total Fee Estimate		\$297,779	\$31,774					\$210,177												\$43,678																		\$12,150	

EXHIBIT B - PHASE I SCOPE OF SERVICES AND FEE SCHEDULE
Design Build Services for TRWRF BioGas Cleaning and Utilization Project (3GAS18)
Pre-Construction Cost Proposal - Totals - Phases 1A and 1B
May 24, 2018

Phase IA - Preliminary Design Services

Task	Total
Task 1 Project Management	\$57,027
Task 2 Permitting Assistance	\$11,408
Task 3 Preliminary Design	\$118,234
Task 4 Field Investigations	\$0
Task 5 Schematic Design (30%)	\$179,104

Phase IA Total **\$365,773**

Phase IB - Final Design Services

Task	Total
Task 6 Design Development (60%)	\$131,224
Task 7 Construction Document Preparation (95%)	\$141,558
Task 8 Construction GMP	\$1,136
Task 9 100% Construction Document Completion	\$23,861

Phase IB Total **\$297,779**

Total Design Fee **\$663,552**

EXHIBIT B - PHASE I SCOPE OF SERVICES AND FEE SCHEDULE

SFQ 285645

Design Build Services for TRWRF BioGas Cleaning and Utilization Project (3GAS18)

Rate Schedule

The Ashton Company Wage Rate Schedule				
Classification	Direct Labor (Burdened)	Overhead @ 11.2%	Profit @ 8%	Billing Rate
Project Manager	\$118.44	\$13.27	\$10.54	\$142
Project Engineer	\$86.36	\$9.67	\$7.68	\$104
Scheduler	\$86.36	\$9.67	\$7.68	\$104
Estimator	\$62.04	\$6.95	\$5.52	\$75
Admin	\$25.38	\$2.84	\$2.26	\$30

Bartlett & West Rate Schedule				
Classification	Direct Labor	Overhead @ 188%	Profit @ 8%	Billing Rate
Eng. X	\$64.27	\$120.63	\$14.79	\$200
Eng. IX	\$55.50	\$104.17	\$12.77	\$172
Eng. VIII	\$55.70	\$104.55	\$12.82	\$173
Eng. VI	\$43.45	\$81.56	\$10.00	\$135
Eng. VI	\$43.45	\$81.56	\$10.00	\$135
Eng IV	\$39.25	\$73.67	\$9.03	\$122
Eng. III	\$35.00	\$65.70	\$8.06	\$109
Eng. II	\$29.80	\$55.93	\$6.86	\$93
Eng. V	\$42.51	\$79.79	\$9.78	\$132
Tech III	\$34.85	\$65.41	\$8.02	\$108
Admin	\$20.81	\$39.06	\$4.79	\$65

Dowl Rate Schedule				
Classification	Direct Labor	Overhead @ 196%	Profit @ 8%	Billing Rate
Eng. II	\$36.06	\$70.64	\$8.54	\$115
Eng. III	\$39.19	\$76.77	\$9.28	\$126
Eng. VI	\$46.80	\$91.68	\$11.08	\$150
Eng. VII	\$53.85	\$105.49	\$12.75	\$172
Eng. VIII	\$58.84	\$115.27	\$13.93	\$188
Eng. Tech II	\$23.92	\$46.86	\$5.66	\$77
Survey Tech IV	\$25.00	\$48.98	\$5.92	\$80
Crew Chief I	\$25.00	\$48.98	\$5.92	\$80
Land Surveyor X	\$57.70	\$113.03	\$13.66	\$185

Venture Rate Schedule				
Classification	Direct Labor	Overhead @ 118%	Profit @ 8%	Billing Rate
CTO/Exec	\$68.09	\$80.34	\$11.87	\$160
PM/Engr VII	\$61.70	\$72.81	\$10.76	\$145
Desgn III	\$45.53	\$53.73	\$7.94	\$107
Engr IV	\$42.13	\$49.71	\$7.35	\$99
Engr II	\$37.45	\$44.19	\$6.53	\$88

EXHIBIT B - PHASE I SCOPE OF SERVICES AND FEE SCHEDULE

**PIMA COUNTY TRWRF BIOGAS CLEANING & UTILIZATION PROJECT (3GAS18)
 DESIGN BUILD SERVICES - SCOPE OF WORK - PHASE 1
 PRELIMINARY LIST OF PLAN SHEETS**

0% Complete at "30% Stage"
 0-30% Complete at "30% Stage"
 >30% Complete at "30% Stage"

<u>SHEET NO.</u>	<u>GENERAL</u>	<u>SHEET NAME</u>
1	G01	COVER SHEET
2	G02	INDEX OF DRAWINGS/LEGEND/GENERAL NOTES
3	G03	ABBREVIATIONS
4	G04	EXISTING SITE PLAN AND PROJECT AREA - OVERALL KEY PLAN & CONTROL
5	G05	PROCESS FLOW DIAGRAM - UP/DOWNSTREAM UPGRADING AND ANCILLARY
6	G06	PROCESS FLOW DIAGRAM - UPGRADING FACILITY
7	G07	MASS & ENERGY BALANCE
8	G08	AREA CLASSIFICATION DELINEATIONS
	<u>CIVIL</u>	<u>SHEET NAME</u>
8	C01	GENERAL CIVIL NOTES & ABBREVIATIONS
9	C02	CIVIL- GRADING AND PAVING PLAN
10	C03	CIVIL - YARD PIPING PLAN (OVERALL) AND BLOWUP PLAN
11	C04	CIVIL - YARD PIPING FITTING COORDINATE SCHEDULE AND DETAILS
12	C05	CIVIL-SITE DETAILS
13	C06	CIVIL-SITE DETAILS
14	C07	CIVIL-EROSION CONTROL PLAN AND DETAILS
15	C08	FINISHED GAS PIPING PLAN AND PROFILE
16	C09	CONDENSATE / DESULFURIZATION WASTE RETURN LINE PLAN & PROFILE
17	C10	LANDSCAPE ARCHITECTURE PLAN, DETAILS AND NOTES
	<u>PROCESS</u>	<u>SHEET NAME</u>
17	P01	P&ID SYMBOLS, ABBREVIATIONS AND NOMENCLATURE
18	P02	EQUIPMENT SCHEDULE / KEY DESIGN CRITERIA
19	P03	INSTRUMENT AND VALVE SCHEDULES
20	P04	PIPING SCHEDULE AND INTERFACE POINT LIST
21	P05	P&ID EXISTING DIGESTER GAS, BLOWERS, AND FLARES
22	P06	P&ID DESULFURIZATION ABSORPTION AND TEMPERATURE CONTROL
23	P07	P&ID DESULFURIZATION CHEMICAL FEED AND WATER SOFTENING
24	P08	P&ID DEHYDRATION AND DESULFURIZATION PERFORMANCE GAS ANALYSIS
25	P09	P&ID VOC/SILOXANE ABSORPTION SYSTEM
26	P10	P&ID FEED COMPRESSION AND VOC/SILOXANE PERFORMANCE GAS ANALYSIS
27	P11	P&ID COMPRESSED GAS TREATMENT
28	P12	P&ID MEMBRANE SEPARATION SYSTEM
29	P13	P&ID CHILLERS AND AFTERCOOLERS
30	P14	P&ID THERMAL OXIDIZER AND VENT
31	P15	P&ID HIGH-BTU FLARE
32	P16	P&ID FINISHED GAS ANALYSIS AND BUILDING AUXILIARIES
33	P17	P&ID UTILITY METERING / ANALYSIS INTERFACE AND INTERCONNECT
34	P18	P&ID CONDENSATE AND DESULFURIZATION WASTE HANDLING
35	P19	OVERALL PROCESS LAYOUT PLAN AND NOTES
36	P20	BULK DESULFURIZATION PROCESS PLAN

**PIMA COUNTY TRWRF BIOGAS CLEANING & UTILIZATION PROJECT (3GAS18)
DESIGN BUILD SERVICES - SCOPE OF WORK - PHASE 1
PRELIMINARY LIST OF PLAN SHEETS**

0% Complete at "30% Stage"
0-30% Complete at "30% Stage"
>30% Complete at "30% Stage"

<u>SHEET NO.</u>	<u>GENERAL</u>	<u>SHEET NAME</u>
37	P21	BULK DESULFURIZATION PROCESS SECTIONS
38	P22	BULK DESULFURIZATION PROCESS SECTIONS AND DETAILS
39	P23	H2S POLISHING ADSORPTION PROCESS PLAN
40	P24	H2S POLISHING ADSORPTION PROCESS SECTIONS AND DETAILS
41	P25	VOC/SILOXANE ADSORPTION PROCESS PLAN & DETAILS
42	P26	VOC/SILOXANE ADSORPTION PROCESS SECTIONS AND DETAILS
43	P27	FEED COMPRESSOR, DEHYDRATION AND HEAT EX. PROCESS PLAN
44	P28	FEED COMPRESSOR, DEHYDRATION AND HEAT EX. PROCESS SECTIONS AND DET.
45	P29	MEMBRANE SYSTEM PROCESS PLAN
46	P30	MEMBRANE SYSTEM SECTIONS & DETAILS
47	P31	CHILLER & AFTERCOOLER PROCESS PLAN
48	P32	CHILLER & AFTERCOOLER PROCESS SECTIONS AND DETAILS
49	P33	THERMAL OXIDIZER PROCESS PLAN
50	P34	THERMAL OXIDIZER PROCESS PLAN, SECTIONS AND DETAILS
51	P35	HIGH-BTU FLARE PROCESS PLAN
52	P36	HIGH-BTU FLARE PROCESS PLAN, SECTIONS AND DETAILS
53	P37	CONDENSATE AND WASTEWATER PUMPING PLAN, SECTIONS AND DETAILS
54	P38	BUILDING PROCESS PLAN (CHEMICAL STORAGE, FEED, AND MISC. EQ)
55	P39	CAUSTIC FEED SYSTEM PROCESS PLAN
56	P40	CAUSTIC FEED SYSTEM PROCESS SECTIONS AND DETAILS
57	P41	MISCELLANEOUS BUILDING PROCESS PLANS, SECTIONS AND DETAILS
58	P42	UTILITY ANALYTICAL SKID PROCESS PLAN
59	P43	UTILITY ANALYTICAL SKID PROCESS SECTIONS AND DETAILS
60	P44	WATER SOFTENER AND INSTRUMENT AIR PROCESS PLAN, SECTIONS AND DETAILS
61	P45	TYPICAL INSTRUMENT, VALVE AND METER PROCESS DETAILS
62	P46	MISCELLANEOUS PROCESS PROCESS PLANS, SECTIONS AND DETAILS
63	P47	MISCELLANEOUS PROCESS DETAILS

STRUCTURAL SHEET NAME

64	S01	STRUCTURAL NOTES & STATEMENT OF SPECIAL INSPECTIONS
65	S02	STANDARD STRUCTURAL DETAILS
66	S03	BUILDING STRUCTURAL FOUNDATION PLAN
67	S04	BUILDING STRUCTURAL ROOF PLAN
68	S05	BUILDING STRUCTURAL SECTIONS
69	S06	BUILDING STRUCTURAL SECTIONS AND DETAILS
70	S07	TYPICAL SKID FOUNDATION PLAN AND SKID DIMENSION TABLE
71	S08	TYPICAL SKID FOUNDATION SECTIONS AND DETAILS
72	S09	MISCELLANEOUS STRUCTURAL SECTIONS AND DETAILS
73	S10	PIPE SUPPORT LAYOUT
74	S11	PIPE SUPPORT DETAILS

ARCHIT SHEET NAME

75	A01	ARCHITECTURAL NOTES
76	A02	STANDARD ARCHITECTURAL DETAILS

**PIMA COUNTY TRWRF BIOGAS CLEANING & UTILIZATION PROJECT (3GAS18)
 DESIGN BUILD SERVICES - SCOPE OF WORK - PHASE 1
 PRELIMINARY LIST OF PLAN SHEETS**

0% Complete at "30% Stage"
 0-30% Complete at "30% Stage"
 >30% Complete at "30% Stage"

<u>SHEET NO.</u>	<u>GENERAL</u>	<u>SHEET NAME</u>
77	A03	BUILDING ARCHITECTURAL FLOOR & ROOF PLAN
78	A04	BUILDING ARCHITECTURAL ELEVATIONS
79	A05	BUILDING ARCHITECTURAL SECTIONS
80	A06	BUILDING FIRE PROTECTION, DETAILS AND NOTES
	<u>MECH/FIRE</u>	<u>SHEET NAME</u>
81	M01	MECHANICAL NOTES, ABBREVIATIONS AND SYMBOLS
82	M02	BUILDING LOWER LEVEL PLUMBING PLAN
83	M03	BUILDING UPPER LEVEL PLUMBING PLAN
84	M04	BUILDING MECHANICAL HVAC PLAN
85	M05	BUILDING FIRE PROTECTION PLAN
86	M06	MECHANICAL / PLUMBING DETAILS & SCHEDULES
	<u>ELECTRICAL</u>	<u>SHEET NAME</u>
87	E01	ELECTRICAL NOTES, ABBREVIATIONS AND SYMBOLS
88	E02	ELECTRICAL SITE PLAN
89	E03	ELECTRICAL ONE LINE DIAGRAMS
90	E04	BUILDING ELECTRICAL LIGHTING PLAN
91	E05	BUILDING ELECTRICAL POWER PLAN
92	E06	ELECTRICAL PANELBOARD SCHEDULES
93	E07	ELECTRICAL DETAILS
94	E08	ELECTRICAL RISERS
	<u>I&C</u>	<u>SHEET NAME</u>
95	I01	INSTRUMENTATION AND CONTROLS NOTES, ABBREVIATIONS AND SYMBOLS
96	I02	NETWORK ARCHITECTURE DIAGRAM
97	I03	INSTRUMENT MOUNTING DETAILS
98	I04	CONTROL PANEL ELEVATIONS AND DETAILS
99	I05	FIBER OPTIC DATA COMMUNICATION PANEL DETAILS
100	I06	MISCELLANEOUS I&C DETAILS

APPENDIX "A" (4 pages)

PROJECT SCOPE OF WORK

SCOPE OF SERVICES FOR TRES RIOS BIOGAS CLEANING FACILITY

Background

Pima County Regional Wastewater Reclamation Department (RWRD) operates six anaerobic digesters at its Tres Rios WRF. The digesters handle biosolids collected at the Tres Rios WRF, as well as biosolids recovered at the Agua Nueva WRF. Anaerobic digestion of biosolids produces biogas, of which a principle component is methane gas. Recent advances in technology, and prudent energy management strategies have allowed utilities the opportunity to clean biogas and generate a source for renewable energy. Pima County is in the midst of fulfilling a county-wide Sustainability Action Plan activity to increase renewable energy usage. Pima County RWRD is advancing the County's renewable energy usage plan by pursuing energy sustainability initiatives at their facilities, including the Tres Rios WRF. As such, the Tres Rios WRF seeks to utilize the biogas generated at the facility, by purifying, and marketing the produced biomethane in the renewable energy market.

System Description and Components

Biogas purification and utilization on this project considers the cleaning of biogas through a commercially available, proven technology recommended by the Design-Builder. Such technologies include, but are not limited to:

- Water Wash Technologies
- Pressure/Vacuum Swing Adsorption Technologies
- Membrane Separation Technologies

Guidelines and requirements on arriving at a recommendation are provided in **Appendix "C" - Technical Specifications**.

The biogas purification system is envisioned to receive biogas flow from the existing digesters. The biogas flow will be purified to the standards prescribed and set forth by Southwest Gas, which can be found in **Appendix "C" - Technical Specifications**. The purified biogas will be analyzed via online biogas analytical equipment prior to injecting into the Southwest Gas distribution pipeline.

Main components of the biogas cleaning and utilization process system foreseen for this scope of services are described with more detail below.

Biogas Production and Delivery

The digesters at the Tres Rios WRF shall provide a source of biogas for the biogas purification facility. The County shall provide a biogas feedline to the Project site. The Design-Builder shall utilize this feedline as a connection to the biogas source for the purification facility.

Biogas Purification and Cleaning

The biogas shall feed into a biogas cleaning and purification system recommended by the Design-Builder and approved by the County. The biogas cleaning and purification facility shall be sized accordingly to optimize the use of available biogas production, and shall reserve land site usage and process connections for future upgrades and expansion(s). Biogas shall be purified to meet the minimum standards prescribed and set forth by Southwest Gas.

Biogas Pressurization

Once the biogas has passed through the purification and cleaning process, it will undergo compression to meet the pressurization and compression standards set forth and prescribed by Southwest Gas.

Biogas Analysis

Prior to entering the Southwest Gas distribution pipeline, the purified biogas shall be analyzed via online biogas analyzers and periodic grab samples. Gas analyses shall be performed on parameters deemed necessary by Southwest Gas; such parameters can be found in the **Technical Specifications**. Upon satisfactory compliance with the standards for such parameters, the purified biogas (biomethane) shall be injected into the Southwest Gas distribution pipeline.

Yard Piping and Valves

The system yard piping includes a biogas feed line from the Digesters to the biogas purification facility, biomethane effluent pipeline system from biogas purification facility to the Southwest Gas service site, service water line system (if necessary), and process liquid waste line system to the plant drain (if necessary).

System Design Requirements

The biogas purification system design will be based on the general features outlined above and the project **Technical Requirements**. The design will be completed and detailed to provide an operational and fully functional biogas purification and cleaning facility after construction. At a minimum, design submittals will be made to the RWRD at the 30 percent, 60 percent, 90 percent and 100 percent of design. The design requirements and design submission requirements are described in the project General Scope of Work requirements (**Appendix "B"**).

The design-build team will have monthly meetings (monthly progress meetings) with RWRD to review project status and discuss upcoming activities. A project report shall be prepared and submitted each month describing project activities and actions undertaken and completed, and activities and actions to be undertaken and completed within the next month. The project schedule will be reviewed during each monthly meeting.

Should the Design-Builder and Pima County fail to negotiate a Guaranteed Maximum Price; the Design-Builder will be required to complete the design to the 100 % level for competitive bidding later.

System Performance Requirements

The biogas purification system will be designed to reliably clean and purify at least 98% of the total annual biogas produced from the Tres Rios WRF digesters on a 24-hour, 365-day per year basis. Required uptime of the biogas purification facility shall be at least 95% annually, or at least 8,322 hours per year. The produced biomethane shall at minimum, meet all applicable standards prescribed and set forth by Southwest Gas.

Construction Requirements

A Contractor, appropriately licensed by the State of Arizona will perform all the work necessary to provide a complete and operational biogas purification facility. All work will be in locations approved by RWRD and in compliance with all current local, state and federal codes. All permits for construction will be the responsibility of the Design-Builder. All onsite equipment, materials and supplies will be kept in areas designated by RWRD for that purpose. All personnel will enter the site through approved access points only after following the plant security processes and procedures.

The Contractor will be responsible for preparing the baseline project schedule and monthly updates from project initiation through construction completion, startup, commissioning and performance testing.

The Contractor will prepare construction cost estimates for inclusion in the 30 percent, 60 percent, 90 percent and 100 percent of design submittals. When requested by RWRD, the Contractor will prepare a Guaranteed Maximum Price (GMP) for the construction, O&M Manual preparation, commissioning, startup, training and performance testing. The GMP will be based on an "open-book" bidding process from qualified subcontractors. Self-performed services will be subject to review and approval by RWRD. Unapproved services shall be processed through open-book bidding.

A draft Operations and Maintenance (O&M) Manual will be submitted to RWRD for comment 180 days in advance of startup and training. A final complete O&M Manual in conformance with the existing plant-wide O&M Manual will be submitted for approval by RWRD 60 days prior to startup and training on the biogas purification facility.

Record drawings for the Project will be prepared and approved by RWRD before retainage release and final payment is approved.

Project Schedule Requirements

The Design-Builder shall submit a proposed baseline project schedule to the County within 45 calendar days after the contract date for review and comment by the County. The schedule will be updated at least monthly throughout the project. The schedule shall include a defined work calendar designating which days of the week will be planned workdays and dates of all scheduled non-workdays. The schedule shall encompass the entire Design-Build Period and shall consist of, but not be limited to, the following:

- All design and permitting activities and milestones to be achieved in the design-build period
- All construction activities and milestones to be achieved in the design-build Period
- Sequence of design-build work and the time of commencement and completion of each part
- All design deliverables and the sequence for their review by the County
- All permitting deliverables and the sequence for their review by the County and approval agencies
- Sitework
- Temporary relocations
- Excavation
- Shutdowns and tie-ins
- Concrete placement (pour and cure time)
- Backfill and compacting
- Raceway and ductbank installations
- Process piping and ductwork installations
- HVAC installations
- Plumbing
- Electrical equipment installations
- Power and control wiring and termination
- Treatment system installations
- Major equipment installations
- Order and delivery dates for all County furnished equipment
- Painting and coatings
- Preliminary and final O&M Manual delivery
- All testing
- All training
- Turnover of spare parts
- Pre-startup substantial completion inspections
- Equipment system and subsystem startups
- Record drawings, warranties, occupancy permits
- Final inspections and final punch list
- Commissioning
- Acceptance testing
- Performance testing

Each activity shall show the number of person-days of efforts, by month, over the duration of the design-build period. Further, the Design-Builder shall show each type of critical construction equipment used, number of pieces of each type of equipment used, and where such equipment will be used. In developing

the schedule, the Design-Builder shall be responsible for assuring that Subcontractor work at all tiers, as well as its own work, is included in the schedule.

The schedule shall show the sequence and interdependence of activities required for complete performance of the design-build work. The Design-Builder shall be responsible for assuring that all design-build work sequences are logical, activity durations are reasonable based on their scope and the resources allocated for them and that the schedule reflects a coordinated plan of the design-build work.

Failure by the Design-Builder to include any element of design-build work required for proper performance of the Design-Builder's obligations under the contract shall not excuse the Design-Builder from completing all design-build work within the design-build period.

The Design-Builder shall meet with the County within 14 calendar days after the County's receipt of the Design-Builder's proposed baseline schedule for a joint review to identify any corrections or adjustments to the proposed schedule. Within 14 days of such joint review meeting, the Design-Builder shall submit a final schedule incorporating the County's comments into the proposed schedule. The finalization of the schedule shall be a precondition to the establishment of the Construction Date.

The final schedule shall be updated on a monthly basis to show progress until final completion has been achieved. The final schedule shall be used for the evaluation of any design-build period extension request(s) made by the Design-Builder once the final schedule has been established.

In the event the Design-Builder fails to define any element of design-build work, activity or logic, such omission or error, when discovered by the Design-Builder or County, shall be corrected by the Design-Builder in the next monthly progress schedule and the Design-Builder shall provide notice to the County of the proposed amendment(s) with the submission of the monthly progress report. The schedule shall be utilized in the preparation of and submitted with progress payments and monthly meetings.

System Performance Testing

After substantial completion of construction, the Design-Builder in coordination with the selected biogas purification technology provider will provide RWRD plant staff with operator training, including O&M training on all the equipment and systems provided in preparation of a 90 continuous calendar days performance test. The performance test will be operated by the County under the guidance of the biogas purification technology provider in association with the Design-Builder. The County will perform all sample testing with at least one of, or a combination of, the following methods:

1. Online biogas analytical equipment installed in conjunction with this Project.
2. Grab samples sampled and analyzed via a certified, third party analytical laboratory.
3. Sample testing in the County's certified laboratory facility.

Should the system fail to meet the performance requirements, or operation of any part of the system stops, because of mechanical or system failure anytime during the 90 days, the performance test period will restart at day one.

End of Appendix "A" – Project Scope of Work

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APPENDIX "B" (50 pages)

DESIGN-BUILDER GENERAL SCOPE OF WORK

Contents

PHASE 1 – PRELIMINARY DESIGN SERVICES

Task 1	Project Management
Task 1.1	Project Execution Plan
Task 1.2	Project Kick-off and Chartering Meeting.....
Task 1.3	Contract Administration.....
Task 1.4	Project Schedule and Controls
Task 1	Deliverables.....
Task 2	Permitting Assistance
Task 2.1	Permitting Workplan
Task 2	Deliverables.....
Task 3	Preliminary Design
Task 3.1	Data and Information Collection
Task 3.2	Survey and Mapping
Task 3.3	As-Built Validation/Development
Task 3.4	Visual Inspection and Photography.....
Task 3.5	Not Applicable
Task 3.6	Design Criteria Development/Confirmation.....
Task 3.7	Preliminary Design Report.....
Task 3	Deliverables.....
Task 4	Field Investigations
Task 4.1	Geotechnical
Task 4.2	Corrosion.....
Task 4.3	Subsurface Utility Engineering.....
Task 4.4	Legal Survey
Task 4.5	Endangered Species Survey.....
Task 4.6	Arizona Native Plant Survey.....
Task 4	Deliverables.....
Task 5	Schematic Design (30%)
Task 5.1	Civil and Site Development
Task 5.2	Landscape Architecture
Task 5.3	Architecture

- Task 5.4 - Structural.....
- Task 5.5 - Foundations/Excavation.....
- Task 5.6 - Process/Hydraulics (as applicable)
- Task 5.7 - Process Mechanical (as applicable).....
- Task 5.8 - Building HVAC/Plumbing (as applicable)
- Task 5.9 - Electrical (as applicable)
- Task 5.10 - Instrumentation and Control Systems (as applicable).....
- Task 5.11 - Ancillary Systems (as applicable)
- Task 5.12 - Updated MOPO Design Memorandum
- Task 5.13 - Schematic Design Report.....
- Task 5.14- Schematic Design Construction Cost Estimate.....
- Task 5.15 - Schematic Design Model Review and Workshop
- Task 5 Deliverables.....

PHASE 2 – FINAL DESIGN SERVICES

Task 6 Design Development (60%).....

- Task 6.1 - Civil and Site Development
- Task 6.2 - Landscape Architecture
- Task 6.3 - Architecture (as applicable).....
- Task 6.4 - Structural (as applicable)
- Task 6.5 - Process/Hydraulics (as applicable)
- Task 6.6 - Process Mechanical (as applicable).....
- Task 6.7 - Building HVAC/Plumbing (as applicable)
- Task 6.8 - Electrical (as applicable)
- Task 6.9 - Instrumentation and Control Systems (as applicable).....
- Task 6.10 - Ancillary Systems.....
- Task 6.11 - Project Delivery/Construction Package Analysis
- Task 6.12 - Updated MOPO Design Memorandum
- Task 6.13 - Design Development Construction Cost Estimate.....
- Task 6.14 - Design Development Review with County
- Task 6 Deliverables.....

Task 7 Construction Document Preparation (95%)

- Task 7.1 - Develop 95% Construction Documents.....
- Task 7.2 - Construction Documents Construction Cost Estimate
- Task 7.3 - Construction Document Review with County
- Task 7.4 - Construction Cost Estimate Reconciliation

Task 7.5 - Updated MOPO Design Memorandum.....

Task 7 Deliverables.....

Task 8 Construction GMP.....

Task 9 100% Construction Document Completion

Task 9.1 - Final Design Construction Documents

Task 9.2 - Final Design Report.....

Task 9 Deliverables.....

PHASE 3 - CONSTRUCTION

Task 10 Trade Contractor Selection Bidding and Negotiation

Task 10.1 - Bid Packages.....

Task 10.2 - Prequalification.....

Task 10.3 - Bidding.....

Task 10.4 - Budget Control

Task 10.5 - Bid Opening.....

Task 10.6 - Bid Evaluation and Award

Task 10.7 - County Approval Required to Proceed.....

Task 11 Design Professional's Role During and After Construction.

Task 11.1 - Construction Administration

Task 11.2 - Advice and Consultation.....

Task 11.3 - Presence at Work Site

Task 11.4 - Certification of Pay Requests.....

Task 11.5 - Duty to Inspect

Task 11.6 - Submittals

Task 11.7 - Preparation of Change Orders.....

Task 11.8 - Interpretation

Task 11.9 - Aesthetic Review

Task 11.10 - Substantial and Final Completion

Task 11.11 - As-Built Drawings

Task 11.12 - Warranty Support

Task 12 Construction Supervision

Task 13 Reporting

Task 14 Miscellaneous Construction Phase Duties

Task 14.1 - GMP and Savings

Task 14.2 - Services Provided

Task 14.3 - Performance of Work

Task 14.4 - Reporting.....	.....
Task 14.5 - Schedule .....	.....
Task 14.6 - Work Management .....	.....
Task 14.7 - Management Presence at Work Site/Approval of Replacement .....	.....
Task 14.8 - Subcontractor Coordination .....	.....
Task 14.9 - Work Site Cooperation.....	.....
Task 14.9.1 - County Use of Work Site.....	.....
Task 14.9.2 - Right to Comment on County Work Site Activity .....	.....
Task 14.9.3 - Waiver of Claim against County .....	.....
Task 14.9.4 - Duty to Remedy/Indemnification .....	.....
Task 14.10 - Work Site Appearance .....	.....
Task 15 Control of Construction Work .....	.....
Task 15.1 - Means and Methods.....	.....
Task 15.2 - Supervision and Coordination of Work.....	.....
Task 15.3 - Lines of Authority .....	.....
Task 15.4 - Direct Supervision of Work.....	.....
Task 15.5 - Superintendent.....	.....
Task 15.6 - Measurements .....	.....
Task 15.7 - Field Measurements.....	.....
Task 15.8 - Survey .....	.....
Task 15.9 - Dust Control.....	.....
Task 15.10 - Sanitary Provisions.....	.....
Task 15.11 - On-Site Storage .....	.....
Task 15.12 - Responsibility for Materials and Equipment .....	.....
Task 16 Daily Log .....	.....
Task 16.1 - Log Content .....	.....
Task 16.2 - Copies to County .....	.....
Task 17 Supervision and Construction Procedures.....	.....
Task 17.1 - Duty to Supervise and Direct .....	.....
Task 17.2 - Responsibility for Actions .....	.....
Task 17.3 - Responsibility for Inspection Delays .....	.....
Task 17.4 - Superintendent Authority .....	.....
Task 17.5 - Skilled Employees .....	.....
Task 17.6 - County Access to Work .....	.....
Task 17.7 - Uncovering Work .....	.....

Task 17.8 - Inspection Notice to County

Task 17.9 - County Authority to Keep Work Uncovered

Task 18 Construction Documents

Task 18.1 - Reporting of Errors

Task 18.2 - Shop Drawings Required.....

Task 18.3 - Interpretation of Construction Document Conflicts

Task 18.4 - Implied Minor Details.....

Task 19 Submittals, Drawings, and Shop Drawings.....

Task 19.1 - Records Maintained at Work Site.....

Task 19.2 - Submittals to County

Task 19.3 - Submittal Content Standards

Task 19.4 - Design-Builder Review of Subcontractor Submittals.....

Task 19.5 - Deviations from Contract Documents.....

Task 19.6 - Responsibility for Submittals

Task 19.7 - Design-Builder Representations Concerning Correctness of Submittals.....

Task 19.8 - County Review

Task 19.9 - Response to County Rejection or Comments

Task 19.10 - Untimely Submittal

Task 19.11 - Transmittal of Approved Submittals to Subcontractors.....

Task 20 Product Samples, Tests, and Certificates

Task 20.1 - Requirement to Furnish Product Samples

Task 20.2 - Submittal of Product Samples

Task 20.3 - Certification of Compliance

Task 20.4 - Duty to Perform.....

Task 20.5 - Destruction of Samples.....

Task 20.6 - County Testing Not Acceptance

Task 20.7 - Removal of Rejected Work.....

Task 20.8 - Cooperation with Testing Efforts

Task 20.9 - Trade Name Substitutions.....

Task 20.10 - Field Inspection.....

Task 21 Redline Drawings

Task 21.1 - Monthly Review.....

Task 21.2 - Changes Shown.....

Task 21.3 - Basis Documents

Task 21.4 - Changes after Substantial Completion.....

Task 22 Startup.....

 Task 22.1 - Startup Plan.....

 Task 22.2 - Startup.....

Task 23 Performance Testing......

 Task 23.1 - Performance Test Plan.....

 Task 23.2 - Performance Test Procedures and Standards.....

 Task 23.3 - General Performance Standards.....

 Task 23.4 - Performance Test Report.....

PROJECT DESCRIPTION

This scope of work describes the general services to be provided by the Design-Builder for the design and construction of the TRWRF BioGas Cleaning & Utilization Project. A separate document, entitled "Technical Specifications," describes the key components of the Work as well as County technical requirements for the Work. The Technical Specifications define what will be done and the General Scope of Work defines how it will be done.

It is envisioned that the Work will be accomplished in two phases: Phase 1 - Design and Pre-Construction Services; and Phase 2 – Construction Services. Each phase will have a specific list of work products and deliverables. Also, each phase will include design review workshops with County's and Design-Builder's personnel at critical design milestones.

This Project does not include at this time, the following additional work elements:

- Excavations or other mitigation measures required to preserve or relocate historic resources.

DESIGN PHASES SCOPE OF WORK

The following key assumptions were made in the development of the Scope of Work for design and in estimating level of effort:

- With the exception of the final review, the project team will continue the design effort during formal reviews of deliverables by Pima County and regulatory agencies.
- County will provide one round of compiled review comments to the Design-Builder for each deliverable submitted for review.
- The design will be based on the federal, state, and local codes and standards in effect at the start of the Project.
- County's design standards will be used. County will provide electronic copies of these documents in MS Word format to the Design-Builder.
- The drawings will follow the Design-Builder's CAE/ CAD standards. AutoCAD will be used to develop the drawings. At the conclusion of design, County will be given a 22"x 34" sized set of original signature drawings and an electronic set of drawings in pdf format. In addition, the County will be given a copy of the Design Documents on compact disk (CD-R) in AutoCAD format.

The design will be carried out using a five-phased design delivery approach:

1. Preliminary Design Report (10%)

2. Schematic Design (30%)
3. Design Development (60%)
4. Construction Document Development (95%)
5. Construction Document Completion (100%)

PHASE 1 – PRELIMINARY DESIGN SERVICES

Task 1 Project Management

The purpose of this task is to manage, coordinate, and lead the Design-Builder's activities and perform administration of Project design services. The Design-Builder will perform the following subtasks described below as part of Task 1.

Task 1.1 - Project Execution Plan

Within 60 days of the Notice to Proceed, a Project Execution Plan will be prepared to guide the direction of the Design-Builder team. It will include descriptions of the roles and responsibilities of team members, communication plan, cost and schedule control procedures, document control, change management, and other Project management requirements. Also, the plan will define the CAD/CAE software standards, graphic standards, file naming conventions and standards, and other graphic standards. Design-Builder will utilize standards developed by the County as a basis for this element of the Plan. In addition, the Plan will include a Quality Management Plan and a Project Health and Safety Plan applicable to the Design-Builder Team. The Project Execution Plan will be distributed to the County and design team members.

Task 1.2 - Project Kick-off and Chartering Meeting

Task 1.2.1 - Project Kickoff Meeting

Within 60 days of the Notice to Proceed, the Design-Builder will conduct a project kick-off meeting to be held with the County. The purpose of the meeting is to discuss the roles, relationships, and responsibilities of all parties. The draft baseline design schedule will be presented and discussed. The Design-Builder will prepare a meeting summary and will distribute to the attendees.

Task 1.2.2 - Chartering Meeting

The Design-Builder will attend a project chartering meeting to be held between the County and the Design-Builder. The purpose of the meeting is to discuss the roles, relationships, and responsibilities of the parties. The draft baseline Project Schedule will be presented and discussed.

Task 1.3 - Contract Administration

This task includes activities associated with administration of the Contract and coordination with the County. It will include communications with the County and others as required. In addition, preparation of invoices, oversight of Project staff, administration of contracts with sub-consultants, maintenance of a decision log, and record keeping are included in this task.

Task 1.4 - Project Schedule and Controls

Within 60 days of the Notice to Proceed, the Design-Builder will submit a draft baseline Project Schedule using MS Project, which will be updated on a monthly basis. The initial draft Project Schedule will be cost-loaded for Phase 1 tasks. Upon completion of Phase 1 and approval to proceed with Phase 2, a new cost-loaded Project Schedule will be developed for the remainder of the Project. This task also includes the preparation of monthly reports showing the comparison of actual costs and percent complete with planned

cost and percent complete. The Design-Builder will also report Project status including the following information:

- Key accomplishments
- Key issues
- Required actions
- Upcoming work and challenges
- Key milestone schedule updates
- Scheduled progress verses actual progress
- Cost summary
- Cost (budget, accrued. Projection, variance)

Task 1.5 - Project Coordination and Progress Meetings

On a bi-weekly basis, the Design-Builder will conduct Project design progress meetings between the County and Design-Builder's project team members to discuss design elements of the Project. Meeting agendas will be prepared and distributed 2 days prior to the meeting and a meeting minute summary will be prepared and distributed by the Design-Builder within 3 business days following the design Project Coordination and Progress Meeting. In addition, the Design-Builder will conduct monthly progress report and invoice presentation meetings attended by the County to confirm the Design-Builder is meeting the requirements of the County. A summary of meetings will be prepared and distributed by the Design-Builder within 5 business days of the monthly progress report meeting. This task also allocates time for internal Project coordination meetings.

Task 1.6 - Not Applicable

Task 1.7 - Quality Assurance/Quality Control Management

The Design-Builder will provide management of the quality assurance/quality control (QA/QC) aspects of the Project. An internal Project Quality Manager (PQM) will be identified by the Design-Builder and will provide oversight of the QA/QC staff, scheduling of technical reviews, and documenting and adjudicating of review comments from both internal sources and the County. The Quality Management Plan will be prepared as part of the Project Execution Plan.

Task 1.8 - Public Information Assistance

The County is responsible for managing the Public Information Program for the Project. The Design-Builder will assist the County by preparing informational material and attending meetings, if requested. The Design-Builder is not authorized to issue statements or press releases on County's behalf nor is it authorized to issue statement or press releases concerning the Project unless prior approval is given by the County.

Task 1.9 - Construction Cost Estimating/Guaranteed Maximum Price Reviews

The Design-Builder will prepare Opinions of Probable Construction Costs at the conclusion of the 30%, 60%, 95%, and 100% design phases. The Association for the Advancement of Cost Estimating (AACE) recommended practices will be used to develop the cost estimates.

Task 1.10 - Project Closeout

At the completion of design, appropriate Project records will be archived according to County's existing methods and standards.

Task 1 - Deliverables

1. Project Execution Plan
2. Project Kickoff/Chartering Meeting Summary
3. Invoices
4. Draft Project Baseline Schedule
5. Monthly Progress Reports
6. Bi-weekly Progress Meeting Summary
7. Monthly Progress Report
8. 30% Cost Estimate
9. 60% Cost Estimate
10. 90% Cost Estimate
11. 100% Cost Estimate

Task 2 - Permitting Assistance

The purpose of this task is to develop a Permitting Workplan for obtaining the various permits, identifying the permits required for construction and operation of the project, preparing the permit applications for the various regulatory agencies, and submitting the permit applications to County for review and approval. County will then submit the completed applications to the various regulatory agencies and pay all the permit fees. For permit activities related to this Project, the Design-Builder will provide five copies of draft and final permit applications and accompanying material. An electronic file in .pdf format will be provided for draft and final submittals. The Design-Builder will develop a Permitting Workplan. The plan will list those permits that are necessary, the appropriate contacts for the permits, the time constraints associated with the permits, and a schedule for application of the permits. In addition to the Permitting Plan, permit applications will be developed, as appropriate, for each agency. County will take the lead in submittal of the permit applications. As requested by County, the Design-Builder will assist in the negotiation of these permits.

Task 2.1 - Permitting Workplan

The Design-Builder will prepare a permitting workplan for submittal and approval by County. The workplan will include the following elements:

- List of anticipated permits required
- Agency contacts
- Time constraints associated with each permit
- Schedule for submittal of permit applications

Task 2 - Deliverables

1. Permitting Workplan
2. Stormwater Construction Permit Application
3. Draft and Final Stormwater MSGP Application
4. AZPDES SWPPP Draft and Final
5. Draft and Final Regulatory Applicability Analysis TM
6. Draft and Final Air Permit Application

Task 3 - Preliminary Design

The purpose of this task is to develop design criteria for use in the subsequent design phases of Project. The Design-Builder will perform the following subtasks as part of this Task:

Task 3.1 - Data and Information Collection

Information and data needed to formulate design criteria will be collected and reviewed by the Design-Builder.

Task 3.2 - Survey and Mapping

The Design-Builder will provide mapping and related services as described below for Project, suitable for final design activities. The Design-Builder will employ a Registered Land Surveyor (RLS), registered in Arizona, to survey and map the improvements to be designed, and/or constructed. The surveying and mapping will be sufficient to establish needed horizontal and vertical control monuments. Existing aerial and ground survey information will be reviewed to determine any additional survey activities needed. Specific activities will include the following:

- **Establish Control Network:** The Design-Builder will perform research, field surveys, and office work necessary to establish the Horizontal and Vertical Project Control Network meeting County standards. The Design-Builder will establish a survey control network which will encompass the Project area. The Project Control Network will also provide the basis of control for the construction phase of the Project. Survey control monuments will be located in areas that will not be disturbed during construction. Survey control monuments set by the RLS will be tagged or stamped.
- Survey monuments (property pins, section corners, witness comers, and bench marks) will be collected during the field survey with a description of the monuments (steel pin, O.I.P., L.C.P., and brass monument in concrete).
- A ground aerial survey will be performed and used to develop a site digital terrain model and existing facilities model, including all existing above grade structures and site features.
- **Horizontal Control:** Control traverses will be geometrically closed and the error of angular and horizontal closure for the unadjusted traverse will be shown in the field notes and on the required maps. Horizontal closures will be made using unadjusted angles and distances and will have a precision ratio of 1:20,000 or better. Set, at a minimum, semi-permanent monuments nail and shiner, or rebar or better, at newly established control point locations.
- **Vertical Control:** A control listing of the benchmarks used for the survey control network will be provided to the Design-Builder. The datum which the elevations are to be referenced will be included in the field research data. Set, at a minimum, semi-permanent monuments nail and shiner, or rebar or better, at newly established control point locations.
- **Arizona State Plane Coordinates:** The coordinate system for establishing the Project Control Network will be the North American Datum of 1983 (NAD-83) (1992) adjustment, Arizona State Plane Coordinate System in International feet reported in both grid and ground coordinates. The vertical datum will be North American Vertical c Datum of 1988 (NAVD88).

The survey and mapping activities associated with the treatment facilities are defined as follows:

- **Aerial Targets:** Design-Builder will set up to 20 aerial targets for photo-control at locations determined by the aerial mapping firm within the defined Project limits.
- **Aerial Photography:** Design-Builder will acquire new color vertical aerial photography, +/- 1:2400 scale for design mapping at these facilities.

- DTM and 1-foot contours - Design Mapping: Using the acquired 1:2400 scale aerial photography, Design-Builder will generate a DTM for a 1"=20'scale, 1.0-foot contour interval contour mapping of the affected treatment plant site. The total area for 1.0-foot interval contour mapping will be for the portion of the facility affected by this design and construction project.
- Other surveys (other than control surveys), will comply with FGDC Geospatial Positioning Accuracy Standards, Part 4: Standards for Architecture, Engineering, Construction (A/E/C), and Facility Management with accuracy tolerances of +/-0.10- foot for the horizontal and +/- 0.03-foot for the vertical (if applicable) on other hard surfaces and +/-0.10-foot for the vertical on soft or natural ground surfaces (if applicable).
- Planimetric Mapping: Using the acquired 1:2400 scale aerial photography, Design-Builder will generate a 1" =20'scale planimetric mapping of the entire 150 acre site. Above ground features (structures, roads, curbs, sidewalks, piping, walls or fencing, ditches, grade breaks, site lighting, and major vegetation) will be collected during the survey.
- Digital Orthophoto Images: Using the acquired 1:2400 scale photography, Design-Builder will generate digital orthophoto images at 0.2 ground distance pixel resolution covering the entire 150 acre site.
- Locate Utilities: The Design-Builder will locate at grade utilities and other physical obstructions within the Project site. The Design-Builder will also identify locations and elevations of inverts of sanitary sewers, storm sewers, other buried utilities, drainage structures, and other similar underground structures.
- Surveying services will be performed under the supervision of a qualified, Arizona registered, professional land surveyor.
- The units of measurement for this Project will be in International Feet.
- The Design-Builder will take reasonable precautions to prevent damage to public and private property, and will restore the site to the condition existing prior to the surveyor's entry.

Task 3.3 - As-Built Validation/Development

The Design-Builder will obtain as-built information for the Project area and will utilize this information, and information obtained in Subtask 3.2, to develop a set of as-built drawings as required for design and construction of the new facilities. Specific activities will include the following:

- Determine document needs associated with the Project and obtain available information including as-built drawings for roads, sanitary sewers, utilities, storm water drainage structures, rights-of-way, easements, and property lines, and significant topographical features.
- Utilize information obtained in Subtask 3.2 to validate as-built information as required for the design and construction.
- Develop and prepare as-built drawings for Project. At this stage, focus will be on obtaining and documenting "above ground" information associated with the Project site. Below grade as-built information for site utilities is described separately in Task 4.3, Sub-surface Utility Engineering.

Assumptions:

- The County will provide the Design-Builder with electronic or hard copies of existing as-built drawings for existing County facilities within the Project area.

Task 3.4 - Visual Inspection and Photography

The Design-Builder will perform a visual inspection of the proposed construction site and will determine if there are any concerns affecting the design or construction process. A written narrative documenting the results of this task will be provided to the County.

The Design-Builder will also take interior and exterior photographs (as appropriate) of existing above ground facilities. The photographs will be taken with a digital format camera with a minimum 8 MB pixel rating. The photographs should be of sufficient size to clearly identify vegetation, and objects which may come into question during the design and construction of the Project. As an alternate, digital motion pictures with still print capability may be used. The Design-Builder will provide County with licensed software and hands-on instruction, if needed, to view and print the pictures. The digital images (JPEG or MPEG) will be stored on CD or DVD (2 copies will be supplied to County). Hard copy will be printed only when needed.

Task 3.5 - Not Applicable

Task 3.6 - Design Criteria Development/Confirmation

The Design-Builder will work with the County to develop updated design criteria for the Project. Design criteria development and confirmation will include:

- Review of all available data, including as-built information and County requirements.
- Develop design criteria, sizing, and general layouts.

This design criteria development information will be summarized in a series of technical memoranda described in the following subtasks.

Assumptions:

- This task includes two meetings with appropriate County staff to review design criteria that is developed for the Project.

Task 3.6.1 - LEED Strategies (If Applicable)

In concert with the goals established by the County, the Design-Builder will lead a one-day LEED workshop with the County to validate the compliance or certification goals established for the Project. Based on the County's goals and the opportunities for incorporating LEED strategies into the Project components, conceptual approaches will be presented and a LEED strategy will be developed for the Project. A preliminary LEED Scorecard will be prepared with a preliminary list of proposed LEED credits for the Project.

This LEED Scorecard will be used to establish the LEED goals as the Project is designed. Actual final LEED certification level is based on a number of items, the LEED design elements that County chooses to incorporate into the Project and the County's decision on whether to include LEED certification activities into the design and construction phases, such as LEED template development, LEED modeling and verification, and commissioning.

The scope of this task is currently limited to developing LEED strategies for the Project, presenting this information in a workshop and documenting proposed LEED credits in the LEED scorecard. A design memoranda (DM) will be developed summarizing the LEED strategies.

Task 3.6.2 - Project Design Standards

Project design standards will comply with County standards. When such standards do not exist, Design-Builder and County will confer as necessary to establish County-approvable standards. These design standards will include standards to be used for drawings and specifications for the Project as well as standards for each discipline, which include County preferences for materials and components.

Task 3.6.3 - Design Submittals

Task 3.6.3.1 - Submittal

The Design-Builder will submit to County, with such promptness as to cause no delay in the Design Work, all submittals and drawings required by the Contract or as necessary to illustrate details of the Design Work.

Task 3.6.3.2 - Submittal Requirements

Each submittal and drawing must be accompanied by a transmittal letter containing a list of the submitted documents and/or of the titles and numbers of the drawings, as appropriate. Each series will be numbered consecutively for ready reference and each submittal and drawing will be marked with the following information:

- Date of submission
- Name of Project
- Location of Project
- Branch of Design Work (specification section)
- Project number
- Name of submitting Design-Builder
- Name of Subcontractors
- Revision number

Task 3.6.3.3 - Consistency with Technical Specifications

All Subcontractor submittals and drawings will be reviewed by Design-Builder prior to being submitted to County and will bear a written statement by the Design-Builder that the submittals and drawings are consistent with the Technical Specifications or, if not totally consistent, will bear a written statement indicating all deviations from the Technical Specifications. By approving, verifying, and submitting drawings, product data, and similar submittals, the Design-Builder represents that the Design-Builder has determined and verified the information contained within such submittals complies with the requirements of the Technical Specifications. Any submittals or drawings submitted without the statement will be returned for resubmission; the submittals or shop drawings will be considered as not having been submitted, and any delay caused thereby will be the Design-Builder's sole responsibility. This review by Design-Builder of Subcontractor submittals and drawings will not be construed as Design-Builder approval of the design therein except that it will be a representation that the letter accompanying the submittal or drawings does indicate all deviations from the Construction Documents as required by Task 3.6.3.4,

Task 3.6.3.4 - Identification of Deviations

Design-Builder will include with submittals and drawings, a written statement indicating all deviations from the Technical Specifications. Failure to so notify County of such deviations may be grounds for subsequent rejection of the Design Work. If, in the opinion of County, the deviations are not acceptable, the Design-Builder must furnish the item as specified in accordance with the Technical Specifications. Design-Builder will not be relieved of responsibility for deviations from requirements of the Technical Specifications by County's approval of Drawings, Product Data, or similar submittals unless Design-Builder has specifically informed County in writing of such deviation at the time of submittal and County has given written approval to the specific deviation. The Design-Builder will not be relieved of responsibility for errors or omissions in Drawings, Product Data, or similar submittals by approval thereof.

Task 3.6.3.5 - Verification of Submittal

By reviewing or submitting submittals and/or drawings, the Design-Builder represents that it has determined and verified availability, field measurements, field construction criteria, materials, catalog numbers, and similar data, or will do so, and that it has checked and coordinated each submittal and/or drawing with the requirements of the Technical Specifications. If any specified material item or part is not available, the Design-Builder will so indicate to County.

Task 3.6.3.6 - County Review

The County will review and approve submittals and drawings and return them to Design-Builder within ten (10) days of receipt unless otherwise previously agreed in writing. For scheduling purposes, Design-Builder must assume a ten (10) day review period for each submittal or set of drawings. For complex submittals, Design-Builder must assume two ten (10) day review cycles. If review and approval are delayed beyond ten (10) days, County will notify Design-Builder in writing stating the reason for the delay. Approval will not relieve the Design-Builder from responsibility for deviations from the Technical Specifications, unless it has been called to County's attention, in writing, at the time of submission. Any modification will be approved only if it is in the interest of County to effect an improvement in the Work and does not increase the GMP or Contract Time(s). Any such modification is subject to all other provisions of the Technical Specifications and Contract and is without prejudice to any and all rights of County under any surety bonds.

Task 3.6.3.7 - Response to County Review

If the County returns a submittal or shop drawing to Design-Builder with the notation "rejected", "revise and resubmit", or "approved as noted", Design-Builder, so as not to delay the Work, will promptly submit a submittal or drawing conforming to the requirements of the Technical Specifications and Contract and indicating in writing on the submittal or drawing and on the transmittal what portions of the resubmittal have been altered in order to meet with the approval of the County. Any other differences between the resubmittal and the prior submittal will be indicated on the drawing and on the resubmittal as a special note.

Task 3.6.3.8 - No Time Extension

No extension of time will be granted to Design-Builder because of its failure to submit submittals or drawings in ample time to allow for review, possible resubmittal, and approval. The Design-Builder will furnish prints of its approved submittals and drawings to all Subcontractors whose work is in any way related to the Work covered by the submittal or drawings.

Task 3.6.4 - Design Memoranda

Based on information provided in the RFP/RFQ and further development of facilities criteria, sizing, and layouts, a series of design memoranda (DM) will be prepared to document and build consensus of the criteria to be used for the basis of design.

Task 3.6.4.1. - Site Layout

A proposed site plan is provided as part of the SFQ documents. This DM will include reviewing the proposed site layout, along with locations of existing utilities and roadways and proposed sizing of new and future facilities, including auxiliary facilities, and developing an updated proposed site layout for the Project. The site layout will include, as appropriate, new and existing facilities, roadways, and space allowances for utility corridors and future facilities.

Task 3.6.4.2. - Site Utility Requirements

This DM will, if applicable, summarize site utility requirements, including requirements for fire protection, potable water, non-potable water, power, communications infrastructure, and any additional requirements.

The capacity of the existing systems for these utilities will also be summarized, with proposed modifications to provide the required utility capacities.

Task 3.6.4.3 - Power/Electrical System

This DM will, if applicable, include the electrical power supply sizing criteria for the Project, summarize the current electrical power system (if applicable) and provide a plan for electrical system feed modifications to power the new facilities. This task will develop a comprehensive plan for power supply and distribution to the new facilities including evaluating power supplies from the power supplier and any electrical power supply system and capacity currently available.

Task 3.6.4.4 - Instrumentation and Control Systems (SCADA)

This DM will, if applicable, include a description of the proposed instrumentation, control, and SCADA systems to be incorporated into the Project. This will be coordinated with County's existing SCADA system. A system block diagram will be developed showing how the Project ties into the existing control system. Process and instrumentation diagrams (P&IDs) will be developed for each unit process. Process control narratives will be developed to describe the control approach for each unit process. During this phase of the Project the P&IDs and process control narratives will be preliminary and will be developed in more detail during subsequent design phases.

Task 3.6.4.5 - Construction Packaging, Sequencing, and Duration

This DM will provide a summary of the recommended construction packaging and scheduling to achieve the County's goals and regulatory requirements for the project. These recommendations for construction packaging, sequencing, and duration will be coordinated with the County. This task will include attending workshops with County to coordinate these requirements and to develop a DM with recommendations and schedule milestones.

Assumptions:

- This task includes attending two 4-hour workshops with the County.

Task 3.6.4.6 - Maintenance of Existing Operations During Construction

This DM will provide a summary of construction sequencing and tie-ins to maintain any existing operations while the new facilities are being constructed and started up. The required MOPOs will be identified and documented for the purposes of updating as the design progresses. These recommendations will be coordinated with County staff.

Assumptions:

- This task includes attending two workshops with all appropriate County personnel.

Task 3.6.4.7 - Security

This DM will, if applicable, describe how the security will be maintained at the Project and, if the Project is a modification to an existing facility, how it will be incorporated into the existing security system. The site security provisions for the new facilities will be coordinated with the County's security plan. In addition, this DM will describe the overall site work to be done to provide security that meets the County's Security System Master Plan requirements. These security requirements may include closed circuit TV, fencing, gates with controllers, building access controls, and the site security monitoring system.

Assumptions:

- This task includes one meeting with County security personnel to review site security design criteria.

Task 3.6.4.8 - Not Applicable

Task 3.6.4.9 - Discipline Engineering Design Criteria

DM's will be developed to include the general design criteria for the technical disciplines, including HVAC, plumbing, electrical, structural, mechanical, architectural, instrumentation, and civil. In addition to the design criteria to be used for the Project, the applicable codes and standards will be listed that apply to the Project.

Task 3.6.4.10 - Pre-purchased Equipment and Materials

This DM will include recommendations for any pre-purchased equipment and materials recommended for advancing the Project schedule. The DM will identify vendor-imposed lead times for the recommended purchases and show Project Schedule impacts as well as critical purchase deadlines. The list of equipment and materials recommended for pre-purchase will be coordinated with the County to ensure that the equipment and materials meet County standards and any County preferences for type or manufacturer. Following County approval, Design-Builder will work with County to facilitate timely purchase of the recommended equipment and materials.

Task 3.7 - Preliminary Design Report

The Design-Builder will compile the DMs developed under this task into a comprehensive Preliminary Design Report. A Final Design Report will be completed under other tasks.

Task 3 - Deliverables

1. Draft Preliminary Design Report – Biogas Cleaning Facility
2. Final Preliminary Design Report – Biogas Cleaning Facility
3. Workshop Summary
4. Draft preparation of required permits and accompanying documentation
5. Draft Pilot Test Plan for Biogas Cleaning Facility pilot testing
6. Final Pilot Test Plan for Biogas Cleaning Facility pilot testing
7. Pilot Test Report
8. 30% Schematic Design Report (Draft and Final)
9. Presentation workshop materials and summary
10. 30% Construction Cost Estimate
11. 60% Design Development Documents
12. 60% Construction Cost Estimate
13. Final preparation of required permits and accompanying documentation
14. Outline of startup and operator training plan
15. Constructability Review Workshop Materials and Summary
16. Presentation workshop materials
17. 95% Construction Cost Estimate
18. 95% Contract Documents
19. 100% Contract Documents
20. Preliminary Design

21. Planimetric mapping, DTM, and 1.0-foot contour interval contour mapping at 1"=20' scale containing utilities located by field survey methods for the 150 acre site.
22. Digital orthophoto imagery at 1"=20' scale with 0.2-foot ground distance pixel resolution for the 150 acre site.
23. A copy of field notes and electronically collected notes of horizontal and vertical traverses as well as closure information on these traverses.
24. A coordinate printout of surveyed information with X, Y, and Z coordinates listed to the nearest 0.01 foot. The collected field information shall contain the station ID, the horizontal and vertical coordinate information, and feature codes. Information shall be tied to the Arizona State Plane Coordinate System. A Project adjustment factor shall be provided and the final coordinate system shall be converted to ground.
25. ASCII file containing topographic points and survey control points
26. Hard copy plots of the surveyed Project area showing the derived data with the 1.0-foot contours
27. As-built drawings
28. Calibrated GPSX Process Model Results
29. Design memoranda and preliminary drawings
30. Draft and Final Preliminary Design Report

Task 4 - Field Investigations

Task 4.1 - Geotechnical

Based upon available information, the scope of work for geotechnical investigations is assumed to consist of the following:

Task 4.1.1 - Site Reconnaissance and Field Exploration

- Using the facility site layout validated in Task 3, the location of soil borings will be determined, identified by their coordinates, and staked on the site.
- Clearance by a Subsurface Utility Engineering (SUE) firm will be obtained by Design-Builder for utilities at the proposed boring locations. A site reconnaissance will be made to evaluate site and access conditions by the SUE and soil boring driller. Cultural Resource (CR) clearances will be provided by County. One week minimum notification to CR prior to any drilling.
- For purposes of estimating cost, it is assumed that there will be 2 borings for a total footage of approximately 20 lineal feet each.
- The subsurface conditions encountered will be logged by a geologist or geotechnical engineer, and the soils encountered will be identified in accordance with ASTM D 248800, *Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)*. Standard Penetration Tests will be performed in accordance with ASTM D 1586-99, *Standard Test Method for Penetration Tests and Split-Barrel Sampling of Soils* at approximately 5 feet intervals. For soft fine grained soils, relatively undisturbed Shelby tube samples will be obtained for laboratory testing, in general accordance with ASTM D 1587-00, *Standard Practice for Thin-Walled Tube Sampling of Soils for Geotechnical Purposes*. Where the soils is too stiff to use Shelby tube samples, ring samples will be taken in general accordance with ASTM D 3550-84, *Standard Practice for Ring-Lined Barrel Sampling of Soils*.
- Piezometers will be installed at 4 to 5 selected locations to determine the groundwater levels in the soil profile. Knowledge of groundwater conditions is important for design as well as for construction planning purposes.

- To aid in corrosion analysis, field resistivity soundings will be performed at various locations at the proposed plant site. The field resistivity soundings will be performed using the Wenner array in accordance with ASTM G57.

Task 4.1.2 - Laboratory Testing

Laboratory tests will be performed on samples obtained from the borings to evaluate certain physical and engineering parameters, including the following:

- One-Dimensional Consolidation (ASTM D 4546)
- Grain Size Distribution (ASTM C 136)
- Percent Passing the No. 200 Sieve (ASTM C 117)
- Atterberg Limits (ASTM D 4318)
- Consolidated Undrained Triaxial Compression Test (ASTM D 4767-02)
- R-Value (ASTM D 2844)
- Swell Potential
- In-Place Moisture and Dry Density
- Chemical Corrosivity Tests including pH, resistivity, and soluble salts.

Task 4.1.3 - Engineering Analysis and Geotechnical Report Preparation

An engineering analysis will be performed to provide the following design parameters:

- Allowable bearing pressures for all structures
- Estimated total and differential settlements
- Modulus of subgrade reaction for the design of mat-type foundations
- Coefficient of friction for the design of mat-type foundations or conventional spread footings
- Static lateral earth pressures for unrestrained and restrained subsurface walls such as vault structures including sloping backfill conditions
- Seismically induced lateral earth pressures for unrestrained and restrained subsurface walls such as vault structures including sloping backfill conditions
- Apparent earth pressures for the design of temporary excavation shoring
- Modulus of lateral earth reaction (E') for the design of flexible pipe
- Pipe/soil coefficient of friction
- Lateral earth support and coefficient of friction for pipe thrust blocks
- Seismically induced peak horizontal ground accelerations
- Non-dedicated asphalt concrete and Portland cement concrete pavements
- Dedicated off-site half street asphalt concrete pavements

A geotechnical report will be prepared to include a summary of the above, including preliminary mat and spread foundation bearing capacities and the boring logs.

Task 4.2 - Corrosion

Design-Builder will perform a soils analysis and corrosion control evaluation of the Project site. Investigations will include soil resistivity tests, soil box resistivity test, pH measurements, sulfur reducing

bacteria tests, and a stray current potential evaluation. The analysis will be presented in a Design Memorandum with recommendations for corrosion protection design.

The Design-Builder's corrosion engineer will evaluate the corrosion protection requirements in potentially corrosive environments and provide recommendations in the DM on general materials and coatings to use in the Project.

Task 4.3 - Subsurface Utility Engineering

Design-Builder will map all underground utilities within all potential excavation areas at the Project site. This utility mapping will include developing base maps using existing record drawings and other existing information. Vacuum potholing and other locating methods will be used as needed to determine more exact utility locations for existing underground utilities. For purposes of estimating cost, it is assumed that up to three (3) crew days will be required for potholing. Once identified, the location of utilities will be surveyed and shown on the Project mapping. A Subsurface Utility Engineering firm may be used as needed for locating existing subsurface utilities.

Assumptions:

- This task includes three (3) crew days of a subsurface utility company at the Project site for potholing and surveying subsurface utilities.

Task 4.4 - Legal Survey

If required, County will furnish, or direct the Design-Builder to obtain at County's expense, surveys describing physical characteristics, legal limitations, and utility locations for the Project site, and a written legal description of the Project site. The surveys and legal information will include, as applicable, grades and lines of streets, alleys, pavements, and adjoining property and structures; adjacent drainage; rights-of-way, restrictions, easements, encroachments, zoning, deed restrictions, boundaries, and contours of the site; locations, dimensions, and necessary data pertaining to existing buildings, other improvements, and trees; and information concerning available utility services and lines, both public and private, above and below grade, including inverts and depths.

Task 4.5 - Endangered Species Survey

The Design-Builder will hold informal consultations (2 meetings) with the USFWS regarding adverse impacts to any known species within the Project area.

Design-Builder's biologist will survey the Project area, document the results of the field survey, and submit the report to USFWS. The report will document the existence or absence of listed species in the Project area. It is anticipated that comments on the draft report will be received from USFWS. Upon receipt of the comments, a final report will be prepared and submitted to USFWS and County.

Task 4.6 - Arizona Native Plant Survey

Design-Builder will investigate, as applicable, U.S. Bureau of Reclamation (BOR), State of Arizona, and Pima County native plant mitigation requirements for areas that will be disturbed by construction.

Task 4.6.1 - Prepare Native Plant Mitigation Plan

The Design-Builder will map the Project area. The mapping will be prepared at a horizontal scale of T-40 and will use aerial photography prepared in Task 3.

The Design-Builder will consult with the State of Arizona to review the Project area and determine if refinements are required.

The Design-Builder will perform a full plant inventory of lands encompassing the Project. The Design-Builder will calculate plant mitigation fees for the Project area using the State Land Native Plant Value Methodology. The draft plant inventory and mitigation fee calculations will be submitted to County for review and comment. A final plant inventory and mitigation fee calculation will be prepared that addresses County comments. Final documents will be submitted to County for submission to the State of Arizona.

The Design-Builder will attend one pre-submittal conference with the State of Arizona and will provide technical assistance during the State's review period to answer questions or provide additional information, if required by the State. It is assumed that the Design-Builder will respond to two information requests.

Task 4 - Deliverables

1. Draft and Final Geotechnical Report
2. Draft and Final Corrosion Report
3. Draft and Final ANP Survey Results

Task 5 - Schematic Design (30%)

The purpose of this task is to use the data and guidelines developed in Task 3, Preliminary Design, to develop and evaluate alternative design concepts, and agree upon a single design concept for the Project. The primary products from this task will be design memorandums, a 30% level 3-D model, Schematic Design Report, and an initial 30% level construction cost estimate for the Project.

During the Schematic Design phase, the Design-Builder will develop renderings of facilities taken from the model, sketches, preliminary drawings, process and instrument diagrams (P&IDs), and narratives. At the conclusion of this phase of design, a 30% Design Briefing will be held with County. At this briefing, the 3-D model will be used to convey concepts and to solicit input. Meeting minutes will be prepared to capture comments and to document the decisions reached. Specific activities and deliverables from this task are as identified in the subtasks below. During the Schematic Design phase, the Design-Builder will focus on constructability aspects of Project, including facility layouts and construction sequencing.

If the County decides to proceed with a LEED certification approach for the Project, the LEED scorecard will be updated as part of the Schematic Design tasks for each discipline and preliminary LEED templates will be developed for each LEED point. The LEED certification process would also include registering the Project with the Green Building Council.

Task 5.1 - Civil and Site Development

Schematic design work for civil and site development will include the following activities:

- Develop site layouts of improvements for the facility developed to 30% level.
- Identify the locations of underground utilities and incorporate this information into site utility drawings.
- Prepare preliminary storm water calculations and develop preliminary storm water control concepts.
- Set preliminary finish grades of structures and roadways. Identify traffic flow patterns and patterns for delivery of equipment, chemicals, and materials to the site.
- Identify routes for emergency vehicles.
- Review concepts with Design-Builder quality control reviewers.
- Develop concepts for ingress and egress from the Project site.
- Develop potable water distribution system concepts.

- Develop reuse water distribution system concepts.
- Determine routes for major yard piping and site utilities. Coordinate with other projects in the area.
- Contractor entrance, offices, parking, and staging areas will be defined.

Task 5.2 - Landscape Architecture

The general landscape architecture concepts will be prepared by the County and provided to the Design-Builder for use in the Schematic Design phase of the Project. Schematic Design work for landscape architectural will include the following activities:

- Perform an analysis of existing site conditions to include existing vegetation, soil conditions, topography, drainage, and views.
- Coordinate with the County to develop the proposed plant list and landscaping approach.
- Prepare up to three (3) conceptual designs. One concept will be selected and incorporated into the construction documents.
- Develop planting plans indicating the location of plant materials. The plans will: list plants by botanical name and common name with sub-species as required; include the total number of each variety; and include any special plant considerations with technical specifications and details.
- Coordinate irrigation system requirements with site civil for reclaimed water distribution irrigation supply.
- Provide low voltage lighting fixture locations and recommended manufacturers. Identify special lens or bulb patterns and recommended transformer locations.
- Develop concepts and layout for fencing, site screening and enclosures.
- Soil stabilization with 85% coverage.

Task 5.3 - Architecture

The general architectural concepts will be prepared by the County and provided to the Design-Builder for use in the Schematic Design phase of the Project. Schematic design work for architectural will include the following activities:

- Perform code review to determine requirements applicable to new facilities. Rehabilitation and code upgrading of existing facilities may be required in locations where existing facilities will be expanded or modified.
- Utilize architectural theme for buildings provided by County. An architectural review meeting will be held with County to review the architectural theme to be used for the above grade structures within the Project area, and for any fencing required. Select interior and exterior construction materials; roof type, slope, and roof support system.
- Assign code classification to new buildings.
- Compile list of chemicals and amounts to be used, if applicable, to determine any area classifications associated with chemical storage.
- Prepare preliminary layout of buildings (plan, section, and elevations).
- Determine building materials.
- Determine locations for personnel facilities in the existing and new buildings.
- Review concepts and draft work products with Design-Builder quality control reviewer.

- Coordinate with the County to schedule a meeting with building review officials. Meet with building review officials as needed to review building permit approach for new and/or modified existing facilities.

Task 5.4 - Structural

Schematic design for structural will include the following activities:

- Coordinate with architectural discipline on the selection of building concepts and building materials. Consult with County on building/structure layouts.
- Develop facility foundation and building concepts and structural design approach.
- Provide input on any modifications to existing facilities to incorporate new work or tie in new facilities.
- Review concepts -with Design-Builder quality control reviewer.

Task 5.5 - Foundations/Excavation

Schematic design for geotechnical will include the following activities:

- Based on the geotechnical investigation described in Task 4, evaluate foundation options.
- Perform an engineering analysis to develop design parameters for the foundation options.
- Review concepts with Design-Builder quality control reviewer.
- Coordinate with civil and structural design leads in making a decision on the preferred foundation option and finalizing design criteria.

Task 5.6 - Process/Hydraulics (as applicable)

Schematic design for process will include the following activities:

- Determine the size and capacity of unit treatment processes, pipelines, and ancillary systems.
- Develop liquids processes gravity flow and pumped flow hydraulics.
- Advance the design for any new outfall capacity determined to be needed as part of the preliminary design hydraulics analysis.
- Develop doses for chemical feed systems.
- Review capacities of existing equipment and pipelines that will interface with new equipment to verify adequacy or to determine replacement if necessary
- Prepare process flow diagrams.
- Develop process narratives.
- Develop plans and sections of various processes.
- Review and update as required the operations during construction design memorandum
- Review concepts with Design-Builder quality control reviewer.
- Develop process models (GPS-X and Pro2D). Provide comparison and summary of output for each model.

Task 5.7 - Process Mechanical (as applicable)

Schematic design for mechanical will include the following activities:

- Select and size major process equipment. Prepare sizing calculations and obtain review and approval of calculations as directed by the Design-Builder Quality Control Manager. Establish level of redundancy required for process equipment.
- Coordinate with the County on preferences of equipment manufacturer and processes. Prepare equipment list with sizing for major equipment.
- Determine equipment availability and delivery lead time requirements.
- Develop preliminary piping and valve schedules with input from County.
- Prepare mechanical specification list and draft piping and valve schedules.
- Prepare preliminary layouts for piping and equipment arrangements.
- Coordinate process and building mechanical water demands and define needs for effluent reuse water and for potable water.
- Coordinate with civil to determine location for new process and utility yard piping.
- Develop plans and sections of various processes.
- Review concepts with Design-Builder quality control reviewer.

Task 5.8 - Building HVAC/Plumbing (as applicable)

Schematic design for HVAC and plumbing will include the following activities:

- Select type of ventilation system to be used in process buildings and odor control facilities. Develop preliminary system sizing and determine locations for building mechanical equipment. Coordinate recommended control systems with appropriate County staff.
- Select type of heating system to be used.
- Select type of air conditioning system to be used.
- Coordinate with the architectural discipline to establish design R-values for exterior walls and roof systems.
- Perform a ventilation code review.
- Coordinate with local and State Fire Marshal and architect to determine requirements for sprinklers and fire protection.
- Determine plumbing utility requirements in existing and new facilities, coordinate with existing facilities and determine configuration for building plumbing drain systems
- Review concepts with Design-Builder quality control reviewer.

Task 5.9 - Electrical (as applicable)

Schematic design work for electrical will include the following activities:

- Prepare preliminary overall one-line diagram for the proposed facility.
- Prepare preliminary load calculations.
- Size electrical rooms, size equipment to fit into the rooms - existing and new buildings
- Determine equipment availability and delivery lead time requirements
- Determine number of electrical feeds to be provided. Coordinate with the electric service provider (ESP) to determine locations of power feeds, voltage, billing details (peak usage rates), requirements for reduced voltage starters, and substation requirements.

- Determine redundancy requirements for power supplies and power distribution.
- Determine any standby power requirements and potential sources.
- Establish preferred voltages for power distribution and equipment operation.
- Perform an electrical code review.
- Coordinate with other disciplines, including architectural and mechanical, to resolve code compliance issues specific to the disciplines. Develop preliminary schedule of hazardous and corrosive locations.
- Review concepts with Design-Builder quality control reviewer.
- Coordination with ESP.

Assumptions:

- This electrical scope may include developing a preliminary design for providing electrical power new facilities included in this Project. Modifications to existing facilities will be included where these modifications are necessary to provide power to the new facilities.

Schematic design work for the instrumentation and control will include the following activities:

- Coordinate with County to develop Preliminary P&IDs for each process.
- Add equipment/instrument tag numbering, naming, and abbreviation following existing County standard conventions.
- Identify equipment based on County standards.
- Determine equipment availability and delivery lead time requirements
- Design control system configuration in coordination with the County standards and review same with the County. Develop control system block diagram showing interface of new control systems with County standards.
- Work with process engineer to prepare written operational description of each major process.
- Develop overall control philosophy including local control approach, control system, level of automation, supervisory control based on County's SCADA standards. Coordinate SCADA criteria with SCADA Integrator and County.
- Review concepts with Design-Builder quality control reviewer.

Task 5.11 - Ancillary Systems (as applicable)

Schematic design work for ancillary systems will include the following activities:

- Identify PCRWRD standards for telephone and intercom systems.
- Identify PCRWRD standards for security.
- Identify PCRWRD standards for fire alarm systems.
- Determine fire water demands.
- Identify data highway architecture.

Task 5.12 - Updated MOPO Design Memorandum

Update the MOPOs that were identified in Task 3.6.3.6 based on the additional design information developed in Task 6. Meet with County staff prior to update of MOPO and discuss additional information available to update MOPO.

Task 5.13 - Schematic Design Report

A schematic design report will be developed including process control narratives, any design memoranda updates from the Preliminary Design Phase, and preliminary layout drawings.

Task 5.14 - Schematic Design Construction Cost Estimate

This task includes Design-Builder review of the cost estimate with County. Design-Builder and County will resolve any differences between the cost estimate and County's budget.

Assumptions:

- This task scope does not include a value engineering study of the schematic design or value engineering revisions of the schematic design.

Task 5.15 - Schematic Design Model Review and Workshop

Design-Builder will prepare a model of Project and use it to present major design concepts to County staff. Additional information, such as P&IDs and facility renderings, will be presented at the workshop. An update and status of permitting and stakeholder activities will be presented. The Schematic Design workshop is based on a 2 hour meeting to allow time to meet with all appropriate County staff. At the meeting, input on the design concepts will be discussed. Following the workshop, meeting minutes and responses to comments will be prepared and submitted to the County to address comments and to document decisions reached. The responses to comments will be incorporated in the 60% Design Development Document. The objective of these workshops is to get County input and freeze the 30% design prior to moving forward with the Design Development phase of the Project.

Task 5 - Deliverables

1. MOPO-DM Update
2. Draft and Final Schematic Design Report
3. SD Workshop Summary
4. 3-D Model

PHASE 2 – FINAL DESIGN SERVICES

Task 6 - Design Development (60%)

The purpose of this task is to utilize the decisions that were made in the 30% schematic design task to finalize design development and to achieve a true "design freeze" at the conclusion of this task. Structures, equipment, major plant piping, any processes, and the site plan will be finalized during this task to allow for subsequent final detailing in the Construction Document Preparation phase. Specific activities and work products from this task are described in the following subtasks.

Should the Project include a LEED certification requirement, the LEED scorecard will be updated as part of the Design Development tasks for each discipline and the LEED templates will be developed for each LEED point. If the Project will be LEED certified, the Design-Builder will incorporate LEED requirements into the preliminary specifications and a commissioning lead will provide input into commissioning specifications.

Task 6.1 - Civil and Site Development

- Finalize horizontal locations of major site elements.
- Finalize floor, structure, and finish grade elevations.

- Define demolition requirements and limits.
- Define contractor staging, storage, access, parking, and off-site access corridors.
- Prepare preliminary site grading drawings.
- Develop preliminary yard piping and plant drain layouts.
- Show storm water control concepts (retention basins, swales, curb, and gutter) on the drawings.
- Finalize paving concepts.
- Prepare first draft of technical specifications.
- Review design development with Design-Builder quality control reviewer.

Task 6.2 - Landscape Architecture

- Develop construction details for planting and irrigation.
- Develop technical specifications for landscape architectural elements and construction.
- Develop details, as necessary, for interpretive signage.
- Provide schedule of plant materials. Schedules will include plant type, plant botanical name, size, quantity, and any special planting considerations.
- Provide schedules of irrigation components. Schedules will include information on the type of piping, controller, backflow preventers, heads, quick couplers, sleeves, gate valves, v-strainers, and enclosures.
- Provide plans of landscape lighting layouts and equipment specification.
- Review design development with Design-Builder quality control reviewer.
- General ground cover - soil stabilization for 85% of disturbed ground areas.

Task 6.3 - Architecture (as applicable)

- Further develop a 3-D electronic model of the Project.
- From the models, generate floor plans and elevations.
- Size and locate electrical and control rooms.
- Select the type and location of HVAC equipment and controls, determine space requirements and routing for ductwork, and establish design R-values for exterior walls and roof systems.
- Define the structural design concepts for the facilities.
- Confirm applicable codes for buildings/structures with local code officials and State Fire Marshal. Complete building and fire code analysis. Attend one meeting with local code official to review floor plans.
- Prepare first draft of technical specifications.
- Develop first draft of architectural material schedules.
- Review design development work products with Design-Builder quality control reviewer.

Task 6.4 - Structural (as applicable)

- Establish foundation design.
- Document structural design concepts for buildings and structures.
- Prepare preliminary floor and foundation plans for major structures.

- Prepare first draft of technical specifications.
- Review design development work products with Design-Builder quality control reviewer.

Task 6.5 - Process/Hydraulics (as applicable)

- Finalize major equipment-sizing calculations.
- Finalize plant gravity hydraulics and pumping system hydraulics for major pumping systems.
- Complete internal reference P&IDs.
- Develop process control narratives.
- Review design development work products with Design-Builder quality control reviewer.

Task 6.6 - Process Mechanical (as applicable)

- Prepare 3-D electronic model of mechanical layout.
- From the model, prepare preliminary mechanical plans and major sections.
- Assemble catalog cuts and equipment data sheets for major process equipment.
- Finalize P&IDs.
- Finalize ancillary equipment sizing and line sizing calculations.
- Finalize equipment selection (type, size, weight, arrangement).
- Prepare first draft of technical specifications.
- Review design development work products with Design-Builder quality control reviewer.

Task 6.7 - Building HVAC/Plumbing (as applicable)

- Prepare sizing calculations for HVAC equipment.
- Prepare HVAC equipment data sheets and cut sheets.
- Create ventilation concept drawing.
- Locate duct routes and equipment locations.
- Prepare HVAC system block diagrams. Define HVAC system control philosophy with the County.
- Finalize routing for potable water, effluent reuse water, water for fire suppression, and plant drain system.
- Develop preliminary plumbing drawings including utility piping, drainage systems, and drain piping.
- Prepare first draft of technical specifications.
- Review design development work products with Design-Builder quality control reviewer.

Task 6.8 - Electrical (as applicable)

- Determine location of Motor Control Centers (MCCs) and equipment to be powered out of each MCC.
- Prepare preliminary one-line diagrams for overall facility.
- Prepare detailed electrical load calculations.
- Prepare a preliminary layout of the major electrical equipment.
- Determine equipment requiring uninterruptible power supplies (UPS).

- Determine space requirements and locations for control equipment.
- Locate major I/O termination panels, terminal junction boxes, and control panels.
- Submit load calculations and one-lines to electric utility for review.
- Identify routing methods for electrical conduit and tray.
- Lay out duct bank systems (major runs/manholes).
- Coordinate with civil yard piping.
- Locate manholes and hand holes.
- Develop detailed lighting concepts and prepare preliminary site lighting layout.
- Define and document hazardous locations (NFPA 820).
- Prepare first draft of technical specifications.
- Review design development work products with Design-Builder quality control reviewer.

Task 6.9 - Instrumentation and Control Systems (as applicable)

- Prepare final CAD-based P&ID drawings including loop numbers and instrumentation.
- Finalize I/O rack room sizing.
- Summarize I&C system design philosophy for each major process in a process control narrative.
- Prepare preliminary Instrument List, I/O List, and PLC Equipment List.
- Prepare preliminary panel drawings for control system control panels (not including vendor package system panels to be done by vendor).
- Update control system block diagram.
- Develop control diagrams/loop diagrams for each type of control scheme to be used following existing PCRWRD standards.
- Define control interfaces for package systems with local controls, including adjustable frequency drives.
- Prepare first draft of technical specifications, including incorporating County standards for instruments and I&C components.
- Coordinate with County on control system configuration and operation.
- Review design development work products with Design-Builder quality control reviewer.

Task 6.10 - Ancillary Systems

- Define and document the requirements for telephone and intercom systems.
- Determine the systems required for access control and security monitoring and surveillance systems and determine the methods of procuring such equipment (sole source negotiated price and performance specification). Coordinate security with County requirements.
- Define and document the concepts for fire alarm systems.
- Meet with the State Fire Marshal to determine fire water demands and requirements for fire suppression systems.
- Review design development work products with Design-Builder quality control reviewer.

Task 6.11 - Project Delivery/Construction Package Analysis

Design-Builder will conduct a Project delivery analysis, which will include consideration of the following:

- Finalize the list of any equipment to be pre-negotiated and/or County selected.
- Coordinate with vendors the equipment to be pre-procured and develop contract interface details.
- Receive County's review comments on 60% documents before development of 95% construction documents begins.
- Update and provide more detail on procurement and construction schedule and milestones. The results of this analysis will be discussed with the PCRWRD at the 60% Design Development Workshop.

Task 6.12 - Updated MOPO Design Memorandum

Update the MOPO DM, from Task 5.12, based on additional design information developed in Task 6. Meet with County staff prior to update of MOPO and discuss additional information available to update MOPO.

Task 6.13 - Design Development Construction Cost Estimate

This task includes Design-Builder review of the cost estimate with the County. Construction cost estimating procedures are defined in Task 1.9.

In the event that the cost estimate exceeds the County budget, Design-Builder and County will meet as necessary to review and refine the cost estimate with the goal of reaching consensus on a workable Project cost.

Task 6.14 - Design Development Review with County

Design-Builder will assemble the work products from the tasks above and submit the 60% Design Development document to the County for review and comment. A workshop will be held with the County's personnel to review the 60% deliverable and 3-D model, to receive and discuss comments, and to reach closure on design issues. A 1-day workshop is included in this task to provide time to meet with all appropriate County staff. Following the workshop, meeting minutes and responses to comments will be prepared and submitted by Design-Builder. The responses to comments will be incorporated in the 95% Construction Documents.

Task 6 - Deliverables

1. Design Development Documents
2. Project Delivery/Construction Package Memoranda and Meeting Minutes
3. Updated MOPO DM
4. DD Construction Cost Estimate
5. DD Workshop Summary
6. 3-D model

Task 7 - Construction Document Preparation (95%)

The purpose of this task is to develop the final construction drawings, specifications, and schedules for the Construction Phase. The construction documents will be finalized in Task 9, by incorporating the 95% review comments.

Task 7.1 - Develop 95% Construction Documents

Specific activities performed by the Design-Builder during this phase will include the following:

- Incorporate responses to comments on the 60% Design Development Document.
- Complete the design around the equipment that has been pre-purchased.
- Prepare final construction drawings.
- Prepare final technical specifications.
- Prepare final calculations.
- Complete final checking and coordination review by design leads.
- Provide independent review by the Design-Builder quality control review team.
- Should the County decide to proceed with a LEED certification approach for the Project, the LEED scorecard will be updated as part of the Contract Document preparation tasks for each discipline and LEED templates and the documentation required for each LEED point will be finalized.

Task 7.2 - Construction Documents Construction Cost Estimate

A 95% definitive construction cost estimate will be prepared from 95% percent complete plans and elevations, piping and instrument diagrams, one-line electrical diagrams, equipment data sheets, vendor quotations, structural details, soil data, drawings of major foundations and buildings, and a complete set of specifications.

Task 7.3 - Construction Document Review with County

The Design-Builder will submit 95% Construction Documents to the County for review and comment. The County will prepare one set of collated and adjudicated review comments and provide to the Design-Builder prior to the 95% Review Workshop. The workshop will be held to discuss and resolve this final set of review comments. Following the workshop, meeting minutes and responses to comments will be submitted to the County to document decisions.

Task 7.4 - Construction Cost Estimate Reconciliation

This task includes Design-Builder review of the cost estimate with County. Construction cost estimating procedures are defined in Task 1.9.

In the event that the cost estimate exceeds the County budget, Design-Builder and County will meet as necessary to review and refine the cost estimate with the goal of reaching consensus on a workable Project cost.

Task 7.5 - Updated MOPO Design Memorandum

Update the MOPO DM from Task 6.12 based on additional design information developed in Task 7. Meet with County staff prior to update of MOPO and discuss additional information available to update MOPO.

Task 7 - Deliverables

1. 95% Contract Documents
2. CD Construction Cost Estimate
3. Adjudicated Review Comments and Workshop Minutes
4. Updated MOPO DM

Task 8 - Construction GMP

Design-Builder will prepare and, by the date specified in the Contract, deliver to County a proposed GMP for the construction phase of the Project. At a minimum, the following component will be included in the proposed GMP:

- A recital of the specific Construction Documents, including drawings, specifications, and all addenda thereto, used in preparation of the GMP proposal.
- The five (5) elements of the Guaranteed Maximum Price:
 - a. Guaranteed Maximum Cost of the Work (hereinafter defined), detailed by each subcontract, trade, or bid division;
 - b. the Design-Builder's Contingency for the Work;
 - c. Guaranteed Maximum Design-Builder's Staffing Cost (hereinafter defined), detailed by expense category;
 - d. Guaranteed Maximum General Conditions Cost (includes bond & insurance costs) (hereinafter defined), detailed by expense category; and
 - e. Guaranteed Maximum for Design-Builder's Overhead and Profit.
- A draft schedule of values;
- A description of all other inclusions to, or exclusions from, the GMP;
- All assumptions and clarifications; and
- The final construction Project Schedule.

Task 9 - 100% Construction Document Completion

The purpose of this task is to prepare final Construction Documents to be used for construction and building permit review. The Design-Builder will perform the following subtasks as part of this task.

Task 9.1 - Final Design Construction Documents

The Design-Builder will modify the Construction Documents to incorporate agreed upon review comments from the County, applicable regulatory agencies, and the Design-Builder's quality control review team. The final documents will then be submitted to the County for final back-check and approval. The final back checking will consist of verifying the 95% responses to comments were adequately incorporated.

The final Construction Document production is based on a maximum of 3 construction packages.

The final Construction Documents will include 22-inch x 34-inch mylars sealed and signed, and contract specifications.

Task 9.2 - Final Design Report

The final design report will include the final updates of the predesign report technical memoranda, documenting design criteria, treatment facility and equipment sizing, redundancy, treatment facilities configuration, and design criteria for the engineering disciplines. This report will be in compliance with ADEQ requirements. The Design-Builder will submit the Final Design Report to County for County submission to ADEQ.

Task 9 - Deliverables

1. Final Contract Documents
2. Final Design Report

3. Final GPSX Model
4. Final 3-D Model
5. Final MOPO DM

PHASE 3 - CONSTRUCTION

General Intent. Design-Builder will perform all Work and construction administration services necessary to construct the Project in accordance with the Contract for Design-Build Construction and to render the Project and all of its components operational and functionally and legally usable. This includes, but is not limited to, completion of the following tasks.

Task 10 - Trade Contractor Selection Bidding and Negotiation

Task 10.1 - Bid Packages

Design-Builder will prepare and assemble document packets for use in bidding the subcontracts. Such packaging of the Work will be broken down to maximize both competition and the involvement of small businesses.

Task 10.2. - Prequalification

The Design-Builder will develop subcontractor and supplier interest for each division of the Work. A design professional on the Project Team will attend all pre-bid meetings with potential subcontractors and be available to respond to questions regarding the Construction Documents.

Task 10.3 - Bidding

The Design-Builder will competitively bid each trade category or, if approved by County, negotiate for the performance of a particular trade category.

Task 10.4 - Budget Control

The Design-Builder will use its best efforts to obtain bids which are less than the final GMP estimates.

Task 10.5 - Bid Opening

The Design-Builder will conduct bid openings in the presence of the County's Representative. The Design-Builder will provide the County with a copy of its preliminary bid tabulation and a copy of all bids.

Task 10.6 - Bid Evaluation and Award

The Design-Builder will, for each subcontract, trade, or bid division:

- determine the final bid amounts, having reviewed and clarified the scope of Work in detail with the apparent low responsive bidders to determine that their bids are complete but do not include duplicate scope items;
- prepare and furnish to the County a final bid tabulation summary which includes by subcontract, trade, and/or bid division, the applicable final GMP estimate and the related final bid amount and the details of all scope clarifications for County's review and approval;
- if requested by County, provide a list of all potential Direct Purchase Materials (hereinafter defined);
- identify to the County in writing the subcontractors to which the Design-Builder recommends award of subcontracts; and

- award and enter into a subcontract between itself and each subcontractor which it has recommended in accordance with this Scope unless otherwise notified by the County.

Task 10.7 - County Approval Required to Proceed

No portion of the Work may be performed by the Design-Builder or its affiliates except with County's approval.

Task 11 - Design Professional's Role During and After Construction

Although the design and construction of the Project are being provided through a Design-Build delivery method, because no additional design professionals have been retained by County to provide oversight during construction and warranty phase services, the lead design professionals on the Design-Builder's Project Team will be responsible for providing the services described herein. Such services will be provided by the lead design professionals without regard to the conflict of interests associated with the Design-Build delivery method. These services include:

Task 11.1 - Construction Administration

The design professionals will carry out the Construction Administration services set forth herein.

Task 11.2 - Advice and Consultation

The design professionals will be a representative of, and will advise and consult with, the County during construction until final payment is made. The Design-Builder will have authority to act on behalf of the County only to the extent provided in the Contract.

Task 11.3 - Presence at Work Site

The design professionals on the Project Team will attend regularly scheduled construction meetings at the Site and will provide such representation as may be required to fulfill the intent and interpretation of the plans and specifications for the Project. In any event, the design professionals will visit the site as is reasonable and necessary to become familiar with the progress and quality of the Work completed and to determine if the Work is being performed in a manner indicating that the Work when completed will be in accordance with the Construction Documents. On the basis of on-site observations as an architect or as an engineer, the design professional will keep the County informed of the progress and quality of the Work and will guard the County against defects and deficiencies in the Work.

Task 11.4 - Certification of Pay Requests

Based on the design professionals' observations and evaluations of the Design-Builder's Applications for Payment, the design professional will review and certify the amounts due the Design-Builder. The design professional's certification for payment will constitute a representation to the County, based on the design professional's observations at the Project site and on the data comprising the Design-Builder's Application for Payment, that the Work has progressed to the point indicated and that, to the best of the design professional's knowledge, information, and belief, the quality of the Work is in accordance with the Construction Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Construction Documents upon Substantial Completion, to results of subsequent tests and inspections, to minor deviations from the Construction Documents correctable prior to completion and to specific qualifications expressed by the design professional. The issuance of a Certificate for Payment will further constitute a representation that the Design-Builder is entitled to payment in the amount certified.

Task 11.5 - Duty to Inspect

The design professional will reject Work which does not conform to the Construction Documents. Whenever the design professional considers it necessary or advisable for implementation of the intent of the

Construction Documents, the design professional will have authority to require additional inspection or testing of the Work in accordance with the provisions of the Design-Build Contract for Construction, whether or not such Work is fabricated, installed, or completed.

Task 11.6 - Submittals

The design professional will review, approve, reject, or take other appropriate action on construction-related inquiries and submittals, such as shop drawings, product data, and samples. The design professional will not approve any such submittals unless such submittals conform with: (i) the design concept; (ii) the Construction Documents; (iii) the County's total budgeted Construction Cost; (iv) the County's Design and Construction Standards; and (v) governing codes and authorities having jurisdiction. In the event the County's Design and Construction Standards exceed applicable legal requirements, those County standards will govern. The design professional's review will be completed so that all Work can be performed without delay and all products or materials may be ordered or fabricated with sufficient time to meet the Project Schedule.

Task 11.7 - Preparation of Change Orders

The design professional will prepare Change Orders, with supporting documentation and data, if the design professional determines the same is necessary for the County's approval and execution in accordance with the Design-Build Contract for Construction.

Task 11.8 - Interpretation

Interpretations and decisions of the design professionals will be consistent with the intent of, and reasonably inferable from, the Construction Documents and will be in writing or in the form of drawings.

Task 11.9 - Aesthetic Review

The design professionals' decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Construction Documents, and if concurred with by the County.

Task 11.10 - Substantial and Final Completion

The design professionals will, in conjunction with County personnel, conduct inspections to determine the dates of Substantial Completion and Final Completion, will receive and forward to the County for the County's review and records, written warranties, and related documents required by the Design-Build Contract for Construction and assembled by Design-Builder, and will issue a final Certificate for Payment upon compliance by the Design-Builder with the requirements of the Design-Build Contract for Construction. The design professionals will perform all services relating to Substantial Completion and Final Completion in accordance with County policies and procedures.

Task 11.11 - As-Built Drawings

The Design-Builder will prepare "As-Built" or record drawings at Project completion in accordance with the requirements set forth in the County Specifications. These drawings will include changes made to the Project by Change Orders, Addenda to the Construction Documents, Architect's Supplemental Information, field orders, field reports, Requests for Information, shop drawings, other directives and submittals, and information provided by the Design-Builder.

Task 11.12 - Warranty Support

The design professionals will respond to: County's requests to review design and construction issues during the construction warranty period; coordinate and participate in the end of the warranty period inspection in accordance with the County Specifications; and produce a summary report documenting deficiencies, problems, or other outstanding items.

Task 12 - Construction Supervision

Commencing with the award of the first subcontract and terminating on the date of Final Completion, the Design-Builder will provide the services described herein. The Design-Builder will, as the County's construction representative during construction, advise and consult with the County, and provide administration of the Construction Documents. The Design-Builder will supervise and direct the Work at the Site. The Design-Builder will, at a minimum, staff the Project Site with personnel who will:

- supervise and coordinate the Design-Builder's personnel and act as its primary liaison with the County;
- coordinate trade contractors and suppliers, and supervise Site construction management services;
- be familiar with all trade divisions and trade contractors' scopes of Work, all applicable building codes and standards, and the Contract for Design-Build Construction;
- check, review, coordinate and distribute shop drawings and check and review materials delivered to the Site, regularly review the Work to determine its compliance with the Construction Documents and this Agreement, confer with the appropriate County consultant(s) as necessary to assure acceptable levels of quality;
- prepare and maintain Project records and process documents;
- schedule and conduct weekly progress meetings with subcontractors to review such matters as jobsite safety, job procedures, construction progress, schedule, shop drawing status and other information as necessary and provide notification of, and minutes from, such meetings to County;
- schedule and conduct weekly progress meetings with the County to review such matters as construction progress, schedule, shop drawing status, and other information as necessary; and
- make provision for Project security to protect the Project site and materials stored off-site against theft, vandalism, fire, and accidents as required by the General Terms and Conditions.

Task 13 - Reporting

The Design-Builder will provide a monthly report in searchable PDF format summarizing the progress of the Project to the County including information on the subcontractors' Work, percentage of completion of the Work, current estimating, subcontract buyouts, computerized updated monthly Critical Path Method scheduling and Project accounting reports, including projected time to completion and estimated cost to complete the Work, progress photographs, project directory, logs for Requests for Information, submittals and shop drawings, Change Orders, cost change proposals, field directives, safety meetings, deficiencies, weather conditions, and meeting minutes.

Task 14 - Miscellaneous Construction Phase Duties

Task 14.1 - GMP and Savings

During the Construction Phase, Design-Builder will complete the Construction Work in accordance with the Construction Documents and the Contract in return for payment by County of the Costs of Construction, provided that in no event will the aggregate payments by County to Design-Builder for Construction Work exceed the Guaranteed Maximum Price.

Task 14.2 - Services Provided

Design-Builder's Construction Phase services include, without limitation: team management and coordination, scheduling, cost control and change order management, submittal process management, subcontracting, field management, safety program, close-out process, and warranty period services. This will include providing through itself or its Subcontractors all necessary supervision, labor, inspection, testing, startup, material, equipment, machinery, temporary utilities, and other temporary facilities to permit Design-Builder to complete all Construction Work in accordance with the Construction Documents and the Contract.

Task 14.3 - Performance of Work

Design-Builder will perform all construction activities efficiently and with the requisite expertise, skill, quality, and competence to satisfy the requirements of the Construction Documents and the Contract.

Task 14.4 - Reporting

Design-Builder will provide County, on a monthly basis, a written status report detailing the progress of the Construction Work during the Construction Phase, including whether the Work is proceeding according to the Project Schedule. Each monthly report during the Construction Phase will include: an updated Project Schedule; an updated Construction Work cash flow projection for the duration of the Project; copies of the Design-Builder's Superintendent's daily site reports made during the preceding month; identification of discrepancies, conflicts, or ambiguities existing in the Construction Documents that require resolution; identification of any health and safety issues that have arisen in connection with the Construction Work; and identification of other items that require resolution so as not to jeopardize Design-Builder's ability to complete the Construction Work for the GMP and within the Contract Time(s).

Task 14.5 - Schedule

During the Construction Phase, Design-Builder will maintain the Project Schedule and will promptly prepare a proposed updated Project Schedule and submit it to County for its review and approval whenever events occur or are likely to occur that require changes in the Project Schedule. The Project Schedule for the Construction Phase is the same and a continuation of the Project Schedule used for the Design Phases and will indicate the dates for the start and completion of the various stages of the Construction Work, including the dates when County information and approvals are required and all necessary shutdowns or suspensions of County or separate vendor activities on the Site (if any).

Task 14.6 - Work Management

The Design-Builder will provide leadership to Design-Builder's employees and Subcontractors during the Construction Phase for all matters relating to the Construction Work. The Design-Builder agrees to furnish efficient business administration and superintendence and to complete the Construction Work in an expeditious and economical manner.

Task 14.7 - Management Presence at Work Site/Approval of Replacement

Design-Builder's Representative and the Design-Builder Superintendent will be at the Site at all times when Construction Work is being performed and will have the necessary expertise and experience required to supervise the Construction Work. Design-Builder's Representative will communicate regularly with County and will be vested with the authority to act on behalf of Design-Builder. Design-Builder's Representative and Design-Builder's Superintendent may only be replaced with the mutual written agreement of County and Design-Builder. Notwithstanding the foregoing, the Design-Builder's Representative and Design-Builder's Superintendent will be replaced upon reasonable request of the County.

Task 14.8 - Subcontractor Coordination

Design-Builder is responsible for coordinating the activities of its own Subcontractors.

Task 14.9 - Work Site Cooperation

If County is performing other work with separate contractors under its control as part of the Project or as a separate project, Design-Builder agrees to cooperate and coordinate its Construction Work with the work of County's separate contractors so that the Project and any separate project(s) on which the separate contractors are working can be completed in an orderly and coordinated manner reasonably free of significant disruption to any party. In this regard:

Task 14.9.1 - County Use of Work Site

County reserves the right to award other contracts related to the Project, or to perform certain work. The County also reserves the right to award other contracts unrelated to the Project but involving work in the vicinity of the Project or to perform unrelated work itself. Such other work may or may not be known to the County or disclosed to the Design-Builder prior to the date of the Contract. The Design-Builder will afford the County and other contractors reasonable opportunity for the introduction and storage of their materials and equipment and the execution of their work and will properly coordinate its Construction Work with theirs in such manner as County may direct. The Design-Builder will also permit reasonable access of other contractors to the Site and their work.

Task 14.9.2 - Right to Comment on County Work Site Activity

The County will timely provide the Design-Builder with a copy of all plans, specifications, schedules, and other data relating to other contracts or work. The Design-Builder will thoroughly examine these documents and will within three (3) days of completing such examination notify the County in writing of any conflicts with the Construction Work to be performed by the Design-Builder. In no event will such notice be given so late as to interfere with or delay Construction Work to be performed by the Design-Builder. Failure of Design-Builder to review, or provide written notice as provided above will constitute a waiver of any objections or claims Design-Builder may have as a result of the necessity to coordinate Design-Builder's Construction Work with other activities.

Task 14.9.3 - Waiver of Claim against County

Should Design-Builder sustain any property damage through any act or omission of any other contractor, Design-Builder will have no claim or cause of action against County for such damage and hereby waives any such claim. The Design-Builder does not waive any claim or cause of action against any other contractor or subcontractor to recover any and all damages sustained by reason of the acts or omissions of such other contractor. The phrase "acts or omissions" as used in this section will include, but not be limited to, any unreasonable delay by any such other contractors, whether due to negligence, gross negligence, inadvertence or any other cause.

Task 14.9.4 - Duty to Remedy/Indemnification

Should the Design-Builder cause damage to the work or property of any other contractor or of the County, the Design-Builder will upon receiving due notice promptly attempt to settle with such other contractor or the County by agreement, repair or otherwise to resolve the dispute. If such separate contractor sues or initiates a proceeding against the County on account of any damage caused by the Design-Builder, the County will notify the Design-Builder who will defend and indemnify County against such proceedings to the extent required by Article 8 of the Contract.

Task 14.10 - Work Site Appearance

Design-Builder will keep the Site free from debris, trash and construction wastes to permit Design-Builder to perform its Construction Work efficiently, safely, and so as not to interfere with the use of any adjacent land areas, and will maintain the reasonable appearance of the jobsite and all storage/staging areas. Upon Substantial Completion of the entire Construction Work or a portion of the Construction Work to be accepted

separately by County, Design-Builder will remove all debris, materials, wastes, equipment, machinery and tools from the Construction Work to permit County to occupy the entire Construction Work or portion of the Construction Work for the use for which it is intended.

Task 14.11 - Changes to Approved Work

Any changes affecting previously approved Construction Work will require prior written approval of County.

Task 15 - Control of Construction Work

Task 15.1 - Means and Methods

Design-Builder will at all times exercise complete and exclusive control over the means, methods, sequences and techniques of construction. Design-Builder will perform all construction activities efficiently and with the requisite expertise, skill, and competence to satisfy the requirements of the Contract and Construction Documents.

Task 15.2 - Supervision and Coordination of Work

The Design-Builder will supervise and direct the work of its employees and Subcontractors and coordinate the Construction Work with the activities and responsibilities of the County to complete the Construction Work in accordance with the Construction Documents and the Contract and within the Contract Time(s).

Task 15.3 - Lines of Authority

The Design-Builder will establish an on-site organization and lines of authority in order to carry out the overall plans for completion of the Construction Work.

Task 15.4 - Direct Supervision of Work

All elements of the Work will be under the direct supervision of a foreman or his designated representative on the Site who will have the authority to take actions required to properly carry out that particular element of the Work.

Task 15.5 - Superintendent

The Superintendent will represent the Design-Builder in its absence and all directions given to the Superintendent will be as binding as if given to the Design-Builder. Important directions will be confirmed by written request in each case. The Superintendent will give efficient supervision to the Work, using its best skill and attention. In the event of noncompliance with this Task, County may require the Design-Builder to stop or suspend the Work in whole or in part.

Task 15.6 - Measurements

Before ordering materials or doing work, the Design-Builder and each Subcontractor will verify measurements at the Site and will be responsible for the correctness of such measurements.

Task 15.7 - Field Measurements

Design-Builder will take field measurements and verify field conditions and will carefully compare such field measurements and conditions and other information known to the Design-Builder with the Construction Documents before commencing activities. Errors, inconsistencies, or omissions discovered will be reported to County at once.

Task 15.8 - Survey

Design-Builder will establish and maintain all building and construction grades, lines, levels, and bench marks, and will be responsible for accuracy and protection of same. This Work will be performed or supervised by a civil engineer or surveyor licensed in the State of Arizona.

Task 15.9 - Dust Control

Design-Builder will take whatever steps, procedures, or means necessary to prevent any dust nuisance due to construction operations. The dust control measures will be maintained at all times to the reasonable satisfaction of County and in accordance with the requirements of the Pima County Department of Environmental Quality.

Task 15.10 - Sanitary Provisions

Design-Builder will provide and maintain in a neat and sanitary condition such accommodations for the use of its employees as may be necessary to comply with the requirements and regulations of the State Department of Health or other authorities having jurisdiction.

Task 15.11 - On-Site Storage

Only materials and equipment which are to be used directly in the Work will be brought to and stored on the Site by the Design-Builder. Equipment no longer required for the Work will be removed from the Site within a reasonable time.

Task 15.12 - Responsibility for Materials and Equipment

Protection of construction materials and equipment stored at the Site from weather, theft, damage, and all other adversity is the responsibility of the Design-Builder. No part of damage or loss arising from Design-Builder's failure to provide such protection will be compensable from the Design-Builder's contingency.

Task 16 - Daily Log

Task 16.1 - Log Content

The Design-Builder will maintain a daily log of construction activities for each calendar day during the Construction Phase, using a form approved by Design-Builder and County. The Design-Builder will document all activities at the Site, including:

- Weather conditions showing the high and low temperatures during work hours, the amount of precipitation received on the Site, and any other weather conditions which adversely affect Construction Work at the Site;
- Soil conditions which adversely affect Construction Work at the Site;
- The hours of operation by Design-Builder and individual Subcontractor personnel;
- The number of Design-Builder and Subcontractor personnel present and working at the Site, by subcontract and trade, and updated schedule activity number;
- The equipment active or idle at the Site;
- A description of the Construction Work being performed at the Site by updated schedule activity number;
- Any delays, disruptions or unusual or special occurrences at the Site;
- Materials received at the Site; and
- A list of all visitors at the Site.

Task 16.2 - Copies to County

The Design-Builder will provide copies of the daily logs to County on a weekly basis. Providing copies of the daily log to County does not satisfy any requirement in the Design-Builder Contract for written notice to the County.

Task 17 - Supervision and Construction Procedures

Task 17.1 - Duty to Supervise and Direct

The Design-Builder will supervise and direct the Construction Work, using the Design-Builder's best skill and attention. The Design-Builder will be solely responsible for coordination and accomplishment of all portions of the Construction Work in accordance with the Construction Documents and the Contract.

Task 17.2 - Responsibility for Actions

The Design-Builder will be responsible to the County for the acts and omissions of all entities or persons employed by or operating under the direction of Design-Builder including, but not limited to, Subcontractors, material and equipment suppliers, vendors, and service providers.

Task 17.3 - Responsibility for Inspection Delays

Delays in or results from inspections, tests, or approvals required or performed by persons other than the Design-Builder will not relieve Design-Builder from its obligation to perform the Construction Work in accordance with the Construction Documents and the Contract. Nothing contained in this Task 17.3 precludes the Design-Builder from asserting any rights it may have under the Contract in the event County is responsible for unreasonable delays in the making of any inspections, tests, or approvals.

Task 17.4 - Superintendent Authority

The superintendent and representatives will represent the Design-Builder and all communications given to either representative will be binding on the Design-Builder. All oral communications will be confirmed in writing.

Task 17.5 - Skilled Employees

The Design-Builder will at all times enforce strict discipline and good order among its employees and its Subcontractors' employees and will not allow employment on the Construction Work of any unfit person or anyone not skilled in the task or trade assigned to him or her.

Task 17.6 - County Access to Work

The Design-Builder will at all times allow the County or any other representative designated by County access to the Construction Work to observe progress and inspect the quality of work and conformance to the Construction Documents and the Contract.

Task 17.7 - Uncovering Work

Any Construction Work required to be observed or inspected, as applicable, by the County prior to being covered, which is covered without prior observation or inspection, as applicable, or without prior consent of the County, must be uncovered and recovered by the Design-Builder, if requested by the County, at no cost to County, except where Design-Builder has complied with the notice requirement of Task 17.8 and County or any other representative designated by County fails to inspect the Construction Work to be covered up.

Task 17.8 - Inspection Notice to County

Design-Builder will notify the County in writing at least twenty-four (24) hours prior to the time at which the County must be present to perform an inspection or observation, as applicable. Failure to provide such notice will make the Design-Builder responsible for uncovering the affected Construction Work including any costs to provide reasonable and required access to the Construction Work.

Task 17.9 - County Authority to Keep Work Uncovered

Notwithstanding the foregoing, if after inspection by County, the quality of the Construction Work is in question or an error in measurement is suspected, County may require that Design-Builder leave the work uncovered pending final resolution of the discrepancy.

Task 18 - Construction Documents

Task 18.1 - Reporting of Errors

Design-Builder will study and compare the Construction Documents in advance of beginning each portion of the Construction Work and immediately report to the County any material error, inconsistency, conflict, ambiguity, or omission that is discovered.

Task 18.2 - Shop Drawings Required

The drawings included in the Construction Documents are intended to show general arrangements, design, and extent of Construction Work and are not intended to serve as shop drawings. When specified by County, Design-Builder will not perform any portion of the Construction Work without approved shop drawings, product data, or samples. Any Construction Work performed in violation of this requirement will be solely at the Design-Builder's risk regardless of County's knowledge of such Construction Work.

Task 18.3 - Interpretation of Construction Document Conflicts

In the event of any conflict or ambiguity, the Construction Documents will be interpreted as being complementary, requiring a complete Project or designated portion thereof to be accepted separately by the County. Any requirement occurring in any one of the Construction Documents is as binding as though occurring in all Construction Documents. Generally, the specifications address quality, types of materials and contractual conditions while the drawings show placement, sizes, and fabrication details of materials. In the event of any conflict in the Construction Documents, the order of precedence stated below will govern:

- Contract addenda (subsequent addenda will govern over prior addenda only to the extent modified).
- The Contract document.
- Design-Builder Special Conditions.
- Technical Specifications.
- Standard Specifications & Details for Public Improvement, 2015 Edition.
- General Conditions.
- Glossary of Terms.
- In case of conflict between drawings and specifications, the specifications will govern.
- Conflicts within the drawings:
 - 1) Schedules, when identified as such, will govern over all other portions of the drawings.
 - 2) Specific notes will govern over all other notes and all other portions of the drawings, except the schedules described in Item (c)(1) above.

- 3) Larger scale drawings will govern over smaller scale drawings.
 - 4) Figured or numerical dimensions will govern over dimensions obtained by scaling.
- If provisions of codes, safety orders, Construction Documents, referenced manufacturer's specifications, or industry standards are in conflict, the more restrictive or higher quality will govern.
 - In the event of any conflict or ambiguity, Design-Builder will request an interpretation by the Design-Builder before performing the Construction Work.

Task 18.4 - Implied Minor Details

If the Construction Documents are not complete as to any minor detail of a required construction system or with regard to the manner of combining or installing of parts, materials, or equipment, but there exists an accepted trade standard for good and skillful construction, such detail will be deemed to be an implied requirement of the Construction Documents in accordance with such standard. "Minor detail" will include the concept of substantially identical components, where the price of each such component is small even though the aggregate cost or importance is substantial and will also include a single component which is incidental, even though its cost or importance may be substantial. The quality and quantity of parts or material so supplied will conform to trade standards and be compatible with the type, composition, strength, size, and profile of the parts or materials otherwise set forth in the Construction Documents.

Task 19 - Submittals, Drawings, and Shop Drawings

Task 19.1 - Records Maintained at Work Site

The Design-Builder will maintain at the Site, for the use of County, one copy of all drawings, specifications, bulletins, addenda, Change Orders, field orders, approved shop drawings, approved submittals, supplementary instructions, requests for information, catalog data, manufacturers' operating and maintenance instructions, certificates, warranties, guarantees, and other Contract related documents and their modifications, if any, in good order and marked daily by the Design-Builder to record all approved changes made during construction. These will be turned over to the County by Design-Builder at Substantial Completion.

Task 19.2 - Submittals to County

The Design-Builder will submit to County, with such promptness as to cause no delay in the Construction Work or in the work of any other contractor, all submittals and shop drawings as required by the Construction Documents and the Contract or as necessary to illustrate details of the Construction Work.

Task 19.3 - Submittal Content Standards

Each submittal and shop drawing must be accompanied by a transmittal letter containing a list of the titles and numbers of the shop drawings. Each series will be numbered consecutively for ready reference and each submittal and shop drawing will be marked with the following information:

- Date of submission
- Name of Project
- Location of Project
- Branch of Construction Work (specification section)
- Project number
- Name of submitting Design-Builder
- Name of Subcontractors
- Revision number

Task 19.4 - Design-Builder Review of Subcontractor Submittals

All Subcontractor submittals and shop drawings will be reviewed by Design-Builder prior to being submitted to County and will bear a written statement by the Design-Builder that the submittals and shop drawings are consistent with the Construction Documents or, if not totally consistent, will bear a written statement indicating all deviations from the Construction Documents. By approving, verifying and submitting Shop Drawings, Product Data, Samples, and similar submittals, the Design-Builder represents that the Design-Builder has determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Construction Documents. Any submittals or shop drawings submitted without the statement will be returned for resubmission; the submittals or shop drawings will be considered as not having been submitted, and any delay caused thereby will be the Design-Builder's sole responsibility. This review by Design-Builder of Subcontractor submittals and shop drawings will not be construed as Design-Builder approval of the design therein except that it will be a representation that the letter accompanying the submittal or shop drawings does indicate all deviations from the Construction Documents as required by Task 19.5,

Task 19.5 - Deviations from Contract Documents

Design-Builder will include with submittals and shop drawings, a written statement indicating all deviations from the Construction Documents and Contract. Failure to so notify County of such deviations may be grounds for subsequent rejection of the related Construction Work or materials. If, in the opinion of County, the deviations are not acceptable, the Design-Builder must furnish the item as specified or as indicated on the drawings included in the Construction Documents and in accordance with the Contract, Design-Builder will not be relieved of responsibility for deviations from requirements of the Contract Documents by County's approval of Shop Drawings, Product Data, Samples, or similar submittals unless Design-Builder has specifically informed County in writing of such deviation at the time of submittal and County has given written approval to the specific deviation. The Design-Builder will not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals by approval thereof.

Task 19.6 - Responsibility for Submittals

It is the Design-Builder's obligation and responsibility to check all of its submittals and shop drawings and to be fully responsible for them and for coordination with connecting Construction Work. Submittals and shop drawings will indicate in detail all parts of an item of Construction Work, including, without limitation, erection and setting instructions, and engagements with work of other trades or other separate contractors.

Task 19.7 - Design-Builder Representations Concerning Correctness of Submittals

By reviewing or submitting submittals and/or shop drawings, the Design-Builder represents that it has determined and verified availability, field measurements, field construction criteria, materials, catalog numbers, and similar data, or will do so, and that it has checked and coordinated each submittal and/or shop drawing with the requirements of the Construction Documents and Contract. If any specified material item or part is not available, the Design-Builder will so indicate to County.

Task 19.8 - County Review

The County will review and approve submittals and shop drawings and return them to Design-Builder within ten (10) days of receipt unless otherwise previously agreed in writing. For scheduling purposes, Design-Builder must assume a ten (10) day review period for each submittal or set of shop drawings. For complex submittals, Design-Builder must assume two ten (10) day review cycles. If review and approval are delayed beyond ten (10) days, County will notify Design-Builder in writing stating the reason for the delay. Approval will not relieve the Design-Builder from responsibility for deviations from the Construction Documents or Contract, unless it has been called to County's attention, in writing, at the time of submission. Any modification will be approved only if it is in the interest of County to effect an improvement in the Construction Work and does not increase the GMP or Contract Time(s). Any such modification is subject

to all other provisions of the Construction Documents and Contract and is without prejudice to any and all rights of County under any surety bond.

Task 19.9 - Response to County Rejection or Comments

If the County returns a submittal or shop drawing to Design-Builder with the notation "rejected", "revise and resubmit", or "approved as noted", Design-Builder, so as not to delay the Construction Work, will promptly submit a submittal or shop drawing conforming to the requirements of the Construction Documents and Contract and indicating in writing on the submittal or shop drawing and on the transmittal what portions of the resubmittal have been altered in order to meet with the approval of the County. Any other differences between the resubmittal and the prior submittal will be indicated on the shop drawing and on the resubmittal as a special note.

Task 19.10 - Untimely Submittal

No extension of time will be granted to Design-Builder because of its failure to submit submittals or shop drawings in ample time to allow for review, possible resubmittal, and approval. Construction Work will not commence until the Design-Builder has received written approval.

Task 19.11 - Transmittal of Approved Submittals to Subcontractors

The Design-Builder will furnish prints of its approved submittals and shop drawings to all Subcontractors whose work is in any way related to the Construction Work covered by the Submittal or shop drawings.

Task 20 - Product Samples, Tests, and Certificates

Task 20.1 - Requirement to Furnish Product Samples

Design-Builder will furnish product samples of all items requested or required by the specifications. Product samples will be properly identified and submitted with such promptness as to cause no delay in Construction Work or in the work of any other contractor and to allow time for consideration by County. Design-Builder will submit product samples to County for review and approval in accordance with Task 19, above, and this Task 20.

Task 20.2 - Submittal of Product Samples

Each product sample must be accompanied by a letter of transmittal containing the following information:

- Date of submission
- Name of Project
- Location of Project
- Branch of Construction Work (specification section number) Project number
- Name of submitting Design-Builder
- Name of Subcontractor

Task 20.3 - Certification of Compliance

Design-Builder will furnish to County a certificate stating that material or equipment submitted complies with the Construction Documents and the other Contract Documents. If a certificate originates with the manufacturer, the Design-Builder will endorse it and submit it to County together with a statement of compliance in its own name.

Task 20.4 - Duty to Perform

No tests, inspections, observations or approvals performed or given by County or others acting for County, or any agency of Federal, State, or local government, nor any acts or omissions by County in administering the Contract will relieve Design-Builder from its duty to perform the Construction Work in accordance with the Construction Documents, the Contract, and applicable law.

Task 20.5 - Destruction of Samples

Unless the County is requested at the time of submittal to return samples at Design-Builder's expense, rejected samples will be destroyed.

Task 20.6 - County Testing Not Acceptance

After delivery of materials, County may make such tests as it deems necessary, with samples required for such tests being furnished by and at the cost of Design-Builder. Any such test is for the benefit of County and will not relieve Design-Builder of the responsibility for providing quality control measures to assure that Construction Work strictly complies with the Construction Documents and the Contract. No test will be construed as implying acceptance of materials, work, workmanship, equipment, accessories, or any other item or thing. Any material not meeting the requirements of the specifications may be rejected by County and will be removed immediately and replaced in an acceptable manner.

Task 20.7 - Removal of Rejected Work

On the basis of the test results, materials, workmanship, equipment, or accessories may be rejected even though general approval has been given, if items have been incorporated into the Construction Work, County will each have the right to cause their removal and replacement by items meeting Construction Document requirements or to demand and secure appropriate reparation to County from the Design-Builder.

Task 20.8 - Cooperation with Testing Efforts

Design-Builder will cooperate with the selected testing laboratory and all others responsible for testing and inspecting the work and will provide them access to the Work at all times. The County and/or selected testing laboratory will make every effort as to not delay the work.

Task 20.8.1 - Compliance with Work Site Rules

Any person employed by any testing laboratory who, in the opinion of the Design-Builder, does not perform his work in a proper, skillful, and safe manner or is intemperate or disorderly will, at the written request of the Design-Builder, be removed from the Work by County or testing laboratory employing such person, and will not be employed again in any portion of Work without the written approval of the Design-Builder.

Task 20.8.2 - Testing Prior to Delivery

At the option of County, materials may be tested at the source of supply before delivery is started. County will make every effort necessary to not delay the work if materials are to be tested at the source of supply.

Task 20.9 - Trade Name Substitutions

Unless the Contract Documents indicate that no substitutions are permitted, Design-Builder may, subject to the following conditions, substitute or supply alternate items when equipment, materials, or patented processes are referenced in the Contract Documents by manufacturer, trade name, make, or catalog number:

- The substitution will be submitted to County in writing by Design-Builder.

- Design-Builder will certify that the substitution will perform the functions and achieve the results called for by the general design, be similar and of equal substance, and be suited to the same use as that specified.
- The submittal will state any required changes in the Construction Documents to adapt the design to the proposed substitution.
- The submittal will contain an itemized estimate of all costs and credits that will result directly and indirectly from the acceptance of such substitution, including cost of design, license fees, royalties, and testing. Also, the submittal will include any adjustment in the Contract Time created by the substitution.
- Design-Builder, if requested by the County, will submit Samples or any additional information that may be necessary to evaluate the acceptability of the substitution

County will make the final decision and will notify Design-Builder in writing as to whether the substitution has been accepted or rejected. If County does not respond in a timely manner, Design-Builder will continue to perform the Work in accordance with the Contract and the substitution will be considered rejected.

Task 20.10 - Field Inspection

County may utilize field inspectors during construction to assist County in observing Design-Builder's performance. Such inspectors are solely for the purpose of assisting County and should not be confused with an inspector with a regulatory agency or with an inspector from an County-selected laboratory. In conjunction with these activities, the inspector may perform the following activities:

- Thorough onsite observation of the Work in progress and field checks of materials and equipment, the inspector will endeavor to provide protection against defects and deficiencies in the Work.
- The inspector will be authorized to inspect all Work and materials furnished. Such inspection may extend to all or part of the Work and to the preparation, fabrication, or manufacture of the materials to be used.
- The inspector will not be authorized to issue instructions contrary to the Construction Documents or to act as foremen for the Design-Builder.
- The inspector will have the authority to reject work or materials until any questions at issue can be decided by County.

The use of such services by County will not make County responsible for or give the County control over construction means, methods, techniques, sequence, or procedures, or for safety precautions or programs, or responsibility for the Design-Builder's failure to perform the work in accordance with Contract Documents.

County and its representatives will at all reasonable times have access to the work wherever it is in preparation or progress. Design-Builder will provide proper facilities for such access and for inspection.

During the course of construction, as identified in the scheduled, initial construction inspections, if work fails to comply with the Project plans and specifications, Design-Builder will be responsible for all additional engineering consultant costs associated with re-inspections, meetings and reports.

Task 21 Redline Drawings

Task 21.1 - Monthly Review

On a monthly basis, the Design-Builder will complete and turn over to County redlined drawings for review. The redlined drawings will clearly indicate all field changes that were made to adapt to field conditions, field changes resulting from Change Orders, and all buried and concealed installation of piping, conduit and utility services. All buried and concealed items will be accurately located on the redlined drawings as to depth and in relationship to not less than two permanent features such as manholes or corners. The redlined

drawings will be clean and all changes, corrections, and dimensions will be given in a neat and legible manner in a contrasting color.

Task 21.2 - Changes Shown

Items required to be marked include but are not limited to:

- Dimensional changes to the drawings.
- Revisions to details shown on Drawings
- Depths of foundations or footings
- Locations and depths of underground utilities
- Revisions to routing of piping and conduits.
- Revisions to electrical circuitry.
- Actual equipment locations.
- Duct size and routing, if any.
- Locations of concealed internal utilities.
- Changes made by Change Order.
- Details not on original Contract Drawings.

Task 21.3 - Basis Documents

Design-Builder will completely and accurately mark Project Red Line Record Drawing prints of Construction Documents or Shop Drawings, whichever is most capable of indicating the actual physical condition. Where Shop Drawings are marked, they must display a cross-reference to their location in the Construction Documents.

Task 21.4 - Changes after Substantial Completion

Changes or corrections in the Construction Work made subsequent to Substantial Completion will be submitted to County as part of the red line record drawings.

Task 22 - Startup

Task 22.1 - Startup Plan

D-B will develop a detailed plan for the startup of the Project (the "Startup Plan") and submit it to County for review and approval. The Startup Plan will address all tasks necessary for a successful startup of the Project including, without limitation, the following items:

- The responsible party for each task identified in the Startup Plan.
- A schedule for all Startup tasks.
- Actions to be taken should some portion of the Project become inoperable or fail to perform as anticipated.
- Expected sludge and chemical requirements and usage during commissioning and startup of the Project.
- County and D-B staffing during the startup.
- Communications procedures.

- SCADA system operation.
- Control of odors.
- The relationship between the steps in the Startup Plan and the steps specified below to be undertaken by D-B prior to commencement of Performance Testing.
- Identification of any special safety requirements for startup personnel.

Task 22.2 - Startup

D-B will conduct the Startup consistent with the Startup Plan.

Task 23 - Performance Testing

The purpose of the Performance Testing is to demonstrate that the Project meets all performance requirements set forth in the Contract.

Task 23.1 - Performance Test Plan

D-B will develop a detailed plan for conducting the Performance Test (the "Performance Test Plan") and submit it to County for review and approval. The Performance Test Plan will describe the D-B's approach and details for meeting the Contract requirements. The Performance Test Plan will address all tasks necessary to successfully test the performance of the Project including, without limitation, the following items:

- Facility configuration -identify which of the components in each unit process will be utilized in the test.
- Provide anticipated chemical dosages to be used.
- Test date -the scheduled date the test will be performed by the D-B.
- Related systems required if the test will involve coordination with ancillary or support systems, identify these ancillary or support systems in the plan and schedule.
- Tasks and responsibilities, staffing requirements, support -the specific tasks or activities, both non-process and process related, which are required for the successful completion of the test.
- Response procedures for unsuccessful test results including definition of threshold results that constitute overall Performance Test failure.
- Internal and external communications protocols.
- Operating and maintenance schedule during testing.
- Operating conditions for Influent and Effluent systems.
- Procedures for demonstrating compliance with every Performance Test Procedure and Standard.
- Procedure for testing cathodic protection systems, if such systems are provided.

The Performance Test Plan will also describe methods for demonstrating compliance with Performance Guarantees during the performance of the Performance Tests, including:

- A list of all parameters to be monitored and measurements to be made including but not limited to all Influent and Effluent and Sludge parameters to be monitored and a schedule of monitoring, describing sampling locations, analytical methods and sampling frequencies at which parameters will be monitored on a continuous or other defined basis.
- Identification of equipment calibrations to be performed, descriptions of all calibration techniques to be used and timing of calibrations relative to Performance Testing (all instruments used in

Performance Testing operations and to monitor and evaluate Performance Testing will be calibrated in accordance with manufacturer's requirements), QA/QC procedures, including those to be utilized for all equipment used for testing and measuring different parameters within the treatment process and at the process control laboratory, contract laboratories and County laboratory. The description will address the calibration practices, including the frequency and accuracy requirements. The calibration procedures will consider intermediate spot and cross checks, in addition to the formal calibration periods.

- A full description of any analytical methods and techniques that will be utilized to ensure that all Applicable Law and Performance Guarantees are met. In addition, descriptions of how data collected will be compared with Performance Guarantees will be provided and will be in a manner that complies with Applicable Law. Provide examples of any tools such as flow charts, check sheets or any other data presentation and evaluation techniques that will be utilized.
- A list of real-time data fields that will be provided to the County during Performance Testing.
- A protocol for enabling the County to collect samples during Performance Testing.

The Performance Test Plan will also specify the form and content of the Performance Test report and include specific, detailed sampling protocols to be utilized while conducting the Performance Tests. Laboratory analyses to determine compliance with the Performance Guarantee will be conducted by the County laboratory.

Task 23.2 - Performance Test Procedures and Standards

D-B will perform Performance Testing in accordance with the requirements of the approved Performance Test Plan. If there is a failure to meet Performance Test Procedures and Standards, the D-B will conduct re-tests until the Performance Procedures and Standards are met in accordance with the Contract Technical Specifications. No temporary equipment will be allowed to operate during Acceptance Testing. The Performance Test will be repeated in its entirety at the D-B's expense if the D-B is forced to use any temporary equipment to maintain operation.

Task 23.3 - General Performance Standards

The D-B will perform the Performance Test for a continuous 60-day period to demonstrate that the Project can meet the Performance Guarantees over the range of sludge flows and loadings received at the Project. In order to satisfy the Performance Test requirements, the D-B must certify to the County in the Performance Test Report that the Project:

- Was designed and constructed in accordance with the Contract Standards.
- Operated in accordance with the Contract Standards with only the normal complement of employees included in the D-B's staffing plan. Additional staff may be on-site to aid with sample collection and engineering support only. Additional staff and duties to be approved and authorized by County. Use of unauthorized staff will be cause to invalidate the Performance Test.
- Operated with all automated and computerized systems in full and continuous operation.
- Operated properly during manual and automatic shutdown and start-up.
- Met the Performance Guarantees for the duration of the Performance Test.

Task 23.4 Performance Test Report.

The D-B will prepare reports describing and documenting each Performance Test. The report(s) will include, at a minimum, the following information:

- A certification stating that testing was conducted in accordance with the approved Performance Test Plan.

- A certification of the results of each Performance Test, including:
 - A determination of the extent to which the results comply with the Performance Test Procedures and Standards.
 - For each Performance Guarantee a determination of the extent to which the Facility complies with the Performance Guarantee.
- All required data measured and recorded during the Performance Test, including all laboratory analyses, chemical consumption, instrument calibrations, pressures, and other measurements. Copies of original data sheets, log sheets, calculations, laboratory reports, and test sheets will be provided. D-B will retain all original data sheets, log sheets, calculations, laboratory reports, and test sheets and make them available for County inspection upon request.
- All necessary certifications relating to testing, evaluation, analyses, and performance.
- A record of all equipment failures, repairs, and preventative maintenance.
- A summary of all data and calculations demonstrating the ability of the Project to meet the requirements of the Performance Guarantees.
- A summary of test results and conclusive evidence of compliance with all Performance Test requirements.
- Any additional data reasonably requested by the County in approving the Performance Test Plan to be included in such report.

All certifications required in the Performance Test report will be signed by the D-B and signed and sealed by an engineer employed by the lead design firm.

End of Appendix "B" – Design-Builder General Scope of Work