



BOARD OF SUPERVISORS AGENDA ITEM REPORT AWARDS / CONTRACTS / GRANTS

☐ Award ☒ Contract ☐ Grant

Requested Board Meeting Date: 05/16/23

or Procurement Director Award: ☐

* = Mandatory, information must be provided

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

Kiewit Infrastructure West Co. (Headquarters: Omaha, Nebraska)

***Project Title/Description:**

Design-Build Services: Class A Biosolids Solar Drying Facility (3TRCAB)

***Purpose:**

Award: Contract No. CT-CPO-23-385. This award is recommended to the highest qualified Design-Build Team in the amount of \$6,989,384.44 for a contract term from 05/16/23 to 05/16/26 for Phase 1 Design and Pre-construction Services for the Design-Build Services of a Class A Biosolids Solar Drying Facility. 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: Capital Program Office.

***Procurement Method:**

Solicitation for Qualifications No. SFQ-PO-2300008 was conducted in accordance with A.R.S. § 34-603 and Pima County Board of Supervisors Policy D29.1. Two (2) 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, a short list of two (2) respondents were invited to interviews. As a result of the combined scoring of the written statements of qualifications and interviews, the highest qualified design-builder is recommended for award. This project is expected to have multiple GMP's for construction services. The Design-Builder's construction budget is set to not exceed \$40,000,000.00.

Board of Supervisors to authorize the Procurement Director to execute all modifications, including one or more Guaranteed Maximum Price packages, provided the cumulative total of all GMPs and Pre-construction Services does not exceed \$40,000,000.00 and the contract expiration date does not exceed 05/16/26, which allows for all contract close-out activities and final submittals.

Attachments: Notice of Recommendation for Award and Contract.

***Program Goals/Predicted Outcomes:**

The goal of this project is to improve the quality of biosolids produced at the Tres Rios water reclamation facility from Class B to Class A while simultaneously reducing the volume of biosolids transported from the facility. The goal is to dry biosolids from 20% to greater than 85% total solids while utilizing renewable resources with minimal increase in electrical power consumption.

***Public Benefit:**

Class A biosolids have a higher quality and greater flexibility for beneficial reuse and travel distances reduction in transported volume lessens trucking costs, and provides best practices for the treatment and disposal of biosolids, increases capacity for future needs, and increases energy efficiency at the Tres Rios Wastewater Reclamation Facility.

***Metrics Available to Measure Performance:**

RWRD will quantify the reduction in transported loads leaving the Tres Rios WRF, quantify the increase percentage of biosolids products, and quantify the GHG emissions reduction from this process change. The Design-Builder's performance will be measured using the contractor evaluation process as outlined in BOS Policy D29.1 (E).

***Retroactive:**

No.

TO: COB 5/2/2023 (1)

VERSION: 1

PAGES: 194

MAY01'23AM1056PO

THE APPLICABLE SECTION(S) BELOW MUST BE COMPLETED

Click or tap the boxes to enter text. If not applicable, indicate "N/A". Make sure to complete mandatory (*) fields

Contract / Award Information

Document Type: CT Department Code: CPO Contract Number (i.e., 15-123): 23-385
 Commencement Date: 05/16/23 Termination Date: 05/16/26 Prior Contract Number (Synergen/CMS): _____
☒ Expense Amount \$ 6,989,384.44 * ☐ Revenue Amount: \$ _____

***Funding Source(s) required: Regional Wastewater Reclamation Department 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 22-10.

Amendment / Revised Award Information

Document Type: _____ Department Code: _____ Contract Number (i.e., 15-123): _____
 Amendment No.: _____ AMS Version No.: _____
 Commencement Date: _____ New Termination Date: _____
 Prior Contract No. (Synergen/CMS): _____
☐ Expense ☐ 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): _____
 Commencement 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: Procurement Officer: Judy Cooper Digitally signed by Judy Cooper Date: 2023.04.24 14:28:10 -0700 Division Manager: Scott Loomis Digitally signed by Scott Loomis Date: 2023.04.21 15:11:59 -0700

Department: Procurement Director: Terri Spencer Digitally signed by Terri Spencer Date: 2023.04.24 15:29:00 -0700 Telephone: 520-724-3727

Department Director Signature: Tony Somers Digitally signed by Tony Somers Date: 4/25/2023
 Deputy County Administrator Signature: [Signature] Date: 4/25/2023
 County Administrator Signature: [Signature] Date: 4/25/2023



NOTICE OF RECOMMENDATION FOR AWARD

Date of Issue: April 20, 2023

The Capital Program Office hereby issues formal notice to respondents to Solicitation No. SFQ-PO-2300008 for Design-Build Services: Class A Biosolids Solar Dryer Facility (3TRCAB) that the following listed respondent will be recommended for award as indicated below. The award action is scheduled to be performed by the Board of Supervisors on or after May 16, 2023.

Award is recommended to the most qualified Respondent.

AWARDEE NAME

Kiewit Infrastructure West Co. with HDR Engineering Inc.

OTHER RESPONDENT NAMES

Brown and Caldwell Constructors, Inc.

NOTE: Pursuant to A.R.S. §34-603(H), only the names of the firms on the final list may be disclosed.

Issued by: Judy Cooper, (Procurement Officer)

Telephone Number: 520-724-3727

This notice is in compliance with Pima County Procurement Code §11.12.010(C).

Copy to: Pima County SBE via e-mail at SBE@pima.gov

PIMA COUNTY CAPITAL PROGRAM OFFICE

PROJECT: Design-Build Services: Class A Biosolids Solar Drying Facility (3TRCAB)

CONTRACTOR: Kiewit Infrastructure West Co.
3888 E. Broadway Rd.
Phoenix, AZ 85040

CONTRACT NO.: CT-CPO-23-385

AMOUNT: \$6,989,384.44

FUNDING: Regional Wastewater Reclamation Department Obligations

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 Kiewit Infrastructure West Co. County and Design-Builder may also be individually referred to as a "Party" or collectively as the "Parties."
- 1.2. History. County previously issued Solicitation for Qualifications (SFQ) No. SFQ-PO-2300008 (hereinafter referred to as the "Solicitation") seeking a Design-Build services provider; the documents, amendments, requirements and specifications of which are all incorporated into this Contract by reference.
- 1.3. Design-Builder Selection. Design-Builder was selected by County through the evaluation process described in the Solicitation in accordance with A.R.S. § 34-603.
- 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. The effective date of this Contract is the date last signed below.
- 2.2. Unless otherwise terminated or extended, in writing, pursuant to other provisions of this Contract, the term of this Contract shall commence on 05/16/23 and terminate on 05/16/26 (the "Term").
- 2.3. Design-Builder provided County with a preliminary schedule covering the planning, design, and construction of the Project which is included as Attachment 4 to Appendix D - Design and Preconstruction Services Fee Proposal (103 pages). The schedule complies with County's goal of having Design-Builder complete the Project within 30 months of Design-Builder receiving the notice to proceed from County.

3. Scope of Services.

- 3.1. This is a Design-Build Contract for architectural, engineering, and construction services (collectively, the "Services") for Project, as more fully set forth in the following documents attached this Contract: Appendix A – Project Scope of Work (14 pages); Appendix B – Supplemental Provisions – Construction Costing (5 pages); Appendix C – Design-Builder General Conditions (46 pages); and Appendix D – Design and Preconstruction Services Fee Proposal.
- 3.2. Design-Builder will proceed with the Work in two phases: Phase 1 - Design and Preconstruction Services; and Phase 2 – Construction Services. This Contract covers only Phase 1 as that is defined in the Scope.

Prior to any Design-Builder work on Phase 2, Design-Builder must deliver to County a proposed GMP, or multiple GMPs, if construction is divided into multiple phases.

- 3.3. With respect to Phase 2 – Construction Services, the Parties acknowledge that the Construction Documents may be incomplete at the time Design-Builder delivers the GMP proposal to County, and that Design-Builder may not complete the Construction Documents until after Design-Builder begins work on Phase 2. Nevertheless, Design-Builder's GMP proposal shall include all anticipated costs for the Work required for Phase 2. If County accepts Design-Builder's GMP proposal, Design-Builder will not be entitled to any increase in the GMP unless the Work required by the completed Construction Documents: (i) is required by this Contract for Design-Build Construction; (ii) is reasonably inferable from the incomplete construction documents submitted with the proposed GMP; (iii) is consistent with County's programmatic goals and objectives; (iv) is consistent with 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 construction documents submitted with the GMP proposal.
- 3.4. If a GMP proposal is unacceptable to County, County will promptly notify Design-Builder in writing. Within 14 calendar days of notification, 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. County may, at its sole discretion and based upon its sole judgment follow Appendix C Section 2.3.7.3 with respect to any GMP submitted by Design-Builder pursuant to Contract.
- 3.6. If County rejects a GMP proposal, neither party shall have any further obligations or liabilities pursuant to this Contract except in the event of any notice from County to Design-Builder of deficiencies in the Work due to Design-Builder's failure to meet the Standard of Care, then Design-Builder shall re-perform the deficient Work and re-perform any associated services at no cost to County.
- 3.7. If County accepts a GMP proposal, the parties will complete and execute an amendment to this Contract, and County will issue a written Notice to Proceed to Design-Builder establishing the date that Design-Builder will commence Phase 2 (the "Phase Commencement Date"). Design-Builder shall not expend any monies for the new phase prior to receipt of the 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. County will pay Design-Builder at the rates in Appendix D – Design and Preconstruction Services Fee Proposal. County's total payments to Design-Builder for Phase 1 Work, including sales taxes (if applicable), will not exceed \$6,989,384.44 (the "Not-to-Exceed Amount" or "NTE amount"). The payment amounts or rates in Appendix D – Design and Preconstruction Services Fee Proposal do not include sales taxes. Design-Builder may invoice County for the sales taxes Design-Builder is required to pay on goods supplied to County under this Contract.
 - 5.2. Design-Builder will invoice County on a monthly basis unless a different billing period is included in Appendix A. County must receive invoices no more than 30 calendar 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 County and, pursuant to A.R.S. § 11-622(C), will not pay for any product or service invoiced more than six months late. Design-Builder will cite the Contract number on all invoices. Design-Builder shall show sales taxes as a separate

line item on invoices. Any pre-printed terms and conditions on a 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.

- 5.3. 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 County any overpayment that County cannot recover by set-off.
- 5.4. 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.
- 5.5. Price Guarantees. Upon acceptance by County of a GMP under Section 3.7:
 - 5.5.1. 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) the general conditions cost; and (v) Design-Builder's overhead and profit, will not exceed the amount in the accepted GMP. Design-Builder is responsible for all costs or expenses that would cause the sum of the items above to exceed the GMP unless County has adjusted the GMP by an approved change order.
 - 5.5.2. Design-Builder certifies that: all unit costs supporting the GMP proposal are accurate, complete, and current at the time of negotiations; and that any other factual unit costs that Design-Builder may provide to County in the future to support any additional amounts that County may authorize will also be accurate and complete. County may reduce payments to Design-Builder if County determines that any amounts Design-Builder included are materially inaccurate, incomplete, or non-current factual unit costs.

6. **Insurance.** The Insurance Requirements herein are minimum requirements for this Contract and in no way limit the indemnity covenants contained in this Contract. County in no way warrants that the minimum limits contained herein are sufficient to protect Design-Builder from liabilities that arise out of the performance of the work under this Contract. Design-Builder is free to purchase additional insurance.

Design-Builder's insurance will be placed with companies licensed in the State of Arizona or hold approved non-admitted status on the Arizona Department of Insurance List of Qualified Unauthorized Insurers. Insurers will have an "A.M. Best" rating of not less than A- VII. County in no way warrants that the above- required minimum insurer rating is sufficient to protect Design-Builder from potential insurer insolvency.

6.1. Minimum Scope and Limits of Insurance.

Design-Builder will procure and maintain, until all of their obligations have been discharged, coverage with limits of liability not less than those stated below.

- 6.1.1. Commercial General Liability (CGL) – Occurrence Form with limits of \$2,000,000 Each Occurrence and \$2,000,000 General Aggregate. Policy will include bodily injury, property damage, and broad form Contractual liability coverage, and products – completed operations.
- 6.1.2. Business Automobile Liability – Bodily Injury and Property Damage 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.

- 6.1.3. Workers' Compensation (WC) and Employers' Liability - Statutory requirements and benefits. 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.

Note: The Workers' Compensation requirement will not apply to a Design-Builder that is exempt under A.R.S. § 23-901, and when such Design-Builder executes the appropriate County Sole Proprietor or Independent Design-Builder waiver form.

- 6.1.4. Builder's Risk Insurance does apply to this contract. Design-Builder shall be required to maintain throughout the course of construction, Builder's Risk Insurance in a dollar amount equal to the full insurable value of the work under contract, which shall include "All Risk" coverage. Pima County shall be named as a "Loss Payee". Design-Builder shall be responsible for equipment, materials, and supplies until completion of the project and acceptance by Pima County.
- 6.1.5. Professional Liability (Errors and Omissions) Insurance – The policy limits will be not less than \$2,000,000 Each Claim and \$2,000,000 Annual Aggregate. The policy will cover negligent acts for professional services arising out of the Work of this Contract.

In the event that the Professional Liability insurance required by this Contract is written on a claims-made basis, Design-Builder warrants that any retroactive date under the policy will precede the effective date of this Contract and, either continuous coverage will be maintained, or an extended discovery period will be exercised, for a period of two (2) years beginning at the time work under this Contract is completed.

6.2. Additional Insurance Requirements

Insurance provided by Design-Builder will not limit Design-Builder's liability assumed under the indemnification provisions of this Contract. The policies shall include, or be endorsed to include, as required by this written agreement, the following provisions:

- 6.2.1. Additional Insured Endorsement: The General Liability and Business Automobile Liability Policies will each be endorsed to include 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 Design-Builder.
- 6.2.2. Subrogation Endorsement: The General Liability, Business Automobile Liability and Workers' Compensation Policies will each contain a waiver of subrogation endorsement in favor of County, and its departments, districts, boards, commissions, officers, officials, agents, and employees for losses arising from work performed by or on behalf of Design-Builder.
- 6.2.3. Primary Insurance Endorsement: Design-Builder's policies will stipulate that the insurance afforded Design-Builder will be primary and that any insurance carried by the Department, its agents, officials, employees or County will be excess and not contributory insurance, as provided by A.R.S. § 41-621 (E).

6.3. Notice of Cancellation.

For each insurance policy required by the insurance provisions of this Contract, Design-Builder must provide to County, within two business days of receipt, a notice if a policy is suspended, voided, or cancelled for any reason. Such notice will be mailed, emailed, hand-delivered or sent by facsimile transmission to Pima County Procurement, 150 West Congress Street, 5th Floor, Tucson, Arizona 85701-1317 or via fax to (520) 724-3646.

6.4. Verification of Coverage.

Design-Builder will furnish County with certificates of insurance (valid ACORD form or equivalent approved by County) as required by this Contract. An authorized representative of the insurer will sign the certificates.

6.4.1. All certificates and endorsements, as required by this written agreement, are to be received and approved by County before work commences. Each insurance policy required by this Contract must be in effect at, or prior to, commencement of work under this Contract. Failure to maintain the insurance coverages or policies as required by this Contract, or to provide evidence of renewal, is a material breach of Contract.

6.4.2. All certificates required by this Contract will be sent directly to the Department. County Project or Contract number and Project description will be noted on the certificate of insurance. County reserves the right to require complete copies of all insurance policies required by this Contract at any time.

6.5. Approval and Modifications.

The Pima County Risk Manager may modify the Insurance Requirements at any point during the Term of this Contract. This can be done administratively, with written notice from the Risk Manager and does not require a formal Contract amendment. 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, nor the County's receipt of any other information from the Contractor, its insurance broker(s) and/or insurer(s), constitutes a waiver of any of the Insurance Requirements.

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 1 hereto and must be issued by a surety company: (1) verified by 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 Design-Builder. In no event shall the Performance Bond or the Payment Bond serve as a limitation on the liability of 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. Design-Builder's Performance. Design-Builder is responsible for the professional quality, technical accuracy, timely completion, and coordination of all its efforts and other services under this Contract. Without additional compensation from County, 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 efforts or services.

9. **Excusable Delays.** 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. 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. Excusable Delays shall not include late performance by a subcontractor unless the delay arises out of an Uncontrollable Circumstance. A party shall extend the time of completion by a Change Order for a period of time equal to the time the Uncontrollable Circumstance prevented the delayed Party from performing in accordance with this Contract.
10. **Liquidated Damages.** Design-Builder agrees to achieve substantial completion by the end date as determined by mutual agreement of the Parties at time of GMP. Design-Builder's failure to reach Substantial Completion within the Term will substantially harm County. Because damages resulting from such a failure cannot be calculated with any degree of certainty, the Parties agree that if Contractor does not achieve Substantial Completion within the Term (as may be amended through written Change Orders), Design-Builder will pay to County as liquidated damages, and not a penalty, a dollar amount not-to-exceed limits set forth in Pima Association of Governments (PAG) Standards and Specifications, Section 108-9, for each calendar day between the deadline for Substantial Completion and the date Design-Builder actually achieves Substantial Completion. Dollar amount to be determined by mutual agreement of the Parties at time of GMP. The Parties further agree that the daily liquidated damages amount is fair, reasonable, and not subject to later challenge.
11. **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 County in writing of Design-Builder's agreement (or disagreement) with any price, performance, or schedule, if any, as may be proposed by County in the unilateral change directive. No unilateral change directive will be binding on either Party unless it has been approved by the Pima County Board of Supervisors or, if authorized, County's Procurement Director. A unilateral change directive that is signed by Design-Builder and approved by the Pima 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.
12. **Suspension/Termination for Convenience**
 - 12.1. 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 County may determine necessary whenever such suspension or interruption would be in the best interest of 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:
 - 12.1.1. performance is, was, or would have been so suspended or interrupted by another cause for which Design-Builder is responsible; or
 - 12.1.2. an equitable adjustment is made or denied by County.

12.2. Termination by County for Convenience.

- 12.2.1. The performance of the Work under this Contract may be terminated by County, in whole or in part, in accordance with this clause whenever County reasonably determines that such termination is in the best interest of County. Any such termination will be affected 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.
- 12.2.2. If the Contract is terminated by 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.
- 12.2.3. Termination of the Contract or any portion thereof by County for convenience will not relieve Design-Builder of its contractual responsibilities for Work completed.

13. Termination for Cause.

- 13.1. Events of Default. This Contract may be terminated for cause upon the occurrence of one or more of the following Events of Default:
 - 13.1.1. If Design-Builder fails or neglects to carry out the Work in accordance with the provisions of the Contract Documents, and fails, after 10 calendar days written notice from County, to correct such failure or neglect and thereafter diligently pursue the Project to completion;
 - 13.1.2. If Design-Builder materially breaches this Contract and fails, after 10 days written notice from County, to correct such breach and thereafter diligently pursue the Project to completion; or
 - 13.1.3. 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 60 days of its institution.
- 13.2. Remedies of County Upon an Event of Default.
 - 13.2.1. Upon an Event of Default, County has the right to terminate this Contract upon an additional seven days' written notice to Design-Builder provided Design-Builder has not commenced a cure within the seven-day period.
 - 13.2.2. Without prejudice to any of County's other rights or remedies, County may:
 - 13.2.2.1. Take possession of all data, reports, and work in progress in possession of Design-Builder or to which Design-Builder otherwise has rights;
 - 13.2.2.2. Accept assignment of Subcontracts; and
 - 13.2.2.3. Finish the Work by whatever reasonable method County may deem expedient.

- 13.2.3. If County terminates the Contract under this Section 13.2, Design-Builder is not 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.

14. Dispute Resolution.

- 14.1. In the event of any dispute 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 these dispute resolution procedures. The Parties shall continue performance of their respective obligations notwithstanding the existence of a dispute.
- 14.1.1. The Parties are fully committed to working with each other throughout the Project and agree to communicate regularly with each other at all times 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 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.
- 14.1.2. 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. This meeting will be held at County's offices within three working days of a written request for a meeting that specifies in reasonable detail the nature of the dispute. County's Project Manager and Design-Builder's Project Manager will attend the meeting. These 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.
- 14.1.3. If the Parties are unable to resolve the dispute through the special meeting 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 Project and any relevant documents. The mediator will call a meeting of the Parties within 10 working days after his/her appointment, which meeting will be attended by County's Project Manager and Design-Builder's Project Manager. Such Authorized Representatives shall attempt in good faith to resolve the dispute. During such 10-day period, the mediator may meet with the Parties separately.
- 14.1.4. 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 by the Parties, will be non-binding, confidential, and without prejudice to the rights and remedies of any Party. The entire mediation process must be completed within 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.
- 14.1.5. Nothing in this Section limits, interferes with, or delays 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 mediation.

15. No Consequential or Punitive Damages. In no event will either Party 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 County and Design-Builder. Nothing in this Section shall limit the obligation of Design-Builder to indemnify, defend and hold harmless County Indemnitees for any special, incidental, consequential, punitive, or similar damages payable to third parties resulting from any act or circumstance for which Design-Builder is obligated to indemnify 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.

16. Laws and Regulations.

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

16.2. 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.

16.3. Choice of Law; Venue. The laws and regulations of the State of Arizona govern the rights of the parties, the performance of this Contract, and any disputes hereunder. Any action relating to this Contract will be brought and maintained in Superior Court in Pima County.

17. 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 and hold County harmless from any and all liability that County may incur because of Design-Builder's failure to pay such taxes.

18. 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 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.

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

20. 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.

21. 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.

22. 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.

23. 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.

24. 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.

25. Notice. Any notice required or permitted to be given under this Contract must be in writing and be served by personal delivery, email or by certified mail upon the other Party as follows:

County:
Sheila Holben, Interim Director
Facilities Management Department
150 W. Congress St., 3rd Floor
Tucson, AZ 85701
Tel:(520) 724-2089

Design-Builder:
Darron Rolle
Kiewit Infrastructure West Co.
3888 E Broadway Rd.
Phoenix, AZ 85040
Tel: (602) 437-7878

26. 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.

27. 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.

28. 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. 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.

29. 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.

30. 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.

31. Public Records.

31.1 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.

31.2 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.

32. Legal Arizona Workers Act Compliance.

- 32.1 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.
- 32.2 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.
- 32.3 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.
- 32.4 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 ensure 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."

33. Grant Compliance. Not Applicable.

- 34. Israel Boycott Certification.** Pursuant to A.R.S. § 35-393.01, if Design-Builder engages in for-profit activity and has 10 or more employees, and if this Contract has a value of \$100,000.00 or more, Design-Builder certifies it is not currently engaged in, and agrees for the duration of this Contract to not engage in, a boycott of goods or services from Israel. This certification does not apply to a boycott prohibited by 50 U.S.C. § 4842 or a regulation issued pursuant to 50 U.S.C. § 4842.
- 35. Forced Labor of Ethnic Uyghurs.** Pursuant to A.R.S. § 35-394, if Design-Builder engages in for-profit activity and has 10 or more employees, Design-Builder certifies it is not currently using, and agrees for the duration of this Contract to not use (1) the forced labor of ethnic Uyghurs in the People's Republic of China; (2) any goods or services produced by the forced labor of ethnic Uyghurs in the People's Republic of China; and (3) any contractors, subcontractors or suppliers that use the forced labor or any goods or services produced by the forced labor of ethnic Uyghurs in the People's Republic of China. If Design-Builder becomes aware during the term of the Contract that the Company is not in compliance with A.R.S. § 35-394, Design-Builder must notify

the County within five business days and provide a written certification to County regarding compliance within one hundred eighty days.

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.

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. In the event of any conflict between the terms and provisions of this Agreement and those of any Schedule, Exhibit or Statement of Work, the following order of precedence shall govern: (a) first, this Contract, exclusive of any Schedules, Change Orders, and the General Conditions; (b) second, the Scope of Services; (c) third, any Change Orders; (d) fourth, the General Conditions in Appendix C; (e) fifth, any Appendices to this Agreement.

IN WITNESS WHEREOF, the Parties have affixed their signatures to this Contract on the dates written below.

PIMA COUNTY

Chair, Board of Supervisors


Date

ATTEST:

Clerk of the Board

Date

APPROVED AS TO FORM:



Deputy County Attorney

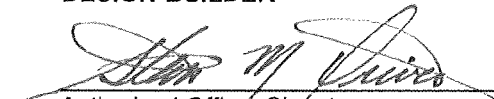
Tyler Campman

Name (Please Print)

4/27/23

Date

DESIGN-BUILDER



Authorized Officer Signature

Stan M. Driver, Senior Vice President

Printed Name and Title

May 1, 2023

Date

APPENDIX A – PROJECT SCOPE OF WORK (14 pages)



SCOPE OF SERVICES REQUIRED

DATE (Version): August 31, 2022

PROJECT NAME: Tres Rios WRF Class A Biosolids Drying Facility

PROJECT LOCATION: 7101 N Casa Grande Hwy, Tucson, AZ 85743

A. SCOPE OF SERVICES TO BE PROVIDED BY THE DESIGN BUILD TEAM.

1. Background:

Pima County Regional Wastewater Reclamation Department strives for excellent environmental stewardship and resource recovery producing high quality water for reuse, renewable natural gas, and exceptional quality biosolids for agricultural benefit. Biosolids processing and disposal are integral to wastewater reclamation facility operation and incorporating processes to remove solids and generating stabilized biosolids for beneficial reuse is a challenge faced by all municipal agencies. The purpose of this effort is the design and construction of Class A biosolids solar drying facility for reducing the volume, and improving the quality, of biosolids generated at the Tres Rios Wastewater Reclamation Facility in the most efficient manner.

The Tres Rios WRF is responsible for regional biosolids management for all Pima County owned treatment facilities. Solids from Agua Nueva WRF, Avra Valley WRF, Mt. Lemmon WRF, Green Valley WRF and Corona de Tucson are transferred to Tres Rios WRF for treatment, processing and beneficial reuse. The Tres Rios WRF produces approximately 180 wet tons per day of Class B cake biosolids at approximately 20% total solids content. Cake biosolids are conveyed to three storage silos via two Schwing piston pumps. Each day, 8-10 haul trailers depart Tres Rios with biosolids destined for agricultural land application as authorized by the Arizona Department of Environmental Quality.

With the current production of Class B biosolids dewatered to 18% - 20% solids, there are a limited number of potential end users. The County has historically relied on bulk agricultural applications

until that was halted during the 2020 calendar year because of a self-imposed moratorium for a comprehensive evaluation of PFAS contamination at land application sites. For approximately thirteen (13) months following the moratorium, the County relied on landfill disposal before returning to bulk agricultural applications in February 2021 after lifting the temporary moratorium.

In 2021, a Biosolids Master Planning effort recommended solar drying as the preferred method for achieving both solids reduction and transition to Class A quality for maximizing the beneficial uses of biosolids. A recommendation from the 2021 Energy Master Plan provided a recommendation for maximizing waste heat recovery at the TRWRF for improving energy efficiency and minimizing the carbon footprint. In 2022, RWRD personnel toured four solar dryers in California and Arizona for assessing solar greenhouse operations and biosolids products for achieving Class A biosolids quality. RWRD then transported cake biosolids generated at the Tres Rios WRF to the City of Surprise, Arizona for assessing biosolids drying times and total solids encountered in typical winter conditions in a novel solar dryer that incorporates a thermal floor option. These cumulative efforts helped to define the Scope of Services required for this project.

The Scope of Services includes all services required to design and construct a fully functional, and easily maintainable, Class A biosolids solar dryer located at the Tres Rios WRF and adjacent Ina Road Landfill. The Scope of Service goals for this project are the creation of an efficient, energy neutral biosolids dryer with the following requirements;

1. Facility must be able to produce biosolids product quality meeting EPA's 503 regulation for Class A pathogen reduction requirements in accordance with Arizona Administrative Code Title 18, Chapter 9, Article 10.
2. Facility must be integrate with the existing dewatering operations at the Tres Rios WRF and able to increase dewatered cake biosolids from 18% - 20% to greater than 85% total solids content using primarily thermal, energy neutral, renewable resources.
3. Facility must be able to process biosolids 24 hrs/day, 365 days per year and reduce the daily weight of biosolids transported from Tres Rios WRF by a minimum of 75%.
4. Facility must be fully automated under PLC control and integrated with the Tres Rios SCADA system providing complete remote control, monitoring, alarm processing, trending and data archiving capabilities for both manual and automated control.
5. Facility operation shall not result in an increase in manpower or FTEs beyond normal operator rounds and not require dedicated personnel for operation.
6. Facility must employ odor control devices for measuring and treating off gases and treating nuisance odors.
7. Facility must provide for load-in and load-out of material for transport off site.
8. Facility must provide for 2 days of onsite staging of final product.
9. Equipment maintenance must capable of being performing outside the processing facility to the greatest extent possible.
10. Facility must seek to be energy neutral to minimize or eliminate fossil-fuel based energy use and reduce the overall Tres Rios WRF carbon emission footprint and shall utilize a combination of waste heat recovery, concentrated solar power, thermal storage and/or photovoltaic power for both digestion heating and solar drying.
11. Installation of waste heat recovery common aeration header joining the East and West treatment trains and blower buildings for improving equipment redundancy and further energy reduction.

2. General Provisions:

Design-Builder shall provide the services to design and construct the Tres Rios Class A Biosolids Solar Drying Facility. To fulfill this obligation, Design-Builder shall hire and coordinate all professional consultants, and subcontractors. The estimated cost for this project is \$40 million.

The Contractor, Professional Consultants, and Subcontractors shall be collectively referred to as Design-Builder. Design-Builder will develop and execute the design and construction documents that comply with the SOW and construct the new functional Class A biosolids drying facility.

The Design-Builder and all members of the Design-Builder Team shall be currently licensed to perform work in the State of Arizona and in compliance with the Arizona Administrative Code.

Design-Builder shall provide to County the names and licensing or registration information of all project team members who have direct responsibility in designing and constructing the facility and in preparing documents that define the work for constructing the facility under this contract. Professional consultants shall sign and seal all documents they prepare as required by Title 4, Chapter 30, Board of Technical Registration, and Section R4-30-303 of the Arizona Administrative Code. Commercially licensed contractors shall perform all construction work as required by Title 4, Chapter 9, and Section R4-9-102 and the licensee must be named on the respective license per R4-9-109.

County lacks the necessary expertise for the Project, and has therefore, contracted with Design-Builder. Any written approval of plans, specifications, reports, and other construction documents by the Pima County Board of Supervisors is only for conformance with the program design concept of the Project. The Board of Supervisor's approval does not imply approval of nor attest to the accuracy, suitability, or completeness of the design, drawings, dimensions, details, proper selection of materials, nor compliance with applicable codes or ordinances. Such accuracy, suitability, or completeness is the sole responsibility of the Design-Builder for the Project.

The Design-Builder shall prepare minutes of all meetings between County and Design-Builder, for review and approval by County. Meetings shall take place, at a minimum, on a bi-weekly basis with County and the Design-Builder, throughout the project.

Throughout the project the Design-Builder shall prepare and maintain a Master Project Schedule, on a regularly established schedule, to encompass the entire project phases from beginning of the preliminary planning, through design phase, and through the end of construction, for review and approval by County.

3. Project Narrative: Statement of Work

The Work shall include the design and construction of a Tres Rios Class A Biosolids Drying Facility (the "Facility") for the Pima County Regional Wastewater Reclamation Department. The Facility will be located at the Tres Rios WRF located at 7101 N Casa Grande Hwy and/or the adjacent Ina Road Landfill site, both owned by Pima County. (See **Map of the Project Site Location as Item C of Appendix A**)

The scope of work includes all services required to design and construct a fully functional, and easily maintainable Class A biosolids solar drying facility. The scope of service goals for this project are the creation of an efficient energy neutral biosolids dryer with the following requirements and defined more specifically in the Statement of Work (SOW) and associated documents.

The Facility will include sufficient space and thermal inputs to process biosolids 24 hours/day, 365 days per year. The Project Scope of Work for the design must include but is not limited to the following general description items to provide a complete and functional biosolids drying facility.

The Design-Builder shall verify the information provided by County and review issues of relevance including but not limited to: physical design parameters, material selections, existing business operations, required finish systems and County recommendations. The Design-Builder shall validate site conditions, collect data necessary to perform the engineering of the project, and meet the Project Team to discuss and coordinate the specifics of the Project and ensure compliance with Contract Documents. Technical design criteria must adhere to the RWRD's ROMP, Control Systems Revisions and SCADA Standard Specifications. Any deviations must be approved in advance through written acknowledgement and authorizations by the appropriate RWRD manager. Equipment and materials acceptance require a certificate of proper installation (COPI) from each vendor and equipment warranties shall begin from the start date of commissioning, not delivery on site.

The Design-Builder will submit to County design phase drawings and document packages for County review and approval before submitting final packages for permit. Professional design services for this project shall consist of Pre-design, Schematic Design, Design Development, Construction Documents, Bid and Negotiation and Construction Administration as described further in the Design Services Detail section below.

Professional services for this Project are to consist of the following phases as described below.

1. Existing Conditions Survey, data gathering, and documentation
2. Program- functional analysis, space development, validate and document
3. Site Development Plan
4. Schematic Design
5. Construction Documentation in four submittals
 - a) *30% CD Review*
 - b) *60% CD Review (with GMP1 at 60%)*
 - c) *90% CD Review*
 - d) *100% Permit Documents*
6. Bidding and Negotiation
7. Construction Administration
8. Record Drawings

The Design-Builder shall conduct an internal quality review session of each package for each phase described, with the entire Design-Builder prior to submission to County. A document review session will be held with County and the Design-Builder. The formal submittal shall consist of PDF and AutoCAD formatted documents.

County will provide, as necessary, written review comments for each package and the Design- Builder will provide response to address County concerns.

The document packages shall provide the information necessary to obtain building permits and shall include at a minimum, drawings, design narratives from each discipline, outline specifications, calculations and other documents which establish the general scope and design, and any other dimensional relationships specific to the Project.

The Design-Builder shall prepare and update cost estimates on a regular basis as Scope changes and document packages are prepared for review by County.

Written approval by County for each document package submitted to County is necessary before proceeding.

The Design-Builder shall prepare completed Construction Documents, including fit up drawings, structural connections, Specifications and material color and finish selections, and implementation

plan, and any calculations or reports not included in the drawing package, setting forth in detail the requirements for the construction.

The Design-Builder and/or sub-consultants along with County's Project Manager shall meet with local and State agencies to review and verify architectural and engineering documents. This includes, but is not limited to, consultation with Pima County Development Services, the Arizona Office of State Fire Marshal, and other agencies as applicable.

4. Design-Builder Phase I Design Service

Phase I services consist of preliminary engineering, design development and construction management services during design in close collaboration with the County. With the progression of the design, the services will include development of Guaranteed Maximum Price (GMP) proposals and schedules, which will be updated throughout Phase I until the commencement of Phase II. The GMP will be based on the project's design, and will include supporting documentation, such as detailed construction cost estimates.

a) Phase I services shall include the following;

- Project execution plan submitted within 45 days of contract signing for review by County.
- Produce a basis-of-design report.
- Develop the engineering design, including preparing and submitting intermediate design review packages (at a minimum 30%, 60%, 90% of design development), and value-engineering activities in conjunction with the County.
- Prepare and conduct workshops (no less than one-half day each) with each design review package. Review and discuss the work of all project design disciplines during each workshop.
- Prepare a project cost model and provide detailed cost estimates as the design is advanced.
- Perform engineering studies to support design and cost estimating.
- Identify project permitting requirements and initiate appropriate permitting activities.
- Prepare a stormwater management plan for all areas of disturbance and dust control measures.
- Conduct monthly project status meetings at the project site.
- Prepare construction estimates and submit and negotiate a guaranteed maximum price (GMP 1) for construction to complete the Phase II services.
- Preorder of long lead equipment items approved for GMP 1.
- Note: any design that requires excavation deeper than 12" from existing grade in the area highlighted on the MAP OF THE PROJECT SITE AREA OF ARCHEOLOGICAL CONCERN will require an archeological monitor (**See Item D of Appendix A**). Any area that is deeper than 12" and determined by Pima County as a mass area excavation will require a pre-construction archeological investigation.
- Any design on the adjacent landfill must be approved through PDEQ and ADEQ to allow maintenance of and ensure the integrity of the cap on the closed landfill. See the limits of waste on the Phase 2 closure plans for the Ina Road Construction Debris Landfill (**See Item E of Appendix A**).

b) Project Schedule Requirements

The Design-Builder shall submit a proposed baseline project schedule to 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 including excavations, shutdowns, tie-ins and temporary relocations
- 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.

c) **SCADA Integration Requirements**

The designs shall include a description of the proposed instrumentation, control, and incorporation in the County's existing SCADA system and comply with RWRD's latest SCADA Standards and Specifications and Pima County Enterprise Communications Division Voice and Data Communications Cabling Standards. (include a link to both of these documents or footnote) A system block diagram shall be developed showing how the Project ties into the existing control system. Process and instrumentation diagrams (P&IDs) must be developed for each unit process. Process control narratives shall 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.

The selected process shall be designed to provide complete control, monitoring, alarm processing, trending and data archiving capabilities for both manual and automated control. The Design-Builder shall apply hardware and software consistent with existing County standards and practices consisting of field-mounted instruments, local equipment control panels, programmable logic controller (PLC) control panels, thin client workstations and communication networks. These systems shall fully integrate with the existing supervisory control and data acquisition (SCADA) system that is in production at the Tres Rios WRF.

d) **Security Requirements**

The design report shall describe how the security will be maintained at the Project and 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 design report shall describe the overall site work 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.

e) **Maintenance of Plant Operations**

The design report shall also provide a summary of construction sequencing and tie-ins to maintain any existing treatment plant 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.

5. Design-Builder – Phase II Construction Services

Phase II services consist of construction administration services necessary for completing final design, construction completion, commissioning and performance testing 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. The Design-Builder must comply with all Pima County and Arizona State Fire Marshal (ASFM) adopted codes provide permit documents to the Pima County Facilities Documents for submission to the Arizona State Fire Marshal (ASFM) for permit as applicable. The Design-Builder shall provide sealed construction documents, specifications and all documents necessary with obtaining building permits from Pima County Development Services.

Phase II services shall encompass completing the project's final design, construction, commissioning and performance testing.

- a) Construction services for this project include the following:
- Completion the final design.
 - Procure all project related equipment.
 - Procure all necessary subcontractors.
 - Secure necessary permits and approvals.
 - Maintain site security.
 - Supervise subcontractors and Design-Builder personnel.
 - Prepare design and construction documents and quality management procedures
 - Construct project.
 - Prepare the operations and maintenance manuals for review and approval.
 - Conduct startup, commissioning and performance testing.
 - Provide operator training.
 - Provide warranty coverage.
 - Conduct monthly project status meetings at the project site.
 - Maintain and update, at least monthly, a detailed construction schedule during Phase II Services.
 - Implement project health and safety practices.

b) Commissioning

Prior to commissioning, the Design-Builder shall develop a detailed plan for the start-up ("Startup Plan") and submit it to County for review and approval. All equipment, wired inputs, including fiber optic connections to equipment, panels, switches, etc., must be properly labeled with signed and dated loop testing completed prior to commencement of Startup to facilitate troubleshooting and avoid unnecessary delays during Startup. Likewise, all asset management items and operation manuals must be submitted prior to commissioning and start-up.

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.
- Complete validation of equipment operation, loop tests, manual and remote operation and SCADA integration and control
- Actions to be taken should some portion of the Project become inoperable or fail to perform as anticipated.
- Required staffing and vendor presence during the startup.
- Communications procedures.
- Control of odors.
- Identification of any special safety requirements for startup personnel.

c) System Performance Testing

After substantial completion of construction, the Design-Builder will provide RWRD plant staff with operator training, including O&M training on all the equipment and systems provided in preparation of a sixty (60) continuous calendar days performance test. The performance test will be operated by the County in association with the Design-Builder. All samples must be tested by a certified laboratory meeting Arizona Department of Health Services requirements.

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 60 days, the performance test period will restart at day one.

d) Construction Administration

The Construction Administration Phase will commence with the preconstruction meeting/notice-to-proceed to the Design-Builder and will terminate upon completion of the final acceptance of the Close-Out Document package. The Design-Builder shall assist County in a timely completion of the Close-Out Documents. Construction Administration Services, beyond the completion time period specified above shall require specific written approval by County by written amendment to this Contract.

Design-Builder shall make sufficient visits to the site to ascertain the progress and quality of the Work and to determine if the Work is proceeding in accordance with the Contract Documents. Engineering consultants shall also furnish periodic written records of their inspection of the Work, and Design-Builder shall submit them to County for County files. County shall have the authority to enter the project work site as it deems necessary to review the progress of the Work.

The Design-Builder shall chair a construction meeting on site as needed to oversee the construction with the Design-Builder and County represented and shall also provide written minutes of the meetings to all attendees.

The Design-Builder shall immediately notify County of issues relating to failing to carry out the work in accordance with the Contract Documents.

The application for progress payment shall be based on document packages provided by Design-Builder, visual and written evidence of site improvements, and the data comprising the application for payment. Design-Builder's submission of the Application for Payment is a representation by the Design-Builder to County, that (1) the Work has progressed to the point indicated; (2) to the best of the Design-Builder's knowledge, information and belief, that the quality of the Work is in accordance with the Contract Documents (subject to an evaluation of the state of the Work at the time the Certificate of Payment was made) and (3) the Design-Builder is entitled to payment in the amount certified. The Design-Builder Contractor shall provide to County evidence of items corrected or payments made to sub-consultants and subcontractors prior to submitting an Application for Payment.

The Design-Builder Architect is the interpreter of the requirements of the Contract Documents and of the performance thereof, and shall recommend decisions on all claims from County or Design-Builder Contractor relating to the execution and progress of the work on all other matters or questions related thereto.

The Design-Builder Architect will establish all testing requirements and parameters. Review reports of special inspections, test reports, and special inspections for compliance with construction documents, specifications and applicable codes. County shall contract for testing in a separate contract.

The Design-Builder Architect and Engineers shall reject Work that does not conform to the construction documents sealed by them, and shall require special inspection or testing of any Work which has due cause for concern for noncompliance with the construction documents. Work shall stop whenever in the opinion of the Design-Builder Architect that confirmation of compliance with the construction documents is required. County, where necessary, shall issue the order to Stop the Work.

The Design-Builder Architect and Engineers shall review and approve shop drawings, samples, and other submissions of the Design-Builder contractor and provide additional instructions and provide any additional written instructions and drawings as needed for the proper execution of the Work. All such instructions or drawings shall be consistent with the intent of the construction documents.

The Design-Builder may make minor changes in the Work as long as the changes do not involve extra cost, delay in execution, or a claim of any kind against County and are consistent with the intent of the construction documents. Except in an emergency endangering life or property, the Design-Builder shall not perform additional work or change the Work except by written approval and Change Order signed by County.

e) Project Close Out and Occupancy

The Design-Builder shall prepare as-built documents of the completed work. These documents will be made into the Record Drawings Package (electronic pdf and AutoCAD as-built drawings) formatted per most current requirements of County.

1. As part of the Project Closeout documents requirements, the Design-Builder shall prepare records drawings in AutoCAD format which contain external references (x-refs) by using the "Bind" command so that the x-ref drawing becomes part of the final drawing. This will prevent unintentional updating of archived drawings by later changes to referenced drawings. Binding an x-ref to the final drawing makes the x-ref a permanent part of the drawing and no longer an externally referenced file. Bind the entire database of the x-ref drawings, including all its x-ref-dependent names objects (blocks, dimension styles, layers, line types, and text styles) by using the XREF Bind option. Referenced images, PDFs, or other file format shall also be bound and submitted individually as part of the record drawings package.
2. When choosing to bind the x-ref to the current drawing, AutoCAD prompts to which type of bind to use: Bind or Insert. Do not use the Insert command. When the Insert option is used, AutoCAD inserts the drawing as a normal block, and prefix names objects with the x-ref's drawing name. Consequently, any duplicate objects in the x-ref are ignored, and the names objects in the current drawing take precedence. Although this feature eliminates redundancy of duplicate layer names, it may give unexpected results if there are duplicate named objects.
3. Do not create drawings using proxy objects.
4. Provide a digital copy of the Record Drawings Package in PDF and current AutoCAD format and deliver to County. If Revit was used, provide these files in addition.

A complete set of Operations and Maintenance Manuals (O&M Manual) in PDF format shall be **provided by Design-Builder to include the most current items provided and installed and provided to County.**

The O&M Manuals, Certificates of Warranty and Substantial Completion shall have a date of substantial completion on each. The submittal of Final Completion shall provide guarantees, lien waivers and related documents.

Design-Builder will coordinate with appropriate agencies having jurisdiction of the final acceptance and approval of the sprinkler fire alarm system.

Design-Builder will provide to County the final signed Certificate of Occupancy.

6. Estimated Budget & Cost Control

The estimated cost for design and construction of the Tres Rios Class A Biosolids Drying Facility shall not exceed **\$40,000,000**. (including design services, preconstruction services, permits, utility connection and fees, and construction services).

The Design-Builder is responsible to maintain the project's design within the construction budget. The Design-Builder shall prepare an estimate of Probable Construction Cost for each submittal phase at which time County and the Design-Builder will review and evaluate the cost estimate.

The cost estimator needs to be cognizant of construction costs for the market which has direct impact to this project. The Design-Builder and his cost estimator shall recommend value-engineering items, scope changes, and alternates for County review and approval. If the Design-Builder's estimate of the Probable Construction Cost exceeds the Construction Budget at any phase/submittal, the process outlined in Contract Section 3 Scope of Services (3.4 – 3.6, and other sections as applicable) shall govern.

7. **Project Schedule:** Design Services shall begin concurrently upon receipt of an approved Contract and a Notice to Proceed from the Project Manager. A total of approximately 25 months from start of design to substantial completion is County's goal. It is anticipated that there will be overlap in the phases with multiple GMPs.
 - a. Pre Design and Design through Construction Documents - Seven (7) Months
 - b. Permits and Bids – Three (3) Months. Bid phase overlaps with Construction

- c. Construction – Eighteen (18) Months
- d. Project Commissioning Three (3) Months
- e. Project Closeout – Two (2) Months

The overall master project schedule shall be developed by the Design-Builder per the above overall timelines with input from County.

B. SCOPE OF SERVICES TO BE PROVIDED BY PIMA COUNTY

County shall provide the following:

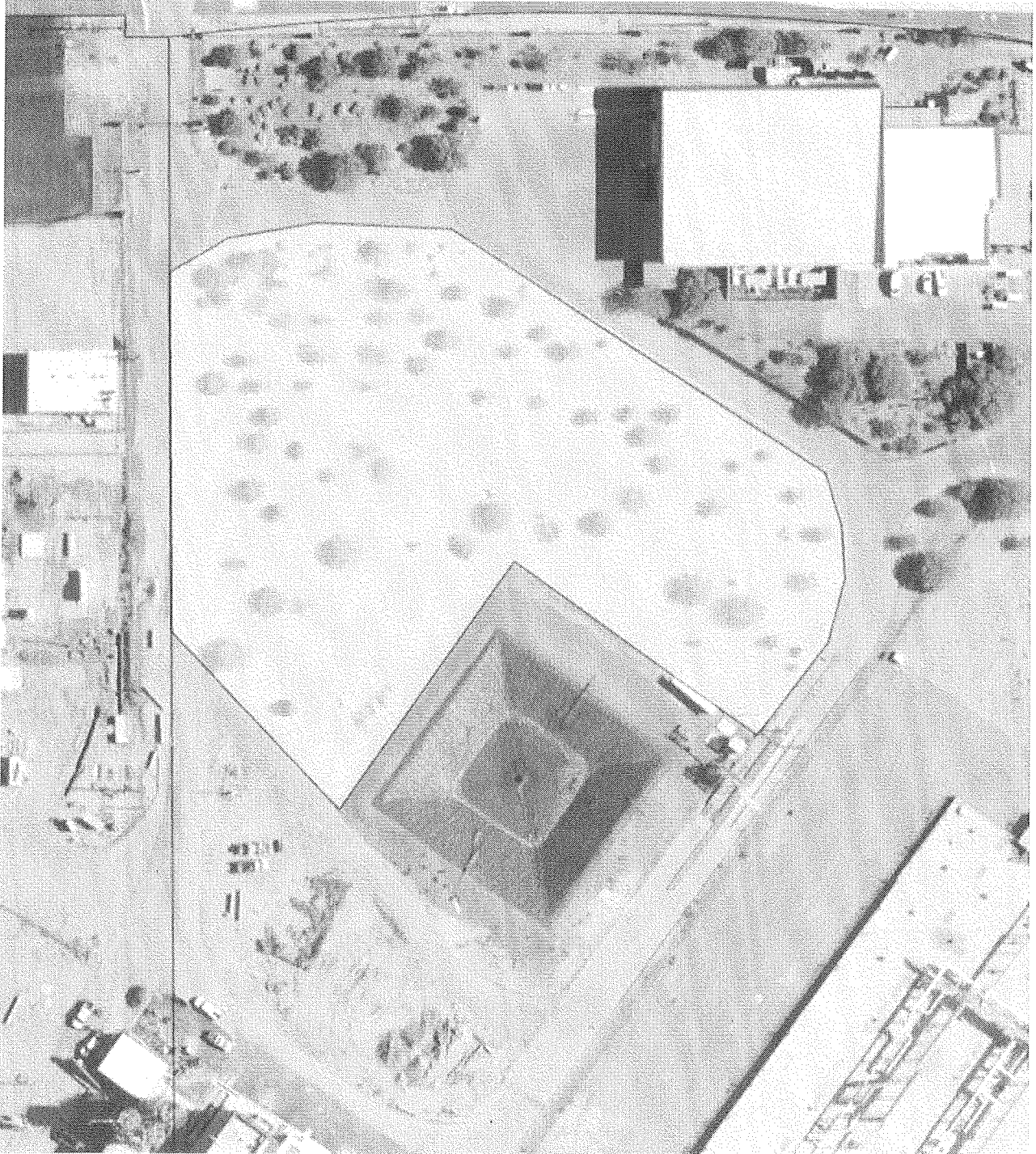
1. Cost of reproductions for all documents as listed in the Contract, which are used for meetings with County representatives, and as requested by County Project Manager. Reproduction costs
2. A Project Manager from Capitol Projects Office will be assigned to work with the Design-Builder.
3. Any information known to County that is available regarding utilities and services, or any other project specific information as required. This does not limit or negate the requirement of the Design-Builder to verify field conditions;
4. Any reports and/or mitigation known to County that is regarding the presence of hazardous materials on the property. In the event that hazardous materials are encountered, County will contract directly with abatement consultants and contractors for remediation, should that be necessary;
5. Any building Materials and Finishes Standards desired by County;
6. Apply for and pay all building permit fees, to include Pima County Wastewater fees (if any);
7. Apply and pay for the final Certificate of Occupancy.
8. Consultation with Pima County officials as required.
9. Obtain and pay for third party Commissioning Agent.
10. PC RWRD will Provide Pima County Design and Construction Standards.
11. Coordination with business operations representatives.
12. Provide interior design services for selection of finishes.

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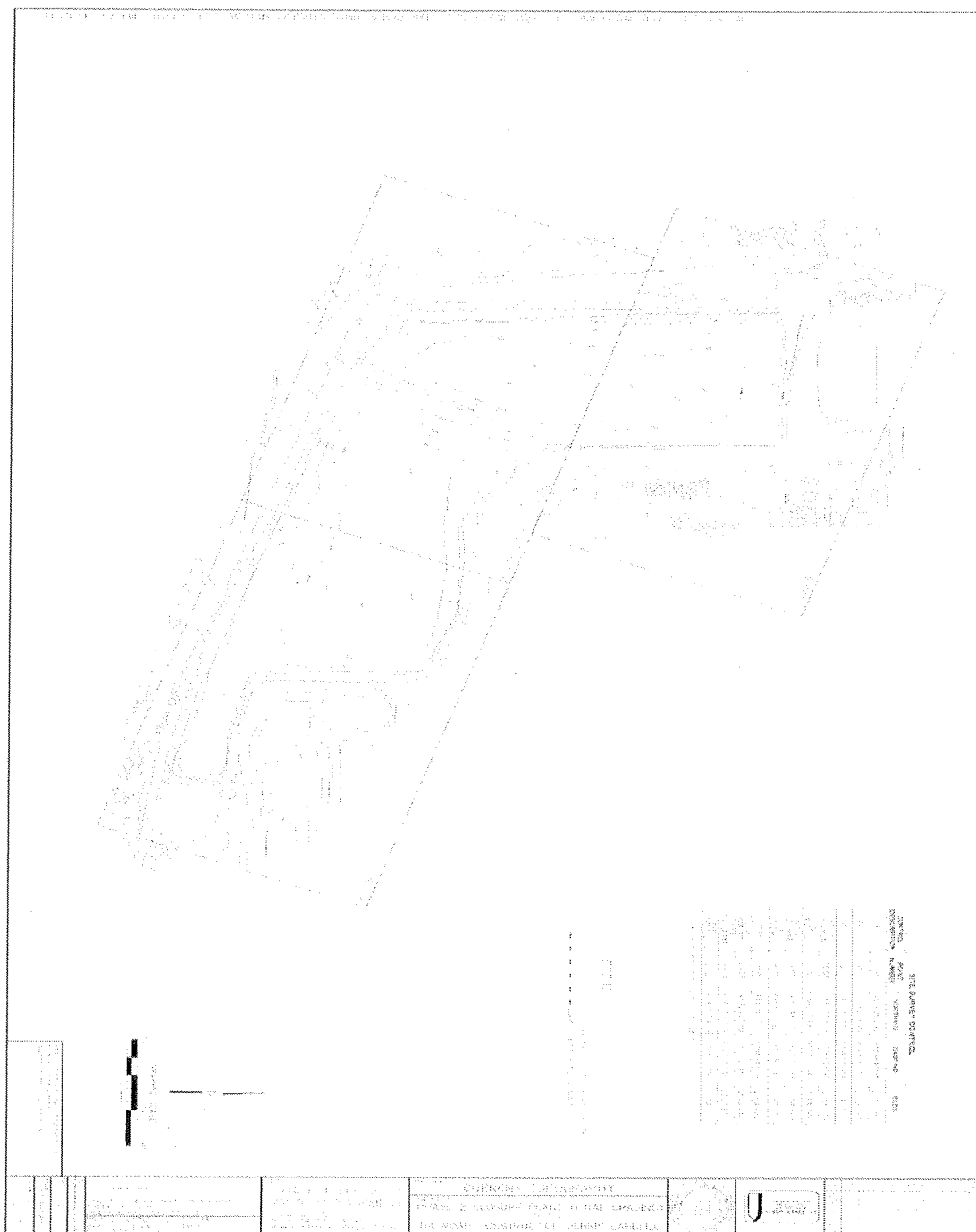
C. MAP OF THE PROJECT SITE LOCATION



D. MAP OF THE PROJECT SITE AREA OF ARCHEOLOGICAL CONCERN



E. PHASE 2 CLOSURE PLANS FOR THE INA ROAD CONSTRUCTION DEBRIS LANDFILL



End of Appendix A – Project Scope of Work

APPENDIX B

SUPPLEMENTAL PROVISIONS – CONSTRUCTION COSTING (5 pages)

ARTICLE 1 – GENERAL

Design-Builder will develop the Guaranteed Maximum Price (GMP) as provided for in this Contract and appendices. The GMP Proposal for the entire Work (or portions thereof) will be presented in a format acceptable to County and will include the clarifications or assumptions upon which the GMP Proposal is based.

- A. Unless otherwise directed by County, each GMP proposal will include all of the following components:
1. Summary of the GMP: A summary of the GMP with a total for each of the components of the GMP defined in the Construction Provisions (i.e., "Cost of the Work", "Design-Builder Contingency", "Fee") as described and as shown in **Attachment 1 to this GMP Appendix**. If there will be multiple GMPs, then the GMP Summary will be presented in a spreadsheet format with each successive GMP in a separate column with the total GMP in the rightmost column.
 2. Description of Work: a brief description of the Work to be performed for the Project or phase(s) to which the GMP proposal applies. Exclusions must be clearly stated.
 3. List of Plans and Specifications used for GMP Proposal: A list of the Plans and Specifications with latest issuance date including all addenda used in preparation of the GMP proposal. (Date stamped and signed by Design-Builder).
 4. List of clarifications, assumptions and exclusions: A list of the clarifications, assumptions, and exclusions by Design-Builder with regard to the Scope of Work in the GMP proposal, to supplement the information contained in the documents.
 5. Project Schedule in Critical Path Method format: A Critical Path Method (CPM) diagram construction schedule. An updated Project Management Plan will also be submitted with each GMP proposal.
 6. A calendared spend plan to show a cash-flow forecast based on the proposed construction schedule, schedule of values and GMP. If the construction covered by the GMP overlaps construction performed under a prior GMP, their cash flows will be consolidated into a single cash-flow statement.
 7. Subcontractor Selections / SBE Requirements / Utilization Form / Letters of Intent: A summary of the subcontractor selections, including an SBE requirements section addressing the goals set for the Project and the current status on meeting the Project goals. The Utilization Form and Letters of Intent must be attached when subcontractor selection has been made prior to final GMP submittal. Subcontractor selections must conform to the approved Subcontractor Selection Plan provided by Design-Builder.
- B. Design-Builder must keep the submittal package as simple as possible and submit it on 8 ½ x 11-inch paper. Color or shading must be kept to a minimum. If used, the color or shading must not affect the reproduction of the submittal in black and white.
- C. The Parties may, by agreement, use a simplified GMP format for smaller projects or phases, so long as the documents supporting the GMP clearly delineate the Work—or that portion of the Work—to which the GMP applies and provide a schedule for completion of the Work.

ARTICLE 2 – COST OF THE WORK

The term "Cost of the Work" means costs necessarily incurred by Design-Builder in the proper performance of the Work. Such costs will be at rates not higher than the standard paid at the place of the Project except with prior consent of County. The Cost of the Work includes only the items set forth in this Article.

1. Wages of direct employees of Design-Builder performing the Work at the site or, with County's agreement, at locations off the site, provided, however, that the costs for those employees of Design-Builder performing design services shall be calculated on the basis of prevailing market rates for design professionals performing such services or, if applicable, those rates set forth in an exhibit to this Agreement.
2. Wages or salaries of Design-Builder's supervisory and administrative personnel engaged in the performance of the Work and who are located at the site or working off-site to assist in the coordination, production or transportation of material and equipment necessary for the Work.
3. Wages or salaries of Design-Builder's personnel stationed at Design-Builder's principal or branch offices and performing the payment of the salaries of Design-Builder's project management, estimating, administrative, scheduling, safety and other personnel when working on items of Work specifically related to the Project at Design-Builder's principal office, Design Consultant(s)' office, job site, field office or any other location for that portion of their time spent in the performance of the Work for the Project shall be included in the Cost of the Work. The cost of Vice Presidents and the President of Design-Builder is included in Design-Builder's Fee and is not part of the Cost of the Work. The reimbursable costs of personnel stationed at Design-Builder's principal or branch offices shall include a fifty percent (50%) markup to compensate Design-Builder for the Project related overhead associated with such personnel.
4. Costs incurred by Design-Builder for employee benefits, premiums, taxes, insurance, contributions and assessments required by law, collective bargaining agreements, or which are customarily paid by Design-Builder, excluding bonuses, to the extent such costs are based on wages and salaries paid to employees of Design-Builder covered under paragraphs 1 through 3 of this Article.
5. The reasonable portion of the cost of travel, accommodations and meals for Design-Builder's personnel necessarily and directly incurred in connection with the performance of the Work.
6. Payments properly made by Design-Builder to Subcontractors and Design Consultants for performance of portions of the Work, including any insurance and bond premiums incurred by Subcontractors and Design Consultants.
7. Costs incurred by Design-Builder in repairing or correcting defective, damaged, or nonconforming Work, provided that such defective, damaged, or nonconforming Work was beyond the reasonable control of Design-Builder, or caused by the ordinary mistakes or inadvertence, and not the negligence of Design-Builder or those working by or through Design-Builder. If the costs associated with such defective, damaged or nonconforming Work are recoverable from insurance, Subcontractors or Design Consultants, Design-Builder will exercise best efforts to obtain recovery from the appropriate source and credit County if recovery is obtained.
8. Costs, including transportation, inspection, testing, storage and handling, of materials, equipment and supplies incorporated or reasonably used in completing the Work.
9. Costs less salvage value of materials, supplies, temporary facilities, machinery, equipment and hand tools not customarily owned Design-Builder employees or subcontractors that are not fully consumed in the performance of the Work and which remain the property of Design-Builder, including the costs of transporting, inspecting, testing, handling, installing, maintaining, dismantling and removing such items.
10. Costs of removal of debris and waste from the project site.
11. The reasonable costs and expenses incurred in establishing, operating, and demobilizing the site office, including the cost of facsimile transmissions, long-distance telephone calls, postage and express delivery charges, telephone service, photocopying, and reasonable petty cash expenses.
12. Rental charges and the costs of transportation, installation, minor repairs and replacements, dismantling and removal of temporary facilities, machinery, equipment, and hand tools not customarily owned by the workers, which are provided by Design-Builder at the project site, whether rented from Design-Builder or others, and incurred in the performance of the Work.
13. Premiums for insurance and bonds required by the Contract or the performance of the Work.
14. All fuel and utility costs incurred in the performance of the Work.
15. Sales, use, privilege, or similar taxes, tariffs, or duties incurred in the performance of the Work.

16. Costs for permits, royalties, licenses, tests, and inspections incurred by Design-Builder as a requirement of the Contract Documents provided, however, that costs for re-tests and re-inspections are not included in the Cost of Work to the extent the re-tests and re-inspections result from re-work or re-testing due to Design-Builder's failure to meet County requirements under this Contract.
17. Deposits which are lost, except to the extent caused by Design-Builder's negligence or delay.
18. Costs incurred in preventing damage, injury, or loss in case of an emergency affecting the safety of persons and property except to the extent the emergency was caused by Design-Builder's negligence.
19. Other costs reasonably and properly incurred in the performance of the Work to the extent approved in writing by County.

ARTICLE 3 - COSTS NOT TO BE REIMBURSED

The following are excluded from the Cost of the Work:

1. Compensation for Design-Builder's personnel stationed at Design-Builder's principal or branch offices, except as provided for in paragraphs 1 through 3 of Article 2.
2. Overhead and general expenses, except as provided for elsewhere in this Contract, or which may be recoverable for changes to the Work.
3. The cost of Design-Builder's capital used in the performance of the Work.
4. Costs that would cause the GMP, as adjusted in accordance with the Contract Documents, to be exceeded.

ARTICLE 4 - DISCOUNTS, REBATES AND REFUNDS

- A. Cash discounts obtained on payments made by Design-Builder will accrue to County if (1) before making the payment, Design-Builder included them in an Application for Payment and received payment therefor from County, or (2) County has deposited funds with Design-Builder with which to make payments; otherwise, cash discounts will accrue to Design-Builder. Trade discounts, rebates, refunds, and amounts received from sales or surplus materials and equipment will accrue to County, and Design-Builder will make provisions so that they can be secured.
 1. Cost of the Work will be credited with all insurance policy discounts, performance and payment bond rebates or refunds, refunds or return premiums from any subcontractor default insurance, refunds or rebates from any Design-Builder controlled insurance programs applicable to the project, merchandise rebates of any nature, refunds of any nature, insurance dividends; and a portion of any volume rebates or free material credits earned with purchase of material or other goods and services charged to the job.
 2. "Cash" discounts which may accrue to Design-Builder will be limited to a maximum of one and one-half percent (1.5%) of invoice cost. Any portion of "Cash" discounts greater than one and one-half percent (1.5%) will automatically accrue to County if Design-Builder is eligible to take advantage of the discounts.
- B. Amounts that accrue to County in accordance with the provisions of Paragraph 4.A.1 will be credited to County as a deduction from the Cost of the Work.

ARTICLE 5 - CONTINGENCY FUND

Generally:

- A. The GMP may include a Design-Builder Contingency in the amount stated in the GMP Summary. Each line item of the GMP Summary for which risk remains for the Design-Builder after the Design and Preconstruction Phase will carry an agreed upon contingency that can be traced back to the initial cost model. Subject to the terms of the Contract Documents and with prior notification to and approval by County, Design-Builder may allocate from and apply against the Design-Builder Contingency increases in the Cost of the Work that could

not have been reasonably anticipated by a Design-Builder using the standard of care and skill that a professional Design-Builder in Arizona would exercise under similar conditions at the time the GMP was established or for increases in General Condition Costs. County may disallow such Design-Builder Contingency use and deny reimbursement in the absence of prior notice or if County determines that the use was not consistent with the Contract Documents.

- B. Design-Builder may not apply, use, or allocate from the Design-Builder Contingency any amounts for any of the foregoing purposes that are the result of a material breach or material failure to perform by Design-Builder, any Subcontractor, or vendor (except as necessary to replace any subcontractor, or vendor because of the bankruptcy or failure of such entity to perform), or any entity for which any of them are liable or responsible at law or under the Contract Documents, or for any non-allowable costs of the Work.
- C. Each application of the Design-Builder Contingency by Design-Builder will be reflected (with narrative explanation) on the Application for Progress Payment for the period during which Design-Builder makes such application. Application of Design-Builder Contingency to any particular risk event should not exceed the agreed associated amount of the Design-Builder Contingency previously assigned to the specific line item in the GMP. Any portion of the Design-Builder Contingency remaining unapplied at final completion will be a credit against and reduce the GMP. When Design-Builder utilizes Design-Builder's Contingency funds, Design-Builder will make the appropriate changes to the Schedule of Values with the next regular progress payment request. Design-Builder will deduct the amount of Design-Builder's Contingency funds used from Design-Builder's Contingency line item and add the same amount to the line item on the Schedule of Values where the funds were used. If Design-Builder's Contingency funds are used for a new line item that was not included in the original Schedule of Values, Design-Builder will so indicate.
- D. The Design-Builder Contingency is not cumulative across multiple GMPs.
- E. County's Contingency is a sum of money in the Contract but not included in the GMP that may be used at the discretion of County to cover any increases in Project costs that result from County-directed changes, changed site conditions, or additional costs of Allowance Items that exceeds the Allowance. County's Contingency will be added to the GMP amount provided by Design-Builder, the sum of which will be the full Contract price for construction. Markups for the Construction Fee, taxes, and overhead will be applied by Design-Builder at the time that County's Contingency is used.
- F. County's Contingency and the Design-Builder Contingency will not be combined into a single project contingency.

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ATTACHMENT 1 TO APPENDIX B

GMP Summary Format

CONSTRUCTION	AMOUNT
CONSTRUCTION COSTS:	
Cost of Construction	\$
Design-Builder Contingency	\$
Subtotal Direct Construction Costs	\$
INDIRECT CONSTRUCTION COSTS:	
General Conditions	\$
Overhead	\$
Insurance	\$
Payment and Performance Bonds	\$
Subtotal Direct Construction Cost + Gen Cond, Overhead, Bonds, Insurance	\$
Construction Fee (As a percentage of Subtotal above or to exclude any items above)	
Subtotal Direct Construction Cost + Gen Cond, Overhead, Bonds, Insurance and Fee	
Arizona Gross Receipts Tax	\$
Subtotal Direct Construction Cost + Gen Cond, Overhead, Bonds, Insurance, Fee and Tax	\$
GUARANTEED MAXIMUM PRICE (GMP)	\$
OTHER PROJECT COSTS:	
County Contingency	\$
TOTAL CONTRACT COST	\$

END OF APPENDIX B – SUPPLEMENTAL PROVISIONS—CONSTRUCTION COSTING

APPENDIX C

DESIGN-BUILDER GENERAL CONDITIONS (46 pages)

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ARTICLE 1 – GENERAL ARTICLES

1.1 MUTUAL OBLIGATIONS

County and Design-Builder (Design-Builder) which includes the Design Professional (DP) commit, at all times, to cooperate fully with each other, and proceed on the basis of trust, confidence, and good faith to permit each party to realize the benefits expected and afforded under the Contract Documents, which benefits include the satisfactory and timely completion of the Project and performance of all obligations required by or inferable from the Contract Documents.

1.2 BASIC DEFINITIONS

- 1.2.1 "Actual Cost of the Work" means the aggregate amount of Design-Builder Direct Construction Costs and Indirect Construction Costs properly and actually chargeable to County when calculated under the provisions of **Appendix B of the Design-Builder Contract** throughout the Project up to the time of Final Completion.
- 1.2.2 "Allowances" means items established by County in the GMP as estimates for the cost of items of included in the Work. To the extent that the Actual Cost of the Work is lesser or greater than the corresponding estimate, the GMP will be reduced or increased by Change Order with such amount being added to or taken from County's Contingency.
- 1.2.3 "Bidding Contingency", or "Design-Builder Contingency" means that part of the Guaranteed Maximum Price (GMP) the Design-Builder may use during the Bidding or Construction Phase as provided in these General Conditions at 7.11, to cover any excess of the amount bid by a subcontractor over the amount for that Work in the GMP, or to cover legitimate unforeseen construction expenses once construction begins. Contingency may not be used to cover the cost of any Work on the Project after issuance of the Certificate of Final Completion.
- 1.2.4 "Design-Builder Authorization" means Chapter 6 of Title 34, Arizona Revised Statutes
- 1.2.5 "Design-Builder" means the Design Builder and all persons and entities identified as members of the Design-Builder team including the registered professionals responsible for the design, in the Design-Builder's response to County's request for fee proposal that led to the Contract with all Contract Amendments, and any substitutes permitted under the terms of the Contract, and these General Conditions. The Design-Builder leads the Preconstruction Phase as set forth in Preconstruction Phase Services Contract by, among other things, developing design and a cost model and refining it during design to ensure construction costs remain within County's budget, doing value engineering and reviewing constructability, preparing schedules, and identifying the life-cycle implications of alternate designs, systems, and materials. **During construction, the Design-Builder assumes all risk for price and schedule under the Contract and its GMP, except as otherwise provided in the Contract.**
- 1.2.6 "Construction General Conditions" means the following types of costs during construction: Project Director costs directly attributable to time expended in execution of the project, whether on- or off- site; payroll costs for project manager or construction manager for work conducted at the site; payroll costs for the superintendent and full-time general foremen; payroll costs for other management personnel resident and working on the site; general support workers not included in direct labor costs (e.g. loading/unloading, clean-up, etc.); on-site administrative office personnel; costs of offices and temporary facilities including office materials, office supplies, office equipment, minor expenses; utilities, fuel, sanitary facilities and telephone services at the site; and fees for licenses. General Conditions specifically exclude, without limitation, the following: Home (off-site) Expenses, Profit & Overhead; Home Office Personnel such as Corporate Executive, Project Executive; Home Office Staff Transportation & Travel Costs; Home Office Accounting & Contract Forms; Legal Expenses; Project Staff Moving Expense; off-site Staff Training & Education; Pre-Mobilization Office Space; off-site Equipment & Supplies; Forms; Estimating & Value/Constructability Analysis; Warranty Coordination; Legal Expenses,

Contractor Yard not Dedicated to Project, Contractor Association Fees, Licenses & Memberships; Cost over GMP, Corrective Work, Bonuses, Cost of Living Allowance, marketing expenses, corporate sponsorships and entertainment, and Promotional or Celebratory Expenses the Design-Builder incurs while performing and completing the Project. The Parties acknowledge that some portion of the General Conditions represent upfront costs associated with mobilization and startup of construction. These amounts will be deducted from the total amount of General Conditions in the GMP and the balance will be divided by the number of days allowed for performance to arrive at a fixed daily rate for use in estimating the amount, if any, of the adjustment for General Conditions associated with changes in Contract Time or for the number of workdays in any particular month.

- 1.2.7 "Construction Documents" means the plans and specifications prepared by the DP under the Design-Builder for the Project, approved by County, and incorporated into the Contract by reference after such approval, to be used to construct the Project. All Contract Amendments, Change Orders, and other modifications to the Construction Documents must be approved by County prior to incorporation into the Contract.
- 1.2.8 "Construction Phase Fee" means profit and unallowable costs. The Construction Phase Fee will initially be calculated not to exceed seven percent (7%) of Direct Construction Cost only, and then will be fixed as a dollar amount as mutually negotiated and agreed to by the Parties. Overhead will be treated as described in 1.2.24.
- 1.2.9 "Contract Float" means the number of calendar days between Design-Builder's anticipated date for early completion of all or any such part of the Work and the corresponding specified Contract Time and provided that the CPM schedule of the Work anticipates early completion of all or any part of the Work. It is owned jointly by County and Design-Builder.
- 1.2.10 "Contract Time" means the time allotted in the Contract Documents for completion of the Work.
- 1.2.11 "Cost of the Work" means those items of Work which are paid for by County to the Design-Builder consisting of those Direct Construction Costs and Indirect Construction Costs set forth as allowable in **Appendix B Construction Costing**.
- 1.2.12 "Day" means a calendar day unless otherwise denoted.
- 1.2.13 "Deliverables" - the Work product prepared by the Design-Builder within the definition of the Scope of Work in the Contract. Some of these deliverables provided by the Design-Builder during the Preconstruction Phase included the Design Submission Documents, the Cost Model, Project Schedule, Schedule of Values, Evaluations of Alternatives, Procurement Strategies, proposed SBE Utilization, Subcontractor and Supplier bid packages and Contracts.
- 1.2.14 Design Professional ("DP") means an individual contracted through the Design-Builder who is (a) a qualified professional properly licensed in the State of Arizona to furnish applicable design services (and construction administration services, if so designated by County), and (b) responsible for the review of submittals, responding to Design-Builder Requests for Information (RFI), and Substantial Completion, if so designated.
- 1.2.15 "Design Submission Documents" means the drawings, specifications, structural calculations and any the documents required to communicate the construction requirements and are submitted at specific milestones in the design effort by the DP and other documents prepared by the Design-Builder that are submitted for County's approval for each milestone in Project design. Because design milestones may vary from project to project, County will notify Design-Builder in writing of the milestones applicable to the project covered by this Contract. Such milestones will be as binding as if set forth herein.
- 1.2.16 Direct Construction Cost means the sum of all applicable Construction General Conditions costs, subcontractor costs, costs of self-performed Work (if approved in writing in advance by County), Allowances and Contingencies. Contingencies specifically include Bidding and Construction Contingency, Design Contingency, and Schedule Contingency, as applicable.

- 1.2.17 "Final Completion" means 100% completion of all Work described by or reasonably inferred from the Project Criteria and Contract Documents, including but not limited to all punch lists, Close-Out Documents, and County training/start up activities, if included.
- 1.2.18 "Guaranteed Maximum Price" (GMP) means the dollar amount that the Design-Builder guarantees to be the maximum amount due from County to the Design-Builder under the Contract for Construction Phase services. It is the sum of Design-Builder's Construction Phase Fee, the Cost of the Work, and Contingencies and Allowances established in accordance with the Contract. The GMP is subject to additions or deductions due to changes in the Scope of Work. All costs, which exceed the GMP and are not authorized by written Change Order, are to be paid by the Design- Builder and not County.
- 1.2.19 Governmental Agency means any unit of federal, state, or local government with regulatory authority over any aspect of the Work.
- 1.2.20 "Hazardous Material" means any waste, substance, object, or material deemed hazardous under federal, state, or local law, including "hazardous substance" as defined under CERCLA, "hazardous waste" as defined under RCRA, and "hazardous material" as defined under US DOT regulations (49 CFR 100-180).
- 1.2.21 Indirect Construction Cost means the sum of all applicable insurance costs, bond costs and applicable sales or use taxes, but excludes Construction Phase Fee.
- 1.2.22 "Legal Requirements" means all regulations, policies, procedures, and practices of County and all applicable rules, laws, codes, ordinances, and regulations of any federal, state, or local government or quasi-governmental entity having jurisdiction over the Work, the practices involved in the Work, or any Work performed.
- 1.2.23 "Open Book Cost" means the Actual Cost of the Work as compiled and recorded in accordance with the provisions of Subsection 2.1.14 of these General Conditions.
- 1.2.24 "Overhead" means those items specifically excluded from General Conditions in paragraph 1.2.6 except for Estimating and Value/Constructability Analysis and profit. Overhead will be separately stated in the GMP Summary. Job Overhead will be included in General Conditions.
- 1.2.25 "Partnering or Teaming" means a mutual effort by all parties involved in the Project, principally County, the DP contracted by the Design-Builder, to cooperate and coordinate efforts to achieve the final result intended by the Project criteria. All involved use their expertise for the benefit of all. Partnering requires flexibility and appreciation of the positions of other parties and willingness to make compromises for the benefit of all. County has the exclusive right to decide whether to use Partnering on the Project and will indicate its decision during the Preconstruction Phase.
- 1.2.26 "Design and Preconstruction Phase Fee" means all direct and indirect costs of Design-Builder in providing Design and Preconstruction Phase Services until completion of the Construction Documents and the award of all bid packages, plus associated overhead and profit. The Design and Preconstruction Phase Fee also includes the cost of the DP to develop the architectural program, design, document, attend meetings, etc. during the design phase of the project.
- 1.2.27 "Project Budget" means the funding available to County for the total cost of the Project, including the Design and Preconstruction Phase Fee, the GMP (including DP's Construction Phase Fee, Construction Services, and Contingencies), permit fees, and other costs necessary to achieve Final Completion of the Project.
- 1.2.28 "Project Criteria" means criteria developed by or for County to describe County's program, requirements and objectives for the Project, including use, space, price, time, site, utility, parking, and expandability requirements, as well as all submittal requirements and other requirements affecting Design-Builder's performance of its Work. The Project Criteria may include conceptual documents, design criteria, performance requirements, and other Project specific technical materials and requirements prepared by or for County.

- 1.2.29 "Project Manager" means County's Representative who is responsible to County for the Project completion within County established Schedule, Budget and Scope. In this document "Project Manager" is the same as "County"
- 1.2.30 "Punch List" means those minor items of Work identified and listed by County and agreed to be completed by Design-Builder after Substantial Completion and prior to Final Completion, which do not prevent the Project from being fully used for the purpose for which it is intended.
- 1.2.31 "Savings" means the difference, if any, between the GMP and the Actual Cost of the Work and will be allocated as set forth in Article 7. Amount of savings is to be determined by County with such assistance as County requests of Design-Builder and is to be based on the GMP in effect on the date of Final Completion of the entire Work.
- 1.2.32 "Site" means the land and other areas on which the Project is located.
- 1.2.33 "Subcontractor" (of any tier) means any entity or person who performs a portion of the Work, on or off-site, directly on behalf of the Design-Builder, including any materials, workers and suppliers, and includes all employees, agents and authorized representatives of such entities or persons.
- 1.2.34 "Substantial Completion" means the date on which Design-Builder's Work, or an agreed upon portion of the Work, is sufficiently complete, as determined by the County's issuance of a Certificate of Substantial Completion, so that County can fully occupy and utilize the Project, or a portion thereof, for the purposes for which it is intended. In order to achieve substantial completion, all Work must be complete, including all tests and inspections, except for items included on the approved punch list.
- 1.2.35 "Total Float" means the number of calendar days by which the Work or any part of the Work may be delayed without necessarily extending a pertinent Contract Time. Total Float is at least equal to Contract Float.
- 1.2.36 "Value Engineering Proposal" means a modification to the Work proposed by the Design-Builder after the Effective Date of the Contract for the purpose of reducing the total cost of construction while still delivering a quality and functional Project. Value Engineering is part of the broader goal of obtaining optimum value for each dollar County spends on the Project.
- 1.2.37 "Work" means comprised of all activities required in order to complete the Project as defined by Appendix A – Project Scope of Work, the Project Criteria and other Contract Documents.

1.3 CONTRACT GENERAL CONDITIONS

The following are the mutual understanding and agreement of the Parties regarding the Contract general conditions or subjects addressed therein.

- 1.3.1 The Design-Builder shall design the Project.
- 1.3.2 The design for the Project may not be complete at a) the time the GMP is agreed to; b) the time of execution of the Contract; or c) both a and b.
- 1.3.3 Design-Builder will produce a completed design for the Project that is acceptable to County, as more fully described in the Contract Documents.
- 1.3.4 When the Design Documents are complete and requisite approvals obtained and County then accepts them, they become part of the Contract Documents without further action by the Parties as though they were specifically set forth therein at the time of execution of the Contract.

ARTICLE 2 – DESIGN-BUILDER’S SERVICES AND RESPONSIBILITIES

2.1 GENERAL SERVICES

- 2.1.1 Design-Builder's Representative will attend all meetings and assist County during the Design and Preconstruction Phase in accordance with these General Conditions. During the Construction Phase, the Design-Builder's Representative, and Superintendent as necessary, will be at the site at all times when Work is being performed, and will have the necessary expertise and experience required to properly supervise the Work. Design-Builder's Representative will communicate regularly with County and be vested with the authority to act on behalf of Design-Builder as to all matters. The expectation is that meetings will be collaborative among County and the Design- Builder as described below.
- 2.1.1.1 The Design-Builder and County will attend all regular meetings, including rolling design reviews, and such additional meetings that are called as provided below.
- 2.1.1.2 During the Design and Preconstruction Phase Design-Builder will schedule all regular meetings with the agreement and approval of County. Unless otherwise agreed, meetings will be held weekly for the purpose of tracking design progress and consistency with County's requirements. Design-Builder shall track and report on the design evolution log. At these meetings, Design-Builder is responsible for progressing the design, cost, and scope tracking; early identification of long-lead items; and making recommendations regarding constructability, construction sequencing, materials, and other factors that can have a material impact on cost or schedule. County will schedule all additional meetings.
- 2.1.1.3 During the Design Phase, Design-Builder will take minutes at each meeting and distribute draft minutes within three business days after each meeting. County will promptly review the minutes of each meeting and deliver any comments to the Design-Builder. The Design- Builder will promptly issue final minutes of each meeting, which will be approved by Design- Builder and County.
- 2.1.1.4 At the commencement of the Construction Phase, County and Design-Builder will meet to review cooperation, coordination, and if applicable, partnering during the construction phase and to establish procedures governing, among other matters, submittals and scheduling of site activities.
- 2.1.1.5 During the Construction Phase there will be weekly progress meetings of the Design-Builder and County. The Design-Builder will schedule and conduct the progress meetings during the Construction Phase. The weekly progress meetings will include joint discussions about such matters as procedures, progress, scheduling, submittals, requests for information (RFI), any Work deficiencies, any other actual problems or potential problems, fixes to and limits on actual problems, and ways to avoid, limit, or fix potential problems. At each meeting, the Design-Builder will provide and discuss a CPM-based look ahead schedule of construction activities to be accomplished in the next three weeks. Presentation of the look-ahead does not substitute for the 24-hour advance notice required in section 2.6.10.8 prior to all special inspections. County, and Design-Builder will contribute their good faith efforts in such discussions to find ways (i) to complete the Project within the Contract Time(s) in accordance with the Construction Documents and the other Design-Builder Contract Documents and within the Guaranteed Maximum Price; (ii) to limit and fix actual problems; (iii) to anticipate and then avoid, limit or fix potential problems; and (iv) to discuss and decide other matters brought up by County or Design-Builder. None of these discussions will affect or impair the respective rights, responsibilities and obligations of County and the Design-Builder.
- 2.1.1.6 During the Construction Phase, County or Design-Builder may request special on-site meetings as necessary to resolve issue and maintain the construction schedule and meet the requirement of the construction documents.

- 2.1.1.7 During the Construction Phase, the Design-Builder will take minutes at each meeting and distribute draft minutes within three business days after each meeting. The County will promptly review the minutes of each meeting and deliver any comments to the Design-Builder. The Design-Builder will promptly issue final minutes of each meeting, which will be approved by Design-Builder and County.
- 2.1.1.8 Design-Builder, when requested by County, will attend, make presentations and participate as may be appropriate in public agency or community meetings related to the Project. Design-Builder will provide drawings and illustrations and Design-Builder will provide schedule diagrams, budget charts and other materials describing the Project when their use is required or appropriate in any such meetings.
- 2.1.2 During the Construction Phase, the Design-Builder will provide County, on a monthly basis, a written status report detailing the progress of the Work during that month. Design-Builder's monthly report shall state whether the Work is proceeding according to Schedule and include (1) an updated and current Critical Path Method (CPM) Schedule, (2) an updated and current Work cash flow projection for the duration of the Project, (3) copies of the construction Superintendent's daily site reports, (4) identification of any discrepancies, conflicts, or ambiguities existing in the Construction Documents that require resolution, (5) whether health and safety issues have arisen in connection with performance of the Work, and (6) whether other matters exist that require resolution so as not to jeopardize Design-Builder's ability to complete the Work for the GMP(s) on schedule and within the Contract Time(s). The Design-Builder's monthly report will also include a cost tracking report with the updated Cost Model, projected final cost, subcontract amounts and buy-out status, and status of contingency and allowance usage.
- 2.1.3 Within 30 days after executing the Contract, Design-Builder will prepare and submit to County:
 - 2.1.3.1 A Milestone Schedule for the Work including the activities in the Design Phase and the Construction Phase through bid and award. The Milestone Schedule must include three weeks of County review time for Design Submission Documents at each milestone and adequate time for Government Agency and for other regulatory-type reviews and for all other necessary approvals. The CPM Schedule will indicate the dates for the start and completion of the various stages of 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). The Milestone Schedule must allow for such multiple bid packages and fast-tracked construction as may be required and include any contemplated completion date(s) earlier than those required by the Contract Documents.
 - 2.1.3.2 A Cost Model for construction of the project. The Cost Model must contain all of the costs that will be included in the GMP, including cost of the Work, general conditions, bonds, insurance, permits, taxes, including, without limitation, applicable sales taxes and transaction privilege tax, Design-Builder's construction fee, contingency, and any other costs in the Cost Model. As part of the Cost Model, the Design-Builder will also identify all areas of concern or risk and assign a separate and reasonable contingency to each of them. County will review these submissions and may request changes. Final contingency amounts will be as agreed by the Project Team. The statement of areas of concern/risks will be stratified by cost to enable the Project Team to focus in preconstruction on resolving or eliminating the costly uncertainties.
- 2.1.4 County and Design-Builder will have an initial meeting promptly after selection of the Design-Builder team to discuss issues affecting Project administration and to implement procedures to permit County and Design-Builder to perform their respective obligations under the Design-Builder Contract. Among other matters to be covered at this meeting will be procedures for efficient interaction during the Design and Preconstruction Phase so that each can perform its activities, functions, and obligations in an efficient, cooperative, coordinated, collaborative, and communicative manner. Among other subjects to be covered by the procedures will be:

- 2.1.4.1 Design-Builder will be responsible for (1) preparing Design Submission Documents, the Design-Builder's Construction Cost Estimates, as required during the development of Preliminary Design, Schematic Design, and Construction Documents; and (2) submitting each set of Design Submission Documents and the related Design-Builder Construction Cost Estimates to County for review and comment by County and for group discussion among the Design-Builder and County.
- 2.1.4.2 Arrangements that encourage frequent informal interaction, cooperation, coordination, collaboration, and communication among County and Design-Builder during the Design and Preconstruction Phase, especially between submissions of Design Submission Documents and Construction Cost Estimates. These will include among other activities, the Design-Builder offering value engineering and constructability recommendations on the design of the Project and the Design-Builder using that information in its design work on the Project.
- 2.1.4.3 A schedule for the activities of the Design-Builder and County during the Design and Preconstruction Phase.
- 2.1.4.4 Formal partnering for the Design Phase, at the option of County. Partnering is a mutual effort to cooperate and coordinate efforts in order to benefit and achieve the final result of an active and functional facility. Partnering requires that all parties use their particular expertise for the mutual benefit of all, rather than for the benefit of the one. Partnering requires flexibility, the ability to appreciate the positions of the other parties and to make compromises for the benefit of all. Partnering will be implemented through a formal partnering process developed as described above and presented in a separate workshop attended by Design-Builder, County and their key participants. Follow up sessions will

occur every three months or as mutually agreed to ensure that all commitments are updated and being followed by all parties. The cost of this partnering effort shall be shared by the Parties.
- 2.1.4.5 A responsibility matrix developed with the cooperation and collaboration of County, and Design-Builder.
- 2.1.5 No action, or attempted action, of cooperation, coordination, collaboration, or communication, and no failure to cooperate, coordinate, collaborate, or communicate, on any matter will affect or impair the respective rights and obligations of County and Design-Builder under the Design-Builder Contract. No failure by any one party to perform its obligations under this Article excuses any failure by another party to perform any obligation under other provisions of the Contract Documents, unless the obligation that the first party failed to perform is an essential predicate to performance by the second party. In such case, it is the second party's duty to make all reasonable efforts to perform its obligations.
- 2.1.6 The Design-Builder will interact and cooperate fully with County during the Design and Preconstruction and Construction Phases so as to keep the Work within County's budget and schedule limitations.
- 2.1.7 The Design-Builder agrees to furnish its best skill and judgment and to cooperate with County in furthering the interests of County. Design-Builder agrees to furnish efficient business administration and superintendence and to use its best efforts to timely complete the Work in an expeditious and economical manner consistent with the interests of County.
- 2.1.8 The Design-Builder and County, collectively the "Project Team", will cooperatively work together during all phases of the Work to achieve completion. The Design-Builder will provide leadership to the Project Team during the Design and Preconstruction Phase for all design, cost, schedule, or alternative systems issues, and all matters relating to construction. During the Design and Preconstruction phase the Design-Builder will provide to County a written evaluation of County's

Project Program and Project Budget and Schedule, each in relationship to the other with recommendations on the appropriateness of each.

- 2.1.9 The Contract Documents do not give any third party any claim or right of action against County or Design-Builder which does not otherwise explicitly exist in the Contract Documents.
- 2.1.10 The Design-Builder's initial Work consists of its services in connection with the Design and Preconstruction Phase. The Design-Builder's Services in that phase include the DP's Services. Design-Builder will prepare an itemized systems type cost estimate at the completion of the Schematic Design Phase, and at other times as agreed upon by the Project Team, in a format otherwise mutually agreed upon prior to the cost estimate preparation. Design-Builder will prepare Construction Specifications Institute (CSI) Master Formatted cost estimates at each submittal phase after the completion of Schematic/Conceptual Design, to verify that the Project is staying within the applicable portions of County's identified budget. Design-Builder will keep all Deliverables required of it up to date during the Design and Preconstruction Phase so that the Project activities will continue uninterrupted while progressing into the Construction Phase.
- 2.1.11 The Design-Builder will provide a GMP during the Design and Preconstruction Phase as required in **Section 3.2 of the Contract**.
- 2.1.12 Subject to the other provisions of these General Conditions, execution of the Contract by the Design-Builder is an assurance that the Design-Builder has visited the site, has become familiar with the locale and any specific conditions under which the Work is to be performed, and has correlated Design-Builder's personal observations with the requirements of County's Project criteria.
- 2.1.13 The Parties' intent is that the Contract Documents include all items and services necessary for the proper execution and completion of the Work. The Contract Documents are complementary, and what is required by any one is binding as if required by all. Work not covered in the Contract Documents but that the Design-Builder considers necessary for the proper completion of the Work will be required of Design-Builder unless it is inconsistent with the Contract Documents, or is not reasonably inferable therefrom as being necessary to produce the intended results. Words and abbreviations that have well known technical or trade meanings are used in the Contract Documents in accordance with their recognized meanings.
- 2.1.14 The organization of the Specifications into division, section, and article, and the arrangement of Drawings does not obligate or control the Design-Builder in dividing performance of the Work among subcontractors, or in establishing the extent of the Work to be performed by any one trade.
- 2.1.15 With respect to all Work performed by Design-Builder and its Subcontractors and Consultants, Design-Builder and its Subcontractors and Consultants will keep full and detailed accounts and exercise such cost controls as may be necessary for proper financial management, using accounting and control systems in accordance with generally accepted accounting principles and subject to review by County. During performance of the Work and for five years after Final Payment, the Design-Builder will retain and will also require all Subcontractors and Consultants to retain for review or audit, or both, by County all correspondence, meeting minutes, memoranda, electronic media, books, accounts, reports, files, time cards, material invoices, payrolls, and evidence of all communications, direct and indirect costs, and all other matters related to the Work. Upon request by County, Design-Builder will produce a legible copy or the original of any or all such records as are described above at any time during or after the Work. Upon request by County, the Design-Builder will submit to County copies of all payrolls, reports, estimates, records, Change Order costs and data, and any other data concerning Work performed or to be performed, materials supplied or to be supplied, including Subcontractor or Consultant payment applications or invoices and such Subcontractor's or Consultant's progress payment checks. The Design-Builder will include the requirements of this Article in all contracts between the Design-Builder and its Subcontractors and Consultants. County may exercise its rights under this Paragraph as often as reasonably necessary in County's sole judgment to assure County that it has a complete and accurate understanding of all Project costs.

2.2 DESIGN AND PRECONSTRUCTION SERVICES

The Design-Builder's primary responsibility during Design and Preconstruction is to apply its knowledge and experience to developing and keeping the design capable of being constructed within the budget and schedule. The Design-Builder must track costs on an ongoing basis and proactively advise County of lower cost or more effective means, methods, materials, design aspects, etc., or anytime when construction costs exceed, or threaten to exceed the budget, so the Project Team can take appropriate action.

- 2.2.1 The Design-Builder will develop a Construction Cost Model for the Project for County's review and approval. County will advise the Design-Builder in writing of the amount of County's Construction Budget. The Design-Builder will evaluate County's Construction Budget for cost realism and prepare construction cost estimates for the completion of the Work. Design-Builder's cost estimates must include all of the costs that will be included in the GMP, including labor, materials, general conditions, bonds, taxes, Design-Builder construction fee, Design-Builder's contingency, and all other GMP costs. Design-Builder with input from County will reconcile the differences between County's Construction Budget and the Design-Builder estimates, if any, to develop an agreed estimate for the cost of construction. If the agreed estimate exceeds County's Construction Budget, County, at its sole discretion, may (1) seek additional funding; (2) direct redesign or re-scoping of the Project to bring it within the available funding; or (3) any combination of 1 and 2; or (4) determine not to go forward with this Contract for all or part of the Project. Any adjustment to County's budget or scope must be in writing and approved by County.
- 2.2.2 Unless otherwise agreed to by County, County may retain or authorize Design-Builder to retain surveyors, engineers, or other consultants in connection with the following items, provided such information is specifically requested by County:
- a. A survey of existing site conditions. A complete and accurate survey of the Project site and existing improvements including, but not limited to, grades and lines of streets, pavements, and adjoining properties, contours of the site, and full information as to sewer, water, gas, electrical service, telephone lines, or other utilities.
 - b. A report on subsurface investigations. Professional recommendations regarding local conditions accompanied by test borings, or test pits, soil bearing values, percolation tests, air and water pollution tests, ground corrosion, and resistivity tests including necessary operations for determining subsoil, air and water conditions, and chemical, mechanical, laboratory, or other tests.
 - c. Design-Builder may recommend such additional geotechnical or investigative tests, such as potholing, as Design-Builder believes may be necessary to support construction on the site.
 - d. As-built information in possession of County concerning any existing improvements that will remain on the site and that will be incorporated into the Project, to which the Project will be attached, or with which the Project will be interconnected.
 - e. Other tests recommended by Design-Builder and agreed to by County.

In addition to the above information, the Design-Builder is responsible for obtaining information concerning conditions of the site required by law or typically obtained within the DP's industry to assess conditions for similar projects and will advise County of any such information so obtained that may be significant to the Project.

County will deliver to Design-Builder a copy of all available surveys, reports, test results, and other information described in Article 2.2.2. These items, any other information concerning the site delivered by County to Design-Builder, and all information Design-Builder is obligated to obtain on its own initiative are referred to as the "site Information". The Design-Builder will thoroughly acquaint themselves with all site Information.

By making each submission of any Design Submission Documents (including, without limitation, the Construction Documents) the Design-Builder represents and warrants to County that Design-Builder has examined and evaluated the site Information and has taken the site Information into account in preparing the Design Submission Documents.

The Design-Builder has the right to rely upon surveys, soil test reports, other test reports and other information provided by County, but only to the extent provided in said reports or information. The Design-Builder will carefully examine all surveys, soil test reports, other test reports and other information, whether obtained by the Design-Builder or County, and will promptly report to County any obvious or reasonably suspected errors, omissions, or inadequacies in such surveys, soil test reports, other test reports, and other information of which the Design-Builder becomes aware as a result of such examination or otherwise, and of any disagreement the Design-Builder may have with the conclusions of such surveys, soil test reports, other test reports, and other information. The Design-Builder's Consultants will make themselves available to the soils engineer and any other person retained by County to prepare any surveys, soils test reports, other test reports, or other information, for the purpose of reconciling such concerns.

2.2.3 The Design-Builder will submit to County all required Design Submission Documents to describe the Project's essential elements. The required Design Submission Documents required will include such drawings, specifications, and other documents as may be necessary to fully identify the Project scope and materials, together with the Design-Builder's Construction Cost Estimates. The Design-Builder will submit to County, detailed Construction Cost Estimates as part of each design submission. At the time of each scheduled submission, Design-Builder and County will meet and confer about the submission. During the meeting, the Design-Builder will identify, among other things, the evolution of the design and any significant changes or deviations from previously submitted Design Submission Documents and any changes in the Design-Builder's Construction Cost. Within three weeks following each design review meeting, County will approve or reject the Design Submission Documents, Design-Builder's Construction Cost Estimate. County may reject in full or in part any Design Submission Documents or Construction Cost Estimates (1) that do not conform to County's Project Criteria or overall Project concepts, (2) that exceed the Construction Budget, (3) are not within the Guaranteed Maximum Price, (4) are not consistent with the GMP Setting Drawings, Specifications, Assumptions, and Clarifications (unless the inconsistency was approved or requested by County), or (5) for any other reasonable cause consistent with the intent of the Design-Builder Contract Documents or the Design-Builder Contract Documents, as applicable. In the event of such rejection, the Design-Builder will bear the costs of redesign or of revising the construction costs estimates, unless the deficiencies upon which rejection is based are attributable to County-requested changes. All deviations from County's Project Criteria, the Construction Budget, the Guaranteed Maximum Price, or the GMP Setting Drawings, Specifications, Assumptions, and Clarifications must be approved in writing by County.

2.2.4 The Design-Builder will prepare a Project Management Plan (PMP), which will include:

- a. Project milestone dates and the Project Schedule, including the broad sequencing of the design and construction of the Project,
- b. Required and recommended investigations to be undertaken to ascertain subsurface conditions and physical conditions of existing surface and subsurface facilities and underground utilities,
- c. Alternate strategies for fast-tracking and/or phasing the construction,
- d. Permitting strategy,
- e. Cost estimate and basis of the cost model,
- f. Defined scope basis,
- g. Organization chart, and
- h. Procurement plan

The purpose of the PMP is to identify, coordinate, and record the tasks and activities to be performed by all of the Project Team members. The Project Team will utilize the PMP as a basis for managing and monitoring all members' compliance with the requirements of the Project. Project Team members are responsible for their compliance with the PMP requirements. A member's failure to complete a task does not excuse a subsequent failure by another member unless the first member's task is a direct prerequisite to the latter's performance provide, however, the latter team member must make reasonable efforts to mitigate impacts of the failure. Resolution of compatibility issues between the different tracking programs that may be used is the responsibility of the Design- Builder.

2.2.5 The schedule for performance of the Construction Work will be a CPM schedule with reasonable detail, including a time-scaled network and computer printout in accordance with the following requirements:

The Design-Builder will use scheduling software acceptable to County to develop the Project Schedule. The Project Schedule will be presented in graphical and/or tabular reports as agreed upon by the Project Team. If Project phasing, as described below, is required, the Project Schedule will indicate milestone dates for the phases, once determined.

The Project Schedule will provide three weeks for County to review Design Submission Documents at each sub-phase of the Design Phase and provide adequate time for Government Agency reviews and all other necessary approvals and permits. The Project Schedule will indicate the dates for the start and completion of the various stages of the Project, including, among others, 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). Design-Builder will update and reissue the Project Schedule throughout the Design Phase and the Construction Phase, as necessary and appropriate to reflect adjustments in the schedule. Updates will be subject to approval by County

The Project Schedule will be in Days (five days constitutes one week, otherwise directed by County) and indicate task duration (earliest start/latest completion) for all activities. Float times for all activities will be shown. The CPM diagram will be presented in a time scaled graphical format for the Project as a whole.

The Project Schedule must indicate all relationships between activities.

The activities making up the Project Schedule will be in sufficient detail to assure that adequate planning has been done for proper execution of the Work so that it provides an appropriate basis for monitoring and evaluating progress of the Work.

The activities upon which the Project Schedule is based will coincide with the Schedule of Values.

The Project Schedule will show all submittals associated with each Work activity and the review time for each submittal.

The Project Schedule will show milestones, including milestones for all Project Team members.

The Project Schedule does not include anticipated rain delays. This will be addressed during the construction of the project.

Throughout the Design Phase, Design-Builder will provide updates and/or revisions to the Project Schedule for use by the Project Team, whenever required, but no less often than monthly. The Design-Builder will add detail to previous version of the Project Schedule to keep it current throughout the Design Phase, so that the Project Schedule is ready for implementation at the start of the construction phase. The update/revisions will include:

- a. A narrative showing progress to-date vs. planned
- b. The fast-tracking of any of the construction, or other chosen construction delivery methods
- c. Illustrate the requisite number of separate bidding/permit packages for advertisement.
- d. The status of the procurement of long-lead time equipment and materials

As phased construction is deemed appropriate for this project, and County and Design-Builder approve, Design-Builder will review the design and make recommendations regarding the phased issuance of Construction Documents to facilitate phased construction of the Work, with the objective of shortening the Construction Time and/or reducing the Cost of the Work. The Design-Builder will take into consideration such factors as natural and practical lines of Work severability, sequencing effectiveness, access and availability constraints, total time for completion, construction market conditions, labor and materials availability, effect on traffic or public access, and any other factors pertinent to saving time and cost. Design-Builder will adjust the Project Schedule to allow for phased construction or for portions of the Construction Work to be accepted separately by County, if required by County.

2.3 DESIGN PHASE AND GMP

- 2.3.1 Design-Builder will continuously and actively track Project costs throughout the design phase, will proactively advise County, and will make recommendations relating to construction costs and concerns regarding the feasibility and practicality of any proposed means and methods, selected materials, equipment, building systems, and labor and material availability, and long-lead items. Design-Builder will further advise County regarding proposed site improvements, excavation, utility coordination, traffic control and public access, or other issues, as well as any concerns regarding the coordination of drawings and specifications. Design-Builder will advise County any time that a design revision results in the Design-Builder's estimate of the Cost of Construction exceeding County's construction budget.

2.3.2 Program Verification/Schematic Design

- a. The Design-Builder will review County's Project Criteria to ascertain the basic requirements for the Project.
- b. The Design-Builder will prepare an expanded Project Program for review by County and for County's approval, which expands and refines the Project Criteria. The Program shall contain all space needs necessary for the operation of the facility including FFE. The description will include all site conditions affecting the Project, including utilities, drainage and flood control implications, and other requirements specified by County. County will promptly review the Program Document and approve, approve with comments or reject the document.
- c. The Design-Builder will develop a Schematic Design Submission for review by County. The submission shall include at a minimum site plan, floor plan, ceiling plan, roof plan, building elevations and sections and the preliminary calculations to understand utility requirements, metal building requirements, equipment selections, geotechnical requirements and other information necessary to develop the estimated cost of construction.
- d. The Design-Builder will develop and submit to County a conceptual Construction Cost Estimate.
- e. Depending upon the stage of the Project at the inception of this Contract, County, in its sole discretion, may decide to forgo performance of the activities under this Paragraph 2.3.2 in whole or in part without liability to Design-Builder.

2.3.4 Construction Documents

The Design-Builder will review the Schematic Design with County, solicit and receive comments and recommendations from County, confirm County's understanding of the subject matter, determine any additional, modified or alternative requirements, and obtain County's approval.

Based on the Schematic Design documents and any amendments thereto approved by County to the Project or the amount of County's Construction Budget, the Design-Builder will prepare 30%, 60%, and 90% Construction Documents for review with County and the Design-Builder and for County's approval. The CDs will consist of drawings and other documents to delineate and define the general design of the entire Project.

The Design-Builder for each submittal shall submit a Construction Cost Estimate for review and approval by County. The Design-Builder with County shall reconcile the estimate with County's construction budget and modify the design to meet the budget.

2.3.5 Final Construction Documents

Based upon the approved 90% Construction Documents and any further amendments thereto of any kind approved by County, the Design-Builder will prepare detailed Final Construction Documents setting forth the requirements for construction of the entire Project, including complete Drawings, Specifications, calculations and reports and any other information required for the building and other construction permits. If the GMP(s) is agreed to approved prior to the final CDs then a cost evaluation shall be provided. The Design-Builder must be aware of, and conform to, the **order of precedence provisions in Article 2.6.12.3**. The Construction Documents are subject to review and approval by County.

If the GMP has been agreed by County and Design-Builder before completion of the Construction Documents, the Construction Documents will be subject to review by Design-Builder for conformance with the GMP Drawings, Specifications, Assumptions, and Clarifications as provided in **Sections 3.2 to 3.5**.

All drawings and specifications included in the Construction Documents must bear the dated signature and seal of the Design-Builder's DP. The Design-Builder's is fully responsible for all designs it provides for the Project.

County will submit the Design-Builder's documents for the Building Construction Permit thru Pima County Development Services Department and the Arizona State Fire Marshal. The Design-Builder will be responsible for all other permits including those of a temporary nature required for the construction and related to the means and methods of the Design-Builder's construction plan. County will cooperate with the Design-Builder in preparing applications for necessary approvals, sign applications, and pay applicable fees. The Design-Builder will also assure that the Project meets all applicable statutory requirements for public works of the nature of the Project.

2.3.6 Design-Builder's Construction Cost Estimates

Each Design-Builder Construction Cost Estimate will include without duplication:

- a. All labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for the proper execution and completion of the Construction Work, whether temporary or permanent, and whether or not incorporated or to be incorporated in the Construction Work. All fixed equipment, site improvements, utility and utility relocations, and equipment installations will also be included.
- b. General Conditions;

- c. The Construction Phase Fee;
- d. All bond and insurance premiums;
- e. All applicable taxes, including, without limitation, applicable sales taxes and transaction privilege tax; and
- f. Contingency as applicable.

The Design-Builder Construction Cost Estimates will include the costs of the Construction Work and will not include the Design-Builder's Design Phase Services Fee, Preconstruction Fee, costs of land, rights of way, financing, or other costs which are the responsibility of County. Design-Builder's allowable labor rates within rates or part of Construction General Conditions are restricted to direct labor costs, *i.e.*, actual salaries/wages plus associated costs required by statute or regulation (social security, Medicare employee's match, unemployment, etc.) and employee benefits (vacations, health insurance, etc.). Non-Project specific training costs, bonuses, cost of living allowances, education, and training are not allowable labor costs and are not reimbursable. Promotional or celebratory expenses the Design-Builder incurs while performing and completing the Project are not reimbursable as part of Construction General Conditions and must be paid out of the Design-Builder Construction Phase fee.

The Design-Builder will base each of their Construction Cost Estimates on the latest Design Submissions Documents. The Design-Builder will discuss the materials, equipment, component systems, and types of construction contemplated by the Design-Builder to the extent such items are not in the latest Design Submission Documents.

The Design-Builder, prior to and in preparing its estimates of Construction Costs and providing the GMP, will determine to the extent possible what materials, equipment, component systems, and types of construction are to be included in the Construction Documents and to make recommendations for reasonable adjustments in the Scope of Work, and to include in the Construction Documents such alternate items as County approves in writing.

The Design-Builder will take the lead in developing a cost model, preparing an estimate of Construction Cost as soon as major Project requirements have been identified, and updating the cost model and estimate for each submittal of the Design Submission Documents specified in 1.2.14 of the General Conditions. For all Bid Packages for Construction, the Design-Builder will prepare a quantity take-off cost estimate based on CSI formats. All estimates of Construction Cost must make allowance for bidding and price escalation. During the Preconstruction Phase, the Design-Builder will continually monitor the cost estimates and develop a cost estimate to help assure that the Cost of the Work remains within the applicable portion of the Project Budget or GMP, as applicable. No Construction Services or

Work to be performed under the Contract will commence until a GMP is established by the Design-Builder, submitted and accepted by County, and incorporated into this Contract by Contract Amendment.

All Design-Builder cost estimates will be based on quantitative takeoffs whenever possible, and will be completed in sufficient depth and organization to be used in preparing budgets based on sub-trades, combinations of sub-trades, building systems (if any), and Bid Packages. Lump sum estimates are not acceptable.

All Design-Builder Construction Cost Estimates will use a consistent method of allocating costs of the Construction Work, will follow the standard construction format, and will otherwise be in a form agreed to by County.

After County and Design-Builder agree on a GMP and in any event during the Construction Documents sub-phase of the Design Phase, Design-Builder will continually monitor costs and develop cost estimates to help ensure that the cost of the Construction Work remains within both County's Construction Budget and the GMP.

In the event the reconciled Cost Estimates are not within County's Construction Budget or GMP, the Design-Builder will:

- a. Notify County if it appears that the Design-Builder's Construction Cost Estimate will exceed County's Construction Budget or the GMP.
- b. Satisfactorily demonstrate the accuracy of its estimate in such detail as County may reasonably require.
- c. Make reasonable recommendations for corrective action to bring the estimates back within County's Construction Budget or the GMP, if the estimates exceed County's Construction Budget.

The overall design objective is to develop a design that can be constructed for an amount within County's Construction Budget. If, in connection with any submission of Design Submission Documents and Cost Estimates, the Cost Estimates exceed County's Construction Budget, then the costs of redesign and of revising the cost estimates will be allocated as follows:

- a. If the excess costs of the Design Submission Documents are attributable to County - directed design choices, unanticipated significant materials cost increases or other unforeseen market dislocations, or other causes beyond the control of Design-Builder, then the costs of revision will be the responsibility of County.
- b. If the excess costs are attributable to unapproved deviations from County's Final Schematic Design Report or County determines design choices unreasonable or negligent, then the costs of revision will be the responsibility of Design-Builder.
- c. If the excess costs are attributable to the application of unsubstantiated deviations from the cost model by Design-Builder, then the costs of revising the costs estimates will be the responsibility of Design-Builder.
- d. If the excess costs are attributable to any combination of the causes identified above, then the costs of design and or cost estimate revision will be allocated to each party in the percentage by which their cause contributed to the excess.
- e. In the event the excess costs are attributable to an unanticipated cause not identified above, then the costs of revision will be the responsibility of County.
- f. If the Parties are unable to agree on causation or the allocation of costs, then County will make a determination with respect thereto and provide a copy of the determination in writing to each of the other parties. County's determination will be final and conclusive unless, within seven calendar days from delivery of County's determination, the party or parties objecting to County's determination notifies each of the other parties in writing that they are initiating the Dispute Resolution procedure of the Contract. The notice will include a brief statement of the basis for the initiating party's objection to County's determination.

2.3.7 Budgeting and Guaranteed Maximum Price

- 2.3.7.1 The Design-Builder will provide its Design and Preconstruction Services for the Design and Preconstruction Phase Fee identified in the Contract. That fee will be earned based upon the amount of Design and Preconstruction Phase Work completed. That fee will be billed and payable monthly as a percentage of completion of Design and Preconstruction Services. The Construction Phase services of Design-Builder will be

provided based upon an Open Book Cost of the Work, plus the separate Construction Phase Fee for Design-Builder identified in the Contract.

- 2.3.7.2 As provided for in the Contract and when the design has sufficiently progressed, County will require the Design-Builder to propose a GMP for the construction that is to be based on the Cost of the Work. The GMP will be prepared in accordance with these Sections 2.3.7.2 and **Appendix B Construction Costing**.
- 2.3.7.3 County may accept the GMP submitted by Design-Builder, request that Design-Builder submit another GMP, or reject the GMP and terminate all contracts and agreements with the Design-Builder. In the event of such a termination, the Design-Builder will receive payment for services it has provided to date. In this situation, there will be no amounts paid for any termination cost, lost profits, lost opportunity or any other reason.
- 2.3.7.4 Once accepted by County, the GMP may be revised only by an approved Change Order or Contract Amendment.
- 2.3.7.5 In the event the Design-Builder elects, in its sole discretion, to maintain a construction contingency within the GMP, the criteria for the development of that contingency must be acceptable to County.

Thereafter, the Design-Builder must inform and receive approval from County of any intended usage of the contingency, with supporting itemized schedule and pricing documentation, to maintain complete records and confirm its appropriate use for the Project.

2.3.8 Intentionally Omitted

2.3.9 Other Preconstruction Services

- 2.3.9.1 The Design-Builder will review the Drawings and Specifications as they are being prepared, recommending alternative materials, alternatives, methods, means, constructability, and/or sequencing whenever design details affect construction feasibility, schedules, or cost.
- 2.3.9.2 The Design-Builder will make recommendations to County regarding the division of work in the Drawings and Specifications to facilitate the bidding and awarding of subcontracts, allowing for phased construction, if applicable, taking into consideration such factors as time of performance, availability of labor, overlapping trade jurisdictions, provisions for temporary facilities, and similar factors.
- 2.3.9.3 The Design-Builder will provide a written Constructability Review of all Drawings and Specifications, in a form acceptable to County. The Constructability Review will (a) minimize areas of conflict, errors, omissions, and overlapping of the Work to be performed by the various subcontractors; (b) confirm that the full Scope of Work has been included in the drawings; (c) endeavor to minimize cost and to Value Engineer where appropriate; and (d) allow for phased and/or fast-track bid packages and construction, as required. An acceptable and effective Constructability Review is a goal for the Design-Builder and County.
- 2.3.9.4 The Design-Builder will schedule and attend all regular meetings with County and the Design-Builder shall attend all meetings as part of the Design-Builder team. County will schedule all additional meetings.
- 2.3.9.5 The Design-Builder will investigate and recommend materials and equipment that County could purchase directly; consider long lead time procurement and mass purchasing power in making such recommendations; recommend a schedule for such purchases after coordination with the Design-Builder regarding the timetable for preparation of Construction Documents; and expedite and coordinate delivery of these purchases to facilitate their delivery by the required dates.

2.3.9.6 If County determines that Building Information Modeling (BIM) objectives will benefit the Project and it is or will be to the advantage of County or the Project to select certain subcontracting trades to participate in the design process during the Design and Preconstruction Phase, as well as provide Construction Services during the Construction Phase, then the following procedures will apply:

- a. Design-Builder will prequalify Subcontractors from the trades needed in the Preconstruction Phase.
- b. Upon acceptance of County, a Request for Proposal (RFP) will be requested from pre-qualified Subcontractors. The RFP will request additional qualification information in addition to pricing information, such as labor rates and overhead and profit factors.
- c. The Statement of Qualifications (SOQ) from the Subcontractors will be reviewed by a committee consisting of Design-Builder and County team members. The qualification and pricing information will be scored by a pre-determined weighted scoring system.
- d. The committee will develop a list of firms and determine if interviews are required and conduct the interviews.
- e. The Subcontractors will be ranked, and the highest ranked Subcontractor will be selected to provide the services.
- f. All Subcontractor selections will be in accordance with A.R.S. 34-603(C)(2)(e)(i) and Design Builder's Subcontractor Selection Plan.

For Subcontractors selected in this manner, the Design-Builder must establish to County's satisfaction that the Subcontractor's price submission is reasonable and appropriate by following the procedures outlined for the Design-Builder in Article 2.3.9.11 and 2.3.9.12.

2.3.9.7 The Design-Builder will: assist County in the preparation of the necessary and appropriate bidding information, bidding forms, and pre-qualification criteria for bidders; develop subcontractor interest; establish bidding schedules; advertise for bids; and conduct pre-bid conferences to familiarize bidders with the bidding documents and management techniques and with any special systems, materials, or methods. The Design-Builder will review all potential subcontractors with County and obtain County's approval of the pre-qualification of any subcontractor. If the Design-Builder becomes aware prior to any bid date that fewer than three pre-qualified subcontractors plan to bid any portion of any Bid Package or that anticipated bids from previously approved or pre-qualified subcontractors are likely to exceed the current Schedule of Values or estimate of Construction Cost, the Design-Builder will promptly notify County.

2.3.9.8 The Design-Builders post-bid selection of any subcontractor must be based on qualifications alone, or on a combination of qualifications and price selection, but will not be based on price alone. The Design-Builder will receive and open bids when advertised, prepare a bid analysis, conduct pre-award conferences, and notify County concerning which bids from pre-qualified subcontractors will be accepted and awarded. The Design-Builder will notify County of the time and place of all bid openings and will permit County to attend such openings with their representatives and guests. Design-Builder will justify in writing any proposal to accept other than a low lump sum bid with sufficient detail to satisfy County, and the proposal will be subject to prior written approval by County, with no increase in the GMP. Once approved by County, Design-Builder may not replace any subcontractor without County's prior approval and any change in cost to Design-Builder will not be a responsibility of County and there will be no increase in GMP or contract price by reason of such change of subcontractor. Within

10 days after award, Design-Builder will furnish one fully executed subcontract for work or services on this Project to County together with all special or supplementary conditions applicable to the subcontract work.

2.3.9.9 The Design-Builder will provide County with requirements and assignment of responsibilities for safety precautions and programs as required for the execution of the Work, temporary Project facilities and for equipment, materials and services for common use of subcontractors and verify that all such information is included in the Construction Documents.

2.3.9.10 If the Design-Builder indicates it desires to self-perform any portion of the Construction Work, the following procedures will be followed: The Design-Builder must submit its qualifications to do the listed portion(s) of the Construction Work to County and if County is satisfied with Design-Builder's qualifications as to that portion of the Construction Work, County will designate the Design-Builder as a pre-qualified Subcontractor for that portion of the Construction Work. A bid package for each portion of the Construction Work as to which Design-Builder is a pre-qualified Subcontractor will be prepared in the same manner and content as bid packages for Subcontractors in other trades. Design-Builder will submit a proposed price for each of these portions of the Construction Work. This proposed price will include labor rates and certify that sub-sub trades and materials will be bid with a minimum of three pre-qualified bidders.

2.3.9.11 In order to evaluate the Design-Builder's Price Submission on self-performed Work, County may do any or all of the following: (i) engage an estimator selected by County to prepare an independent estimate of this portion of the Construction Work; (ii) engage other consultants to do a construction market study to confirm construction market impacts to the cost of this portion of the Construction Work; or (iii) take other action to evaluate the Design-Builder's Price Submission. In any event, Design-Builder is responsible to establish to County's satisfaction that the Design-Builder's Price Submission is reasonable and appropriate. If County is satisfied that the Design-

Builder Price Submission is reasonable and appropriate, County will advise the Design-Builder that the Design-Builder is selected as Subcontractor for the respective portion of the Construction Work.

2.3.9.12 If at the conclusion of the review of the Design-Builder proposed price for self-performed work, County is not satisfied that the Design-Builder's Price Submission is reasonable and appropriate, County will so advise the Design-Builder and the Design-Builder will conduct a normal Subcontractor bid competition for selection of the Subcontractor to perform this portion of the Construction Work, in accordance with the procedures in Article 2.3.9.7, except that, notwithstanding any other provision of the Design-Builder Design Phase Services Contract Documents to the contrary, (i) the Design-Builder's Price Submission will be the Design-Builder's bid for that portion of the Construction Work in the Subcontractor bidding process; (ii) the Design-Builder must obtain bids for that portion of the Construction Work from a minimum of two other pre-qualified Subcontractors; (iii) the Subcontractor bids for that portion of the Construction Work must be delivered to County rather than the Design-Builder; and (iv) County will decide which Subcontractor bids to accept, in accordance with Article 2.3.9.8.

2.4 LEGAL REQUIREMENTS.

Design-Builder will perform all Work in accordance with all applicable Legal Requirements as described in Article 1.2.22 and otherwise will provide all notices applicable to the Work. It is the responsibility of the Design-Builder during the Design and Preconstruction Phase to assist County to ascertain that the Construction Documents under preparation are in compliance with all applicable laws, statutes, ordinances, building codes, rules, and regulations.

2.5 GOVERNMENTAL APPROVALS AND PERMITS

Unless otherwise provided in the contract documents County will obtain and pay for the building permit, Fire Marshal permit, utility permit applications and costs. The Design-Builder will assist in provided the necessary documents to obtain the permits and will assist in any coordination, corrections, etc. to obtain the permits. The Design-Builder will provide and pay or all temporary construction permits required for the construction means and methods such as dust control permits, NESHAP, etc. and include in the GMP.

2.6 DESIGN-BUILDER'S CONSTRUCTION PHASE SERVICES

- 2.6.1 Unless otherwise provided in the Contract Documents to be the responsibility of County or a separate Contractor(s), Design-Builder's construction phase services will include: team management and coordination, scheduling, cost controls and Change Order management, submittal process management, subcontracting, field management, safety program, closeout process, and warranty period services. This responsibility includes providing, through itself or its Subcontractors, all necessary supervision, labor, inspection, testing, start-up, material, equipment, machinery, temporary utilities, and other temporary facilities needed to complete construction of all Work consistent with the Construction Documents.
- 2.6.2 Design-Builder will perform all construction Work, services, and activities efficiently and with the requisite expertise, skill, quality, and competence necessary to satisfy the requirements of the Contract Documents. Design-Builder will at all times exercise complete and exclusive control over the means, methods, sequences, and techniques of construction.
- 2.6.3 Design-Builder will only employ Subcontractors (of any tier) who are properly licensed and fully able and committed to performing the Work in compliance with the Construction Documents and with the same degree of skill, quality and competence as Design-Builder.
- 2.6.4 Design-Builder is fully responsible for the work of its Subcontractors and any of their acts and omissions in connection with the performance of their work. Nothing in the Contract Documents creates any legal or contractual relationship between County and a Subcontractor (of any tier). In addition, nothing in the Contract Documents creates any third-party beneficiary rights.
- 2.6.5 Design-Builder is responsible for coordinating the activities and Work of all Subcontractors. If County is performing other work with separate Contractors under County's control, Design-Builder agrees to cooperate and coordinate its Work with the work of County's separate Contractors so that the Project can be completed in an orderly, efficient, and coordinated manner reasonably free of significant disruption to any party.
 - 2.6.5.1 County reserves the right to award other contracts related to the Project, or to perform certain portions of the Work itself. Any such other work may or may not be known to County or disclosed to the Design-Builder prior to execution of the Contract. The Design-Builder will afford County and such 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 work with theirs in such manner as County may direct. The Design- Builder will also assure at its own cost reasonable access of other contractors to their site and their work.
 - 2.6.5.2 The Design-Builder with the DP as part of their team will provide Drawings, Specifications, Schedules or other needed data relating to such other contracts or work as may be necessary to meet Design-Builder's duty to coordinate. The Design-Builder will thoroughly examine these documents and within three work days of completing such examination will notify County in writing of any conflicts with the Work to be performed by the Design- Builder. In no event will such notice be given by Design-Builder so late as to interfere with or delay the Work to be performed by the Design-Builder. Failure of the Design-Builder to request, review, or provide written notice as provided above constitutes a waiver of any objections or claims the Design-Builder may otherwise have as a result of the necessity to coordinate the Design-Builder Work with other activities.

- 2.6.5.3 Should the Design-Builder sustain any damage through any act or omission of any other contractor or subcontractor, Design-Builder has 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 or subcontractor. The phrase "act or omission" as used in this section includes, but is not limited to, any delay on the part of any such other contractor or subcontractor, whether due to negligence, gross negligence, inadvertence, or any other cause.
- 2.6.5.4 Should the Design-Builder cause damage to the work or property of any other contractor or subcontractor of County, the Design-Builder will upon receiving due notice of damage promptly attempt to settle with such other contractor by contract, repair, or otherwise to resolve the dispute. If any such separate contractor sues or initiates a proceeding against County on account of any damage alleged to have been caused by the Design-Builder or its subcontractors, County will notify the Design-Builder who will at its own cost indemnify and defend County in such proceedings, or pay the costs of County defending such proceedings, and if any judgment or award against County arises therefrom, the Design-Builder will pay or satisfy it and will reimburse County for all attorney's fees and court or other costs which County has incurred in connection with the matter.
- 2.6.6 Design-Builder will keep the site free from debris, trash, and construction waste to permit Design-Builder to perform its construction services efficiently, safely, and so as not to interfere with the use of any adjacent land areas, including the reasonable aesthetic appearance of the jobsite and all storage and staging areas. Design-Builder is also responsible for and will take precautions and measures to fully secure, safeguard, and protect the Work during the Construction Phase. Unless previously released of responsibility by County, Design-Builder's responsibility to secure, safeguard, and protect continues until final completion and acceptance.
- 2.6.7 Prior to Substantial Completion of the Work, or a portion of the Work, Design-Builder will remove all debris, materials, waste, equipment, machinery, and tools from the Work so as to permit County to safely occupy the Work or a portion of the Work for the use for which it is intended.
- 2.6.8 CONTROL OF THE WORK
- 2.6.8.1 The Design-Builder will supervise and direct the work of its employees and Subcontractors and coordinate the work with the activities and responsibilities of County so as to complete the Work in accordance with County's objectives of cost, time, and quality as set forth in the Contract Documents.
- 2.6.8.2 The Design-Builder will establish an on-site organization with lines of authority in order to carry out the overall plans for completion of the Work.
- 2.6.8.3 The Design-Builder will schedule, notice, conduct, and take and distribute minutes of weekly progress meetings at which County, and Design-Builder can discuss jointly such matters as procedures, progress, and problems.
- 2.6.9 DAILY LOG
- 2.6.9.1 The Design-Builder will maintain a daily log of construction activities for each calendar day of the Contract Time. In that log, the Design-Builder will document all activities at the Work site, including, but not limited to:
- a. Weather conditions showing the high and low temperatures during work hours, the amount of precipitation received on the job site, and any other weather conditions which adversely affect work at the site;
 - b. Soil conditions which adversely affect work at the site;

- c. The hours of operation by Design-Builder and individual Subcontractor personnel;
- d. The number of Design-Builder and Subcontractor personnel present and working at the site, by subcontract and trade, and updated schedule activity number;
- e. The equipment active or idle at the site;
- f. A description of the work being performed at the site by updated schedule activity number;
- g. Any delays, disruptions or unusual or special occurrences at the site;
- h. Materials received at job site; and
- i. A list of all visitors at the site.
- j. Any other relevant information as to activities on the site that day.

2.6.9.2 The Design-Builder will provide copies of the daily logs to County on a weekly basis. The daily log does not constitute written notice to County of any event or occurrence when such notice is required by the Contract Documents.

2.6.9.3 Any changes affecting previously approved work requires prior written approval of County.

2.6.10 SUPERVISION AND CONSTRUCTION PROCEDURES

- 2.6.10.1 The Design-Builder will supervise and direct the Work using the Design-Builder's best skill and attention. The Design-Builder is solely responsible for the coordination and accomplishment of all portions of the Work under the Contract Documents.
- 2.6.10.2 Design-Builder is responsible to County for the acts and omissions of Design-Builder's employees, Subcontractors of all tiers, their agents and employees, and any other persons performing any of the Work or furnishing materials under a contract with the Design-Builder.
- 2.6.10.3 The Design-Builder will not be relieved from its obligation to perform the Work in accordance with the Contract Documents either by the activities or duties of the Design-Builder in its administration of this Contract, or by inspections, tests, or approvals required or performed by persons other than the Design-Builder. Nothing contained in this paragraph precludes the Design-Builder from asserting any rights it may have under this Contract in the event of unreasonable delays to the Design-Builder in the conduct of any inspections, test, approvals, or other actions by the DP upon which Design-Builder's schedule depends.
- 2.6.10.4 The Design-Builder will employ a competent County-approved Superintendent and necessary assistants, who will be in attendance at the Project site during the progress of the Work. The Design-Builder will also employ a County-approved additional staff, such as project engineer, as may be reasonably required and appropriate to the stage of construction work. Once designated, the Superintendent and other staff of Design-Builder will not be changed except with the prior consent of County, unless the Superintendent or Representative proves to be unsatisfactory to the Design-Builder or ceases to be in its employ. The Superintendent and on-site staff will represent the Design-Builder and all communications given to the Representative are binding on the Design-Builder. All such communications will be confirmed in writing by Design-Builder.
- 2.6.10.5 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

Work of any unfit person or anyone not skilled in and capable of performing the task assigned to them.

2.6.10.6 The Design-Builder will at all times allow County, or any other designated representatives access to the construction work to observe progress and inspect the quality of work and conformance to the Construction Documents.

2.6.10.7 Any Work required to be inspected by County prior to being covered, which is covered up without prior inspection or without prior consent of County, must be uncovered by the Design-Builder, if requested by County, and then re-covered at no cost to County, notwithstanding the provisions of the following subsection. Design-Builder will notify County in writing at least 48 hours prior to the time at which County must be present to perform an inspection. Failure to provide such notice makes the Design-Builder solely responsible for all consequences of non-inspection and any required access to or uncovering of such Work.

2.6.11 ADMINISTRATION

2.6.11.1 Except as may be expressly provided to the contrary in the Contract Documents, the Design-Builder's Representative will forward all communications in writing and all documents simultaneously to County's Representative as listed below:

Design-Builder's	County's
Representative:	Representative:
(NAME)	(NAME)

2.6.12 DRAWINGS AND SPECIFICATIONS

2.6.12.1 The DP is an agent of the Design-Builder under this contract. The DP shall be responsible for providing the design documents with the competency and care as a technical registrant in the State of Arizona. Any DP members not under the jurisdiction of the State of Arizona shall meet the standards of any professional organization related to the field within their scope of services. The Design-Builder will study and compare the Construction Documents prior to beginning Work on each phase or portion of the Work and immediately report any material error, inconsistency, conflict, ambiguity, or omission that is discovered to the DP and County.

2.6.12.2 The Construction Drawings are intended to show general arrangements, design, and extent of Work and are not intended to serve as Shop Drawings. Where required, the Design-Builder will perform no portion of the Work without having Shop Drawings, Product Data, or Samples approved; any Work performed in violation of this provision will be solely at the Design-Builder's risk regardless of County's knowledge of such Work being performed.

2.6.12.3 In the event of any conflict or ambiguity, the Construction Documents will be interpreted as being complementary, requiring delivery by Design-Builder of a complete Project, or designated portion thereof. Any requirement occurring in any one of the Construction Documents is as binding as though occurring in all Construction Documents. In the event of any conflict or ambiguity, perceived or real, the Design-Builder will provide an interpretation before performing the Work. 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 a conflict is discovered in the Construction Documents, the priorities stated below govern and control:

- a. Addenda govern over all other Construction Documents;
 - b. Subsequent addenda govern over prior addenda, but only to the extent modified;
 - c. In case of conflict between Drawings and Specifications, the Specifications govern;
 - d. Conflicts within the Drawings:
 - (1) Schedules, when identified as such, govern over all other portions of the Drawings.
 - (2) Specific notes govern over all other notes and all other portions of the Drawings, except the schedules described in 2.6.12.3(d)(1) above.
 - (3) Larger scale drawings govern over smaller scale drawings.
 - (4) Figured or numerical dimensions govern over dimensions obtained by scaling.
 - e. Conflicts within the Specifications: These General Conditions govern over all sections of the Specifications except for specific modifications thereto that may be stated in Special Conditions or addenda. No other section of the Specifications modifies these General Conditions; and
 - f. In the event provisions of codes, safety orders, Construction Documents, referenced manufacturer's specifications or industry standards are in conflict, the more restrictive or higher quality governs.
- 2.6.12.4 In the event of conflict between County's Technical Standards and the Drawings and Specifications, Design-Builder will promptly call the conflict to the attention of County and will defer the use of such Drawing until resolution of the conflict to County's satisfaction.
- 2.6.12.5 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 an implied requirement of the Construction Documents in accordance with such standard. A "minor detail" includes (a) 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 includes a single component which is incidental, even though its cost or importance may be substantial; and (b) the quality and quantity of the parts or materials 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.

2.6.13 SUBMITTALS, DRAWINGS AND SHOP DRAWINGS

- 2.6.13.1 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. The Design-Builder at the time of Substantial Completion will turn these over to County for use by County.

- 2.6.13.2 The Design-Builder will submit, with such promptness as to cause no delay in its work or in the work of any other Contractor, all Submittals and Shop Drawings as are required by the Construction Documents, or are necessary to illustrate details of the Work.
- 2.6.13.3 Each Submittal and Shop Drawing must be accompanied by a Design-Builder transmittal letter containing a list of the titles and numbers of the Shop Drawings. Each series must be numbered consecutively for ready reference. Each Submittal and Shop Drawing will be marked with the following information:
- a. Date of Submission
 - b. Name of Project
 - c. Location of Project
 - d. Branch of Work (Specification Section)
 - e. Project Number
 - f. Name of Submitting Design-Builder
 - g. Name of Subcontractors
 - h. Revision Number

County will identify Submittals that must be submitted to County for its review. During Construction Phase Design-Builder will promptly provide County with an electronic copy of all approved submittals.

- 2.6.13.4 The Design-Builder will review all Subcontractor Submittals and Shop Drawings prior to being submitted to the County and each must bear a written statement by the Design- Builder that the Submittals and shop drawings are consistent with the Construction Documents and other Contract Documents or, if not totally consistent, they must bear a written statement indicating all variances from the Construction Documents and other applicable Documents. Any submittals or shop drawings submitted without the statements will be returned for resubmission; the submittals or shop drawings will be considered as not having been submitted; and any delay caused thereby is the Design- Builder's sole responsibility. This review by Design-Builder of Subcontractor submittals and shop drawings is not Design-Builder approval of the design therein except that it is a representation that the letter accompanying the submittal or shop drawings does indicate all variations from the Construction Documents and other Contract Documents as required by Article 2.6.13.5.
- 2.6.13.5 The Design-Builder will include with Submittals and Shop Drawings, a letter indicating all variances from the Drawings and Specifications. Failure to so notify the County of such variances will be grounds for subsequent rejection of the related Work or materials. If, in the opinion of the County, the variances are not acceptable, the Design-Builder must furnish the item as specified or as indicated on the Construction Drawings.
- 2.6.13.6 The Design-Builder must check all of its Submittals and Shop Drawings and be fully responsible for them and for coordination with connecting Work. Submittals and Shop Drawings must indicate in detail all parts of an item of Work, including erection and setting instructions and engagements with work of other trades or other separate Contractors.

- 2.6.13.7 By the act of reviewing or submitting to County Submittals or Shop Drawings, the Design-Builder represents to County 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 Work and of the Construction Documents. If any specified material item or part is not available, the Design-Builder must so indicate to County.
- 2.6.13.8 The County will review and approve Submittals and Shop Drawings and return them to the Design-Builder within 20 calendar days of receipt unless otherwise previously agreed in writing. For scheduling purposes, the Design-Builder must assume a 20-day review period for each Submittal or set of Shop Drawings, and 10 calendar days for resubmittals, except for complex submittals identified by the County as having significant deficiencies, in which event the resubmittal turnaround time will be within 20 calendar days. If review and approval are delayed beyond 20 calendar days, the County will notify the Design-Builder and County in writing stating the reason for the delay. Reviews of submittals and shop drawings by the County are the responsibility of the Design-Builder under this Design-Build Contract and any delays associated with the review are not the responsibility of County. Approval does not relieve the Design-Builder from the responsibility for variances from the drawings and specifications, unless it has been called to the 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 affect an improvement in the Work and does not increase the GMP or Contract Time. Any such modification is subject generally to all other provisions of the Construction Documents, and is without prejudice to any and all rights under any surety bond.
- 2.6.13.9 If the County returns a Submittal or Shop Drawing to the Design-Builder with the notation "rejected", "revise and resubmit", or "approved as noted", the Design-Builder, so as not to delay the Work, will promptly resubmit a Submittal or Shop Drawing conforming to the requirements of the Construction Documents 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. Design-Builder will also indicate any other differences between the resubmittal and the prior submittal on the Shop Drawing and on the resubmittal as a special note.
- 2.6.13.10 No extension of Contract Time will be granted to the Design-Builder because of its failure to submit Submittals or Shop Drawings in ample time to allow for review, possible resubmittals, and approval. Fabrication of Work will not commence until the Design-Builder has received written approval. The Design-Builder will furnish prints of its approved Submittals and Shop Drawings to all the Subcontractors whose work is in any way related to those Submittals or Drawings. Only prints bearing this approval will be allowed on the Site.
- 2.6.13.11 The County may review/comment on all submittals/shop drawings within the designated time for the review prior to completing their review and returning to the Design-Builder.

2.6.14 PRODUCT SAMPLES, TESTS, AND CERTIFICATES

- 2.6.14.1 The Design-Builder will furnish Product Samples of all items requested or required by the Specifications. Product Samples must be properly identified and submitted with such promptness as to cause no delay in Work or in the work of any other Contractor and to allow time for consideration by County. The County will review Product Samples in accordance with Articles 2.6.13.2 – 2.6.13.11 above.

- 2.5.14.2 Each Product Sample must be accompanied by a letter of transmittal containing the following information:
- a) Date of Submission
 - b) Name of Project
 - c) Location of Project
 - d) Branch of Work (Specification Section Number)
 - e) Project Number
 - f) Name of Submitting Design-Builder
 - g) Name of Subcontractor
- 2.6.14.3 The Design-Builder will furnish the County a certificate stating that material or equipment submitted by Design-Builder complies with Contract Documents. If a certificate originates with the manufacturer, the Design-Builder will endorse it and submit it to the County together with a statement of compliance in its own name.
- 2.6.14.4 No tests, inspections 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 this Contract relieve the Design-Builder from its duty to perform the Work in accordance with the Contract Documents and all applicable law or regulation or code.
- 2.6.14.5 Unless the County authorizes, at the time of submittal to return samples at the Design-Builder's expense, rejected samples will be destroyed.
- 2.6.14.6 After delivery of materials by Design-Builder, the County may make such tests, as it deems necessary, with samples required for such tests being furnished by and at the cost of the Design-Builder. Any test is for the benefit of County and does not relieve Design-Builder of the responsibility for providing quality control measures to assure that the Work strictly complies with the Construction Documents. No test implies acceptance of materials, Work, workmanship, equipment, accessories or any other item or thing.
- 2.6.14.7 Materials, workmanship, equipment, or accessories may be rejected by County on the basis of the test results even though general approval has been previously given. If items have been incorporated in the Work, the County has the right to cause their removal and replacement by items meeting Construction Document requirements, with the cost therefor being borne by the Design-Builder and not County, or to demand and secure appropriate reparation to or price adjustment for the benefit of County from the Design-Builder.

2.6.15 AS-BUILT DRAWINGS

- 2.6.15.1 The Design-Builder shall maintain a set of as-builts on-site that show the changes that have occurred including changes to the following dimensions, product changes, clarifications, RFIs, ASIs, work that is concealed in walls, slabs or ceilings, underground utilities, etc. The as-builts shall be reviewed at a minimum of once a month by the County.
- 2.6.15.2 Prior to Final Payment, the Design-Builder will complete and turn over to the County the digital file of the Red Line Drawings kept current at the Project site by Design-Builder. Red Line Drawings will consist of a set of digital drawings that clearly indicate all field changes that were made during contract performance to adapt to field conditions, changes resulting from Change Orders and all buried and

concealed installation of piping, conduit and utility services. All buried and concealed items both inside and outside the facility must be accurately located on the Red Line Drawings as to depth and in relationship to not less than two permanent features such as interior or exterior wall faces. The Red Line Drawings must be clean and all changes, corrections, and dimensions will be given in a neat and legible manner in a contrasting color. The County will use the Design-Builder Red Line Drawings to finalize the As Built Drawings (Record Drawings) which, in turn, will be turned over to County at the end of construction.

2.6.15.3 With respect to any changes or corrections in the Work which are made subsequent to Substantial Completion, such revisions must be submitted to the County for approval prior to Final Payment.

2.6.15.4 The County shall review the Red Line Drawings prior to the acceptance and approval to County by Design-Builder of the monthly payment application to ensure the As-Built Drawings are updated and represent the construction progress of the Project. If the As-Built Drawings do not reflect the current progress the payment application shall not be approved by the County until that are brought up to a satisfactory level.

2.6.16 SCHEDULE AND COORDINATION

2.6.16.1 The Design-Builder will schedule and coordinate the Work of all of its Subcontractors on the Project including their use of the site. The Design-Builder will keep the Subcontractors informed of the Project CPM Schedule to enable the Subcontractors to plan and perform their Work properly.

2.6.16.2 At the time of the submission of the GMP, the Design-Builder will submit to County a detailed CPM Schedule for the Work, which will provide for the expeditious and practicable execution of the Work. The CPM Schedule will be consistent with and build upon any previous schedules issued during the Design and Preconstruction Phase. The CPM Schedule is not to exceed time limits under the GMP/Contract Documents and must be related to the entire Work to the extent required by the Contract Documents.

2.6.16.3 The CPM Schedule required for the performance of the Work will include reasonable detail including a time scaled network and computer printout in accordance with the following requirements:

- a. no activity may be longer than 14 calendar days (i.e. task line item duration in the CPM Schedule) in length except fabrication and delivery activities;
- b. each activity must be logically tied to another activity to show its interdependency with other activities;
- c. installation activities must be logically tied to submittal/approval, fabrication and delivery;
- d. only a single critical path is allowed; and
- e. all activities on the schedule must be clearly designated.

2.6.16.4 The GMP will prepare and keep current, for the County, a submittal schedule which is coordinated with the Design-Builder's CPM Schedule for the Work and allows the County the specified time to review submittals. The schedule must allow for the review periods and take into account lead times for products and materials.

2.6.16.5 The Design-Builder will revise the CPM Schedule monthly to reflect actual conditions in the field and transmit it monthly to County with a copy and a Narrative

Report including a description of current and anticipated problem areas, delaying factors and their impact and corrective action taken or proposed. This update is to be submitted to County by Design-Builder with each Application for Progress Payment. County's review of the CPM Schedule update does not relieve Design-Builder of its complete and exclusive control over the means, methods, sequences, and techniques of construction. The monthly updated CPM Schedule will be the basis for the analysis and granting or rejection of time extensions by County in accordance with Article 9 of these General Conditions.

- 2.6.16.6 In addition to the monthly CPM Schedule update, the Design-Builder will also revise its schedule at appropriate intervals as required by the conditions of the Work or as directed by County with an electronic copy of the revision submitted to County in a format acceptable to County.
- 2.6.16.7 The Design-Builder will perform the Work at all times during the Construction Phase within the identified times of the most recent County-approved schedule and consistent with the established Contract Time.
- 2.6.16.8 If the Design-Builder submits an original or updated CPM schedule which shows the Project and/or individual Milestone(s) for the Project completing earlier than required by the adjusted contractual completion date(s), the differences between the forecasted early completion and the required completion will be considered Project-owned float available for use by both County and the Design-Builder.
- 2.6.16.9 Since float time within the CPM Schedule is jointly owned, County will grant no time extensions and will pay no delay damages until a critical path activity delay occurs which extends the Work beyond the adjusted contractual completion date. Since float time within the CPM Schedule is jointly owned, County-caused delays on the Project may be offset by County-caused time savings which result in a critical path activity savings of time to the Design-Builder. In that event, the Design-Builder is not entitled to receive a time extension or delay damages until all County-caused time savings are exhausted and the applicable contractual completion date or milestone date is also exceeded. The Design-Builder is not entitled to a time extension due to failure by the County to respond to clarifications in the construction documents, delays in submittal reviews or any other delay attributed to the County's delay in providing information as part of the Design-Builder Team to keep the construction schedule.
- 2.6.16.10 No time extensions will be granted or delay damages paid unless (1) the delay is clearly demonstrated by the updated CPM Schedule and the current and supporting narrative as of the month the change was issued or occurred, or the delay took place, and (2) the delay cannot be mitigated, offset, or eliminated through such actions as revising the intended sequence of Work or other reasonable or industry recognized means of mitigating schedule slippage.

2.7 DESIGN-BUILDER'S RESPONSIBILITY FOR PROJECT SAFETY

- 2.7.1 Design-Builder recognizes the importance of performing its Work in the safest manner possible so as to prevent damage, injury or loss to (a) all individuals at or in the vicinity of the Work, whether working or visiting the Project; (b) all Work, including materials and equipment incorporated or stored on or off-site; and (c) all property adjacent to the site. On that basis Design-Builder assumes sole responsibility for implementing and monitoring all safety precautions and programs related to the performance of the Work and will submit a Safety Plan in complete form to County at the time of issuance of the Notice to Proceed with the Work. Design-Builder will, prior to commencing construction, designate a safety manager with the necessary qualifications and experience to supervise the implementation of the plan and the monitoring of all safety precautions and programs related to the Work. The safety manager will make routine daily inspections of the Work site, and will hold at least weekly safety meetings with Design-Builder's personnel and Subcontractors.

- 2.7.2 Design-Builder and its Subcontractors will comply with all legal requirements relating to safety, as well as any County specific safety requirements set forth in the Contract Documents. Design-Builder will immediately report, in writing, to County's Representative and all government or quasi- government authorities having jurisdiction over matters involving the Work, any injury, loss, damage, or accident occurring at the site of the Work.
- 2.7.3 Design-Builder's responsibility for safety under this Article 2.7 is not intended to relieve Design-Builder's Subcontractors (of any tier) from applicable obligations and responsibilities for complying with all legal requirements, including those related to health and safety matters, and their taking all necessary measures to implement and monitor all safety precautions and programs to guard against injury, losses, damages, or accidents resulting from their performance of the Work.

2.8 WARRANTY

- 2.8.1 Design-Builder warrants to County that the construction, including all materials and equipment furnished as part of the Work, will be new, unless otherwise specified in the Contract Documents; of good quality, in conformance with the Contract Documents; and free of defects in materials and workmanship. Design-Builder's warranty obligation excludes defects caused by abuse, alterations, or unreasonable failure to maintain the Work by persons other than Design-Builder, Design- Builder's subcontractors, or others under Design-Builder's control. Nothing in this warranty by Design-Builder limits any manufacturer's warranty which provides County with greater warranty rights than set forth in this Article 2.8 or the Contract Documents.
- 2.8.2 Design-Builder will provide County with all manufacturers' warranties and Operation and Maintenance Manuals upon the date of Substantial Completion of the Work. Design-Builder will provide County a two-year warranty for all portions of the Work, which warranty commences upon Substantial Completion and acceptance by County of the final phase of the Project. All statutory or other warranties, express or implied, related to latent defects will remain in force and are not limited or superseded by this provision.
- 2.8.3 The Warranties identified herein do not limit or control other remedies available to County at law or their limitation periods, if any.

2.9 CORRECTION OF DEFECTIVE WORK

- 2.9.1 If any portion of the Work is covered over by Design-Builder or its subcontractor contrary to the request of County, or as required by the Construction Documents, or the applicable building standards or codes if requested in writing by County, that Work or portion thereof must be promptly uncovered for observation at the Design-Builder's own expense.
- 2.9.2 If any portion of the Work, other than those portions required to be inspected by County, or others, prior to being covered, has been covered over, County may request that it be uncovered for observation. If such portion of the Work is found to be in accordance with the requirements of the Construction Documents, the cost of uncovering it will be charged to County as a Change Order. If such portion of the Work is found not to be in compliance with the requirements of the Contract Documents, the Design-Builder shall bear such costs to uncover, to remove and replace, or to repair. Unless a specific written waiver of such non-conformance has been provided to the Design-Builder, Design-Builder will promptly correct any Work that is found not to be in conformance with the Contract Documents, whether previously inspected by County's representatives or not. This obligation of Design-Builder continues for a period of two years from the date of Substantial Completion. Nothing in this Article waives any other rights or remedies that County may have under applicable law.
- 2.9.3 Design-Builder, upon receipt of written notice from County that the Work is not in conformance with the Contract Documents, will, within seven days (except in the case of an emergency or an item on the schedule critical path, which will require immediate response) commence correction of such nonconforming Work, including the correction, removal, or replacement of the nonconforming Work and any damage caused to any other parts of the Work affected by the

nonconforming Work. In the event Design-BUILDER fails to commence the necessary corrective steps within seven days of the Notice, County, in addition to any other remedies provided under the Contract Documents, may at the end of the seven-day period commence to correct or cause the correction of such nonconforming Work with its own or other forces. Design-BUILDER is responsible for all costs and expenses that County incurs in remedying any such Work not in conformance with the Contract Documents, including at County's sole discretion, any of its own staff time costs. County will notify Design-BUILDER of its intent to make such corrections at or before the commencement of the corrective work.

- 2.9.4 The two-year warranty period referenced in Article 2.8.1 applies only to the Design-BUILDER's obligation to correct Work not in compliance with the Construction Documents, and does not constitute a period of limitations with respect to any other rights or remedies County may have with respect to Design-BUILDER's other obligations under the Contract Documents. Design-BUILDER acknowledges that, for purposes of statutes of limitations, County is a body politic and corporate of the State of Arizona acting in its governmental capacity for the general good.

ARTICLE 3 – RESERVED

ARTICLE 4 COUNTY'S SERVICES AND RESPONSIBILITIES

In addition to its responsibilities outlined in Article 2,

- 4.1 County will, throughout the performance of the Contract, cooperate with Design-BUILDER and perform its responsibilities, obligations and services in a timely manner so as not to delay or interfere with Design-BUILDER's performance of its obligations under the Contract Documents.
- 4.2 County's Representative is responsible for processing and delivery of County-supplied information and approvals or rejections in a timely manner to permit Design-BUILDER to fulfill its obligations under the Contract Documents. County's Representative will also provide Design-BUILDER with reasonably prompt notice if and when it observes any failure on the part of Design-BUILDER to fulfill its contractual obligations, including errors, omissions, or defects in the Design-BUILDER's performance of its Work. Failure of County or its representatives to notify the Design-BUILDER hereunder will not alter the duties and obligations of Design-BUILDER under the Contract Documents.
- 4.3 County will provide reviews and approvals or rejections of the Design-BUILDER's cost estimate portion of the Design Submission within three weeks of receipt of those documents. County will review documents submitted by the Design-BUILDER and render any decisions pertaining thereto without unreasonable delay.
- 4.4 County is responsible for all Work performed at the Project by parties under County's control other than Design-BUILDER. County will contractually require such parties to cooperate with and coordinate their activities with Design-BUILDER so as not to unreasonably interfere with Design-BUILDER's ability to complete the Work in a timely manner, consistent with the Contract Documents.
- 4.5 County will interact and cooperate with the Design-BUILDER to keep the Work within the portions of the Project Budget or GMP, as may be applicable, including but not limited to giving appropriate and reasonable consideration to all reasonable recommendations of the Design-BUILDER, approving redesign, deductive alternatives or reductions in the Work, consideration of any requested additional Value Engineering, making modifications to the Contract Documents, or exercising such other rights or remedies as may be available elsewhere under this Contract including termination for convenience. If at any time, it is apparent that the cost of the Work cannot be kept within the Project Budget or GMP, County may terminate this Contract in accordance with the termination for convenience provisions set forth below.
- 4.6 The DP acting through the Design-BUILDER, will furnish County a sufficient quantity of documents and information required for the Design-BUILDER's performance of its Design and Preconstruction Services.

ARTICLE 5 – HAZARDOUS MATERIALS AND UNFORESEEN PROJECT SITE CONDITIONS

5.1 HAZARDOUS MATERIALS

- 5.1.1 Design-Builder is solely responsible for properly removing and disposing of any Hazardous Materials in the Project identified as such in the Contract Documents by County. Design-Builder, upon encountering any Hazardous Materials not identified in the Contract Documents, will stop work immediately in the affected area and notify County and, if required by applicable rules, all governmental or quasi-governmental entities with jurisdiction over the Project. County has responsibility to take the necessary measures required to properly remove and dispose of Hazardous Materials not identified in the Contract Documents as being the responsibility of the Design-Builder.
- 5.1.2 Design-Builder will be entitled, in accordance with the provisions of these General Conditions, to an adjustment in the GMP or Contract Time(s) of performance, or both, to the extent that the Design-Builder's costs or time of performance have been adversely and materially impacted by the presence of unforeseen or undisclosed Hazardous Materials.
- 5.1.3 County is not responsible for Hazardous Materials introduced to the site by Design-Builder, Design-Builder's Subcontractors (at any tier), or anyone else for whom the Design-Builder is responsible unless the Contract Documents explicitly call for either the provision or removal of the specific Hazardous Materials.
- 5.1.4 Design-Builder will indemnify, defend, and hold harmless County and others under County's control, and the officers, directors, employees and agents of each of them, from and against all claims, losses, liabilities, costs and expenses, including but not limited to attorney's fees and expenses, arising out of or resulting from Design-Builder's importation, improper handling, storage, abatement, removal, remediation, or disposal of any Hazardous Materials.
- 5.1.5 Upon any release of any Hazardous Material in connection with the Work, whether relating to a pre-existing condition or to acts or omissions of Design-Builder, Design-Builder will take immediate action reasonably necessary to contain the release and if the Hazardous Material release is not a Design-Builder release, County will pay Design-Builder the reasonable costs incurred by Design-Builder in taking such containment action. County may elect to have Design-Builder control and carry out any removal and remediation activity needed, provided that if the release is not a Design-Builder release, County will be responsible to pay Design-Builder for such Design-Builder removal and remediation activities in accordance with the Change Order provision set forth in Article 10.4 of these General Conditions, including allowance of additional Contract Time.

5.2 UNFORESEEN PROJECT SITE CONDITIONS

- 5.2.1 If Design-Builder encounters, during the performance of the Work, concealed or latent physical conditions or subsurface conditions at the Project which (a) materially differ from the conditions indicated in the Contract Documents; or (b) are of an unusual nature which differ materially from the conditions ordinarily encountered and generally recognized as inherent in the sort of work provided for in the Contract Documents, Design-Builder will immediately provide written notice to County apprising County of the unforeseen conditions encountered. Design-Builder will not disturb or modify such conditions without County's prior written consent. County will promptly investigate Design-Builder's notice of an unforeseen site condition and advise Design-Builder of its findings and determination.
- 5.2.2 If County determines that the conditions encountered by Design-Builder under Article 5.2.1 are an unforeseen Project site condition, Design-Builder will be entitled, in accordance with the provisions of these General Conditions, to an adjustment in its GMP or Contract Time(s) of performance, or both, to the extent that Design-Builder's cost or time of performance have been adversely impacted by the unforeseen conditions. Adjustments to GMP will be for the actual direct cost impact incurred by Design-Builder to address and resolve the unforeseen conditions.

- 5.2.3 County will not consider or allow any claim by the Design-Builder for an increase in the GMP or in Contract Time(s) without compliance with the advance notice requirement set forth above, submission of verifiable documentation of specific direct cost impact, and an adequate opportunity for County to investigate. Extensions of Contract Time(s) will be considered and allowed only when based upon submission of an updated CPM Schedule and supporting narrative showing an actual unavoidable delay to the Project Critical Path due to the unforeseen Project Site Conditions.
- 5.2.4 In no event will the Contract Time or GMP be adjusted for conditions that Design-Builder could or should have identified through past work or its investigations or survey of existing conditions prior to submission and establishment of the GMP and the GMP Schedule.
- 5.2.5 If County determines Design-Builder has no entitlement to an adjustment in GMP or Contract Time for what Design-Builder contends is an unforeseen Project Site Condition, Design-Builder may only proceed in pursuit of its position or claim in accordance with the Dispute Resolution provisions of the Contract.
- 5.3 **ARCHEOLOGICAL CONDITIONS:**
- If in the course of performing the Work, the Design-Builder, any subcontractor, or other persons or entities under the control of Design-Builder, encounter any Native American burial site or other archeological artifacts, Design-Builder will immediately notify County and suspend any Work or activity in the vicinity of the burial site or artifact. County will determine with reasonable promptness what action, if any, needs to be taken and advise Design-Builder how to proceed or adjust the Work. Any claim for adjustment in Contract Time or GMP will be handled under 5.2.2 above.

ARTICLE 6 – RESERVED

ARTICLE 7 – PAYMENT

7.1 GUARANTEED MAXIMUM PRICE; SAVINGS.

- 7.1.1 County will pay the Design-Builder for the Design-Builder's performance and the Design-Builder accepts the Design and Preconstruction Phase Fee in full payment for Preconstruction services, and the Actual Cost of Work (as defined in Appendix B hereto) plus the Construction Phase Fee for construction services, provided, however, that the amount paid to Design-Builder will not exceed the GMP as originally fixed or as adjusted from time to time as provided in these General Conditions.
- 7.1.2 Savings will be calculated and paid upon Final Completion of the Work. One hundred percent of all savings will be allocated to County. Savings returned to County will not include return of Construction Phase Fee for the amount of the savings but will include an appropriate percentage of bonds and insurance premiums and taxes attributable to the savings amount. One hundred percent of allocations to GMP for allowance and contingency items that remain unused upon Final Completion will be returned to County.

7.2 SCHEDULE OF VALUES.

- 7.2.1 Before issuance of the Notice to proceed and commencement of the Work in the Construction Phase, the Design-Builder will submit to County, and County and the Design-Builder shall agree upon, a complete Schedule of Values on the items constituting the GMP following the sample outline in **Appendix B**, setting forth the various portions of the Work, and the portions of the GMP allocated to each portion of the Work. This Schedule of Values will also be the basis for payment as the Work progresses. Those portions of the Schedule of Values allocable to Work to be performed by Subcontractors of the Design-Builder will be finalized as and when the Subcontracts are executed. All estimated construction costs not specifically allocated to a Subcontract (including Work self-performed) or to Construction General Conditions will be allocated to "Bidding Contingency" and will, upon approval of County, be available for later use

by the Design-Builder as Construction Contingency, for reallocation to other line items as provided for in these General Conditions.

7.3 APPLICATIONS FOR PROGRESS PAYMENTS.

- 7.3.1 Design-Builder will deliver to County (or such other person as is designated by County) on the last day of each month a sworn application for progress payment in the format specified by County. Each such application for payment will be based on the Schedule of Values and be in an amount determined by the percentage of completion of the Work in the month being billed. It will show the percentage of completion of each category of the Work performed in the billing period. The payment application must be accompanied (as separate documents) by (a) an updated CPM Schedule and narrative schedule update report as provided for herein; and (b) conditional lien waivers from each subcontractor or supplier entitled to progress payment thereunder. In addition, the Design-Builder will provide the following documentation upon specific request by County: (a) a written accounting in a form agreed by Design-Builder and County of the actual cost of the Work completed; (b) a report by Design-Builder on Subcontractor buy-out status, contract sums, and subcontractor pay applications; (c) a copy of job cost ledger; (d) a copy of timecards for all employees charged to the Project; and (e) a copy each of Construction General Conditions invoices and purchase orders for the time periods periodically requested by County.
- 7.3.2 The Design-Builder Construction Phase Fee and the Construction General Conditions will be paid monthly by County, in accordance with the percentage of completion of the Work. The amount approved by County, and paid for progress achieved in the month billed for is not final acceptance of the Work and is subject to final adjustment at the time of Final Acceptance and Final Payment. At no time may the cumulative value of past progress payments plus the current requested progress payment on any pay application exceed the GMP as it may be adjusted under these General Conditions.
- 7.3.3 County, within seven days after receipt of Design-Builder's application for progress payment, and no later, will either issue (a) a certificate of approval for payment of such amount as is invoiced in the payment application; or (b) specific written findings setting forth those items in detail in the estimate of the Work in the pay application that are not approved for payment under the Contract. All items in the payment application are considered approved that are not made the subject of the written detailed finding of non-approval.
- 7.3.4 County may withhold an amount from the progress payment to be made for the time period billed for a sufficient sum to pay the expenses that County reasonably expects to incur in correcting the deficiencies set forth in the written finding issued by County as to the items not approved for payment.

7.4 PAYMENT AND RETAINAGE.

- 7.4.1 The County shall review the payment application prior to approving to verify that the work completed is consistent with the percentage identified in the payment application, stored materials documentation is provided to County, and retention amounts are accurate. Within 14 days following approval for payment and the written detailed findings of items not approved, if any, County will pay the amount due on the progress payment application to the Design-Builder. Payment will be limited to 90% of the value approved of the Construction Work in place and for materials suitably stored in accordance with Article 7.6.1, below, of these General Conditions during the month being billed. County will retain the remaining 10% until the Contract is 50% complete, at which time County may, in its sole discretion, reduce the retainage to 5%; provided that: (a) the Design-Builder is making satisfactory progress on the Contract; and (b) in County's sole judgment, there is no specific cause or claim requiring a greater amount than 5% to be retained. Thereafter, County will pay the Design-Builder 95% of the value of the Construction Work and materials on approved progress billings, unless and until County determines, in its sole discretion that satisfactory progress is not being made, at which time County may reinstate 10% retainage. Such 10% reinstatement is equal to 10% of the total Contract value of

Construction Work in place and materials stored. County's determinations concerning the satisfactory progress of the Work for retainage adjustment purposes is final.

7.4.2 Within 60 days after the issuance of the Certificate of Final Completion by the County and receipt by County of all other documents required from Design-Builder by the Contract Documents, County will pay all retained amounts to Design-Builder as part of Final Payment, provided, however, (a) the Final Payment is not due from County until the Design-Builder delivers full and final unconditional lien releases in statutory form from all Subcontractors and major Suppliers (any claim filed thereafter is the responsibility of the Design-Builder), and (b) if any claim remains unsatisfied after all payments are made by County, the Design-Builder will immediately, upon demand, refund to County all monies that County may be compelled to pay in discharging such unsatisfied claims including all costs, interest, and attorneys' fees.

7.4.3 For the avoidance of doubt, no retainage will be withheld on payments to Design-Builder for Design and Preconstruction Phase.

7.5 EARLY RELEASE OF SUBCONTRACTOR RETAINAGE.

If a Subcontractor has completed its portion of the Work (including all Punch list items) pursuant to its Subcontract, the Design-Builder may ask County to disburse the amount of Retainage allocable to such Subcontractor after delivering to County, when required by County, consent to such disbursement from such Subcontractor's surety, in a form satisfactory to County, and a final lien release from the Subcontractor. If County is satisfied that the Subcontractor's Work has been fully and finally completed in accordance with the Contract Documents, County may disburse said Retainage to Design-Builder for payment over to the Subcontractor. However, the two-year warranty period with respect to such Subcontractor Work will not commence until Substantial Completion of the entire Project.

7.6 PAYMENT FOR ON-SITE AND OFF-SITE MATERIALS.

County will make progress payments when due to Design-Builder on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. County may similarly make payment to Design-Builder for materials and equipment suitably stored off the site, conditioned upon the Design-Builder furnishing satisfactory evidence to County that (a) title to the materials and equipment will pass to County upon payment for same;

(b) there are no claims of third parties; (c) the materials and equipment are adequately insured for full replacement value plus delivery; and (d) such other matters as County may reasonably request in order to protect its interests.

7.7 OWNERSHIP OF CONSTRUCTION WORK.

7.7.1 The Design-Builder warrants that title to all Construction Work included in an Application for Progress Payment will pass to County no later than the time of payment therefor. The Design-Builder further warrants and represents to County that upon submittal of an Application for Payment, all Construction Work for which Applications for Payment have been previously issued and payments received from County will, to the best of the Design-Builder's knowledge, information and belief, be free and clear of liens, claims, security interests, or encumbrances in favor of the Design-Builder, its Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials, and equipment relating to the Work.

7.7.2 As a condition precedent to Final Payment from County the Design-Builder will provide unconditional waivers of lien in statutory form from all Subcontractors, material suppliers, and other persons or entities having provided labor, materials and equipment relating to the Work.

7.8 SUBSTANTIAL COMPLETION.

When the Design-Builder believes the Work, or a portion thereof which County wants and agrees to accept separately, is Substantially Complete, the Design-Builder will notify County and will submit to County a comprehensive list of items to be completed or corrected as to that Work or all Work. Within five working days of receipt of the Design-Builder's notice and list, County and Design-Builder will jointly inspect the Project to determine whether Substantial Completion has in fact occurred. If County determines that the Work, or the relevant portion thereof, is Substantially Complete, County will issue the Punch List and the Certificate of Substantial Completion stating the date of Substantial Completion, which certificate will be executed by County and the Design-Builder. The Design-Builder will thereupon proceed promptly to complete or correct Punch List items. Failure to include an item on the Punch List does not alleviate or alter the responsibility of the Design-Builder to complete all Work in accordance with the Contract Documents.

7.9 FINAL COMPLETION AND FINAL PAYMENT

- 7.9.1 Completion of all outstanding Work items noted in the Substantial Completion "Punch List" for the entire Work, or relevant portion thereof, and other Contract requirements are necessary for County to certify Final Completion. Requirements for this certification also include, but are not limited to, completion of equipment operating training for County and the submission and approval by County of (a) all Record and Close Out Documents; (b) copies of all Construction General Conditions and Purchase Orders not previously provided; and (c) all required reports.
- 7.9.2 Neither Final Payment nor any final release of Retainage become due until such time as Design-Builder submits all of the following to County:
- a. An affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which County or County's property might be responsible or encumbered (less amounts withheld by County) have been paid or otherwise satisfied by Design-Builder;
 - b. A certificate evidencing that insurance required by the Contract Documents to remain in force after Final Payment is currently in effect and will not be canceled or allowed to expire until at least 60 days' prior written notice has been given to County;
 - c. Consent of Sureties to final payment;
 - d. Unconditional waivers of lien in statutory form from all Subcontractors, material suppliers, and other persons or entities having provided labor, materials, and equipment relating to the Work;
 - e. If required by County, other data establishing payment or satisfaction of obligations, such as receipts; releases; and waivers of liens, claims, security interests, or encumbrances arising out of the Contract Documents;
 - f. All Project warranty documents;
 - g. Final Subcontractor List;
 - h. All approved Submittals and Shop Drawings (electronic copy);
 - i. Schedule of Required Maintenance;
 - j. Operation and Maintenance Manuals (electronic and hard copies);
 - k. As-Builts (electronic copies, hard copies and BIM Model, if any);
 - l. Any required County training provided by Design-Builder;

- m. State Fire Marshal and State Elevator Inspection approvals and certificates received, if applicable;
 - n. Commissioning completed and reports received, if applicable; and
 - o. Any other items identified by County, and agreed to by Design-Builder in Contract Documents, to be received by County.
- 7.9.3 If, after Substantial Completion of the Project has been achieved, Final Completion is materially delayed through no fault of the Design-Builder, or by the issuance of additional Change Orders by County, County may at its sole discretion, upon request of the Design-Builder, and without terminating the Contract, make payment to Design-Builder of the balance due for that portion of the Work fully completed. If the remaining balance for Work not fully completed is less than the Retainage, and if bonds have been furnished, the written consent of surety to payment for that portion of the Work fully completed must be delivered by the Design-Builder to County, and such payment will be made under the terms and conditions governing Final Payment, except that such payment does not constitute a waiver of claims by either the Design-Builder or County.
- 7.9.4 Acceptance of Final Payment by the Design-Builder constitutes a waiver of all affirmative claims by the Design-Builder in connection with the Contract and construction of the Project. Final Payment by County constitutes a waiver of claims by County, except those arising from (a) liens, claims, security interests, and encumbrances arising out of the Work after final payment; (b) latent defects which County becomes aware of after Final Payment; or (c) the terms of warranties required by the Contract Documents and other rights provided under applicable law.

7.10 ALLOWANCES.

The Design-Builder will include in the GMP all allowances required by County. Items covered by allowances will be supplied for such amounts and by such persons or entities as County may direct, but the Design-Builder is not required to employ persons or entities against which the Design-Builder makes reasonable objection. Unless otherwise provided in the Contract Documents:

- a. County will select materials and equipment under an Allowance within a reasonable time frame as defined in County-approved Project CPM Schedule;
- b. Allowances will cover the cost to the Design-Builder of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- c. Allowances will not include professional or construction fees, Construction General Conditions, bond and insurance premiums;
- d. Allowances will cover Design-Builder's costs for unloading and handling at the site, labor, installation costs and other expenses;
- e. Whenever costs are more than or less than Allowances, the GMP may be adjusted accordingly by Change Order in accordance with provisions of Article 10. The amount of the Change Order will reflect the difference between Actual Costs and the Allowances plus Fee on such difference in accordance with Article 10 hereof if the Actual Costs are greater than the allowances.

ARTICLE 8 – INDEMNIFICATION

8.1 PROPRIETARY RIGHTS, PATENT AND COPYRIGHT INFRINGEMENT

- 8.1.1 Design-Builder will defend any action or proceeding brought against County based on any assertion or claim that the Work, or any part thereof, or the operation thereof or use of the Work or any part thereof, constitutes infringement of any proprietary rights or United States patent or copyright, now or hereafter issued. County agrees to give prompt notice in writing to Design-Builder of any such action or proceeding and to provide authority, information and assistance in

the defense of same. Design-Builder will indemnify and hold harmless County from and against all damages and costs, including attorney's fees, awarded against County or Design-Builder in any such action or proceeding. Design-Builder further agrees to keep County informed of all developments in the defense of such actions or proceedings.

- 8.1.2 In the event that County is enjoined from the operations or use of the Work, or any part thereof in connection with any proprietary rights, patent suit, claim, or proceeding, Design-Builder will at its sole expense take reasonable steps to procure the right or license to operate or use the Work. If Design-Builder cannot so procure the aforesaid right within a reasonable time, Design-Builder will then promptly, at Design-Builder's option and at Design-Builder's expense (a) modify the Work so to avoid infringement of any patents, or copyrights; or (b) replace said Work with Work that does not infringe or violate any such proprietary rights, patent, or copyright.
- 8.1.3 Articles 8.1.1 and 8.1.2 above do not apply to any action or proceeding based on infringement or violation of a proprietary right, patent, or copyright (a) relating solely to a particular process or the product of a particular manufacturer specified by County and such processes or products are something other than that which has been offered or recommended by Design-Builder to County; or (b) arising from modifications to the Work by County or its agents after acceptance of the Work.
- 8.1.4 Design-Builder's warranty and indemnification obligations survive expiration or termination of this Contract unless otherwise specifically stated.
- 8.1.5 The obligations set forth in this "Proprietary Rights, Patent and Copyright Infringement" section constitute the sole agreement between the parties relating to liability for infringement or violation of any proprietary rights, patent or copyright.

8.2 GENERAL INDEMNITY

To the fullest extent permitted by law, Design-Builder will defend, indemnify, and hold harmless County and its officers, officials, agents, and employees (hereinafter referred to as "Indemnitees") from and against any and all claims, actions, liabilities, damages, losses, or expenses (including court costs and reasonable attorneys' fees) (hereinafter referred to as "Claims") arising out of actual or alleged bodily injury or personal injury (including death), or loss or damage to tangible or intangible property caused, or alleged to be caused, by any acts or omissions of Design-Builder or any of its owners, officers, directors, agents, employees, or subcontractors, arising out of performance of the Work or this Contract, or in connection with the Project or defects in the Work, or any materials supplied. This indemnity includes any claim or amount arising out of or recovered under the Workers' Compensation Law or arising out of the failure of such Design-Builder to conform to any federal, state, or local law, statute, ordinance, rule, regulation, or court decree. County indemnitees will, in all instances, except for Claims arising solely from the acts or omissions of County Indemnitees, be indemnified by Design-Builder from and against any and all Claims, or other deficiencies in all products of its efforts and other services provided. Design-Builder will be responsible for primary loss investigation, defense, and judgment costs where this indemnification is applicable. In consideration of the award of this Contract, the Design-Builder waives all rights of subrogation against Indemnitees for losses arising from the Work performed by the Design-Builder for County. This duty to indemnify will survive the expiration or termination of this Contract. The Parties agree that any indemnification provision inconsistent with A.R.S. § 34-226 is, in all cases, not void, but will be interpreted and applied as if it were consistent with A.R.S. § 34-226.

8.3 CUMULATIVE RIGHTS

The rights of indemnification in this Article 8 are cumulative and in addition to any other rights of indemnification under this Contract. Nothing in this Article 8 limits or otherwise impairs any other right of indemnification in this Contract.

ARTICLE 9 – TIME AND DELAY

- 9.1.1 All time limits set forth in the Contract Documents for performance are of the essence of this Contract. Design-Builder agrees that it will commence performance of the Work, achieve Substantial and Final Completion of the entire Project, and achieve any interim Milestones for Substantial and Final Completion in compliance with all contractual time requirements.
- 9.1.2 Time is of the essence of each and every part of the Contract Documents and of the Specifications wherein a definite and certain length of time is fixed for the performance of any act or activity whatsoever. Where, under the Contract Documents, additional time is allowed for the completion of any Work, the new time limit fixed by such extension is also of the essence of this Contract.
- 9.1.3 Failure of the Design-Builder to achieve the completion dates for Substantial or Final Completion set forth in the Contract will result in the assessment of Liquidated Damages as required by the Contract. Design-Builder will pay the per diem amount for Liquidated Damages provided for in the Contract for each and every calendar day that the Design- Builder is not in full compliance with the time(s) stipulated in the Contract for completing the Work. The Liquidated Damages per diem amount is fixed and agreed upon by and between the Design-Builder and County because of the impracticality and extreme difficulty of fixing and ascertaining the actual damages County would in such event sustain. County may withhold any such sums from Final Payment due hereunder or from retainage.
- 9.1.4 If Design-Builder is delayed in the performance of the Work and such delay actually and directly delays the timely achievement of a critical path activity, element, or component, based upon an analysis of the current CPM Schedule due to acts, omissions, conditions, events, or circumstances beyond its reasonable control or prevention and due to no legal fault of its own or those for whom Design-Builder is responsible under the terms of the Contract Documents, the time for Substantial Completion of the Work, and to the extent applicable, any interim milestones or Substantial Completion dates for portions of the Work will be extended by written Change Order for the amount of time attributable to such events or circumstances. By way of example only, such acts, omissions, conditions, events, and circumstances which would entitle Design-Builder to an extension of the Contract Time(s), include acts or omissions of County, or anyone under County's control, including changes made by separate contractors in the Work by County, unforeseeable Project site conditions, wars, floods, labor disputes, unusual delay in transportation, and unusually adverse weather conditions.
- 9.1.5 The Design-Builder has included a specified number of days of weather related delays within the CPM Schedule which County has approved, and that number of days is incorporated herein by reference. If the Project experiences weather-related delays beyond the contractually specified number of weather days, the Design-Builder is entitled to a commensurate extension of time.
- 9.1.6 Design-Builder is entitled to an appropriate adjustment of its GMP for extended Construction General Conditions only for mutually determined delays directly caused by the actions, omissions, or inactions of County and upon proof of the actual, direct additional cost to the Design-Builder for such delays.
- 9.1.7 Design-Builder will provide notice of any delay in performance of the Work that Design- Builder attributes to County in writing to County immediately but in no event later than twenty-four (24) hours after discovery of the event giving rise to the delay. The Design- Builder will then provide additional details concerning the delay in writing to County within seven (7) calendar days from the delay notice. Failure to satisfy each of these time requirements will absolutely bar any and all later delay claims. The detailed notice will indicate the cause of the delay, the anticipated length of the delay in reasonable detail, the probable effect of such delay upon the progress and Cost of the Work, and possible mitigation plans. If the cause of the delay is ongoing, the Design-Builder must give further detailed notice every month at the same time it submits the updated progress Narrative Report to County.

- 9.1.8 Design-Builder will, upon discovering an event giving rise to a delay, as promptly as possible, make all reasonable efforts to mitigate the impact of the delay.
- 9.1.9 Within 15 calendar days after elimination of any such delay, the Design-Builder will, unless the time is extended in a Change Order approved by County, submit further documentation concerning the delay and, if appropriate, a formal written request requesting an extension of time for such delay and any compensation sought for the delay. The written request for time extension will state the cause of the delay, the number of days of extension requested and the compensation sought and provide a fully documented analysis of the Progress Schedule, including any data demonstrating a delay in the critical path of the Work or individual milestone or the overall Project completion. If the Design-Builder does not timely comply with the notice and documentation requirements set forth in this Article 9.1.9, the Design-Builder's claim for delay is barred.
- 9.1.10 In the event the Design-Builder gives notice to County of compensable delay alleging that County is responsible for the delay as to which the notice was given and the delay is unreasonable under the circumstances and was not within the contemplation of County and Design-Builder when they entered into the Contract, County will enter into negotiations with Design-Builder as to Design-Builder's damages, if any.

ARTICLE 10 – CHANGES TO THE CONTRACT PRICE AND TIME

10.1 CHANGES

- 10.1.1 After the Contract is signed, modifications to the Contract, including any changes to GMP, the Contract Time(s) or Scope of Work, may only be made by a written Contract Amendment or written Change Order.
- 10.1.2 The Design-Builder will not proceed with the Work on any change involving an increase or decrease in cost or time without prior approval of the Change Order or Contract Amendment by the Board of Supervisors or the Procurement Director, as required by Section 11.16.010(C) of the Pima County Procurement Code. If the Design-Builder proceeds with any change involving an increase or decrease in cost or time without written authorization from County as required by this paragraph, the Design-Builder hereby waives all rights or claims Design-Builder may have in connection with or as a result of the change.
- 10.1.3 County's right to make changes in the Work will not invalidate this Contract, relieve the Design-Builder of any responsibility, or require County to give notice to the Surety. Any requirement of notice to the Surety of a change in the Work is the sole responsibility of Design-Builder.
- 10.1.4 A Contract Amendment or Change Order is a written instrument issued after execution of the Contract signed by County and Design-Builder, stating their agreement upon all of the following:
 - a. The scope of the change in the Work;
 - b. The amount of the adjustment, if any, to the GMP; and
 - c. The extent of the adjustment, if any, to the Contract Time(s) for performance set forth in the Contract Documents.
- 10.1.5 All changes in the Work authorized by a Contract Amendment or Change Order will be performed under the applicable terms of the Contract Documents, and County, and Design- Builder will negotiate in good faith and as expeditiously as possible on the appropriate adjustments, if any, in Contract Time or GMP. No GMP adjustment on account of a Change Order will include the Design-Builder's or Subcontractor's profit, fee, home office overhead, or a formula allocation of indirect costs except as allowed in Article 10.3.1 below unless otherwise specifically allowed under these General Conditions.

10.2 MINOR CHANGES IN THE WORK

- 10.2.1 County may make minor changes in the Work consistent with the intent of the Contract Documents providing such changes do not involve an adjustment in the GMP or Contract Time(s) of performance and do not materially affect or alter the design, quality, or performance.

10.3 PRICE, TIME, OR SCOPE OF WORK ADJUSTMENT

- 10.3.1 The cost of or credit to County resulting from a change in the Work will be determined in one or more of the following ways:
- a. By unit prices stated in the Contract Documents;
 - b. By cost, as defined below, and described in Appendix C, properly itemized and supported by sufficient data reduced to meaningful unit prices for each assembled component of the Work in order to facilitate evaluation. Such costs will be itemized by crafts as defined within the Schedule of Values, submitted in a format approved by County, and limited to items directly allocable to the change in the Work:
 - 1) Cost of materials, including delivery;
 - 2) Cost of labor, fully-burdened, including, but not limited to, payroll taxes, social security, old age and unemployment insurance, vacation and fringe benefits required by contract or routinely paid by Design-Builder, and workers' compensation insurance but excluding Subcontractor's labor;
 - 3) Rental value of equipment and machinery to be established by rental receipts and not to exceed reasonable and customary rates for the locale of the Work. For owned equipment, Design-Builder must prove reasonable rental rate pursuant to actual ownership costs. County will not pay for equipment idle time unless the equipment is engaged in County- authorized force account or other time and materials work, and then only for the time it is engaged in such work. When the authorized force account or time and materials work is completed or the equipment ceases to be used for that work, payment for idle time stops;
 - 4) As a guideline, on a not-to-exceed ("NTE") percentage of Direct Construction Cost only basis, the following overhead, general conditions and fee percentages will be utilized, and will be fixed as a dollar amount, unless otherwise established in the Contract, or otherwise mutually agreed upon and documented in the Change Order description:

Subcontractor Fee (profit):	5%
Subcontractor Overhead & General Conditions, NTE:	<u>10%</u>
Total Subcontractor Markups, NTE:	15%

Design-Builder Fee (profit), approximately or as per Design-Builder Contract:	5%
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Design-Builder Overhead & General Conditions, NTE or as per Design-Builder Contract:	<u>5%</u>
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Total Design-Builder Markups, NTE:	10%
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 - 5) The Contract may include provisions for some situations where larger amounts of Overhead and General Conditions are needed to address

extenuating site-related circumstances. However, the combined total fee, Profit, Overhead and General Conditions, including the Design-Builder and all levels or tiers of subcontractors, will not exceed twenty-five percent (25%) of the total direct costs of materials, labor, rental equipment, and subcontractor insurance and bonds.

- c. Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to facilitate evaluations; provided that such lump sum will not exceed that amount calculated under (b) above.
- 10.3.2 Any dispute regarding the pricing methodology or cost of a change does not relieve the Design-Builder of the obligation to proceed with work on the change. Any such dispute will be preserved by inclusion in the Change Order or Contract Amendment.
- 10.3.3 A County-approved written Contract Amendment or Change Order is full and final settlement of all entitlement claims for direct, indirect, delay, disruption, inefficiency, productivity, and any other consequential costs related to items covered or affected, as well as for related delays. Design-Builder irrevocably waives any such claim not presented for inclusion in the Contract Amendment or Change Order prior to signature.
- 10.3.4 In the event that County and the Design-Builder disagree upon whether Design-Builder is entitled to be paid for any Change Order services required of Design-Builder by County, or as to amount of compensation in the event of any other disagreement over the Scope of Work or proposed changes to the Work, County and Design-Builder will resolve all such disagreements consistent initially with Article 10 of these General Conditions and thereafter if not resolved, in accordance with the Dispute Resolution provisions of the Contract. As part of the negotiation process, Design-Builder will furnish County with a good faith estimate of the costs to perform the disputed services or Work in accordance with County's interpretations. If the parties are unable to agree, and County expects Design-Builder to promptly perform the services in accordance with County's interpretations of the documents, Design-Builder will proceed to perform the disputed services, conditioned upon County issuing a written order to Design-Builder directing Design-Builder to proceed and specifying County's interpretation of the services that are to be performed.
- 10.3.5 The requirements set forth above as to Design-Builder providing detailed, itemized pricing on subcontractor Change Orders is fully applicable to Change Orders from Design-Builder to subcontractor where there is no comparable Change Order between County and Design-Builder.

10.4 EMERGENCIES

In any emergency affecting the safety of persons or property, Design-Builder will promptly act, at its discretion, to prevent threatened damage, injury or loss. Any increase in the Guaranteed Maximum Price or Contract Time(s) of performance or both claimed by Design-Builder on account of emergency work will be determined as provided in this Article.

ARTICLE 11 – STOP WORK AND TERMINATION

11.1 COUNTY'S RIGHT TO STOP WORK OR TERMINATE FOR CONVENIENCE

- 11.1.1 County at any time may, without cause and for its convenience, order Design-Builder in writing to stop or suspend the Work, for a period not to exceed 60 calendar days. In that event, Design-Builder may seek an adjustment of the GMP or Contract Time(s) of performance or both under Article 10 of the General Conditions to the extent that its Work has been adversely impacted by any such suspension or stoppage of the Work by County, unless actions, omissions or inactions of the Design-Builder are the cause of County stopping or suspending the Work.
- 11.1.2 Upon seven days written notice to Design-Builder, County may, without cause and without prejudice to any other right or remedy of County, elect to terminate the Contract for convenience

of County. In such case Design-Builder will be paid (without duplication of any items): a) for completed and accepted Work executed in accordance with Contract Documents prior to the effective date of the termination, including fair and reasonable sums for overhead and profit on such Work; b) for expenses sustained prior to termination in performing services and furnishing labor, materials, and equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; c) for all claims, costs, losses, and damages incurred in settlement of terminated contracts with subcontractors, suppliers, and others; and d) for reasonable expenses directly attributable to termination.

- 11.1.3 Upon receiving a Notice of Termination for Convenience, the Design-Builder will proceed as follows: a) stop Work as specified in the Notice; b) place no further subcontracts on purchase orders; c) terminate all subcontracts to the extent they relate to the Work terminated; d) assign to County all rights of the Design-Builder under terminated subcontracts, in which case County has the right to settle or to pay any termination settlement proposal arising out of these terminations; and e) submit complete termination inventory schedules to County no later than 120 days from date of the Notice of Termination.

11.2 COUNTY'S RIGHT TO TERMINATE FOR DEFAULT AND PERFORM

- 11.2.1 If Design-Builder persistently fails to (a) provide a sufficient number of skilled workers, the materials required by the Construction Documents, or both; (b) comply with applicable legal requirements; (c) pay, without cause, its Subcontractors or suppliers; (d) prosecute the Work with promptness and diligence to ensure that the Work is completed by the Contract Time(s) as may be from time to time adjusted; (e) maintain contractor, business, or other required licenses or authority; (f) otherwise perform the Work and its obligations in compliance with the Contract Documents; or (g) if, for any reason, Design-Builder curtails or ceases business or business operations to a degree that would substantially impair or preclude Design-Builder's performance of this Contract, County has the right, in addition to any other rights and remedies provided in the Contract Documents or by law, after seven (7) days' written notice of default to Design-Builder and its surety and Design-Builder's (or its surety's) failure to cure within that seven day period, to (i) perform and furnish through itself or through others it selects any such labor, materials, or Work, and to deduct the cost thereof from any monies due or to become due to Design-Builder under the Contract Documents; or (ii) terminate the Contract with Design-Builder for all or any portion of the Work, enter upon the premises and take possession, for the purpose of completing the Work, of all materials, equipment scaffolds, tools, appliances, and other items thereon, all of which Design-Builder hereby transfers, assigns, and sets over to County for such purpose, and to employ any person or persons to complete the Work and provide all of the required labor, services, materials, equipment, and other items; or (iii) both (i) and (ii) above. Upon exercising its right to Terminate for Default for any reason set forth above, County, at its discretion, may also exercise the right to have each or any of Design-Builder's subcontractor and supply contracts assigned to County, or County's nominee, provided however, County will have no responsibility or liability for acts or omission of Design-Builder under such Contracts and the sole recourse of subcontractors on pre-termination events will be against Design-Builder. Design-Builder will ensure that a clause providing for this conditional assignment on the foregoing terms is included in each subcontract.

- 11.2.2 In the event of such termination for default:

- 11.2.2.1 Design-Builder is not entitled to recover any further payment until the Work is completed and will then only be entitled to be paid for all acceptable Work performed prior to its date of default minus costs incurred by County to complete the Project exceeding the GMP as described below. In the event County's cost and expense of completing Design-Builder's Work exceeds the GMP, then Design-Builder or its surety will promptly pay the difference to County. Such costs and expense will include not only the cost of completing the Work to the satisfaction of County and of performing and furnishing all labor, services, tools, equipment and other items required in the Contract Documents, but also losses, damages, costs and expense,

including consultant and attorney's fees and expenses incurred in connection with any additional procurement and the defending of claims, if any, arising from or related to Design-Builder's default.

- 11.2.2.2 All finished and unfinished As-Built, shop drawings, documents, data, studies, surveys, drawings, photographs, reports, and other information in whatever form, including electronic, acquired, or prepared by Design-Builder for this project become County's property and will be delivered to County not later than five (5) business days after the effective date of the termination.
- 11.2.2.3 County may withhold payments to Design-Builder arising under this or any other Contract for the purpose of set-off until such time as the exact amount of damage due County from Design-Builder is determined.
- 11.2.3 In the event that County terminates the Contract for default and such termination is ultimately determined to be improper or wrongful, the termination for default will be automatically converted to a termination for convenience and the provisions of 11.1 of these General Conditions will apply.
- 11.2.4 If Design-Builder institutes or has instituted against it a proceeding under the United States Bankruptcy Code, such event is a default that may impair or frustrate Design-Builder's performance of its obligations under the Contract Documents. Accordingly, if such event of default occurs, County is entitled to request Design-Builder, its trustee, or other successor, to provide adequate assurance of future performance. If Design-Builder or Design-Builder's trustee, or other successor fails to comply with such request within 10 days after receiving notice of the request, County, in addition to any other rights and remedies provided by the Contract Documents, or by law, is entitled to terminate the Contract. County will thereupon be entitled to perform and furnish through itself or through others any such labor, materials, or equipment necessary for the completion of the Work and necessary to maintain the Contract Time(s) of performance, and to deduct the costs from any monies due or to become due Design-Builder under the Contract Documents pending receipt of adequate assurances of performance and actual performance in accordance herewith. In the event of any such bankruptcy proceedings, the Contract will terminate if Design-Builder rejects the Contract or if there has been a default under the Contract Documents, and Design-Builder is unable to give adequate assurances that it will perform as provided in the Contract Documents or otherwise is unable to comply with the requirements for assuming the Contract under the applicable provisions of the Bankruptcy Code.

11.3 DESIGN-BUILDER'S RIGHT TO STOP WORK AND TERMINATE FOR CAUSE

- 11.3.1 Design-Builder may, in addition to any other rights afforded it under the Contract Documents or by applicable law, either stop Work or terminate the Contract for cause upon County's failure to timely pay an amount in excess of \$100,000 properly due to Design-Builder under any Design-Builder Application for Payment. In this regard Design-Builder will provide County with written notice indicating that such non-payment condition has occurred, and that it is Design-Builder's intention to stop Work or terminate the Contract only if the non-payment condition is not cured within seven days from County's receipt of Design-Builder's notice. In the event that Design-Builder elects to only stop Work, it may nonetheless later indicate its intention to terminate the Contract by providing County with written notice that Design-Builder will terminate the Contract within seven days from receipt of Design-Builder's notice; unless the alleged cause of termination is cured in the interim.
- 11.3.2 In the event Design-Builder properly and lawfully elects to stop Work under Article 11.3.1 for non-payment and then resumes Work, Design-Builder will be entitled to make a claim for adjustment to the GMP and Contract Time(s) of performance to the extent Design-Builder has been adversely impacted by the stoppage of Work. In the event that Design-Builder elects to terminate the Contract on the basis permitted under Article 11.3.1, Design-Builder will be entitled to recover the same costs it would be permitted to recover had County terminated this Contract for convenience under Article 11.1 of these General Conditions.

- 11.4 If the Contract is terminated for any of the reasons set forth above, Design-Builder's contracts with its subcontractors and suppliers, at County's option and without further action by Design-Builder, will be assigned to County; provided however, that County will have no liability for any pre-existing acts or omissions or default by Design-Builder under such contracts and the sole recourse of such subcontractors and suppliers for any such events will be against Design-Builder.

End of Appendix C – Design Builder General Conditions



April 19, 2023

James Johnson and Judy Cooper, Procurement Officers
Pima County Procurement Department
150 West Congress Street, 5th Floor
Tucson, AZ 85701

Re: SFQ No. SFQ-PO-2300008 Design-Build Services for Class A Biosolids Solar Drying Facility

Dear Mr. Johnson,

We are pleased to provide this quotation for Design and Pre-Construction Services for the Tres Rios Solar Drying Facility. The scope of work we are including is as follows:

- I. DESIGN ENGINEERING – PLEASE SEE ATTACHMENT ‘A’
- II. PROJECT MANAGEMENT
 - A. Provide general project oversight and facilitate communication with Pima County and third-party stakeholders
 - B. Prepare and Submit the Project Safety and Quality Plans
 - C. Prepare and Submit the Project Management Plan
 - D. Prepare, Submit, and Maintain Stormwater Pollution Prevention Plan (SWPPP)
- III. MEETINGS
 - A. Attend bi-weekly design progress meetings organized by HDR
 - B. Organize monthly project status meetings with Pima County
 - C. Meet with local and state agencies as required for design coordination and permitting
 - D. Participate in Design Workshops
- IV. PROJECT CONTROLS
 - A. Conduct overall budget tracking toward NTE
 - B. Setup and maintain document control systems
 - C. Accounts payable/receivable and cost projections to Pima County

V. DESIGN SUPPORT

A. Design Review and Risk Mitigation

1. Process Performance Review - Review the process scope designed by HDR (Aqua) to ensure we can meet a Class A biosolid facility and we are aligned with performance requirements from our vendors. We utilize a Standard Operating Procedure (SOP) involving Performance Guarantee Score Card for this and this directly feeds into our Technical Risk Assessment.
2. Technical Risk Assessment – Engage discipline Subject Matter Experts (SME) to perform Technical Risk Review utilizing our internal SOP to identify and mitigate risks in the design.
3. Review of Preliminary and Final BODR for Constructability and Completeness
4. Review of PV panel, battery storage and microgrid sizing and solar performance
5. Spec Reviews and Procurement Package assembly – Solar Dryer, Screw Press, Heat Exchanger, Odor Control

B. Design Management/Oversight and shared service support

1. Review design concepts for constructability and efficiency
2. Oversee design related tasks and manage HDR schedule and budget
3. Attending Kickoff meeting and Task Force Meetings
4. Overseeing technical portion of Alternatives Evaluation workshop
5. Moderate Planning sessions and brainstorm sessions
6. Monthly HDR invoice and Earned Value reviews
7. Estimate support (scope gap review this will feed Tech Risk Assessment)
8. Develop and maintain Comment Resolution Log (design phase)

C. Field Investigation and Site Support

1. Manage Potholing Operations – An Allowance of \$100,000 has been included in this proposal for potholing services and incidental expenses
2. Field Management of Pilot test operations – An allowance of \$25,000.00 has been included with this proposal for vendor/supplier pilot testing fees and incidental expenses



3. Tie-In and MOPO Planning

VI. PERMITTING

- A. Set up and maintain permitting responsibility matrix
- B. Obtain permits as described in HDR Design Services Proposal – An Allowance of \$150,000 has been included in this proposal for permit fees

VII. ESTIMATING

- A. Cost Model initial setup and updates
- B. Detailed estimate for three (3) early works packages
- C. Detailed estimate for Balance of Plant
- D. Estimate and Cost Model updates for Alternatives and Value-Engineering Options
- E. Set up and Maintain design innovations tracking log

VIII. PROCUREMENT

- A. Conduct an initial assessment of equipment lead time and escalation risk
- B. Sub/Supplier engagement throughout design and estimating efforts, performed at 30%, 60%, and 90% design levels
- C. Evaluation Plan for critical subs and suppliers – integration of technical and performance requirements into bid packages and commercial documents.

IX. SCHEDULING

- A. Preparation and maintenance of the baseline CPM Schedule
- B. Provide monthly update to the baseline CPM Schedule



X. CLARIFICATIONS AND EXCLUSIONS

- A. This proposal is for design and pre-construction services up to the completion of 90% design. Issue-for-Construction deliverables and stamped drawings will be provided in a separate GMP as part of Phase 2.



DESIGN AND PRE-CONSTRUCTION SERVICES OVERALL PRICE SUMMARY

	Labor	Expenses	Total
Design Engineering Fee – HDR	\$5,180,208.00	\$143,413.00	\$5,323,621.00
Pre-Construction Services – Kiewit	<u>\$1,380,011.69</u>	<u>\$10,751.75</u>	<u>\$1,390,973.44</u>
Subtotal:	\$6,560,219.69	\$154,164.75	\$6,714,594.44
Allowance 1: Potholing		\$100,000.00	\$100,000
Allowance 2: Pilot Testing Fees		\$25,000.00	\$25,000
Allowance 3: Permit Fees		<u>\$150,000.00</u>	<u>\$150,000</u>
Grand Total:	\$6,560,219.69	\$429,164.75	\$6,989,384.44



Table 1 - Pre-Construction Estimate by Task

Task	Task Description	PROJ MGR	CONST MGR	PRE-C MGR	EST	DISC SUPT	PROJ ENGR	BUS MGR	SCH	PROC LEAD	PROC MGR	ME	EE	SE	CE	JLC E	SHE / SCL	ARCH	GGG	WATR TECH	DSM	PCA	ACCT	DOC CTL	TOTAL
4.1	Project Management	355																							355
4.1.1	General Oversight	16																							16
4.1.2	Project Safety Plan	8					8																		8
4.1.3	Project Quality Plan	8					8																		8
4.1.4	Project Management Plan	40					8																		40
4.1.5	Project Management Plan	20					8																		20
4.1.6	Update/Maintain SWPPP						16																		16
4.2	Meetings	70		70																					70
4.2.1	Bi-Weekly Meetings with Pima County	8					20																		28
4.2.2	Preparation and Review of Meeting Minutes	24		24			20																		44
4.2.3	Meetings with Local and State Agencies	2		2			20																		22
4.2.4	Monthly Status Report	24		24			24																		48
4.2.5	Monthly Status Report	2		2			24																		26
4.2.6	Design Workshops	24		24			24																		48
4.3	Project Controls	28		13			71																		102
4.3.1	Budget Tracking and Reporting	8					4																		12
4.3.2	Project Cost Setup	8					4																		12
4.3.3	Project Cost Setup	8					4																		12
4.3.4	Contract Data Requirements List	4					20																		24
4.3.5	Manage Accounts Payable/Receivable	20					160																		180
4.3.6	Cash Flow Projections	20					160																		180
4.4	Design Support	16					4																		20
4.4.1	Design Review and Risk Mitigation	16					4																		20
4.4.2	Screw Press Pilot Support	2		2			40																		42
4.4.3	Pre-Bidding Site Assessment	32		32			40																		64
4.4.4	Pre-Bidding Site Assessment	32		32			40																		64
4.4.5	Tie-In and MOPO Planning	40		40			40																		80
4.4.6	Alternative Systems Evaluation	2		2			40																		42
4.4.7	Subsurface Utility Investigation / Pinpointing	2		2			40																		42
4.4.8	Constructability Reviews	40		40			40																		80
4.5	Permitting	2					8																		10
4.5.1	Permitting Matrix - Prepare	2					8																		10
4.5.2	Permitting Matrix - Update/Maintain						20																		20
4.6	Procurement	150																							150
4.6.1	Procurement Assessment and Vendor Mgmt	150					20																		170
4.7	Estimating	4					16																		20
4.7.1	Inflight Cost Model Setup	16		16			16																		32
4.7.2	Cost Model Update - Conceptual Design	24		24			48																		72
4.7.3	Cost Model Update - EDP's	8		8			24																		32
4.7.4	Cost Model Update - Alternatives and VEs	40		40			40																		80
4.7.5	Estimate Assumptions Log Setup and Tracking	8		8			8																		16
4.7.6	Detailed Estimate - Balance of Plant	40		40			40																		80
4.7.7	Estimate Assumptions Log Setup and Tracking	8		8			8																		16
4.7.8	Design Innovations Log Setup and Tracking	8		8			8																		16
4.8	Scheduling	8					80																		88
4.8.1	Baseline CPM Development	8					128																		136
4.8.1	Baseline CPM Updates	8					128																		136
		935	140	337	384	82	483	320	208	440	140	298	122	67	55	84	109	8	122	164	1314	624	144	158	6738
Rate		\$ 261.18	\$ 229.56	\$ 261.18	\$ 173.11	\$ 180.64	\$ 150.53	\$ 143.01	\$ 210.75	\$ 143.01	\$ 184.40	\$ 219.06	\$ 219.06	\$ 219.06	\$ 219.06	\$ 219.06	\$ 300.79	\$ 219.06	\$ 254.49	\$ 219.06	\$ 248.05	\$ 137.08	\$ 137.08	\$ 109.03	

Travel Expenses (see separate detail sheet)

\$ 244,200.31 \$ 32,139.05 \$ 88,016.58 \$ 66,075.89 \$ 14,812.56 \$ 72,708.01 \$ 46,762.39 \$ 43,835.55 \$ 62,922.29 \$ 25,816.61 \$ 65,279.09 \$ 26,725.03 \$ 14,676.94 \$ 12,948.15 \$ 18,400.82 \$ 30,785.57 \$ 1,752.46 \$ 31,048.16 \$ 35,925.40 \$ 325,937.99 \$ 82,417.10 \$ 19,019.33 \$ 17,395.53 \$ 10,751.75

\$ 1,396,763.44



Table 2 - Pre-Construction Hourly Rates

Category	Hourly Base Wage Rate	Total Benefits, Tax, Insurance	Overhead @ 133.897%	Profit @ 8%	Billable Rate
Project Executive	\$97.50	\$43.75	\$130.55	\$21.74	\$293.54
Pre-Construction Manager	\$86.75	\$38.92	\$116.16	\$19.35	\$261.18
Project Manager	\$86.75	\$38.92	\$116.16	\$19.35	\$261.18
Construction Manager	\$76.25	\$34.21	\$102.10	\$17.00	\$229.56
General Superintendent	\$67.50	\$30.29	\$90.38	\$15.05	\$203.22
Discipline Superintendent	\$60.00	\$26.92	\$80.34	\$13.38	\$180.64
Project Engineer	\$50.00	\$22.44	\$66.95	\$11.15	\$150.53
Field Engineer	\$42.50	\$19.07	\$56.91	\$9.48	\$127.95
Business Manager	\$47.50	\$21.31	\$63.60	\$10.59	\$143.01
Estimator	\$57.50	\$25.80	\$76.99	\$12.82	\$173.11
Scheduler	\$70.00	\$31.41	\$93.73	\$15.61	\$210.75
Mechanical Engineer	\$72.76	\$32.65	\$97.42	\$16.23	\$219.06
Electrical Engineer	\$72.76	\$32.65	\$97.42	\$16.23	\$219.06
Structural Engineer	\$72.76	\$32.65	\$97.42	\$16.23	\$219.06
Civil Engineer	\$72.76	\$32.65	\$97.42	\$16.23	\$219.06
I&C Engineer	\$72.76	\$32.65	\$97.42	\$16.23	\$219.06
Subject Matter Expert (Solar)	\$99.91	\$44.83	\$133.77	\$22.28	\$300.79
Architectural Engineer	\$72.76	\$32.65	\$97.42	\$16.23	\$219.06
Geotechnical Engineer	\$84.53	\$37.93	\$113.18	\$18.85	\$254.49
Process Engineer	\$72.76	\$32.65	\$97.42	\$16.23	\$219.06
Engineering Manager	\$82.39	\$36.97	\$110.32	\$18.37	\$248.05
Project Controls Analyst	\$43.87	\$19.68	\$58.74	\$9.78	\$132.08
Accounting	\$43.87	\$19.68	\$58.74	\$9.78	\$132.08
Document Control	\$36.38	\$16.32	\$48.71	\$8.11	\$109.53
Procurement Lead	\$47.50	\$21.31	\$63.60	\$10.59	\$143.01
Procurement Manager	\$61.25	\$27.48	\$82.01	\$13.66	\$184.40



Kiewit Travel Expenses Schedule

Mileage: per AZDOA rate - \$0.625/mile
Mileage from 3888 E. Broadway Rd. Phoenix is 97 miles
Air Travel estimated at \$600 R/T, will be billed at cost
Lodging is estimated \$145 (Nov-Mar) and \$104 (Apr-Oct); max per diem is \$60/day and \$49 on travel days per AZDOA
Car rental estimated @ \$75/Day, unlimited mileage, fill gas

Task	Plane Trips (RT)	Car Trips (1-Way)	Total Miles	Total Hotel Nights	Max Hotel Rate	Max Per Diem Rate	Mileage	Air Travel	Lodging	Per Diem	Car Rental	Total	Notes
1.2.1 - Project Kick-off and Site Visit (May 2023) PM, Pre-Com Mgr, and CM drive; DBM fly from K.C.	1	6	582	4	\$104.00	\$ 60.00	\$ 363.75	\$ 600.00	\$ 416.00	\$ 630.00	\$ 75.00	\$ 2,084.75	4 people, 1 night lodging ea. in Tucson area
2.9.2 - Alternatives Evaluation Workshop (est. Aug 2023) PM, Pre-Com Mgr, and CM drive; DBM fly from K.C.	1	6	582	4	\$104.00	\$ 60.00	\$ 363.75	\$ 600.00	\$ 416.00	\$ 630.00	\$ 75.00	\$ 2,084.75	4 people, 1 night lodging ea. in Tucson area
3.4.1 - Conceptual Design (30%) Workshop (est. Dec '23) PM, Pre-Com Mgr, and CM drive; DBM fly from K.C.	1	6	582	4	\$145.00	\$ 60.00	\$ 363.75	\$ 600.00	\$ 580.00	\$ 630.00	\$ 75.00	\$ 2,248.75	4 people, 1 night lodging ea. in Tucson area
3.4.2 - Design Development (60%) Workshop (est. Mar 2024); PM, Pre-Com Mgr, and CM drive; DBM fly from K.C.	1	6	582	4	\$145.00	\$ 60.00	\$ 363.75	\$ 600.00	\$ 580.00	\$ 630.00	\$ 75.00	\$ 2,248.75	4 people, 1 night lodging ea. in Tucson area
3.4.4 - Construction Documents (90%) Workshop (est. Jun '24); PM, Pre-Com Mgr, and CM drive; DBM fly from K.C.	1	6	582	4	\$104.00	\$ 60.00	\$ 363.75	\$ 600.00	\$ 416.00	\$ 630.00	\$ 75.00	\$ 2,084.75	4 people, 1 night lodging ea. in Tucson area
Total							\$1,818.75	\$3,000.00	\$2,408.00	\$3,150.00	\$ 375.00	\$10,751.75	



ATTACHMENT 'A'

Kiewit-PC Solar Dryer Program Proposal and Fee Revised 4-12-23

HDR Engineering, Inc.



March 21, 2023

Darron Rolle, Project Executive
Kiewit Infrastructure West Co.
3888 East Broadway Road
Phoenix, AZ 85040

**Subject: Preliminary Design Scope of Work (SOW), Fee Proposal, and Schedule
Pima County Class A Biosolids Solar Drying Facility (3TRCAB)**

Dear Mr. Rolle:

Please find attached HDR's scope of work, fee proposal, and schedule to perform BODR services and pre-construction design services leading up to GMP negotiation and approval for the subject project. We look forward to working with Kiewit and Pima County on this exciting and important project. If you have any questions about our scope of services, please feel free to contact Ty at 520-834-2619 or ty.morton@hdrinc.com.

Sincerely,

Aaron Meilleur, PE
Senior Vice President

Ty Morton, PE
Vice President, Project Manager

Attachments:

1. Scope of Work
2. Fee Proposal
3. HDR Rate Schedule
4. Subconsultant Fee Proposals and Rate Schedules

ATTACHMENT 1 – SCOPE OF WORK

Design Build Services

Engineering Scope of Work – Phase 1 Design Services

Tres Rios WRF Class A Biosolids Solar Drying Facility (3TRCAB)

**Pima County, Arizona
(Solicitation No. SQ-PO-2300008)**

Scope of Work

1.0 Project Management

1.1 Project Administration

1.1.1 PROJECT MANAGEMENT

HDR will perform internal project administration throughout the Task Order to include team coordination, management, subcontracts, design change management, monthly reporting, and invoicing. Monthly reports will be prepared and submitted by Kiewit, and HDR will provide status updates and identify needed actions on the engineering elements. This subtask also includes HERWIT Engineering as a subconsultant to provide an Independent Technical Review (ITR) throughout the project.

1.1.2 PROJECT EXECUTION PLAN

HDR will prepare a Project Management Plan (PMP) for engineering activities on the project. The PMP will be included as part of the overall Project Execution Plan (PXP) that will be submitted within 45 days of Notice to Proceed (NTP). It is assumed the PXP and project Health and Safety Plan will be prepared and submitted by Kiewit.

1.1.3 PROJECT SCHEDULE AND CONTROLS

HDR will maintain the engineering budget and potential changes using standard HDR accounting tools and processes. HDR has prepared the attached Design Schedule which will be used to track the delivery of the Design. HDR will not be preparing a detailed schedule or cost controls but will on a monthly basis provide inputs to Kiewit's scheduler and controller to reflect actual start and finish dates, forecasted start and finished dates, and new activities. HDR will track Earned Value (EV) and submit to Kiewit on monthly basis.

1.1.4 QUALITY ASSURANCE / QUALITY CONTROL MANAGEMENT

HDR will prepare an engineering Quality Management Plan (QMP) for inclusion in the PMP.

1.2 Meetings and workshops

1.2.1 PROJECT KICK-OFF AND SITE VISIT

The kick-off meeting will be organized and conducted by Kiewit and will be attended by the design Principal-in-Charge (PIC), Project Manager (PM), design manager, project engineer, process engineers, and key discipline engineers (structural, instrumentation and controls, thermal, solar, civil, geotechnical). It is assumed the meeting will be held in hybrid mode, with some participants attending virtually. Following the kick-off meeting, HDR staff will visit the dewatering building (Building 23), the odor control facility adjacent to the dewatering building, the blower buildings (Buildings 34 and 46), and the activated sludge reactors (Building 6).

1.2.2 CLIENT PROGRESS MEETINGS

HDR will attend monthly meetings through the pre-construction period which is anticipated to extend through July 2024 for a total of 16 meetings. The meetings are assumed to be held in hybrid mode, with Tucson-based staff attending in person and others via videoconference. The meetings be attended by the design PM, project engineers, and process engineers as necessary.

1.2.3 ENGINEERING TEAM PROGRESS AND COORDINATION MEETINGS

HDR will conduct bi-weekly coordination meetings through the pre-construction period which is anticipated to extend through July 2024 for a total of 35 meetings. The meetings will be attended by the design PM, project engineers, and process engineers as necessary. It is assumed that Kiewit will attend the coordination meetings, be actively involved, and participate in reaching consensus on all topics discussed as they occur such that pre-review of design drawing submittals are not required.

1.3 Project Documentation

HDR engineers will visit the proposed facility location and meet with Pima County Regional Wastewater Reclamation Department (the OWNER) plant staff to collect information for the Tres Rios Water Reclamation Facility (WRF). Information will include as-built drawings for existing facilities, operating data, engineering and geotechnical reports. HDR will prepare a data and information request to the OWNER for project related documentation within one week of NTP. The documentation will be placed in a file sharing database such as SharePoint to facilitate access by project partners.

Task 1.0 Deliverables

Task 1.0 deliverables are assumed to be prepared and submitted by Kiewit, with contributions from HDR.

- Project Management Plan (HDR)
- Design Quality Management Plan (HDR)
- Invoices with Monthly Progress Reports
- Engineering Team Bi-weekly Progress Meeting Summaries (HDR)

2.0 Preliminary Design

2.1 Screw Press Piloting

HDR will coordinate a screw press pilot with available equipment vendors. The purpose of the pilot will be to verify and evaluate dewatering performance and determine design parameters using sludge from the Tres Rios WRF. Based on preliminary discussions with available equipment vendors, all costs associated with pilot equipment and testing are assumed to be the responsibility of the equipment vendors. Supplemental site work and ancillary equipment costs are assumed to be the responsibility of Kiewit.

2.1.1 TEST PLAN DEVELOPMENT

HDR will develop a screw press pilot plan to specify the procedure, equipment and sampling required during the pilot testing. Polymers for the screw press pilot will be selected based on vendor's opinions and OWNER preferences. As part of this task, HDR will work with Tres Rios WRF operators to identify an area for the pilot setup. HDR will prepare a site plan showing connections and site setup, to be submitted and reviewed by the OWNER. The duration of the pilot testing will be a minimum of eight (8) hours for five (5) days, or per vendor's recommendation.

2.1.2 VENDOR COORDINATION AND SUPPORT ACTIVITIES

HDR and Kiewit will jointly identify a screw press vendor and agree on the technical criterion for the pilot. The HDR team may coordinate vendor presentations prior to the selection of the pilot vendor before selecting a vendor.

The screw press manufacturer shall provide staff to set up and operate the pilot equipment and collect samples. The samples shall be taken during the operation period with each given polymer at predetermined sampling periods. The samples will be analyzed at the OWNER's laboratory by OWNER staff. Parameters to be collected and/or analyzed during the testing include feed rate, feed total suspended solids (TSS in pounds per hour or pounds per minute), cake TSS, and centrate TSS, polymer dose (and type of polymer used), and percent of equipment's rated throughput capacity.

2.1.3 DATA ANALYSIS

HDR will coordinate with the vendor to review the sampling results from the pilot testing. The data analysis will be used to prepare a Technical Memorandum (See Task 2.1.4) and in the development of the Basis of Design Report (See Task 2.9). It is assumed that the sampling and data collection will be conducted by the vendor during the testing.

2.1.4 PILOT RESULTS TECHNICAL MEMORANDUM

HDR will prepare a technical memorandum (TM) to summarize the results of the pilot tests and screw press recommendations for the Solar Dryer Facility. The TM also will outline the operating design criteria and recommended polymer dosing. The pilot test report produced by the vendor will also be attached to the TM as an Appendix. The TM will be delivered to the OWNER for review. HDR assumes that no amendments will be made to the TM and that OWNER review comments will be incorporated to the Basis of Design Report to be furnished in Task 2.9.

2.1.5 PERFORMANCE SPECIFICATIONS DEVELOPMENT

Based on HDR's design criteria established as part of the Basis of Design Report (see Task 2.9), HDR will prepare performance specifications for key screw press equipment to facilitate competitive purchasing, expedite the procurement of long lead items, and finalize the equipment selection to facilitate detailed design. The performance specifications will be reconciled with the OWNER's standard specifications to confirm equipment appurtenances, controls, electrical requirements, piping schedules, etc., are consistent with these standards. HDR will review vendor submittals and one additional re-submittal to compare vendor proposals against the performance specification.

2.2 Field Investigations

2.2.1 SURVEY

HDR shall conduct a horizontal and vertical control survey of the project site. Aerial mapping and some static global positioning system (GPS) survey will be conducted to confirm accuracy and the set bench marks/site control points and Pima County control points will be tied into the control network. A detailed topographic and culture survey shall be conducted on the proposed Solar Dryer Facility site, dewatering building and surrounding areas, locating visible surface features including valves, meters and covers, and other visible signs of utilities. HDR shall create full documentation including coordinate listings, field notes, GPS static reports and survey drawings in a sealed report. Static GPS data will also be collected in support of Task 2.2.3.

2.2.2 GEOTECHNICAL

Tetra Tech (as a subconsultant to HDR) will retain a geophysical firm selected to investigate the Ina Road Landfill. The bladder site will be investigated using conventional methods. Tetra Tech will review and comment on the geophysical investigation report before further geotechnical work proceeds. A geotechnical report will be prepared that includes settlement calculations, the degree of differential settlement and recommendations related to the configuration and thickness of the matt foundation and recommendations for foundations for other project components, including trenching. A final geotechnical report, including preliminary design section for the matt foundation, will be produced.

2.2.3 SUBSURFACE UTILITY INVESTIGATION (SUI) REPORT

HDR will assist Kiewit in pothole investigation of major utility locations and potential conflicts. HDR will gather plant as-built drawings (see Task 1.3), which will be incorporated with field data to create a master utility drawing file. HDR will provide an SUI report to support the conceptual layout of the alternatives. HDR will provide survey information of pothole locations and depths to utilities.

2.3 Waste Heat recovery

HDR will evaluate the potential for waste heat recovery from the East and West Blower Buildings at Tres Rios WRF to provide supplemental heating to the solar dryer facility. The blower buildings each house two (2) 600 horsepower (HP) and two (2) 1000 HP centrifugal blowers, for a total of four (4) blowers per building. The discharge temperature from the blowers is approximately 220 degree Fahrenheit, and HDR has previously estimated the potential to

capture approximately 3 million British thermal units (MMBtu) per hour which will be further refined as part of this subtask.

2.3.1 THERMAL REQUIREMENTS ANALYSIS

HDR will coordinate with solar dryer vendors to establish the estimated total thermal requirements for each solar dryer option, including the use of floor and radiant heating to augment natural solar radiation to achieve Class A biosolids. The thermal augmentation load will use a combination of waste heat recovery and photovoltaics (see Subtask 2.6 - Photovoltaic (PV) System). The thermal augmentation will take the following into consideration and will require coordination with the solar dryer vendor.

- Design operating temperatures of the solar dryer, including seasonal variations (as provided from Task 2.5.3)
- The number of radiant heat exchangers and floor heating elements (as provided from Task 2.5.3)
- Efficiency of heat transfer within the solar dryer from thermal augmentation (as provided from Task 2.5.3)
- Conveyance efficiency of thermal augmentation from the heat source to the solar dryer
- Temperature differentials between thermal supply sources, i.e., blowers, and target thermal storage temperature
- Target thermal storage temperature and thermal storage losses
- Efficiency in converting PV to thermal liquid storage

2.3.2 HEAT EXCHANGER SIZING

HDR will evaluate up to three heat exchanger options for installation within the blower discharge header. Using vendor furnished data, HDR will evaluate sizes, number of units, and installation locations. Inherent to heat exchangers installed within a hot air conduit, the heat exchangers will introduce frictional headloss into the blower discharge header that will require additional blower energy to overcome the headloss. HDR will review the installed blower operational data to estimate blower energy consumption, pre- and post-heat exchanger installation. The heat exchanger sizing will take the following into consideration:

- Total heat flux within blower discharge header based on a review of the last two years of blower operating data as provided by the OWNER
- Target thermal storage temperature and temperature differential between the blower discharge air and the heat exchanger thermal output
- Efficiency of heat transfer across the exchanger
- Blower performance

2.3.3 REPURPOSING THE ABANDONED ACTIVATED SLUDGE REACTORS AND MODIFYING THE BLOWER BUILDINGS

HDR will identify modifications to the blower buildings to accommodate the installation of the heat exchangers, to include maintenance access, electrical and controls modifications, hot water piping runs, and structural modifications.

The abandoned activated sludge reactors are located in between the East and West Blower buildings and offer 2.5 million gallons of available tankage. There are 12 reactors, sized approximately 44-ft (width) x 44-ft (length) x 15-ft (depth). HDR will evaluate the existing reactor structure volume and geometry for use as a thermal storage tank, including the review of the prior condition assessment completed for the OWNER's AnitaMOX project. Flow between reactor sections, structural geometry, insulation, ability to connect and integrate the tank into the overall system will be considered. HDR will not be performing a condition assessment of the existing tank. If, during the site visit, the structure is deemed to be in poor condition or not properly configured or large enough for use as a thermal storage tank, HDR will size a new thermal storage tank.

2.3.4 VENDOR COORDINATION AND SUPPORT ACTIVITIES

HDR will coordinate with heat exchanger vendors to establish preliminary design options, equipment sizing, and operational strategies for thermal heat storage. HDR will work with Kiewit to request preliminary pricing and manufacturer's lead times for key waste heat recovery equipment, including:

- Heat exchanger units
- Hot water pumps
- Mixers / circulators
- Sensors and controls

HDR will use information from vendors in conjunction with HDR's design experience to identify the key design criteria and design concept for waste heat recovery, including approved equipment vendors, for inclusion in the Basis of Design Report (See Task 2.9).

2.3.5 PERFORMANCE SPECIFICATIONS DEVELOPMENT

Based on HDR's design criteria established as part of the Basis of Design Report (see Task 2.9), HDR will prepare performance specifications for key waste heat recovery equipment to facilitate competitive purchasing, expedite the procurement of long lead items, and finalize the equipment selection to facilitate detailed design. The performance specifications will be compared against the OWNER's standard specifications to confirm equipment appurtenances, controls, electrical requirements, piping schedules, etc., are consistent with these standards. Note that HDR provides no Performance Guarantee, which is assumed to be addressed in the procurement agreement between Kiewit and the vendor. HDR will review vendor submittals and one additional re-submittal to compare vendor proposals against the performance specification.

2.4 Odor Control

The existing odor control system is a three-stage system consisting of one ammonia scrubber, three biofilters, and five carbon adsorbers. It is located adjacent to the dewatering building. The existing system is rated for 8,000 cubic feet per minute (cfm) and is designed to handle the foul air from the dewatering building and adjacent truck loadout area. The system is a vendor supplied package that was constructed and installed in 2014.

2.4.1 EXISTING ODOR CONTROL SYSTEM EVALUATION

HDR will evaluate the capacity of the existing odor control system at the Centrifuge Facility to determine the additional capacity needed to treat the foul air from the new Solar Dryer Facility. The purpose of the evaluation is to determine the following parameters:

- Original design criteria and sizing including compounds to be treated and airflows
- Existing airflow and treatment performance
- Available treatment capacity

The evaluation will be conducted by reviewing record drawings, shop drawings/submittal cutsheets, and operations and maintenance (O&M) data furnished by the OWNER. In addition to reviewing the construction drawings, HDR will conduct a site visit and interview with Tres Rios WRF O&M staff to identify known issues and treatment performance. Given the relatively recent installation of the odor control system (installed in 2014) this design scope anticipates and is predicated on the system being in good operable condition capable of operating reliably as needed to achieve the desired performance and that a condition assessment is not warranted. HDR will visually inspect the odor control system and evaluate performance data, and if it is determined at that time that a more detailed condition assessment is warranted, that will be performed through a contract amendment.

2.4.2 PRELIMINARY SYSTEM DESIGN AND SIZING CRITERIA

HDR will evaluate three options for the preliminary design of the odor control system for the new Solar Dryer Facility. The options to be evaluated are:

- Option A – expansion of the existing odor control system based on the Solar Dryer Facility being installed at the bladder location
- Option B.1 – expansion of the existing odor control system based on the Solar Dryer Facility being installed at the landfill location
- Option B.2 – New odor control system based on the Solar Dryer Facility being installed at the landfill location.

Using vendor furnished data, HDR will evaluate sizes, number of units, connection points to the existing system (Options A and B.1 only), and new equipment installation locations. The odor control sizing will take the following into consideration:

- Total air changeout requirements of the Solar Dryer Facility
- Available capacity at the existing odor control system adjacent to the dewatering building

2.4.3 VENDOR COORDINATION AND SUPPORT ACTIVITIES

HDR will coordinate with equipment vendors to establish preliminary design options, equipment sizing, and operational strategies for odor control. HDR will work with Kiewit to request preliminary pricing and manufacturer's lead times for key odor control equipment, including:

- Scrubbers
- Biofilters
- Carbon adsorbers
- Auxiliary fans, sensors, and controls

HDR will use information from vendors in conjunction with HDR's design experience to identify the key design criteria and design concept for odor control, including approved equipment vendors, for inclusion in the Basis of Design Report (See Task 2.9).

2.4.4 PERFORMANCE SPECIFICATIONS DEVELOPMENT

Based on HDR's design criteria established as part of the Basis of Design Report (see Task 2.9), HDR will prepare performance specifications for the odor control equipment to facilitate competitive purchasing, expedite the procurement of long lead items, and finalize the equipment selection to facilitate detailed design. The performance specifications will be compared against the OWNER's standard specifications to confirm equipment appurtenances, controls, electrical requirements, piping schedules, etc., are consistent with these standards. HDR will review vendor submittals and one additional re-submittal to compare vendor proposals against the performance specification.

2.5 Solar Dryer and Solids Layout

The solar drying facility layouts will be conceptually developed for the two (2) sites, the bladder and landfill sites. One or more vendor's equipment will be used for this basis of design development, noting that a price competitive solicitation for multiple vendors will be conducted to select the final vendor. AQUA (as a subconsultant to HDR) will develop these conceptual layouts based on their experience with input from HDR, Kiewit, vendors, and the OWNER. Coordination will be required with the thermal heat recovery components (see Task 2.3), as well as general site layout (see Task 2.8). The solar drying size along with associated supplemental heat will be evaluated for both sites.

Solids loadout facilities will also be developed for the two (2) solar dryer locations and layouts. It is anticipated these conceptual layouts will be similar for either option. This facility will include inclined solids conveyance, storage, and scales.

Conceptual drawings and exhibits will be prepared for both options.

2.5.1 DATA NEEDS COORDINATION

Additional pertinent data and sampling are required for the biosolids drying and thermal options analysis, including:

- Biosolids samples to evaluate off-gassing, odor production, and thermal requirements to achieve 90% solids during simulated drying activities
- Daily biosolids production records, diurnal, and other seasonal variations in biosolids production

2.5.2 DESIGN CRITERIA

Design criteria for the solar drying and solids loadout facilities will be established in coordination with Kiewit and based on the information provided in the OWNER's performance requirements. Solids loading to the facility will be based on the 180 wet tons of solids entering the facility at 18% solids. These criteria may be altered based on the screw press pilot testing results as appropriate (see Task 2.1). Solids discharge from the facility will achieve at least a 75% reduction in weight and meet Class A requirements. Class A will ultimately be achieved by meeting the testing requirements for Class A Biosolids. Conveyance system design criteria will

be based on moving wet sludge through the facility. Sludge loadout and storage will be based on the two (2) days of storage required by the OWNER's performance requirements.

2.5.3 THERMAL OPTIONS EVALUATION

AQUA (as a subconsultant to HDR) will work with solar dryer equipment vendors to identify and define the thermal heating options for both the solar dryer sites. Input from vendors along with their experience will be used to define the air-to-air transfer efficiency along with the water-to-slab floor transfer efficiency. Both transfer options will be considered to determine the correct thermal heat transfer option. Additionally, AQUA will coordinate with Task 2.3.1 (Thermal Requirements Analysis) regarding thermal heat availability (from waste heat recovery and/or PV) as it relates to the efficient use of this heat in the solar drying process. AQUA will provide preliminary costs and quantities related to thermal heat sizing and integration into the solar drying facility to Kiewit to assist with balancing the cost of thermal heat addition with the overall sizing of the solar drying facilities. This evaluation will be included and summarized in the Basis of Design Report (see Task 2.9).

2.5.4 VENDOR COORDINATION AND SUPPORT ACTIVITIES

AQUA (as a subconsultant to HDR) will coordinate with a vendor to establish preliminary design options, equipment sizing, and operational strategies for the solar drying and solids loadout facilities. AQUA will work with Kiewit to request preliminary pricing and manufacturer's lead times for the key equipment associated with these facilities, including:

- Turner mechanisms
- Internal and exhaust fans
- Loading and unloading belt conveyors
- Floor heating systems
- Green houses
- Associated electrical gear and instrumentation

AQUA will use information from vendors in conjunction with AQUA's design experience to identify the key design criteria for these equipment components, including approved equipment vendors, for inclusion in the Basis of Design Report (See Task 2.9).

2.5.5 PERFORMANCE SPECIFICATIONS DEVELOPMENT

AQUA (as a subconsultant to HDR) will prepare performance specifications for the solar drying and solids loadout equipment to facilitate competitive purchasing, expedite the procurement of long lead items, and finalize the equipment selection to facilitate detailed design. These specifications will include options for locating the facility at the bladder and landfill sites. The performance specifications will be compared against the OWNER's standard specifications to confirm equipment appurtenances, controls, electrical requirements, piping schedules, etc., are consistent with these standards. HDR will review vendor submittals and one additional re-submittal to compare vendor proposals against the performance specification.

2.6 Photovoltaic (PV) System

HDR will evaluate PV energy for both solar dryer alternatives:

- Option A – Bladder Site: power solar dryer equipment and provide supplemental thermal energy
- Option B – Landfill Site: power solar dryer equipment only

The power requirements and supplemental thermal requirements for both alternatives will be established as part of Task 2.5. For Option A – Bladder Site, PV will be used in conjunction with waste heat recovery (see Task 2.3) to provide supplemental thermal energy to the solar dryer.

2.6.1 PV SYSTEM CONCEPTUAL DESIGN

For both options, HDR will provide conceptual PV designs with visuals, land requirements, estimated kilowatt-hour (kWh) outputs, and annual 8,760 hourly output for the overall project integration. HDR will provide indicative cost inputs for general project comparative purposes, however, it is assumed Kiewit will provide formal cost estimates.

2.6.2 BATTERY STORAGE AND MICRO-GRID DESIGN CRITERIA

HDR will evaluate the PV requirements and battery storage requirements to support continuous operations of the solar dryer without connection to the Tucson Electric Power (TEP) grid. The evaluation will take the following into consideration:

- Operating conditions, i.e., winter season, inclement weather
- Diurnal power and thermal energy demands
- Partial vs full night-time operations
- Using TEP power instead of PV to power solar dryer equipment, and use PV for supplemental thermal energy only

2.6.3 PERFORMANCE SPECIFICATIONS DEVELOPMENT

Based on HDR's finalized design criteria (see Task 2.9), HDR will prepare performance specifications for PV equipment to facilitate competitive purchasing, expedite the procurement of long lead items, and finalize the equipment selection to facilitate detailed design. The performance specifications will be compared against the OWNER's standard specifications to confirm equipment appurtenances, controls, electrical requirements, piping schedules, etc., are consistent with these standards. The basis of design will include:

- Site roads
- Solar PV module requirements
- Inverter requirements
- Project requirements
- Efficiency requirements based on the selected project footprint.

HDR will review vendor submittals and one additional re-submittal to compare vendor proposals against the performance specification.

2.7 SCADA and Instrumentations and Controls (I&C)

The project will require the integration of multiple vendor-furnished packages as well as multiple individual pieces of equipment that will need to communicate with the OWNER's SCADA system. This task will establish the control system architecture requirements and

communications protocols for the various vendors to maintain compatibility and adherence to the OWNER's SCADA and security standards.

2.7.1 CONCEPTUAL VENDOR INTEGRATION PLAN

HDR will establish the network architecture for the project, including installation of a master programmable logic controller (PLC) to exchange signals with vendor packages. HDR will define the communications protocols and minimum criteria for vendor controls to be consistent with the OWNER's standards. These activities will be closely coordinated with and led by the OWNER's SCADA staff to identify project-specific requirements and preferences. The integration plan will take the following into consideration:

- Automation
- Communications protocols and cyber-security
- Network architecture
- Vendor minimum submittal requirements

2.7.2 PERFORMANCE SPECIFICATIONS DEVELOPMENT

For the selected solar dryer alternative, HDR will prepare performance specifications for SCADA and I&C equipment to facilitate competitive purchasing, expedite the procurement of long lead items, and finalize the equipment selection to facilitate detailed design. The performance specifications will be based on the OWNER's standard specifications to confirm communications and appurtenant equipment are consistent with these standards. HDR will review vendor submittals and one additional re-submittal to compare vendor proposals against the performance specification.

2.7.3 EXCLUSIONS

This scope and fee are developed for design phase of project only. Following items are not included and will be handled during the construction phase.

- PLC Panel design
- Loop drawings
- PLC/SCADA development and integration

2.8 Site / Civil

HDR and Tetra Tech will use landfill as-built data as well as topographic survey data to develop estimates of earthwork and fill quantities. Earthwork for both options will be developed to support cost estimating and alternatives analysis. This includes but is not limited to earthwork for structures, major yard piping, access, and potential stormwater management improvements.

2.8.1 GENERAL ARRANGEMENT DEVELOPMENT

Two alternative site layouts will be developed: Option A with the solar drying facility sited on the bladder site and Option B with the Solar drying facility sited on the landfill. The layouts will provide the basis for developing life-cycle costs to support the alternatives analysis. Plan views of the layouts will be used with facility sizing as accurately as possible without formal design.

2.8.2 YARD PIPING LAYOUTS

Conceptual yard piping will be shown for both options to provide a basis for cost estimating in support of the BODR alternatives analysis (Tasks 2.9.1 and 2.9.2). Yard piping will include major buried and/or overhead utility piping (hot water for supplemental heat, pumped sludge, potable water, electric, fiber, major utility ductwork, etc.).

2.8.3 EARTHWORK AND SITE / CIVIL

Tetra Tech will prepare a civil grading layout utilizing the topography survey information for the two (2) alternatives. Based on the proposed grading layout, earthwork volumes for cut and fill will be generated. These earthwork volumes will be "neat" volumes between the existing surface and proposed surfaces and will not include swell or shrinkage factors or subgrade thicknesses.

2.9 Basis of Design Report (BODR)

2.9.1 LIFECYCLE COST DEVELOPMENT

HDR will work with Kiewit to develop a lifecycle cost table that will support the alternatives analysis (Task 2.9.2). The lifecycle costs will compare the 20-yr, net present value of capital costs, O&M costs, and potentially other specific allied costs to provide an "apples-to-apples" cost comparison. HDR, AQUA, and Tetra Tech will lead the evaluation of the operational costs including use of the information provided by Kiewit's equipment vendors, and Kiewit will evaluate the capital costs. Typically, the alternative with the overall lowest 20-yr cost is selected as the optimum solution. However, qualitative and risk factors are often used by project owners to supplement alternatives analysis.

2.9.2 ALTERNATIVES EVALUATION WORKSHOP

HDR and Kiewit will coordinate and facilitate an Alternatives Evaluation Workshop with appropriate OWNER staff and stakeholders. The purpose of the workshop is to present a summary of the alternatives evaluated:

- Option A – Solar Dryer Facility located at the bladder location
- Option B – Solar Dryer Facility located at the landfill location

HDR will present the lifecycle cost analysis and advantages/disadvantages for each project alternative and receive concurrence from key stakeholders on the preferred configurations.

HDR and Kiewit will establish decision metrics for evaluating the alternatives, including preliminary cost and non-cost parameters (e.g., safety, ease of operations, maintenance intensity, etc.), to be submitted, reviewed, and approved by the OWNER. The decision analysis methodology will be established and presented to the OWNER for concurrence two (2) weeks prior to the workshop. It is assumed that the OWNER will actively participate in the workshop, selection of the decision metrics, and selection of the preferred alternative. The Alternatives Evaluation Workshop will be four (4) hours and be hosted in-person at Tres Rios WRF. HDR and Kiewit will coordinate with the OWNER to identify staff and the key stakeholders to be invited to the workshop.

2.9.3 DRAFT BASIS OF DESIGN REPORT

HDR will prepare a BODR that summarizes the existing solids process, details the proposed facilities to be designed as part of this project, and includes the design criteria for the proposed facilities. The BODR shall also memorialize decisions, rationale, assumptions, and constraints of the project. It shall include:

- Executive Summary
- Summary of existing biosolids processing
- Proposed biosolids facilities, including site layout and process flow diagram
- Design criteria for relevant disciplines, including:
 - Process mechanical
 - Heating, ventilation, and air conditioning (HVAC)
 - Site / civil
 - SCADA and I&C
 - Electrical systems, including battery storage and micro-grid design
 - Piping
 - Structural
- Reference applicable Building Codes
- Permitting
- Appendices
 - Summary of alternatives evaluated and life-cycle analysis (Tasks 2.9.1 and 2.9.2)
 - Preliminary calculations
 - Technical performance specifications for:
 - Screw presses
 - Odor control system
 - Waste heat recovery and storage system
 - PV and battery storage
 - Solar Dryer Facility

The draft BODR will be submitted by Kiewit to the OWNER for review. HDR assumes the OWNER will review and return comments within 10 business days.

2.9.4 FINAL BASIS OF DESIGN REPORT

HDR will generate a comment log based on the OWNER's review comments of the Draft BODR. The Final BODR will be submitted to the OWNER by Kiewit.

2.10 Permitting Assistance and Workplan

Kiewit will be responsible for obtaining building permits, and HDR will provide the necessary documentation to support the applications, i.e., plans, specifications, geotechnical reports, and structural calculations.

HDR will prepare a permitting workplan that will outline the schedule and requirements for the project engineering-related permits. HDR will participate in a permitting workshop with the OWNER and Kiewit, to be attended by HDR's engineering manager and permitting specialist.

2.10.1 ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY (ADEQ) PERMITS

Two permits will be required from ADEQ:

- i. The Tres Rios WRF Aquifer Protection Permit (APP) will require a minor amendment for the biosolids process modifications.
 - a. HDR's engineering manager and permitting specialist will participate in a pre-application meeting with ADEQ and the OWNER, assumed to occur at ADEQ's offices in Phoenix. In preparation for the pre-application meeting, HDR will provide exhibits and meeting materials to adequately describe the project and solicit pre-design feedback from ADEQ. HDR will be responsible for preparing the agenda and meeting summary.
 - b. HDR will prepare the permit application with the OWNER designated as the official applicant. The permit will include 90% design drawings, specifications, Final BODR, and other supporting documentation as required. It is assumed that the OWNER will pay the APP amendment application and post-processing fees levied after the permit is issued. HDR will deliver the permit application to ADEQ in Phoenix and participate in an administrative completeness review, including preparation of checklist forms.
 - c. HDR will respond to technical review comments from ADEQ in a timely manner, including a review of proposed responses by the OWNER.
 - d. HDR will issue an Engineers Certificate of Completion following construction.
- ii. The Ina Road Landfill permit will require an amendment for the placement of the solar dryer and PV system on the recently capped landfill.
 - a. Tetra Tech's geotechnical lead and HDR's engineering manager will participate in a pre-application meeting with ADEQ and the OWNER, assumed to occur at ADEQ's offices in Phoenix. In preparation for the pre-application meeting, Tetra Tech will provide exhibits and meeting materials to adequately describe the project and solicit pre-design feedback from ADEQ. Tetra Tech will be responsible for preparing the agenda and meeting summary.
 - b. Tetra Tech will prepare the permit application with the OWNER designated as the official applicant. The permit will include 30% design drawings, specifications, Final BODR, and other supporting documentation as required. It is assumed that the OWNER will pay the landfill permit amendment application and post-processing fees levied after the permit is issued. Tetra Tech will deliver the permit application to ADEQ in Phoenix and participate in an administrative completeness review, including preparation of checklist forms.
 - c. Tetra Tech will respond to technical review comments from ADEQ in a timely manner, including a review of proposed responses by the OWNER.
 - d. HDR will issue an Engineers Certificate of Completion following construction.

2.10.2 CONSTRUCTION PERMITS

HDR will assist Kiewit with the preparation of construction-related permits by preparing the supporting engineering drawings, specifications, and calculations. It is assumed that Kiewit will prepare and submit the permit applications. Construction-related permits include:

- Temporary construction related facilities, e.g., construction trailer setup
 - Power connection
 - Water connection
 - Sewer connection (optional)
 - Decking, parking area, grading
- Earthwork
 - Stormwater Construction Permit and Stormwater Pollution Prevention Plan (SWPPP)
 - Grading and excavation
- Air permit (if required)
- Arizona State Fire Marshall Permit
- Building permits
 - Aeration header pipe bridge
 - Combined screw press and solar dryer controls building
 - Solar dryer
 - PV system
 - Odor control expansion slabs
 - Miscellaneous process equipment slabs
- Paving permits

Task 2.0 Deliverables

Task 2.0 deliverables assume draft and final submittals, and will be submitted by Kiewit to the OWNER:

- Screw Press Pilot Test Plan (Task 2.1)
- Screw Press Pilot Results TM (Task 2.1)
- Screw Press Performance Specifications (Task 2.1)
- Master Utility Drawing (Task 2.2)
- Subsurface Utility Investigation (SUI) Report (Task 2.2)
- Heat Recovery Performance Specifications (Task 2.3)
- Odor Control Performance Specifications (Task 2.4)
- Solar Dryer and Solids Loadout Performance Specifications (Task 2.5)
- PV, Battery Storage, and Micro-Grid Performance Specifications (Task 2.6)
- SCADA and I&C Performance Specifications (Task 2.7)
- Life Cycle Cost Table (Task 2.9)
- Basis of Design Report (Task 2.9)
- Permitting Workplan (Task 2.10)
- Temporary construction permits (Task 2.10)
- APP Amendment Pre-Application Meeting Materials (Task 2.10)
- APP Amendment Application (Task 2.10)
- Landfill Permit Amendment Pre-Application Meeting Materials (Task 2.10)
- Landfill Permit Amendment Application (Task 2.10)
- Earthwork and grading permits supporting documents (Task 2.10)

- Air permit supporting materials, if required (Task 2.10)
- Arizona State Fire Marshall Permit (Task 2.10)
- Building permit supporting documents (Task 2.10)
- Paving permit supporting documents (Task 2.10)

3.0 Detailed Design

The scope of work and level of effort for Task 3.0 are based on designing the solar dryer facility at the landfill site – Option B. The design effort is divided into several Early Works Packages prior to the Balance of Plant work to expedite the project schedule and take advantage of equipment long lead items to complete prerequisite work. The number and extent of the Early Works Packages will be evaluated as part of Task 2.9 (Basis of Design Report), but this scope of work assumes three Early Works Packages. The costs associated with adding more Early Works Packages will be negotiated through a contract amendment. The design sub-tasks are:

1. Early Works Package 1: Aeration Header
2. Early Works Package 2: Thermal Storage Tank Insulation and Readiness
3. Early Works Package 3: Mass Grading for the Solar Dryer Building
4. Balance of Plant: Everything else not included in the Early Works Packages

3.1 Early Works Package 1: Aeration Header

The aeration header is not technically related to the solar dryer system which allows its design and construction to proceed independently.

3.1.1 FIELD INVESTIGATION AND CONCEPT DEVELOPMENT

HDR will size and design a common air header that connects the two blower buildings which will allow for greater flexibility in supplying air to either side of the plant from either blower building. A field investigation will be conducted by HDR to develop a concept for aeration header, and the optimal routing of the header will be determined with Kiewit and the OWNER. HDR will also provide electrical and controls design to regulate the flow of air. It is assumed that required modifications to blower controls and programming will be provided by the OWNER.

3.1.2 DESIGN DEVELOPMENT (60%)

HDR will advance the conceptual design to include connection points, routing, additional equipment such as actuated valves, and loop drawings for I&C equipment. The pipe support design for the aeration header bridge will be prepared by HDR. Submittals will be delivered in PDF form. Based on HDR's understanding of this project and our prior design experience on similar projects, our proposed sheet list is summarized in Table 2.

Table 2: Aeration Header Sheet List

Group	Sheet #	Title/Description
GENERAL	1	Title Sheet
	2	Sheet Index, General Notes
	3	Symbols and Legends
	4	Site Plan and Project Area - Overall Key Plan
	5	Process Flow Diagram - Overall

Group	Sheet #	Title/Description
DEMOLITION	6	Blower Buildings East and West Demolition Plans
	7	Blower Buildings East and West Demolition Sections
CIVIL	8	Site Plan and General Civil Notes
	9	Yard Piping Plan, Sections and Details
STRUCTURAL	10	Structural General Notes and Inspection Schedule
	11	Structural Plans, Sections and Details
PROCESS / MECHANICAL	12	Mechanical General Notes, Symbols and Abbreviations
	13	Mechanical Plans, Sections and Details
ELECTRICAL	14	Electrical Site Plan and General Electrical Notes
	15	Electrical Details
INSTRUMENTATION	16	I&C General Notes, Symbols and Abbreviations
	17	P&ID - Aeration Header

HDR will provide updated engineering quantities to Kiewit and participate in a coordination meeting to assist in the preparation of a 60% construction cost estimate. HDR will participate in a design development model workshop with the OWNER.

3.1.3 MOPO

HDR will work with Kiewit to develop a MOPO for installation that minimizes risk and impacts to operations during installation. HDR will assist Kiewit with the finalization of MOPOs developed as part of this sub-tasks. The aeration header MOPO design memoranda will be prepared and submitted by Kiewit.

3.1.4 CONSTRUCTION DOCUMENTS (90%)

HDR will provide design drawings and specifications for review, and HDR will participate in a construction document review workshop with the OWNER. HDR will provide updated engineering quantities to Kiewit to assist in the preparation of the 90% cost estimate. Submittals will be delivered in PDF format.

3.1.5 100% CONSTRUCTION DOCUMENT COMPLETION

HDR will finalize the design drawings, specifications, and associated MOPO's in preparation for Guaranteed Maximum Price (GMP) development and construction.

3.2 Early Works Package 2: Thermal Storage Tank Insulation and Readiness

Pending completion of the Task 2.3.3 (Repurposing the Abandoned activated sludge reactors and Modifying the blower buildings), the activated sludge reactor tanks may be insulated and structurally modified in readiness for a thermal storage tank while the heat exchangers and associated mechanical systems are being procured.

3.2.1 FIELD INVESTIGATION

HDR will visit and make a confined space entry of the abandoned activated sludge reactors (Building 6) to assess the structure geometry. It is assumed the OWNER will provide access to Building 6 at multiple locations, including furnishing ladders and other ingress/egress equipment, and HDR will provide health and safety equipment to facilitate the entry, including

preparation of a Job Hazard Analysis (JHA). It is assumed Building 6 is fully abandoned and can be accessed for a field investigation without operational impacts, and that a MOPO will not be required.

3.2.2 DESIGN DEVELOPMENT (60%)

Based on the field investigation and results of Task 2.3 (Waste Heat Recovery), HDR will design structural modifications and insulation to prepare Building 6 for use as thermal storage. Submittals will be delivered in PDF form. Based on HDR's understanding of this project, our proposed sheet list is summarized in Table 3.

Table 3: Thermal Storage Tank Insulation and Readiness

Group	Sheet #	Title/Description
GENERAL	1	Title Sheet
	2	Sheet Index, General Notes
	3	Symbols and Legends
	4	Site Plan and Project Area - Overall Key Plan
DEMOLITION	5	Demolition Plans and General Notes
	6	Demolition Sections and Details 1
	7	Demolition Sections and Details 2
STRUCTURAL	8	Structural General Notes and Inspection Schedule
	9	Structural Sections and Details 1
	10	Structural Sections and Details 2

HDR will provide updated engineering quantities to Kiewit and participate in a coordination meeting to assist in the preparation of a 60% construction cost estimate. HDR will participate in a design development review workshop with the OWNER.

3.2.3 CONSTRUCTION DOCUMENTS (90%)

HDR will provide design drawings and specifications for review, and HDR will participate in a construction document review workshop with the OWNER. HDR will provide updated engineering quantities to Kiewit to assist in the preparation of the 90% cost estimate. Submittals will be delivered in PDF format.

3.2.4 100% CONSTRUCTION DOCUMENT COMPLETION

HDR will finalize the design drawings and specifications in preparation for GMP development and construction.

3.3 Early Works Package 3: Mass Grading for the Solar Dryer Building

Pending selection of a solar dryer vendor, Tetra Tech (as a subconsultant to HDR) may proceed with designing the mass grading for the solar dryer building and PV at the landfill site. Given the limitations imposed by ADEQ for permitted landfills, it will not be possible to excavate into the landfill cap. Fill will need to be placed above the cap to provide a level foundation surface for the solar dryer building, accommodate new yard piping placed above the landfill cap while still meeting minimum depth requirements, maintain surface drainage and flow patterns, and facilitate site access.

3.3.1 DESIGN DEVELOPMENT (60%)

The grading plan for the landfill site will be prepared at a scale of 1" = 40', and will also include the following deliverables to support obtaining grading permit:

- Overall site plan showing property boundary and limits of grading
- Proposed locations of buildings and finished floor elevation(s)
- Proposed locations of paving, including total area to be paved
- Total earthwork volume
- Slope stability statement

Site grading should incorporate approved temporary soil stabilization techniques for construction on an active landfill, and a Stormwater Pollution Prevention Plan (SWPPP) to limit sediment and erosion from leaving the site. Submittals will be delivered in PDF form. Based on HDR's understanding of this project, our proposed sheet list is summarized in Table 4.

Table 4: Mass Grading for the Solar Dryer Building

Group	Sheet #	Title/Description
GENERAL	1	Title Sheet
	2	Sheet Index, General Notes
	3	Symbols and Legends
	4	Site Plan and Project Area - Overall Key Plan
CIVIL	4	Grading Plan 1
	5	Grading Plan 2
	6	Grading Plan 3
	7	Grading Plan 4
	8	Grading Plan 5
	9	Grading Plan 6
	10	Grading Plan 7
	11	Grading Plan 8

HDR will provide updated engineering quantities to Kiewit and participate in a coordination meeting to assist in the preparation of a 60% construction cost estimate. HDR will participate in a design development review workshop with the OWNER.

3.3.2 CONSTRUCTION DOCUMENTS (90%)

HDR will provide design drawings and specifications for review, and HDR will participate in a construction document review workshop with the OWNER. HDR will provide updated engineering quantities to Kiewit to assist in the preparation of the 90% cost estimate. Submittals will be delivered in PDF format.

3.3.3 100% CONSTRUCTION DOCUMENT COMPLETION

HDR will finalize the design drawings and specifications in preparation for GMP development and construction.

3.4 Balance of Plant

The Balance of Plant (BOP) will include the following facilities and design activities:

- Site Civil
 - o Remainder of grading for the solar dryer and PV systems at the landfill site and miscellaneous grading within the Tres Rios WRF plant site to support facility design
 - o Access roads and paving
 - o Drainage
- Yard Piping
 - o Sludge transfer line from Building 23 to the solar dryer
 - o Centrate line from the solar dryer to the central sump at Building 23
 - o Hot water line from Building 6 to the solar dryer and return water line from the solar dryer to Building 6.
 - o Foul air line from the solar dryer to the odor control system at Building 23
 - o Electrical service and communications duct banks to the solar dryer building.
 - o Miscellaneous water, sewer, electrical, communications, and other process piping.
 - o Pipe support designs for elevated pipes or pipes larger than 12-in diameter.
- PV System
 - o Structural, electrical, and I&C systems for the PV array
 - o Structural, electrical, and I&C systems for battery storage
- Screw Press Building (the design scope assumes installation of the screw presses in a climate-controlled pre-fabricated building with a separate controls room for the solar dryer system)
 - o Structural foundation for the vendor-furnished building
 - o Mechanical, process, electrical, and I&C design for two screw presses, including chemical feed systems and appurtenances
 - o Building mechanical systems for water, electrical, and HVAC.
- Solar Dryer Building
 - o Structural foundation and interior wall systems for the vendor-furnished solar dryer greenhouse structure
 - o Mechanical, electrical and I&C design for the solar dryer turner system, including internal ventilation and exhaust ventilation.
 - o Mechanical, electrical, and I&C design for the dewatered sludge conveyance system(s)
 - o Mechanical, electrical, and I&C design for the dried sludge conveyance system(s)
 - o Structural, mechanical, electrical, and I&C design for solids storage and loadout
- Building 6 (repurposed Activated Sludge Reactors)
 - o Structural, mechanical, electrical, and I&C design for thermal storage and heater water system
- Building 23 (Dewatering Building and Odor Control)
 - o Mechanical, electrical, and I&C design for process connections, pumping, and sludge transfer to the solar dryer facility.
 - o Structural, mechanical, process, electrical, and I&C design for expansion of the existing odor control system.

- Buildings 34 and 46 (Blowers East and West, respectively)
 - o Demolition, structural, mechanical, electrical, and I&C systems for installation of heat exchangers, piping, and appurtenances in blower discharge manifolds.

3.4.1 CONCEPTUAL DESIGN (30%)

Based on HDR's understanding of this project, our proposed sheet list is summarized in Appendix A. HDR will provide design drawings for review and will participate in a conceptual design review workshop with the OWNER which will incorporate preliminary BIM and 3D models of the facility. HDR will provide updated engineering quantities to Kiewit to assist in the preparation of the 60% cost estimate. Submittals will be delivered in PDF form.

3.4.2 DESIGN DEVELOPMENT (60%)

HDR will provide design drawings and specifications for review and will participate in a construction document review workshop with the OWNER which will incorporate BIM and 3D models of the facility. HDR will provide updated engineering quantities to Kiewit and participate in a coordination meeting to assist in the preparation of the 60% cost estimate. Submittals will be delivered in PDF form.

3.4.3 MOPO

HDR will work with Kiewit to develop a MOPO for installation that minimizes risk and impacts to operations during installation. HDR will assist Kiewit with the finalization of MOPOs developed as part of this sub-task. The BOP MOPO design memoranda will be prepared and submitted by Kiewit.

3.4.4 CONSTRUCTION DOCUMENTS (90%)

HDR will provide design drawings and specifications for review and will participate in a construction document review workshop with the OWNER which will incorporate BIM and 3D models of the facility. HDR will provide updated engineering quantities to Kiewit to assist in the preparation of the 90% cost estimate. Submittals will be delivered in PDF format.

3.4.5 100% CONSTRUCTION DOCUMENT COMPLETION

HDR will finalize the design drawings and specifications in preparation for GMP development and construction.

Task 3.0 Deliverables

Task 3.0 deliverables are assumed to be submitted by Kiewit.

- Aeration Header MOPO
- Aeration Header 60%, 90%, and 100% Construction Documents
- Thermal Storage Tanks Insulation and Readiness 60%, 90%, and 100% Construction Documents
- Solar Dryer Building Mass Grading 60%, 90%, and 100% Construction Documents
- Solar Dryer Building Site Grading Plan
- Balance of Plant 30%, 60%, 90%, and 100% Construction Documents

4.0 Qualifications and Exclusions

1. HDR will prepare and submit construction drawings and associated documents in electronic PDF format. Final sealed drawings will be submitted in PDF and AutoCAD format.
2. HDR's scope of work is limited to design services only for this phase of the work. Further design or support of construction is to be addressed via contract amendment.
3. HDR provides no Performance Guarantee for specified equipment. Performance Guarantees are assumed to be addressed in the procurement agreements between Kiewit and vendors.
4. HDR assumes laboratory testing during screw press piloting will be performed by the Owner at their laboratory at no cost to HDR.
5. HDR assumes that screw press pilot testing will be completed on-schedule as noted in HDR's Design Schedule based on preliminary discussions with available equipment vendors. Any schedule delays and associated HDR efforts related to delays will require a change order.
6. HDR's design submittals will be reviewed by Kiewit (and the OWNER) and returned to HDR in a total (initial submission and potentially resubmittals) of 20 calendar days of submission unless stated otherwise in the Design Schedule.
7. HDR's will support Kiewit in developing and applying for permits required during the design process. That support will include providing to Kiewit the design documents, specifications, calculations, and other design related information needed by Kiewit to develop the applications. Additional permit documentation beyond those prepared for the design development are assumed to be prepared by Kiewit, including but not limited to permits related to Kiewit mobilization, site setup, and maintenance of the work site. Kiewit will prepare and submit the permit applications, pay the related fees, participate in meetings, and secure the permits as needed to meet the design schedule.
8. Other than review and selection of Alternate Equipment / Processes and providing approximate non-binding quantities of major work disciplines, no other procurement (equipment or other) support is included. Kiewit acknowledges that selection of equipment manufacturer and / or model selection made prior to 100% I&C design may be subject to modifications.
9. Preparation of Early Work Packages are excluded unless explicitly defined in this document.
10. Kiewit will support HDR in securing site access to enable Geotech drilling / sampling per the Design Schedule.
11. Kiewit will provide to HDR on a monthly basis copies of relevant Design-Builder Contract documents, including but not limited to Notices, change order requests for added time and / or costs, executed change orders and amendments, schedule modifications, Monthly Progress Reports, other documents, including correspondence with Owner, relevant to HDR's performance of its obligations.
12. Hazardous material surveys, mitigation, and potential delays are excluded and are presumed to be budgeted directly by the OWNER or by Kiewit.

13. HDR's scope has no Value Engineering hours for creation or assessment of options, review of reports by third parties, or redesign. It is anticipated that Value Engineering will be a continual process occurring early in the design process without disruption.
14. HDR excludes incorporation of OT Cybersecurity within the design. Where OWNER-provided standards are applied, risk evaluation or development of cybersecurity mitigations are excluded.
15. The OWNER will furnish requested operational data, as-built drawings, and other facility-related information to facilitate the design. As-built drawings will be provided in CAD format where available.
16. Compensation for proposed services will be billed on a Time and Materials basis. HDR and subconsultant rates will be updated annually for subsequent years. The fee is based on an assumed level of effort which can vary significantly depending on the level of support requested by Kiewit and/or the OWNER. HDR will work closely with Kiewit to monitor the budget status.
17. HDR's fee has no contingency budget. It is anticipated that Kiewit will have a budget for this should the need for Additional Services arise.
18. For the purposes of cost estimating, HDR bears no responsibility for: the accuracy of quantities provided, how they may change with evolution of the final design, materials availability, accuracy of or errors in the estimate, or market conditions that may impact construction cost and / or schedule.

APPENDIX A

Sheet List

Pima County
Solar Dryer Facility
Balance of Plant (BOP) - Drawings List

Discipline	Type	Drawing Number	Drawing Name	Sequence	Total Sheet Count
General	General	00G101	Title Sheet	1	1
General	General	00G102	Facility Key Map	2	2
General	General	00G103	Sheet Index I	3	3
General	General	00G104	Sheet Index II	4	4
General	General	00G105	Code Compliance Requirements 1	5	5
General	General	00G106	Code Compliance Requirements 2	6	6
General	General	00G107	General Notes	7	7
General	General	00G108	Abbreviations	8	8
General	General	00G109	General Symbols and Legends	9	9
General	General	00G110	Process Flow Diagram (Solids)	10	10
General	Schedule and Diagrams	00G701	Piping Schedule	1	11
General	Schedule and Diagrams	00G702	Schedule of Special Inspections 1	2	12
General	Schedule and Diagrams	00G703	Schedule of Special Inspections 2	3	13
General	Schedule and Diagrams	00G704	Schedule of Special Inspections 3	4	14
General	Schedule and Diagrams	00G705	Schedule of Special Inspections 4	5	15
Demolition	Plans	00D201	Centrifuge Facility and Odor Control Demolition Plans 1	1	16
Demolition	Plans	00D202	Centrifuge Facility and Odor Control Demolition Plans 2	2	17
Civil	General	00C101	Symbols and Legends	1	18
Civil	General	00C102	Civil General Notes	2	19
Civil	General	00C103	Survey Control	3	20
Civil	Plans	00C201	Overall Site Plan	1	21
Civil	Plans	00C202	Site Plan 1	2	22
Civil	Plans	00C203	Site Plan 2	3	23
Civil	Plans	00C204	Site Plan 3	4	24
Civil	Plans	00C205	Site Plan 4	5	25
Civil	Plans	00C206	Site Plan 5	6	26
Civil	Plans	00C207	Site Plan 6	7	27
Civil	Plans	00C208	Site Plan 7	8	28
Civil	Plans	00C209	Site Plan 8	9	29

Pima County
Solar Dryer Facility
Balance of Plant (BOP) - Drawings List

Discipline	Type	Drawing Number	Drawing Name	Sequence	Total Sheet Count
Civil	Plans	00C210	Site Plan 9	10	30
Civil	Plans	00C211	Site Plan 10	11	31
Civil	Plans	00C212	Site Plan 11	12	32
Civil	Plans	00C213	Site Plan 12	13	33
Civil	Plans	00C214	Site Plan 13	14	34
Civil	Plans	00C215	Site Plan 14	15	35
Civil	Plans	00C216	Site Plan 15	16	36
Civil	Plans	00C217	Site Plan 16	17	37
Civil	Plans	00C218	Grading & Drainage Plan 1	18	38
Civil	Plans	00C219	Grading & Drainage Plan 2	19	39
Civil	Plans	00C220	Grading & Drainage Plan 3	20	40
Civil	Plans	00C221	Grading & Drainage Plan 4	21	41
Civil	Plans	00C222	Grading & Drainage Plan 5	22	42
Civil	Plans	00C223	Grading & Drainage Plan 6	23	43
Civil	Plans	00C224	Grading & Drainage Plan 7	24	44
Civil	Plans	00C225	Grading & Drainage Plan 8	25	45
Civil	Plans	00C226	Yard Piping Plan 1	26	46
Civil	Plans	00C227	Yard Piping Plan 2	27	47
Civil	Plans	00C228	Yard Piping Plan 3	28	48
Civil	Plans	00C229	Yard Piping Plan 4	29	49
Civil	Plans	00C230	Yard Piping Plan 5	30	50
Civil	Plans	00C231	Yard Piping Plan 6	31	51
Civil	Plans	00C232	Yard Piping Plan 7	32	52
Civil	Plans	00C233	Yard Piping Plan 8	33	53
Civil	Plans	00C234	Yard Piping Plan 9	34	54
Civil	Plans	00C235	Yard Piping Plan 10	35	55
Civil	Plans	00C236	Yard Piping Plan 11	36	56
Civil	Plans	00C237	Yard Piping Plan 12	37	57
Civil	Plans	00C238	Yard Piping Plan 13	38	58

Pima County
Solar Dryer Facility
Balance of Plant (BOP) - Drawings List

Discipline	Type	Drawing Number	Drawing Name	Sequence	Total Sheet Count
Civil	Plans	00C239	Yard Piping Plan 14	39	59
Civil	Plans	00C240	Yard Piping Plan 15	40	60
Civil	Plans	00C241	Yard Piping Plan 16	41	61
Civil	Details	00C601	Civil Standard Details 1	1	62
Civil	Details	00C602	Civil Standard Details 2	2	63
Civil	Details	00C603	Civil Standard Details 3	3	64
Geotechnical	Plans	00B201	Overall Methane Ventilation System	1	65
Geotechnical	Plans	00B202	Methane Ventilation System Plan 1	2	66
Geotechnical	Plans	00B203	Methane Ventilation System Plan 2	3	67
Geotechnical	Details	00B601	Methane Ventilation System Details 1	1	68
Geotechnical	Details	00B602	Methane Ventilation System Details 2	2	69
Architectural	General	00A101	Architectural General Notes and Abbreviations	1	70
Architectural	Plans	00A201	Architectural Site Plan	1	71
Architectural	Plans	00A202	Solar Dryer Building - Architectural Plans 1	2	72
Architectural	Plans	00A203	Solar Dryer Building - Architectural Plans 2	3	73
Architectural	Plans	00A204	Solar Dryer Building - Architectural Plans 3	4	74
Architectural	Plans	00A205	Solar Dryer Building - Architectural Plans 4	5	75
Architectural	Plans	00A206	Screw Press Building - Architectural Plans	6	76
Architectural	Plans	00A207	Control Building - Architectural Plans	7	77
Architectural	Sections	00A401	Solar Dryer Building - Architectural Sections 1	1	78
Architectural	Sections	00A402	Solar Dryer Building - Architectural Sections 2	2	79
Architectural	Sections	00A403	Screw Press and Control Buildings - Architectural Sections	3	80
Architectural	Elevations	00A301	Solar Dryer Building - Architectural Elevations 1	1	81
Architectural	Elevations	00A302	Solar Dryer Building - Architectural Elevations 2	2	82
Architectural	Elevations	00A303	Solar Dryer Building - Architectural Elevations 3	3	83
Architectural	Elevations	00A304	Solar Dryer Building - Architectural Elevations 4	4	84
Architectural	Elevations	00A305	Solar Dryer Building - Architectural Elevations 5	5	85
Architectural	Elevations	00A306	Solar Dryer Building - Architectural Elevations 6	6	86
Architectural	Elevations	00A307	Solar Dryer Building - Architectural Elevations 7	7	87

Pima County
Solar Dryer Facility
Balance of Plant (BOP) - Drawings List

Discipline	Type	Drawing Number	Drawing Name	Sequence	Total Sheet Count
Architectural	Elevations	00A308	Solar Dryer Building - Architectural Elevations 8	8	88
Architectural	Elevations	00A309	Solar Dryer Building - Architectural Elevations 9	9	89
Architectural	Elevations	00A310	Solar Dryer Building - Architectural Elevations 10	10	90
Architectural	Elevations	00A311	Solar Dryer Building - Architectural Elevations 11	11	91
Architectural	Elevations	00A312	Solar Dryer Building - Architectural Elevations 12	12	92
Architectural	Elevations	00A313	Centrifuge and Control Buildings - Architectural Elevations	13	93
Architectural	Details	00A601	Solar Dryer Building - Architectural Details 1	1	94
Architectural	Details	00A602	Solar Dryer Building - Architectural Details 2	2	95
Architectural	Details	00A603	Solar Dryer Building - Architectural Details 3	3	96
Architectural	Details	00A604	Solar Dryer Building - Architectural Details 4	4	97
Architectural	Details	00A605	Architectural Standard Details	5	98
Architectural	Schedule and Diagrams	00A701	Door and Hardware Schedule	1	99
Structural	General	00S101	Structural Symbols and Abbreviations	1	100
Structural	General	00S102	Structural General Notes and Inspection Schedule	2	101
Structural	Plans	00S201	Solar Dryer Building - Overall Structural Plan	1	102
Structural	Plans	00S202	Solar Dryer Building - Structural Plan 1	2	103
Structural	Plans	00S203	Solar Dryer Building - Structural Plan 2	3	104
Structural	Plans	00S204	Solar Dryer Building - Structural Plan 3	4	105
Structural	Plans	00S205	Solar Dryer Building - Structural Plan 4	5	106
Structural	Plans	00S206	Solar Dryer Building - Foundation Plan 1	6	107
Structural	Plans	00S207	Solar Dryer Building - Foundation Plan 2	7	108
Structural	Plans	00S208	Solar Dryer Building - Foundation Plan 3	8	109
Structural	Plans	00S209	Solar Dryer Building - Foundation Plan 4	9	110
Structural	Plans	00S210	Solids Loadout - Structural Plan 1	10	111
Structural	Plans	00S211	Solids Loadout - Structural Plan 1	11	112
Structural	Plans	00S212	Solar Drying Floor Heating Pumps - Foundation Plan	12	113
Structural	Plans	00S213	Odor Control Units - Foundation Plan 1	13	114
Structural	Plans	00S214	Odor Control Units - Foundation Plan 2	14	115
Structural	Plans	00S215	Odor Control Units - Foundation Plan 3	15	116

Pima County
Solar Dryer Facility
Balance of Plant (BOP) - Drawings List

Discipline	Type	Drawing Number	Drawing Name	Sequence	Total Sheet Count
Structural	Plans	00S216	Odor Control Units - Foundation Plan 4	16	117
Structural	Plans	00S217	Odor Control Units - Foundation Plan 5	17	118
Structural	Plans	00S218	Odor Control Units - Foundation Plan 6	18	119
Structural	Plans	00S219	Solar PV System - Foundation Plan 1	19	120
Structural	Plans	00S220	Solar PV System - Foundation Plan 2	20	121
Structural	Plans	00S221	Ancillary Buildings - Foundation Plans	21	122
Structural	Sections	00S401	Solar Dryer Building - Foundation Section 1	1	123
Structural	Sections	00S402	Solar Dryer Building - Foundation Section 2	2	124
Structural	Sections	00S403	Solar Dryer Building - Foundation Section 3	3	125
Structural	Sections	00S404	Solar Dryer Building - Foundation Section 4	4	126
Structural	Sections	00S405	Solids Loadout - Structural Section 1	5	127
Structural	Sections	00S406	Solids Loadout - Structural Section 2	6	128
Structural	Sections	00S407	Solar Drying Floor Heating Pumps - Sections	7	129
Structural	Sections	00S408	Odor Control Units - Foundation Section	8	130
Structural	Sections	00S409	Solar PV System - Foundation Section 1	9	131
Structural	Sections	00S410	Solar PV System - Foundation Section 2	10	132
Structural	Sections	00S411	Ancillary Buildings - Foundation Sections	11	133
Structural	Details	00S601	Solar Dryer Building - Structural Details 1	1	134
Structural	Details	00S602	Solar Dryer Building - Structural Details 2	2	135
Structural	Details	00S603	Solar Dryer Building - Structural Details 3	3	136
Structural	Details	00S604	Solar Dryer Building - Structural Details 4	4	137
Structural	Details	00S605	Solids Loadout - Structural Details 1	5	138
Structural	Details	00S606	Solids Loadout - Structural Details 2	6	139
Structural	Details	00S607	Structural Standard Details 1	7	140
Structural	Details	00S608	Structural Standard Details 2	8	141
Structural	Details	00S609	Structural Standard Details 3	9	142
Structural	Details	00S610	Structural Standard Details 4	10	143
Process Mechanical	General	00M101	Mechanical Symbols and Abbreviations	1	144
Process Mechanical	General	00M102	Mechanical Process Abbreviations	2	145

Pima County
Solar Dryer Facility
Balance of Plant (BOP) - Drawings List

Discipline	Type	Drawing Number	Drawing Name	Sequence	Total Sheet Count
Process Mechanical	General	00M103	Mechanical General Notes	3	146
Process Mechanical	Plans	00M201	Solar Dryer Building - Overall Mechanical Plan	1	147
Process Mechanical	Plans	00M202	Solar Dryer Building - Mechanical Plan 1	2	148
Process Mechanical	Plans	00M203	Solar Dryer Building - Mechanical Plan 2	3	149
Process Mechanical	Plans	00M204	Solar Dryer Building - Mechanical Plan 3	4	150
Process Mechanical	Plans	00M205	Solar Dryer Building - Mechanical Plan 4	5	151
Process Mechanical	Plans	00M206	Solar Dryer Building - Dewatered Solids Conveyance Plan 1	6	152
Process Mechanical	Plans	00M207	Solar Dryer Building - Dewatered Solids Conveyance Plan 2	7	153
Process Mechanical	Plans	00M208	Solar Dryer Building - Dried Solids Conveyance Plan 1	8	154
Process Mechanical	Plans	00M209	Solar Dryer Building - Dried Solids Conveyance Plan 2	9	155
Process Mechanical	Plans	00M210	Solar Dryer Building - Overall Floor Heating Plan	10	156
Process Mechanical	Plans	00M211	Solar Dryer Building - Floor Heating Plan 1	11	157
Process Mechanical	Plans	00M212	Solar Dryer Building - Floor Heating Plan 2	12	158
Process Mechanical	Plans	00M213	Solar Dryer Building - Floor Heating Plan 3	13	159
Process Mechanical	Plans	00M214	Solar Dryer Building - Floor Heating Plan 4	14	160
Process Mechanical	Plans	00M215	Solar Dryer Building - Floor Heating Plan 5	15	161
Process Mechanical	Plans	00M216	Solar Dryer Building - Floor Heating Plan 6	16	162
Process Mechanical	Plans	00M217	Solar Dryer Building - Floor Heating Plan 7	17	163
Process Mechanical	Plans	00M218	Solar Dryer Building - Floor Heating Plan 8	18	164
Process Mechanical	Plans	00M219	Solar Dryer Building - Overall Radiant Heating Plan	19	165
Process Mechanical	Plans	00M220	Solar Dryer Building - Radiant Heating Plan 1	20	166
Process Mechanical	Plans	00M221	Solar Dryer Building - Radiant Heating Plan 2	21	167
Process Mechanical	Plans	00M222	Solar Dryer Building - Radiant Heating Plan 3	22	168
Process Mechanical	Plans	00M223	Solar Dryer Building - Radiant Heating Plan 4	23	169
Process Mechanical	Plans	00M224	Solar Dryer Floor Heating Pumps - Mechanical Plan	24	170
Process Mechanical	Plans	00M225	Solids Loadout - Mechanical Plan 1	25	171
Process Mechanical	Plans	00M226	Solids Loadout - Mechanical Plan 2	26	172
Process Mechanical	Plans	00M227	Screw Press Building - Mechanical Plans 1	27	173
Process Mechanical	Plans	00M228	Screw Press Building - Mechanical Plans 2	28	174

Pima County
Solar Dryer Facility
Balance of Plant (BOP) - Drawings List

Discipline	Type	Drawing Number	Drawing Name	Sequence	Total Sheet Count
Process Mechanical	Plans	00M229	Odor Control Units - Mechanical Plans 1	29	175
Process Mechanical	Plans	00M230	Odor Control Units - Mechanical Plans 2	30	176
Process Mechanical	Plans	00M231	Odor Control Units - Mechanical Plans 3	31	177
Process Mechanical	Plans	00M232	Odor Control Units - Mechanical Plans 4	32	178
Process Mechanical	Plans	00M233	Odor Control Units - Mechanical Plans 5	33	179
Process Mechanical	Plans	00M234	Odor Control Units - Mechanical Plans 6	34	180
Process Mechanical	Plans	00M235	Blower Building East - Mechanical Plans	35	181
Process Mechanical	Plans	00M236	Blower Building West - Mechanical Plans	36	182
Process Mechanical	Plans	00M237	Heat Exchanger Tank - Mechanical Plans	37	183
Process Mechanical	Plans	00M238	Heat Exchanger Pumps - Mechanical Plan	38	184
Process Mechanical	Sections	00M401	Solar Dryer Building - Mechanical Sections 1	1	185
Process Mechanical	Sections	00M402	Solar Dryer Building - Mechanical Sections 2	2	186
Process Mechanical	Sections	00M403	Solar Dryer Building - Mechanical Sections 3	3	187
Process Mechanical	Sections	00M404	Solar Dryer Building - Mechanical Sections 4	4	188
Process Mechanical	Sections	00M405	Solar Dryer Building - Mechanical Sections 5	5	189
Process Mechanical	Sections	00M406	Solar Dryer Building - Mechanical Sections 6	6	190
Process Mechanical	Sections	00M407	Solar Dryer Building - Mechanical Sections 7	7	191
Process Mechanical	Sections	00M408	Solar Dryer Building - Mechanical Sections 8	8	192
Process Mechanical	Sections	00M409	Solar Dryer Building - Mechanical Sections 9	9	193
Process Mechanical	Sections	00M410	Solar Dryer Building - Mechanical Sections 10	10	194
Process Mechanical	Sections	00M411	Solar Dryer Building - Mechanical Sections 11	11	195
Process Mechanical	Sections	00M412	Solar Dryer Building - Radiant Heating Sections 1	12	196
Process Mechanical	Sections	00M413	Solar Dryer Building - Radiant Heating Sections 2	13	197
Process Mechanical	Sections	00M414	Solar Dryer Building - Exhaust Piping Sections 1	14	198
Process Mechanical	Sections	00M415	Solar Dryer Building - Exhaust Piping Sections 2	15	199
Process Mechanical	Sections	00M416	Solar Dryer Building - Exhaust Piping Sections 3	16	200
Process Mechanical	Sections	00M417	Solar Dryer Building - Exhaust Piping Sections 4	17	201
Process Mechanical	Sections	00M418	Solar Dryer Building - Exhaust Piping Sections 5	18	202
Process Mechanical	Sections	00M419	Solar Dryer Building - Exhaust Piping Sections 6	19	203

Pima County
Solar Dryer Facility
Balance of Plant (BOP) - Drawings List

Discipline	Type	Drawing Number	Drawing Name	Sequence	Total Sheet Count
Process Mechanical	Sections	00M420	Solar Dryer Building - Exhaust Piping Sections 7	20	204
Process Mechanical	Sections	00M421	Solar Dryer Building - Exhaust Piping Sections 8	21	205
Process Mechanical	Sections	00M422	Solar Dryer Floor Heating Pumps - Mechanical Sections 1	22	206
Process Mechanical	Sections	00M423	Solar Dryer Floor Heating Pumps - Mechanical Sections 2	23	207
Process Mechanical	Sections	00M424	Solids Loadout - Mechanical Sections 1	24	208
Process Mechanical	Sections	00M425	Solids Loadout - Mechanical Sections 2	25	209
Process Mechanical	Sections	00M426	Screw Press Building - Mechanical Sections 1	26	210
Process Mechanical	Sections	00M427	Screw Press Building - Mechanical Sections 2	27	211
Process Mechanical	Sections	00M428	Odor Control Units - Mechanical Sections 1	28	212
Process Mechanical	Sections	00M429	Odor Control Units - Mechanical Sections 2	29	213
Process Mechanical	Sections	00M430	Odor Control Units - Mechanical Sections 3	30	214
Process Mechanical	Sections	00M431	Odor Control Units - Mechanical Sections 4	31	215
Process Mechanical	Sections	00M432	Odor Control Units - Mechanical Sections 5	32	216
Process Mechanical	Sections	00M433	Odor Control Units - Mechanical Sections 6	33	217
Process Mechanical	Sections	00M434	Blower Building East - Mechanical Sections	34	218
Process Mechanical	Sections	00M435	Blower Building West - Mechanical Sections	35	219
Process Mechanical	Sections	00M436	Heat Exchanger Tank - Mechanical Sections	36	220
Process Mechanical	Sections	00M437	Heat Exchanger Pumps - Mechanical Sections	37	221
Process Mechanical	Details	00M601	Solar Dryer Building - Mechanical Details 1	1	222
Process Mechanical	Details	00M602	Solar Dryer Building - Mechanical Details 2	2	223
Process Mechanical	Details	00M603	Solar Dryer Building - Mechanical Details 3	3	224
Process Mechanical	Details	00M604	Solar Dryer Building - Floor Heating Mechanical Details 1	4	225
Process Mechanical	Details	00M605	Solar Dryer Building - Floor Heating Mechanical Details 2	5	226
Process Mechanical	Details	00M606	Solar Dryer Building - Radiant Heating Mechanical Details 1	6	227
Process Mechanical	Details	00M607	Solar Dryer Building - Radiant Heating Mechanical Details 2	7	228
Process Mechanical	Details	00M608	Solids Loadout - Mechanical Details 1	8	229
Process Mechanical	Details	00M609	Solids Loadout - Mechanical Details 2	9	230
Process Mechanical	Details	00M610	Screw Press Building - Mechanical Details 1	10	231
Process Mechanical	Details	00M611	Screw Press Building - Mechanical Details 2	11	232

Pima County
Solar Dryer Facility
Balance of Plant (BOP) - Drawings List

Discipline	Type	Drawing Number	Drawing Name	Sequence	Total Sheet Count
Process Mechanical	Details	00M612	Odor Control Units - Mechanical Details 1	12	233
Process Mechanical	Details	00M613	Odor Control Units - Mechanical Details 2	13	234
Process Mechanical	Details	00M614	Odor Control Units - Mechanical Details 3	14	235
Process Mechanical	Details	00M615	Mechanical Standard Details 1	15	236
Process Mechanical	Details	00M616	Mechanical Standard Details 2	16	237
Process Mechanical	Details	00M617	Mechanical Standard Details 3	17	238
HVAC	General	00H101	HVAC Plumbing Symbols and Abbreviations	1	239
HVAC	Plans	00H202	Screw Press and Control Building HVAC and Plumbing Plan	2	240
HVAC	Details	00H603	Screw Press and Control Building Details and Schedules	3	241
Equipment	Schedule and Diagrams	00Q701	Mechanical Equipment Schedule 1	1	242
Equipment	Schedule and Diagrams	00Q702	Mechanical Equipment Schedule 2	2	243
Equipment	Schedule and Diagrams	00Q703	Mechanical Equipment Schedule 3	3	244
Equipment	Schedule and Diagrams	00Q704	Mechanical Equipment Schedule 4	4	245
Equipment	Schedule and Diagrams	00Q705	Mechanical Equipment Schedule 5	5	246
Equipment	Schedule and Diagrams	00Q707	Valve Schedule 1	7	247
Equipment	Schedule and Diagrams	00Q708	Valve Schedule 2	8	248
Equipment	Schedule and Diagrams	00Q709	Valve Schedule 3	9	249
Equipment	Schedule and Diagrams	00Q710	Valve Schedule 4	10	250
Equipment	Schedule and Diagrams	00Q711	Valve Schedule 5	11	251
Equipment	Schedule and Diagrams	00Q710	Gate and Pump Schedule	10	252
Electrical	General	00E101	Electrical Symbols and Abbreviations 1	1	253
Electrical	General	00E102	Electrical Symbols and Abbreviations 2	2	254
Electrical	General	00E103	Electrical General Notes	3	255
Electrical	General	00E104	PV and Battery Storage General Notes	4	256
Electrical	Plans	00E201	Electrical Site Plan 1	1	257
Electrical	Plans	00E202	Electrical Site Plan 2	2	258
Electrical	Plans	00E203	Electrical Site Plan 3	3	259
Electrical	Plans	00E204	Electrical Site Plan 4	4	260
Electrical	Plans	00E205	PV and Battery Storage - Plan	5	261

Pima County
Solar Dryer Facility
Balance of Plant (BOP) - Drawings List

Discipline	Type	Drawing Number	Drawing Name	Sequence	Total Sheet Count
Electrical	Plans	00E206	PV and Battery Storage - Array Layout	6	262
Electrical	Plans	00E209	Electrical Power and Lighting Plan 1	9	263
Electrical	Plans	00E210	Electrical Power and Lighting Plan 2	10	264
Electrical	Plans	00E211	Electrical Power and Lighting Plan 3	11	265
Electrical	Plans	00E212	Electrical Power and Lighting Plan 4	12	266
Electrical	Plans	00E213	Electrical Grounding Plan 1	13	267
Electrical	Plans	00E214	Electrical Grounding Plan 2	14	268
Electrical	Plans	00E215	Electrical Grounding Plan 3	15	269
Electrical	Plans	00E216	Electrical Grounding Plan 4	16	270
Electrical	Elevations	00E301	Electrical Elevations 1	1	271
Electrical	Elevations	00E302	Electrical Elevations 2	2	272
Electrical	Details	00E601	Electrical Standard Details 1	1	273
Electrical	Details	00E602	Electrical Standard Details 2	2	274
Electrical	Details	00E603	Electrical Standard Details 3	3	275
Electrical	Details	00E604	Electrical Standard Details 4	4	276
Electrical	Details	00E605	PV and Battery Storage Details 1	5	277
Electrical	Details	00E606	PV and Battery Storage Details 2	6	278
Electrical	Details	00E607	PV and Battery Storage Details 3	7	279
Electrical	Details	00E608	PV and Battery Storage Details 4	8	280
Electrical	Details	00E609	PV and Battery Storage Details 5	9	281
Electrical	Details	00E610	PV and Battery Storage Details 6	10	282
Electrical	Schedule and Diagrams	00E701	Electrical One-Line Diagram 1	1	283
Electrical	Schedule and Diagrams	00E702	Electrical One-Line Diagram 2	2	284
Electrical	Schedule and Diagrams	00E703	Electrical One-Line Diagram 3	3	285
Electrical	Schedule and Diagrams	00E704	Electrical One-Line Diagram 4	4	286
Electrical	Schedule and Diagrams	00E705	Electrical Panel Schedule 1	5	287
Electrical	Schedule and Diagrams	00E706	Electrical Panel Schedule 2	6	288
Electrical	Schedule and Diagrams	00E707	Electrical Conduit Schedule 1	7	289
Electrical	Schedule and Diagrams	00E708	Electrical Conduit Schedule 2	8	290

Pima County
Solar Dryer Facility
Balance of Plant (BOP) - Drawings List

Discipline	Type	Drawing Number	Drawing Name	Sequence	Total Sheet Count
Electrical	Schedule and Diagrams	00E709	Electrical Conduit Schedule 3	9	291
Electrical	Schedule and Diagrams	00E710	Electrical Conduit Schedule 4	10	292
Instrumentation and Control	General	00I101	Instrumentation Symbols and Abbreviations 1	1	293
Instrumentation and Control	General	00I102	Instrumentation Symbols and Abbreviations 2	2	294
Instrumentation and Control	General	00I103	Instrumentation Symbols and Abbreviations 3	3	295
Instrumentation and Control	Details	00I601	Instrumentation Standard Details 1	1	296
Instrumentation and Control	Details	00I602	Instrumentation Standard Details 2	2	297
Instrumentation and Control	Schedule and Diagrams	00I701	P&ID - Solar Dryer Building Feed Conveyance	1	298
Instrumentation and Control	Schedule and Diagrams	00I702	P&ID - Solar Dryer Building	2	299
Instrumentation and Control	Schedule and Diagrams	00I703	P&ID - Solar Dryer Building Floor Heating	3	300
Instrumentation and Control	Schedule and Diagrams	00I704	P&ID - Solar Dryer Building Radiant Heating	4	301
Instrumentation and Control	Schedule and Diagrams	00I705	P&ID - Solar Dryer Building Discharge Conveyance	5	302
Instrumentation and Control	Schedule and Diagrams	00I706	P&ID - Solar Dryer Building Loadout Facility	6	303
Instrumentation and Control	Schedule and Diagrams	00I707	P&ID - Hot Water Pumps	7	304
Instrumentation and Control	Schedule and Diagrams	00I708	P&ID - Screw Press Building	8	305
Instrumentation and Control	Schedule and Diagrams	00I709	P&ID - Odor Control Units 1	9	306
Instrumentation and Control	Schedule and Diagrams	00I710	P&ID - Odor Control Units 2	10	307
Instrumentation and Control	Schedule and Diagrams	00I711	P&ID - Odor Control Units 3	11	308
Instrumentation and Control	Schedule and Diagrams	00I712	P&ID - Odor Control Units 4	12	309
Instrumentation and Control	Schedule and Diagrams	00I713	P&ID - Odor Control Units 5	13	310
Instrumentation and Control	Schedule and Diagrams	00I714	P&ID - Odor Control Units 6	14	311
Instrumentation and Control	Schedule and Diagrams	00I715	P&ID - Solar PV System	15	312
Instrumentation and Control	Schedule and Diagrams	00I716	P&ID - Blower Buildings E and W	16	313
Instrumentation and Control	Schedule and Diagrams	00I717	P&ID - Heat Exchanger Tank	17	314
Instrumentation and Control	Schedule and Diagrams	00I718	P&ID - Miscellaneous	18	315
Instrumentation and Control	Schedule and Diagrams	00I719	Network Diagram 1	19	316
Instrumentation and Control	Schedule and Diagrams	00I720	Network Diagram 2	20	317
Instrumentation and Control	Schedule and Diagrams	00I721	One-Line Diagram 1	21	318
Instrumentation and Control	Schedule and Diagrams	00I722	One-Line Diagram 2	22	319

Pima County
Solar Dryer Facility
Balance of Plant (BOP) - Drawings List

Discipline	Type	Drawing Number	Drawing Name	Sequence	Total Sheet Count
Instrumentation and Control	Schedule and Diagrams	00I723	One-Line Diagram 3	23	320
Instrumentation and Control	Schedule and Diagrams	00I724	One-Line Diagram 4	24	321

ATTACHMENT 2 – FEE PROPOSAL

Tres Rios WRF Solar Dryer Phase 1 Design Fee

Task No.	Task Description	Total HDR Labor Hours	Total HDR Labor (\$)	Total HDR Expenses (\$)	Total HDR	Total Aqua Labor Hours	Total Aqua Labor (\$)	Total Aqua Expenses (\$)	Total Aqua	Total Tetra Tech Labor Hours	Total Tetra Tech Labor (\$)	Total Tetra Tech Expenses (\$)	Total Tetra Tech	Total Team Labor Hours	Total Team Labor (\$)	Total Team Expenses (\$)	Total Team
Task 5 - Detailed Design																	
3.1	Early Works Package 1: Aerialion Header	14	\$2,705	-	\$ 200,960	0	\$0	-	\$ -	17	\$4,473	-	\$ 21,008	31	\$7,177	-	\$ 232,269
3.1.1	Field Investigation and Concept Development	14	\$2,705	-	\$ 200,960	0	\$0	-	\$ -	17	\$4,473	-	\$ 21,008	31	\$7,177	-	\$ 232,269
3.1.2	Design Development (60%)	502	\$88,723	-	\$ 88,723	0	\$0	-	\$ -	17	\$4,473	-	\$ 4,473	519	\$85,140	-	\$ 93,196
3.1.3	Design Development (60%) Workshop	36	\$6,204	\$ 179	\$ 6,383	0	\$0	-	\$ -	17	\$4,473	-	\$ 4,473	53	\$10,676	\$ 179	\$ 10,855
3.1.4	MOPO	36	\$6,305	-	\$ 6,305	0	\$0	-	\$ -	17	\$4,473	-	\$ 4,473	55	\$10,627	-	\$ 10,657
3.1.5	Construction Documents (90%)	302	\$55,401	-	\$ 52,401	0	\$0	-	\$ -	17	\$4,473	-	\$ 4,473	319	\$57,873	-	\$ 57,873
3.1.6	Construction Documents (90%) Workshop	36	\$6,204	\$ 179	\$ 6,383	0	\$0	-	\$ -	17	\$4,473	-	\$ 4,473	53	\$10,676	\$ 179	\$ 10,855
3.2	Early Works Package 2: Thermal Storage Tank Installation and Roadways	214	\$38,971	-	\$ 38,971	0	\$0	-	\$ -	17	\$4,473	-	\$ 4,473	231	\$41,444	-	\$ 41,444
3.2.1	Field Investigation	24	\$3,901	-	\$ 3,901	0	\$0	-	\$ -	0	\$0	-	\$ -	24	\$3,901	-	\$ 3,901
3.2.2	Design Development (60%)	202	\$44,553	-	\$ 44,553	0	\$0	-	\$ -	0	\$0	-	\$ -	202	\$44,553	-	\$ 44,553
3.2.3	Design Development (60%) Workshop	36	\$6,043	\$ 179	\$ 6,222	0	\$0	-	\$ -	0	\$0	-	\$ -	36	\$6,043	\$ 179	\$ 6,222
3.2.4	Construction Documents (90%)	156	\$25,444	-	\$ 25,444	0	\$0	-	\$ -	0	\$0	-	\$ -	156	\$25,444	-	\$ 25,444
3.2.5	Construction Documents (90%) Workshop	36	\$6,043	\$ 179	\$ 6,222	0	\$0	-	\$ -	0	\$0	-	\$ -	36	\$6,043	\$ 179	\$ 6,222
3.3	Early Works Package 3: Mass Grading for the Solar Dryer Building	118	\$19,436	-	\$ 19,436	0	\$0	-	\$ -	0	\$0	-	\$ -	118	\$19,436	-	\$ 19,436
3.3.1	Design Development (60%)	48	\$9,100	-	\$ 8,100	28	\$5,760	-	\$ 5,760	308	\$53,956	-	\$ 53,956	384	\$68,445	-	\$ 68,445
3.3.2	Design Development (60%) Workshop	14	\$2,705	\$ 179	\$ 2,884	12	\$2,400	-	\$ 2,400	32	\$4,560	-	\$ 4,560	58	\$13,750	\$ 179	\$ 13,929
3.3.3	Construction Documents (90%)	40	\$7,856	-	\$ 7,856	28	\$6,066	-	\$ 6,066	158	\$28,792	-	\$ 28,792	226	\$42,716	-	\$ 42,716
3.3.4	Construction Documents (90%) Workshop	14	\$2,900	\$ 179	\$ 3,079	12	\$2,520	-	\$ 2,520	26	\$7,760	-	\$ 7,760	54	\$13,164	\$ 179	\$ 13,343
3.4	Balance of Plant	42	\$7,031	-	\$ 7,031	10	\$2,060	-	\$ 2,060	07	\$12,201	-	\$ 12,201	119	\$21,360	-	\$ 21,360
3.4.1	Conceptual Design (30%)	1,572	\$275,500	-	\$ 275,500	1,569	\$348,100	-	\$ 348,100	406	\$77,034	-	\$ 77,034	3,556	\$600,725	-	\$ 600,725
3.4.2	Design Development (60%)	62	\$12,217	\$ 1,047	\$ 13,264	40	\$7,800	\$ 2,000	\$ 9,800	30	\$4,024	-	\$ 4,024	132	\$27,649	\$ 3,047	\$ 30,696
3.4.3	Design Development (60%) Workshop	2,358	\$434,060	-	\$ 434,060	1,925	\$317,074	-	\$ 317,074	240	\$51,089	-	\$ 51,089	4,523	\$802,223	-	\$ 802,223
3.4.4	MOPO	86	\$14,749	\$ 4,100	\$ 22,713	40	\$7,800	\$ 2,000	\$ 9,800	31	\$4,722	-	\$ 4,722	157	\$35,515	\$ 6,100	\$ 41,415
3.4.5	Construction Documents (90%)	82	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	82	\$14,749	-	\$ 14,749
3.4.6	Construction Documents (90%) Workshop	2,358	\$434,060	-	\$ 434,060	2,055	\$337,916	-	\$ 337,916	147	\$22,057	-	\$ 22,057	4,560	\$804,034	-	\$ 804,034
3.4.7	Construction Documents (90%)	86	\$14,749	\$ 4,100	\$ 22,713	40	\$7,800	\$ 2,000	\$ 9,800	31	\$4,722	-	\$ 4,722	157	\$35,515	\$ 6,100	\$ 41,415
3.4.8	Construction Documents (90%) Workshop	2,358	\$434,060	-	\$ 434,060	1,925	\$317,074	-	\$ 317,074	240	\$51,089	-	\$ 51,089	4,523	\$802,223	-	\$ 802,223
3.4.9	MOPO	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.10	Construction Documents (90%)	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.11	Construction Documents (90%) Workshop	2,358	\$434,060	-	\$ 434,060	1,925	\$317,074	-	\$ 317,074	240	\$51,089	-	\$ 51,089	4,523	\$802,223	-	\$ 802,223
3.4.12	MOPO	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.13	Construction Documents (90%)	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.14	Construction Documents (90%) Workshop	2,358	\$434,060	-	\$ 434,060	1,925	\$317,074	-	\$ 317,074	240	\$51,089	-	\$ 51,089	4,523	\$802,223	-	\$ 802,223
3.4.15	MOPO	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.16	Construction Documents (90%)	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.17	Construction Documents (90%) Workshop	2,358	\$434,060	-	\$ 434,060	1,925	\$317,074	-	\$ 317,074	240	\$51,089	-	\$ 51,089	4,523	\$802,223	-	\$ 802,223
3.4.18	MOPO	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.19	Construction Documents (90%)	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.20	Construction Documents (90%) Workshop	2,358	\$434,060	-	\$ 434,060	1,925	\$317,074	-	\$ 317,074	240	\$51,089	-	\$ 51,089	4,523	\$802,223	-	\$ 802,223
3.4.21	MOPO	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.22	Construction Documents (90%)	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.23	Construction Documents (90%) Workshop	2,358	\$434,060	-	\$ 434,060	1,925	\$317,074	-	\$ 317,074	240	\$51,089	-	\$ 51,089	4,523	\$802,223	-	\$ 802,223
3.4.24	MOPO	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.25	Construction Documents (90%)	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.26	Construction Documents (90%) Workshop	2,358	\$434,060	-	\$ 434,060	1,925	\$317,074	-	\$ 317,074	240	\$51,089	-	\$ 51,089	4,523	\$802,223	-	\$ 802,223
3.4.27	MOPO	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.28	Construction Documents (90%)	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.29	Construction Documents (90%) Workshop	2,358	\$434,060	-	\$ 434,060	1,925	\$317,074	-	\$ 317,074	240	\$51,089	-	\$ 51,089	4,523	\$802,223	-	\$ 802,223
3.4.30	MOPO	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.31	Construction Documents (90%)	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.32	Construction Documents (90%) Workshop	2,358	\$434,060	-	\$ 434,060	1,925	\$317,074	-	\$ 317,074	240	\$51,089	-	\$ 51,089	4,523	\$802,223	-	\$ 802,223
3.4.33	MOPO	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.34	Construction Documents (90%)	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.35	Construction Documents (90%) Workshop	2,358	\$434,060	-	\$ 434,060	1,925	\$317,074	-	\$ 317,074	240	\$51,089	-	\$ 51,089	4,523	\$802,223	-	\$ 802,223
3.4.36	MOPO	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.37	Construction Documents (90%)	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.38	Construction Documents (90%) Workshop	2,358	\$434,060	-	\$ 434,060	1,925	\$317,074	-	\$ 317,074	240	\$51,089	-	\$ 51,089	4,523	\$802,223	-	\$ 802,223
3.4.39	MOPO	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.40	Construction Documents (90%)	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.41	Construction Documents (90%) Workshop	2,358	\$434,060	-	\$ 434,060	1,925	\$317,074	-	\$ 317,074	240	\$51,089	-	\$ 51,089	4,523	\$802,223	-	\$ 802,223
3.4.42	MOPO	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.43	Construction Documents (90%)	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.44	Construction Documents (90%) Workshop	2,358	\$434,060	-	\$ 434,060	1,925	\$317,074	-	\$ 317,074	240	\$51,089	-	\$ 51,089	4,523	\$802,223	-	\$ 802,223
3.4.45	MOPO	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.46	Construction Documents (90%)	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.47	Construction Documents (90%) Workshop	2,358	\$434,060	-	\$ 434,060	1,925	\$317,074	-	\$ 317,074	240	\$51,089	-	\$ 51,089	4,523	\$802,223	-	\$ 802,223
3.4.48	MOPO	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.49	Construction Documents (90%)	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.50	Construction Documents (90%) Workshop	2,358	\$434,060	-	\$ 434,060	1,925	\$317,074	-	\$ 317,074	240	\$51,089	-	\$ 51,089	4,523	\$802,223	-	\$ 802,223
3.4.51	MOPO	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.52	Construction Documents (90%)	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.53	Construction Documents (90%) Workshop	2,358	\$434,060	-	\$ 434,060	1,925	\$317,074	-	\$ 317,074	240	\$51,089	-	\$ 51,089	4,523	\$802,223	-	\$ 802,223
3.4.54	MOPO	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.55	Construction Documents (90%)	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,749	-	\$ 14,749
3.4.56	Construction Documents (90%) Workshop	2,358	\$434,060	-	\$ 434,060	1,925	\$317,074	-	\$ 317,074	240	\$51,089	-	\$ 51,089	4,523	\$802,223	-	\$ 802,223
3.4.57	MOPO	86	\$14,749	-	\$ 14,749	0	\$0	-	\$ -	0	\$0	-	\$ -	86	\$14,		

ATTACHMENT 3 – HDR RATE SCHEDULE

HDR Billing Rate Schedule: Calendar Years 2023 - 2025

Personnel Classification	Personnel Hourly Billing Rates		
	2023	2024	2025
Principal-in-Charge	\$ 301.64	\$ 316.72	\$ 332.56
Engr Project Manager	\$ 266.45	\$ 279.77	\$ 293.76
Sr Tech Advisor	\$ 301.64	\$ 316.72	\$ 332.56
QA/QC	\$ 301.64	\$ 316.72	\$ 332.56
Design Manager	\$ 196.07	\$ 205.87	\$ 216.16
Project Engineer	\$ 130.71	\$ 137.25	\$ 144.11
Process Engineer	\$ 226.23	\$ 237.54	\$ 249.42
Thermal Process Engineer	\$ 186.01	\$ 195.31	\$ 205.08
Solar Power Engineer	\$ 201.09	\$ 211.15	\$ 221.71
Civil Engineer	\$ 160.88	\$ 168.92	\$ 177.37
Structural Engineer	\$ 160.88	\$ 168.92	\$ 177.37
Electrical Engineer	\$ 191.04	\$ 200.59	\$ 210.62
I&C Engineer	\$ 191.04	\$ 200.59	\$ 210.62
Corrosion Engineer	\$ 226.23	\$ 237.54	\$ 249.42
Architect	\$ 226.23	\$ 237.54	\$ 249.42
Operations Engineer	\$ 226.23	\$ 237.54	\$ 249.42
Geotechnical Engineer	\$ 301.64	\$ 316.72	\$ 332.56
Environmental Engineer	\$ 160.88	\$ 168.92	\$ 177.37
CAD Technician	\$ 130.71	\$ 137.25	\$ 144.11
Admin / Accounting	\$ 110.60	\$ 116.13	\$ 121.94
Survey Manager	\$ 196.07	\$ 205.87	\$ 216.16
Survey Party Chief (RLS)	\$ 186.01	\$ 195.31	\$ 205.08
Survey Technician	\$ 95.52	\$ 100.30	\$ 105.31
Economist	\$ 226.23	\$ 237.54	\$ 249.42

Rates based on the following:

Engineering staff average hourly raw labor rate + Overhead (181.35%) + Profit (10%)

Annual escalation is based on max allowable CPI, estimated at 5%

Rate Information Table

DATE: 2/13/2023

Firm Name: HDR Engineering, Inc.
Project/Contract: SFQ-PO-2300008 for Design Build Services
Description: Class A Biosolids Solar Drying Facility (3TRCAB)

Overhead %	181.35%
Profit %	10.0%

	A	B	C	D
Discipline	Direct Labor Rate	Overhead	Profit	Billing Rate
Principal-in-Charge	\$ 97.47	\$ 176.75	\$ 27.42	\$ 301.64
Engr Project Manager	\$ 86.09	\$ 156.13	\$ 24.22	\$ 266.45
Sr Tech Advisor	\$ 97.47	\$ 176.75	\$ 27.42	\$ 301.64
QA/QC	\$ 97.47	\$ 176.75	\$ 27.42	\$ 301.64
Design Manager	\$ 63.35	\$ 114.89	\$ 17.82	\$ 196.07
Project Engineer	\$ 42.24	\$ 76.59	\$ 11.88	\$ 130.71
Process Engineer	\$ 73.10	\$ 132.57	\$ 20.57	\$ 226.23
Thermal Process Engineer	\$ 60.10	\$ 109.00	\$ 16.91	\$ 186.01
Solar Power Engineer	\$ 64.98	\$ 117.84	\$ 18.28	\$ 201.09
Civil Engineer	\$ 51.98	\$ 94.27	\$ 14.63	\$ 160.88
Structural Engineer	\$ 51.98	\$ 94.27	\$ 14.63	\$ 160.88
Electrical Engineer	\$ 61.73	\$ 111.94	\$ 17.37	\$ 191.04
I&C Engineer	\$ 61.73	\$ 111.94	\$ 17.37	\$ 191.04
Corrosion Engineer	\$ 73.10	\$ 132.57	\$ 20.57	\$ 226.23
Architect	\$ 73.10	\$ 132.57	\$ 20.57	\$ 226.23
Operations Engineer	\$ 73.10	\$ 132.57	\$ 20.57	\$ 226.23
Geotechnical Engineer	\$ 97.47	\$ 176.75	\$ 27.42	\$ 301.64
Environmental Engineer	\$ 51.98	\$ 94.27	\$ 14.63	\$ 160.88
CAD Technician	\$ 42.24	\$ 76.59	\$ 11.88	\$ 130.71
Admin / Accounting	\$ 35.74	\$ 64.81	\$ 10.05	\$ 110.60
Survey Manager	\$ 63.35	\$ 114.89	\$ 17.82	\$ 196.07
Survey Party Chief (RLS)	\$ 60.10	\$ 109.00	\$ 16.91	\$ 186.01
Survey Technician	\$ 30.86	\$ 55.97	\$ 8.68	\$ 95.52
Economist	\$ 73.10	\$ 132.57	\$ 20.57	\$ 226.23

Formulas

- (A) Direct Labor Rate
- (B) Overhead @ 181.35% x (A)
- (C) Profit @ 10% x (A+B)
- (D) Billing Rate (A+B+C)

HDR Expenses Schedule

Mileage: Per AZ DOA Rate - \$0.625/mile

Air Travel: Pass through at cost, no markup. Assume \$600 R/T

Lodging and per diem maximum is per AZ DOA schedule for Tucson, AZ

Car rental @ \$75/day, unlimite mileage, fill gas

Miscellaneous ODCs (reproduction, project expendibles, unplanned travel, etc.) billed at cost

Task	Mileage	Air Travel	Lodging	Per Diem	Car Rental	Miscellaneous ODCs	Subs	Total	Notes
1.1 - Project Management						\$10,000	\$44,000	\$54,000	Sub cost includes HERWIT Engineering fee for Independent Technical Review
1.2.1 - Project Kick-off and Site Visit	\$975	\$3,000	\$725	\$448	\$150			\$5,298	Multiple staff flying in, driving down from Phoenix. AZ DOA lodging @ \$145 (Mar)
1.2.2 - Client Coordination Meetings	\$2,600							\$2,600	16 coordination meetings, staff driving down from Phoenix
2.2.1 - Survey						\$413	\$6,300	\$6,713	Survey vehicle mileage
2.9.2 - Alternatives Evaluation Workshop	\$163	\$600	\$104	\$64	\$75			\$1,006	Staff flying in, driving down from Phoenix. AZ DOA lodging @ \$104 (Aug)
2.10.1 - ADEQ Permits	\$325			\$64				\$389	Meet in person w/ ADEQ in Phoenix on two occasions
3.1.2 - Design Development (60%) Workshop	\$163			\$16				\$179	Staff driving down from Phoenix
3.1.4 - Construction Documents (90%) Workshop	\$163			\$16				\$179	Staff driving down from Phoenix
3.2.2 - Design Development (60%) Workshop	\$163			\$16				\$179	Staff driving down from Phoenix
3.2.4 - Construction Documents (90%) Workshop	\$163			\$16				\$179	Staff driving down from Phoenix
3.3.1 - Design Development (60%) Workshop	\$163			\$16				\$179	Staff driving down from Phoenix
3.3.2 - Construction Documents (90%) Workshop	\$163			\$16				\$179	Staff driving down from Phoenix
3.4.1 - Conceptual Design (30%) Workshop	\$163	\$599	\$145	\$64	\$75			\$1,046	Staff flying in, staff driving down from Phoenix. AZ DOA lodging @ \$145 (Dec)
3.4.2 - Design Development (60%) Workshop	\$650	\$2,400	\$580	\$320	\$150			\$4,100	Multiple staff flying in, driving down from Phoenix. AZ DOA lodging @ \$145 (Mar)
3.4.4 - Construction Documents (90%) Workshop	\$650	\$2,400	\$416	\$320	\$150			\$3,936	Multiple staff flying in, driving down from Phoenix. AZ DOA lodging @ \$104 (Jun)

ATTACHMENT 4 – SCHEDULE

[illegible]

**ATTACHMENT 5 – SUBCONSULTANT FEE
PROPOSALS AND RATE SCHEDULES**



INNOVATIVE ENGINEERING SOLUTIONS

Ty Morton, PE
HDR
1 S. Church Avenue, Suite 1400
Tucson, AZ 85701-1612
ty.morton@hdrinc.com

April 11, 2023

RE: Pima County Scope/Fee Proposal

Dear Mr. Morton,

AQUA Engineering is pleased to work with you on this project for Pima County and in conjunction with Kiewitt. Please find the attached documents for your use:

- Hourly Rate Schedule
- Rate Worksheet
- Labor/Cost Summary
- Labor Breakdown 2023
- Labor Breakdown 2024

The fees presented are associated with the scope items listed in the associated fee schedule rows. These scope tasks are further outlined in the master document prepared by HDR, AQUA, and TetraTech. If you require additional information, please contact me at (801) 694-4604.

Sincerely,

A handwritten signature in black ink, appearing to read "Justin Logan", with a stylized flourish at the end.

Justin Logan
Principal



BILLING RATE SCHEDULE

Hourly Billing Rates

Description	Year		
	2023	2024	2025
Principal Engineer	\$ 215.00	\$ 225.75	\$ 237.04
Process Engineer	\$ 210.00	\$ 220.50	\$ 231.53
Civil Engineer	\$ 175.00	\$ 183.75	\$ 192.94
Structural Engineer	\$ 175.00	\$ 183.75	\$ 192.94
Mechanical Engineer	\$ 175.00	\$ 183.75	\$ 192.94
Electrical Engineer	\$ 215.00	\$ 225.75	\$ 237.04
CAD Tech	\$ 135.00	\$ 141.75	\$ 148.84
Administrative/Project Coordinator	\$ 95.00	\$ 99.75	\$ 104.74

Rates based on the following:

Staff Average Hourly Raw Labor Rate + Overhead (190%) + Profit (8%)

Annual escalation is based on max allowable CPI, estimated at 5%

AQUA Rate Worksheet

Rate Information Table

DATE:

1/25/23

Firm Name: AQUA Engineering
Project/Contract SFQ-PO-2300008 for Design Build Services
Description Class A Biosolids Solar Drying Facility (3TRCAB)

Overhead %	190.00%
Profit %	8.0%

	A	B	C	D
Discipline	Direct Labor Rate	Overhead	Profit	Billing Rate
Principal-in-Charge	\$ 68.65	\$ 130.43	\$ 15.93	\$215.00
Process Engineer	\$ 67.05	\$ 127.39	\$ 15.56	\$210.00
Civil Engineer	\$ 55.87	\$ 106.16	\$ 12.96	\$175.00
Structural Engineer	\$ 55.87	\$ 106.16	\$ 12.96	\$175.00
Mechanical Engineer	\$ 55.87	\$ 106.16	\$ 12.96	\$175.00
Electrical Engineer	\$ 68.65	\$ 130.43	\$ 15.93	\$215.00
CAD Technician	\$ 43.10	\$ 81.90	\$ 10.00	\$135.00
Admin/Project Coordinator	\$ 30.33	\$ 57.63	\$ 7.04	\$95.00

Formulas

- (A) Direct Labor Rate
 (B) Overhead @ 190% x (A)
 (C) Profit @ 8% x (A+B)
 (D) Billing Rate (A+B+C)

AQUA Labor Summary

Task No.	Task Description	Total Aqua Labor Hours	Total Aqua Labor (\$)	Total Aqua Expenses (\$)	Total Aqua
Task 1 - Project Management					
1.1	Project Administration				\$ 49,024
1.1.1	Project Management	186	\$36,360	\$ -	\$ 36,360
1.1.2	Project Execution Plan	12	\$2,580	\$ -	\$ 2,580
1.1.3	Project Schedule and Controls	30	\$6,579	\$ -	\$ 6,579
1.1.4	QA/QC Management	16	\$3,505	\$ -	\$ 3,505
1.2	Meetings and Workshops				\$ 123,262
1.2.1	Project Kickoff and Site Visit	57	\$11,075	\$ 2,000	\$ 13,075
1.2.2	Client Progress Meetings	159	\$33,878	\$ -	\$ 33,878
1.2.3	Engineering Team Progress and Coordination Meetings	390	\$76,309	\$ -	\$ 76,309
1.3	Project Documentation	0	\$0	\$ -	\$ -
	Subtotal Task 1	850	\$170,286	\$ 2,000	\$ 172,286
Task 2 - Preliminary Design					
2.1	Screw Press Piloting				\$ 4,240
2.1.1	Test Plan Development	8	\$1,700	\$ -	\$ 1,700
2.1.2	Vendor Coordination and Support Activities	0	\$0	\$ -	\$ -
2.1.3	Data Analysis	12	\$2,540	\$ -	\$ 2,540
2.1.4	Pilot Results Technical Memorandum	0	\$0	\$ -	\$ -
2.1.5	Performance Specifications Development	0	\$0	\$ -	\$ -
2.2	Field Investigations				\$ -
2.2.1	Survey	0	\$0	\$ -	\$ -
2.2.2	Geotechnical	0	\$0	\$ -	\$ -
2.2.3	Subsurface Utility Investigation (SUI) Report	0	\$0	\$ -	\$ -
2.3	Waste Heat Recovery				\$ 5,700
2.3.1	Thermal Requirements Analysis	7	\$1,480	\$ -	\$ 1,480
2.3.2	Heat Exchanger Sizing and Optimization	0	\$0	\$ -	\$ -
2.3.3	Repurposing the Abandoned Activated Sludge Reactors and Modifying the Blower Buildings	0	\$0	\$ -	\$ -
2.3.4	Vendor Coordination and Support Activities	0	\$0	\$ -	\$ -
2.3.5	Performance Specifications Development	20	\$4,220	\$ -	\$ 4,220
2.4	Odor Control				\$ 2,540
2.4.1	Existing Odor Control System Evaluation	0	\$0	\$ -	\$ -
2.4.2	Preliminary System Design and Sizing Criteria	12	\$2,540	\$ -	\$ 2,540
2.4.3	Vendor Coordination and Support Activities	0	\$0	\$ -	\$ -
2.4.4	Performance Specifications Development	0	\$0	\$ -	\$ -
2.5	Solar Dryer and Solids Loadout				\$ 135,380
2.5.1	Data Needs Coordination	28	\$4,940	\$ -	\$ 4,940
2.5.2	Design Criteria	338	\$58,050	\$ -	\$ 58,050
2.5.3	Thermal Options Evaluation	104	\$19,680	\$ -	\$ 19,680
2.5.4	Vendor Coordination and Support Activities	120	\$22,050	\$ -	\$ 22,050
2.5.5	Performance Specifications Development	164	\$30,660	\$ -	\$ 30,660
2.6	Photovoltaic (PV) System				\$ -
2.6.1	PV Conceptual Design	0	\$0	\$ -	\$ -
2.6.2	Battery Storage and Micro-Grid Design Criteria	0	\$0	\$ -	\$ -
2.6.3	Performance Specifications Development	0	\$0	\$ -	\$ -
2.7	SCADA and Instrumentation and Controls (I&C)				\$ 1,290
2.7.1	Conceptual Network Architecture	0	\$0	\$ -	\$ -
2.7.2	Performance Specifications Development	6	\$1,290	\$ -	\$ 1,290
2.8	Site / Civil				\$ 14,095
2.8.1	General Arrangement Development	67	\$11,845	\$ -	\$ 11,845
2.8.2	Yard Piping Layouts	12	\$2,250	\$ -	\$ 2,250
2.8.3	Earthwork and Site / Civil	0	\$0	\$ -	\$ -
2.9	Basis of Design Report				\$ 65,050
2.9.1	Lifecycle Cost Development	18	\$3,510	\$ -	\$ 3,510
2.9.2	Alternatives Evaluation Workshop	66	\$12,830	\$ 2,000	\$ 14,830
2.9.3	Draft Basis of Design Report	130	\$23,990	\$ -	\$ 23,990

AQUA Labor Summary

Task No.	Task Description	Total Aqua Labor Hours	Total Aqua Labor (\$)	Total Aqua Expenses (\$)	Total Aqua
2.9.4	Final Basis of Design Report	122	\$22,720	\$ -	\$ 22,720
2.10	Permitting Assistance and Workplan				\$ -
2.10.1	ADEQ Permits	0	\$0	\$ -	\$ -
2.10.2	Construction Permits	0	\$0	\$ -	\$ -
	Subtotal Task 2	1,234	\$ 226,295	\$ 2,000	\$ 228,295
Task 3 - Detailed Design					
3.1	Early Works Package 1: Aeration Header				\$ -
3.1.1	Field Investigation and Concept Development	0	\$0	\$ -	\$ -
3.1.2	Design Development (60%)	0	\$0	\$ -	\$ -
	Design Development (60%) Workshop	0	\$0	\$ -	\$ -
3.1.3	MOPO	0	\$0	\$ -	\$ -
3.1.4	Construction Documents (90%)	0	\$0	\$ -	\$ -
	Construction Documents (90%) Workshop	0	\$0	\$ -	\$ -
3.1.5	100% Construction Document Completion	0	\$0	\$ -	\$ -
3.2	Early Works Package 2: Thermal Storage Tank Insulation and Readiness				\$ -
3.2.1	Field Investigation	0	\$0	\$ -	\$ -
3.2.2	Design Development (60%)	0	\$0	\$ -	\$ -
	Design Development (60%) Workshop	0	\$0	\$ -	\$ -
3.2.3	Construction Documents (90%)	0	\$0	\$ -	\$ -
	Construction Documents (90%) Workshop	0	\$0	\$ -	\$ -
3.2.4	100% Construction Document Completion	0	\$0	\$ -	\$ -
3.3	Early Works Package 3: Mass Grading for the Solar Dryer Building				\$ 18,838
3.3.1	Design Development (60%)	28	\$5,780	\$ -	\$ 5,780
	Design Development (60%) Workshop	12	\$2,400	\$ -	\$ 2,400
3.3.2	Construction Documents (90%)	28	\$6,069	\$ -	\$ 6,069
	Construction Documents (90%) Workshop	12	\$2,520	\$ -	\$ 2,520
3.3.3	100% Construction Document Completion	10	\$2,069	\$ -	\$ 2,069
3.1	Balance of Plant				\$ 1,172,596
3.4.1	Conceptual Design (30%)	1,580	\$248,100	\$ -	\$ 248,100
	Conceptual Design (30%) Workshop	40	\$7,600	\$ 2,000	\$ 9,600
3.4.2	Design Development (60%)	1,925	\$317,074	\$ -	\$ 317,074
	Design Development (60%) Workshop	40	\$7,980	\$ 2,000	\$ 9,980
3.4.3	MOPO	0	\$0	\$ -	\$ -
3.4.4	Construction Documents (90%)	2,055	\$337,916	\$ -	\$ 337,916
	Construction Documents (90%) Workshop	40	\$7,980	\$ 2,000	\$ 9,980
3.4.5	100% Construction Document Completion	1,466	\$239,946	\$ -	\$ 239,946
	Subtotal Task 3	7,236	1,185,434	6,000	\$ 1,191,434
Totals					
		9,320	1,582,014	10,000	1,592,014

AQUA - 2023 Labor Breakdown

Aqua

Task No.	Task Description	PIC	QA/QC	Process Engr	Civil Engr	Struct Engr	Mech Engr	Elect Engr	CADD Tech	Admin/ Clerical	Total Aqua Labor Hours	Total Aqua Labor (\$)	Total Aqua Expenses (\$)	Total Aqua
	Billing Rate	\$ 215.00	\$ 215.00	\$ 210.00	\$ 175.00	\$ 175.00	\$ 175.00	\$ 215.00	\$ 135.00	\$ 95.00				
Task 1 - Project Management														
1.1	Project Administration													
1.1.1	Project Management	92								22	114	\$21,870	\$ -	\$ 30,470
1.1.2	Project Execution Plan	12									12	\$2,580	\$ -	\$ 2,580
1.1.3	Project Schedule and Controls	18									18	\$3,870	\$ -	\$ 3,870
1.1.4	QA/QC Management	10									10	\$2,150	\$ -	\$ 2,150
1.2	Meetings and Workshops													
1.2.1	Project Kickoff and Site Visit	20		20	12					5	57	\$11,075	\$ 2,000	\$ 13,075
1.2.2	Client Progress Meetings	64		41	12						117	\$24,470	\$ -	\$ 24,470
1.2.3	Engineering Team Progress and Coordination Meetings	44		44	44	44	44	18			238	\$45,670	\$ -	\$ 45,670
1.3	Project Documentation										0	\$0	\$ -	\$ -
	Subtotal Task 1	260	-	105	68	44	44	18	-	27	566	\$111,685	\$ 2,000	\$ 113,685
Task 2 - Preliminary Design														
2.1	Screw Press Piloting													
2.1.1	Test Plan Development	4		4							8	\$1,700	\$ -	\$ 1,700
2.1.2	Vendor Coordination and Support Activities										0	\$0	\$ -	\$ -
2.1.3	Data Analysis	4		8							12	\$2,540	\$ -	\$ 2,540
2.1.4	Pilot Results Technical Memorandum										0	\$0	\$ -	\$ -
2.1.5	Performance Specifications Development										0	\$0	\$ -	\$ -
2.2	Field Investigations													
2.2.1	Survey										0	\$0	\$ -	\$ -
2.2.2	Geotechnical										0	\$0	\$ -	\$ -
2.2.3	Subsurface Utility Investigation (SUI) Report										0	\$0	\$ -	\$ -
2.3	Waste Heat Recovery													
2.3.1	Thermal Requirements Analysis	2		5							7	\$1,480	\$ -	\$ 1,480
2.3.2	Heat Exchanger Sizing and Optimization										0	\$0	\$ -	\$ -
2.3.3	Repurposing the Abandoned Activated Sludge Reactors and Modifying the Blower Buildings										0	\$0	\$ -	\$ -
2.3.4	Vendor Coordination and Support Activities										0	\$0	\$ -	\$ -
2.3.5	Performance Specifications Development	4		16							20	\$4,220	\$ -	\$ 4,220
2.4	Odor Control													
2.4.1	Existing Odor Control System Evaluation										0	\$0	\$ -	\$ -
2.4.2	Preliminary System Design and Sizing Criteria	4		8							12	\$2,540	\$ -	\$ 2,540
2.4.3	Vendor Coordination and Support Activities										0	\$0	\$ -	\$ -
2.4.4	Performance Specifications Development										0	\$0	\$ -	\$ -
2.5	Solar Dryer and Solids Loadout													
2.5.1	Data Needs Coordination	4		8	8				6	2	28	\$4,940	\$ -	\$ 4,940
2.5.2	Design Criteria	20	4	44	80		80	10	100		338	\$58,050	\$ -	\$ 58,050
2.5.3	Thermal Options Evaluation	16		24	32		32				104	\$19,680	\$ -	\$ 19,680
2.5.4	Vendor Coordination and Support Activities	16	4	30	30		30			10	120	\$22,050	\$ -	\$ 22,050

AQUA - 2023 Labor Breakdown

Task No.	Task Description	PIC	QA/QC	Process Engr	Civil Engr	Struct Engr	Mech Engr	Elect Engr	CADD Tech	Admin/ Clerical	Total Aqua Labor Hours	Total Aqua Labor (\$)	Total Aqua Expenses (\$)	Total Aqua
2.5.5	Performance Specifications Development	16	8	40	40		40	10		10	164	\$30,660	\$ -	\$ 30,660
2.6	Photovoltaic (PV) System													
2.6.1	PV Conceptual Design													
2.6.2	Battery Storage and Micro-Grid Design Criteria										0	\$0 \$	\$ -	\$ -
2.6.3	Performance Specifications Development										0	\$0 \$	\$ -	\$ -
2.7	SCADA and Instrumentation and Controls (I&C)										0	\$0 \$	\$ -	\$ -
2.7.1	Conceptual Network Architecture													
2.7.2	Performance Specifications Development	2						4			0	\$0 \$	\$ -	\$ 1,290
2.8	Site / Civil										6	\$1,290	\$ -	\$ 1,290
2.8.1	General Arrangement Development	4		16	16		16		15		67	\$11,845	\$ -	\$ 14,095
2.8.2	Yard Piping Layouts	2		2	8						12	\$2,250	\$ -	\$ 11,845
2.8.3	Earthwork and Site / Civil										0	\$0 \$	\$ -	\$ 2,250
2.9	Basis of Design Report													
2.9.1	Lifecycle Cost Development	2		8	8						18	\$3,510	\$ -	\$ 65,050
2.9.2	Alternatives Evaluation Workshop	16	2	16	32						66	\$12,830	\$ 2,000	\$ 3,510
2.9.3	Draft Basis of Design Report	12	4	40	24		40			10	130	\$23,990	\$ -	\$ 14,830
2.9.4	Final Basis of Design Report	16	8	30	30		30			8	122	\$22,720	\$ -	\$ 23,990
2.10	Permitting Assistance and Workplan													
2.10.1	ADEQ Permits										0	\$0 \$	\$ -	\$ -
2.10.2	Construction Permits										0	\$0 \$	\$ -	\$ -
	Subtotal Task 2	144	30	299	308	-	268	24	121	40	1,234	\$ 226,295	\$ 2,000	\$ 228,295
Task 3 - Detailed Design														
3.1	Early Works Package 1: Aeration Header													\$ -
3.1.1	Field Investigation and Concept Development										0	\$0 \$	\$ -	\$ -
3.1.2	Design Development (60%)										0	\$0 \$	\$ -	\$ -
	Design Development (60%) Workshop										0	\$0 \$	\$ -	\$ -
3.1.3	MOPO										0	\$0 \$	\$ -	\$ -
3.1.4	Construction Documents (90%)										0	\$0 \$	\$ -	\$ -
	Construction Documents (90%) Workshop										0	\$0 \$	\$ -	\$ -
3.1.5	100% Construction Document Completion										0	\$0 \$	\$ -	\$ -
3.2	Early Works Package 2: Thermal Storage Tank Insulation and Readiness										0	\$0 \$	\$ -	\$ -
3.2.1	Field Investigation										0	\$0 \$	\$ -	\$ -
3.2.2	Design Development (60%)										0	\$0 \$	\$ -	\$ -
	Design Development (60%) Workshop										0	\$0 \$	\$ -	\$ -
3.2.3	Construction Documents (90%)										0	\$0 \$	\$ -	\$ -
	Construction Documents (90%) Workshop										0	\$0 \$	\$ -	\$ -
3.2.4	100% Construction Document Completion										0	\$0 \$	\$ -	\$ -
3.3	Early Works Package 3: Mass Grading for the Solar Dryer Building										0	\$0 \$	\$ -	\$ -
3.3.1	Design Development (60%)	8		16	4						28	\$5,780	\$ -	\$ 8,180
	Design Development (60%) Workshop	4		4	4						12	\$2,400	\$ -	\$ 5,780
3.3.2	Construction Documents (90%)										0	\$0 \$	\$ -	\$ 2,400
	Construction Documents (90%) Workshop										0	\$0 \$	\$ -	\$ -
3.3.3	100% Construction Document Completion										0	\$0 \$	\$ -	\$ -

AQUA - 2023 Labor Breakdown

Task No.	Task Description	PIC	QA/QC	Process Engr	Civil Engr	Struct Engr	Mech Engr	Elect Engr	CADD Tech	Admin/ Clerical	Total Aqua Labor Hours	Total Aqua Labor (\$)	Total Aqua Expenses (\$)	Total Aqua
3.1	Balance of Plant													
3.4.1	Conceptual Design (30%)	40	20	160	30	180	200	30	900	20	1,580	\$248,100	\$ -	\$ 257,700
	Conceptual Design (30%) Workshop	8		8	8	8	8				40	\$7,600	\$ 2,000	\$ 248,100
3.4.2	Design Development (60%)										0	\$0	\$ -	\$ 9,600
	Design Development (60%) Workshop										0	\$0	\$ -	\$ -
3.4.3	MOP										0	\$0	\$ -	\$ -
3.4.4	Construction Documents (90%)										0	\$0	\$ -	\$ -
	Construction Documents (90%) Workshop										0	\$0	\$ -	\$ -
3.4.5	100% Construction Document Completion										0	\$0	\$ -	\$ -
	Subtotal Task 3	60	20	188	46	188	208	30	900	20	-	\$ -	\$ -	\$ 265,680
Totals		464	50	592	422	232	520	72	1,021	87	1,800	337,980	4,000	607,860

AQUA - 2024 Labor Breakdown

Task No.	Task Description	PIC	QA/QC	Process Engr	Civil Engr	Struct Engr	Mech Engr	Elect Engr	CADD Tech	Admin/ Clerical	Total Aqua Labor Hours	Total Aqua Labor (\$)	Total Aqua Expenses (\$)	Total Aqua
Task 1 - Project Management														
1.1	Project Administration													
1.1.1	Project Management	58								14	72	\$14,490	\$ -	\$ 14,490
1.1.2	Project Execution Plan										0	\$0	\$ -	\$ -
1.1.3	Project Schedule and Controls	12									12	\$2,709	\$ -	\$ 2,709
1.1.4	QA/QC Management	6									6	\$1,355	\$ -	\$ 1,355
1.2	Meetings and Workshops													
1.2.1	Project Kickoff and Site Visit										0	\$0	\$ -	\$ -
1.2.2	Client Progress Meetings	28		14							42	\$9,408	\$ -	\$ 9,408
1.2.3	Engineering Team Progress and Coordination Meetings	28		28	28	28	28	12			152	\$30,639	\$ -	\$ 30,639
1.3	Project Documentation										0	\$0	\$ -	\$ -
	Subtotal Task 1	132	-	42	28	28	28	12	-	14	284	\$58,601	\$ -	\$ 58,601
Task 2 - Preliminary Design														
2.1	Screw Press Piloting													\$ -
2.1.1	Test Plan Development										0	\$0	\$ -	\$ -
2.1.2	Vendor Coordination and Support Activities										0	\$0	\$ -	\$ -
2.1.3	Data Analysis										0	\$0	\$ -	\$ -
2.1.4	Pilot Results Technical Memorandum										0	\$0	\$ -	\$ -
2.1.5	Performance Specifications Development										0	\$0	\$ -	\$ -
2.2	Field Investigations										0	\$0	\$ -	\$ -
2.2.1	Survey										0	\$0	\$ -	\$ -
2.2.2	Geotechnical										0	\$0	\$ -	\$ -
2.2.3	Subsurface Utility Investigation (SUI) Report										0	\$0	\$ -	\$ -
2.3	Waste Heat Recovery													\$ -
2.3.1	Thermal Requirements Analysis										0	\$0	\$ -	\$ -
2.3.2	Heat Exchanger Sizing and Optimization										0	\$0	\$ -	\$ -
2.3.3	Repurposing the Abandoned Activated Sludge Reactors and Modifying the Blower Buildings										0	\$0	\$ -	\$ -
2.3.4	Vendor Coordination and Support Activities										0	\$0	\$ -	\$ -
2.3.5	Performance Specifications Development										0	\$0	\$ -	\$ -
2.4	Odor Control													\$ -
2.4.1	Existing Odor Control System Evaluation										0	\$0	\$ -	\$ -
2.4.2	Preliminary System Design and Sizing Criteria										0	\$0	\$ -	\$ -
2.4.3	Vendor Coordination and Support Activities										0	\$0	\$ -	\$ -
2.4.4	Performance Specifications Development										0	\$0	\$ -	\$ -
2.5	Solar Dryer and Solids Loadout													\$ -
2.5.1	Data Needs Coordination										0	\$0	\$ -	\$ -
2.5.2	Design Criteria										0	\$0	\$ -	\$ -
2.5.3	Thermal Options Evaluation										0	\$0	\$ -	\$ -
2.5.4	Vendor Coordination and Support Activities										0	\$0	\$ -	\$ -
2.5.5	Performance Specifications Development										0	\$0	\$ -	\$ -

AQUA - 2024 Labor Breakdown

[illegible]

AQUA - 2024 Labor Breakdown

Task No.	Task Description	PIC	QA/QC	Process Engr	Civil Engr	Struct Engr	Mech Engr	Elect Engr	CADD Tech	Admin/ Clerical	Total Aqua Labor Hours	Total Aqua Labor (\$)	Total Aqua Expenses (\$)	Total Aqua
3.4.1	Conceptual Design (30%)										0	\$0	\$ -	\$ -
	Conceptual Design (30%) Workshop										0	\$0	\$ -	\$ -
3.4.2	Design Development (60%)	60	20	180	30	210	275	30	1,100	20	1,925	\$317,074		\$ 317,074
	Design Development (60%) Workshop	8		8	8	8	8				40	\$7,980	2,000	\$ 9,980
3.4.3	MOPO										0	\$0	\$ -	\$ -
3.4.4	Construction Documents (90%)	60	30	200	30	210	275	30	1,200	20	2,055	\$337,916	\$ -	\$ 337,916
	Construction Documents (90%) Workshop	8		8	8	8	8				40	\$7,980	2,000	\$ 9,980
3.4.5	100% Construction Document Completion	40	40	150	20	100	180	20	900	16	1,466	\$239,946	\$ -	\$ 239,946
	Subtotal Task 3	190	90	570	108	536	746	80	3,200	56	-	\$ -	\$ -	\$ 925,554
Totals		322	90	612	136	564	774	92	3,200	70	284	58,601	0	984,154

Aqua Expenses Schedule

Mileage: Per AZ DOA Rate - \$0.625/mile
Air Travel: Pass through at cost, no markup. Assume \$750 R/T
Lodging is estimated \$125 per night and per diem is \$50/day
Car rental @ \$75/day, unlimited mileage, fill gas
Miscellaneous ODCs (reproduction, project expendibles, unplanned travel, etc.) billed at cost

Task	Mileage	Air Travel	Lodging	Per Diem	Car Rental	Miscellaneous ODCs	Subs	Total	Notes
1.2.1 - Project Kick-off and Site Visit		\$1,500	\$250	\$100	\$150			\$2,000	Multiple staff flying in, driving down from Phoenix. AZDOA lodging @ \$145 (Mar)
2.9.2 - Alternatives Evaluation Workshop		\$1,500	\$250	\$100	\$150			\$2,000	Staff flying in, driving down from Phoenix. AZDOA lodging @ \$104 (Aug)
3.4.1 - Conceptual Design (30%) Workshop		\$1,500	\$250	\$100	\$150			\$2,000	Staff flying in, staff driving down from Phoenix. AZDOA lodging @ \$145 (Dec)
3.4.2 - Design Development (60%) Workshop		\$1,500	\$250	\$100	\$150			\$2,000	Multiple staff flying in, driving down from Phoenix. AZDOA lodging @ \$145 (Mar)
3.4.4 - Construction Documents (90%) Workshop		\$1,500	\$250	\$100	\$150			\$2,000	Multiple staff flying in, driving down from Phoenix. AZDOA lodging @ \$104 (Jun)



February 10, 2023

Ty Morton, PE
HDR Engineering, Inc.
1 S. Church Avenue, Suite 1400
Tucson, AZ 85701-1612

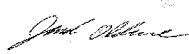
**Re: Basis of Design Report and Preliminary Design Fee Proposal
Pima County Class A Biosolids Solar Drying Facility (3TRCAB)**

Dear Mr. Morton,

Please find attached Tetra Tech's fee proposal and rate schedule for the subject project, which is based on the scope of work prepared by HDR and attached geotechnical scope. We are grateful to support this project and be a productive partner on your team. If you have any questions or would like any additional information, please do not hesitate to call.

Sincerely,

Tetra Tech, Inc.

 Digitally signed by
Jacob Oldenburger
Date: 2023.02.10
10:07:43-05'00'

Jake Oldenburger, PE, CFM, ENV SP
Senior Project Manager

Attachments:

- Rate Information Table – 2023
- Billing Rate Schedule 2023-2025
- Cost Breakdown Summary
- Cost Breakdown 2023
- Cost Breakdown 2024
- Geotechnical Investigation Scope of Work
- Geophysical Survey Proposal

Rate Information Table - 2023

DATE: 2/10/2023

Firm Name: Tetra Tech, Inc.
Project/Contract SFQ-PO-2300008 for Design Build Services
Description Class A Biosolids Solar Drying Facility (3TRCAB)

Overhead %	156.19%
Profit %	8.0%

Discipline	A	B	C	D
	Direct Labor Rate	Overhead	Profit	Billing Rate
Principal-In-Charge	\$ 143.23	\$ 223.71	\$ 29.36	\$ 396.30
Design Manager	\$ 100.45	\$ 156.89	\$ 20.59	\$ 277.93
Civil Engineer	\$ 57.66	\$ 90.06	\$ 11.82	\$ 159.54
Structural Engineer	\$ 65.10	\$ 101.68	\$ 13.34	\$ 180.12
I&C Engineer	\$ 100.45	\$ 156.89	\$ 20.59	\$ 277.93
Geotechnical Engineer	\$ 107.89	\$ 168.51	\$ 22.11	\$ 298.52

Formulas

- (A) Direct Labor Rate
(B) Overhead @ 156.19% x (A)
(C) Profit @ 8% x (A+B)
(D) Billing Rate (A+B+C)

Tt Billing Rate Schedule: Calendar Years 2023 - 2025

Personnel Classification	Personnel Hourly Billing Rates		
	2023	2024	2025
Principal-In-Charge	\$396.30	\$ 416.12	\$ 436.92
Design Manager	\$277.93	\$ 291.83	\$ 306.42
Civil Engineer	\$159.54	\$ 167.52	\$ 175.89
Structural Engineer	\$180.12	\$ 189.13	\$ 198.58
I&C Engineer	\$277.93	\$ 291.83	\$ 306.42
Geotechnical Engineer	\$298.52	\$ 313.45	\$ 329.12

Rates based on the following:

Engineering staff average hourly raw labor rate + Overhead (156.19%) + Profit (8%)

Annual escalation is based on maximum allowable CPI, estimated at 5%.

CPI is the 12-month percentage change based on December, not seasonally adjusted.

Reimbursable Expenses:

Mileage: Per AZ DOA Rate - \$0.625/mile

Air Travel: Pass through at cost, no markup

Lodging and per diem maximum is per AZ DOA schedule for Tucson, AZ.

Subconsultants: Pass through at cost, no markup

Tetra Tech Expenses Schedule

Mileage: Per AZ DOA Rate - \$0.625/mile

Air Travel: Pass through at cost, no markup. Assume \$750 R/T

Lodging and per diem maximum is per AZ DOA schedule for Tucson, AZ

Car rental @ \$75/day, unlimited mileage, fill gas

Task	Air Travel	Lodging	Per Diem	Car Rental	Mileage	Subs	Total	Notes
1.2.1 - Project Kick-off and Site Visit	\$750	\$104	\$120	\$150	\$376		\$1,500	One staff flying in, multiple staff driving down from Phoenix. AZ DOA lodging @ \$104 (May)
1.2.2 - Client Progress Meeting	\$1,500	\$208	\$180	\$150	\$462		\$2,500	One staff flying in, multiple staff driving down from Phoenix. AZ DOA lodging @ \$104 (May)
2.2.2 - Geotechnical						\$47,000	\$47,000	Sub for Borings and Geophysical Survey
2.9.2 - Alternatives Evaluation Workshop	\$1,500	\$208	\$180	\$150	\$212		\$2,250	Multiple Staff flying in, driving down from Phoenix. AZ DOA lodging @ \$104 (Aug)

Task No.	Task Description	Total Tetra Tech			
		Total Tetra Tech Labor Hours	Total Tetra Tech Labor (\$)	Total Tetra Tech Expenses (\$)	Total Tetra Tech
Task 1 - Project Management					
1.1	Project Administration			\$ -	-
1.1.1	Project Management	0	\$0	\$ -	-
1.1.2	Project Execution Plan	0	\$0	\$ -	-
1.1.3	Project Schedule and Controls	0	\$0	\$ -	-
1.1.4	QA/QC Management	0	\$0	\$ -	-
1.2	Meetings and Workshops			\$ -	137,406
1.2.1	Project Kickoff and Site Visit	50	\$17,335	\$ 1,500	16,835
1.2.2	Client Progress Meetings	192	\$63,521	\$ 2,500	66,021
1.2.3	Engineering Team Progress and Coordination Meetings	210	\$62,550	\$ -	62,550
1.3	Project Documentation	0	\$0	\$ -	-
	Subtotal Task 1	460	\$133,406	\$ 4,000	137,406
Task 2 - Preliminary Design					
2.1	Screw Press P&IDing			\$ -	-
2.1.1	Test Plan Development	0	\$0	\$ -	-
2.1.2	Vendor Coordination and Support Activities	0	\$0	\$ -	-
2.1.3	Data Analysis	0	\$0	\$ -	-
2.1.4	Pilot Results Technical Memorandum	0	\$0	\$ -	-
2.1.5	Performance Specifications Development	0	\$0	\$ -	-
2.2	Field Investigations			\$ -	147,034
2.2.1	Survey	0	\$0	\$ -	-
2.2.2	Geotechnical	356	\$100,034	\$ 47,000	147,034
2.2.3	Subsurface Utility Investigation (SUI) Report	0	\$0	\$ -	-
2.3	Waste Heat Recovery			\$ -	-
2.3.1	Thermal Requirements Analysis	0	\$0	\$ -	-
2.3.2	Heat Exchanger Sizing and Optimization	0	\$0	\$ -	-
2.3.3	Repurposing the Abandoned Activated Sludge Reactors and Modifying the Blower Buildings	0	\$0	\$ -	-
2.3.4	Vendor Coordination and Support Activities	0	\$0	\$ -	-
2.3.5	Performance Specifications Development	0	\$0	\$ -	-
2.4	Odor Control			\$ -	-
2.4.1	Existing Odor Control System Evaluation	0	\$0	\$ -	-
2.4.2	Preliminary System Design and Sizing Criteria	0	\$0	\$ -	-
2.4.3	Vendor Coordination and Support Activities	0	\$0	\$ -	-
2.4.4	Performance Specifications Development	0	\$0	\$ -	-
2.6	Solar Dryer and Solids Loadout			\$ -	-
2.5.1	Data Needs Coordination	0	\$0	\$ -	-
2.5.2	Design Criteria	0	\$0	\$ -	-
2.5.3	Thermal Options Evaluation	0	\$0	\$ -	-
2.5.4	Vendor Coordination and Support Activities	0	\$0	\$ -	-
2.5.5	Performance Specifications Development	0	\$0	\$ -	-
2.6	Photovoltaic (PV) System			\$ -	-
2.6.1	PV Conceptual Design	0	\$0	\$ -	-
2.6.2	Battery Storage and Micro-Grid Design Criteria	0	\$0	\$ -	-
2.6.3	Performance Specifications Development	0	\$0	\$ -	-
2.7	SCADA and Instrumentation and Controls (I&C)			\$ -	3,336
2.7.1	Conceptual Network Architecture	6	\$2,223	\$ -	2,223
2.7.2	Performance Specifications Development	4	\$1,112	\$ -	1,112
2.8	Site / Civil			\$ -	29,316
2.8.1	General Arrangement Development	43	\$8,605	\$ -	8,606
2.8.2	Yard Piping Layouts	43	\$8,605	\$ -	8,606
2.8.3	Earthwork and Site / Civil	64	\$12,105	\$ -	12,106
2.9	Basis of Design Report			\$ -	40,662
2.9.1	Lifecycle Cost Development	31	\$7,286	\$ -	7,286
2.9.2	Alternatives Evaluation Workshop	34	\$9,776	\$ 2,250	12,026
2.9.3	Draft Basis of Design Report	65	\$15,826	\$ -	15,826
2.9.4	Final Basis of Design Report	24	\$5,419	\$ -	5,419
2.10	Permitting Assistance and Workplan			\$ -	64,890
2.10.1	ADEQ Permits	86	\$25,343	\$ -	25,343
2.10.2	Construction Permits	102	\$29,636	\$ -	29,636
	Subtotal Task 2	870	\$ 226,976	\$ 49,250	276,226
Task 3 - Detailed Design					
3.1	Early Works Package 1: Aeration Header			\$ -	31,308
3.1.1	Field Investigation and Concept Development	17	\$4,473	\$ -	4,473
3.1.2	Design Development (60%)	17	\$4,473	\$ -	4,473
	Design Development (60%) Workshop	17	\$4,473	\$ -	4,473
3.1.3	MOPO	17	\$4,473	\$ -	4,473
3.1.4	Construction Documents (80%)	17	\$4,473	\$ -	4,473
	Construction Documents (80%) Workshop	17	\$4,473	\$ -	4,473
3.1.5	100% Construction Document Completion	17	\$4,473	\$ -	4,473
3.2	Early Works Package 2: Thermal Storage Tank Insulation and Readiness			\$ -	-
3.2.1	Field Investigation	0	\$0	\$ -	-
3.2.2	Design Development (60%)	0	\$0	\$ -	-
	Design Development (60%) Workshop	0	\$0	\$ -	-
3.2.3	Construction Documents (80%)	0	\$0	\$ -	-
	Construction Documents (80%) Workshop	0	\$0	\$ -	-
3.2.4	100% Construction Document Completion	0	\$0	\$ -	-
3.3	Early Works Package 3: Mass Grading for the Solar Dryer Building			\$ -	110,863
3.3.1	Design Development (60%)	308	\$53,565	\$ -	53,565
	Design Development (60%) Workshop	32	\$8,565	\$ -	8,565
3.3.2	Construction Documents (80%)	158	\$28,792	\$ -	28,792
	Construction Documents (80%) Workshop	28	\$7,760	\$ -	7,760
3.3.3	100% Construction Document Completion	67	\$12,261	\$ -	12,261
3.4	Balance of Plant			\$ -	205,703
3.4.1	Conceptual Design (30%)	406	\$77,034	\$ -	77,034
	Conceptual Design (30%) Workshop	33	\$9,029	\$ -	9,028
3.4.2	Design Development (60%)	240	\$51,089	\$ -	51,089
	Design Development (60%) Workshop	31	\$8,722	\$ -	8,722
3.4.3	MOPO	0	\$0	\$ -	-
3.4.4	Construction Documents (80%)	147	\$32,057	\$ -	32,057
	Construction Documents (80%) Workshop	31	\$8,722	\$ -	8,722
3.4.5	100% Construction Document Completion	83	\$20,049	\$ -	20,049
	Subtotal Task 3	1,685	\$ 347,874	\$ -	347,874
Totals		3,015	707,355	53,250	760,605

Pima County Class A Blosolds Solar Drying Facility Fee

Tetra Tech 2023 Fee											
Task No.	Task Description	PM	Design Manager	Civil Engr	Struct Engr	ME Engr	Geotech Engr	Total Tetra Tech Labor Hours	Total Tetra Tech Labor (\$)	Total Tetra Tech Expenses (\$)	Total Tetra Tech
	Billing Rate	\$ 396.20	\$ 277.93	\$ 159.54	\$ 180.12	\$ 277.93	\$ 298.52				
Task 1 - Project Management											
1.1	Project Administration										\$ -
1.1.1	Project Management							0	\$0	\$ -	\$ -
1.1.2	Project Execution Plan							0	\$0	\$ -	\$ -
1.1.3	Project Schedule and Controls							0	\$0	\$ -	\$ -
1.1.4	QA/QC Management							0	\$0	\$ -	\$ -
1.2	Meetings and Workshops							0	\$0	\$ -	\$ -
1.2.1	Project Kickoff and Site Visit	4	18			38		58	\$17,335	\$ 1,500	\$ 18,835
1.2.2	Client Progress Meetings	38	38			38		114	\$36,865	\$ 1,500	\$ 38,365
1.2.3	Engineering Team Progress and Coordination Meetings		42	42		42		128	\$30,812	\$ -	\$ 30,812
1.3	Project Documentation							0	\$0	\$ -	\$ -
	Subtotal Task 1	42	98	42	-	-	115	298	\$85,211	\$ 3,000	\$ 88,211
Task 2 - Preliminary Design											
2.1	Screw Press Piloting										\$ -
2.1.1	Test Plan Development							0	\$0	\$ -	\$ -
2.1.2	Vendor Coordination and Support Activities							0	\$0	\$ -	\$ -
2.1.3	Data Analysis							0	\$0	\$ -	\$ -
2.1.4	Pilot Results Technical Memorandum							0	\$0	\$ -	\$ -
2.1.5	Performance Specifications Development							0	\$0	\$ -	\$ -
2.2	Field Investigations										\$ 147,034
2.2.1	Survey							0	\$0	\$ -	\$ -
2.2.2	Geotechnical	4		52		300		356	\$100,036	\$ 47,000	\$ 147,034
2.2.3	Subsurface Utility Investigation (SUI) Report							0	\$0	\$ -	\$ -
2.3	Waste Heat Recovery										\$ -
2.3.1	Thermal Requirements Analysis							0	\$0	\$ -	\$ -
2.3.2	Heat Exchanger Sizing and Optimization							0	\$0	\$ -	\$ -
2.3.3	Repurposing the Abandoned Activated Sludge Reactors and Modifying the Blower Buildings							0	\$0	\$ -	\$ -
2.3.4	Vendor Coordination and Support Activities							0	\$0	\$ -	\$ -
2.3.5	Performance Specifications Development							0	\$0	\$ -	\$ -
2.4	Odor Control										\$ -
2.4.1	Existing Odor Control System Evaluation							0	\$0	\$ -	\$ -
2.4.2	Preliminary System Design and Sizing Criteria							0	\$0	\$ -	\$ -
2.4.3	Vendor Coordination and Support Activities							0	\$0	\$ -	\$ -
2.4.4	Performance Specifications Development							0	\$0	\$ -	\$ -
2.5	Solar Dryer and Solids Loadout										\$ -
2.5.1	Data Needs Coordination							0	\$0	\$ -	\$ -
2.5.2	Design Criteria							0	\$0	\$ -	\$ -
2.5.3	Thermal Options Evaluation							0	\$0	\$ -	\$ -
2.5.4	Vendor Coordination and Support Activities							0	\$0	\$ -	\$ -
2.5.5	Performance Specifications Development							0	\$0	\$ -	\$ -
2.6	Photovoltaic (PV) System										\$ -
2.6.1	PV Conceptual Design							0	\$0	\$ -	\$ -
2.6.2	Battery Storage and Micro-Grid Design Criteria							0	\$0	\$ -	\$ -
2.6.3	Performance Specifications Development							0	\$0	\$ -	\$ -
2.7	SCADA and Instrumentation and Controls (I&C)										\$ 3,335
2.7.1	Conceptual Network Architecture					8		8	\$2,223	\$ -	\$ 2,223
2.7.2	Performance Specifications Development					4		4	\$1,112	\$ -	\$ 1,112
2.8	Site / Civil										\$ 28,516
2.8.1	General Arrangement Development	8	40					48	\$8,605	\$ -	\$ 8,605
2.8.2	Yard Piping Layouts	8	40					48	\$8,605	\$ -	\$ 8,605
2.8.3	Earthwork and Site / Civil	16	48					64	\$12,105	\$ -	\$ 12,105
2.9	Basis of Design Report										\$ 40,562
2.9.1	Lifecycle Cost Development	2	5	8	8		8	31	\$7,288	\$ -	\$ 7,288
2.9.2	Alternatives Evaluation Workshop		18				18	34	\$8,770	\$ 2,250	\$ 12,020
2.9.3	Draft Basis of Design Report		14	14	11	2	24	65	\$15,826	\$ -	\$ 15,826
2.9.4	Final Basis of Design Report		2	7	6	1	8	24	\$5,410	\$ -	\$ 5,410
2.10	Permitting Assistance and Workplan										\$ 25,343
2.10.1	ADEQ Permits		16				70	86	\$25,343	\$ -	\$ 25,343
2.10.2	Construction Permits							0	\$0	\$ -	\$ -
	Subtotal Task 2	2	91	157	77	15	425	769	\$ 198,340	\$ 49,250	\$ 245,590
Task 3 - Detailed Design											
3.1	Early Works Package 1: Aeration Header										\$ 31,388
3.1.1	Field Investigation and Concept Development	2	2	4	1	4	4	17	\$4,473	\$ -	\$ 4,473
3.1.2	Design Development (60%)	2	2	4	1	4	4	17	\$4,473	\$ -	\$ 4,473
	Design Development (60%) Workshop	2	2	4	1	4	4	17	\$4,473	\$ -	\$ 4,473
3.1.3	MOPO	2	2	4	1	4	4	17	\$4,473	\$ -	\$ 4,473
3.1.4	Construction Documents (80%)	2	2	4	1	4	4	17	\$4,473	\$ -	\$ 4,473
	Construction Documents (80%) Workshop	2	2	4	1	4	4	17	\$4,473	\$ -	\$ 4,473
3.1.5	100% Construction Document Completion	2	2	4	1	4	4	17	\$4,473	\$ -	\$ 4,473
3.2	Early Works Package 2: Thermal Storage Tank Insulation and Readiness										\$ -
3.2.1	Field Investigation							0	\$0	\$ -	\$ -
3.2.2	Design Development (60%)							0	\$0	\$ -	\$ -
	Design Development (60%) Workshop							0	\$0	\$ -	\$ -
3.2.3	Construction Documents (80%)							0	\$0	\$ -	\$ -
	Construction Documents (80%) Workshop							0	\$0	\$ -	\$ -
3.2.4	100% Construction Document Completion							0	\$0	\$ -	\$ -
3.3	Early Works Package 3: Mass Grading for the Solar Dryer Building										\$ 62,160
3.3.1	Design Development (60%)		28	272			8	308	\$53,585	\$ -	\$ 53,585
3.3.2	Design Development (60%) Workshop	4	12	8			8	32	\$8,585	\$ -	\$ 8,585
3.3.3	Construction Documents (80%)							0	\$0	\$ -	\$ -
	Construction Documents (80%) Workshop							0	\$0	\$ -	\$ -
3.3.3	100% Construction Document Completion							0	\$0	\$ -	\$ -
3.4	Balance of Plant										\$ 85,043
3.4.1	Conceptual Design (30%)		38	308		28	32	406	\$77,034	\$ -	\$ 77,034
	Conceptual Design (30%) Workshop	4	10	8			8	30	\$8,029	\$ -	\$ 8,029
3.4.2	Design Development (60%)							0	\$0	\$ -	\$ -
	Design Development (60%) Workshop							0	\$0	\$ -	\$ -
3.4.3	MOPO							0	\$0	\$ -	\$ -
3.4.4	Construction Documents (80%)							0	\$0	\$ -	\$ -
	Construction Documents (80%) Workshop							0	\$0	\$ -	\$ -
3.4.5	100% Construction Document Completion							0	\$0	\$ -	\$ -
	Subtotal Task 3	22	102	624	7	66	84	898	\$ 178,621	\$ -	\$ 178,621
Totals		66	291	823	84	71	625	1,961	\$ 460,071	\$ 52,250	\$ 512,321

Tetra Tech 2024 Fee											
Task No.	Task Description	PMC	Design Manager	Civil Engr	Struct Engr	M&C Engr	Geotech Engr	Total Tetra Tech Labor Hours	Total Tetra Tech Labor (\$)	Total Tetra Tech Expenses (\$)	Total Tetra Tech
	Billing Rate	\$ 416.12	\$ 251.83	\$ 167.52	\$ 189.13	\$ 291.83	\$ 313.45				
Task 1 - Project Management											
1.1	Project Administration										\$ -
1.1.1	Project Management							0	\$0		\$ -
1.1.2	Project Execution Plan							0	\$0	\$ -	\$ -
1.1.3	Project Schedule and Controls							0	\$0	\$ -	\$ -
1.1.4	QA/QC Management							0	\$0	\$ -	\$ -
1.2	Meetings and Workshops										\$ 49,184
1.2.1	Project Kickoff and Site Visit							0	\$0		\$ -
1.2.2	Client Progress Meetings	26	26				26	78	\$26,556	\$ 1,000	\$ 27,556
1.2.3	Engineering Team Progress and Coordination Meetings		26	26			26	84	\$21,638	\$ -	\$ 21,638
1.3	Project Documentation							0	\$0	\$ -	\$ -
	Subtotal Task 1	26	54	26			54	162	\$48,194	\$ 1,000	\$ 49,194
Task 2 - Preliminary Design											
2.1	Screw Press Piloting										\$ -
2.1.1	Test Plan Development							0	\$0	\$ -	\$ -
2.1.2	Vendor Coordination and Support Activities							0	\$0	\$ -	\$ -
2.1.3	Data Analysis							0	\$0	\$ -	\$ -
2.1.4	Pilot Results Technical Memorandum							0	\$0	\$ -	\$ -
2.1.5	Performance Specifications Development							0	\$0	\$ -	\$ -
2.2	Field Investigations										\$ -
2.2.1	Survey							0	\$0	\$ -	\$ -
2.2.2	Geotechnical							0	\$0	\$ -	\$ -
2.2.3	Subsurface Utility Investigation (SUI) Report							0	\$0	\$ -	\$ -
2.3	Waste Heat Recovery										\$ -
2.3.1	Thermal Requirements Analysis							0	\$0	\$ -	\$ -
2.3.2	Heat Exchanger Sizing and Optimization							0	\$0	\$ -	\$ -
2.3.3	Repurposing the Abandoned Activated Sludge Reactors and Modifying the Blower Buildings							0	\$0	\$ -	\$ -
2.3.4	Vendor Coordination and Support Activities							0	\$0	\$ -	\$ -
2.3.5	Performance Specifications Development							0	\$0	\$ -	\$ -
2.4	Odor Control										\$ -
2.4.1	Existing Odor Control System Evaluation							0	\$0	\$ -	\$ -
2.4.2	Preliminary System Design and Sizing Criteria							0	\$0	\$ -	\$ -
2.4.3	Vendor Coordination and Support Activities							0	\$0	\$ -	\$ -
2.4.4	Performance Specifications Development							0	\$0	\$ -	\$ -
2.5	Solar Dryer and Solids Loadout										\$ -
2.5.1	Data Needs Coordination							0	\$0	\$ -	\$ -
2.5.2	Design Criteria							0	\$0	\$ -	\$ -
2.5.3	Thermal Options Evaluation							0	\$0	\$ -	\$ -
2.5.4	Vendor Coordination and Support Activities							0	\$0	\$ -	\$ -
2.5.5	Performance Specifications Development							0	\$0	\$ -	\$ -
2.6	Photovoltaic (PV) System										\$ -
2.6.1	PV Conceptual Design							0	\$0	\$ -	\$ -
2.6.2	Battery Storage and Micro-Grid Design Criteria							0	\$0	\$ -	\$ -
2.6.3	Performance Specifications Development							0	\$0	\$ -	\$ -
2.7	SCADA and Instrumentation and Controls (I&C)										\$ -
2.7.1	Conceptual Network Architecture							0	\$0	\$ -	\$ -
2.7.2	Performance Specifications Development							0	\$0	\$ -	\$ -
2.8	Site / Civil										\$ -
2.8.1	General Arrangement Development							0	\$0	\$ -	\$ -
2.8.2	Yard Piping Layouts							0	\$0	\$ -	\$ -
2.8.3	Earthwork and Site / Civil							0	\$0	\$ -	\$ -
2.9	Basis of Design Report										\$ -
2.9.1	Lifecycle Cost Development							0	\$0	\$ -	\$ -
2.9.2	Alternatives Evaluation Workshop							0	\$0	\$ -	\$ -
2.9.3	Draft Basis of Design Report							0	\$0	\$ -	\$ -
2.9.4	Final Basis of Design Report							0	\$0	\$ -	\$ -
2.10	Permitting Assistance and Workplan										\$ 29,636
2.10.1	ADEQ Permits							0	\$0	\$ -	\$ -
2.10.2	Construction Permits		16		16		70	102	\$29,636	\$ -	\$ 29,636
	Subtotal Task 2		16		16		70	102	\$ 29,636	\$ -	\$ 29,636
Task 3 - Detailed Design											
3.1	Early Works Package 1: Arration Header										\$ -
3.1.1	Field Investigation and Concept Development							0	\$0	\$ -	\$ -
3.1.2	Design Development (60%)							0	\$0	\$ -	\$ -
3.1.3	Design Development (60%) Workshop							0	\$0	\$ -	\$ -
3.1.4	MOPO							0	\$0	\$ -	\$ -
3.1.5	Construction Documents (80%)							0	\$0	\$ -	\$ -
3.1.6	Construction Documents (80%) Workshop							0	\$0	\$ -	\$ -
3.1.7	100% Construction Document Completion							0	\$0	\$ -	\$ -
3.2	Early Works Package 2: Thermal Storage Tank Insulation and Readiness										\$ -
3.2.1	Field Investigation							0	\$0	\$ -	\$ -
3.2.2	Design Development (60%)							0	\$0	\$ -	\$ -
3.2.3	Design Development (60%) Workshop							0	\$0	\$ -	\$ -
3.2.4	Construction Documents (80%)							0	\$0	\$ -	\$ -
3.2.5	Construction Documents (80%) Workshop							0	\$0	\$ -	\$ -
3.2.6	100% Construction Document Completion							0	\$0	\$ -	\$ -
3.3	Early Works Package 3: Mass Grading for the Solar Dryer Building										\$ 48,813
3.3.1	Design Development (60%)							0	\$0	\$ -	\$ -
3.3.2	Design Development (60%) Workshop							0	\$0	\$ -	\$ -
3.3.3	Construction Documents (80%)		14	140			4	158	\$28,792	\$ -	\$ 28,792
3.3.4	Construction Documents (80%) Workshop	4	12	8			4	28	\$7,760	\$ -	\$ 7,760
3.3.5	100% Construction Document Completion		6	59			2	67	\$12,261	\$ -	\$ 12,261
3.4	Balance of Plant										\$ 126,839
3.4.1	Conceptual Design (30%)							0	\$0	\$ -	\$ -
3.4.2	Conceptual Design (30%) Workshop							0	\$0	\$ -	\$ -
3.4.3	Design Development (60%)		22	158		28	32	240	\$51,088	\$ -	\$ 51,088
3.4.4	Design Development (60%) Workshop	4	11	8			6	31	\$8,722	\$ -	\$ 8,722
3.4.5	MOPO							0	\$0	\$ -	\$ -
3.4.6	Construction Documents (80%)		13	80		28	16	147	\$32,057	\$ -	\$ 32,057
3.4.7	Construction Documents (80%) Workshop	4	11	8			6	31	\$8,722	\$ -	\$ 8,722
3.4.8	100% Construction Document Completion		10	45		28	4	68	\$20,049	\$ -	\$ 20,049
	Subtotal Task 3	12	88	517		84	78	780	\$ 169,463	\$ -	\$ 169,463
Totals:		38	169	645	16	84	202	1,054	\$ 247,283	\$ 1,000	\$ 248,283



Tetra Tech, Inc. Geotechnical Investigation Scope of Work

Types of Geotechnical Investigations Performed

The landfill geotechnical investigation will consist of a comprehensive geophysical survey. Eleven geophysical survey lines will be used to verify the depth and thickness of the waste in-place. A three-dimensional model of the subsurface landfill's two cells will be created. Density differences between the upper construction and demolition waste and the lower municipal solid waste will allow the thickness of each material to be estimated. No exploratory drilling is anticipated for the landfill because the upper portion of the fill is concrete and asphalt rubble that would be very difficult to drill through.

Tetra Tech anticipates conducting a standard geotechnical investigation of the bladder site. Three exploratory borings advanced to approximately twenty feet will be completed most likely by a hollow stem auger. Standard penetration test samples will be collected for testing (plasticity index, moisture content, compaction). Drill cuttings will be removed from the site by the driller. The driller will provide their own water.

Site Access and Field Safety Responsibilities

Access to the landfill site will be through the tire facility. Judy Tovar (P: 520-724-9795, C: 520-247-9964) will be contacted the day before the geophysical survey crew arrives on site.

Site access to the bladder site will be through the Tres Rios WWTF front gate. Tetra Tech will contact WWTP staff the day before the driller is scheduled to arrive on site (WWTP contact TBD). A Tetra Tech field geologist/engineer will be with the driller to log the borings and collect samples. Ultimately the subcontractors are responsible for their own field safety. A Health and Safety Plan will be requested from both Zonge and the selected driller. Tetra Tech will prepare a health and safety plan for our staff and will monitor our subcontractors for proper safety practices and will stop work if any unsafe practices are observed.

Deliverables

Tetra Tech will prepare a geotechnical report encompassing both the landfill and the bladder site. Included in this report will be the results of the geophysical investigation on the landfill and the exploratory drill on the bladder site.

Calculations related to anticipated loading of the mat foundation will be performed. This includes the greenhouse structure and the biosolids floor loading. The additional site fill will also be estimated based on the unit weight of the final cover soil currently in place due to the sloped existing surface condition. The anticipated total loading will be used in our settlement calculations. Our settlement analysis (both total and differential) and the associated loading will be used to determine approximate mat foundation thickness and approximate depth of grade beams. Foundation recommendations will be included in the geotechnical report for both the landfill and the bladder site.

Attachment: Zonge Int'l Proposal

**Geophysical Survey Proposal
Ina Road Construction Debris Landfill Project
Pima County, Arizona**

**for
Tetra Tech**

**by
Zonge International, Inc.
Feb 08, 2023**

Introduction: At the request of Keith Johnson of Tetra Tech, Zonge International, Inc. (Zonge) has prepared a brief proposal and cost estimate for an induced polarization (IP) and resistivity geophysical survey at the Ina Road Construction Debris Landfill, near Tucson, Arizona. The geophysical survey is intended to determine depth and thickness of waste in two old, buried landfill cells. This proposal is based on information and maps provided by Mr. Keith Johnson. Following the proposed scope of work, deliverables, and cost estimate is a brief appendix containing additional background discussion of the proposed geophysical survey method.

Zonge's proposed survey method is a combination of induced polarization (IP) and resistivity; we have used this combination successfully on numerous shallow environmental surveys, including municipal solid waste, for more than 20 years, and these methods have been used successfully in the minerals and groundwater exploration industries for more than four decades. A description of the method is included as an appendix to this proposal. In this type of survey, a controlled electrical signal is transmitted into the ground via a grounded dipole (two stakes or grounding braids in the ground, connected to the transmitter with insulated wire), and at varying distances from this dipole, the transmitted signal is received on different grounded dipoles and recorded digitally by the microprocessor-controlled receiver electronics.

Figure 1 below shows the location of several suggested survey lines. At least 5 lines in the upper cell and 5 lines in the lower right cell are proposed in order to verify the depth and thickness of waste. In each site, there are 4 lines crossing the site and 1 line along the site. Since the site is surrounded by fence, in order to accurately characterize the limits and background of the landfill, all lines should extend as far as they can to the fence line. Exact locations may be modified based

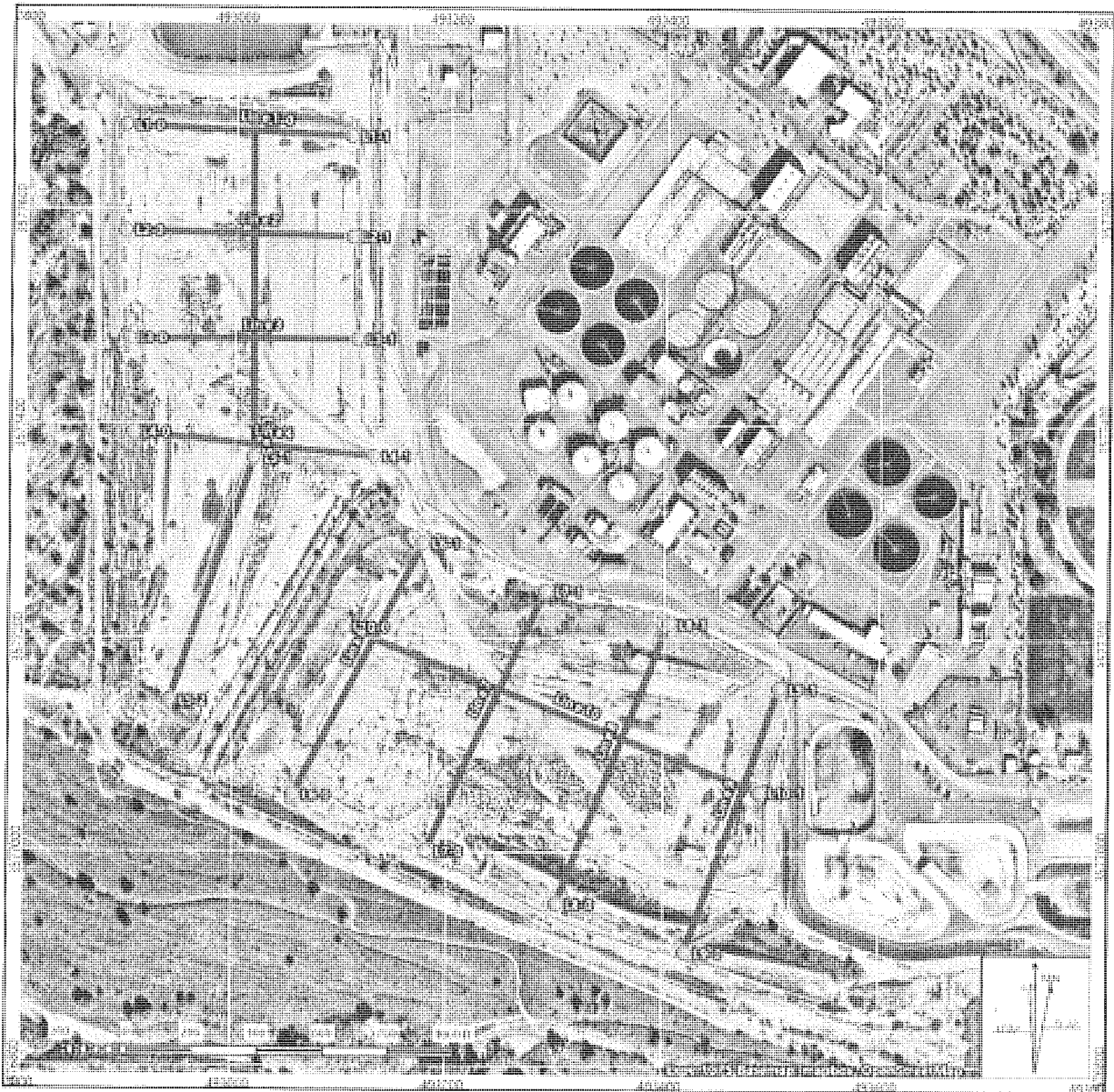


Figure 1: Landfill map provided by Tetra Tech, with preliminary locations of suggested survey lines (blue).

on noise measurements from power lines that cross through the survey area and other civil noise near survey site.

Although there are several different geophysical methods that are often applicable to landfill studies, Zonge proposes the IP and resistivity method based on prior landfill work in and around Tucson. We do not suggest a simpler magnetometry survey, since that would detect only the areas of the buried waste that contain ferrous (iron-bearing) metal and would be heavily influenced by nearby power lines and other city noises. Similarly, we do not propose ground penetrating radar (GPR), since that is not likely to image features deep enough in this environment. The proposed resistivity and IP survey will provide two datasets simultaneously; resistivity often (but not always) shows buried waste, and IP very often shows buried waste in

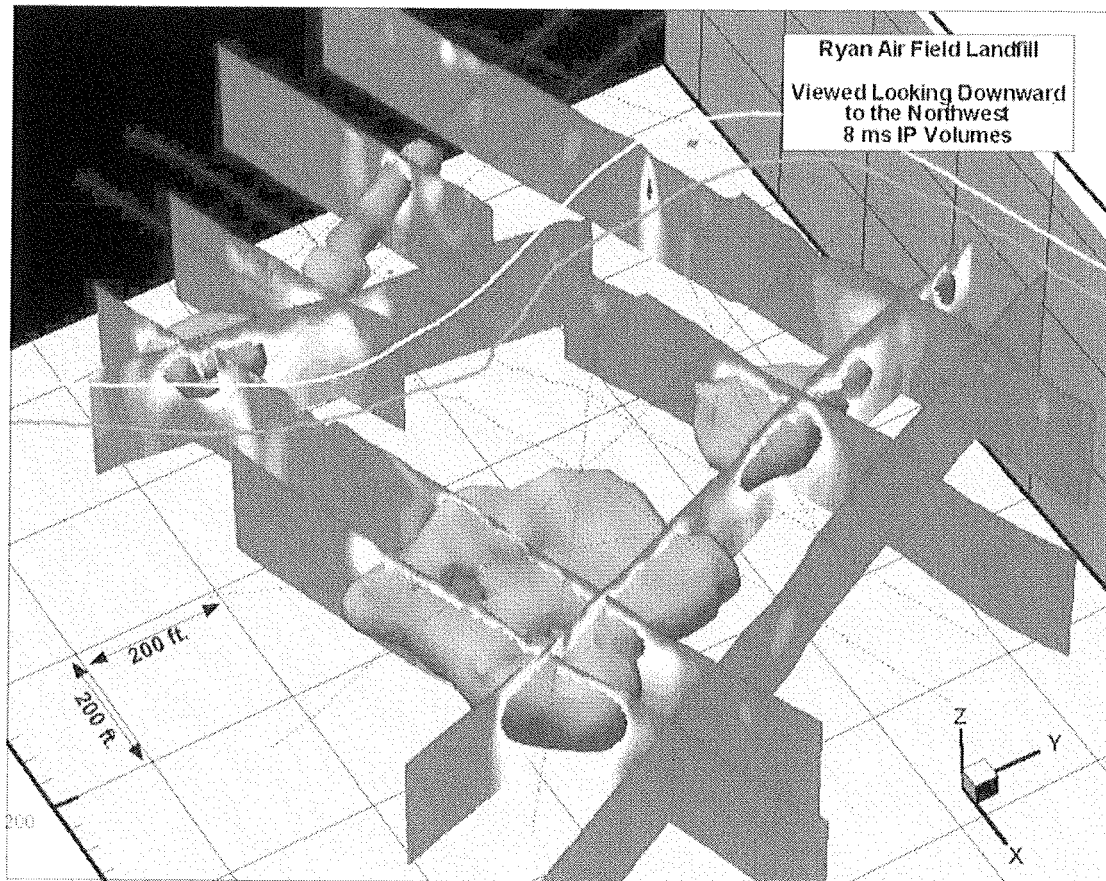


Figure 2: Example IP survey results from a landfill with distinct disposal cells and trenches.

cases where the resistivity information is ambiguous (as it often is in the southwestern desert environment). References and additional background information are included as attachments to this proposal.

Figure 2 shows an example of the IP survey results from a landfill study near Tucson, Arizona. High IP values, shaded red, correlated very well with the waste; the data set was used to safely place monitor wells at this site. With additional lines at the Ina Road Construction Landfill, 3D images similar to Figure 2 could be developed.

Proposed Scope of Work: Zonge proposes to acquire IP and resistivity data on survey Line 1 through Line 10 on Figure 1. Station spacing along the lines will be at least 10 feet, using dipole size of at least 20 feet in order to provide good coverage to a depth of at least 50 feet. Data will be acquired in the dipole-dipole array, reading n -spacings of $n=0.5$ to at least $n=6.0$, in $0.5n$ increments (i.e., a minimum of 12 readings per transmitter dipole).

The geophysical survey data will be sent to Zonge's Tucson office in the evening for processing and modeling, and the results will be sent to Tetra Tech personnel for discussion.

It is assumed that Tetra Tech or its client will acquire all necessary permits and access rights to the project area.

HS&E Plan: Zonge will prepare a Health, Safety, and Environmental Plan for this specific project, including a hazard register covering the field activities for this type of geophysical survey. Zonge will also adhere to any additional HS&E requirements from Tetra Tech or its client. The field crew will hold a "tail-gate" safety meeting every morning prior to beginning operations, as well as performing daily vehicle safety inspections. Given the nature of this project, Zonge will not require MSHA or OSHA certification for the field personnel.

Deliverables: The deliverables for this project will be three copies of a final report, including the following:

1. Logistical summary of the field activity.
2. Brief review of the IP and resistivity methods, with equipment specifications.

3. Location maps showing station locations with pertinent landmarks and cultural features.
4. Color cross section plots of 2D model results of IP and resistivity for each survey line (see Appendix for example plots).
5. Plan view plots of IP and resistivity results at selected constant depths, if applicable (see Appendix for example plots).
6. 3D Images of the subsurface, if applicable (see Appendix for example plots).
7. Interpretive maps showing our interpretation of the data with respect to the survey goals, as correlated to any background information that Tetra Tech can provide, such as borehole logs, historical maps, etc.
8. The final report, including raw geophysical data, GPS data and figures in digital form on diskette or CD.

Proposed Survey Costs: The total estimated cost of the IP/resistivity survey is shown below. In this estimate, production cost includes the three- to four-person field crew, vehicles, and all geophysical equipment necessary for this survey. Expenses for expendable field supplies (lodging, per diem, gasoline, survey stakes, etc.) are estimated, and would be billed at actual cost with no handling charges and will not exceed GSA maximums.

A total of approximately 9500 linear feet of data will be covered on the ten lines. This estimate is based on a proposed electrode spacing of 10 feet, using dipole sizes of 20 feet, reading separations of $n=0.5$ through $n=6.0$ at $\frac{1}{2} n$ increments to improve lateral resolution of the modeling results.

The speed and cost of the survey depends on many factors, of course, but the three- or four-person field crew is usually able to cover approximately 1500 to 3000 line feet of survey per day. Typical daily costs (all inclusive) including labor, equipment, vehicles, expendable supplies, data processing, and final report, are usually between \$3,200 and \$6,000 per 10 hour field day.

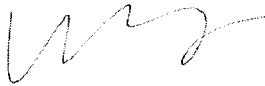
Geophysical Survey Estimated Cost (Time and Materials)

Production Time: IP/Resistivity Survey 5 days @ \$3950/ day	\$ 19,750.00
Data processing and inversion modeling: 5 field days @ \$400/day	\$ 2,000.00
Final Report: 30 hours @ \$110.00/hour	\$ 3,300.00

TOTAL ESTIMATED SURVEY COST: \$ 25,050.00

This cost estimate is a time-and-materials estimate and if the field crew is able to acquire data faster than expected, Tetra Tech would be charged the lesser amount. Standby time, such as delays caused by unsafe weather conditions or delays requested by the client will be charged at one-half the Production Survey Cost ($\$3950.00/2 = \1975.00 per day). Line extension or fill-in lines can be easily added depending on budget constraints and on the survey results. If additional work is requested, the above daily charges would apply.

Respectfully submitted,



Wanjie feng
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Zonge International, Inc.

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Appendix: Survey Methodology

Introduction: There are several valid geophysical methods that can be used on buried landfill projects, depending on the goal of the survey and the environment around the landfill. Geophysics can be used to target or limit the number of intrusive borings, and to fill in information between boreholes. Geophysics has also been used to carefully locate boring or drilling locations, such as in the case of monitor wells that are intended to be very close to the subsurface waste without actually intersecting the waste. On most of our landfill projects, Zonge has proposed the use of Induced Polarization (IP) and resistivity, although we do use the other methods in other applications. This discussion focuses on IP/resistivity, and other geophysical methods are covered briefly at the end of this discussion.

Zonge has used the IP/resistivity combination successfully to map dozens of landfills in and around Phoenix and Tucson, as well as numerous other locations around the US. The primary advantage of this method is that it provides depth and thickness information in addition to the horizontal limits (or “footprint”) of the waste. Depth and thickness information are critical in remediation projects, for example, where the knowledge of the volume of the waste is important.

IP/Resistivity Summary: Resistivity and Induced Polarization (IP) surveys are commonly-used, surface-based geophysical methods which provide information about the electrical properties of the subsurface. Resistivity surveys have been used extensively by the minerals, geothermal, hydrocarbon, and groundwater exploration industries, and IP is commonly used in minerals exploration, as well as environmental studies. The two data sets are usually acquired simultaneously during the same survey using the same equipment and array. The survey is a low-impact, non-intrusive technique, usually involving only 3 to 5 people in two standard pick-up truck-sized vehicles. No large equipment is involved, and no trenching, drilling, road-building, or blasting is done.

Details of the Resistivity/IP Methodology: Briefly, the resistivity/IP method can be described as follows: a controlled electrical signal is transmitted into the ground through a grounded dipole, which consists of two electrodes a specific distance apart. In this case, each electrode is a grounding braid (flat strips measuring about 2 inches X 12 inches made of tin coated copper)

buried about 1 to 2 inches in the soil (see Figure 1). At varying distances from this dipole, the transmitted signal is received on different grounded dipoles and recorded digitally by the microprocessor-controlled receiver electronics. By comparing the transmitted signal to the received signal, electrical properties of the ground can be calculated.

One electrical property of the ground that can be measured in this manner is called resistivity; a change in ground resistivity (the ability of the ground to conduct electrical current) affects the strength of the received signal. A different electrical property is called chargeability, or induced polarization (IP); a change in IP (the ability of material in the ground to polarize at interfaces) affects the shape or timing of the received waveform.

Variations in subsurface moisture content, porosity, permeability, and soil or rock type can all affect resistivity measurements. Cultural features (man-made objects such as fences, power lines, pipelines, etc.) can also affect ground resistivity measurements.

Compared to changes in resistivity, there are relatively few subsurface conditions that create an IP response. Metallic mineralization, particularly disseminated sulphides, cause increased IP values. Certain dissolved solids in groundwater have been shown to increase IP response, and in some environments, some types of clay can also increase IP response if the abundance of the clay is within specific ranges (dependent on the type of clay). Extensive work over landfills has also shown increased IP values, from multiple sources in the landfills. Like resistivity data, IP data can also be influenced by cultural features.

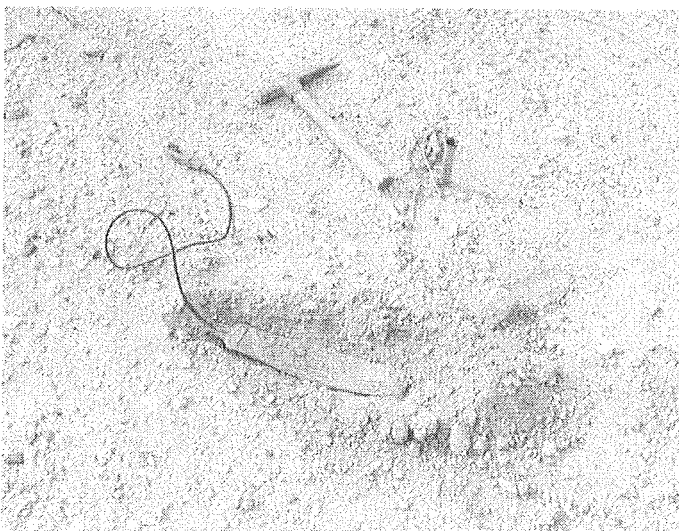


Figure 1: Tin-coated copper grounding braid used as an electrode for an IP and resistivity survey.

Usually, numerous electrodes are set up in a line or grid pattern and connected by cables to the transmitter equipment at a central location. The cables are laid out by walking along the ground, and vehicle access along the length of the wire is not necessary. For shallow surveys, the transmitter is battery powered; this equipment transmits a very carefully controlled signal at specific frequencies into the ground. The measurements are made with a system called a receiver which is connected to different dipoles. The transmitter and receiver are controlled by a laptop computer at a central location (see Figure 2). By making measurements at numerous stations along a line, a cross section or map view of the subsurface electrical properties can be produced, providing information about subsurface faults, fractures, geologic structures, mineralization, groundwater, or anomalous conditions.



Figure 2: The IP/resistivity transmitter and receiver equipment mounted in an SUV.

Once the survey is complete, all wires, electrodes, survey flagging, etc. are removed, and electrode sites are raked. Usually, there is little or no evidence that the survey occurred.

Zonge can restrict its trucks to established roads and trails if necessary, but the ability to do limited off-road driving will increase the survey speed, reducing the time the field crew is on site. Off-road driving to some positions along lines in order to carry water and locate equipment in a central location may be useful, if allowed. Off-road driving will not be done in muddy conditions.

IP/Resistivity Survey Results: The survey produces information about the subsurface electrical characteristics of the ground. The results are usually presented as cross sections through the earth of resistivity and IP. Figure 3 below shows the survey results along an IP/resistivity line that

started at the base of a steep slope, moving uphill and then across an athletic field. High IP values (shaded toward red) were verified by trenching and borings as buried waste. Figure 4 shows the same line of data, but with color shading to show resistivity (low resistivities shaded toward red) and black contours showing IP values. The low resistivities were found to be the result of the nightly watering the athletic field.

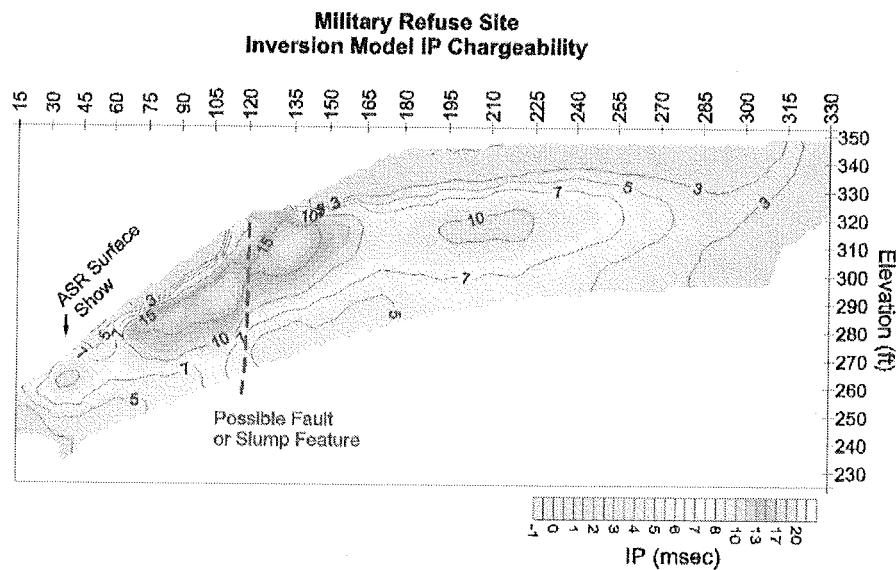


Figure 3. Cross section of inversion IP anomaly from a military refuse site. Data are 0.5 hertz, 15-foot dipole-dipole array data. (Station numbers are in feet).

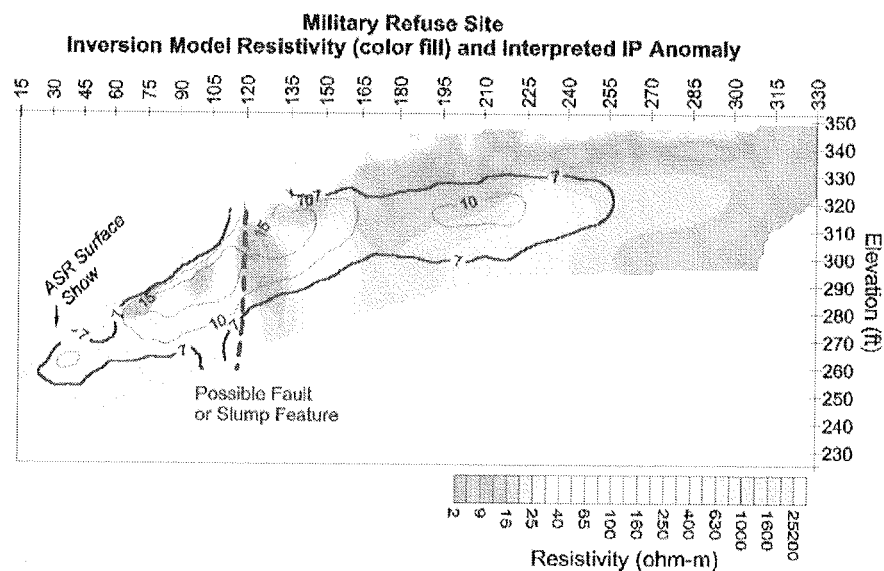
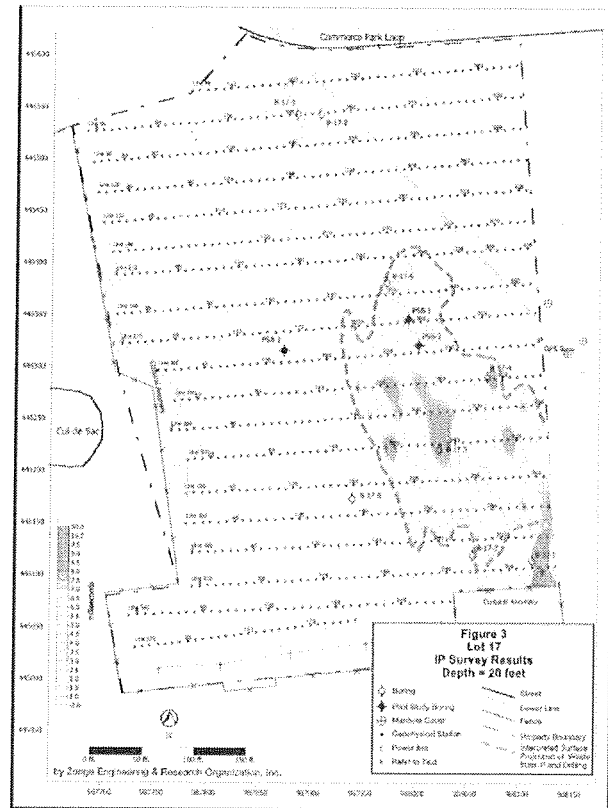
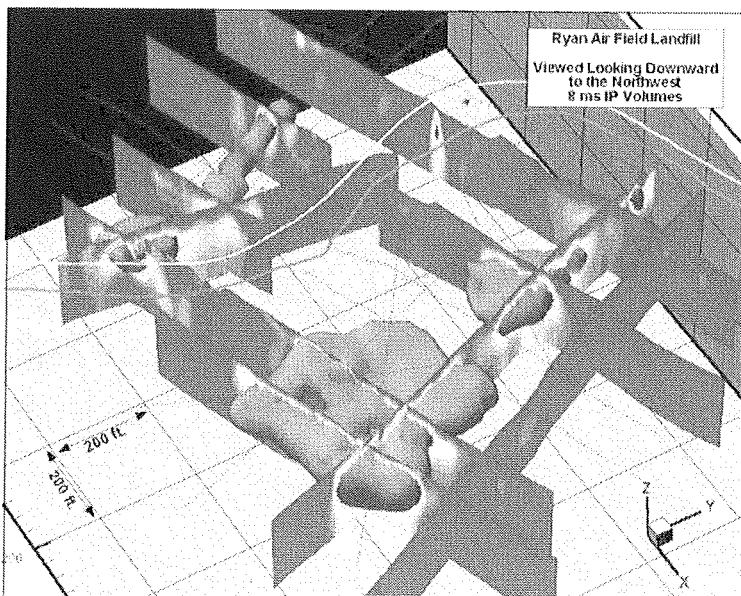


Figure 4. Cross section of resistivity (color-fill) and IP anomaly (black contours) from a military refuse site. Data are 0.5 hertz, 15-foot dipole-dipole array data. (Station numbers are in feet).

When several lines of data are acquired, the data are often presented in plan or map view, to show the outline of anomalies at various depths. The figure on the right shows an example from the Rio Nuevo North Landfill in Tucson, Arizona. The plot shows the IP values at a depth of 20 feet, and the red dashed line outlines the limits of the waste at all depths. The size and shape of the subsurface waste was verified with numerous borings, and the volume of the waste estimated from the IP survey was used to calculate remediation costs for this property.



Multiple lines can also be used to generate a 3D image of the subsurface anomalies, as shown on the below, from a survey at the Ryan Air Field landfill. Historical records indicated the waste was in two rectangular pits, but the IP survey delineated small, irregular pits as well as a separate trench of waste. The survey results



were used to place several monitor wells at this site.

In addition to delineating the waste, the strength of the IP anomaly is often an indication of the type of waste in different parts of the landfill. Municipal solid waste (MSW) often has a strong IP response, while construction waste is more often moderate or weak IP with elevated resistivity values.

Green waste has exhibited low IP values and low resistivities.

Useful References

- Carlson, N.R., Bouzid, N., and Byrd, R., 2015, Environmental applications of the IP method: surveys of subsurface waste, *The Leading Edge*, Society of Exploration Geophysics, V 34, No. 2, pp. 214-220.
- Carlson, N.R. and Urquhart, S.A., 2004, Comparisons of IP and resistivity at several old, buried landfills, Proceedings of the Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP), Environmental and Engineering Geophysical Society, February, 2004, Colorado Springs, Colorado.
- Carlson, N.R. and Urquhart, S.A., 2004, Advances in buried landfill delineation, 2nd Biennial Symposium on Scientific Issues Related to Management of Landfills in Arid and Semi-arid Regions, Arizona Hydrological Society, March, 2004, Tucson, Arizona.
- Carlson, N.R. and Zonge, K.L., 2004, Advances in IP data acquisition with applications to shallow engineering and environmental problems, Progress in Environmental and Engineering Geophysics, Proceedings of the International Conference on Environmental and Engineering Geophysics, Wuhan, China, June 6-9, 2004, pp297-300.
- Hughes, L.H., and Carlson, N.R., 2003, Mapping structural pathways for DNAPL transport in karst using induced polarization, Proceedings of the Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP), Environmental and Engineering Geophysical Society, April, 2003, San Antonio, Texas.
- Carlson, N.R., and Zonge, K.L., 2003, Minerals exploration methods modified for environmental targets, *Exploration Geophysics*, Australian Society of Exploration Geophysicists, V 34, #1/2, pp114-119.
- Carlson, N.R., and K.L. Zonge, 2001, "Case Histories of Buried Landfill Mapping with Non-intrusive Geophysical Methods", Proceedings of the 36th Symposium of Engineering Geology and Geotechnical Engineering, March, 2001, Las Vegas, Nevada, pp. 71-79.
- Carlson, N.R., Hare, J.A., and K.L. Zonge, 2001, "Buried Landfill Delineation with Induced Polarization: Progress and Problems", Proceedings of the Symposium on the Application of Geophysics to Environmental and Engineering Problems (SAGEEP), Environmental and Engineering Geophysical Society), March, 2001, Denver, Colorado.

Comments on Other Geophysical Methods:

Ground Magnetics - Sensitive only to ferrous metals; useful in very rapidly mapping subsurface metallic targets. Not sensitive to non-ferrous objects such as plastics, wood, paper, etc. and not sensitive to changes in resistivity/conductivity.

Ground Penetrating Radar (GPR) - Sensitive to metallic and non-metallic objects, and often maps changes in layering. It is a rapid survey, and very detailed. Probably one of the best tools if the ground conductivity is not too high; depth of investigation is limited in areas of high conductivity, particularly in materials with clay. In some areas around Tucson, depth of investigation is no more than a few feet. GPR will often delineate the top of the waste, but not usually the base of waste, due to rapid attenuation of the high frequencies.

Electromagnetic (EM) Methods - Includes time domain methods (such as TEM, and the EM-61 system) and frequency domain methods (such as the EM-31 and EM-34 systems). The EM-61 is useful as a very deep metal detector, but it is not sensitive to changes in resistivity/conductivity, such as changes in layering. The EM-31 and EM-34 both map changes in conductivity, with very limited depth flexibility.

Seismic Methods - Provides very detailed data, usually higher resolution than other methods, but is typically more expensive, and does not often detect the base of the waste due to attenuation in the very low velocity waste materials. Seismic is sensitive to changes in the acoustic velocity of materials. Zonge often uses these methods for other applications, but we have found the IP/resistivity method to be the most useful and cost-efficient method for landfill delineation.

**Specifications of the Principal Components of the Equipment System to be
Used on the Ina Road Construction Debris Landfill Project**



GDP-3224 Multi-Function Geophysical Receiver

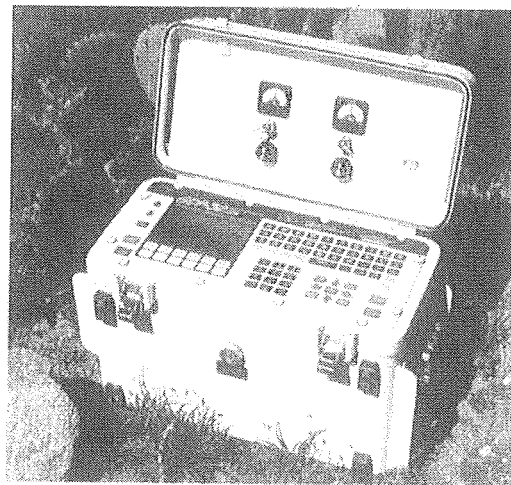
Get maximum use from your equipment investment

The Zonge GDP-3224™ is an integrated, 24-bit multi-channel receiver for acquisition of controlled- and natural-source geoelectric and EM data.

- 24-bit analog system
- Expanded keyboard
- ½-VGA graphics display
- 100BaseT Ethernet port
- GPS timing, plus high-accuracy quartz clock
- Multiple, selectable data storage modes in a single data cache
- Remote control operation
- Broadband time-series recording
- High-speed data transfer

FEATURES

- 1 to 16 channels, user expandable
- 133 MHz 586 CPU
- Alphanumeric keypad
- Real-time data and statistics display
- Easy to use menu-driven software
- Resistivity, Time/Frequency Domain IP, CR, CSAMT, Harmonic analysis CSAMT (HACSAMT), AMT, MT, TEM & NanoTEM®
- Screen graphics: plots of time-domain decay, resistivity and phase, complex plane plots, etc., on a 480x320 ½-VGA, sunlight readable LCD
- Internal humidity and temperature sensors
- Time schedule program for remote operation with Zonge XMT-32S transmitter controller
- Optional GPS time synchronization with transmitter
- Use as a data logger for analog data, borehole data, etc.
- Full compatibility with GDP-32 series receivers.
- 0.015625 Hz to 8 KHz frequency range standard, 0.0001 Hz minimum for MT and 10240 Hz maximum for AMT
- One 24-bit A/D per channel for maximum speed and phase accuracy
- 512 MB Compact Flash Card (up to 4 GB) for program and data storage, sufficient to hold many days' worth of data
- 128 MB dRAM (up to 256 MB) for program execution
- Optional data storage device (up to 40 GB)
- Anti-alias, powerline notch, and telluric filtering
- Automatic SP buckout, gain setting, and calibration
- Rugged, environmentally sealed
- Modular design for upgrades and board replacement
- Complete support, field peripherals, service network, software, and training



TRUSTED GEOPHYSICS™

Specifications for the GDP-3224™ Integrated Multi-Function Receiver

General

Broadband, multichannel, multifunction digital receiver.
Frequency range: 1/64Hz - 8KHz
(0.0001Hz - 8KHz for MT and 1Hz to 10240Hz for AMT)
Number of channels: Large case, 1 to 16 (user expandable)
Small case, 1 to 6 (user expandable).
Standard Survey capabilities: Resistivity, Frequency- and Time-Domain IP, Complex Resistivity, CSAMT (scalar, vector, tensor), Harmonic Analysis (CSAMT, Frequency-Domain EM, Transient Electromagnetics, NanoTEM®, MMR, Magnetic IP, Magnetotellurics, Downhole Logging).
Software language: C++ and assembly.
Size: Large case 43x41x23cm (17x16x9")
Small case 43x31x23cm (17x12x9")
Weight: (including batteries and meter/connection panel):
Small case 13.7 kg (29 lb)
Large case
8 channel, 10 amp-hr batteries, 16.6 kg (36.5 lb)
8 channel, 20 amp-hr batteries, 20.5 kg (45 lb)
16 channel, disk, 10 amp-hr batteries, 19.1 kg (42 lb)
Enclosure: Heavy-duty, environmentally sealed aluminum
Power: 12V rechargeable batteries (removable pack)
Over 10 hours nominal operation at 20°C (8 channels and 20 amp-hr batteries). External battery input for extended operation in cold climates, or for more than 8 channels.
Temperature range: -40° to +56°C (-40° to +122°F)
Humidity range: 5% to 100%
Internal temperature and humidity sensors
Time base: Oven-controlled crystal oscillator; aging rate $<5 \times 10^{-10}$ per 24 hours (GPS disciplining optional)

Displays & Controls

High-contrast sunlight readable 1/2-VGA (480x320) TFT-technology LCD graphics display, with continuous view-angle adjustment (optional heater for use down to -40°C).
Sealed 80-key keyboard
Analog signal meters and analog outputs
Power On-Off

Standard Analog

Input impedance: $>10 \text{ M}\Omega$ at DC
Board Dynamic range: 212 db
Minimum detectable signal: $0.03 \mu\text{V}$
Maximum input voltage: $\pm 32\text{V}$
SP offset adjustment: $\pm 2.25\text{V}$ in $69 \mu\text{V}$ steps (automatic)
Automatic gain ranging in binary steps from 1/8 to 1024
Common-mode rejection at 1000 Hz: $>80 \text{ db}$
Phase accuracy: ± 0.1 milliradians (0.006 degree)
Adjacent channel isolation at 100 Hz: $>90 \text{ db}$
Filter Section: Quadruple-notch digital telluric filter
(50/150/250/450 Hz, 50/150/60/180 Hz, 60/180/300/540 Hz, specified by user)
Analog to Digital Converter (Standard Channel)
Resolution: 24 bits
Conversion time: 30 μsec
One A/D per channel for maximum speed and phase accuracy

NanoTEM® Analog

Input impedance: $20 \text{ K}\Omega$ at DC
Dynamic range: 120 db
Minimum detectable signal: $4 \mu\text{V}$
Automatic gain ranging in binary steps from 10 to 160
Analog to Digital Converter: 14 bits $\pm 1/2 \text{ LSB}$, 16 bits optional
Conversion time: 1.2 μsec
One A/D per channel for maximum data acquisition speed

Digital Section

Microprocessor: 133 MHz 586
Memory: 128 MB dRAM (up to 256 MB)
Mass Storage (program & data storage):
512 MB Compact Flash Card (up to 4 GB).
Data storage device with capacities to 40 GB optional
Serial ports: 2 RS-232C ports (16650) standard
Network Adapter: Ethernet adapter standard (100BaseT)
Mouse, CRT (VGA), and standard keyboard ports
Optimized Operating System

Additional Options

Number of channels: (maximum of 3 NanoTEM® channels)
Large case: 1-16, Small case: 1-6
External battery and LCD heater for -40°C operation

OTHER ACQUISITION SOFTWARE

External RPIP/TDIP/CR Control: Remote control through serial port on GDP-3224 for electrical resistance tomography (ERT).

Streaming RPIP/TDIP: Continuous acquisition of TDIP or RPIP data (time domain or resistivity/phase IP) using a towed electrode array.

Borehole TEM: Remote control through GDP-3224 serial port for efficient logging of borehole TEM and MMR data. Compatible with Crone and Geonics 3-component probes.

Extended Broadband Time Series Data Recording: Continuous recording of up to 5 standard analog channels sampling at 32 K samples/sec (bandwidth 8 KHz with 2x oversampling) with no loss of data. Developed for recording broadband magnetotelluric measurements.

Equal-Interval Mode TEM (TEME): Uniform sampling and storage of TEM transients as time series. Used for LOTEM data acquisition and any application that requires uniformly sampled TEM transients.

Specifications subject to change without notice
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Zonge Offices:

Arizona, Alaska, Nevada, Colorado and Oregon

Headquarters:

3322 E. Ft. Lowell Road, Tucson, AZ 85716, USA (800) 523-9913

Tel: (520) 327-5501 Email: zonge@zonge.com

Fax: (520) 325-1588 Web: <http://www.zonge.com>

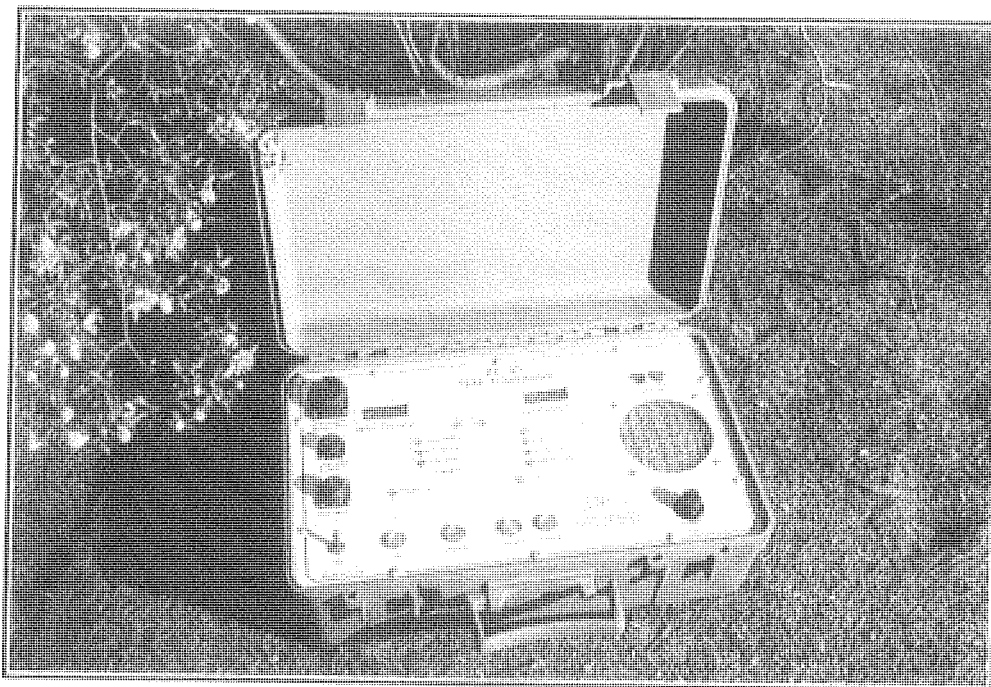
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ZT-30 Geophysical Transmitter

Battery-Powered EM / Resistivity Transmitter



The ZT-30 is a battery-powered transmitter capable of producing time-domain or frequency-domain waveforms into either resistive or inductive loads. As a TEM transmitter, the ZT-30 can deliver up to 30A into a 100m loop with a turnoff time of less than 200 μ s. Because the ZT-30 also performs well while transmitting into resistive loads, some customers are using it as a low-power resistivity transmitter. When used for resistivity, it is necessary to monitor the current since the transmitter does not have current regulation circuitry.

FEATURES

- Bipolar current output up to 30 A
- 50 or 100% duty cycle
- 1 microsecond turnoff into resistive load
- Less than 150 microseconds turnoff into a 100 meter loop at 20 amperes
- Lightweight, battery powered

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SPECIFICATIONS FOR THE ZT-30 TEM TRANSMITTER

Mechanical

Case size: 45 x 18 x 28 cm
(17.7 x 7.1 x 11.0 in)
Weight: 8 kg (17.6 lb) (without batteries)

Electrical

Input voltage: 14 to 136 Vdc (400 Vdc selectable)
Peak output current: 30 A unregulated
Transmit control by GDP receiver or XMT-series Transmitter controller
($DC \leq f \leq 32 \text{ Hz TD}$, $DC \leq f \leq 512 \text{ Hz FD}$)
Isolated current monitor output
Automatic overcurrent shutdown (set for 33 A)
IGBT power output current switch
Power contactor to remove voltage from transmitter during fault conditions
Lamps to indicate state of transmitter:
power on, transmitting, fault, polarity
Fan-cooled heatsink

Controls & Displays

Power on / off
Transmit / Reset
Damping Select
Meter Select
LCD Displays:
Input voltage
Internal battery voltage
Output current
Turnoff time
Heat sink temperature

Fault Indicators

Over / Under Voltage
Over Current
Over Temperature

Output Jacks

Current monitor terminals, isolated output
100 mV/A or 1 V/A ranges
Output current terminals

Power

Internal battery: 10.9 to 14V, Logic Power
Main Power connector: four-pin military twist-lock,
14 – 400 Vdc

Applications

TEM transmitter, 136 Vdc max @ 30 amps
Low current transmitter for TD & FD Resistivity/IP,
400 Vdc max @ 7 amps

Options

ZPB-600 400 Vdc Power Booster

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Tel: (520) 327-5501 Email: zonge@zonge.com

Fax: (520) 325-1588 Web: <http://www.zonge.com>

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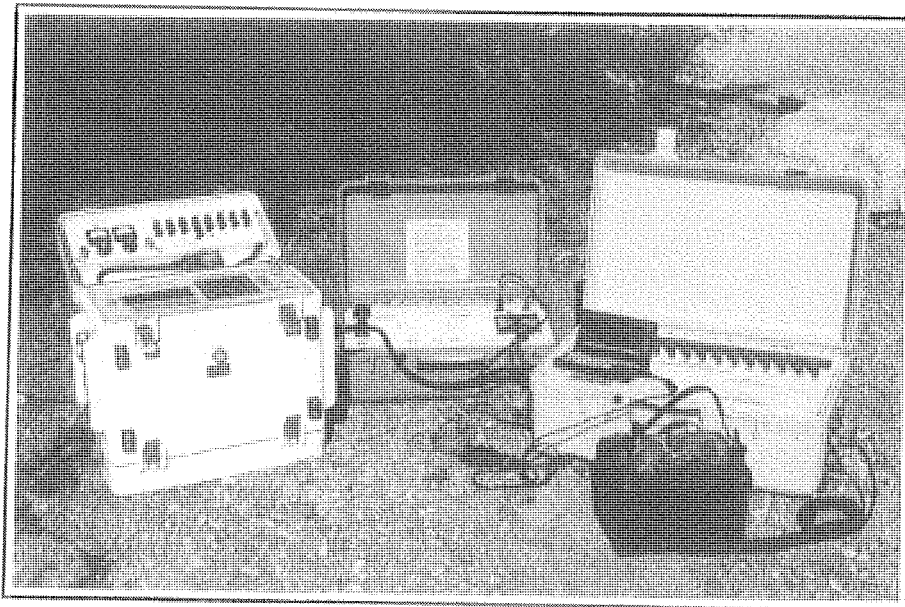
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MX-30

Electrode Multiplexor

Multiplex Switch for Cabled Electrode Arrays



The MX-30 was developed to provide a computer-controlled switching interface between a transmitter, a multi-channel receiver such as the GDP-32^{II}, and an array of electrodes. The MX-30 features a transmitter input multiplexer which can connect the transmitter leads to any pair of electrodes. A receiver multiplexer permits the operator to select any number of electrode pairs (up to half the number of electrodes) for input to the receiver. Multiplexer configuration is controlled by commands transmitted over an RS-232C serial communications channel. A control program is available for a laptop computer. The MX-30 is an essential component of any system designed to rapidly acquire resistivity data using cabled electrode arrays. Customers are currently using the MX-30 together with a GDP-32^{II} receiver and a ZT-30 transmitter to gather data for **Electrical Resistivity Tomography**. The MX-30 can be configured to provide fewer channels at a reduced cost. The unit can be upgraded in the field at a later date to give it increased output channel capacity.

FEATURES

- Selectable Electrode String – 30 electrodes Max
- External Control – RS-232C Serial (4800,N,8,1)
- Signal Output Channels (differential) – 16 Max
- Transmitter Output Relay Specs - ± 500 Vdc 5 A
- Transmitter/Receiver Channel Isolation – 1000V
- High Speed Optical Relays on Receiver MUX
- Fully compatible with GDP-32^{II} Receiver
- MX-30's may be cascaded to address several electrode arrays

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SPECIFICATIONS FOR THE MX-30 MULTIPLEXOR

Mechanical Characteristics

Enclosure: Heavy-Duty Environmentally Sealed
 ABS Plastic Case
 Size: 55 x 23 x 37 cm (22 x 9 x 15 in)
 Weight: 16 kg (35 lb)

Electrical Characteristics

Transmitter Multiplexer: 500 Vdc (max); 5 A (max)
 Signal Multiplexer: ± 18 Vdc

Controls & Displays

Power ON / OFF switch
 LED indicators for:
 POWER ON, SERIAL DATA, and CPU

Power

External battery: 10-14 Vdc
 (6 Amp-hr recommended)

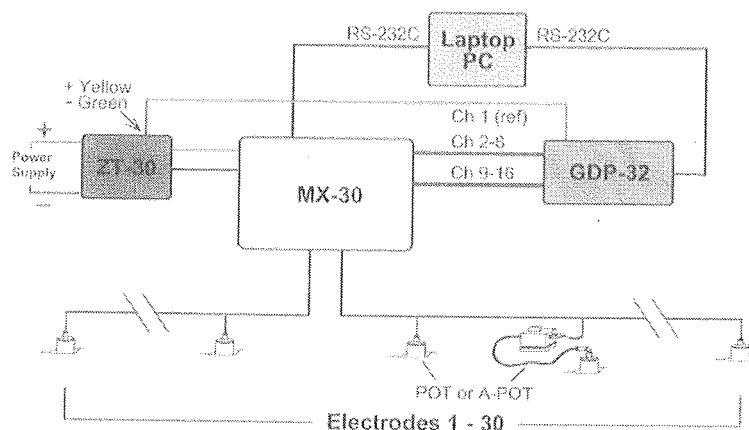
I/O Connectors

External Battery
 RS-232C IN
 RS-232C OUT
 RS-485 IN
 RS-485 OUT
 Signal Channels 1-8
 Signal Channels 9-16
 TX Current IN
 Electrodes IN (1-30)

Applications

Electrical Resistance Tomography
 Automated Resistivity Soundings
 Automated Dipole-Dipole Resistivity/IP Profiling

Specifications subject to change without notice



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Fax: (520) 325-1588

Web: <http://www.zonge.com>

2013-121

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333 North Wilmot Road
Suite 340
Tucson, Arizona 85711
(520) 561-6537

December 20, 2022

Aaron Meilleur, PE

HDR

One South Church Avenue, Suite
Tucson, Arizona 85701

Proposal: Solar Drying Project

AeroTech Mapping Technologies, LLC (ATMT) is pleased to present the following cost proposal for aerial photography and photogrammetric services for the above-mentioned project.

Photogrammetric Scope of Work

Our services will begin with the production of 1"=40', 1-foot topographical information, planimetric detail and digital orthophoto covering the approximate 55 acres located in Tucson, Arizona. The aerial mapping limits are indicated in green on the attached layout.

The photography will consist of 1 flight line and 5 exposures utilizing 5cm digital imagery. Accuracies of plus or minus 0.33' can be expected as it relates to the topographical information generated from the Digital Terrain Modeling (DTM) information. Accuracies of plus or minus 0.22' can be expected as it relates to the DTM information itself.

Project accuracy to conform to generally accepted photogrammetric standards established by the American Society of Photogrammetry and Remote Sensing (ASPRS).

Aerial Ground Panels

We understand that **HDR** will be responsible for the establishment of aerial ground panels for the aerial survey. A total of 6 aerial targets will be needed for this project and a layout showing their locations is attached. The aerial target sizes will be in the order of 6" wide and measure 6' in total length.

Deliverables

Deliverables will consist of a FTP sharefile link containing the DTM information used for the generation of topographical information, the contour information, planimetric detail, the .tfw image limit file, orthophoto TIFF image and .dwg image limits file which will allow for bringing the image into its proper coordinate position.

Final delivery of the digital information will be supplied in AutoCAD and Microstation V8 formatted to HDR specifications.

ARIZONA

CALIFORNIA

NEVADA

NEW MEXICO

TEXAS

www.atmlv.com



Solar Drying Project

Estimated Project Schedule

ATM anticipates completing this project 13 consecutive working days after date of photography or receipt of control, whichever is later. Please note certain delays may exist, i.e., weather and/or air flight restrictions that are beyond our control.

Summary & Terms

Summary for Photogrammetric and LiDAR Services		
Service	Description	Schedule
Aerial Photography	5cm GSD	13 Working Days
Overlap	60%	
Aerial Ground Control	6 Aerial Targets (6"x6')	
Contour Interval	1 Foot (DTM & Breaklines)	
Mapping Scale	1" = 40'	
Stereo Model Count	4	
Planimetric	Full Detail	
Plot	N/A	
Format	AutoCAD & Microstation	
Layers	HDR Specifications	
Digital Orthophoto	Color, TIFF, 0.25' Pixel Resolution	
Total Fee		\$6,300.00

Payment Schedule Net 30 Days

This proposal will remain effective for 60 days after the date of this letter. If you have any questions, please do not hesitate to contact us at any time. ATMT appreciates the opportunity of submitting this proposal and we look forward to working with HDR.

Your signature in the space provided below indicates your acceptance of the scope of work and terms of the proposal and serves as our Notice to Proceed.

Accepted By: **HDR**

Sincerely,

Tim Burrows
Account Manager

Aaron Meilleur, PE

Client Project Number

Date



March 17, 2023
Ty Morton
HDR Inc.
1 S. Church Avenue, Suite 1400
Tucson, AZ 85701-1612

Project: Pima County Solar Dryers

Subject: Scope and Fee Schedule for independent technical review from HERWIT Engineering.

Dear Mr. Morton:

Per our conversations, HDR will be designing a 180 WT/day Solar Dryer Facility for Pima County under a design-build contract. Per your request, HERWIT Engineering will provide independent technical review of the solar dryer design to leverage our knowledge of successfully implemented solar dryers. As we have previously discussed, HERWIT is not licensed in Arizona and will not need to obtain licensing for this project.

SCOPE OF SERVICES

Task 1 – Solar Dryer Technical Review

- A. Review project data and cost information provided by HDR.
- B. Assist in specific project design elements.
- C. Attend zoom meetings as requested.

Work Items not included in this Scope

- A. Detailed design is not included in this scope of services.
- B. Cost estimating of detailed design is not included in this scope of services.

SCHEDULE

We will begin work immediately upon your authorization of this scope of services. Schedule to be set with HDR as specific items are requested.

COMPENSATION

HERWIT Engineering will complete Tasks 1A through 1E on a time and materials basis against the attached fee schedule. This includes reimbursable items such as mileage, delivery, internal printing. Contract shall not exceed \$44,000 without prior written authorization.

TERMS OF SERVICES

Termination of Services: Services under this Contract may be suspended or terminated by either party with 14 days written notification. In the event of termination by either party, HERWIT shall receive payment for all services to date.

Payment : Payment for all services rendered under this contract is due within 30 days of receipt of invoice. Interest of 1.5% per month will occur on all unpaid invoices.

Limitation of Liability: In recognition of the relative risks, rewards and benefits of the project to both the Owner and HERWIT Engineering, the risks have been allocated such that the HDR agrees that, to the fullest extent permitted by law, HERWIT Engineering's total liability to HDR and the client for any and all injuries, claims, losses, expenses, damages or claim expenses arising out of this agreement from any cause or causes, shall not exceed the amount of \$ 40,000. Such causes include, but are not limited to, negligence, errors, omissions, strict liability, breach of contract or breach of warranty.

ACCEPTANCE

To indicate your acceptance of the proposed Scope of Services, please return a signed copy of this letter agreement. By your signature, we will begin work on Task 1.

Very truly yours,

HERWIT ENGINEERING

Gregory P. Harris, P.E. Lic. No. M 28326
Partner

Date: _____

Kurt A. Gardner, P.E. Lic. No. C 045712
Partner

Date: _____

Ty Morton
HDR

Date: _____

HERWIT
ENGINEERING

HERWIT ENGINEERING
1/01/23 - 12/31/23 FEE SCHEDULE

Personnel

Hourly Rate

Engineering (Process, Mechanical, Civil, Electrical, Structural)

\$220.00

Rate Information Table

Overhead %	150%
Profit %	10%

Discipline	(A) Direct Labor Rate	(B) Overhead	(C) Profit	(D) Billing Rate
Engineering	\$ 80.00	\$ 120.00	\$ 20.00	\$ 220.00

Formulas

- (A) Direct Labor Rate
(B) Overhead @ 150 % x (A)
(C) Profit @ 10 % x (A + B)
(D) Billing Rate (A + B + C)

R:\Herwit Support\Financials\Fee Schedules\2023 Fee Schedule HDR.xlsx

6200 Center Street, Ste. 310
Clayton, CA 94517
PHN (925) 672-6599

1 of 1

End of Appendix D - Design and Preconstruction Services Fee Proposal



CERTIFICATE OF LIABILITY INSURANCE

Tres Rios Biosolids

DATE (MM/DD/YYYY)

4/28/2023

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Midwest Agencies, Inc. 1550 Mike Fahey Street Omaha, NE 68102	CONTACT NAME: Traci Sutton PHONE (A/C, No, Ext): 402-271-2956 E-MAIL ADDRESS: Traci.Sutton@MidwestAgenciesInc.com FAX (A/C, No): 402-271-2997																					
INSURED Kiewit Infrastructure West Co. 3888 E. Broadway Rd. Phoenix AZ 85040-2924	<table><tr><th colspan="2">INSURER(S) AFFORDING COVERAGE</th><th>NAIC #</th></tr><tr><td>INSURER A:</td><td>Old Republic Insurance Company</td><td>24147</td></tr><tr><td>INSURER B:</td><td></td><td></td></tr><tr><td>INSURER C:</td><td></td><td></td></tr><tr><td>INSURER D:</td><td></td><td></td></tr><tr><td>INSURER E:</td><td></td><td></td></tr><tr><td>INSURER F:</td><td></td><td></td></tr></table>	INSURER(S) AFFORDING COVERAGE		NAIC #	INSURER A:	Old Republic Insurance Company	24147	INSURER B:			INSURER C:			INSURER D:			INSURER E:			INSURER F:		
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INSURER B:																						
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COVERAGES**CERTIFICATE NUMBER:** 74104494**REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Contractual Liability <input checked="" type="checkbox"/> XCU Included GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> LOC OTHER:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	MWZY 312911	3/1/2023	3/1/2024	EACH OCCURRENCE \$5,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$5,000,000 MED EXP (Any one person) \$10,000 PERSONAL & ADV INJURY \$5,000,000 GENERAL AGGREGATE \$10,000,000 PRODUCTS - COMP/OP AGG \$10,000,000 \$
A	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS ONLY	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	MWTB 312910	3/1/2023	3/1/2024	COMBINED SINGLE LIMIT (Ea accident) \$5,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
	<input type="checkbox"/> UMBRELLA LIAB <input type="checkbox"/> EXCESS LIAB DED \$ RETENTION \$						EACH OCCURRENCE \$ AGGREGATE \$ \$
A	<input checked="" type="checkbox"/> WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	<input checked="" type="checkbox"/>	MWC 312908 MWXS 312909 MWFX 312928-FL MWXS 316021-CA USL&H & Jones Act StopGap	3/1/2023 3/1/2023 3/1/2023 3/1/2023	3/1/2024 3/1/2024 3/1/2024 3/1/2024	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$5,000,000 E.L. DISEASE - EA EMPLOYEE \$5,000,000 E.L. DISEASE - POLICY LIMIT \$5,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Design-Build Services: Class A Biosolids Solar Drying Facility (3TRCAB), Contract No. CT-CPO-23-385. Pima County, its departments, districts, boards, commissions, officers, officials, agents, and employees are named as an additional insured with respect to liability arising out of the activities performed by, or on behalf of the Design-Builder with respect to general liability and auto liability as required by written contract. Coverage is primary and non-contributory. A waiver of subrogation included.

CERTIFICATE HOLDER**CANCELLATION**

Pima County
Procurement Department
Design and Construction Division
150 W. Congress, 5th floor
Tucson AZ 85701-1207

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Philip G. Dehn

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

DESIGNATED INSURED FOR COVERED AUTOS LIABILITY COVERAGE

This endorsement modifies insurance provided under the following:

AUTO DEALERS COVERAGE FORM
BUSINESS AUTO COVERAGE FORM
MOTOR CARRIER COVERAGE FORM

With respect to coverage provided by this endorsement, the provisions of the Coverage Form apply unless modified by this endorsement.

This endorsement identifies person(s) or organization(s) who are "insureds" for Covered Autos Liability Coverage under the Who Is An Insured provision of the Coverage Form. This endorsement does not alter coverage provided in the Coverage Form.

This endorsement changes the policy effective on the inception date of the policy unless another date is indicated below.

Named Insured: Peter Kiewit Sons', Inc.

Endorsement Effective Date: 03/01/23

SCHEDULE

Name Of Person(s) Or Organization(s):

Any person or organization to whom or which you are required to provide additional insured status or additional insured status on a primary, non-contributory basis, in a written contract or written agreement executed prior to loss, except where such contract or agreement is prohibited by law.

Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

Each person or organization shown in the Schedule is an "insured" for Covered Autos Liability Coverage, but only to the extent that person or organization qualifies as an "insured" under the Who Is An Insured provision contained in Paragraph A.1. of Section II – Covered Autos Liability Coverage in the Business Auto and Motor Carrier Coverage Forms and Paragraph D.2. of Section I – Covered Autos Coverages of the Auto Dealers Coverage Form.

IL 10 (12/06) OLD REPUBLIC INSURANCE COMPANY

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

NOTICE OF CANCELLATION, NONRENEWAL OR MATERIAL CHANGE IN COVERAGE TO SCHEDULED PERSON(S) OR ORGANIZATION(S)

SCHEDULE

Person(s) or Organization(s): All Certificate Holders where Notice of Cancellation is required by written contract with the Named Insured

Address:

Reasons:	Number of Days Notice	
Nonpayment Of Premium:	<u>10</u>	Days
Cancellation For Any Other Reason:	<u>90</u>	Days
Nonrenewal (When We Do Not Renew):	<u>90</u>	Days
Material Change In Coverage:	<u>90</u>	Days

For any reasons described in the above Schedule for which the Number of Days Notice is completed, we agree to mail advance written notice of not less than the Number of Days shown in the above Schedule to the Person(s) or Organization(s) at the Address shown in the above Schedule.

IL 10 (12/06) OLD REPUBLIC INSURANCE COMPANY

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

OTHER INSURANCE AMENDMENT

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE FORM

SECTION IV – BUSINESS AUTO CONDITIONS, B. General Conditions, 5. Other Insurance is deleted and replaced by the following:

5. Other Insurance

- a. For any covered "auto" you own, this Coverage Form provides primary insurance. For any covered "auto" you don't own, the insurance provided by this Coverage Form is excess over any other collectible insurance. To the extent, the protection provided by this coverage may be broader or less restrictive than the protection provided to you under other policies, such protection as provide by this coverage will respond to any accidents not covered by other insurance policies, such protection as is provided by this coverage will be excess of the insurance provided by other insurance policies. The excess insurance will be limited to the difference between the limits of liability provided by this coverage and the limits of liability provided by the other insurance policy. However, while a covered "auto" which is a "trailer" is connected to another vehicle, the liability coverage this Coverage Form provides for the "trailer" is:
 - (1) Excess while it is connected to a motor vehicle you do not own; or
 - (2) Primary while it is connected to a covered "auto" you own.
- b. For Hired Auto Physical Damage Coverage, any covered "auto" you lease, hire, rent or borrow is deemed to be a covered "auto" you own. However, any "auto" that is leased, hired, rented or borrowed with a driver is not a covered "auto".
- c. Regardless of the provisions of paragraph a. above, this Coverage Form's liability coverage is primary for any liability assumed under an "insured contract".
- d. When this Coverage Form and any other Coverage Form or policy covers on the same basis, either excess or primary, we will pay only our share. Our share is the proportion that the limit of insurance of our Coverage Form bears to the total of the limits of all the Coverage Forms and policies covering on the same basis

All other terms and conditions of this policy remain unchanged.

CA 765 001 0318

Page 1 of 1

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IL 10 (12/06) OLD REPUBLIC INSURANCE COMPANY

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

WAIVER OF TRANSFER OF RIGHTS OF RECOVERY AGAINST OTHERS TO US

This endorsement modifies insurance provided under the following:

AUTO DEALERS COVERAGE FORM
BUSINESS AUTO COVERAGE FORM
MOTOR CARRIER COVERAGE FORM

SCHEDULE

Name of Person or Organization:

All Persons and/or Organizations that require a written contract or agreement with the insured, executed prior to the accident or loss, that waiver of subrogation be provided under this policy for work performed by you for that Person and/or Organization.

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

The **Transfer Of Rights Of Recovery Against Others To Us** Condition is changed by adding the following:

We waive any right of recovery we may have against the person(s) or organization(s) shown in the Schedule because of payments we make for injury or damage. This waiver applies only to the person or organization shown in the Schedule.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**ADDITIONAL INSURED – OWNERS, LESSEES OR
CONTRACTORS – SCHEDULED PERSON OR
ORGANIZATION**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name of Person or Organization:

Any person or organization whom you are required in a written contract or written agreement to add as an additional insured on this policy and for whom no other endorsement on this policy provides additional insured status.

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

A. Section II – Who Is An Insured is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of your ongoing operations performed for that insured.

B. With respect to the insurance afforded to these additional insureds, the following exclusion is added:

2. Exclusions

This insurance does not apply to "bodily injury" or "property damage" occurring after:

- (1) All work, including materials, parts or equipment furnished in connection with

such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the site of the covered operations has been completed; or

- (2) That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – COMPLETED OPERATIONS

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name of Person or Organization:

Any person or organization whom you are required in a written contract or written agreement to add as an additional insured on this policy and for whom no other endorsement on this policy provides additional insured status.

Location And Description of Completed Operations:**Additional Premium:**

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

Section II – Who Is An Insured is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of "your work" at the location designated and described in the schedule of this endorsement performed for that insured and included in the "products-completed operations hazard".

IL 10 (12/06) OLD REPUBLIC INSURANCE COMPANY

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**NOTICE OF CANCELLATION, NONRENEWAL OR MATERIAL CHANGE IN COVERAGE
TO SCHEDULED PERSON(S) OR ORGANIZATION(S)**

SCHEDULE

Person(s) or Organization(s): All Certificate Holders where Notice of Cancellation is required by written contract with the Named Insured

Address:

Reasons:	Number of Days Notice	
Nonpayment Of Premium:	<u>10</u>	Days
Cancellation For Any Other Reason:	<u>90</u>	Days
Nonrenewal (When We Do Not Renew):	<u>90</u>	Days
Material Change In Coverage:	<u>90</u>	Days

For any reasons described in the above Schedule for which the Number of Days Notice is completed, we agree to mail advance written notice of not less than the Number of Days shown in the above Schedule to the Person(s) or Organization(s) at the Address shown in the above Schedule.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

PRIMARY AND NONCONTRIBUTORY – OTHER INSURANCE CONDITION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
LIQUOR LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART

The following is added to the **Other Insurance** Condition and supersedes any provision to the contrary:

Primary And Noncontributory Insurance

This insurance is primary to and will not seek contribution from any other insurance available to an additional insured under your policy provided that:

- (1) The additional insured is a Named Insured under such other insurance; and

- (2) You have agreed in writing in a contract or agreement that this insurance would be primary and would not seek contribution from any other insurance available to the additional insured.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

WAIVER OF TRANSFER OF RIGHTS OF RECOVERY AGAINST OTHERS TO US (WAIVER OF SUBROGATION)

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
ELECTRONIC DATA LIABILITY COVERAGE PART
LIQUOR LIABILITY COVERAGE PART
POLLUTION LIABILITY COVERAGE PART DESIGNATED SITES
POLLUTION LIABILITY LIMITED COVERAGE PART DESIGNATED SITES
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART
RAILROAD PROTECTIVE LIABILITY COVERAGE PART
UNDERGROUND STORAGE TANK POLICY DESIGNATED TANKS

SCHEDULE

Name Of Person(s) Or Organization(s):

Any person or organization that requires you to waive your rights of recovery, in a written contract or agreement with the Named Insured that is executed prior to the accident or loss.

Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

The following is added to Paragraph 8. **Transfer Of Rights Of Recovery Against Others To Us** of Section IV – Conditions:

We waive any right of recovery against the person(s) or organization(s) shown in the Schedule above because of payments we make under this Coverage Part. Such waiver by us applies only to the extent that the insured has waived its right of recovery against such person(s) or organization(s) prior to loss. This endorsement applies only to the person(s) or organization(s) shown in the Schedule above.

OLD REPUBLIC INSURANCE COMPANY

WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY POLICY

DESIGNATED ENTITY - NOTICE OF CANCELATION PROVIDED BY US ENDORSEMENT

SCHEDULE

Number of Days Notice of Cancellation: 90

Person or Organization:

ALL CERTIFICATE HOLDERS WHERE NOTICE OF CANCELLATION IS
REQUIRED BY WRITTEN CONTRACT WITH THE NAMED INSURED

Address:

If we cancel this policy for any statutorily permitted reason other than nonpayment of premium, and a number of days is shown for cancellation in the schedule above, we will mail notice of cancellation to the person or organization shown in the schedule above. We will mail such notice to the address shown in the schedule above at least the number of days shown for cancellation in the schedule above before the effective date of cancellation.

WC 99 03 65 (03/11)

Page 1 of 1

POLICY NUMBER: MWC 312908 23

WAIVER OF OUR RIGHT TO RECOVER FROM OTHERS ENDORSEMENT

We have the right to recover our payments from anyone liable for an injury covered by this policy. We will not enforce our right against the person or organization named in the Schedule. (This agreement applies only to the extent that you perform work under a written contract that requires you to obtain this agreement from us.)

This agreement shall not operate directly or indirectly to benefit anyone not named in the Schedule.

Schedule

WHERE REQUIRED BY WRITTEN CONTRACT

DATE OF ISSUE:

WC 00 03 13
(Ed. 4-84)

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CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

5/1/2023

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an **ADDITIONAL INSURED**, the policy(ies) must have **ADDITIONAL INSURED** provisions or be endorsed. If **SUBROGATION IS WAIVED**, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Midwest Agencies, Inc. 1550 Mike Fahey Street Omaha, NE 68102	CONTACT NAME: Traci Sutton
	PHONE (A/C, No, Ext): 402-271-2956 FAX (A/C, No): 402-271-2997
	E-MAIL ADDRESS: Traci.Sutton@MidwestAgenciesInc.com
	INSURER(S) AFFORDING COVERAGE NAIC #
	INSURER A: Old Republic Insurance Company 24147
	INSURER B:
	INSURER C:
	INSURER D:
	INSURER E:
	INSURER F:

COVERAGES **CERTIFICATE NUMBER:** 74139875 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:						EACH OCCURRENCE \$ DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS - COMP/OP AGG \$ \$
	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> NON-OWNED AUTOS ONLY <input type="checkbox"/> AUTOS ONLY						COMBINED SINGLE LIMIT (Ea accident) \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
	UMBRELLA LIAB <input type="checkbox"/> OCCUR EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED RETENTION \$						EACH OCCURRENCE \$ AGGREGATE \$ \$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? <input type="checkbox"/> N/A If yes, describe under DESCRIPTION OF OPERATIONS below						PER STATUTE <input type="checkbox"/> OTH-ER <input type="checkbox"/> E.L. EACH ACCIDENT \$ E.L. DISEASE - EA EMPLOYEE \$ E.L. DISEASE - POLICY LIMIT \$
A	Contractors Professional Liability			MWZZ 312912	3/1/2023	3/1/2024	\$5,000,000 Each Claim & Aggregate

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Contract No. CT-CPO-23-385, Design-Build Services: Class A Biosolids Solar Drying Facility (3TRCAB).

CERTIFICATE HOLDER

CANCELLATION

Pima County Procurement Department Design and Construction Division 150 W. Congress, 5th floor Tucson AZ 85701-1207	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE Philip G. Dehn



PROCUREMENT DEPARTMENT

DESIGN & CONSTRUCTION DIVISION • 150 W. CONGRESS STREET, 5th FLOOR • TUCSON, ARIZONA 85701-1317
TELEPHONE (520) 724-8161 • FAX (520) 724-3646

INSURANCE CARRIER VERIFIES PIMA COUNTY IS NAMED AS ADDITIONAL INSURED TO THE COMPREHENSIVE COMMERCIAL GENERAL LIABILITY POLICY AND THE COMPREHENSIVE AUTOMOBILE LIABILITY POLICY REFERENCED BELOW, THE COUNTY BEING ADDED BY ENDORSEMENT TO THE POLICIES.

Kiewit Infrastructure West Co.

Insured Firm

GL: MWZY312911

AL: MWTB312910

Policy Number

Old Republic Insurance Company

Insurance Carrier

A handwritten signature in dark ink, appearing to read "Philip G. Dehn", written over a horizontal line.

Authorized Carrier Signature

Philip G. Dehn

Printed Name

4/28/2023

Date of Signature

NOTE: This document must be included with Insurance Certificates at time of signing contract or renewing contract.