

ATTACHMENT A

TEMPLATE PROFESSIONAL CONSULTING SERVICES AGREEMENT

PROFESSIONAL CONSULTING SERVICES AGREEMENT

FOR _____
(PROJECT NO. _____)

This Agreement is made as of _____, _____ (“Effective Date”), by and between the Jordan Valley Water Conservancy District, a water conservancy district organized under the laws of the State of Utah (“District”), and _____ a Utah corporation **OPTIONAL WORDING: [a Utah _____ / a (State) _____ authorized to do business and doing business in the State of Utah]** (“Engineer”).

RECITALS:

- A. The District desires to obtain professional engineering services relating to the _____;
- B. Engineer represents it has the necessary expertise and experience to perform the services requested by the District and that it is properly qualified and licensed in the State of Utah for this work; and,
- C. Engineer has submitted a proposal outlining its proposed scope of activities for performance and completion of the services, and the Engineer is willing to perform the services requested by the District, consistent with the terms of this Agreement.

TERMS:

The parties agree as follows:

ARTICLE I
DEFINITIONS

- 1.1 Unless the context requires otherwise, the terms defined in this Article shall for all purposes of this Agreement and all schedules, have the following meanings:
 - 1.1.1 Agreement: This Professional Consulting Services Agreement, including attachments.
 - 1.1.2 Contract: The agreement between the District and the Contractor for the provision of labor, materials and equipment for the construction of the Project.
 - 1.1.3 Contract Documents: All documents relating to construction of the Project, issued by or through the Engineer, on behalf of the District to

the Contractor, or by the District, including the Notice Inviting Bids, Instructions to Bidders, Bid, Information Required of Bidder, Bid Bond, Agreement Performance Bond, Payment Bond, General Conditions, Supplemental General Conditions, drawings, specifications, all addenda and change orders executed pursuant to the Contract.

- 1.1.4 Contractor: The party contracting with the District for the provision of labor, materials and equipment for the construction and quality control of the Project.
- 1.1.5 Contract Time: The projected date for substantial completion of the Contract.
- 1.1.6 Engineer's Fee: The Engineer's compensation for performing Services.
- 1.1.7 Phase: A logically separate aspect of the Engineer's Services on the Project which occurs in sequence or concurrently with other such aspects to allow for the orderly progress and management of the Engineer's Services for the Project.
- 1.1.8 Project: The Project is described on attached Schedule A.
- 1.1.9 Project Manager: The individual identified in Schedule D who will administer the performance of the Engineer's Services under this Agreement.
- 1.1.10 Project Representative: The individual identified in Schedule D who will provide observation and inspection of the construction of the Project. The Project Representative is the sole authorized representative of the District in all on-site relations with the Contractor, except as other properly authorized agents are designated by the Engineer and approved by the District.
- 1.1.11 Reimbursable Expenses: Non-salary expenditures made by the Engineer, its employees or its sub-consultants when performing services for the Project. Reimbursable Expenses include:
 - 1.1.11.1 Reasonable expenses of transportation, subsistence and lodging when traveling in connection with the performance of services for the Project.
 - 1.1.11.2 Reasonable expenses of long distance or toll telephone calls, telegrams, messenger service, field office expenses, and fees paid for securing approval of authorities having jurisdiction over the Project.

- 1.1.11.3 Reasonable expenses of all reproduction, postage and handling of drawings, specifications, reports or other Project-related instruments of service of the Engineer.
- 1.1.11.4 Reasonable expense of computer time as described on attached Schedule E.
- 1.1.11.5 Other reasonable reimbursable expenses to which the parties subsequently agree.
- 1.1.12 Hourly Billing Rate: The hourly fee which the Engineer charges for the time expended on the Project. The hourly billing rate shall be considered full compensation for time expended on the Project. Specific hourly billing rates for the Project are identified in Schedule E.
- 1.1.13 Services or Engineer's Services: The Engineer's duties and responsibilities to the District for professional consulting services as set forth in Article II.
- 1.1.14 Sub-Consultant: Any registered professional engineer, architect or other specialist engaged by the Engineer in connection with the Project.
- 1.1.15 Task: An independent and defined service or collection of services to be performed by the Engineer during a Phase(s) of the Project(s), such service or services being more particularly set forth in Schedule A.
- 1.2 Except where the context otherwise requires, words imparting the singular number shall include the plural and vice versa.

ARTICLE II ENGINEER'S SERVICES

- 2.1 Basic Services: The Engineer shall provide the following Services on the Project, as more described and set out in Schedule A.
 - 2.1.1 Pre-design Phase: Complete applicable investigations, evaluations, analyses, surveys, and reports.
 - 2.1.2 Design Phase: Complete all necessary drawings and technical specifications for bidding the construction of the Project.
 - 2.1.3 Construction Phase:

2.1.3.1 The Engineer shall assist the District during bidding and contract execution, administer the Contract, provide field observation and inspection of the Project, and provide management and reporting during the construction phase of the Project.

2.1.3.2 The Engineer shall designate the individuals named in Article IV as Project Manager and Project Representative to be the representatives of the District in its relations with the Contractor, subject to the requirements and limitations set out in the Contract Documents and this Agreement. Other personnel of the Engineer shall be designated as needed to administer the Contract, as further set forth in Section 2.2 and this Agreement.

2.1.3.3 The Engineer shall provide Project representation at the site, as described in Schedule A, in order to provide experienced inspection and observation of the quality and progress of the Contract construction work to verify it complies with the requirements of the Contract Documents, and to advise the District of defects and deficiencies. The Engineer shall direct its efforts toward verifying that the means, methods, techniques or procedures that are specified in the Contract Documents are faithfully observed and followed by the Contractor during construction of the Project, and, except as hereafter provided, that the completed Project conforms to the Contract Documents. The Engineer shall not be responsible for any means, methods, techniques, or procedures of construction selected by the Contractor not specified in the Contract Documents, or for safety precautions and programs incident to the work of Contractor.

2.1.3.4 The Engineer shall have the following powers and is hereby directed to exercise them as in its professional judgment are required to accomplish the above tasks, objectives and responsibilities:

Examine, review and investigate all material, equipment, work and workmanship for compliance with the Contract Documents, including the examination and investigation of plant, mill and shop facilities; require that work done in the absence of observation and examination be removed and replaced under the proper

observation and examination; make such examination and tests, as in its professional judgment are required, to verify that the work is being accomplished in accordance with the Contract Documents; reject work which does not meet the specifications of the Contract Documents and require the Contractor remove and replace such work according to the Contract Documents.

2.1.3.5 If disputes between the Contractor and the District arise, and/or if the Contractor shall file a claim or protest against the District during construction of the Project, the Engineer shall investigate and analyze all such disputes, claims and protests, and attempt to resolve them to the mutual satisfaction of the parties, and failing such resolution, recommend a course of action for the District.

2.1.3.6 The Engineer's recommendation of any payment requested in an application for payment by the Contractor will constitute a representation by the Engineer to the District, based on the Engineer's on-site observations of the Contractor's work in progress as an experienced and qualified design professional and on the Engineer's review of the application for payment and the accompanying data and schedules, that the work has progressed to the point indicated, that to the best of the Engineer's knowledge, information and belief the performance and quality of the work is in accordance with the Contract Documents (subject to an evaluation of the work by the Engineer as a functioning Project upon Substantial Completion as defined in the Contract Documents, to the results of any subsequent tests called for in the Contract Documents, and to any qualifications stated in the recommendation), and that the Contractor is entitled to payment of the amount recommended. However, by recommending any such payment, the Engineer will not thereby be deemed to have represented that the Engineer acted or performed to a standard of care higher than that required of the Engineer under this Agreement and the Contract.

2.2 Guidelines for Basic Services: The Engineer shall perform the Services in conformance with the District's Guidelines for Engineering Services, as set forth in Schedule B, and in conformance with such other guidelines imposed by the District during the progress of the Services, so long as such guidelines are in conformance with standard professional consulting services.

2.3 Additional Services: The District and the Engineer recognize and agree that services not set forth in Schedule A are not covered by the Engineer's Fee and are considered to be additional services. No additional services may be provided by the Engineer, and no compensation shall be paid therefore by the District, except upon written confirmation by the District as an amendment to this Agreement.

Upon request by the District, the following additional services shall be provided by the Engineer:

2.3.1 Perform work resulting from changes in design criteria made in writing at the direction of the District, after acceptance of the criteria by the Engineer;

2.3.2 Prepare applications and supporting documents for government review or action, other than those which may be specified in Schedule A;

2.3.3 Provide additional services required as a result of delinquency or insolvency of one or more of the Contractors; or as a result of damage to the Project caused by fire, flood, earthquake, or other acts of God, wherein damage was not a direct or indirect result of Engineer's negligence or within Engineer's control;

2.3.4 Provide additional services required as a result of strikes, walkouts, or other acts of trade or labor unions;

2.3.5 Provide expert witness testimony or litigation support at depositions, trials, court appearances, and other similar judicial proceedings and cooperate in formulating and responding to interrogatories and other similar discovery methods; and,

2.3.6 Perform any other item of work not specifically mentioned above, and requested by the District in writing.

ARTICLE III
TIME TO COMPLETE

The Engineer's Services, as defined in Article II, shall be completed within the timeframe set forth in Schedule C. Notwithstanding any term or provision of this Agreement to the contrary, all of the Services shall be completed within ____ calendar days after the Effective Date of this Agreement.

ARTICLE IV
ENGINEER'S PERSONNEL

The key personnel identified in Schedule D shall perform the Engineer's Services in the assigned capacities, as shown. Any substitution of key personnel and/or changes in assignments from those shown must be approved by the District in writing before such substitution or change may be made by the Engineer.

ARTICLE V
DISTRICT-FURNISHED SERVICES

- 5.1 Information: Upon the Engineer's request, the District shall provide to the Engineer or make available for review all information and data contained in record drawings, record documents and other records routinely kept by the District pertaining to the design, construction or operation of its facilities. The District does not warrant the accuracy or completeness of such data and information originating from entities or persons other than the District.
- 5.2 Review of Documents: The District shall review and consider all sketches, drawings, reports, studies, model results, specifications, bids, proposals, contracts, and other documents submitted by the Engineer relative to Engineer's Services. Whenever prompt action is necessary, the District shall within a reasonable time inform the Engineer of its decision regarding the same so as to not unduly delay the Engineer in its performance according to the schedule set forth in this Agreement.
- 5.3 Engineer Access: The District shall, at its expense, arrange and make provision for the Engineer's entry and access to such property (public and/or private) as may be necessary to enable the Engineer to perform the Services.
- 5.4 District Representative: The District shall designate in writing an individual who shall be authorized by the District to act as the District's Representative. The Representative shall have authority to receive reports from the Engineer and give instructions to the Engineer.

OPTIONAL 5.4 District Representative: The District hereby designates and authorizes _____ to act as the District's Representative. The Representative shall have authority to receive reports from the Engineer and give instructions to the Engineer.

- 5.5 Notifications of Defects: The District shall give written notice to the Engineer whenever the District or its Representative becomes aware of any defect or deficiency in the Engineer's Services.
- 5.6 Construction Right-of-Way: Where, based upon the Engineer's design work, rights-of-way are required for construction, the District will, at its expense, obtain such rights-of-way, including appraisals and title searches, utilizing descriptions and maps provided by the Engineer.
- 5.7 Consultation with District: Employees of the District shall be available for consultation with the Engineer at all reasonable times.
- 5.8 Permit Fees: The District shall pay any required permit fees, charges for plan checking, and any other fees charged by any public agency having jurisdiction over any part of the Project, if such charges are made.
- 5.9 Legal Opinions: The District shall, at its expense, furnish legal opinions on laws and the interpretation thereof which may affect the Project, if such opinions are judged by the District to be necessary.

ARTICLE VI
COMPENSATION

- 6.1 Basic Services: The District shall pay to the Engineer as compensation for Services attributable to the Project, the hourly billing rates as set forth in Schedule E multiplied by the number of hours expended on the Project, together with reimbursable expenses attributable to the Project multiplied by ____.

 - 6.1.1 Pre-design and Design Phases: In no event shall the total compensation due the Engineer for the Pre-design and Design Phases, including reimbursable expenses, exceed _____ and ____/100 Dollars (\$_____).
 - 6.1.2 Construction Phase: The budget authorized for the Engineer's Services and for reimbursable expenses in the Construction Phase is _____ and ____/100 Dollars (\$_____). As work in this Phase reaches seventy-five percent (75%) of the authorized budget set forth in Schedule E, the Engineer shall notify the District, and the Engineer and the District shall thereafter mutually review the extent of work already accomplished, the extent of work remaining to be completed and the past and projected expenses related thereto. At that time, the scope of Services and corresponding compensation for Services for the Construction Phase may be adjusted by the District.

6.2 Additional Services: In the event this Agreement is amended to provide for additional services by the Engineer, the Engineer's compensation for additional services shall be the hourly billing rate multiplied by the hours expended for additional services, and reimbursable expenses attributable to the additional services multiplied by ____.

A summary showing estimated cost data for each additional service requested shall be submitted to the District for approval prior to commencement of work on that additional service. The District shall not be obligated to reimburse the Engineer for costs incurred in excess of the estimated cost set forth in that summary, and the Engineer shall not be obligated to continue work or to incur costs in excess of the estimated cost until the District notifies the Engineer in writing that the estimated cost therefore has been increased. Additional sets of Contract Documents and reduced scale drawings shall be charged at actual cost of printing and mailing.

6.3 Format for Invoices: Invoices for the Engineer's Services and expenses shall be reviewed and signed by the Engineer's Project Manager before being sent to the District. Each invoice shall include the following information:

- a. Project Name.
- b. Time period of Services (beginning of month to end of month).
- c. Current invoice charges, separated into Pre-design, Design and Construction Phases, with the following breakdown:
 - (i) Charges for Services, further described by:
 - (1) Employee name.
 - (2) Hours worked.
 - (3) Rate charged.
 - (ii) Reimbursable Expenses:
 - (1) Description.
 - (2) Cost.
- d. Account summary, including:
 - (i) Total amount authorized for the Pre-design and Design Phases under this Agreement.

- (ii) Total invoiced to date for the Pre-design and Design Phases.
- (iii) Total amount authorized for the Construction Phase under this agreement.
- (iv) Total invoiced to date for the Construction Phase.

- 6.4 Progress Payments: The Engineer's invoices for Services performed and for reimbursable expenses shall be delivered to the District after the end of the first calendar month following the Effective Date of this Agreement, and monthly thereafter so long as the Engineer's Services shall continue. The compensation requested on any such invoice shall be itemized to show hourly billing rate multiplied by time charged to the Project and reimbursable expenses which actually were incurred in the month identified in the invoice.
- 6.5 Payment of Invoice: The amount shown on each invoice for the Engineer's Fee and expenses shall be due and payable by the District after its review and acceptance of the Services itemized in the invoice. The Engineer may levy a simple interest charge of eight percent (8%) per annum on invoice amounts accepted for payment by the District and not paid within forty-five (45) days of the date of delivery of the invoice. Late payments made by the District shall be credited first to accrued interest and then to principal.
- 6.6 Suspension; Termination: In the event the District fails to submit payment on an invoice within sixty (60) days of the date of delivery to the District of such invoice, the Engineer may, at its discretion and upon ten (10) days written notice to the District, suspend its services or terminate this Agreement.

ARTICLE VII SPECIAL TERMS AND CONDITIONS

- 7.1 Documents: All completed original reproducible tracings, survey notes, plans, specifications, reports, engineering calculations, and other original documents prepared by the Engineer in the performance of the Engineer's Services shall be the property of the District, and the Engineer shall, upon the request of the District, deliver such documents to the District. The Engineer may retain and use copies of the documents. The District agrees to hold harmless, indemnify and defend the Engineer against all third party damages, claims, expenses and losses arising out of any reuse by the District of the plans, specifications and documents if the District does not obtain the written authorization of the Engineer for their reuse.
- 7.2 Governmental Immunity: Except for the District's obligations of indemnification as set forth in paragraph 7.1, nothing in this Agreement shall adversely affect any immunity from suit, or any right, privilege, claim or defense, which the District or its employees, officers and trustees may assert under state or federal law, including but not limited to the Utah Governmental Immunity Act, Utah Code Ann. (1953)

§§ 63-30-1 et seq. (the "Act"). All claims against the District or its employees, officers and trustees are subject to the provisions of the Act, which Act controls all procedures and limitations in connection with any claim of liability.

- 7.3 Conflict of Interest: The Engineer shall not establish or otherwise continue any conflict of interest created by virtue of this Agreement, prohibited under state or local laws.
- 7.4 Termination Prior to Completion: This Agreement may be terminated at any time by the District prior to completion of the Engineer's Services upon written notice to the Engineer. Upon receipt of such notice, the Engineer shall immediately stop any further work in progress, and in such event, the Engineer shall be entitled to payment for all of its Services performed by the Engineer and accepted by the District, to the date of cancellation, and for all work required to organize and deliver to the District the materials developed in the course of the Engineer's Services. Payment shall be due to the Engineer within forty-five (45) days after delivery of such materials and receipt of a verified and itemized invoice therefore.
- 7.5 Construction Estimates: Estimates of contract time, construction costs and quantities prepared by the Engineer or its employees represent their best professional judgment as design professionals and are supplied for the general guidance of the District. The Engineer does not guarantee the accuracy of such estimates as the Engineer has no control over the cost of labor and material, competitive bidding, or market or other conditions.
- 7.6 Indemnity and Insurance: The Engineer shall indemnify, defend and hold the District harmless from any claims under the Workers' Compensation Act, and from any claims, demands, suits, causes of action, costs, fees, judgments, liability for bodily injury and death, and damages to property, real or personal, to the extent caused by or resulting from breach of contract, negligence, recklessness or intentional misconduct by the Engineer or by the negligence of the Engineer's subconsultants, in the performance of the Engineer's Services under this Agreement. During the course of this Agreement, and for a period of four (4) years following Substantial Completion of the Engineer's Services under this Agreement, the Engineer shall maintain both professional errors and omissions liability insurance and general commercial liability insurance providing coverage for all liability arising out of the performance of Services in connection with the Project and this Agreement. The liability insurance required shall include "prior acts" coverage for all services rendered for the Project and shall be written with a limit of liability of \$500,000.00 per claim and a Project aggregate of \$1,000,000.00.
- 7.7 Interpretation: Except as otherwise noted, releases from liability, indemnification against liability, limitations on liability, assumptions of liability and limitations on remedies which may be expressed in this Agreement, shall apply to all possible claims and/or causes of action, including but not limited to those arising under common law, equity, statute, contract, tort or otherwise.

ARTICLE VIII
GENERAL TERMS AND CONDITIONS

- 8.1 Standards of Performance: The Engineer shall perform its Services in a manner consistent with the professional skill and care ordinarily provided by other design professionals with the same or similar professional license, providing the same or similar design professional service in the same or similar locality at the same or similar time under the same or similar circumstances.
- 8.2 Force Majeure: Neither party shall hold the other responsible for damages or delays in performance caused by acts of God, strikes, lockouts, accidents, acts of any governmental entity having jurisdiction over the parties and/or the subject matter of this Agreement (other than those governmental entities named as parties or beneficiaries to this Agreement), or other events beyond the reasonable control of the other or the other's employees and agents. In the event either party claims that performance of its obligation is prevented or delayed by such cause, that party shall promptly notify the other party of that fact and the circumstances preventing or delaying performance.
- 8.3 Assignment: Neither the District nor the Engineer shall delegate and/or assign their respective duties and/or rights under this Agreement without the prior written consent of the other. The Engineer may subcontract, however, portions of the Services as it deems necessary to efficiently accomplish the Basic Services. Nothing in this paragraph shall release the Engineer from full compliance with the terms and conditions of Article IV.
- 8.4 Severability; Waiver: In the event a court, governmental agency or regulatory agency with proper jurisdiction determines that any provision of this Agreement is unlawful, that provision shall terminate. If a provision is terminated, but the parties can legally, commercially and practicably continue to perform this Agreement without the terminated provision, the remainder of this Agreement shall continue in effect. One or more waivers by either party of any provision, term, condition or covenant shall not be construed by the other party as a waiver of any subsequent breach of the same by the other party.
- 8.5 Governing Law: This Agreement shall be governed by, construed and enforced according to the laws of the State of Utah.
- 8.6 Merger; Amendments: This Agreement and the Contract Documents, including all amendments, represents the entire and integrated agreement between the District and the Engineer, and supersedes all prior negotiations, representations or agreements, whether written or oral, regarding the subject matter contained in this Agreement. The Agreement may be amended only by written instrument executed by all parties.

- 8.7 Attorney's Fees: In the event of a default or breach of this Agreement, the defaulting party agrees to pay all costs incurred by the non-defaulting party in enforcing this Agreement or in obtaining damages, including reasonable attorney's fees, whether incurred through legal proceedings or otherwise.
- 8.8 Notice: Any formal notice required to be given under this Agreement shall be deemed given when hand-delivered or when sent by registered or certified mail, return receipt requested, to the parties at their respective addresses stated below or to any other address after notice of such change of address has been given to the parties.
- 8.9 Third Party Beneficiaries: Nothing contained in this Agreement shall create a contractual relationship with a cause of action in favor of a third party against either the District or the Engineer. The Engineer's Services under this Agreement are being performed solely for the District's benefit, and no other entity shall have any claim against the Engineer because of this Agreement or the performance or non-performance of Services hereunder. The District agrees to use reasonable efforts to include a provision in all contracts with other contractors and other entities involved in the Project to carry out the intent of this paragraph.

"District":

Jordan Valley Water Conservancy District
 8215 South 1300 West
 West Jordan, Utah 84088

"Engineer":

By:

 Barton A. Forsyth
 Its General Manager/CEO

By:

 [Name]
 Its _____

SCHEDULE A
SCOPE OF WORK

SCHEDULE B
GUIDELINES FOR ENGINEERING SERVICES

SCHEDULE C
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COMPENSATION

ATTACHMENT B

SCHEDULE B - GUIDELINES FOR ENGINEERING SERVICES

SCHEDULE B
REQUIREMENTS FOR ENGINEERING SERVICES

1. CONTINGENCY FUNDS

- A. Design Contingency funds shall not be utilized without prior authorization by the District. The use of Design Contingency funds shall be authorized in writing by District management on a task by task basis.

2. PRE-DESIGN/DESIGN PHASE

B. DRAWINGS

- 1.1 Computer-Aided Drafting (CAD) shall be used to prepare construction drawings. The drawings shall be delivered to the District in electronic form (AutoCAD 2016 or more recent) and hard copy on 11 x 17 paper.
- 1.2 Document Format:
- a. Electronic documents shall be prepared in the following versions:
- i. Spreadsheets in Excel version 2013
 - ii. Word processing in Word version 2013
 - iii. Presentations in PowerPoint version 2013
- 1.3 The cover sheet shall not include approval signatures from the District, although names of District officers may be printed.
- 1.4 The drawings shall be submitted to the District for its review and comment in accordance with paragraph E of this schedule, "Review of Contract Documents."
- 1.5 All drawings shall show the District's assigned Project number in the lower, right hand corner of the sheet.

OTHER CONTRACT DOCUMENTS

2.1 Bidding and Contractual Documents: The Engineer shall provide Project-specific information to the District for completion of the District's standard bidding and contractual documents identified below. The Engineer shall provide the bid schedule to the District in hard copy and electronic format (Microsoft Word). The District shall print the documents. The following paper colors and format shall be used by the District when printing these documents:

- 2.1.1 Title Page..... Single, Sided, White
- 2.1.2 Table of Contents..... Double-Sided, Yellow
- 2.1.3 Notice Inviting Bids..... Double-Sided, White
- 2.1.4 Instructions of Bidders..... Double-Sided, White
- 2.1.5 Bid..... Single-Sided, Blue
- 2.1.6 Bid Bond Single-Sided, Blue
- 2.1.1 Information Required of Bidder Single-Sided, Blue
- 2.1.2 Agreement Double-Sided, White
- 2.1.3 Performance Bond Single-Sided, White
- 2.1.4 Payment Bond Single-Sided, White
- 2.1.5 Notice of Award..... Single-Sided, White
- 2.1.6 Notice to Proceed Single-Sided, White
- 2.1.7 Payment Application Single-Sided, White
- 2.1.8 Change Order Single-Sided, White
- 2.1.9 Contractor's Certificate of
Substantial Completion..... Single-Sided, Purple
- 2.1.10 Contractor's Certificate of
Final Completion..... Single-Sided, Purple
- 2.1.11 Consent of Surety for
Final Payment..... Single-Sided, Purple
- 2.1.12 Affidavit of Payment Single-Sided, Purple

- 2.2 General and Supplemental Conditions: The District will provide General and Supplemental General Conditions; to be printed on green and yellow paper, respectively.
- 2.3 Technical Specifications:
- 2.3.1 The Engineer shall prepare technical specifications in electronic form (Microsoft Word). The technical specifications shall be delivered to the District prior to the bidding in electronic form and single-sided on 8 ½ x 11 white paper.
 - 2.3.2 The draft sets of technical specifications shall be submitted to the District for its review and comment in accordance with paragraph E of this Schedule.
 - 2.3.3 The technical specifications shall include, but not be limited to, the following General “Divisions.”
 - 2.3.3.1 General Requirements of the Work.
 - 2.3.3.2 Contract Submittals – Include Submittal procedures requirements for equipment shop-drawings, record drawings, and submission of technical O&M manuals, spare parts lists, etc., prior to final payment.
 - 2.3.3.3 Quality Control, Inspection, Testing.
 - 2.3.3.4 Protection and Restoration of Existing Facilities.
 - 2.3.3.5 Equipment Testing and Startup – Include requirements for testing, startup, certification of installation, and training of District personnel by manufacturer’s representative for complex equipment.
 - 2.3.3.6 Project Closeout Procedures and Requirements – These procedures and requirements must match the requirements, in the District’s General Conditions.
 - 2.3.3.7 Measurement and Payment – This should be explained in a separate section, or in each work item section of the technical specification.

2.3.3.8 Field Staking and Surveying – Include defining whether the Engineer or Contractor shall be responsible for field surveying and staking.

2.4 Addenda: If addenda are to be issued, each addendum will be prepared by the Engineer. The addendum will be approved, signed, and delivered by the District.

C. DOCUMENT BINDING REQUIREMENTS

3.1 With the exception of 11x17 drawings, all documents produced by the Engineer shall be bound in a three ring binder. This shall include pre-design reports, final reports, operation and maintenance manuals, etc. Drawings may be comb-bound during bidding and construction. As-constructed drawings shall be (1) comb-bound and (2) folded and included in three ring bound operation and maintenance manuals.

D. DESIGN REQUIREMENTS

4.1 All engineering designs shall include the following elements.

4.1.1 Adequate seismic bracing/anchorage of piping and equipment.

4.1.2 Provision of flexibility for differential settlement where buried piping and/or electrical conduit penetrates concrete vaults or basements.

4.1.3 All other standard engineering design issues shall be addressed.

E. REVIEW OF DRAWINGS AND TECHNICAL SPECIFICATIONS

5.1 The Engineer shall prepare one electronic set (PDF) and one photo copy ready paper set of drawings and technical specifications for review by the District.

5.1.1 Review documents shall be provided at the following minimum progress landmarks: ten percent (10%), thirty percent (30%), fifty percent (50%), ninety percent (90%) and one hundred percent (100%). If specified in the Scope of Work (Exhibit A) more landmarks may be required. A two-week minimum review period shall be allowed for review of the drawings and technical specifications at each progress landmark. At each progress landmark the Engineer shall

meet with the District for two to four hours to receive its comments and direction.

5.1.2 The Engineer shall return to the District, with each subsequent specification to be reviewed, all documents reviewed by the District during the previous submittal.

F. RIGHT-OF-WAY DESCRIPTIONS

Unless otherwise specified by the District, the Engineer will prepare legal descriptions for right-of-way to be acquired by the District from ownership plats and deeds, rather than by the actual survey. The District will prepare easement and other documents, utilizing legal descriptions prepared by the Engineer. Legal descriptions shall be in a metes and bounds format acceptable to the local County Recorder, which may record the document(s).

3. CONSTRUCTION SERVICES PHASE

A. PROJECT PERSONNEL

1.1 Engineer: The Engineer shall represent and perform Engineering Services for the District within the scope of authority delegated to it by the District as described in this Schedule B.

1.2 The Engineer will appoint, subject to the District's approval, the following personnel:

1.2.1 Project Manager: The individual designated by the Engineer and approved by the District to oversee and manage the administration of the Contract. The Project Manager shall supervise the Project Representative; alternatively, the Project Representative may also serve as the Project Manager as provided in Article IV of the Agreement.

1.2.2 Project Representative: The individual of the Engineer's firm appointed as Project Representative will be the Engineer's chief representative in all construction site relations with the Contractor and will have all authority and responsibility as set forth in the District's General Conditions of the Contract.

1.2.3 Other Personnel: The Project Manager may assign, and will supervise, such portions of contract administration

duties as he deems necessary, such as reviewing submittals, performing design changes, and substituting for the Project Representative on the construction site during brief absences of the appointed Project Representative. During brief absences of the assigned Project Representative the Project Manager will first send written notice to the Contractor and will notify the District.

B. CONTRACT EXECUTION ASSISTANCE

- 2.1 The District will issue the Notice of Award and Notice to Proceed to the Contractor.
- 2.2 Following Contract execution by the District, fully executed Contracts will be distributed by the District as follows:

District One (1) Set
Contractor: One (1) Set
Engineer: One (1) Set

These three (3) sets will be bound in three-ring binders.

C. PRE-CONSTRUCTION CONFERENCE

- 3.1 The Project Manager and Project Representative shall familiarize themselves with the District's General Conditions of the Contract.
- 3.2 The Project Manager will prepare a Pre-Construction Conference agenda, and conduct such a conference with the Contractor and applicable third parties at the District's office or on-site. The Project Representative and District Representative shall be present. The agenda should cover the key points of the Contract Documents, including the General Conditions of the Contract, as well as other Project administration matters.

D. SUBMITTAL/SUBSTITUTIONS

- 4.1 The Project Manager shall review, process, and recommend approval/disapproval of Contractor submittals and substitution requests. Copies of each Contractor submittal and substitution request shall be sent to the District, together with the Project Manager's recommend action.

The District will direct the Engineer to approve/disapprove each submittal and substitution request.

E. INSPECTION/TESTING

- 5.1 The Project Representative will make all on-site inspections, with the general frequency and duration as directed by the District.
- 5.2 The Project Representative is authorized to order such tests as he deems necessary for proper administration and inspection of the Project, however, with respect to any such test to be performed by independent firms presently contracting directly with the District, the firm so contracting will be designated by the District to perform the tests. Reports of all test results, or test summaries, shall be submitted to the District by the Project Representative.
- 5.3 The Project Representative shall keep a daily written log of construction activities at the site during each visit. Copies of the daily log shall be sent to the District on a monthly basis.
- 5.4 The Project Representative's daily log shall include a comment of whether or not any event or circumstance has developed in the Contract or Project, which in the Project Representative's professional judgment may lead to a claim or protest from the Contractor. The Project Representative shall notify the District immediately of such an event or circumstance, receipt of a written claim or protest, or his becoming aware of events which may lead to such a claim, from the Contractor.
- 5.5 The Project Representative shall send to the District copies of notes from telephone calls or meetings with the Contractor that, in the opinion of the Project Manager, are significant.
- 5.6 The Project Representative shall take digital photographs of the construction in progress during each phase of the work. The Project Manager shall prepare a photographic history of the work as described in paragraph 10.3. The format of the digital photographs shall be in accordance with paragraph 10.3. Photographs shall be submitted periodically to the District during the construction phase of the work.

F. CHANGES IN THE WORK

- 6.1 Field Order: The Project Representative is authorized to, and shall issue all field orders in writing, as described in Article 1.14 of the General Conditions of the Contract. The Project Representative shall submit a copy of each field order to the District.
- 6.2 Change Orders: The Project Representative and Project Manager are not authorized to approve Change Orders. Change orders may be initiated by the District, by recommendation from the Project

Manager, or by claim of changed conditions by the Contractor. Change orders will be initially reviewed by the Project Manager, then forwarded with a recommendation to the District. The District shall consider if the recommendation is consistent with the Contract Documents, and if acceptable, the District will prepare the change order form for approval by the authorized District staff.

- 6.3 Emergencies: The District acknowledges that in emergencies immediately affecting the safety or protection of persons or property affected by the construction activities, the Contractor, without special instruction or authorization from the Project Representative or the District, is obligated to act to prevent threatened damage, injury or loss. The Contractor shall give the Project Representative prompt written notice of any significant changes in the Contract construction or deviations from the Contract Documents caused thereby.

G. PROGRESS MEETINGS

- 7.1 The Project Representative and/or the Project Manager shall attend progress meetings conducted by the Contractor, and shall document the content of the meetings with minutes. Progress meetings will be scheduled at a location and frequency suitable to the project needs. A District Representative will normally attend these meetings.

H. PROGRESS PAYMENTS

- 8.1 The Project Representative shall receive applications for payment from the Contractor, review and recommend the applications by signature. The Project Representative's signature recommending a progress payment shall constitute the verification of the representations required by the Agreement and the Contract.
- 8.2 The Project Manager will review the applications, approve them by signature, and submit them to the District within five business days of receipt from the Contractor.
- 8.3 Each application for payment shall contain the Contractor's certification and signature substantially in conformance with the following:

CONTRACTOR'S CERTIFICATION

The undersigned Contractor certifies that: (1) all previous progress payments received from Owner on account of Work done under the

Contract referred to herein have been applied to discharge in full all obligations of Contractor incurred in connection with Work covered by prior Applications for Payment numbered 1 through ____ inclusive; and (2) title to all materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to Owner at time of payment free and clear of all liens, claims, security interests and encumbrances (except such as covered by bond acceptable to Owner).

Contractor (Name of Sole Ownership, Corporation or Partnership)

Signature of Authorized Representative

Title

Date

8.4 In accordance with State Law, the District will retain 5% of progress payments until the final payment and final completion of the Project.

4. PROJECT CLOSEOUT

1.1 The Project Manager shall be responsible to see that closeout procedures and documents, as specified in the District's General Conditions, are carefully observed. The following standard District forms, or similar forms of the Engineer acceptable to the District, will be used.

1.1.1 Contractor's Certificate of Substantial Completion

1.1.2 Engineer's Notice of Substantial Completion

1.1.3 Contractor's Certificate of Final Completion

1.1.4 Engineer's Notice of Final Completion

1.1.5 Consent of Surety for Final Payment

1.1.6 Affidavit of Payment (from Contractor)

1.2 The Project Manager will submit original copies of the Contractor's Certificates of Substantial and Final Completion to the District.

1.3 The Project Manager shall prepare and sign the Engineer's Certificate of Substantial Completion, a copy of which is attached.

- 1.4 The Project Manager will prepare, sign and submit the Engineer's Notice of Final Completion, together with the Final Payment application and all submittals required from the Contractor, when he is satisfied the work is complete. A copy of the Engineer's Notice of Completion is attached. The District's acceptance, as Owner, of the Notice of Final Completion will be evidenced by its making final payment.

5. OPERATION AND MAINTENANCE MANUAL

- 1.1 The Project Manager shall prepare an Operation and Maintenance Manual ("O&M Manual") for the Project. The O&M Manual shall be completed within seven (7) calendar days of Substantial Completion of the work. The intent for the O&M Manual is to be a reference for unfamiliar users of the Project facilities to become familiar with the operation of the facilities, receive direction on how and when to maintain the facilities, and be able to locate technical support reference when necessary.

The District wishes to have the O&M Manual in electronic format as much as possible. Although certain formats of electronic documents are defined in this Agreement, the District recognizes that technology will change and improve over time and encourages the Project Manager to look for creative ways of providing O&M Manuals in electronic versions as much as possible. For example, the Project Manager could require the Contractor to submit O&M Manual information in HTML, PDF or another universal standard electronic format that could be easily accessed by the District in the future.

The format of the O&M Manual shall be as follows:

Volume I (By Engineer):

- Section 1: Description of Facilities, Typical Operating Conditions, Standard Operating Procedures
- Section 2: Description of Proper Maintenance Activities
- Section 3: List of Equipment and Suppliers
- Section 4: Contract Documents and Specifications
- Section 5: Record Drawings (see 10.2)
- Section 6: Project Photo Log (see 10.3)
- Section 7: Other Pertinent Documents
- Section 8: Compact Disc

Volume II (By Contractor):

Section 7: Shop Drawings

Section 8: Manufacturer's Literature and Operations & Maintenance Manuals

All the information in Volume I shall be in an electronic format as well as in paper format.

Unless specifically identified in the request for proposal, the Project Manager shall supply four (4) copies of the O&M Manual complete with electronic versions of information contained in the O&M Manual and one (1) additional copy of the electronic information.

- 1.2 The Project Manager will revise the original drawings to reflect record conditions, from the Contractor's marked-up record drawings and the Project Representative's inspection notes, sign and stamp them as follows:

JVWCD RECORD DRAWINGS:

Revisions drawn by _____ Date: _____

This record drawing has been prepared to reflect conditions as actually constructed, from records compiled during construction by the Contractor and the Engineer.

Project Manager

Date

The record drawings are not intended to show in detail the exact location of minor/latent detail of construction. Instead, they are intended to represent as-built conditions in as much detail as practical and available, and to document substantial changes from the original design. The District recognizes that much of the information required to prepare the record drawings is compiled by the Contractor or others during construction, and therefore holds the Engineer harmless from any errors or omissions which may be incorporated into the drawings as a result.

The record drawings will be delivered to the District following Project completion. The record drawings shall be submitted in electronic ((a) AutoCAD 2016 or more recent and (b) PDF format) and (c) paper (11x17) format.

- 1.3 The Project Manager shall submit the complete photo history of the Project compiled during construction. The photo history shall be in electronic and paper formats. Both versions shall contain all photographs in chronological order with a date and caption below each photo.

The electronic version shall contain 4" x 6" photos in a JPEG format with a resolution of 150 dots per inch (DPI) or higher. If compressed the compression must be a high quality compression.

The paper version shall contain thumbnail-size photographs with no more than twelve (12) photos per 8-1/2" x 11" page.

ENGINEER'S NOTICE OF SUBSTANTIAL COMPLETION

OWNER

ENGINEER

TO: Jordan Valley Water
Conservancy District
8215 South 1300 West
P. O. Box 70
West Jordan, UT 84088-0070

PROJECT NAME: _____

Date of Notice to Proceed: _____ Contract Time: _____
Calendar Days _____

In response to Contractor's Certificate of Substantial Completion dated: _____

This Certification of Substantial Completion applies to all work under the Contract Documents or to the following specified parts thereof:

The work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor and Engineer, and that work is hereby declared to be substantially complete in accordance with the Contract Documents on:

Date of Substantial Completion: _____, 20____.

A list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include an item in it does not alter the responsibility of the Contractor to complete all the work in accordance with the Contract Documents. In accordance with the General Conditions, the items in the list shall be completed or corrected by the Contractor within 45 days of the above date of Substantial Completion.

Marked-up record drawings and operation and Maintenance technical information has been received from the Contractor.

The recommended responsibilities between the Owner and the Contractor for security, operation, safety, maintenance, heat, utilities and insurance, if any, shall be as follows:

Owner: _____

Contractor: _____

ENGINEER'S NOTICE OF SUBSTANTIAL COMPLETION (Continued)

The following documents are attached to and made a part of this Certificate:

Execution of this Certificate by the Engineer extends the Contractor's release of claims against the Owner to the date of execution hereof, in accordance with Article 14.08 of the General Conditions, except for written claims filed prior to date of execution, of which the following, if any, are known to the Engineer:

Executed by the Engineer on _____, 20__.

_____	_____
Project Representative	Signature

_____	_____
Project Manager	Signature

The Contractor hereby acknowledges receiving this Certificate of Substantial Completion.

Contractor (Name of Sole Ownership, Corporation or Partnership)

Signature of Authorized Representative

_____ _____
Title Date

(Engineer shall submit to the Owner a copy with the Contractor's signature following the Contractor's receipt.)

JORDAN VALLEY WATER CONSERVANCY DISTRICT

ENGINEER'S NOTICE OF FINAL COMPLETION

OWNER

ENGINEER

TO: Jordan Valley Water
Conservancy District
8215 South 1300 West
West Jordan, UT 84088

PROJECT NAME: _____

Date of Notice to Proceed: _____

In response to Contractor's Certificate of Final Completion dated: _____

On the basis of our observation of the work during construction and final inspection, and on our review of the Contractor's application for final payment and accompanying documentation, we are satisfied that the Contractor has fulfilled all his obligations under the Contract Documents requisite to final payment.

The following remaining minor deficiencies in the work are recommended to be exempt from final payment, in accordance with Article 14.09 of the General Conditions of the Contract. Recommended completion time limits, extended warranty requirements, and the value of these exempt deficiencies are listed below:

DEFICIENCY	COMPLETION TIME	VALUE

The Contractor's application for final payment together with the following contractor submittals, which comprise all final submittal requirements under the Contract Documents, are submitted herewith:

1. Affidavit of Payment from the Contractor.
2. Consent of Surety for final payment.

ENGINEER'S NOTICE OF COMPLETION (Continued)

The date of our satisfactory final inspection was _____, 20____. This date marks the beginning of the one-year Maintenance and Guarantee period, in accordance with Article 13.01(B) of the General Conditions of the Contract.

Acceptance of final payment by the Contractor shall be a release of claims against the Owner in accordance with Article 14.12 of the General Conditions of the Contract. Acceptance of this Notice of Completion by the Owner makes the Contractor's release effective on the date of execution hereof by the Engineer, excepting written claims filed by the Contractor prior to said date of execution of which the following are known to the Engineer:

Is the Engineer aware of any unresolved liens against the Contractor from suppliers or subcontractors?

Yes

No

Unresolved Liens (If Applicable):

Executed by the Engineer on _____, 20____.

Project Representative

Signature

Project Manager

Signature

ATTACHMENT C

SAMPLE FEE PROPOSAL

Project Name

Fee Proposal Template Example

Client: Jordan Valley Water Conservancy District

Firm Name:

Date:

Tasks	Project Manager (Name)	Project Engineer (Name)	Project Rep. (Name)				Total Hours	Cost By Task
Team Member	\$_____/hr	\$_____/hr	\$____h	\$_____/hr	\$_____/hr	\$_____/hr		
Pre-Design Phase								
1.								
2.								
Subtotal:								
Design Phase								
1.								
2.								
Subtotal:								
Total Hours by Team Member								
TOTAL PRE-DESIGN/DESIGN COST								\$
20% CONTINGENCY								\$
Construction Phase								
1. Bidding Support								
2. Construction Management								
3. Documentation								
Subtotal:								
Total Hours by Team Member								
TOTAL CONSTRUCTION MANAGEMENT COST								\$
Direct Charges:								
TOTAL DIRECT CHARGES								\$

JORDAN VALLEY WATER CONSERVANCY DISTRICT

Invitation for Prequalification Proposals to Provide
Design and Construction Management Services
Page 2

TOTAL FEE

\$

Principal's Signature

Principal's Name

Date

APPENDIX A

Brown and Caldwell

**JVWTP Solids Removal Equipment Condition Assessment
February 2020**



6955 Union Park Center, Suite 270
Midvale, UT 84047

Phone: 801-316-9800

Technical Memorandum

Prepared for: Jordan Valley Water Conservancy District (JVWCD)

Project Title: JWTP Solids Removal Equipment Condition Assessment

Project No.: 154279

Technical Memorandum No. 1

Subject: Solids Removal Equipment Condition Assessment

Date: February 23, 2020

To: David McLean, P.E.

From: Jeremy Williams, P.E., Project Manager

Copy to: Steve Blake, Plant Manager

Prepared by: Jake Himebaugh, P.E., BC

Neil Kunz, P.E., BC

Tyler Bird, P.E., BC

Reviewed by: Jeremy Williams, P.E., BC

Limitations:

This document was prepared solely for Jordan Valley Water Conservancy District in accordance with professional standards at the time the services were performed and in accordance with the contract between Jordan Valley Water Conservancy District and Brown and Caldwell dated October 28, 2019. This document is governed by the specific scope of work authorized by Jordan Valley Water Conservancy District; it is not intended to be relied upon by any other party except for regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by Jordan Valley Water Conservancy District and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

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DRAFT



Executive Summary

The Jordan Valley Water Treatment Plant (JVWTP) was designed in 1971 and began operation in 1974 with an initial design capacity of 42 mgd. Plant capacity increased to 60 mgd after minor modifications in 1979. Major expansion to the plant began in 1985 and were completed in 1987, increasing process capacity to 138 mgd and plant hydraulic capacity to 180 mgd. The 1985 project constructed 180 mgd of filters, but only 138 mgd of pretreatment; the design intent was to add tube settlers to the 1985 basins to expand pretreatment capacity to match filtration capacity. The plant regularly operates at 180 mgd, but the tube settlers were never installed. The intent now is to add plate settlers instead of tube settlers.

The original plant consisted of two pretreatment (flocculation/sedimentation) basins: Basin 1 (north) and Basin 2 (south), with three circular solids removal mechanisms per basin. The 1979 expansion project rerated pretreatment to gain additional capacity without expanding the basins. The 1985 plant expansion added four new pretreatment basins with four larger rectangular sedimentation basins (Basin 3 and Basin 4 [north], Basin 5 and Basin 6 [south]) with one cross collector, three long longitudinal, and three short longitudinal chain and flight solids removal systems per basin.

The circular and chain and flight solids removal systems now approach 46 and 33 years of operation, respectively. Both types of solids removal equipment achieved and now exceed their original expected design life, which has raised concerns about the integrity of the equipment and future reliability. Plant staff have had to weld the circular mechanisms to repair them in place, and recently had to replace hundreds of chain pins in the rectangular collectors.

Because the plant operates at 180 mgd with only 138 mgd of pretreatment capacity, taking one basin offline during peak summer flows to repair a solids collector will adversely impact plant operations and could significantly reduce plant production. This increases the consequence of failure, and elevates the equipment status to critical because it is vital for plant operations.

Brown and Caldwell (BC) conducted a field investigation on November 7, 2019. The assessment team found the equipment operational and functioning with fair performance. The team identified no indication of damage or wear symptomatic of neglect or atypical mistreatment. However, the team found the equipment in moderate-to-poor condition due to damage and wear consistent with the age, environment, and use (i.e. corrosion and typical operational wear). The investigation identified substantial corrosion on some critical components of both solids removal equipment types, which currently or will soon compromise the integrity and reliability of the equipment.

- Circular mechanism assessment result: A condition and performance scoring of 4 and 2, respectively, categorizes the equipment within Region 3 or Poor Condition.
- Chain & Flight assessment result: A condition and performance scoring of 5 and 2, respectively, categorizes the equipment within Region 3 or Poor Condition.

Based on the investigation, BC recommends JWCD replace or substantially refurbish the existing solids handling equipment within the next 2 to 3 years and further recommends immediate investigation of critical components showing advanced stages of corrosion to determine the extent of the corrosion and determine temporary remediation options available.

Replacement of the circular mechanism in the Waste Backwash Water Clarifier, the six circular mechanisms in Basins 1 and 2, and the 28 rectangular mechanisms in Basins 3, 4, 5, and 6 is estimated to cost \$12.5M. This is a total project cost that includes a 20% contingency, a 3% reserve for unforeseen conditions (e.g. basin concrete repair), and 8% for engineering, administration, and legal. Replacing the rectangular mechanisms will have no adverse impact on future installation of plate settlers.



Section 1: Introduction

1.1 Plant Background

The Jordan Valley Water Treatment Plant (JVWTP) began operation in 1974 with an initial design capacity of 42 mgd. Design capacity increased to 60 mgd after minor modifications to rerate the existing facility in 1979. The original plant consisted of two flash mixers, two flocculation basins with horizontal-shaft paddle mixers (replaced in 1987 with vertical-shaft impeller mixers), two sedimentation basins (Basin 1 [north] and Basin 2 [south]), with three circular solids removal mechanisms per basin and six filters. Major expansions to the plant began in 1985, increasing plant process capacity to 138 and hydraulic capacity to 180 mgd. Plant expansion included four new four-stage flocculation basins with vertical-shaft impeller mixers, four larger rectangular sedimentation basins (Basin 3 and Basin 4 [north], Basin 5 and Basin 6 [south]) with three long, three short and one cross collector, chain and flight solids removal system(s) per basin, and ten filters. The design intent of the 1985 project was to add tube settlers to the 1985 basins (3, 4, 5, and 6) in the future to expand pretreatment capacity to match filtration capacity. The plant regularly operates at 180 mgd now, but the tube settlers were never installed.

The plant operates year-round at varying capacities, from winter flows as low as 10 mgd to summer flows as high as 180 mgd. Basins 1 and 2 typically remain online throughout the winter because the circular mechanisms don't freeze up; operators drain and remove Basins 3 - 6 from service because the drive shaft is above the water surface elevation and the chain can freeze.

High summer demands require that all six basins are in service, making reliability of the basins and solids removal equipment essential, and without the benefit of system redundancy. As the circular and chain and flight solids removal systems now approach 46 and 33 years of operation, respectively, both types of solids removal equipment achieved and now exceed their original expected design life.

1.2 Purpose

The following list identifies the purposes of this technical memorandum (TM):

- Assess the condition of the existing sedimentation basin solids removal equipment at the JVWTP.
- Document maintenance concerns from JVWTP operations and maintenance staff regarding the solids removal equipment.
- Report the findings of the field investigation performed by Brown and Caldwell (BC).
- Provide recommendations for the rehabilitation or replacement of the solids removal equipment.

Section 2: Methodology

2.1 Staff Interviews

Prior to the field investigation, BC interviewed JVWTP operations staff to review and document the maintenance, repair and operational history of both types of solids removal equipment as well as concerns raised from operations staff familiar with the equipment. In addition to providing valuable information on typical component lifespans, maintenance trends and usage, the interview identified specific components and areas of concern requiring additional observation and assessment during the investigation.



2.2 Field Investigation

BC staff and JWTP management and operations staff conducted a “sensory” condition assessment on November 7, 2019. JWTP staff drained Basins 1, 3, and 4, providing access to the equipment. The assessment team used visual, auditory, and tactile senses to assess equipment based on Table 2-1.

Table 2-1. Available Field Observations

- Vibration
- Noise
- Corrosion
- Wear/ Damage
- Misalignment

2.3 Condition and Performance Scoring

BC utilized a condition and performance scoring system to assess physical condition and operating performance. Table 2-2 and Table 2-3 provide the details of the scoring system.

Table 2-2. Condition Ratings (Physical State)

Rating	Description
1	Good - No defects observed
2	Fair - Only minor defects observed
3	Moderate - Some minor and major defects observed
4	Poor - Major defects observed, asset integrity potentially compromised
5	Failing or Failed - Compromised asset integrity, potentially out of service

Table 2-3. Performance Ratings (Operational)

Rating	Description
1	Good - Asset functioning as intended
2	Fair - In service, but higher than expected O&M
3	Moderate - In service, but with some impaired function
4	Poor - In service, but with highly impaired function
5	Failing or Failed - Out of service or not functioning as intended.

The assessment team used the condition and performance scores to categorize the equipment into five regions as shown in Figure 2-1. The different regions provide guidance for further action.

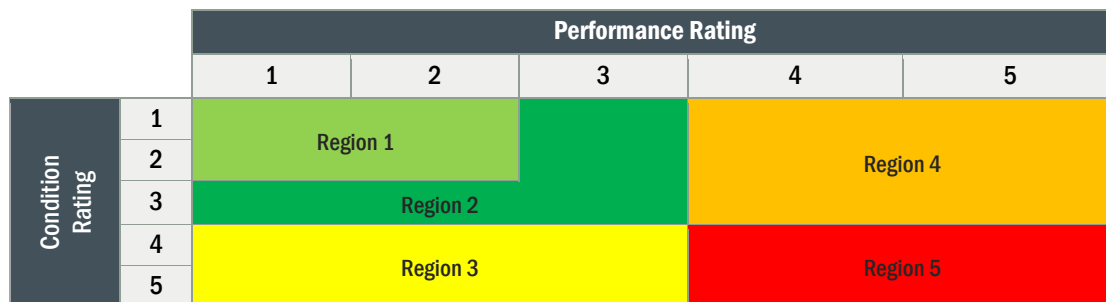


Figure 2-1. Condition and Performance Score Regions for Recommendations



Region 1 - Good Condition and Performance ◆

Asset with good (low) condition and performance scores of 1 or 2 fall in Region 1. With no immediate failure expected, typical recommended actions require *No Immediate Action*.

Region 2 - Moderate Condition and Performance ◆

Asset with at least one moderate score of 3 fall in Region 2. To determine the potential risk for failure, typical actions recommend *Initiating More Detailed Inspection*.

Region 3 - Poor Condition Ranking ◆

Asset with poor condition scores of 4 or 5, but with performance scores of 1, 2, or 3 fall in Region 3. As the asset remains in service, albeit with some potential impairment, the poor and failing condition warrant remediation. Typical recommended actions include *Schedule Corrective Action Work Order for Near Term or Refurbish or Replace*.

Region 4 - Poor Performance Ranking ◆

Asset with poor performance scores of 4 or 5, but with condition scores of 1, 2, or 3 fall in Region 4. Typical recommended actions require *Immediate Corrective Action* as the asset cannot operate or operates with a high level of impairment, but shows no evidence that identified defects compromise integrity.

Region 5 - Poor Condition and Performance ◆

Asset with poor condition and poor performance scores of 4 or 5 fall in Region 5. Typical actions recommend *Refurbish or Replace* as the asset cannot operate or operates with a high level of impairment and shows substantial evidence that defects may or will compromise integrity.

In conjunction with the recommended action of *Refurbish or Replace* based on performance and condition scoring, the action also provides an estimated project timing defined as:

- Immediate: As soon as possible
- Near-Term: Within the next 2 to 5 years
- Long-Term: Within the next 6 to 20 years

Note that depending on the item, the “action” referenced within that timing may only require a further evaluation (study), rather than repair or replacement. Please refer to the individual comments in Section 3.

2.4 Limitations

BC did not perform any destructive or invasive testing as part of this field condition assessment, nor did the assessment employ any sampling, laboratory testing, or other follow up investigatory techniques. Although not an exhaustive inquiry, a sensory level observation does represent an appropriate, commercially prudent, and reasonable level of effort, particularly as a preliminarily method, to prioritize competing potential repair and replacement needs. In addition, a sensory level observation provides a reasonable approach to reduce, but not eliminate, the level of uncertainty regarding the potential for recognized conditions of capital elements at the JWTP that require attention. The Water Environment Research Foundation (WERF) and other industry standards recognize sensory level observation as a reasonable approach to reduce, but not eliminate, the level of uncertainty for recognized conditions of capital elements that require attention.

Similarly, other factors may impact the findings and conclusions of the assessment. For instance, other than first-hand observations, BC relied upon information provided and/or relayed by JWTP staff present during the field observation as to uses, operations, past performance, etc., without independently verifying this information. While BC based its recommendations on its actual observations during the work, to the extent additional conditions exist, but not observed, or conditions change after BC’s observation, such factors could potentially impact recommendations in a substantial manner.



Section 3: Circular Solids Removal Equipment Assessment

3.1 Equipment Description

EIMCO Process Equipment (now Ovivo USA, LLC) originally designed and fabricated the six circular solids removal mechanisms and appurtenances (known as a clarifier mechanism) servicing Basin 1 and Basin 2. Each clarifier mechanism consists of a drive unit, support column and rake arm attached to the main bearing of the drive unit using a structural cage (Exhibit A-1). The drive unit includes a 0.75 hp electric motor, a gear reducer and a main gear assembly (Exhibit A-2). The support column anchors to the basin invert and supports the drive unit at deck level, as well as the rake arm and structural cage suspended from the main bearing of the main gear assembly. The rake arm extends from the structural cage to the basin wall, suspended a few inches off the basin floor using a system of threaded rods and pinned joint to transfer the weight (Exhibit A-3), operational loads, and resulting moment to the structural cage.

3.2 Operational, Maintenance and Repair History

Basin 1 and Basin 2 operate on a year-round basis with solids collection typically performed once per day. At 45 years old, the clarifier mechanisms have exceeded the typical design life of 20 to 30 years for this type of equipment, alluding to a history of consistent and effective routine inspection and maintenance by JWTP operations and maintenance staff. JWTP staff identified the following as major repair events occurring over the lifetime of the equipment:

- Clarifier mechanisms repainting: 6 of 6 units
- Corner sweep replacement: 6 of 6 units
- Gearbox failure and rebuild: 2 of 6 units
- Squeegee replacement (replaced aluminum material with rubber): 6 of 6 units
- Support column failure and repair: 1 of 6 units
- Structure recoating: 6 of 6 units (15 years ago)

JWTP staff performs oil changes in the drive units every six months as part of a routine maintenance schedule, with no noticeable condensate present in the discarded lubricant.

JWTP staff indicated difficulty in obtaining replacement parts for the drive units during the two rebuilds due to the age of the equipment, with many components no longer stocked by the Original Equipment Manufacturer (OEM) or by suppliers within the industry. Staff also noted excessive wear on the bronze sleeve bearing on the pinion of both failed gearboxes, the presence of concrete spalling in Basin 2 and seam leaks in both basins.

3.3 Field Investigation

For the purpose of this investigation, JWTP staff drained Basin 1, providing the assessment team access to the three clarifier mechanisms servicing this basin, which this report refers to as Clarifier 1, Clarifier 2 and Clarifier 3 in order from east to west.

3.3.1 Drive Units

The assessment team inspected the main spur gear (also known as the bull gear) through the access hatch in the main gear assembly housing of each drive unit. The team found each bull gear in good condition with minimum wear on the visible surfaces of the gear teeth (Exhibit A-4), indicating satisfactory contact and minimal slippage between the bull and pinion gear and efficient torque transfer.

The team used a mechanical stethoscope to isolate noises produced in the main gear assembly housing during operation. Of the three drive units monitored, the Clarifier 1 drive unit emitted a slight whine from the housing not present in the other two drive units. Although the team did not identify noises indicative of more serious damage or wear (such as scraping, grinding or popping) in the three drive units, the noise exclusive to the Clarifier 1 drive unit indicates the presence of additional frictional sources from wear and age, such as an excessively worn bronze bearing on the pinion gear (as found in the two failed drive units). As anticipated, the rebuilt Clarifier 2 drive unit emitted the least amount of noise during operation.

It appears the extent of the work performed during the rebuild of the Clarifier 2 drive unit excluded the torque limiting unit. The team witnessed substantial movement in the torque limiting unit during operation when compared to the other drive units, indicative of heavily worn bearings within the torque limiting unit.

The presence of nonuniform lubricant buildup on the members of the structure cages directly below the main gear assembly housing (Exhibit A-5) on all three clarifiers indicates the absence of uniform loading on the bearings. Nonuniform loading on bearings results in preferential wear on the roller or balls as well as inner and outer rings, reducing service life and drive unit reliability.

3.3.2 Structural Cages

The assessment team identified buckling in at least one cross member in the structural cage (Exhibit A-6) on all three units. This indicates the structure experienced a compressive load at some point in its lifetime, resulting in stresses exceeding the yield strength of the material. This typically occurs when the clarifier mechanism experiences a substantial load while rotating opposite to its intended rotation.

As a standard, OEMs typically design this style of clarifier mechanism for tensile loads only, restricting rotation to either clockwise or counter-clockwise rotation rather than allowing bidirectional rotation. The cross member configuration of the structural cage on the units investigated indicate the OEM designed and limited operation to a clockwise rotation (when viewed from above the drive unit).

Although the buckling didn't cause a catastrophic failure of the structure, the deformation compromises the structural integrity of the cross member itself as well as adjacent members due to changes in load distribution.

The team also found widespread failure of the protective coating on the structure (Exhibit A-7) such as the presence of cracking, delamination, peeling and flaking. These areas display significant amounts of corrosion and in many cases, show evidence of material loss. Based on the original thickness of the structural members, the OEM likely did not provide corrosion allowance as part of the design. Material loss, especially in areas of high stress (Exhibit A-8) in critical load transferring members (which the team identified in several areas), erodes the safety factors used in the design, creates stress concentrations where the risk of local yielding and cracking initiates and reduces the overall integrity of the structure, even under normal design conditions and torque limitations.

3.3.3 Rake Arms

The assessment team identified buckling in the leading tie rods (Exhibit A-9) on all three clarifiers, which support and suspend the rake arm above the basin and transfer loading from the rake arm to the structural cage. This indicates, as discussed in Paragraph 3.3.2, the structure experienced a compressive load at some point in its lifetime. The team also identified widespread failure of the protective coating, corrosion and evidence of material loss (Exhibit A-10), especially in critical joint connections and critical load transferring members (Exhibit A-11).

The team used a laser leveling device to measure the level of the rake arm on Clarifier 3 at four locations throughout its rotation (North, East, South and West). Clarifier 3 (with the original drive unit) deviated in elevation by approximately 1.50 in (North to South) and 0.50 in (East to West). OEMs typically require an out

of level measurement below 0.005 in per diameter foot, which for an 85.0 ft clarifier mechanism equates to 0.425 in. Thus, the clarifier mechanism exceeds the out of level tolerance typically recommended by OEMs, dictated to minimum uneven wear on the bearings, strip liner and bearing housings.

The corner sweeps and counterweight assembly on all three units displayed similar coating damage, corrosion and material loss to that found on the structural cage and rake arms (Exhibit A-12). On some assemblies, the counterweights appeared locked in position likely due to binding in the pulley or corner sweep bearings, preventing the counterweight wheel from tracking the exterior of the basin.

3.3.4 Support Columns

The assessment team identified cracking in the coating and corrosion on the surfaces of the support column on all three units, especially in high stress areas around the gussets (Exhibit A-13) near the basin invert and in the longitudinal vertical weld seam (Exhibit A-14). The team found no indications of yielding or buckling during the investigation.

As noted in Section 3.2, JWTP staff indicated the support column for one of the units in Basin 2 required repair after a tear developed approximately 2 to 3 years ago. With Basin 2 in operation, the team could not inspect the repair work, nor evaluate the mode of failure in this area. However, the team found no tears or structural damage on the three support columns inspected in Basin 1.

3.4 Condition Summary and Scoring

The presence of buckling, corrosion and material loss increases risk of structural failure, especially as the material continues to corrode. Current torque cut-out levels, meant to protect the equipment, may not provide a reasonable level of protection, even under normal conditions. Without repair, the structural members will continue to corrode, increasing risk of significant structural failure, leaving the equipment inoperable.

With two of the six drive units experiencing internal bearing failure, the remaining units will likely require replacement and/or refurbishment in the next 2 to 3 years. Failure of the drive unit will leave the equipment inoperable for several weeks due to typical lead times.

Based on the age and condition of the equipment, the assessment team scored the clarifier mechanisms with a rating of 4 in the condition category, as the team identified major defects in the components that may currently compromise or will eventually compromise the integrity of the equipment.

3.5 Performance Scoring

The assessment team found the equipment operational with very minor sludge collection on the invert of the basin floor. The equipment appears to perform fairly with minimum need for operator involvement but will require significant O&M costs based on the repair history, age and condition of the units. As such, the assessment team scored the clarifier mechanisms with a rating of 2 in the performance category.

3.6 Summary

A condition and performance scoring of 4 and 2, respectively, categorizes the equipment within Region 3 or Poor Condition Ranking as defined in Section 2.3. Due to the condition of the equipment, the assessment team recommends substantial refurbishment or replacement in the next 2 to 3 years.

Section 4: Chain and Flight Equipment Assessment

4.1 Equipment Description

The 1987 plant expansion included the addition of four larger rectangular sedimentation basins (Basin 3, Basin 4, Basin 5 and Basin 6) with three short (approximately 115.0 ft), three long (approximately 235.0 ft), and one cross (approximately 50.0 ft) chain and flight solids removal system(s) per basin for a total of 28 units in all. Polychem, a division of the Budd Company (now Brentwood Industries Inc.), designed and fabricated the equipment. Each chain and flight mechanism consists primarily of a drive unit (Exhibit B-1), drive chain, driven sprocket, head shaft assembly (Exhibit B-2), idler shaft assembly (Exhibit B-3), tail shaft assembly (Exhibit B-4), wear strips, return track structure (Exhibit B-5), flights and carrier chains.

The design utilized multiple patents awarded to the Budd Company during this time period, which utilized non-metallic material (originally Nylon 6) for major components of the chain and flight system. These are some of the first generation non-metallic chain and flight mechanisms.

4.2 Operational, Maintenance and Repair History

The plant typically operates Basin 3, Basin 4, Basin 5 and Basin 6 only during the summer months to meet peak summer demands with solids collection typically performed once per day. The plant typically drains these basins and takes them offline during the winter season because the head shaft is above the WSE, which leads to drive chain freezing issues. At 33 years old, the chain and flight mechanisms have exceeded the typical design life of 20 to 30 years for this type of equipment. JWTP staff identified the following as major repair events occurring over the lifetime of the equipment:

- Seized idler shaft bearings, requiring replacement
- Fusion of drive sprocket to drive shaft, bypassing torque protection
- Largescale replacement of carrier chain pins and links after failure: Basin 4

Additionally, JWTP staff identified the following as periodic repair and maintenance events performed as found necessary during the yearly inspection:

- Chain link and pin replacement (both carrier chains and drive chain)
- Wear strip replacement (both lower and return track assemblies)
- Flight to chain connector replacement
- Flight replacement
- Sprocket replacement

JWTP staff performs oil changes in the drive units every six months as part of a routine maintenance schedule, with no noticeable condensate present in the discarded lubricant.

4.3 Field Investigation

JWTP staff drained Basin 3 and Basin 4, providing the assessment team access to the chain and flight mechanisms servicing these basins. With exception of the investigation of the drive units, the assessment team conducted the investigation primarily using the units in Basin 3. Ice buildup on the basin floor resulted in a failed shear pin that prevented operation of the longer units in Basin 4.

4.3.1 Drive Units

The drive unit (Exhibit B-6) consist of an electric motor, gear reducer, torque limiter, drive shaft and drive sprocket. Five drive units operate the seven chain and flight mechanisms per basin (six longitudinal, one cross). Two short or two long mechanisms share a common drive unit, which additionally includes a three-

way right angle gearbox between the gear reducer and drive shafts. The third short or long mechanism in each basin has its own drive unit. JWTP staff identified the drive unit components (apart from the drive sprocket(s) in some instances) as original to the installation.

The assessment team found evidence of localized surface corrosion, coating delamination and chipping on the external surfaces of the motor, gear boxes and torque limiter, typical of the age and operating environment of the equipment (Exhibit B-7). The team found no indication of significant material loss in these areas, suggesting the visible damage currently poses little concern to the overall integrity of the drive unit.

However, the existence of corrosion on surfaces not regularly in contact with liquid (Exhibit B-8) leads to significant concern in areas wetted by the drive chain and areas inaccessible for inspection, including the drive shaft, shaft seals, keys and keyways as well as the torque limiter mechanism. The history of the drive sprocket fusing to the drive shaft in some instances further escalates this concern as a bypass around, or a failure to, the torque protection poses significant risk of catastrophic failure to multiple components in the system.

The team observed typical and uniform wear on the contact surface on the teeth of the drive sprockets (Exhibit B-9). Uniform wear, with no instances of chain slip or tooth jumping occurring during the inspection, indicate wear does not currently affect operation. The drive sprocket on the long chain and flight unit with an independent drive unit in Basin 4 does not appear original.

4.3.2 Drive Chains

The drive chain connects the drive sprocket on the drive unit to the larger driven sprocket of the head shaft assembly below deck. The three longer chain and flight units utilize a carbon steel drive chain, which appear original to the installation. The remaining units include a non-metallic drive chain.

Wear appeared uniform across the links with wear restricted to the pin surface (Exhibit B-10) in contact with the drive sprocket on the long units sharing a common drive unit in Basin 4.

Drive chain wear patterns on the remaining long unit (Exhibit B-11) in Basin 4 appeared identical, but mirrored, to the drive chains of the other long units, indicating chain orientation switched (with the chain pin on each link leading) at some point during its lifespan. Wear on the new contact surface appears minimal, suggesting a recent switch or utilization of a non-metallic drive sprocket.

All links show signs of localized corrosion and pitting. Additionally, the team identified a large fracture in a link of the drive chain (Exhibit B-12) on the long chain and flight unit with an independent drive unit, leading to concerns regarding the integrity of the other original carbon steel drive chains at the facility.

4.3.3 Driven Sprockets

The driven sprocket mounts to the head shaft assembly of each unit. All torque from the drive unit transfers to the head shaft through this connection making this a critical component to the functionality of the equipment.

Although difficult to identify materials in this area due to location and access, the sprocket design appears to utilize non-metallic material for the sprocket teeth segments given the lack of rust, the presence of marring on the contact surfaces of the teeth and the black color observed on the wear surfaces (Exhibit B-13).

The segments attach to the outside edge of a large hub made of carbon steel or cast iron (based on the presence of localized corrosion identified on the surfaces). The surface additionally appears to have the remnants of an original coating provided to protect the material from damage. If correctly identified, the assessment team found the integrity of the coating compromised with widespread cracking, flaking and coating delamination (Exhibit B-14). The assessment team could not find a clear view of the base material

beneath the coating to inspect the component for material loss. Therefore, the structural integrity of the driven sprocket remains uncertain.

4.3.4 Shaft Assemblies

The head shaft, idler shaft and tail shaft assemblies all utilize non-metallic sprockets mounted to a coated carbon steel shaft supported by a wall mounted bearing on each end.

The assessment team found the sprockets in varying conditions, with some exhibiting very little wear on the contact surfaces (Exhibit B-15) and others with significant and widespread cracking and indications of material breakdown (Exhibit B-16). The wear on the contact surfaces of the teeth appear uniform, which along with no instances of chain slip or chain jumping occurring during the inspection, indicates wear does not currently affect operation.

The assessment team found localized surface corrosion, coating delamination and flaking on the exposed surfaces of the all shafts investigated (Exhibit B-17). In some instances, evidence of advanced corrosion, material degradation and loss appear between the sprocket and the end bearing, reasonably questioning the structural integrity of the shaft (Exhibit B-18). Advanced stages of localized corrosion in these areas raises concern of galvanic corrosion due to the existence of dissimilar materials.

The team also found widespread failure of the protective coating on the bearing housing including the presence of cracking, delamination, peeling and flaking (Exhibit B-19). The housing surfaces also show evidence of localized corrosion.

4.3.5 Wear Strips

Plastic wear strip sections mount to the top surface of the return track structure and directly to the invert of the basin, providing a sliding surface for the flights along the length of the basin on both sides. Slotted holes with large spacing between each hole accommodate the expansion of the material.

In theory, the mounting hardware loosely secures the wear strip, allowing each strip to expand along its length as needed, independent of subsequent wear strips due to the gap between adjoining strips. In practice, solids buildup and wear tend to restrict the expansion of the wear strips, resulting in buckling between mounting points (Exhibit B-20).

As JWTP staff routinely replaces wear strips as needed, the assessment team found conditions varied from segment to segment, with some in need of replacement and some appearing relatively new. The team found buckling throughout the basin and identified several gaps between segments with uneven sliding surfaces (Exhibit B-21), which can create a catch point between the wear strip and the flight wear pad, depending on the direction of travel.

Staff also provided the assessment team with samples of used wear strips to investigate (Exhibit B-22). These strips showed significant damage in areas in and around the slotted openings, including missing material and surface cracking due to buckling.

4.3.6 Return Track Structures

The return track structure consists of carbon steel angle running the length of the basin on each side supported by multiple carbon steel brackets spaced along the track length which mount to the basin walls.

The assessment team found prevalent failure of the protective coating used to protect the structure from corrosion (Exhibit B-23). The team identified varying stages of corrosion throughout the structure (Exhibit B-24). However, the areas surrounding the bracket connection appeared the display the most advance stages, with substantial degradation and material loss (Exhibit B-25). As with the shafts, advanced stages of localized corrosion in these areas alludes to the potential of galvanic corrosion.

The advanced stages of corrosion found on the return track structure raises concern of the structural integrity of the components.

4.3.7 Flights

Flights, made of non-metallic material, mount to the carrier chains using a non-metallic flight bracket. Four plastic wear pads, two for the lower wear strips mounted to the basin invert and two for the wear strips mounted to the return track structure, provide a wearable sliding surface and align the light and chain as it travels. JWTP staff routinely replace flights as needed at a rate of 30 to 50 per year across the 28 chain & flight units.

Although the assessment team could not inspect every flight assembly, the team found no evidence of significant damage or abnormal wear on any of the flights investigated (Exhibit B-26).

4.3.8 Carrier Chains

The non-metallic carrier chain runs from the head shaft to the tail shaft at the other end of the basin, running back to the other end of the basin along the invert to the idler shaft before returning to the head shaft forming one continuous loop of chain. With exception of the largescale chain replacement resulting from mass pin failure in Basin 4, JWTP staff routinely replace a few links of chain each year as needed.

The assessment team identified minimal wear on the contact surfaces of the chain pins investigated (Exhibit B-27). The team observed no evidence of chain stretch nor chain jumping at the sprockets.

4.4 Condition Summary and Scoring

The presence of advanced corrosion and significant material loss severely increases risk of structural failure, especially as the material continues to corrode. Current torque cut out levels, based on the cross section of the shear pin in the torque limiting mechanism, may not provide a reasonable level of protection, even under normal conditions. Without repair, the components will continue to corrode and eventually fail, leaving the equipment inoperable.

As the original drive units continue to power the equipment, the units will likely require replacement and/or major refurbishment in the next 3 to 5 years. Failure of the drive unit will leave the equipment completely inoperable.

Based on the age and condition of the equipment, the assessment team scored the chain and flight mechanisms with a rating of 5 in the condition category, as the team identified major defects in the components that currently compromise the integrity of the equipment.

4.5 Performance Scoring

The assessment team found the equipment operational with very minor sludge collection on the invert of the basin floor. The equipment appears to perform fairly with minimum need for operator involvement but will require significant O&M costs based on the repair history, age and condition of the units. As such, the assessment team scored the chain and flight mechanisms with a rating of 2 in the performance category.

4.6 Summary

A condition and performance scoring of 5 and 2, respectively, categorizes the equipment within Region 3 or Poor Condition Ranking as defined in Section 2.3. Due to the condition and criticality of the equipment, the assessment team recommends substantial refurbishment or complete replacement in the next 2 to 3 years.

The condition of several critical components (such as the shafts and return track structure brackets) as well as other areas of significant localized corrosion require further investigation and testing to determine the extent of the corrosion and condition of the material prior to returning the units to service. In order to maintain adequate structural integrity and reliability over the next 2 to 3 years, these components may require Immediate repair or replacement.

Section 5: Waste Backwash Water Clarifier

BC did not perform an in-depth inspection of the waste backwash water (WBW) clarifier during the initial site visit, but the WBW clarifier mechanism is expected to be in the same or worse shape than the mechanisms in Basins 1 and 2.

The WBW clarifier has been offline for years; its function was replaced in 1987 when the two WBW solids basins were constructed. Non-use is much harder on mechanical equipment than regular use, and BC expects the bearings and other mechanical components to have a very short life when the clarifier is brought back online as part of the WBW solids handling improvements project.

BC recommends replacing this mechanism along with the mechanisms in Basins 1 and 2.

Section 6: Expansion Considerations

JVWCD intends to increase plant capacity at JWTP from 180 mgd to 255 mgd to meet growing water demand. The 1985 design provided accommodations (locations for columns/beams) to add tube settlers to Basins 3, 4, 5, and 6 to expand pretreatment from 138 mgd to 180 mgd. Installing plate settlers in the 1985 basins instead of tube settlers could expand capacity beyond 180 mgd to 255 mgd because plate settlers have a higher capacity per square foot than tube settlers.

No plate settlers will be added to Basins 1 or 2. These basins were not designed for tube or plate settlers, and Basins 3, 4, 5, and 6 provide sufficient area to install the required amount of plates to reach 255 mgd. In fact, Basins 1 and 2 will be derated as part of the expansion to 255 mgd to improve performance and reduce settled water turbidity and the associated solids load on the filters.

Increasing flow through Basins 3, 4, 5, and 6 will require expansion of the flocculation area to provide two additional stages for a total of six stages of flocculation. This reduces the length of the sedimentation area by approximately 60 feet and will only affect the short longitudinal collectors. The long longitudinal collectors will be unaffected as the basins are deep enough to receive plates that use a concealed beam to carry the plate packs.

During the site visit, BC confirmed the long (eastern) portion of Basins 3, 4, 5, and 6 will accommodate an 8 x 8 or 7 x 9 plate settler configuration without impacting the existing chain and flight systems. With a minimum height of approximately 4'- 11" above the basin floor, the proposed configuration provides acceptable clearance to accommodate the existing chain and flight system (measured at 3 ft). The proposed plate settler configuration assumes a plate length of 8.2 ft. Although shorter than the standard plate length (10 ft), using shorter plates decreases the required basin depth by increasing the required number of plates. There is more than enough surface area to install enough plates for 255 mgd, even with shorter plates.

Section 7: Cost Estimate

BC estimated replacement costs using schedules of value from past projects that bid within the last few years, and escalating costs to 2020 dollars. Expected accuracy is -30% - + 50%.

Table 7-1. JWTP Solids Removal Equipment Replacement Cost Estimate

Facility Improvement Description	Quantity	Cost
Rectangular Solids Collection Equipment (Chain & Flight)		
Cross Collectors	4	
Short Longitudinal	12	
Long Longitudinal	12	
Total Material Cost		\$4,500,000
Total Labor Cost		\$1,400,000
	Subtotal	\$5,900,000
Circular Solids Collection Equipment (Clarifier)		
Diameter = 85'	6	
Diameter = 110'	1	
Total Material Cost		\$2,700,000
Total Labor Cost		\$300,000
	Subtotal	\$3,000,000
Total Direct Cost		\$8,900,000
Sales Tax	7.25%	\$330,000
Subtotal		\$9,230,000
Contingency	20.0%	\$1,900,000
Subtotal		\$11,130,000
Total Estimated Construction Cost		\$11,200,000
Engineering, Legal, and Administration Fees	8.0%	\$900,000
Change Order Reserve	3.0%	\$400,000
Total Estimated Project Cost		\$12,500,000

*Subtotals and Totals may have been rounded up



Section 8: Summary and Recommendation

Management, operations, and maintenance staff have successfully operated and meticulously maintained the existing solids removal equipment at JWTP well beyond typical life expectancy for this type of equipment. The assessment team identified no indication of damage or wear related to neglect or mistreatment. Rather, the team discovered damage and wear consistent with the age, environment and use (i.e. corrosion and typical operational wear).

The investigation identified substantial corrosion on critical components of both solids removal equipment types, all of which currently or will soon compromise the integrity and reliability of the equipment. As such, evidence of advanced corrosion identified on critical components merits additional inspection and testing to evaluate the integrity and reliability of the component as well as remediation options. BC recommends JWCD view these remediation efforts as temporary, meant to maintain equipment operation and prevent catastrophic failure until equipment is replaced. Given that the 180 mgd JWTP already operates with only 138 mgd of pretreatment, unplanned repair/replacement of any one mechanism during peak summer months will have an adverse effect on plant performance and potentially reduce plant production.

Based on the investigation performed, BC recommends JWCD replace or substantially refurbish the existing solids handling equipment within the next 2 to 3 years and recommends immediate investigation of critical components with advanced stages of corrosion.

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Attachment A: Exhibits – Clarifier Mechanism

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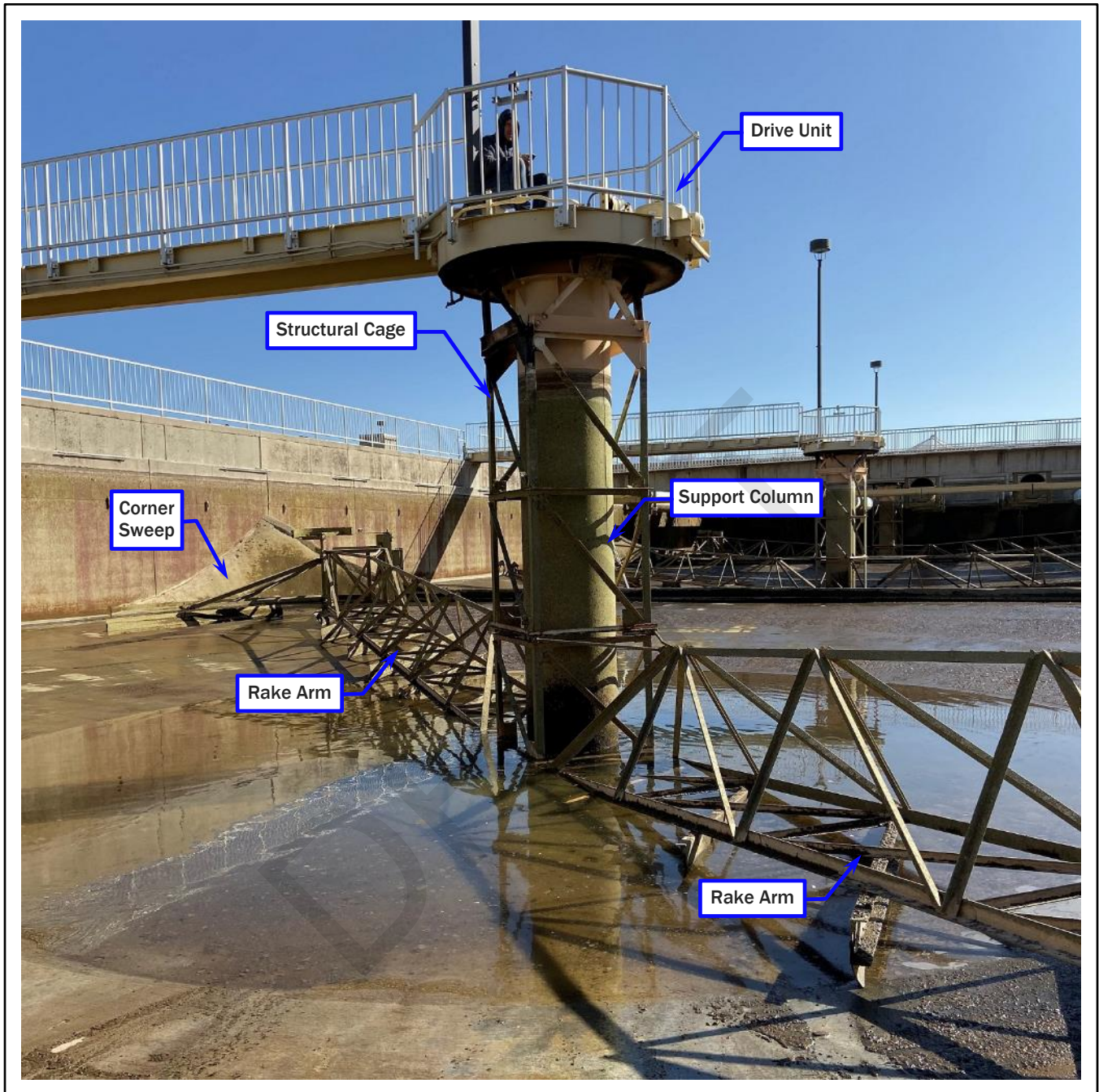


Exhibit A-1

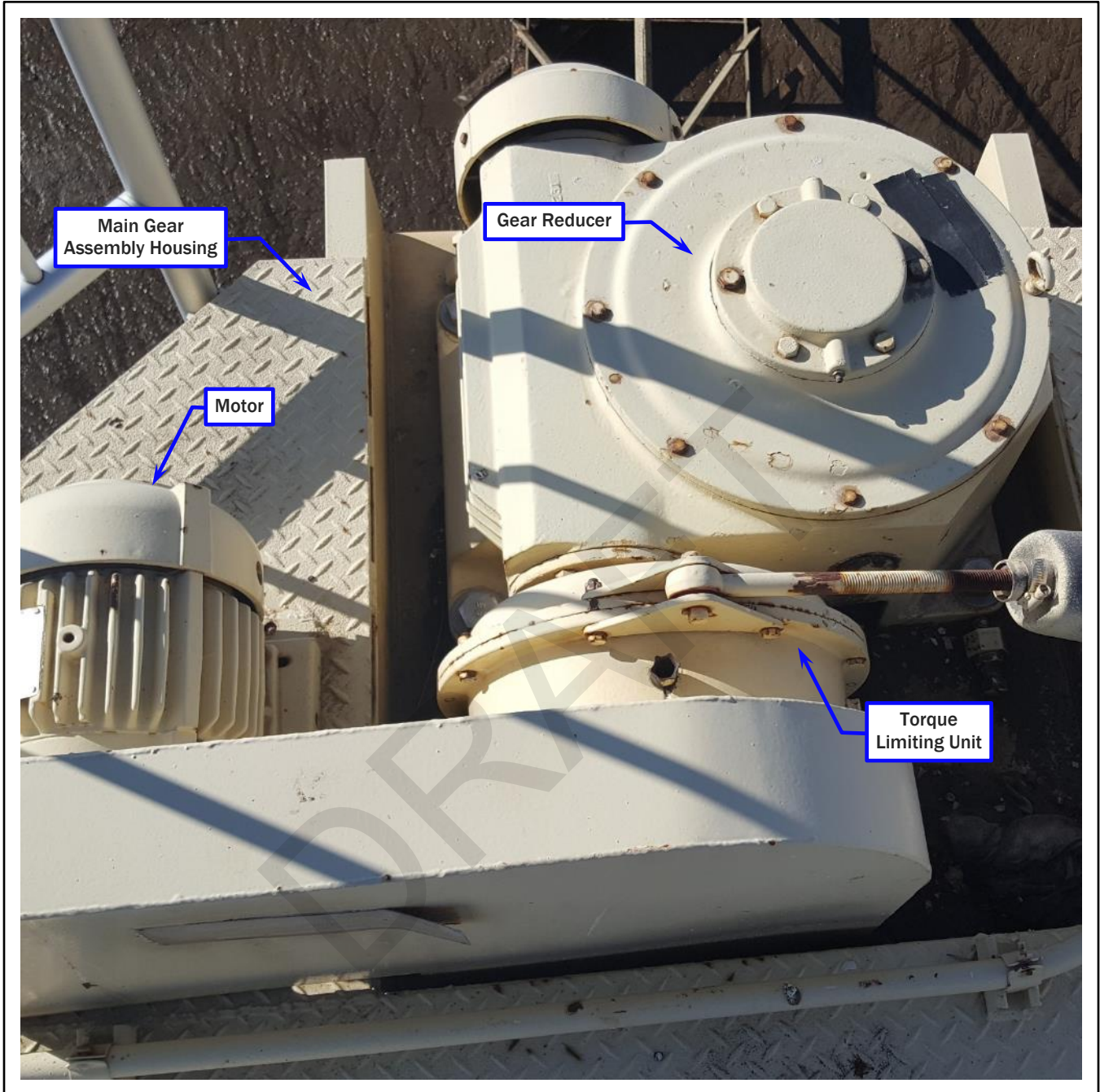


Exhibit A-2

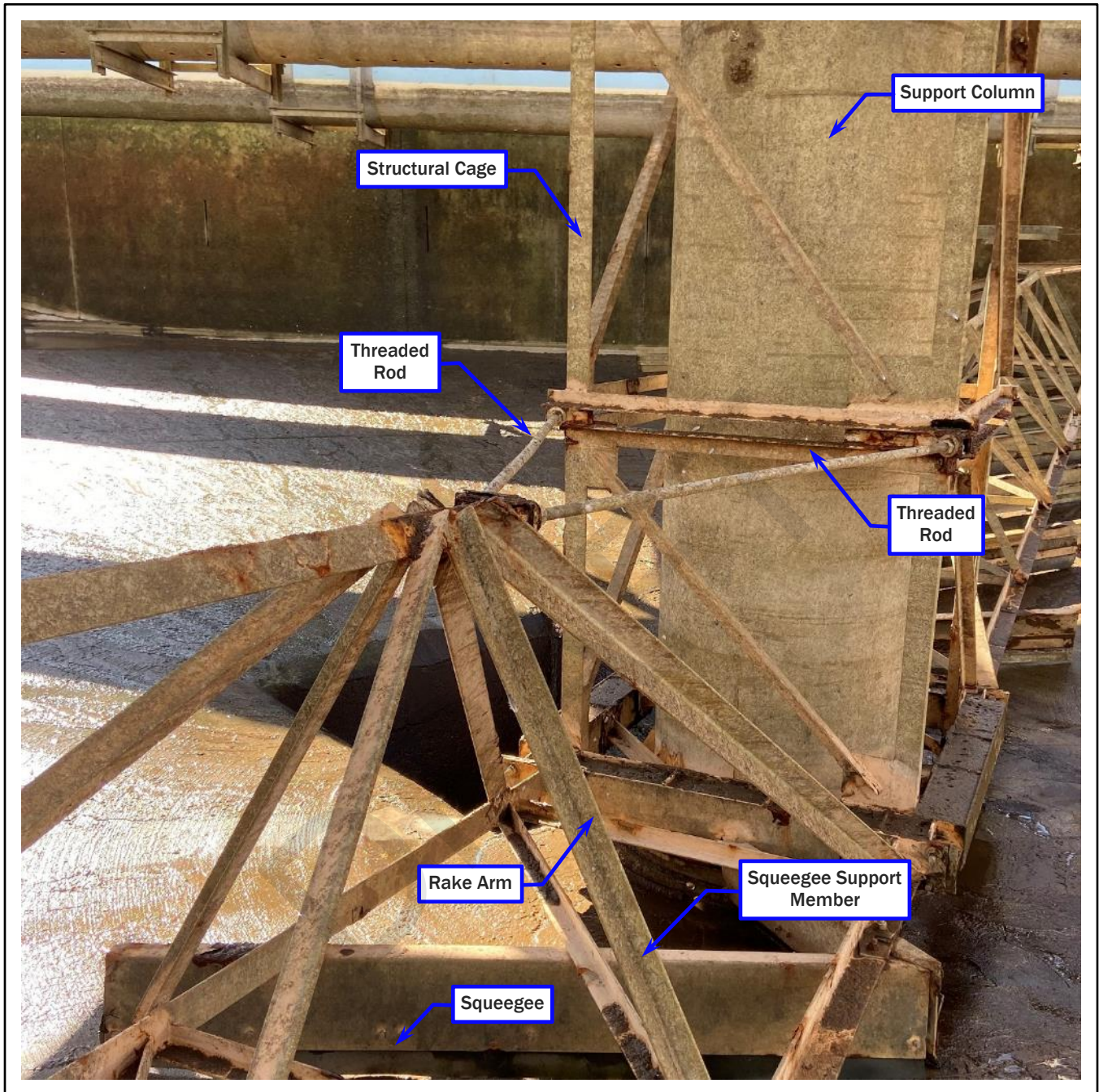


Exhibit A-3

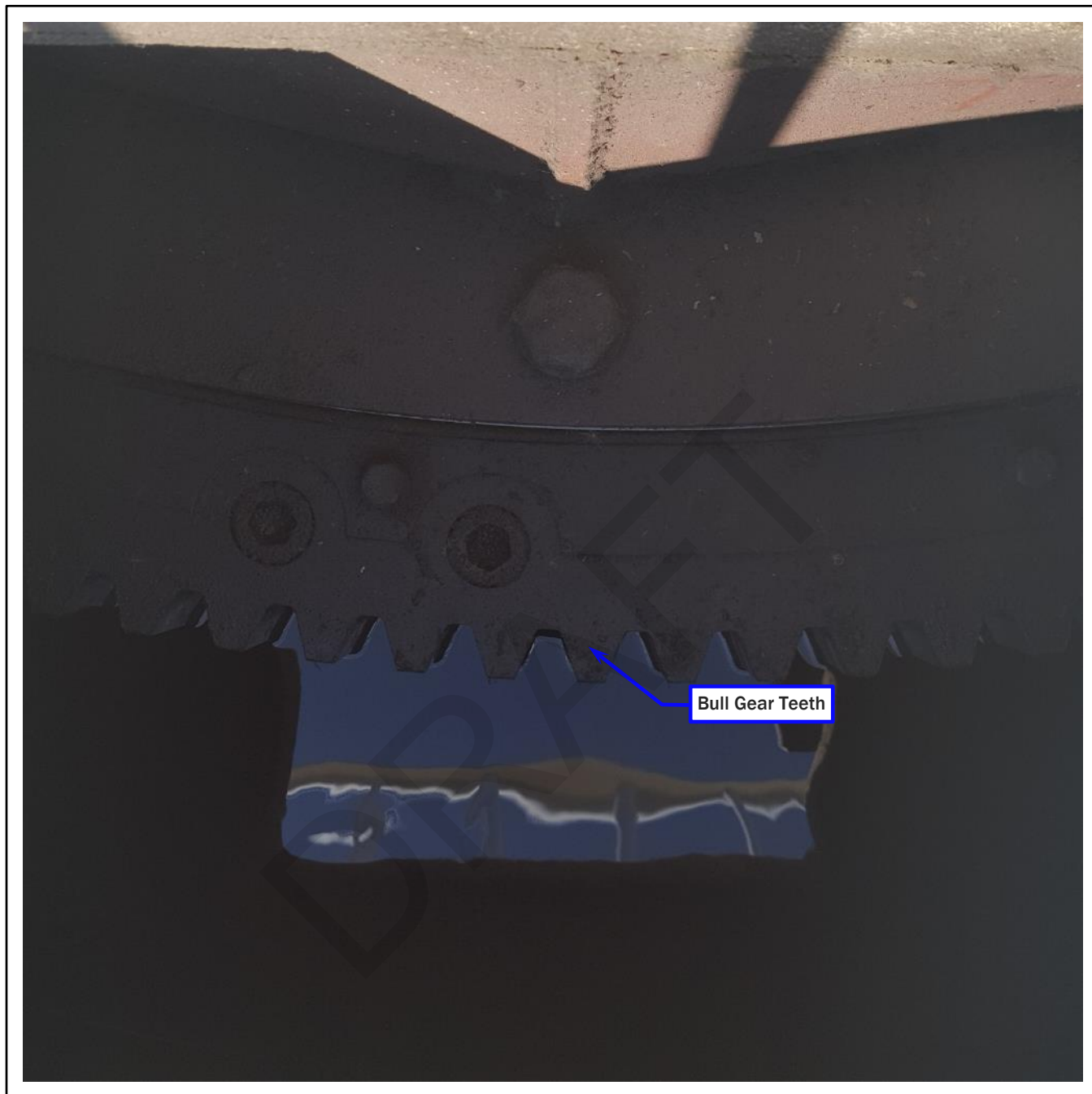


Exhibit A-4

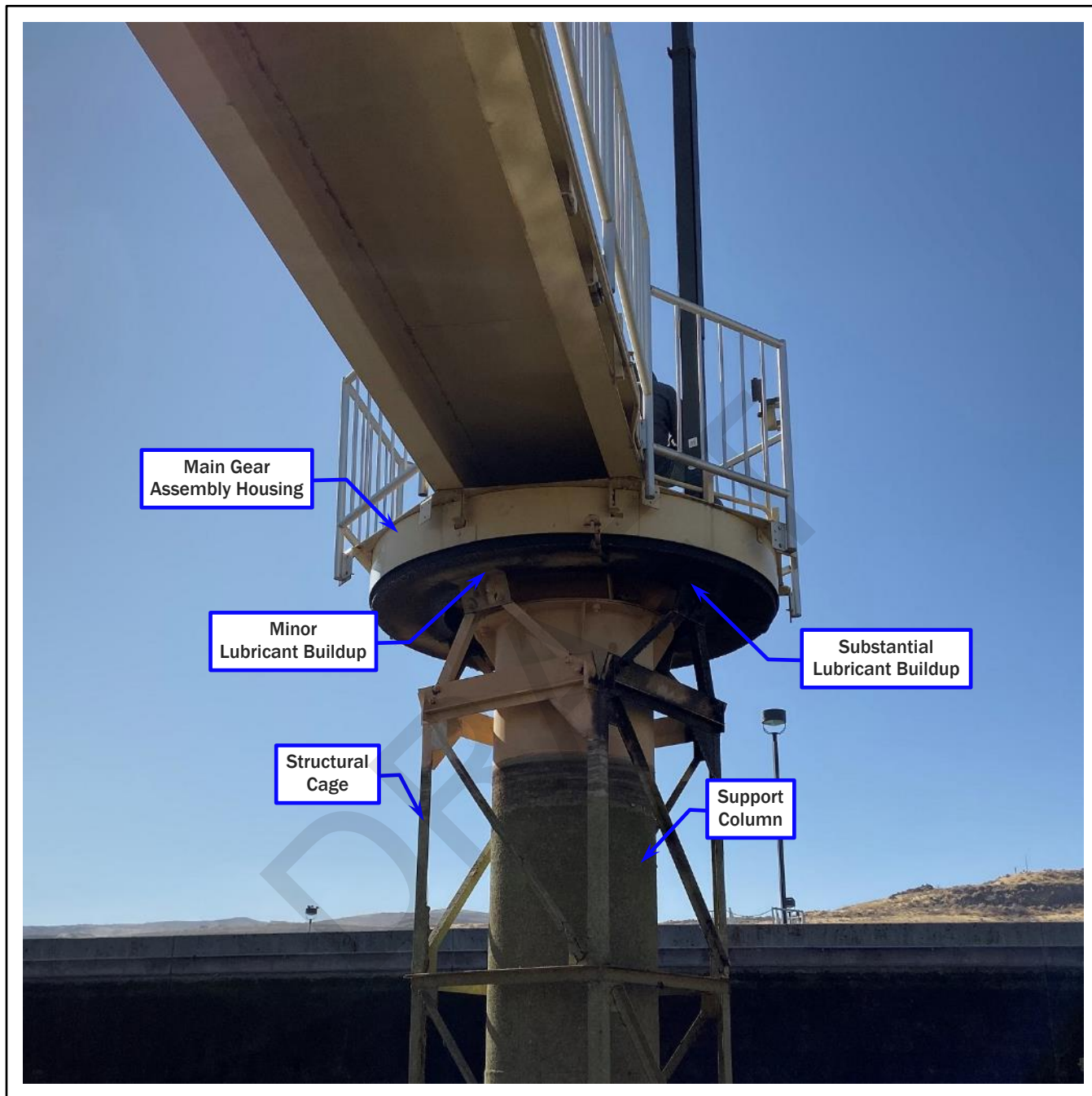


Exhibit A-5

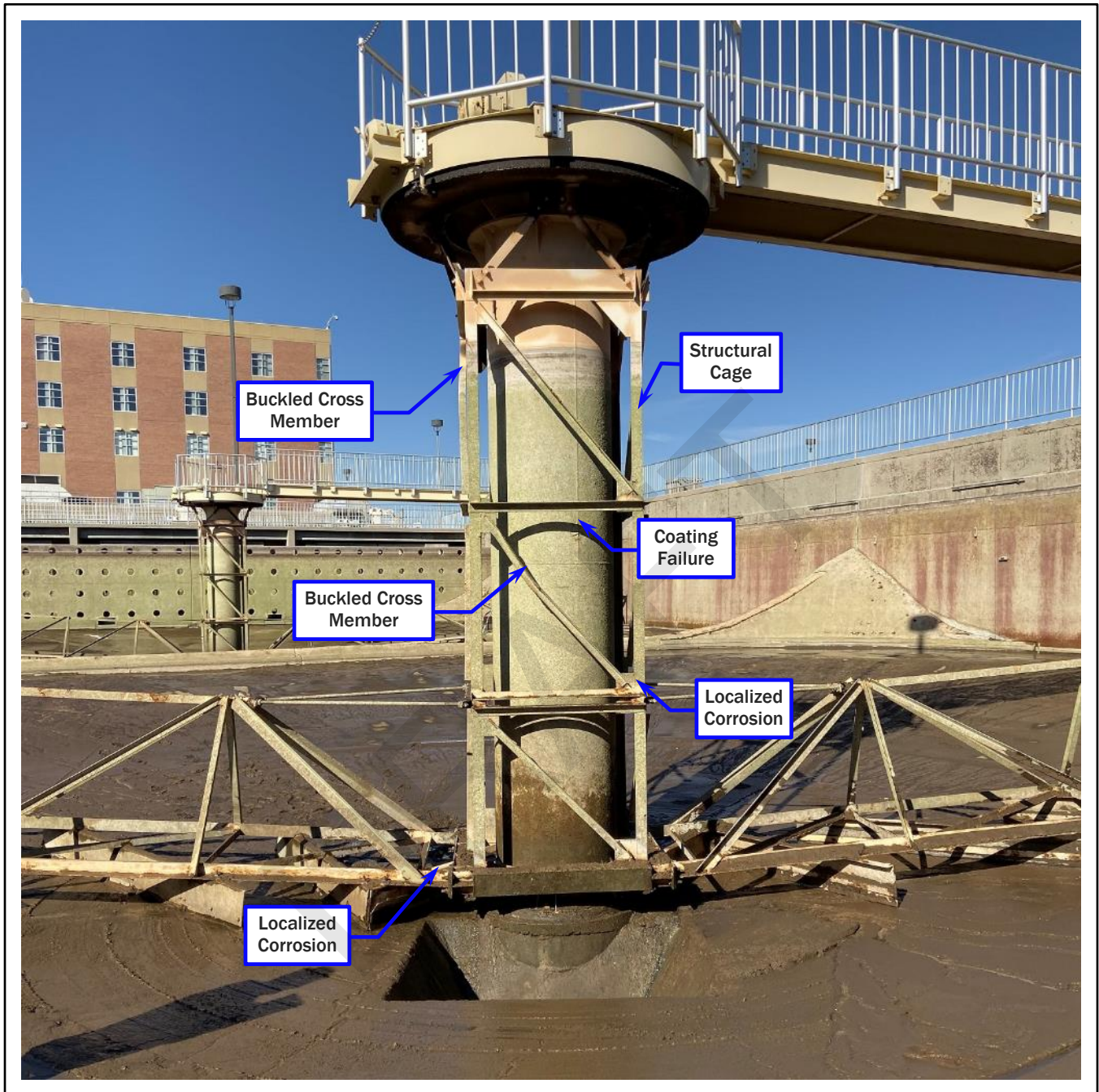


Exhibit A-6



Exhibit A-7

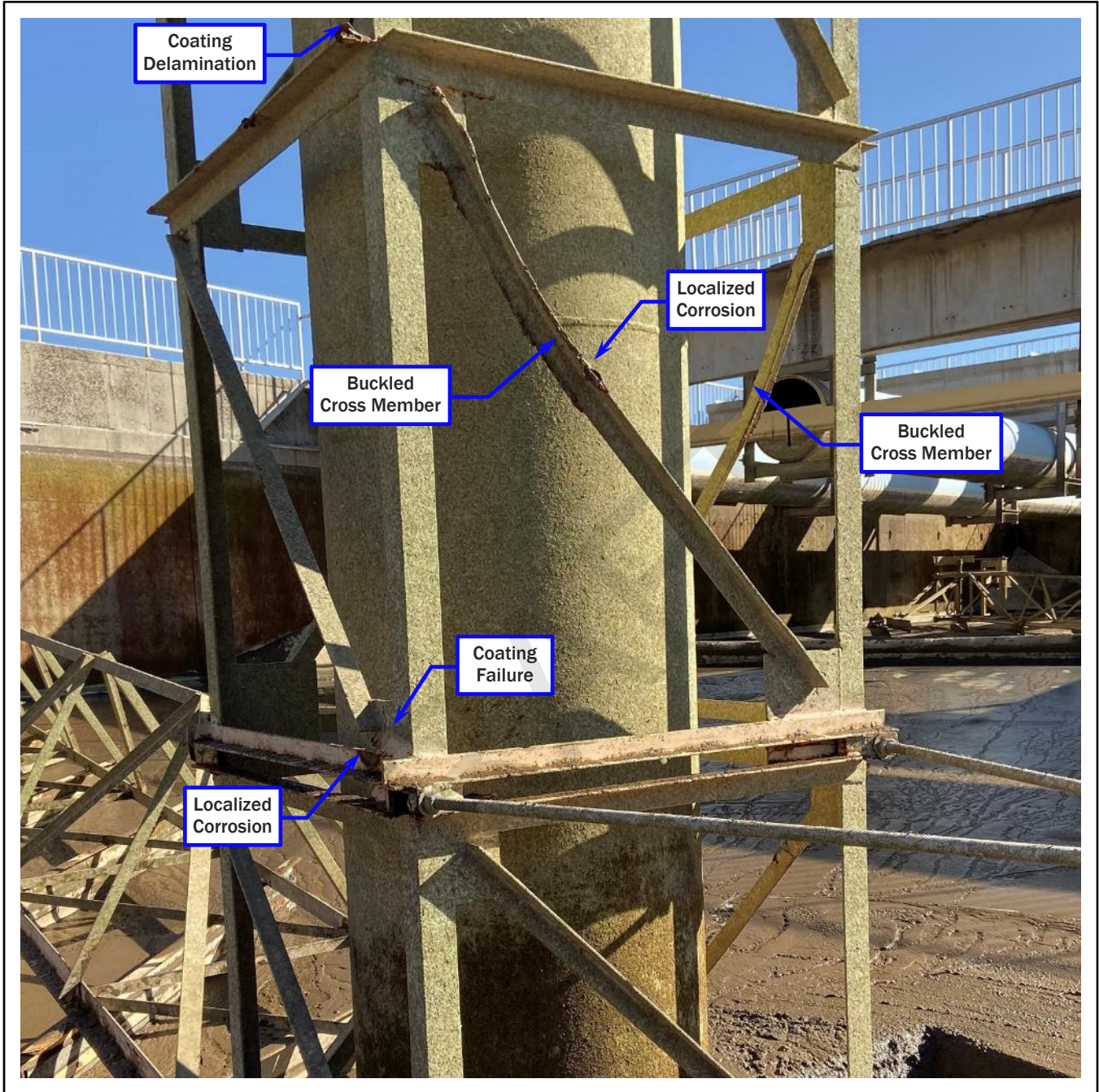


Exhibit A-8

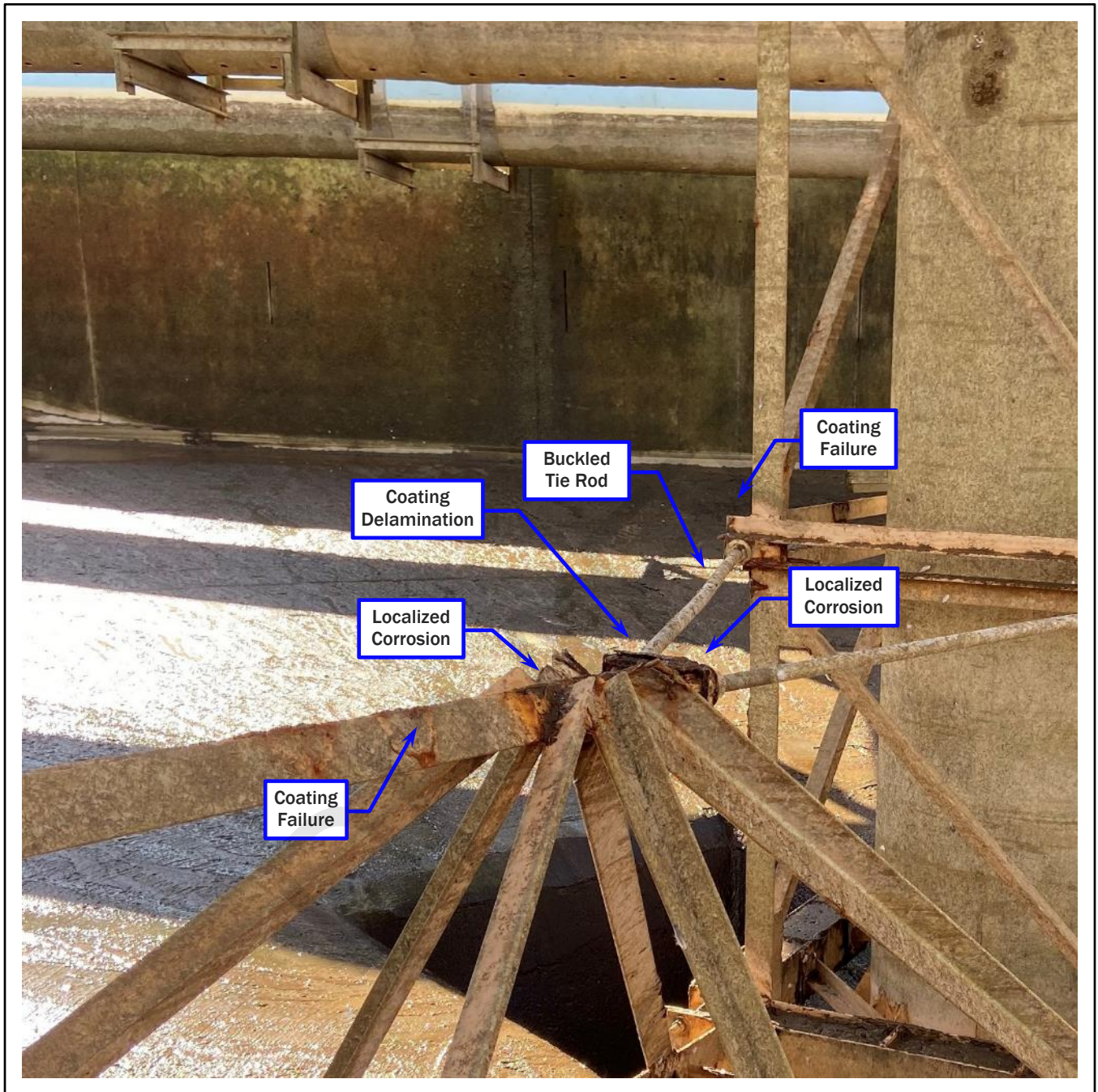


Exhibit A-9

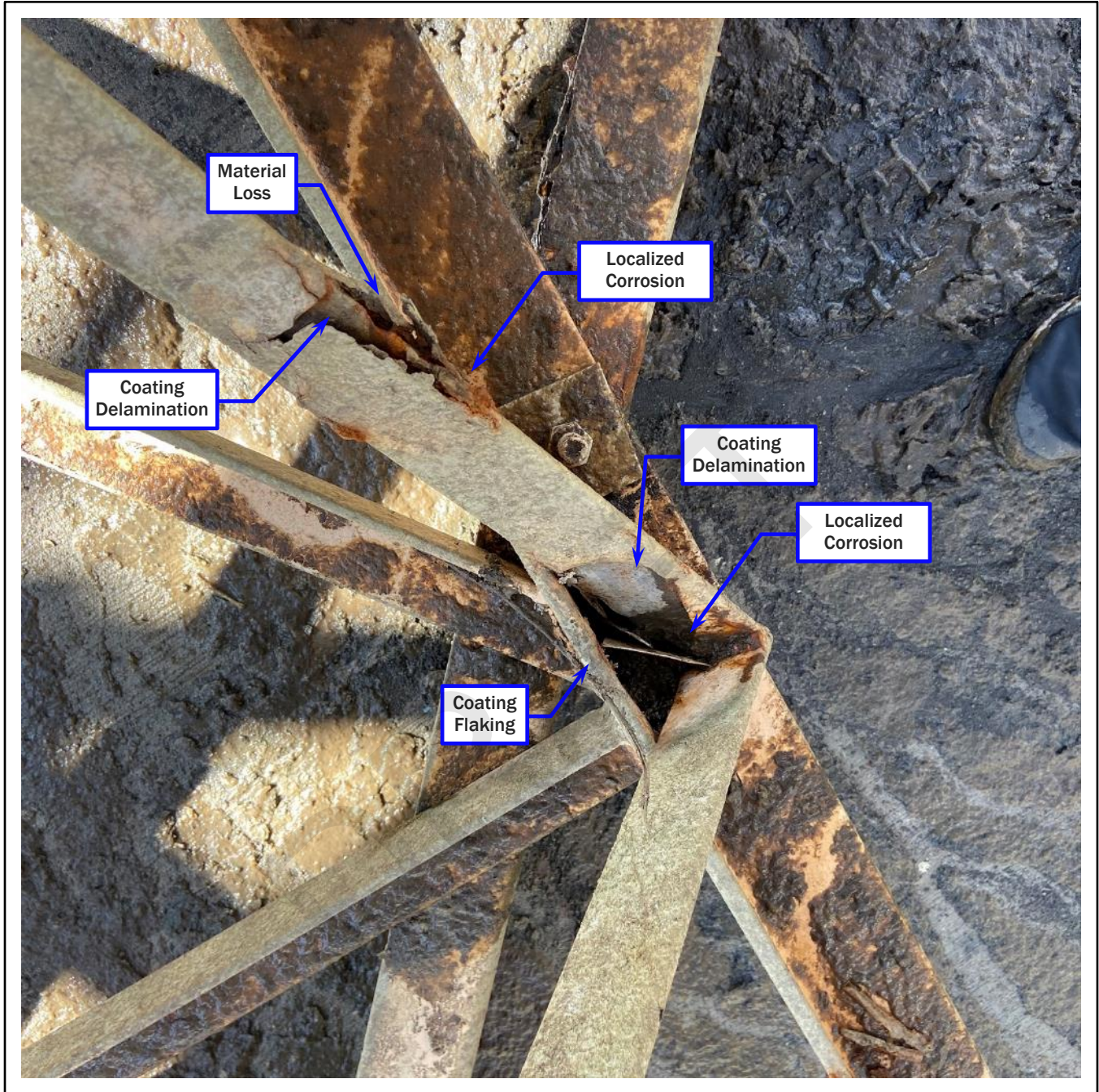


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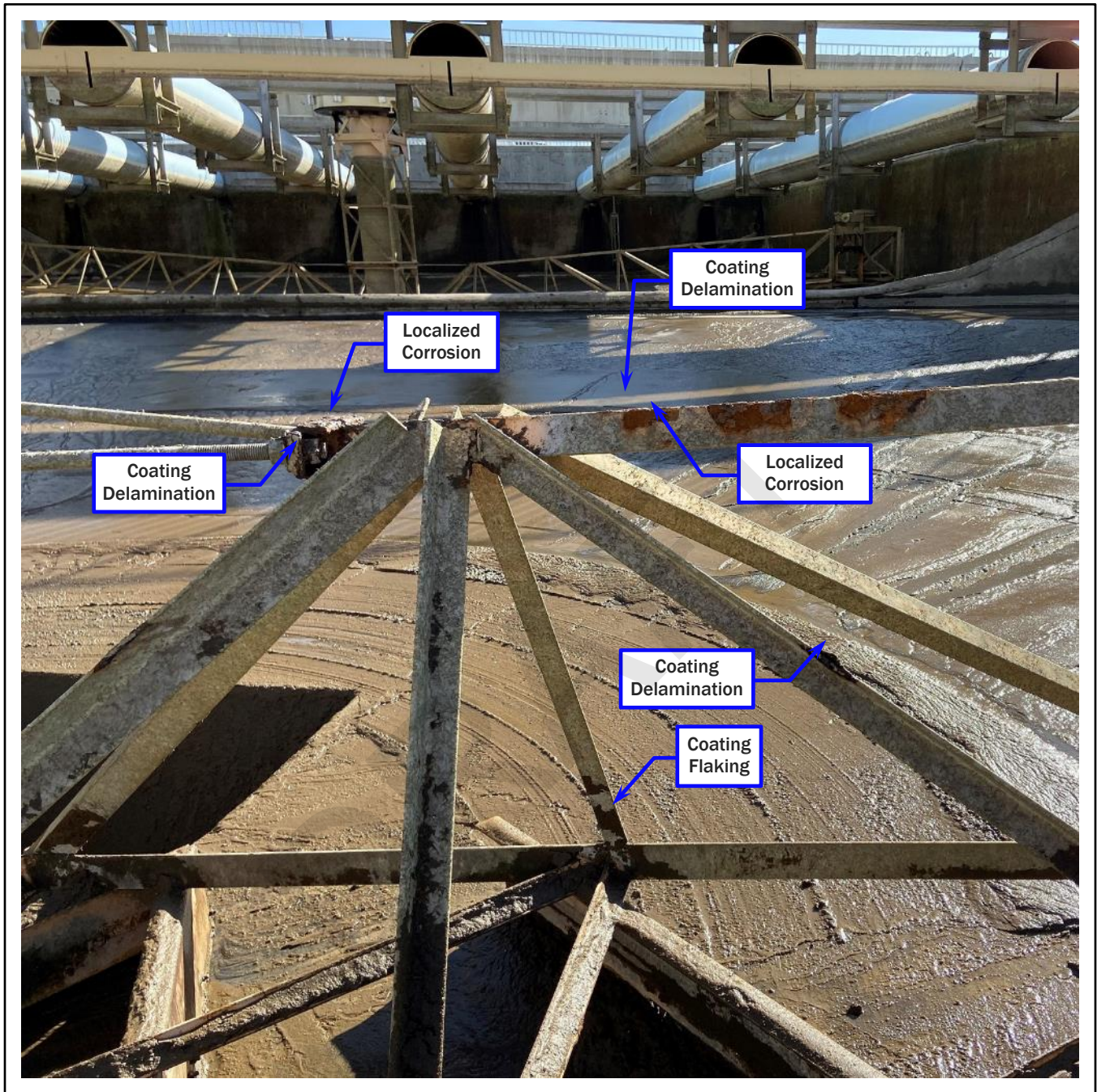


Exhibit A-11

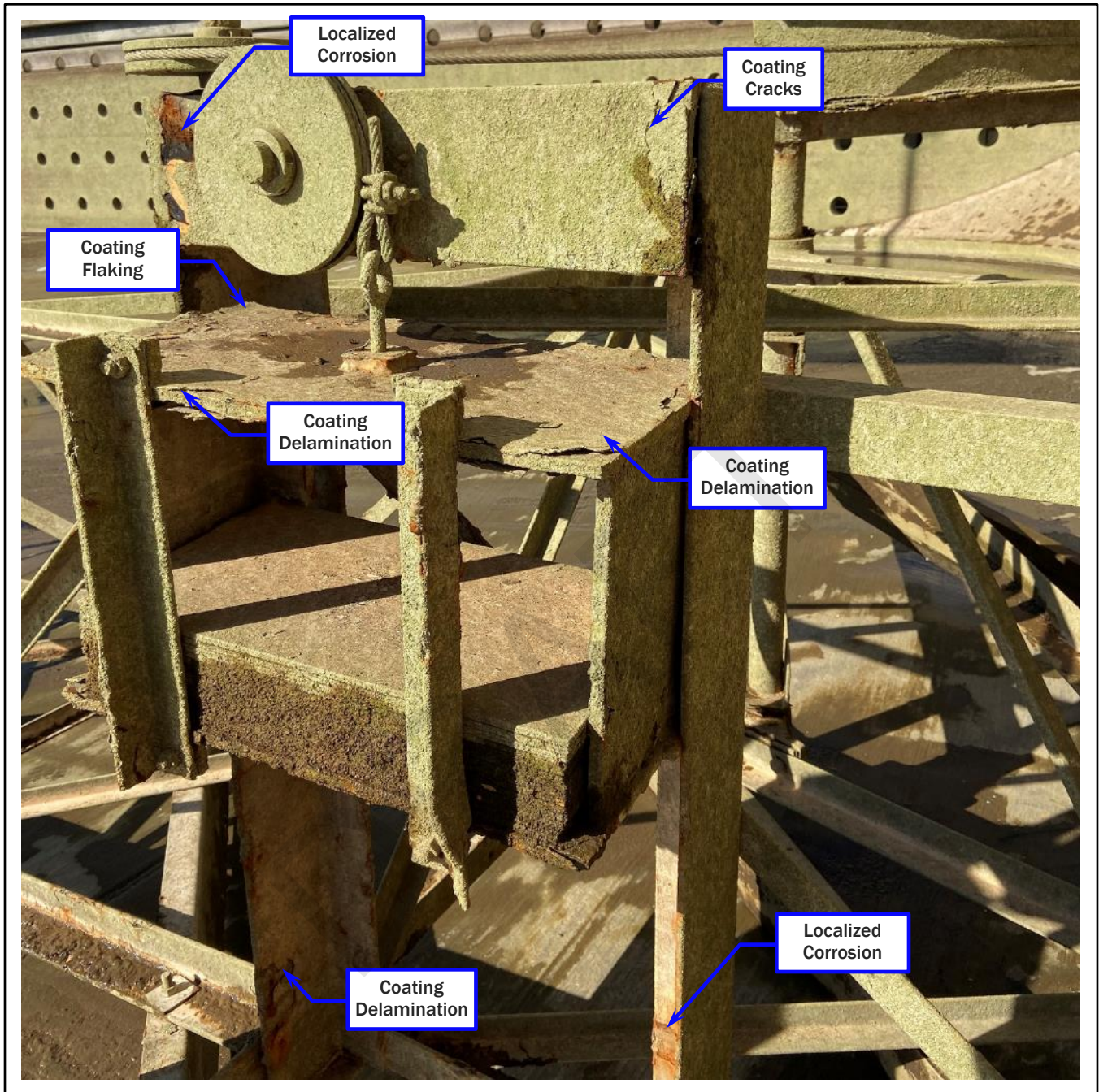


Exhibit A-12

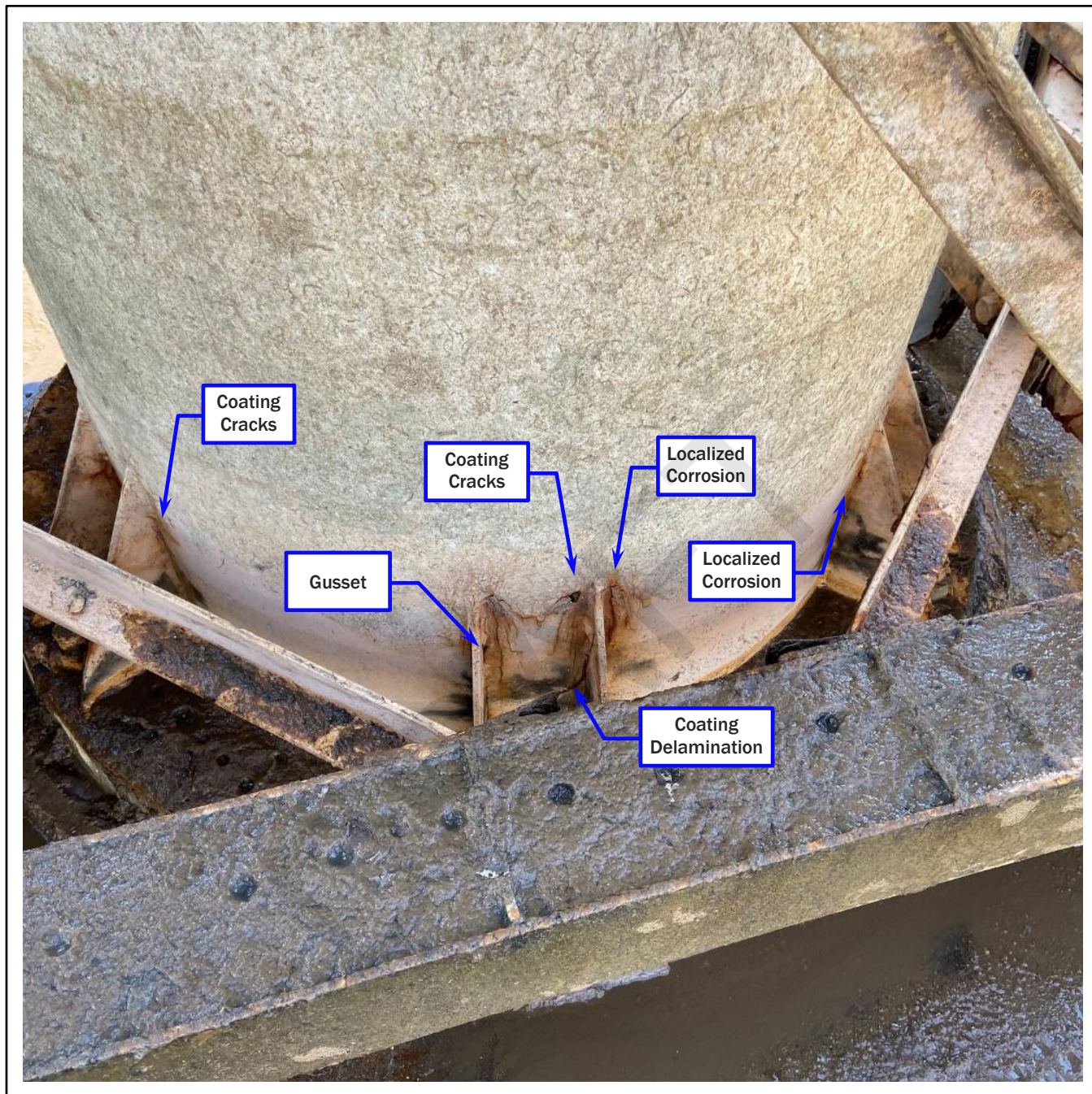


Exhibit A-13

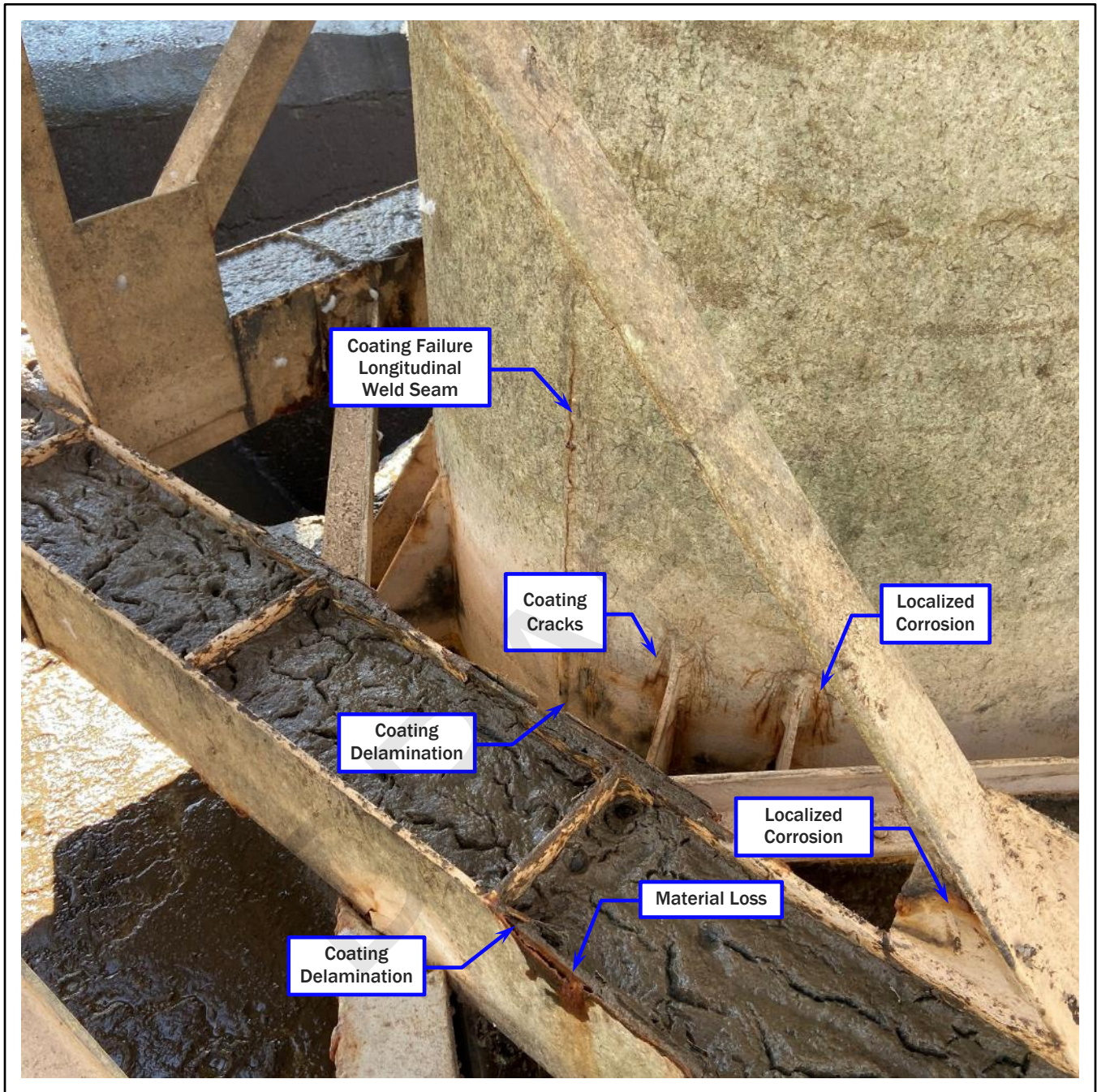


Exhibit A-14

Attachment B: Exhibits – Chain and Flight System

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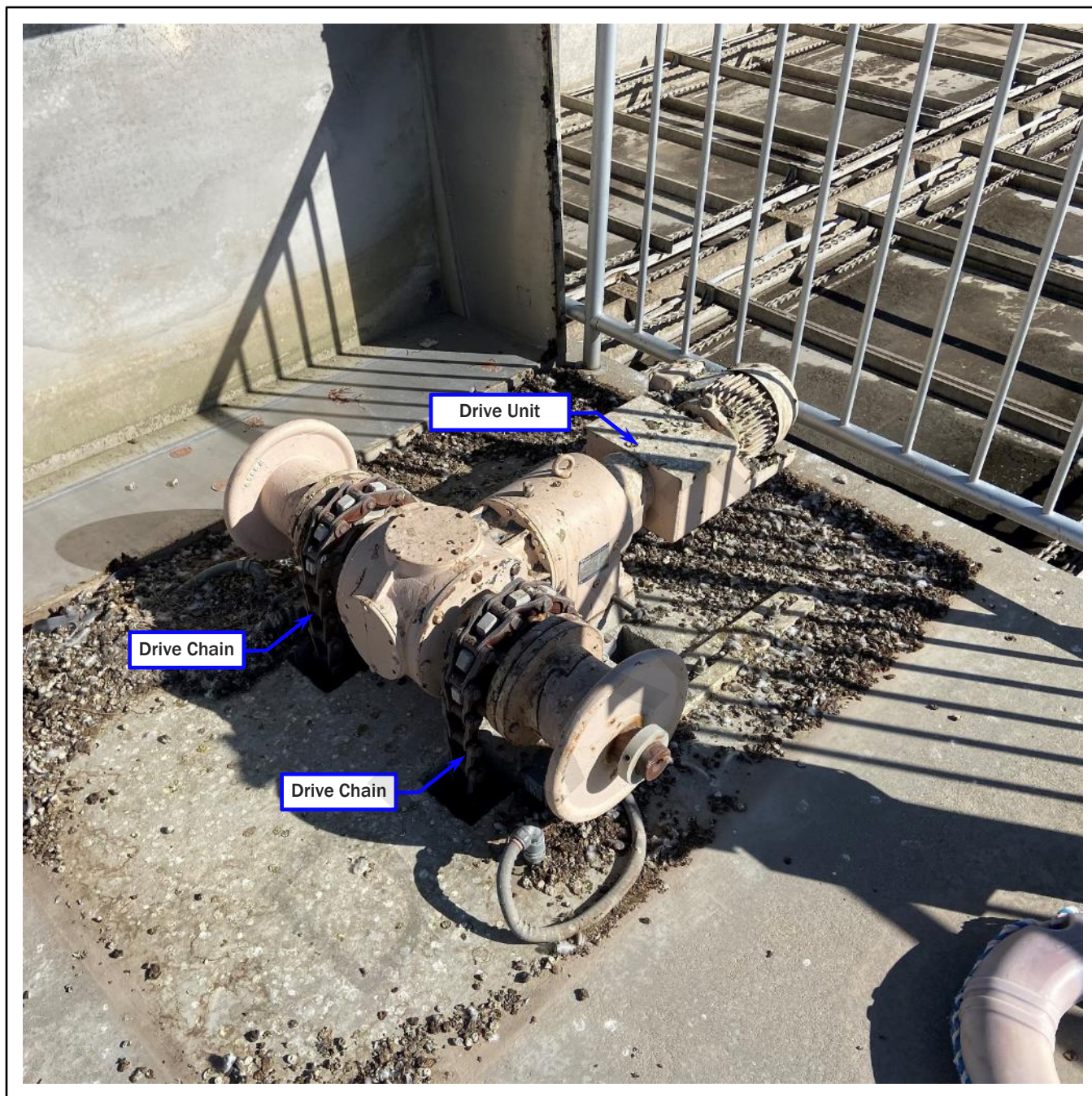


Exhibit B-1

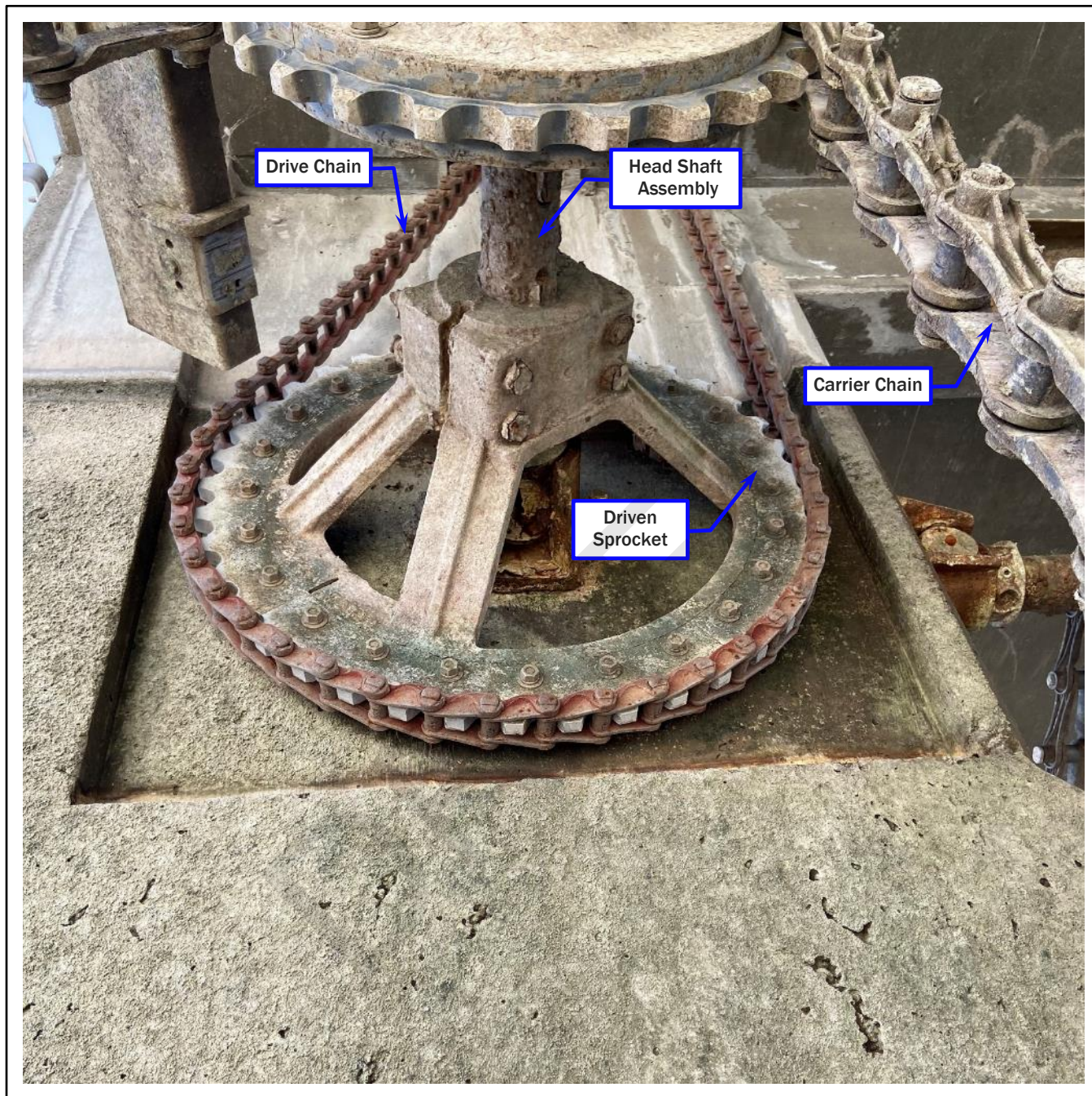


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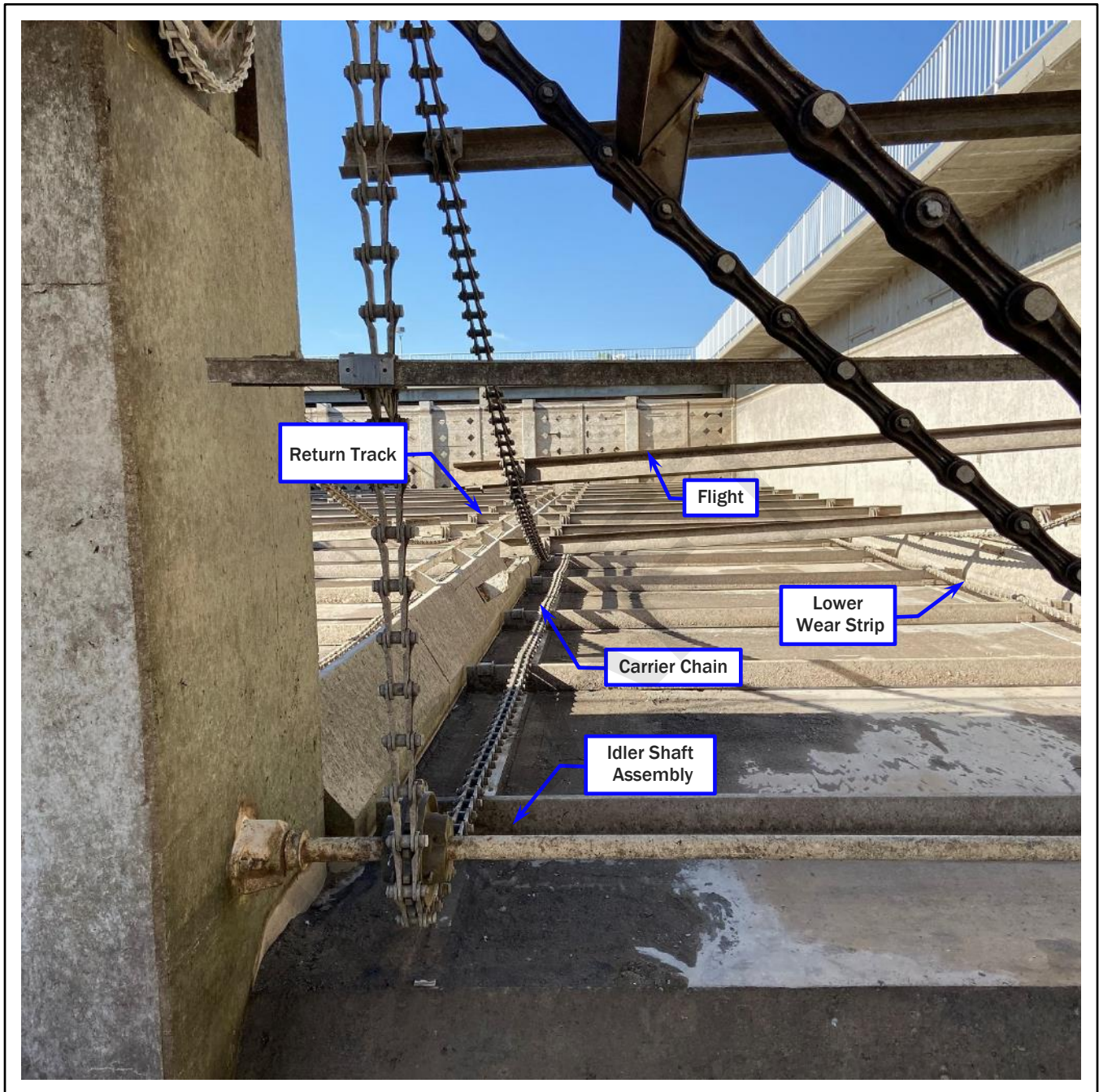


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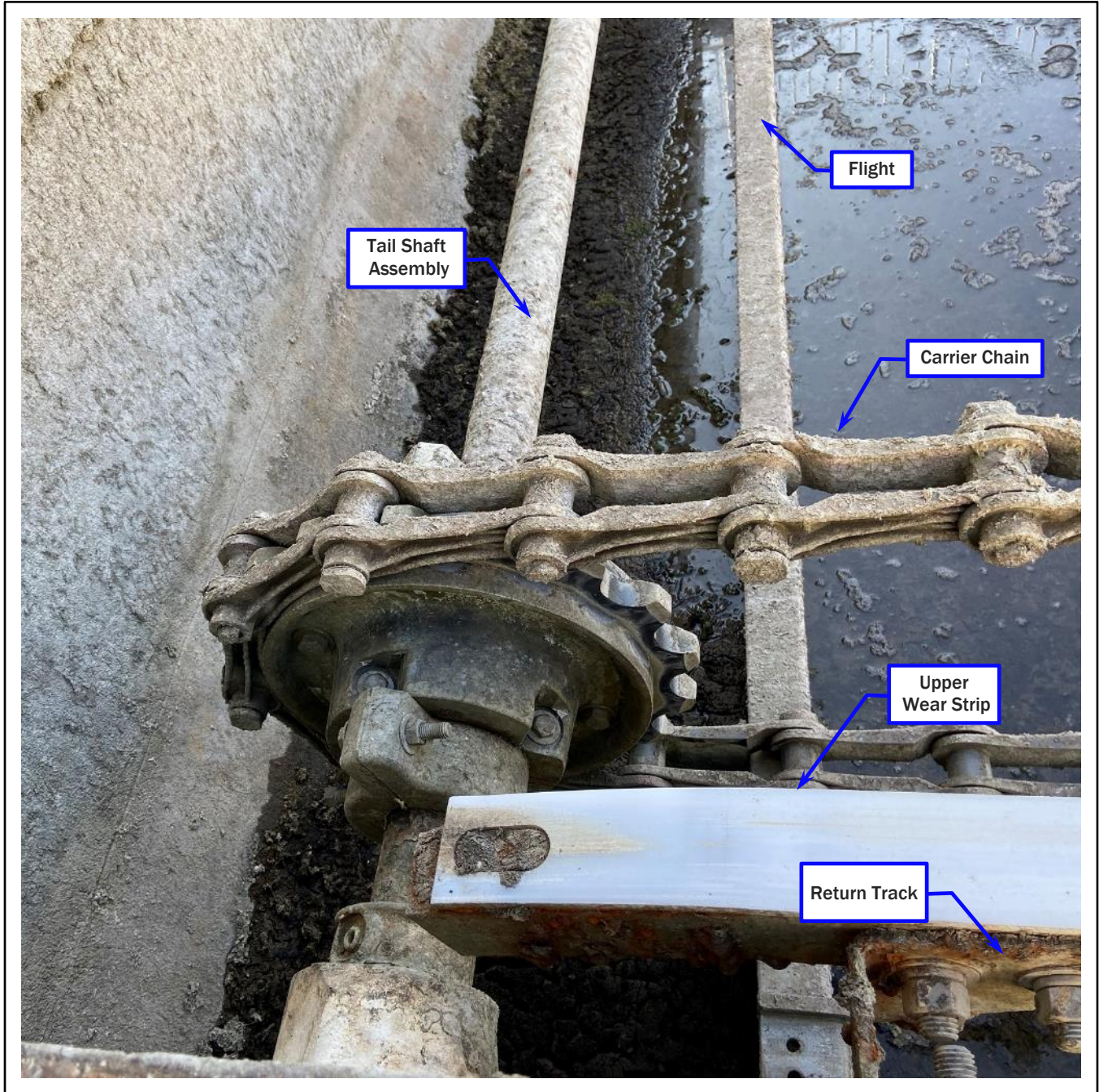


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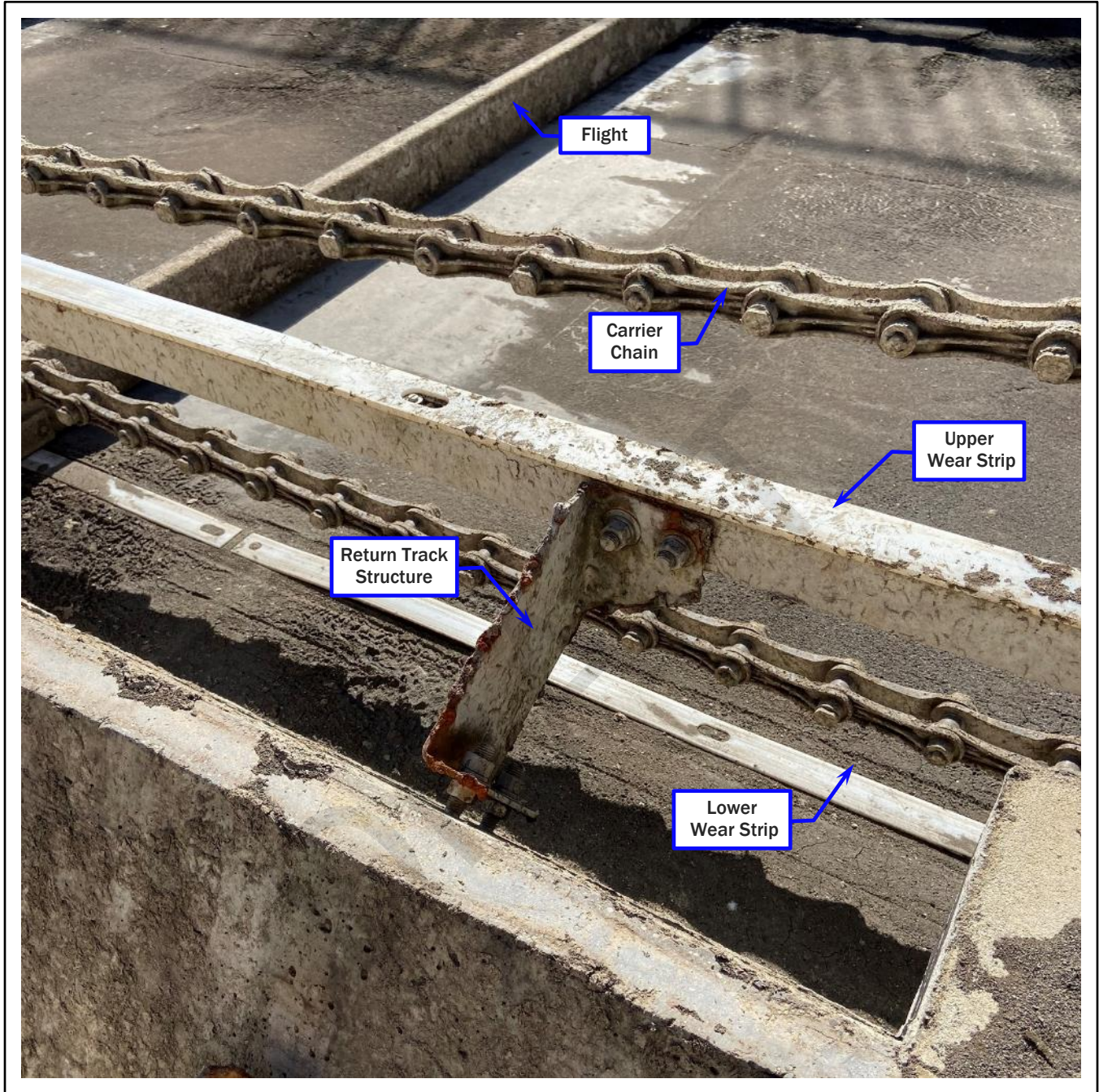


Exhibit B-5

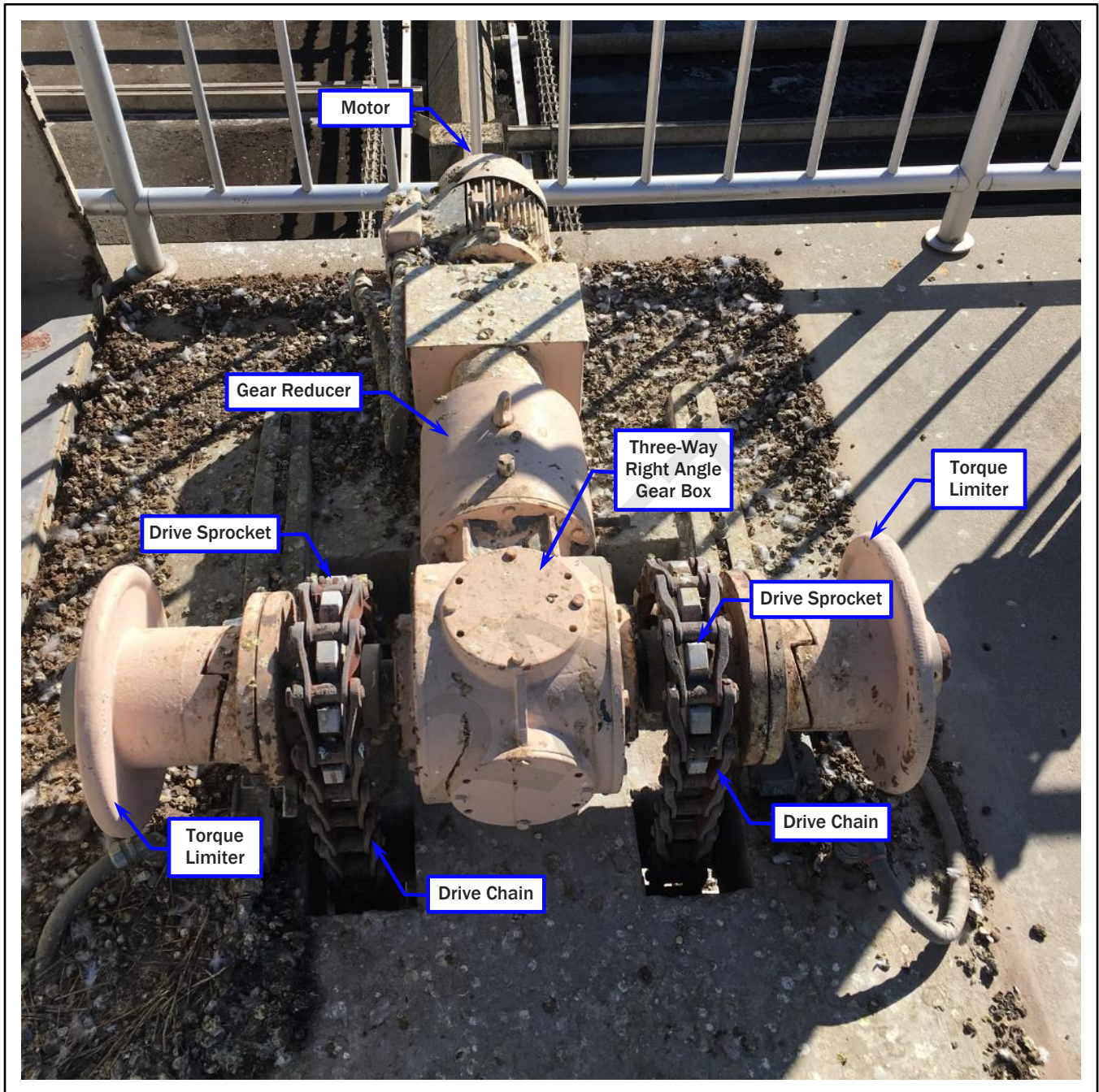


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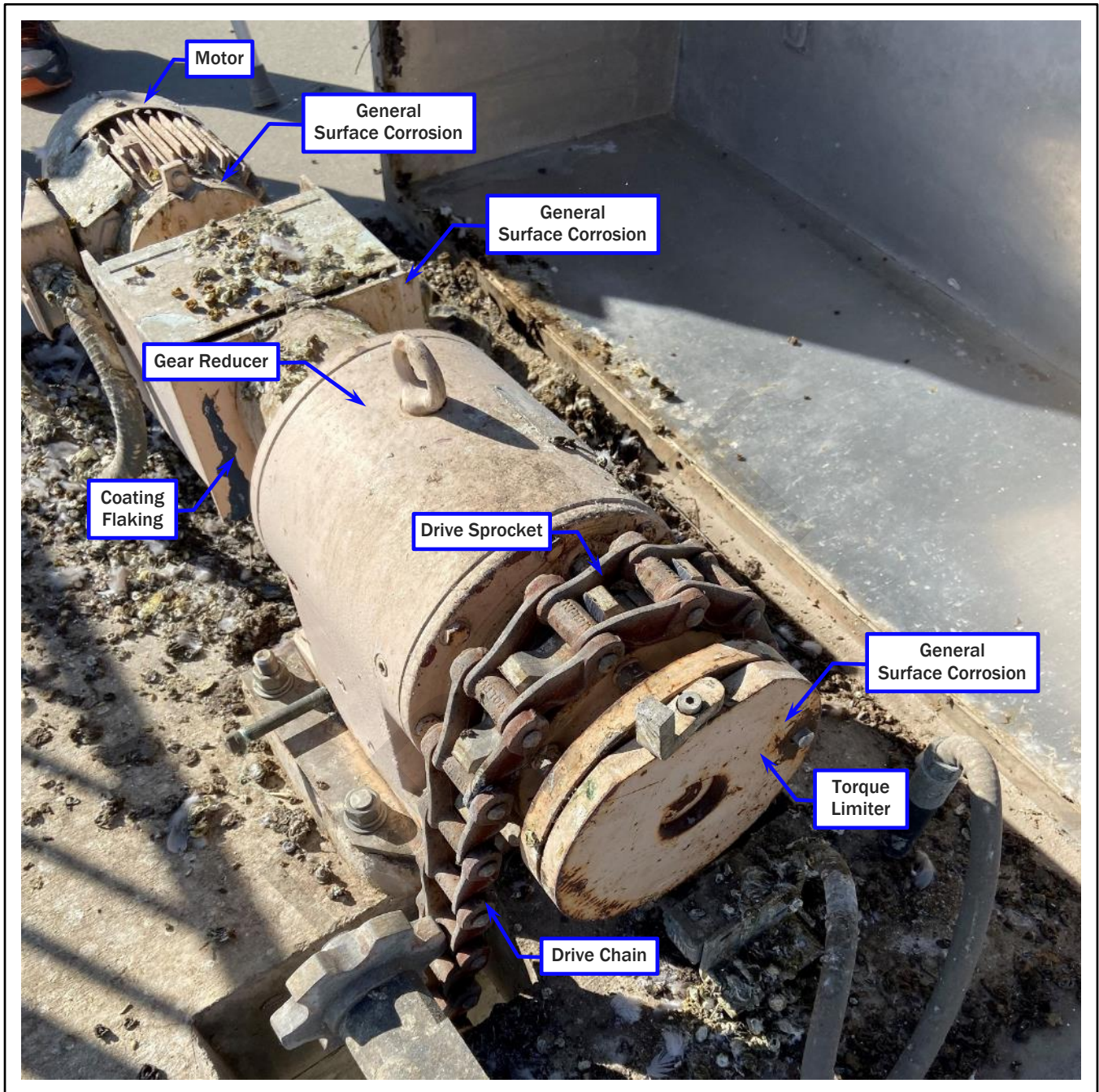


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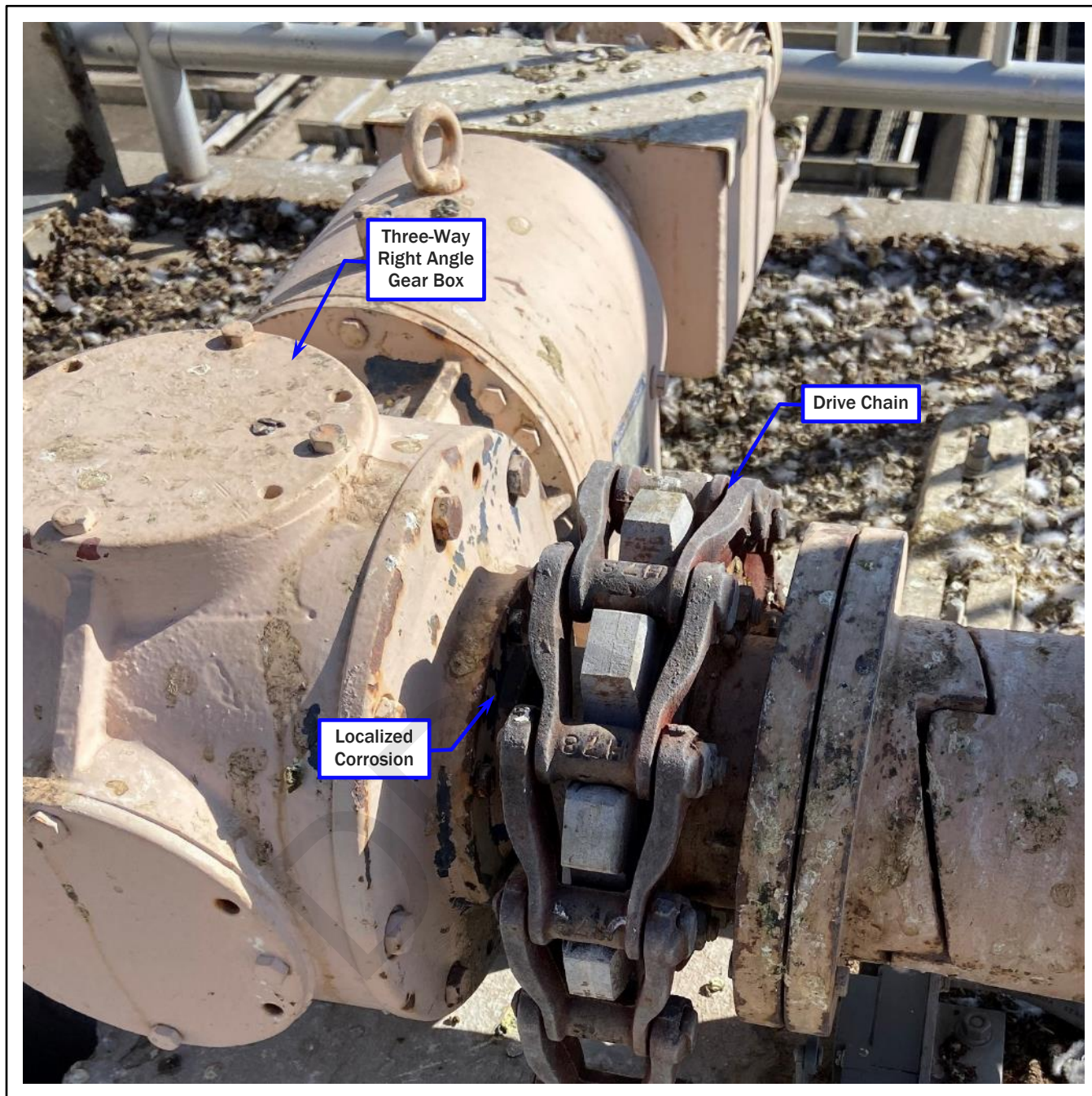


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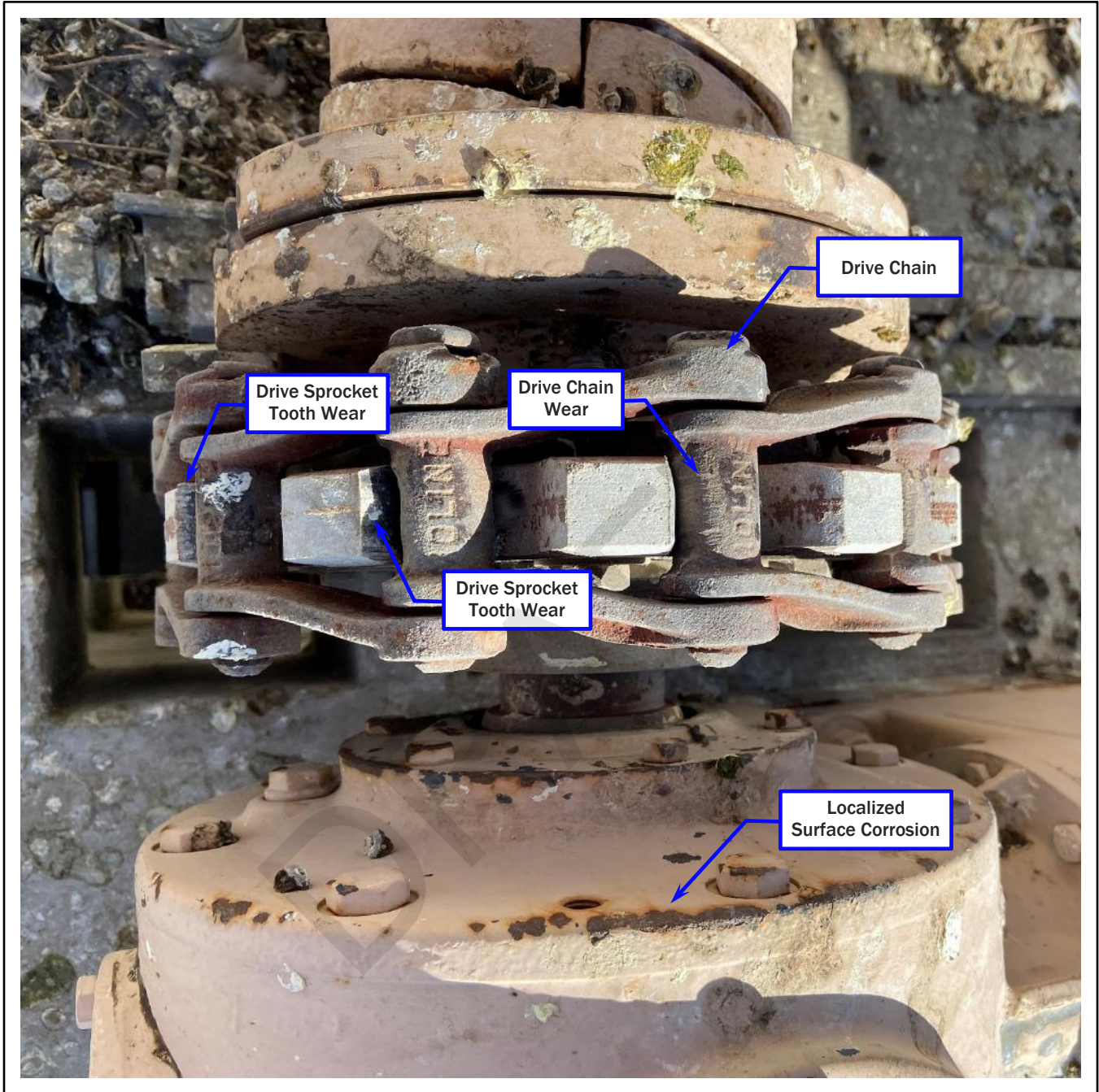


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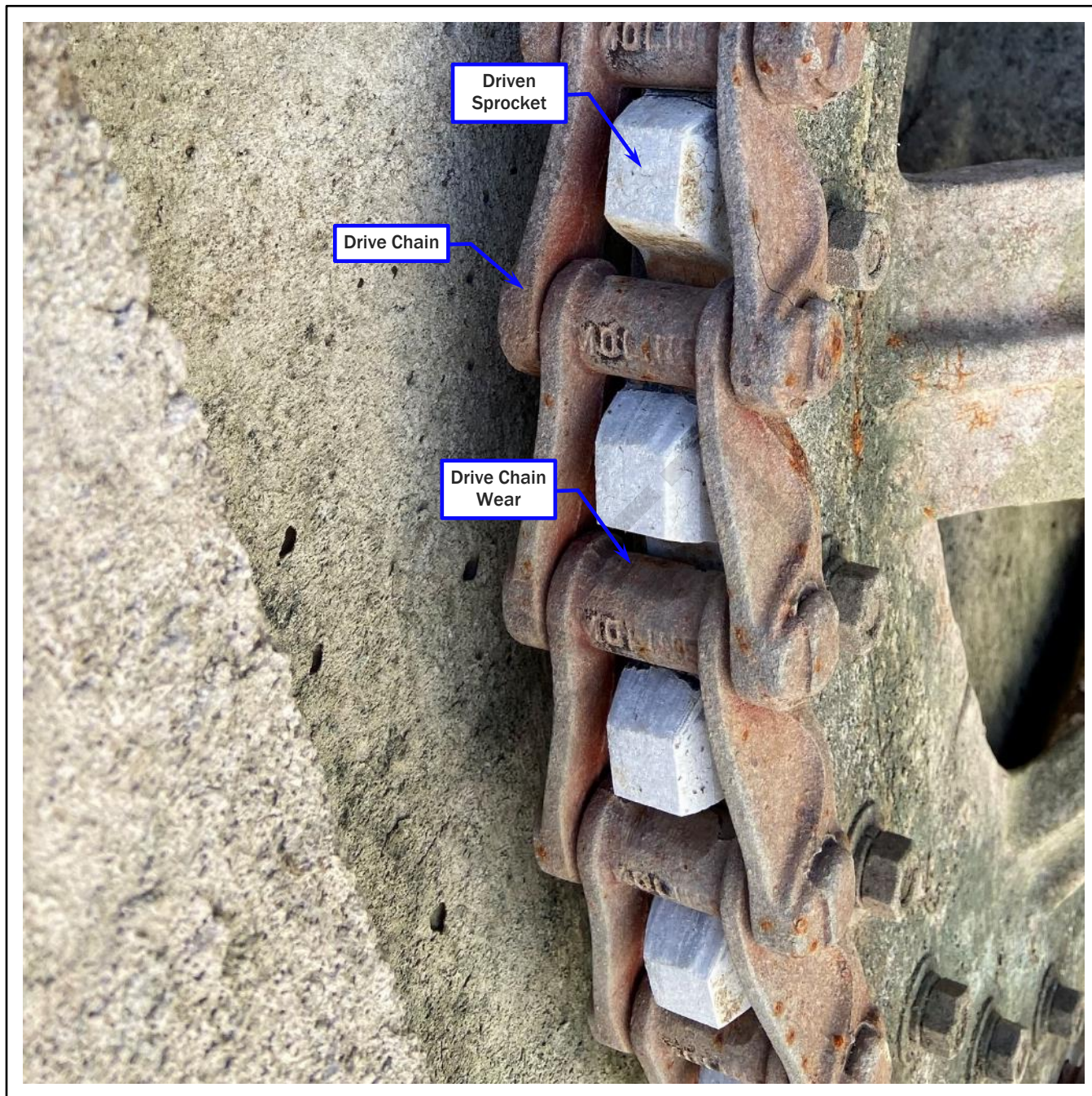


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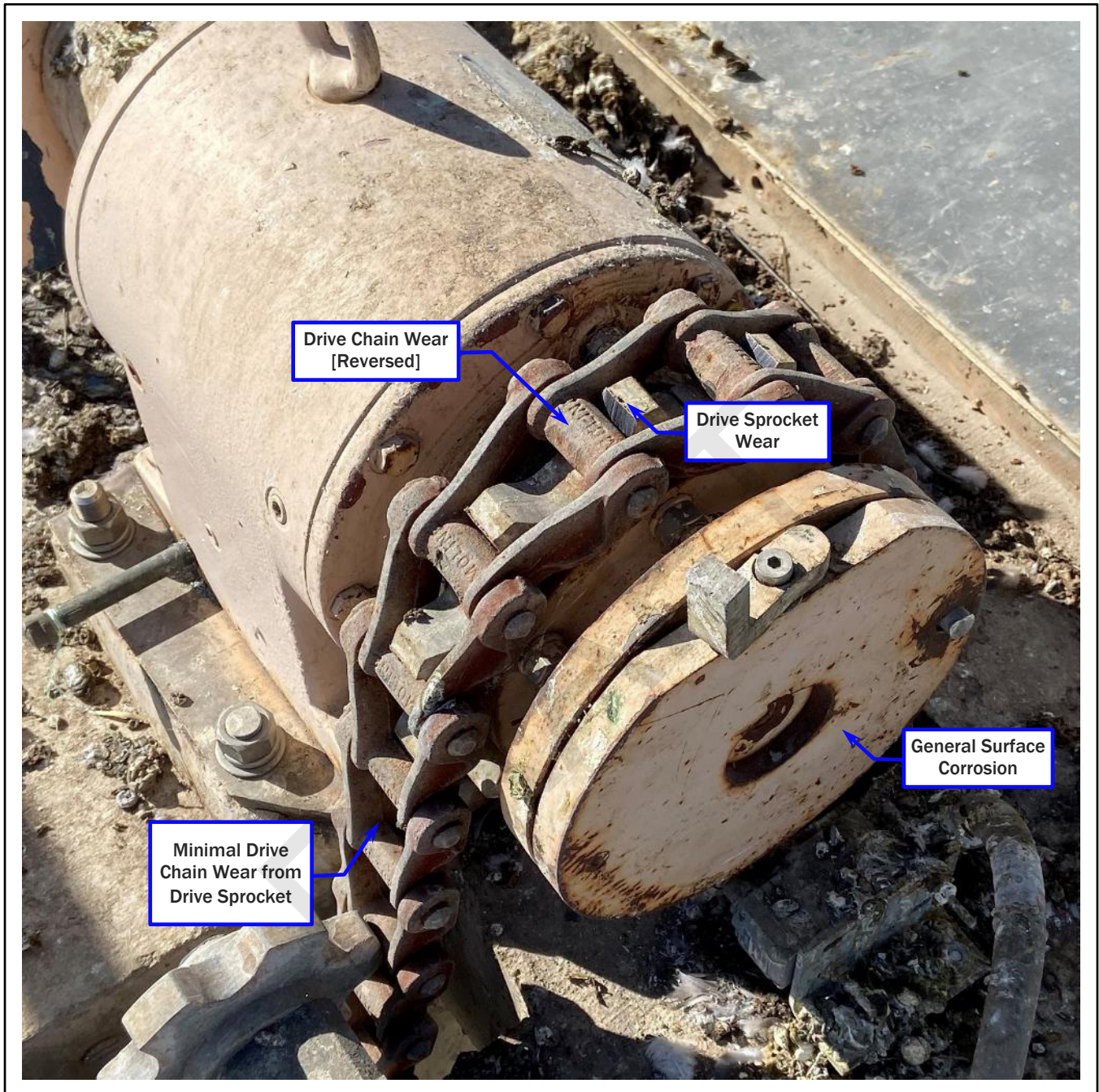


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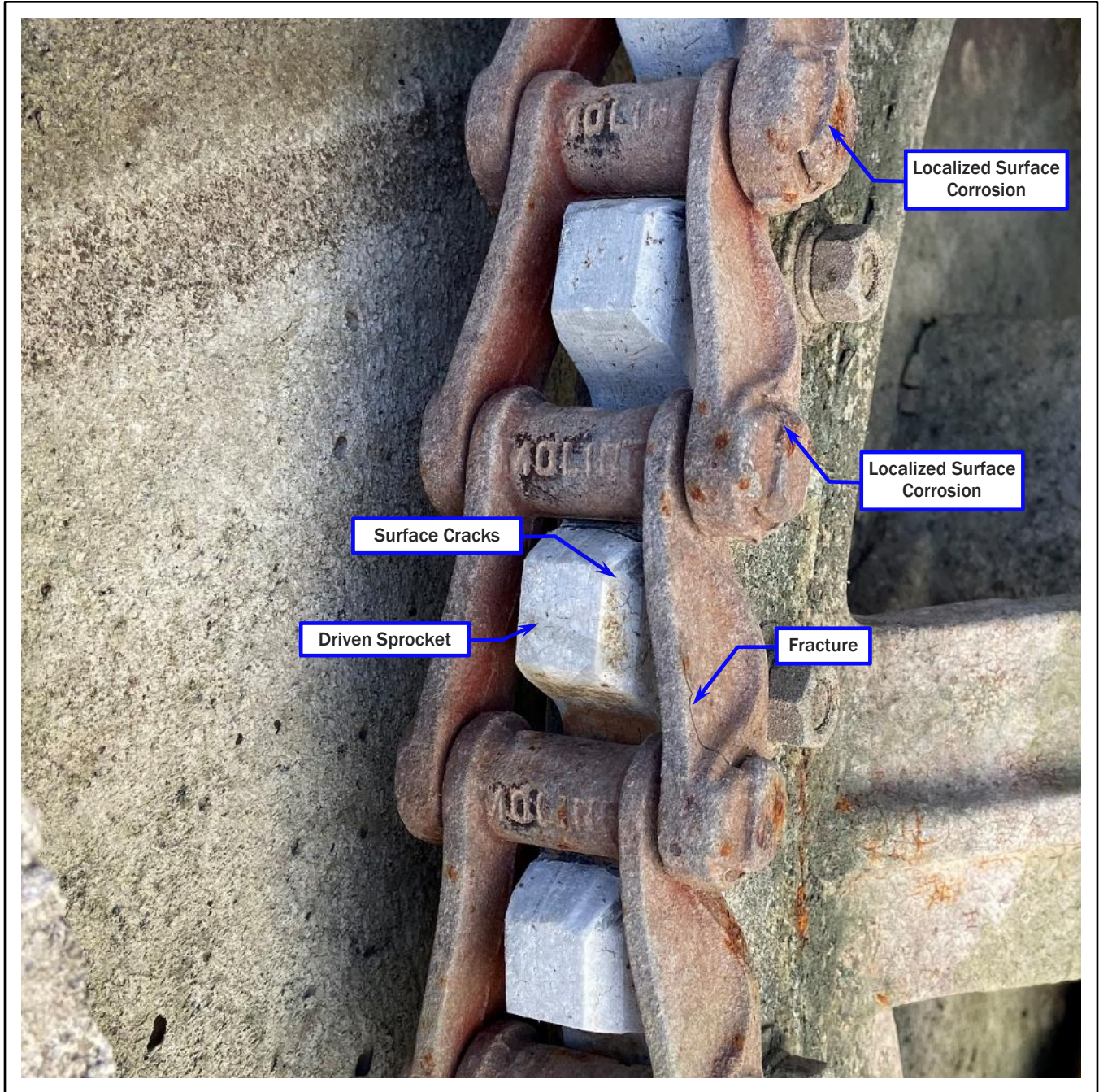


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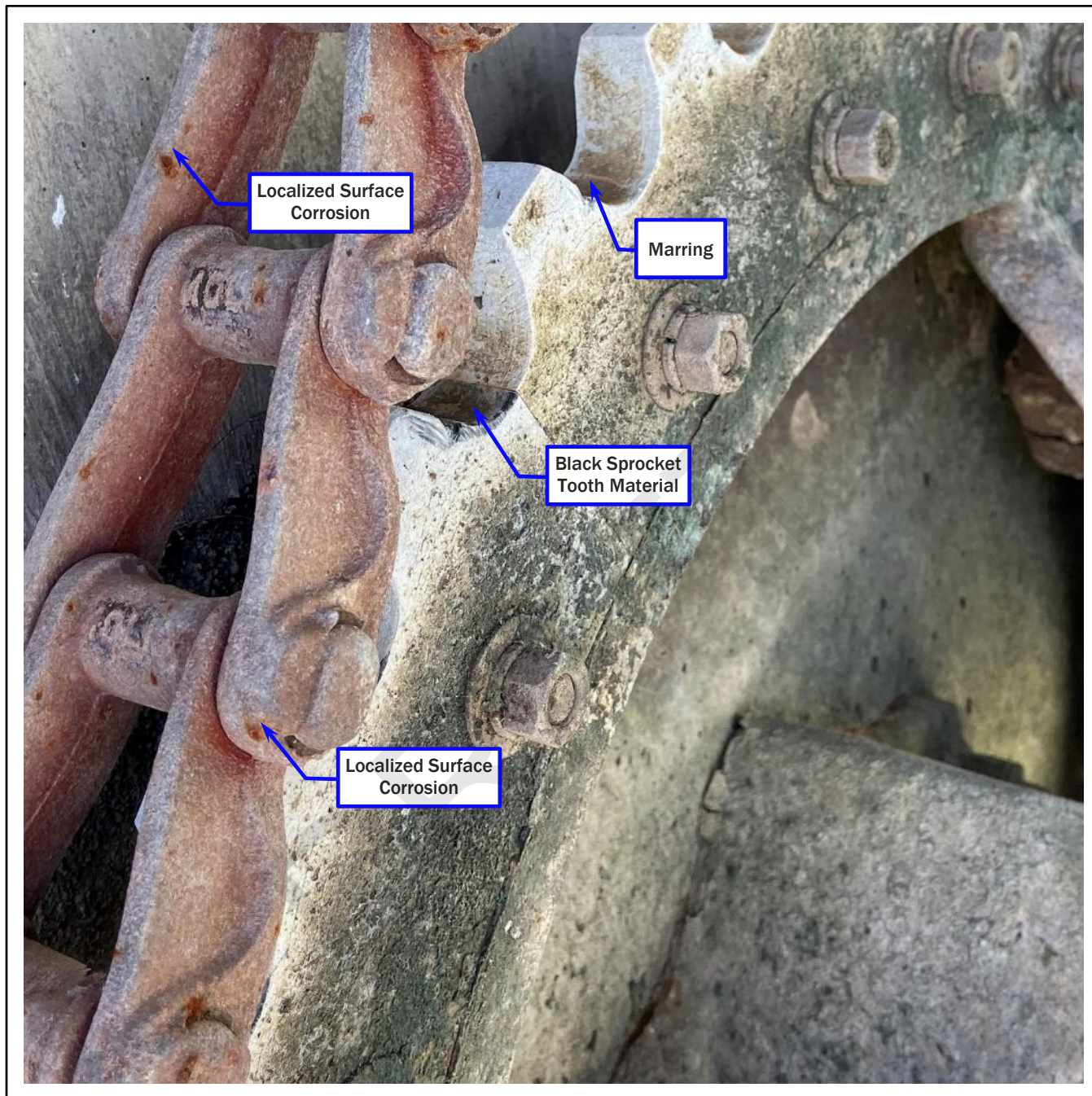


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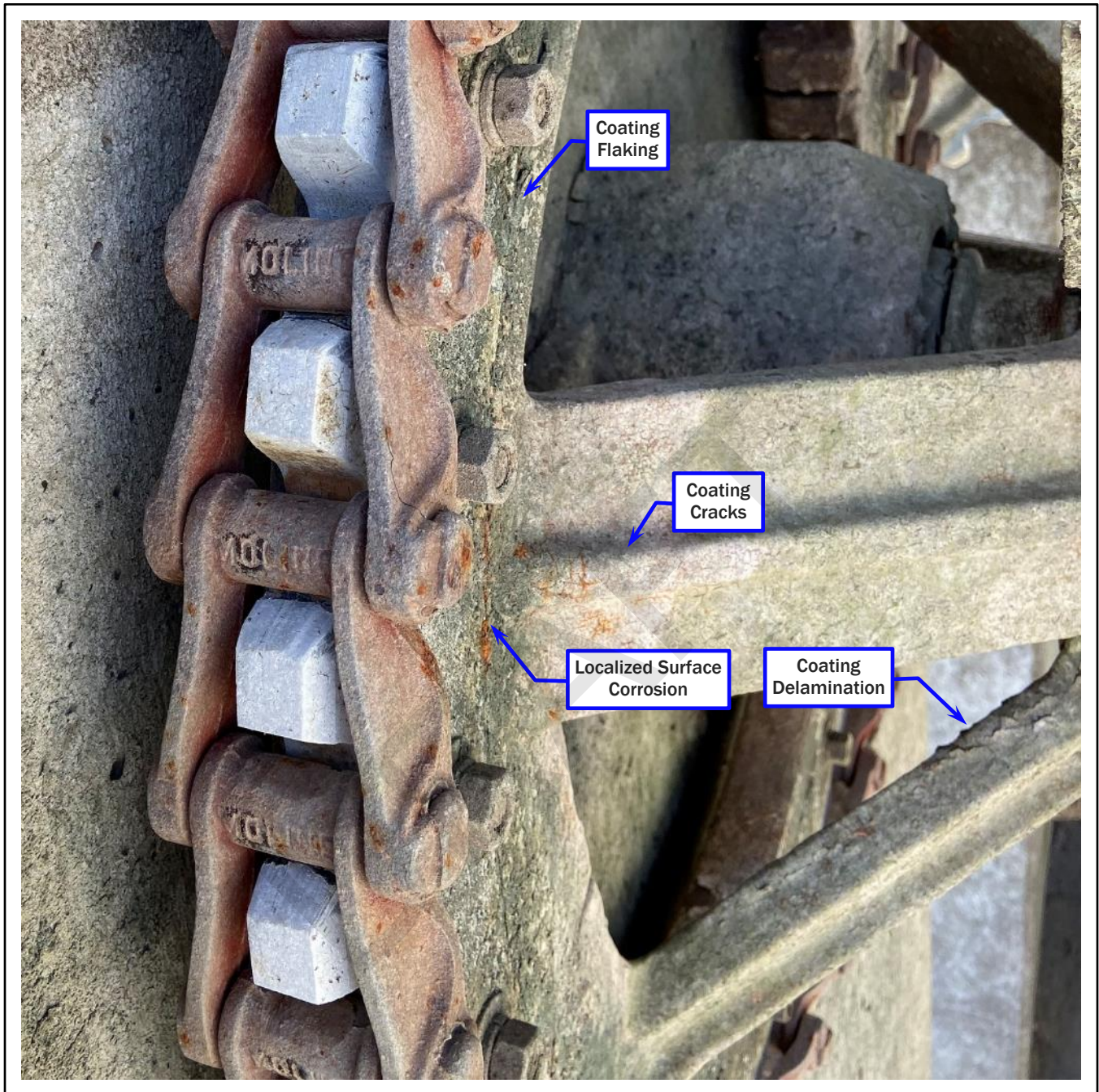


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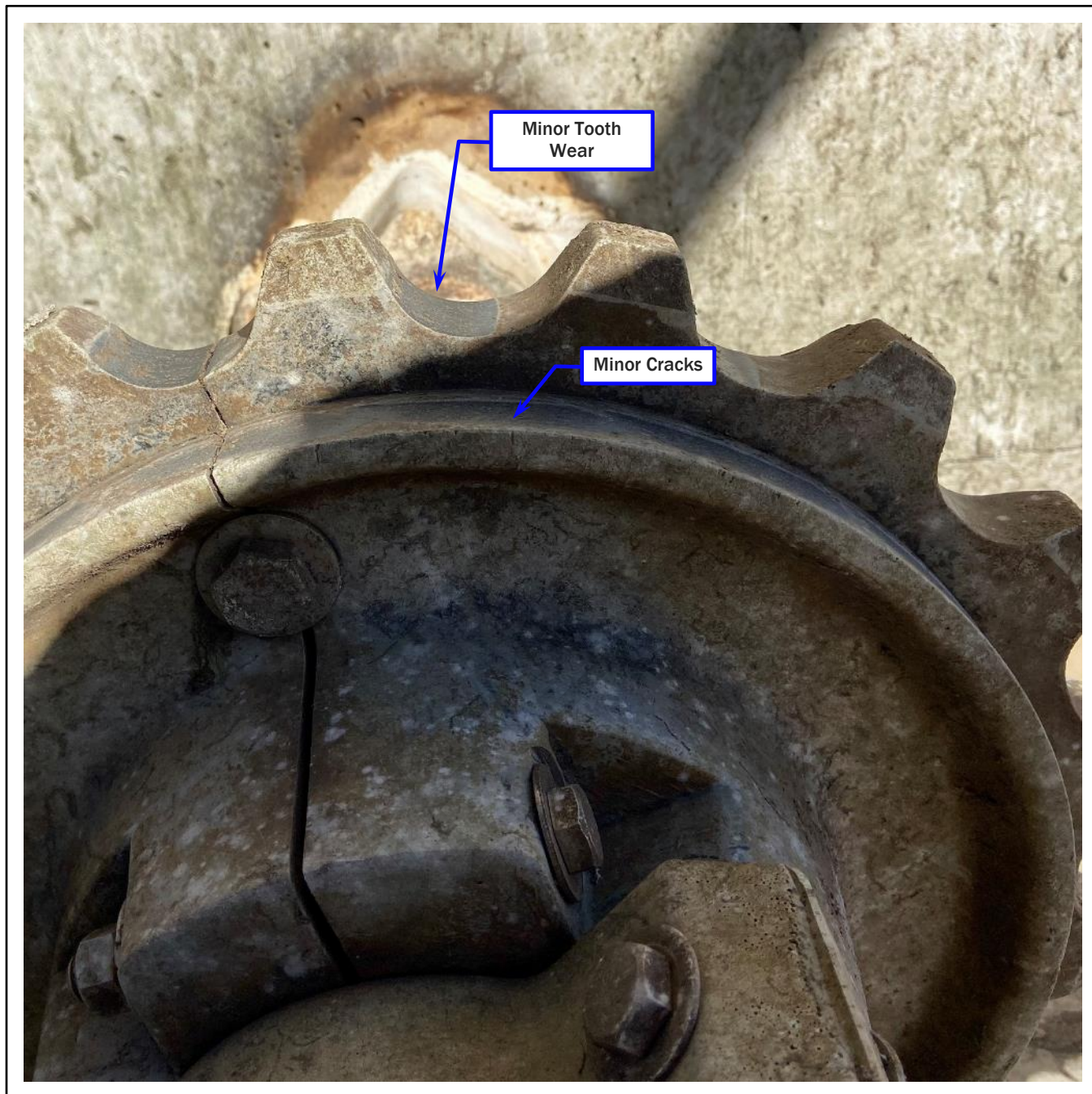


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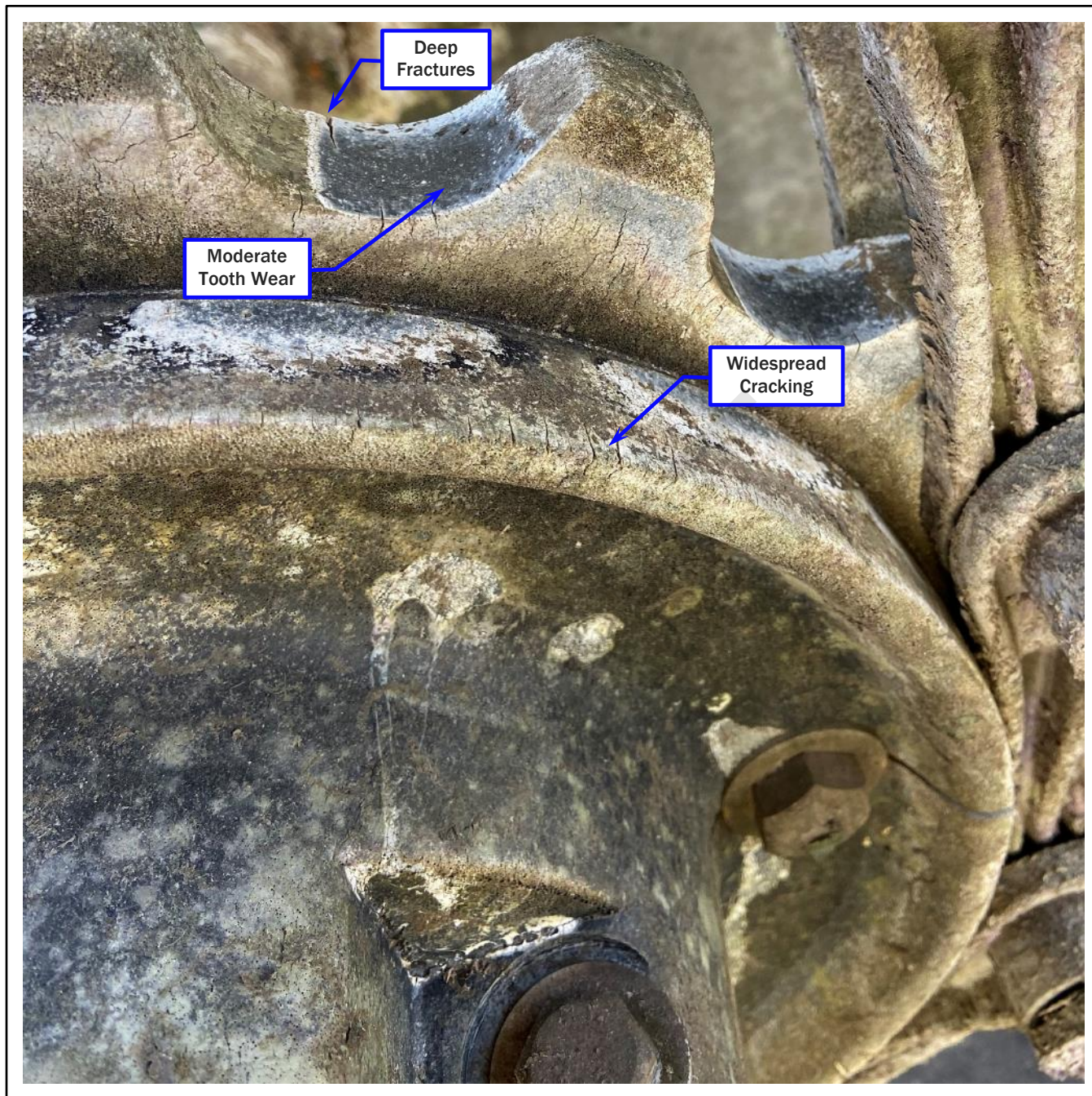


Exhibit B-16

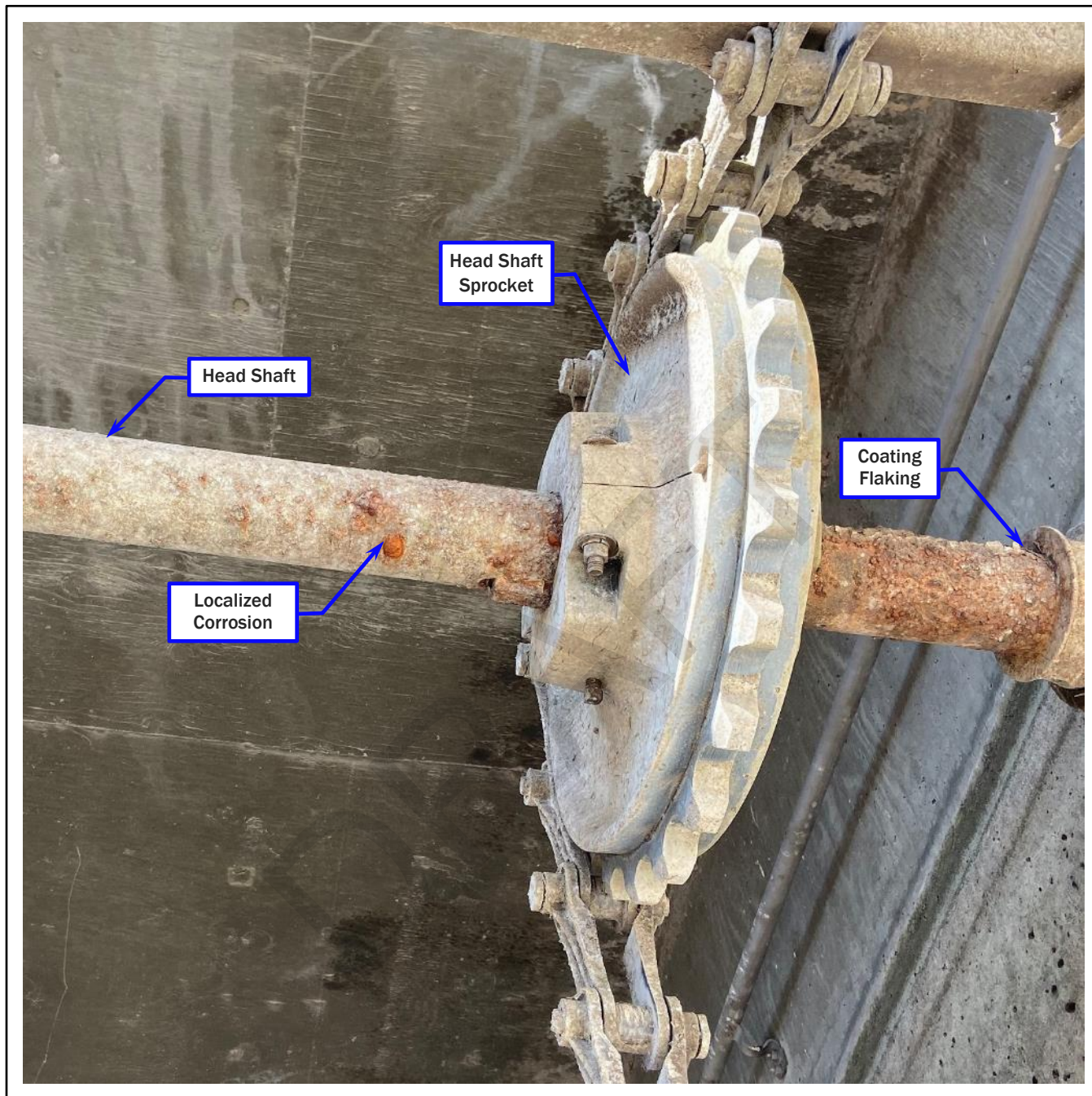


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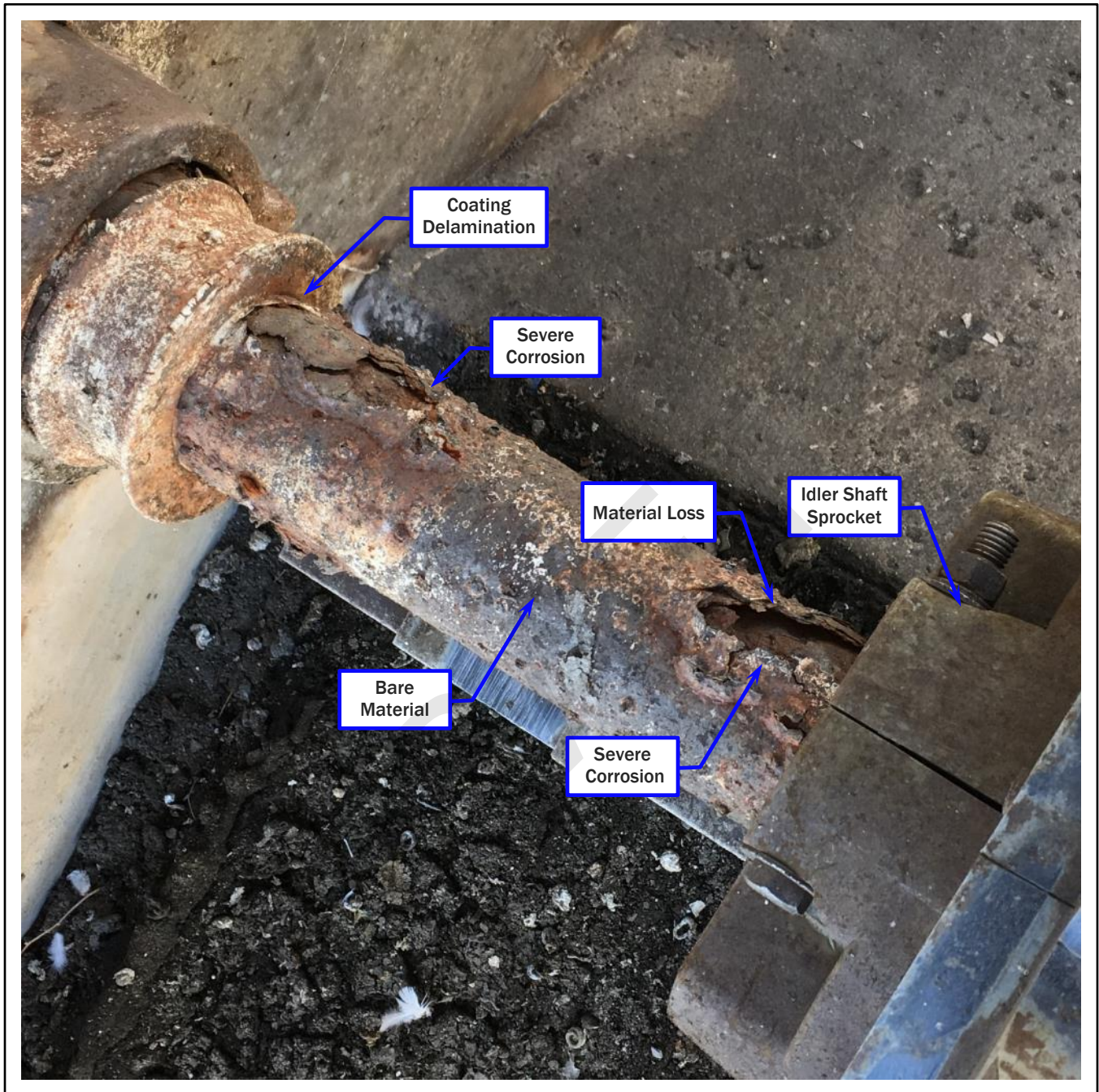


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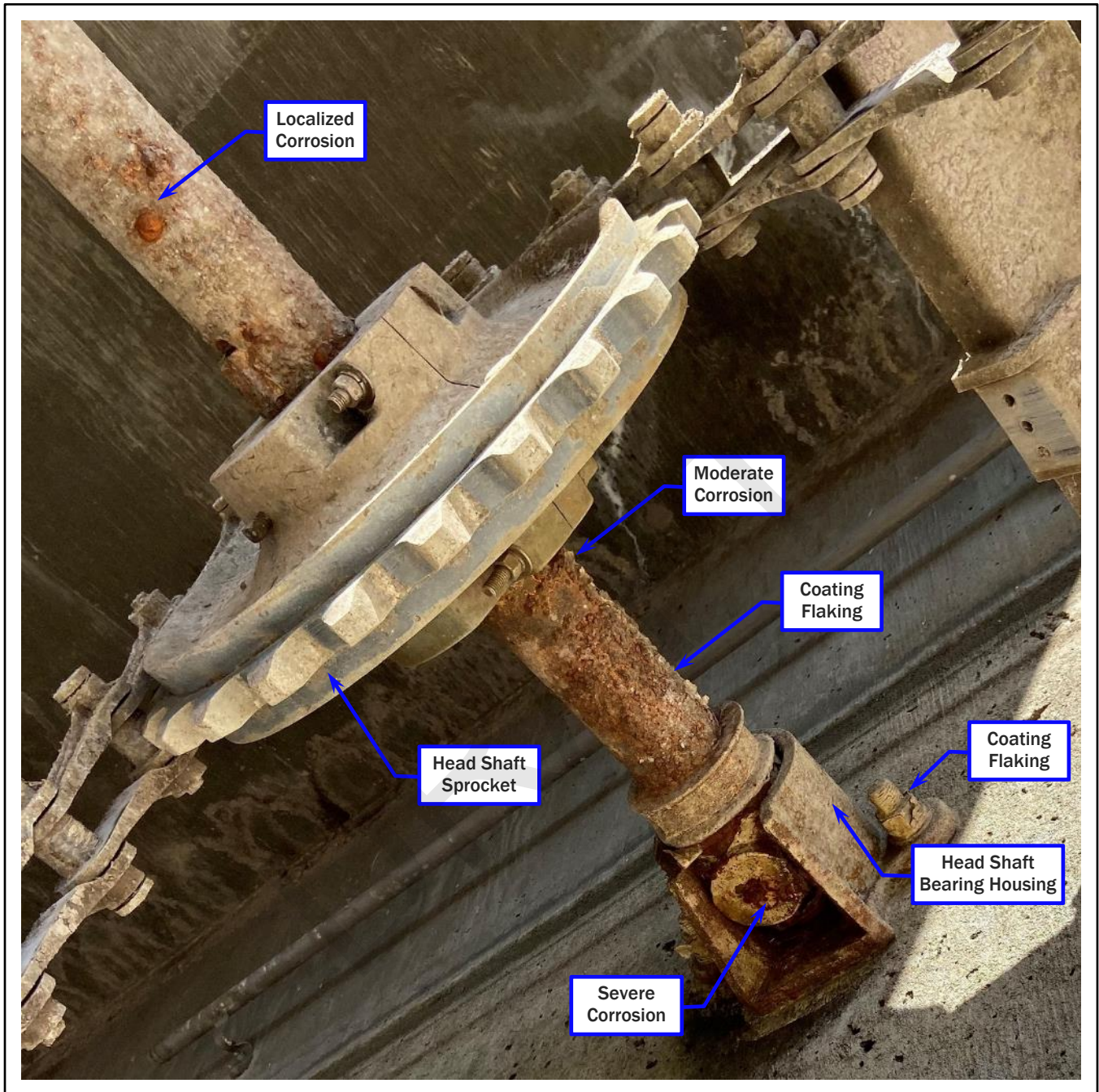


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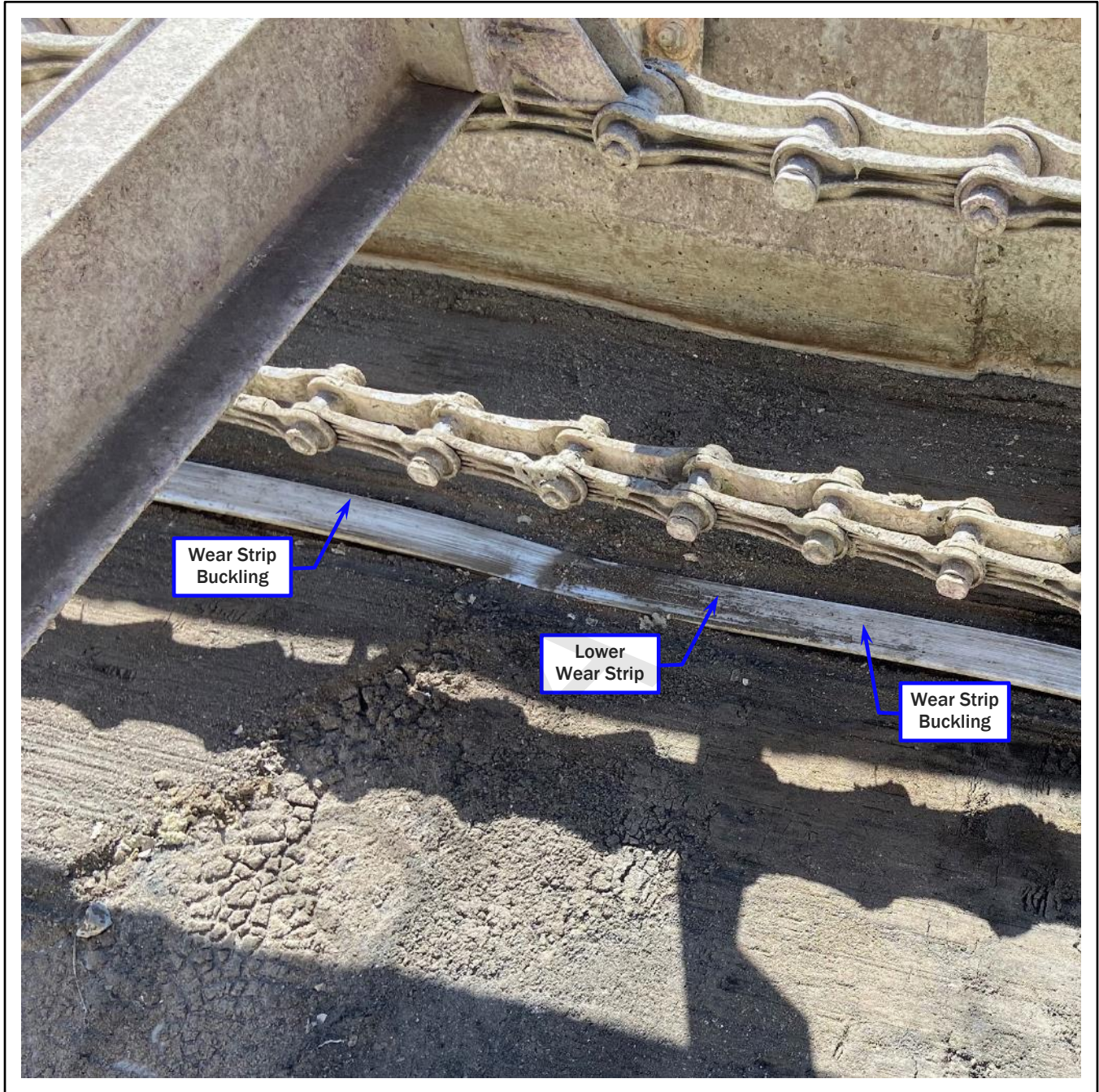


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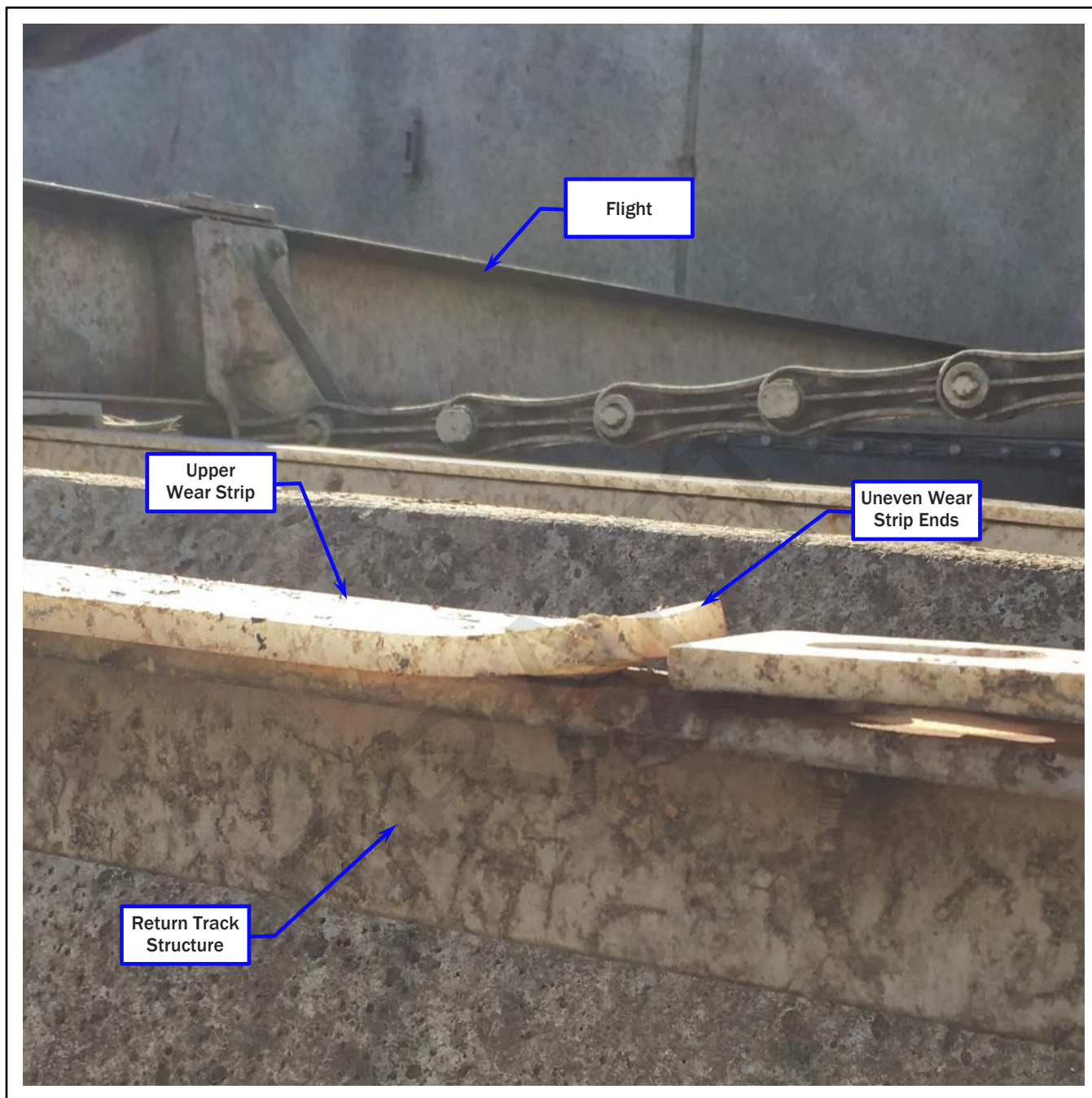


Exhibit B-21



Exhibit B-22

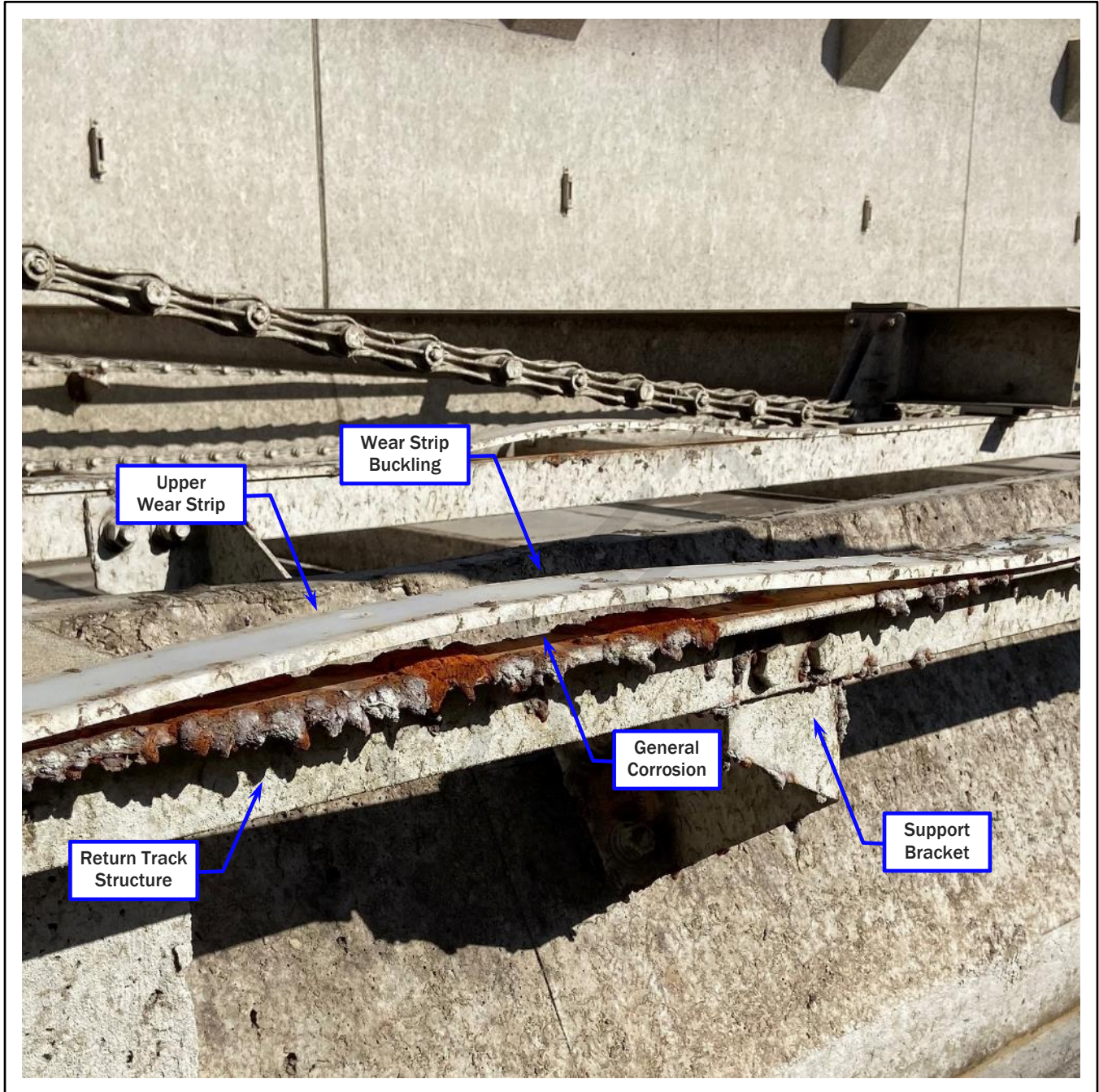


Exhibit B-23

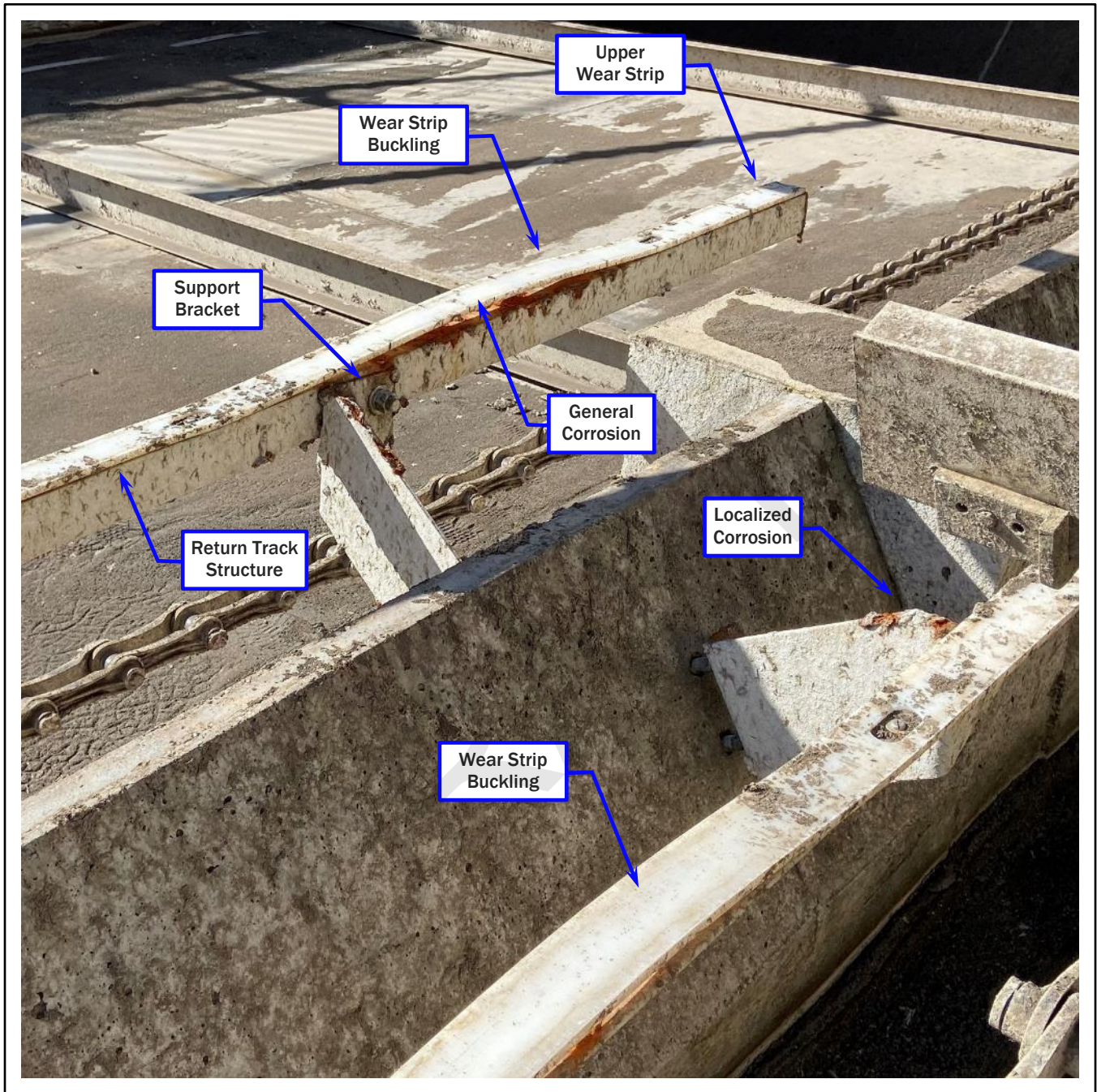


Exhibit B-24

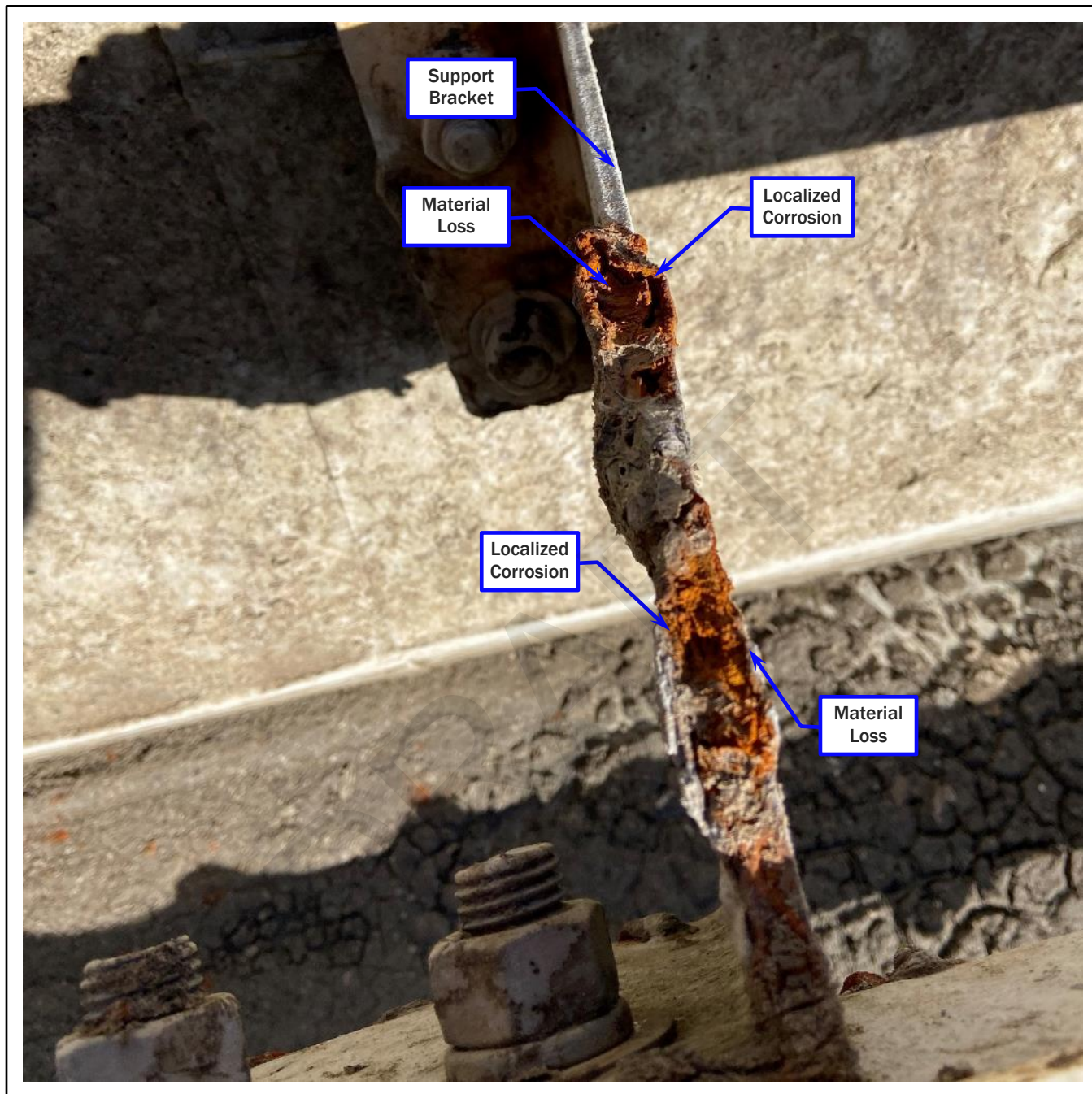


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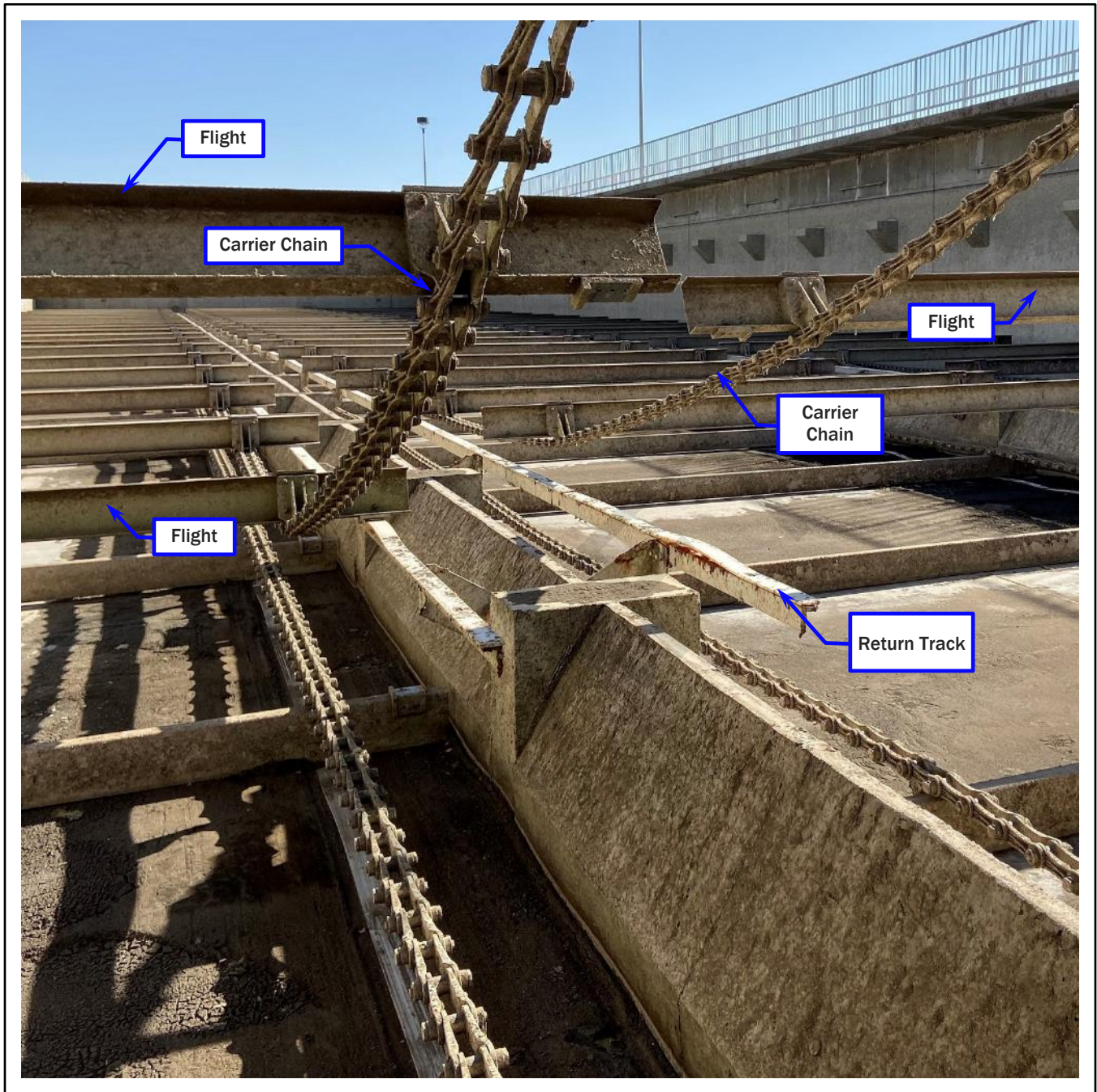


Exhibit B-26



Exhibit B-27

APPENDIX B

**Template JVVCD Division 0 Bidding Documents,
General Conditions and Supplemental General Conditions**

CONTRACT DOCUMENTS FOR

[PROJECT NAME]

PROJECT #:

[DATE]

OWNER

Jordan Valley Water Conservancy District
8215 South 1300 West
West Jordan, Utah
801.565.4300

ENGINEER

[REDACTED]

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DRAWINGS

NOTICE INVITING BIDS

PROJECT NAME:

DESCRIPTION OF WORK:

DISTRICT WEB SITE AND PLANHOLDERS LIST

Prospective bidders must register at the District's web site (www.jvwcd.org) under "Engineering Projects". Prospective bidders are required to check the District's web site for any addenda prior to submitting a responsive bid. The District's web site will be used to publish updated information relative to the project, including a planholders list.

RECEIPT OF BIDS: Sealed bids will be received at the office of the Jordan Valley Water Conservancy District, Owner of the Work, located at 8215 South 1300 West, West Jordan, Utah 84088, until _____ am/pm, on _____, 20____, for construction of the

OBTAINING CONTRACT DOCUMENTS: The Contract Documents are entitled, "Project Title". All Contract Documents may be obtained at the office of the Owner beginning _____, 20____, upon payment of \$_____ (non-refundable) for each set of Contract Documents (including specification and accompanying drawings) or \$10.00 for a compact disk with the same information.

(note to project manager; only advertise in newspaper above this line)

OPENING OF BIDS: The bids will be publicly opened and read at the time and location identified above.

SITE OF WORK:

PRE-BID SITE VISIT:

COMPLETION OF WORK: All work shall be completed within _____ calendar days from the date of the Notice to Proceed.

AWARD OF CONTRACT: An Award of Contract, if it were awarded, will be made within 60 calendar days of the opening of bids.

NOTICE TO PROCEED: A Notice to Proceed, if it were issued, will be made within 60 calendar days of the Notice of Award.

BID SECURITY: Each bid shall be accompanied by a certified or cashier's check, money order or bid bond in the amount of five percent of the total bid price payable to the Jordan Valley Water Conservancy District as a guarantee that the bidder, if its bid is accepted, will promptly execute the contract, provide evidence of worker's compensation insurance, and furnish a satisfactory faithful performance bond in the amount of 100 percent of the total bid price and a payment bond in the amount of 100 percent of the total bid price.

NOTICE INVITING BIDS

ADDRESS AND MARKING OF BID: The envelope enclosing the bid shall be sealed and addressed to the Jordan Valley Water Conservancy District and delivered or mailed to 8215 South 1300 West, P.O. Box 70, West Jordan, Utah 84088. The envelope shall be plainly marked in the upper left-hand corner with the name and address of the bidder and shall bear the words "Bid for," followed by the title of the Contract Documents for the work and the date and hour of opening of bids. The certified or cashier's check, money order, or bidder's bond shall be enclosed in the same envelope with the bid.

PROJECT ADMINISTRATION: All questions relative to this project prior to the opening of bids shall be directed to the Engineer for the project. It shall be understood, however, that no interpretations of the specifications will be made by telephone, nor will any "or equal" products be considered for approval prior to award of contract.

Engineer

Name

Project Manager:

Address

Address

Telephone:

Email:

OWNER'S RIGHTS RESERVED: The Owner reserves the right to reject any or all bids, to waive any informality in a bid, and to make awards in the interest of the Owner.

Owner

Jordan Valley Water Conservancy District

Project Manager:

8215 South 1300 West

West Jordan, Utah 84088

Telephone: (801) 565-4300

Email:

JORDAN VALLEY WATER CONSERVANCY DISTRICT

INSTRUCTIONS TO BIDDERS

FORM OF BID: The bid shall be made on the bidding schedule(s) bound herein. The bid shall be enclosed in a sealed envelope bearing the name of the bidder and name of the project. In the event there is more than one bidding schedule, the bidder may bid on any individual schedule or on any combination of schedules.

DELIVERY OF BID: The bid shall be delivered by the time and to the place stipulated in the Notice Inviting Bids. It is the bidder's sole responsibility to see that his bid is received in proper time.

WITHDRAWAL OF BIDS: Bids shall be unconditionally accepted without alteration or correction, excepting that bidder may by means of written request, signed by the bidder or his properly authorized representative withdraw his bid. Such written request must be delivered to the place stipulated in the Notice Inviting Bids for receipt of bids prior to the scheduled closing time for receipt of bids.

OPENING OF BIDS: The bids will be publicly opened and read at the time and place stipulated in the Notice Inviting Bids.

MODIFICATIONS AND ALTERNATIVE BIDS: Unauthorized conditions, limitations, or provisions attached to a bid may render it non-responsive and may cause its rejection. The completed bid forms shall be without interlineations, alterations, or erasures. Alternative bids will not be considered unless called for. Oral, telegraphic, or telephonic bids or modifications will not be considered.

DISCREPANCIES IN BIDS: In the event there is more than one bid item in a bidding schedule, the bidder shall furnish a price for all bid items in the schedule; failure to do so may render the bid non-responsive and subject to rejection. In the event there are unit price bid items in a bidding schedule and the "amount" indicated for a unit price bid item does not equal the product of the unit price and quantity, the unit price shall govern and the "amount" will be corrected accordingly, and the Contractor shall be bound by said Correction. In the event there is more than one bid item in a bidding schedule and the total indicated for the schedule does not agree with the sum of the prices bid on the individual items, the prices bid on the individual items shall govern and the total for the schedule will be corrected accordingly, and the Contractor shall be bound by said correction.

INSTRUCTIONS TO BIDDERS

BID SECURITY: Each bid shall be accompanied by a certified or cashier's check or approved bid bond in the amount stated in the Notice Inviting Bids. Said check or bond shall be made payable to the Owner and shall be given as a guarantee that the bidder, if awarded the work, will enter into a contract within 10 calendar days after receipt of the contract from the Owner, and will furnish the necessary insurance certificates, Payment Bond, and Performance Bond; each of said bonds to be in the amount stated in the Notice Inviting Bids. In case the apparent low bidder refuses or fails to enter into such contract or fails to provide the required insurance and insurance certificates, the check or bid bond, as the case may be, shall be forfeited to the Owner. If the bidder elects to furnish a bid bond as his bid guarantee, he shall use the bid bond bound herein, or one conforming substantially to it in form.

BIDDER'S EXAMINATION OF CONTRACT DOCUMENTS AND SITE

It is the responsibility of each Bidder before submitting a Bid to:

1. Examine Contract Documents thoroughly.
2. Visit the site to become familiar with local conditions that may affect cost, progress, performance, or furnishing of the work.
3. Consider federal, state and local laws and regulations that may affect cost, progress, and performance of furnishing of the work.
4. Study and carefully correlate the Bidder's observations with the Contract Documents.
5. Notify the Engineer of all conflicts, errors, or discrepancies in the Contract Documents.

Reference is made to the Supplemental General Conditions for identification of:

1. Those reports of exploration and tests of subsurface conditions at the site, which have been utilized by the Engineer in the preparation of the Contract Documents.
2. Those drawings of physical conditions in or relating to existing surface and subsurface conditions (except underground utilities as defined in Article 1 of the General Conditions) which are at or contiguous to the site and which were utilized by the Engineer in the preparation of the Contract Documents. Copies of such reports and drawings are available for inspection at the office of the Owner.

INSTRUCTIONS TO BIDDERS

Information and data reflected in the Contract Documents with respect to underground facilities at/or contiguous to the site are based upon information and data furnished to the Owner and the Engineer by the owners of such underground facilities or others, and the Owner does not assume any responsibility for the accuracy or completeness thereof including any damages whatsoever that may be incurred by the Bidder or the Contractor through his reliance thereon unless it is expressly provided otherwise in the Supplemental General Conditions and/or the Technical Specifications.

Before submitting a bid, the bidder shall conduct such examination, investigations, studies and tests as are necessary to satisfy himself as to: the nature and location of the physical conditions (surface, subsurface and underground facilities), the general and local conditions particularly those bearing upon transportation, disposal, handling and storage of materials, availability of labor, availability of utilities, local weather conditions, the character of equipment and facilities required preliminary to and during the prosecution of the work; any and all other conditions that may in any way affect the cost, progress, performance or furnishing of materials in accordance with the Contract Documents. All such examination, investigation, studies, tests and the like shall be at the Bidder's expense.

Upon reasonable request in advance, the Owner shall provide each Bidder access to the site to conduct such explorations, examination, investigation and tests as each Bidder may determine necessary for the submission of a Bid. The Bidder shall fill all holes, clean and restore the site to its former condition upon the completion of such activities.

The submission of a bid hereunder shall be considered prima facie evidence that the Bidder has made such examination as is set forth in the above paragraph and is knowledgeable as to the location and site conditions surrounding the work and the conditions to be encountered in performing the work and as to the requirements, conditions and terms of the Contract and Contract Documents.

The Owner assumes no responsibility for any understanding or representations made by any of its officers or agents during or prior to the execution of this Contract, for information contained in any reports, subsurface studies, or other information which may be made available for the Contractor's information and which are not included as Contract Documents, for any understanding or representations by the Owner or by others which are not expressly stated in the Contract Documents which liability is not expressly assumed by the Owner or its representatives or Engineer in the Contract Documents. Such information shall be deemed to be for the information of the Contractor and the Contractor shall have the obligation of evaluating any such information as to its accuracy and effect the Owner will not be liable or responsible for any such information or any conclusions that may be drawn there from by the Contractor.

INSTRUCTIONS TO BIDDERS

The lands upon which the work is to be performed, right-of-ways and easements for access thereto together with other lands designated for use by the Contractor in performing the work are identified in the Contract Documents. All additional lands and access thereto that are required for temporary construction facilities or storage of materials and equipment are to be provided by the Contractor. Easements for permanent structures or permanent changes in existing structures are to be obtained and paid for by the Owner unless otherwise provided in the Contract Documents.

The submission of a Bid shall constitute an incontrovertible representation by the Bidder that the Bidder has complied with every requirement of this Article, and that without exception the Bid is premised upon performing and furnishing the work required by the Contract Documents in compliance with such means, methods, techniques, sequences, or procedures of construction as may be indicated in or required by the Contract Documents; and that such means, methods, techniques, sequences or procedures described in the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing the work.

QUANTITIES OF WORK

The quantities of work or material stated in the Bid Schedule are supplied only to give an indication of the general scope of the work; the Owner does not expressly or by implication agree that the actual amount of work or material will correspond therewith. The Owner reserves the right after award of the Contract to increase or decrease the quantities of any unit price item of the work by an amount up to and including 25 percent of the quantity of any bid item, or to omit portions of such work as may be deemed necessary or expedient by the Engineer or Owner, without a change in the unit price. Such right to revise and omit shall include the right to delete any bid item in its entirety, or to add additional bid items in quantities up to and including an aggregate total amount not to exceed 25 percent of the total amount of the Contract.

The Bidders nor the ultimate Contractor on the Project shall at any time after the submittal of a bid make or have any claim for damages or anticipated profits or loss of profit or otherwise because of any difference between the quantities of work actually done and material furnished and those stated in said unit price items of the Bid.

INSTRUCTIONS TO BIDDERS

COMPETENCY OF BIDDERS: In selecting the lowest responsible Bidder, consideration will be given to the general competency of the Bidder for the performance of the work covered by the Bid. To this end, each bid shall be supported by a statement of the bidder's experience as of recent date on the form entitled "Information Required of Bidder," bound herein. No bid for the work will be accepted from a contractor who does not hold an active Contractor's license in good standing applicable to the type of work bid upon at the time of opening bids.

After an award of the contract no substitution of the Project Manager or Project Superintendent will be allowed without the written approval by the Owner.

DISQUALIFICATION OF BIDDERS: More than one bid from an individual, firm partnership, corporation, or association under the same or different names will not be considered. Reasonable grounds for believing that any bidder is interested in more than one bid for the work contemplated will cause the rejection of all bids in which such bidder is interested. If there is reason for believing that collusion exists among the bidders, all bids will be rejected.

RETURN OF BID GUARANTEE: Within 10 calendar days after award of the contract, the Owner will return the bid guarantees accompanying such of the bids as are not considered in making the award. All other bid guarantees will be held until a Notice to Proceed has been issued and accepted. They will then be returned to the respective bidders whose bids they accompany.

AWARD OF CONTRACT: Award of the Contract, if it be awarded, will be based primarily on the lowest overall cost to the Owner, and will be made to a responsive and responsible bidder whose bid complies with all the requirements prescribed. Any such award will be made by written notice and within 60 calendar days after opening of the bids, unless a different waiting period is expressly allowed in the Notice Inviting Bids. Unless otherwise indicated, an award will not be made for less than all the bid items in an individual bidding schedule. In the event the entire work is contained in more than one bidding schedule, the Owner may award schedules individually or in combination. In the case of two bidding schedules which are alternate to each other, only one of such alternate schedules will be awarded.

INSTRUCTIONS TO BIDDERS

EXECUTION OF CONTRACT: The Bidder to whom the award is made shall secure all insurance and shall furnish all certificates and bonds required by the specifications within ten calendar days after receipt of the Notice of Award from the Owner. The Bidder to whom the award is made shall execute a written contract with the Owner on the form of agreement provided within ten calendar days after receipt of the Agreement from the Owner. Failure or refusal to enter into a contract as herein provided or to conform to any of the stipulated requirements in connection therewith shall be just cause for annulment of the award and forfeiture of the bid guarantee. If the successful bidder refuses or fails to execute the contract, the Owner may award the contract to the second lowest responsible bidder, or reject all bids and re-advertise the project for rebidding. If the second lowest responsible bidder refuses or fails to execute the contract, the Owner may award the contract to the third lowest responsible bidder. On the failure or refusal of such second or third lowest bidder to execute the contract, each such bidder's guarantees shall be likewise forfeited to the Owner.

ISSUANCE OF NOTICE TO PROCEED: The Owner intends to execute the Agreement and issue the Notice to Proceed specifying the Project start date within ten calendar days after its receipt of the executed Agreement, Purchase Order Assignment(s), (if applicable), bonds and insurance certificates from the successful bidder. If the Contract Time is expressed as a specific completion date in the Notice Inviting Bids and paragraph 3.1 of the Agreement rather than a specific number of successive days following the start date identified in the Notice to Proceed, then any delay by the Owner beyond the ten days in issuing the Notice to Proceed shall extend the completion date by the number of days of the delay.

LICENSES: Contractor must be licensed as a business qualified to do business within the state of Utah prior to issuance of a Notice of Award. Contractor must hold a current contractor's license with classifications appropriate to the work being contracted.

INSTRUCTIONS TO BIDDERS

BID

BID TO: JORDAN VALLEY WATER CONSERVANCY DISTRICT

The undersigned Bidder hereby proposes to furnish all plant machinery, labor, services, materials, equipment, tools, supplies, transportation, utilities, and all other items and facilities necessary to perform all work required under the Bidding Schedule of the Owner's Contract Documents entitled "**Project Title**" drawings and all addenda issued by said Owner prior to opening of the bids.

Addenda are only delivered by e-mail and through the internet.

The undersigned bidder acknowledges receipt of the following addenda:

<u>No.</u>	<u>Date Received</u>	<u>No.</u>	<u>Date Received</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Bidder agrees that, within 10 calendar days after receipt of Notice of Award from Owner, he will execute the Agreement in the required form, of which the Notice Inviting Bids, Instructions to Bidders, Bid, Information Required of Bidder, Technical Specifications, Drawings, and all addenda issued by Owner prior to the opening of bids, are a part, and will secure the required insurance and bonds and furnish the required insurance certificates; and that upon failure to do so within said time, then the bid guarantee furnished by Bidder shall be forfeited to Owner as liquidated damages for such failure; provided, that if Bidder shall execute the Agreement, secure the required insurance and bonds, and furnish the required insurance certificates within said time, his check, if furnished, shall be returned to him within five days thereafter, and the bid bond, if furnished, shall become void. It is further understood that this bid may not be withdrawn for a period of 45 days after the date set for the opening thereof, unless otherwise required by law.

Bidder hereby certifies he has registered and participates in the Status Verification System (E-Verify).

Dated: _____ Bidder: _____

By: _____
(Signature)

Title: _____

Bidder further agrees to complete all work required within the time stipulated in the Contract Documents, and to accept in full payment therefore the price(s) named in the above-mentioned Bidding Schedule(s).

BID
BID SCHEDULE(S)

(By Engineer)

BID BOND

KNOW ALL MEN BY THESE PRESENTS,

That _____
as Principal, and _____
as Surety, are held and firmly bound unto the Jordan Valley Water Conservancy District
(hereinafter called "Owner") in the sum of _____
dollars, (not less than five percent of the total amount of the bid) for the payment of which
sum, will and truly to be made, we bind ourselves, our heirs, executors, administrators,
successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal has submitted a bid to Owner to perform all work required under the
bidding Schedule of the Owner's Contract Documents entitled "**Project Title**", (hereafter
called the "Project").

NOW THEREFORE, if Principal is awarded Contract by Owner for the Construction of the
Project and, within the time and in the manner required under the heading "Instructions to
Bidders" enters into the written contract entitled "Agreement" bound with said Contract
Documents, furnishes the required certificates of insurance, and furnishes the required
Performance Bond and Payment Bond within 10 calendar days after receipt of such
contract from Owner, then this obligation shall be null and void, otherwise it shall remain in
full force and effect. In the event suit is brought upon this bond by Owner and judgment is
recovered, Surety shall pay all costs incurred by Owner in such suit, including a reasonable
attorney's fee to be fixed by the court.

SIGNED AND SEALED, this _____ day of _____, 20____.

By: _____ By: _____

Its: _____ Its: _____

(SEAL)

(SEAL)

INFORMATION REQUIRED OF BIDDER

The Bidder shall furnish the following information. Failure to comply with this requirement may render the Bid non-responsive and subject to rejection. Additional sheets shall be attached as required.

1. Contractor's name: _____
2. Contractor's address: _____

Contractor's Primary Contact: _____
Email address of Contractor's primary contact: _____
Contractor's telephone number: _____

3. **Contractor must be qualified and licensed to do business in Utah.**
Utah Department of Commerce Information
Business Entity Number: _____
Delinquent Date: _____
4. **Contractor must hold a current contractor's license, classification E100.**
Contractor's Utah License Number: _____
Expiration Date: _____
Primary Classification: _____
Supplemental Classification held, if any: _____

INFORMATION REQUIRED OF BIDDER

5. Key Personnel Qualifications and Experience

List key personnel here and provide detailed information in Attachments A and B. More than one Project Manager and/or Project Superintendent may be proposed. Only personnel approved by the Owner will be allowed in the key positions.

Project Manager A: _____

Project Manager (Alternate 1): _____

Project Manager (Alternate 2): _____

Project Manager shall have:

- At least five (5) years experience
- Have successfully performed as Project Manager on the construction of at least three (3) pressure pipeline projects with a diameter of at least 36-inches.
- The demonstrated pipeline projects shall have:
 - A combined total of at least 10,000 linear feet,
 - At least 5,000 linear feet of pipeline construction within the public right-of-way, and
 - The construction of at least one (1) welded steel pipeline project.

Project Superintendent A: _____

Project Superintendent (Alternate 1): _____

Project Superintendent (Alternate 2): _____

Project Superintendent shall have:

- At least ten (10) years experience
- Have successfully performed as Superintendent on the construction of at least five (5) pressure pipeline projects including:
 - Two drinking water projects, and
 - Three projects with a diameter of at least 24-inches.
- The demonstrated pipeline projects shall have:
 - A combined total of at least 10,000 linear feet,
 - At least 5,000 linear feet of pipeline construction within

INFORMATION REQUIRED OF BIDDER

the public right-of-way, and

- The construction of at least one (1) welded steel pipeline project.

6. **Previous Contractor Project Experience**

Past project experience shall be provided for each requirement. The Owner shall be entitled to contact each and every reference listed by the contractor. The Contractor, by submitting a prequalification proposal, expressly agrees that any information concerning the CONTRACTORS in possession of said entities and references may be made available to the owner.

Provide the information identified in Attachment C for each project listed below

Requirements:

Contractor shall have successfully completed at least three (3) pipeline projects within the last ten (10) years which include the following:

- 36-inch diameter pressure pipeline or larger,
- Reinforced cast-in-place concrete vault work,
- P pipeline construction within the public right of way, and
- Welded steel pipeline construction in one project.

1.

2.

3.

4.

List at least one (1) project successfully completed in the last ten (10) years with a total value of at least \$5,000,000.

1.

INFORMATION REQUIRED OF BIDDER

7. Number of years as a contractor in construction work of this type:

8. Name and title of officers of Contractor's firm:

9. Number of persons employed full-time by the firm: _____

10. Name of person who inspected site of proposed work for your firm:

Name: _____

Date of Inspection: _____

11. Surety company who will provide the required bonds on this contract:

Agent's Name: _____

Telephone: _____

12. Workers Compensation Insurance Policy #: _____

INFORMATION REQUIRED OF BIDDER

ATTACHMENT A

(Copy as necessary – recommended to provide more projects than required)

Project Manager Data Sheet

Name: _____

Years experienced as Project Manager:

Years of prior experience: _____ Positions: _____

Qualifying Project #1:

Project Summary: _____

Year Completed: _____

Total Cost:

Owner:

Owner Contact Person: _____ Telephone:

Qualifying Project #2:

Project Summary: _____

Year Completed: _____

Total Cost:

Owner:

Owner Contact Person: _____ Telephone:

Qualifying Project #3:

Project Summary: _____

Year Completed: _____

INFORMATION REQUIRED OF BIDDER

Total Cost:

Owner:

Owner Contact Person: _____ Telephone:

Qualifying Project #4:

Project Summary: _____

Year Completed: _____

Total Cost:

Owner:

Owner Contact Person: _____ Telephone:

ATTACHMENT B

(Copy as necessary – recommended to provide more projects than required)

Superintendent Data Sheet

Name: _____

Years experienced as Superintendent:

Years of prior experience: _____ Positions: _____

Qualifying Project #1:

Project Summary: _____

Year Completed: _____

Total Cost:

Owner:

INFORMATION REQUIRED OF BIDDER

Owner Contact Person: _____ Telephone: _____

Qualifying Project #2:

Project Summary: _____

Year Completed: _____

Total Cost: _____

Owner: _____

Owner Contact Person: _____ Telephone: _____

Qualifying Project #3:

Project Summary: _____

Year Completed: _____

Total Cost: _____

Owner: _____

Owner Contact Person: _____ Telephone: _____

Qualifying Project #4:

Project Summary: _____

Year Completed: _____

Total Cost: _____

Owner: _____

Owner Contact Person: _____ Telephone: _____

INFORMATION REQUIRED OF BIDDER

(Copy as necessary – recommended to provide more projects than required)

Contractor Project Experience Summary

Project Name: _____

Project Location: _____

Project Manager: -

Project Superintendent:

Project Description: _____

Pipeline type, length and diameter:

Pipeline installation methods: _____

Public relations description:

Traffic management description:

INFORMATION REQUIRED OF BIDDER

Date Bid: _____ Date Completed:

Contract bid price: _____ Contract final price:

Contract duration at bid: _____ Final contract duration: _____

Owner's contact information: _____

AGREEMENT

An Agreement made as of the _____ day of _____, 20____, by and between the Jordan Valley Water Conservancy District, a water conservancy district organized under the laws of the State of Utah (“OWNER”), and _____, a _____ corporation qualified to do business and doing business in the State of Utah (“CONTRACTOR”).

TERMS:

OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE I
WORK

CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents for the _____. The Work is generally described as follows:

Furnishing all labor, services, materials, equipment, and supplies except for such materials, equipment, and services as may be stipulated in the Contract Documents to be furnished by the OWNER; furnishing and removing all plant machinery, temporary structures, tools, supplies, transportation, utilities, and all other items, facilities and equipment, and to do everything required by this Agreement and the Contract Documents; accepting all responsibility for and paying for all loss and damage arising out of the nature of the Work aforesaid, or from the action of the elements, or from any unforeseen difficulties which may arise during the prosecution of the Work until its acceptance by OWNER, and for all risks of every description connected with the Work; also for all expenses resulting from the suspension or discontinuance of work, except as in the Contract Documents are expressly stipulated to be borne by OWNER.

ARTICLE II
ENGINEER

The Project has been designed by the OWNER. The OWNER will assume all duties and responsibilities and have the rights and authority assigned to ENGINEER in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

[ALTERNATE PARAGRAPH]The Project has been designed by _____, a _____ corporation qualified to do business and doing business in the State of Utah, who is hereinafter called “ENGINEER” and who is to act as OWNER’s representative, assume all duties and responsibilities and have the rights and

authority assigned to ENGINEER in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

ARTICLE III CONTRACT TIME

- 3.1 The Work shall be complete, in accordance with paragraphs 14.08 and 14.09 of the General Conditions, on or before _____.
- 3.2 Liquidated Damages: OWNER and CONTRACTOR recognize that time is of the essence of this Agreement and that the OWNER will suffer financial loss if the Work is not completed within the time specified in paragraph 3.1 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. They also recognize the delays, expense and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by OWNER if the Work is not completed on time. Accordingly, instead of requiring any proof of loss, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay OWNER the amount specified in Article 14.07 of the General Conditions and in Article 18.01 of the Supplementary General Conditions for each day that expires after the time specified in paragraph 3.1 for final completion until the Work is substantially complete. And, after Substantial Completion if CONTRACTOR neglects, refuses or fails to complete the remaining Work within forty-five (45) days or any proper extension thereof granted by OWNER, CONTRACTOR shall pay OWNER the amount specified in Article 14.07 of the General Conditions and in Article 18.01 of the Supplemental General Conditions for each day that expires after the forty-five (45) days until readiness for final payment.

ARTICLE IV CONTRACT PRICE

All payments to Contractor shall be made in accordance with the Contract Documents. OWNER shall pay CONTRACTOR for completion of the Work in accordance with the Contract Documents in current funds those prices stated in the approved Bid Schedule as named in the Notice of Award.

ARTICLE V PAYMENT PROCEDURES

CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by ENGINEER as provided in the General Conditions.

- 5.1 Progress Payments: OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR's Applications for Payment

as recommended by ENGINEER, on a monthly basis. All progress payments will be on the basis of the progress of the Work measured by the schedule of values established in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Conditions.

- 5.2 Final Payment: Upon final completion and acceptance of the Work in accordance with Article 14 of the General Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER as provided in Article 14.

ARTICLE VI INTEREST

All moneys not paid when due as provided in Article 14 of the General Conditions shall bear interest at the rate of twelve percent (12%) per annum.

ARTICLE VII CONTRACTOR'S REPRESENTATION

In order to induce OWNER to enter into the Agreement, CONTRACTOR makes the following representations:

- 7.1 CONTRACTOR has familiarized itself with the nature and extent of the Contract Documents, Work, site, locality, and all local conditions and Laws and Regulations that in any manner may affect cost, progress, performance or furnishing of the Work.
- 7.2 CONTRACTOR has studied carefully all exploration reports and test of subsurface conditions and drawings of physical conditions which are identified in the Supplementary General Conditions, as provided in paragraph 4.02 of the General Conditions, and accepts the Technical Data contained in such reports and drawings upon which CONTRACTOR is entitled to rely.
- 7.3 CONTRACTOR has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all such examinations, investigations, explorations, tests, reports and studies (in addition to or to supplement those referred to in paragraph 7.2 above) which pertain to the subsurface or physical conditions at or contiguous to the site or otherwise may affect the cost, progress, performance or furnishing of the Work as CONTRACTOR considers necessary for the performance or furnishing of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of paragraph 4.02 of the General Conditions; and no additional examinations, investigations, explorations, tests, reports,

studies or similar information or data are or will be required by CONTRACTOR for such purposes.

- 7.4 CONTRACTOR has reviewed and checked all information and data shown or indicated on the Contract Documents with respect to existing Underground Facilities at or contiguous to the site and assumes responsibility for the accurate location of said Underground Facilities.
- 7.5 CONTRACTOR has correlated the results of all observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Contract Documents.
- 7.6 CONTRACTOR has given ENGINEER written notice of all conflicts, errors or discrepancies that he had discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.

ARTICLE VIII CONTRACT DOCUMENTS

The Contract Documents for the _____, which comprise the entire agreement between OWNER and CONTRACTOR concerning the Work, consist of the following:

- 8.1 This Agreement;
- 8.2 Performance and Payment Bonds;
- 8.3 Notice of Award;
- 8.4 Notice to Proceed;
- 8.5 General Conditions;
- 8.6 Supplemental General Conditions;
- 8.7 Notice Inviting Bids;
- 8.8 Instructions to Bidders;
- 8.9 Information Required of Bidder;
- 8.10 Technical Specifications;
- 8.11 Drawings - Sheets Number One through _____;
- 8.12 Addendum Number One through _____; and,
- 8.13 CONTRACTOR's Bid, including all schedules and explanatory attachments; attached as Exhibit A.

The CONTRACTOR (1) acknowledges that he has received a copy of each document, specified above, (2) acknowledges that he has read and understands each document specified above and (3) agrees to every term, condition and contract obligation set forth in each document specified above.

There are no Contract Documents other than those listed above in this Article 8. The Contract Documents may only be amended, modified or supplemented as provided in paragraphs 3.03 of the General Conditions.

ARTICLE IX
FEDERAL REQUIREMENTS

The CONTRACTOR shall comply with federal regulations as stated in the Supplemental General Conditions, Article 21.

ARTICLE X
MISCELLANEOUS

- 10.1 Terms used in this Agreement which are defined in Article 1 of the General Conditions will have the meanings indicated in the General Conditions.
- 10.2 No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.
- 10.3 In the event any legal action or other proceeding is brought for the enforcement of this Agreement and/or the Contract Documents, or for damages, because of an alleged dispute, breach, default or misrepresentation in connection with any of the provisions thereof, the successful or prevailing party shall be entitled to recover reasonable attorneys' fees and other costs incurred in the action or proceeding, in addition to any other relief to which it may be entitled.
- 10.4 Any notice to be given hereunder shall be deemed given when sent by registered or certified mail, postage prepaid to the parties at their respective addresses stated below or at any other address when notice of such change of address has been given as provided in this Article 10.4.

[SIGNATURE PAGE FOLLOWS]

“OWNER”:

Jordan Valley Water Conservancy District
8215 South 1300 West
West Jordan, Utah 84088

By: _____
Barton A. Forsyth
Its General Manager/CEO

“CONTRACTOR”:

Utah License No. _____

By: _____
Its: _____

EXHIBIT A
CONTRACTOR'S BID

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS,

That _____, as Contractor, and _____ as Surety, are held firmly bound unto the Jordan Valley Water Conservancy District hereinafter called "Owner," in the sum of \$_____ for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has been awarded and is about to enter into the annexed Agreement with Owner to perform all work required under the Bidding Schedule(s) of the Owner's Contract Documents entitled "Project"

NOW THEREFORE, if Contractor shall perform all the requirements of the Agreement required to be performed on his part, at the times and in the manner specified therein, then this obligation shall be null and void, otherwise it shall remain in full force and effect.

PROVIDED, that any alterations in the work to be done or the materials to be furnished, or changes in the time of completion, which may be made pursuant to the terms of the Agreement, shall not in any way release Contractor or Surety thereunder, nor shall any extensions of the time granted under the provisions of the Agreement release either the Contractor or Surety, and notice of such alterations or extensions of the work, materials or time to complete made under the Agreement is hereby waived by Surety. This Bond is furnished in compliance and in accordance with 14-1-18, Utah Code Ann., as amended, and 63-56-38 Utah Code Ann., as amended.

SIGNED AND SEALED, this _____ day of _____, 20__.

By: _____

By: _____

Its: _____

Its: _____

(SEAL)

(SEAL)

(SEAL AND NOTARIAL ACKNOWLEDGMENT OF SURETY)

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS,

That _____ as Contractor, and _____ as Surety, are held firmly bound unto the Jordan Valley Water Conservancy District hereinafter called "Owner," in the sum of \$ _____ for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has been awarded and is about to enter into the annexed Agreement with Owner to perform all work required under the Bidding Schedule(s) of the Owner's Contract Documents entitled, "Project"

NOW THEREFORE, if said Contractor, or subcontractor, fails to pay for any materials, equipment, or other supplies, or for rental of same, used in connection with the performance of work contracted to be done, or for amounts due under applicable State law for any work or labor thereon, said Surety will pay for the same in an amount not exceeding the sum specified above, and, in the event suit is brought upon this bond, a reasonable attorney's fee to be fixed by the court. This bond shall inure to the benefit of any persons, companies, or corporations entitled to file claims under applicable State law.

PROVIDED, that any alterations in the work to be done or the materials to be furnished, or changes in the time of completion, which may be made pursuant to the terms of the Agreement, shall not in any way release Contractor or Surety thereunder, nor shall any extensions of time granted under the provisions of said contract release either Contractor or the Surety, and notice of such alterations or extensions of the work, materials or time to complete made under the Agreement is hereby waived by Surety. This bond is furnished in compliance and in accordance with 14-1-18 and 19 Utah Code Ann., as amended, and 63-56-38 Utah Code Ann., as amended.

SIGNED AND SEALED, this _____ day of _____, 20____.

By: _____

By: _____

Its: _____

Its: _____

(SEAL)

(SEAL)

(SEAL AND NOTARIAL ACKNOWLEDGMENT OF SURETY)

NOTICE OF AWARD

To: Contractor's Name and Address

Re: (Project Name

You are hereby notified that the OWNER has accepted your bid for the above referenced project in the amount of \$_____.

Furnish the required Contractor's Performance Bond, Payment Bond and Certificates of Insurance within ten calendar days from the date of this notice to you. An acknowledged copy of this Notice of Award, together with all future correspondence regarding this project, shall be sent to the District's Project Manager: (Name) and (Title).

When the Agreement is provided, sign and return it within ten calendar days from receipt of the agreement.

Dated this ____ day of _____, 20__.

Alan E. Packard, PE
Assistant General Manager & Chief Engineer

ACCEPTANCE OF NOTICE

Receipt of the above Notice of Award is hereby acknowledged by:

_____(Contractor's Name goes here - underlined)_____

This _____ day of _____, 20__.

Signature:_____

Printed Name:_____

Title: _____

NOTICE TO PROCEED

To:

Re:

You are hereby notified to commence work in accordance with the Agreement dated _____, on (or before/after) _____, and you are to complete the work by, _____.

An acknowledged copy of this Notice to Proceed should be returned to the Owner, attention: _____.

Dated this _____ day of _____.

Mark G Atencio, P.E.
Engineering Department Manager

ACCEPTANCE OF NOTICE

Receipt of the above Notice to Proceed is hereby acknowledged by:

_____(Contractor's Name goes here - underlined)_____

This _____ day of _____, 20____.

Signature:_____

Printed Name:_____

Title: _____

JORDAN VALLEY WATER CONSERVANCY DISTRICT

PAYMENT APPLICATION AND CERTIFICATE No. ____ **DATE:** _____

SHEET ____ **OF** _____

PERIOD FROM _____ **TO** _____, 20____

PROJECT: _____

JVWCD PROJECT NO.: _____

CONTRACTOR: _____

ADDRESS: _____

ENGINEER: _____

1. ORIGINAL CONTRACT PRICE:..... \$ _____
2. NET CHANGE ORDERS APPROVED TO DATE: \$ _____
(Attach Summary Sheet)
3. REVISED CONTRACT AMOUNT: \$ _____
(Sum of Lines 1 & 2)
4. TOTAL VALUE OF WORK COMPLETED TO DATE \$ _____
(Attached Payment Breakdown)
5. PERCENT PROJECT COMPLETE: %
(Divide Line 4 by 3 and multiply by 100)
6. LESS AMOUNT RETAINED (5%) \$ _____
7. MATERIALS ON HAND..... \$ _____
(95% of Value, Listing Attached)
8. SUBTOTAL (Sum of Lines 4, Line 6 and Line 7) \$ _____
9. LESS PREVIOUS PAYMENTS \$ _____
10. CURRENT PAYMENT DUE: \$ _____
(Line 8 & 9)

JORDAN VALLEY WATER CONSERVANCY DISTRICT

Payment Application and Certificate No _____

SHEET _____ OF _____

CONTRACTOR'S Certification:

The undersigned CONTRACTOR certifies that: (1) all previous progress payments received from OWNER on account of work done under the Contract referred to herein have been applied to discharge in full all obligations of CONTRACTOR incurred in connection with work covered by prior Applications for Payment numbered 1 through _____ inclusive; and, (2) title to all materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to OWNER at time of payment free and clear of all liens, claims, security interests and encumbrances (except such as covered by bond acceptable to OWNER).

Dated: _____

CONTRACTOR: _____

By: _____

Engineer's Recommendation:

This Application (with accompanying documentation) meets the requirements of the Contract Documents and payment of the amount due this application is recommended.

ENGINEER

Dated _____

Project Representative

Dated _____

Project Manager

JORDAN VALLEY WATER CONSERVANCY DISTRICT

CHANGE ORDER

Change Order No. _____

Date: _____

Page ___ of ___

NAME OF PROJECT: _____

PROJECT NUMBER: _____

CONTRACTOR: _____

CONTRACT DATE: _____

The following changes are hereby made to the CONTRACT DOCUMENTS:

- 1)
- 2)
- 3)

Total Change to CONTRACT PRICE: \$

Original CONTRACT PRICE: \$

Current CONTRACT PRICE adjusted by previous CHANGE ORDER(S)..... \$

The new CONTRACT PRICE including this CHANGE ORDER will be \$

The CONTRACT TIME will be increased by _____ calendar days.

The date for Substantial Completion will be _____, 20__.

The Contractor agrees to furnish all labor and materials and perform all work as necessary to complete the change order items for the price named herein, which includes all supervision and miscellaneous costs. This change order constitutes full and mutual accord and satisfaction for all time and all costs related to this change. By acceptance of this change order the Contractor agrees that the change order represents an equitable adjustment to the Contract, and further agrees to waive all right to file a claim arising out of or as a result of this change. This document will become a supplement to the Contract, and all provisions will apply hereto, upon approval by the Owner.

JORDAN VALLEY WATER CONSERVANCY DISTRICT

**CHANGE ORDER
(CONTINUED)**

Change Order No. _____

Date: _____

Page ___ of ___

Recommended: _____
Engineer - _____ Date _____

Accepted: _____
Contractor - _____ Date _____

Approved: _____
Owner - Jordan Valley Water Conservancy District _____ Date _____

JORDAN VALLEY WATER CONSERVANCY DISTRICT

**CONTRACTOR'S CERTIFICATE
OF
SUBSTANTIAL COMPLETION**

OWNER

ENGINEER

TO: Jordan Valley Water Conservancy District
8215 South 1300 West
P. O. Box 70
West Jordan, Utah 84088-0070

PROJECT: _____

ATTENTION: _____

FROM: _____
Firm or Corporation

This is to certify that I, _____ am an authorized official of
_____ working in the capacity of _____
_____ and have been properly authorized by said
firm or corporation to sign the following statements pertaining to the subject contract:

I know of my own personal knowledge, and do hereby certify, that the work of the contract described above has been substantially performed and all materials used and installed to date are in accordance with, and in conformity to, the contract drawings and specifications. A list of all incomplete work is attached.

The Contractor hereby releases the Owner and its agents from all claims of and liability to the Contractor for anything done or furnished for or relating to the work, as further provided in Article 14.08B of the General Conditions, except demands against the Owner for the remainder of progress payments retained to date, and unresolved written claims prior to this date.

The contract work is now substantially complete, ready for its intended use, and ready for your inspection. You are requested to issue a Certificate of Substantial Completion.

SIGNATURE: _____

DATE: _____

JORDAN VALLEY WATER CONSERVANCY DISTRICT

**CONTRACTOR'S CERTIFICATE
OF
FINAL COMPLETION**

OWNER

ENGINEER

TO: Jordan Valley Water Conservancy District
8215 South 1300 West
P. O. Box 70
West Jordan, Utah 84088-0070

PROJECT: _____

ATTENTION: Project Representative: _____

FROM: _____
Firm or Corporation

This is to certify that I, _____ am an authorized official of
_____ working in the capacity of _____
_____ and have been properly authorized
by said firm or corporation to sign the following statements pertaining to the subject
contract:

I know of my own personal knowledge, and do hereby certify, that the work of the contract described above has been performed and all materials used and installed to date are in accordance with, and in conformity to, the contract drawings and specifications.

The Contract work is now complete in all parts and requirements, excepting the attached list of minor deficiencies and the reasons for each being incomplete to date, for which exemption from final payment requirements is requested in conformance to Article 14.09A of the General Conditions of our Contract (if no exemptions requested, write "none") _____. The work is now ready for your final inspection. The following items required from the Contractor prior to application for final payment (such as O & M Manuals, guarantees, record drawings, etc.) are submitted herewith, if any:

JORDAN VALLEY WATER CONSERVANCY DISTRICT

I understand that neither the issuance by the Engineer of a Notice of Completion, nor the acceptance thereof by the Owner, shall operate as a bar or claim against the Contractor under the terms of the guarantee provisions of the Contract Documents.

SIGNATURE: _____

DATE: _____

JORDAN VALLEY WATER CONSERVANCY DISTRICT

CONSENT OF SURETY FOR FINAL PAYMENT

PROJECT NAME: _____

LOCATION: _____

TYPE OF CONTRACT: _____

AMOUNT OF CONTRACT: _____

In accordance with the provisions of the above-named contract between the Owner and the Contractor, the following named surety:

on the Payment Bond of the following named Contractor:

hereby approves of final payment to the Contractor, and further agrees that said final payment to the Contractor shall not relieve the Surety Company named herein of any of its obligations to the following named Owner (as set forth in said Surety company's bond):

IN WITNESS WHEREOF, the Surety Company has hereunto set its hand and seal this _____ day of _____, 20____.

(Name of Surety Company)

(Signature of Authorized Representative)

(Name of Authorized Representatives)

(Title)

JORDAN VALLEY WATER CONSERVANCY DISTRICT

AFFIDAVIT OF PAYMENT

To All Whom It May Concern:

WHEREAS, the undersigned has been employed by the Jordan Valley Water Conservancy District to furnish labor and materials under a contract dated _____ for the project entitled " ", in the County of Salt Lake, State of Utah, of which Jordan Valley Water Conservancy District is the Owner.

NOW, THEREFORE, this _____ day of _____, 20__, the undersigned, as the Contractor for the above-named Contract pursuant to the Conditions of the Contract hereby certifies that, except as listed below, he has paid in full or has otherwise satisfied all obligations for all materials and equipment furnished, for all work, labor, and services performed, and for all known indebtedness and claims against the Contractor for damages arising in any manner in connection with the performance of the Contract referenced above for which the Owner or his property might in any way be held responsible.

EXCEPTIONS: (If none, write "None". If required by the Owner, the Contractor shall furnish bond satisfactory to the Owner for each Exception.)

Contractor (Name of sole ownership,
corporation or partnership)

(affix corporate seal here)

(Signature of Authorized Representative)

Title: _____

JORDAN VALLEY WATER CONSERVANCY DISTRICT

PURCHASE ORDER ASSIGNMENT

The Jordan Valley Water Conservancy District, a water conservancy district organized under the laws of the State of Utah (Assignor), hereby assigns, transfers and sets over to _____, a _____ corporation qualified to do business and doing business in the State of Utah (Assignee), all of Assignor's right, title and interest in and to the following described Purchase Order (a copy of which is attached and incorporated by reference as though fully set forth), subject to all the terms and conditions thereof:

Purchase Order No. _____, dated _____.

This Assignment is made pursuant to and in accordance with the terms of the Contract Documents and Specifications entered into by and between Assignor and Assignee for the _____ (Project Name) _____ dated _____.

Assignor hereby delegates to Assignee, and Assignee hereby expressly assumes, upon execution of this document, all of the obligations and duties to be performed by Assignor under the Purchase Order in accordance with the terms thereof and as provided in the Contract Documents and Specifications.

Assignor

JORDAN VALLEY WATER
CONSERVANCY DISTRICT

Dated: _____, 20__

By: _____
Richard P. Bay
Its General Manager

JORDAN VALLEY WATER CONSERVANCY DISTRICT

_____, Assignee, on this _____ day of _____, 200__, hereby accepts the assignment of the above-described Purchase Order, subject to the terms and conditions thereof and in accordance with the terms of this Assignment.

Assignee
(NAME OF ASSIGNEE)

Dated: _____, 200__

By: _____
Its President

GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS

Wherever used in these General Conditions or in the other Contract Documents the following terms have the meanings indicated:

Addenda - Written or graphic instruments issued prior to the opening of Bids which make additions, deletions, or revisions to the Contract Documents.

Agreement - The written contract between the OWNER and the CONTRACTOR for the performance of the WORK pursuant to the Contract Documents. Documents incorporated into the contract by reference become part of the contract and of the Agreement.

Application for Payment - The form furnished by the ENGINEER and completed by the CONTRACTOR to request progress or final payment including supporting documentation to substantiate the amounts for which payment is requested.

Bonds - Performance, and Payment Bonds and other instruments which protect against loss due to inability or refusal of the CONTRACTOR to perform pursuant to the Contract Documents.

Change Order - A document recommended by the ENGINEER, which is signed by the CONTRACTOR and the OWNER and authorizes an addition, deletion, or revision in the WORK, or an adjustment in the Contract Price or the Contract Time, issued on or after the Effective Date of the Agreement.

Contract Documents - Information and Instructions, forms (including the Schedule of Prices and all required certificates and affidavits), Agreement, Performance Bond, Payment Bond, General Conditions, Supplemental General Conditions, Technical Specifications, Drawings and all Addenda and Change Orders executed pursuant to the provisions of the Contract Documents.

Contract Price - The total monies payable by the OWNER to the CONTRACTOR under the terms and conditions of the Contract Documents.

Contract Time - The number of successive Days stated in the Contract Documents for the completion of the WORK. The Contract Time begins to run on the date specified in the Notice to Proceed.

CONTRACTOR - The person, firm, or corporation with whom the OWNER has executed the Agreement.

Cost Proposal - The offer or proposal of the pipeline installation subcontractor to the CONTRACTOR to provide the work required under these Contract Documents.

Day - A calendar day of 24 hours measured from midnight to the next midnight.

Defective Work - Work that: is unsatisfactory, faulty, or deficient; does not conform to the Contract Documents; does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents; has been damaged prior to the ENGINEERS's recommendation of final payment.

Drawings - The drawings, plans, maps, profiles, diagrams, and other graphic representations which show the character, location, nature, extent, and scope of the WORK.

Effective date of the Agreement - The date indicated in the Agreement on which it was executed, but if no such date is indicated it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

ENGINEER - The person, firm, or corporation named as such in the Contract Documents.

Field Order - A written order issued by the ENGINEER which may or may not involve a change in the WORK.

Laws and Regulations; Laws or Regulations - Laws, rules, regulations, ordinances, codes, and/or orders promulgated by a lawfully constituted body authorized to issue such Laws and Regulations.

Notice of Award - The OWNER's written notice to the apparent successful Bidder stating that upon compliance with the conditions precedent enumerated therein by the apparent successful Bidder within the time specified, the OWNER will enter into the Agreement.

Notice to Proceed - The OWNER's written notice to the CONTRACTOR authorizing the CONTRACTOR to proceed with the work and establishing the date of commencement of the Contract Time.

OWNER - The Jordan Valley Water Conservancy District.

Partial Utilization - Placing a portion of the WORK in service for the purpose for which it is intended (or a related purpose) before reaching Substantial Completion of the WORK.

Project - A unit of total construction of which the WORK to be provided under the Contract Documents, may be the whole, or a part thereof.

Project Representative - The authorized representative of the ENGINEER who is assigned to the site or any part thereof.

Proposer - Any person, firm or corporation submitting a proposal for the work.

Schedule of Prices - The offer or proposal of the CONTRACTOR setting forth the price or prices for the work to be performed.

Shop Drawings - All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for the CONTRACTOR to illustrate some portion of WORK and all illustrations, brochures, standard schedules, performance charts, instruction, and diagrams to illustrate material or equipment for some portion of the WORK.

Specifications - (Same definition as for Technical Specifications hereinafter).

Subcontractor - An individual, firm, or corporation having a direct contract with the CONTRACTOR or with any other Subcontractor for the performance of a part of the WORK at the site.

Substantial Completion - That state of construction when the WORK has progressed to the point where, in the opinion of the ENGINEER as evidenced by the Certificate of Substantial Completion, it is sufficiently complete, in accordance with the Contract Documents, so that the WORK can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to any work refer to substantial completion thereof.

Supplementary General Conditions - The part of the Contract Documents which make additions, deletions, or revisions to these General Conditions.

Supplier - A manufacturer, fabricator, supplier, distributor, materialman, or vendor.

Technical Data - The factual information contained in reports describing physical conditions, including exploration method, plans, logs, laboratory test methods and factual data. Technical Data does not include conclusions, interpretations, interpolations, extrapolations or opinions contained in reports or reached by the CONTRACTOR.

Technical Specifications - Those portions of the Contact Documents consisting of the written technical descriptions of products and execution of the WORK.

Underground Utilities - All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments and any encasements containing such facilities which have been installed under ground to furnish any of the following services or

materials: water, sewage and drainage removal, electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, traffic, or other control systems.

WORK - The entire construction required to be furnished under the Contract Documents. WORK is the result of performing services, furnishing labor and furnishing and incorporating materials and equipment into the construction, all as required by the Contract Documents.

GENERAL CONDITIONS

ARTICLE 2 - PRELIMINARY MATTERS

2.01 DELIVERY OF BONDS/INSURANCE CERTIFICATES

- A. The CONTRACTOR shall deliver to the OWNER the Agreement, Bonds, Insurance Policies and Certificates required by the Contract Documents within ten (10) days after receiving the Notice of Award from the OWNER.

2.02 COPIES OF DOCUMENTS

- A. The OWNER shall furnish the CONTRACTOR 5 copies of the Contract Documents, together with 5 sets of full-scale Drawings. Additional quantities of the Contract Documents will be furnished at reproduction cost.

2.03 STARTING THE PROJECT

- A. The CONTRACTOR shall begin construction of the WORK within 10 days after the commencement date stated in the Notice to Proceed, but shall not commence construction prior to the commencement date.

2.04 BEFORE STARTING CONSTRUCTION

- A. Before undertaking each part of the WORK, the CONTRACTOR shall carefully study and compare the Contract Documents to check and verify pertinent figures and dimensions shown thereon with all applicable field measurements. The CONTRACTOR shall promptly report in writing to the ENGINEER any conflict, error, or discrepancy which the CONTRACTOR may discover and shall obtain a written interpretation or clarification from the ENGINEER before proceeding with any work affected thereby.
- B. The CONTRACTOR shall submit to the ENGINEER for review those documents called for in each section of the Technical Specifications.

2.05 PRECONSTRUCTION CONFERENCE

- A. The CONTRACTOR shall attend a preconstruction conference with the OWNER, the ENGINEER and others as appropriate to discuss the construction of the WORK in accordance with the Contract Documents.

GENERAL CONDITIONS

2.06 FINALIZING SCHEDULES

- A. At least 7 days before the CONTRACTOR's submittal of its first Application for Payment, the CONTRACTOR, the ENGINEER, and others as appropriate will meet to finalize the schedules submitted in accordance with the Technical Specifications.

GENERAL CONDITIONS

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 INTENT

- A. The Contract Documents comprise the entire agreement between OWNER and CONTRACTOR concerning the WORK. The Contract Documents are complementary, what is called for by one is as binding as if called for by all. The Contract Documents will be construed in accordance with the law of the place of the Project.
- B. It is the intent of the Contract Documents to describe the WORK, functionally complete, to be constructed in accordance with the Contract Documents. All work, materials, or equipment that may be reasonably inferred from the Contract Documents as being required to produce the completed work shall be supplied whether or not specifically called for. When words which have a well-known technical or trade meaning are used to describe work, materials, or equipment such words shall be interpreted in accordance with that meaning. Reference to standard specifications, manuals, or codes or any technical society, organization, or association, or to the Laws or Regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids, except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual, or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of the OWNER, the CONTRACTOR, or the ENGINEER or any of their consultants, agents, or employees from those set forth in the Contract Documents.
- C. If, during the performance of the WORK, the CONTRACTOR finds a conflict, error or discrepancy in the Contract Documents, the CONTRACTOR shall immediately report it to the ENGINEER in writing and before proceeding with the work affected thereby. The ENGINEER shall then make a written interpretation, clarification, or correction from the ENGINEER.

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3.02 ORDER OF PRECEDENCE OF CONTRACT DOCUMENTS

- A. In resolving conflicts resulting from conflicts, errors, or discrepancies in any of the Contract Documents, the order of precedence shall be as follows:
 - 1. Change Orders
 - 2. Agreement
 - 3. Addenda
 - 4. Contractor's Bid (Bid Form)
 - 5. Supplemental General Conditions
 - 6. Notice Inviting Bids
 - 7. Instructions to Bidders
 - 8. General Conditions
 - 9. Technical Specifications
 - 10. Referenced Standard Specifications
 - 11. Drawings

- B. With reference to the Drawings the order of precedence is as follows:
 - 1. Figures govern over scaled dimensions
 - 2. Detail drawings govern over general drawings
 - 3. Addenda/change order drawings govern over general drawings
 - 4. Contract Drawings govern over standard drawings

3.03 AMENDING AND SUPPLEMENTING CONTRACT DOCUMENTS

- A. The Contract Documents may be amended by a Change Order (pursuant to Article 10) to provide for additions, deletions or revisions in the WORK or to modify terms and conditions.

GENERAL CONDITIONS

3.04 REUSE OF DOCUMENTS

- A. Neither the CONTRACTOR, Subcontractor, Supplier, nor any other person or organization performing any of the WORK under a contract with the OWNER shall have or acquire any title to or ownership rights in any of the Drawings, Technical Specifications, or other documents used on the WORK, and they shall not reuse any of them on the extensions of the Project or any other project without written consent.

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ARTICLE 4 - AVAILABILITY OF LANDS; PHYSICAL CONDITIONS: REFERENCE POINTS

4.01 AVAILABILITY OF LANDS

- A. The OWNER shall furnish the lands, rights-of-way and easements upon which the WORK is to be performed and for access thereto, together with other lands designated for the use of the CONTRACTOR in the Contract Documents. Easements for permanent structures or permanent changes in existing major facilities will be obtained and paid for by the OWNER, unless otherwise provided in the Contract Documents. Nothing contained in the Contract Documents shall be interpreted as giving the CONTRACTOR exclusive occupancy of the lands or rights-of-way provided. The CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment. The CONTRACTOR shall not enter upon nor use any property not under the control of the OWNER until a written temporary construction easement agreement has been executed by the CONTRACTOR and the property owner, and a copy of the easement furnished to the ENGINEER prior to its use. Neither the OWNER nor the ENGINEER shall be liable for any claims or damages resulting from the CONTRACTOR's unauthorized trespass or use of any properties.

4.02 PHYSICAL CONDITIONS - SUBSURFACE AND EXISTING STRUCTURES

- A. Explorations and Reports: The paragraph entitled "Physical Conditions" of the Supplementary General Conditions identifies exploration reports and subsurface conditions tests at the site that have been utilized by the ENGINEER in the preparation of the Contract Documents. The CONTRACTOR may rely upon the accuracy of the Technical Data contained in these reports. The CONTRACTOR is responsible for the interpretation, extrapolation or interpolation of all technical as well as nontechnical data and its reliance on the completeness, opinions and interpretation of the reports.
- B. Existing Structures: The paragraph entitled "Physical Conditions" of the Supplementary General Conditions identifies the drawings of physical conditions in or relating to existing surface and subsurface structures (except Underground Utilities referred to in Paragraph 4.04 herein) which are at or contiguous to the site that have been utilized by the ENGINEER in the preparation of the Contract Documents. The CONTRACTOR is responsible for the interpretation, extrapolation or interpolation of all technical as well as nontechnical data and its reliance on the completeness, opinions and interpretation of the reports.

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4.03 DIFFERING SITE CONDITIONS

- A. The CONTRACTOR shall notify the ENGINEER upon encountering any of the following unforeseen conditions, hereinafter called "differing site conditions," during the prosecution of the WORK. The CONTRACTOR's notice to the ENGINEER shall be in writing and delivered before the differing site conditions are disturbed, but in no event later than 14 days after their discovery.
 - 1. Subsurface or latent physical conditions at the site of the WORK differing materially from those indicated, described, or delineated in the Contract Documents including those reports and documents discussed in Paragraph 4.02; and
 - 2. Physical conditions at the site of the WORK of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents including those reports and documents discussed in Paragraph 4.02.
- B. The ENGINEER will review the alleged differing site conditions, determine the necessity of obtaining additional explorations or tests with respect to verifying their existence and extent and advise the OWNER in writing of the ENGINEER's findings and conclusions.
- C. If the OWNER concludes that because of newly discovered conditions a change in the Contract Documents is required, a Change Order will be issued as provided in Article 10 to reflect and document the consequences of the differing site conditions.
- D. In each such case, an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, or any combination thereof, will be allowable to the extent that they are attributable to the differing site conditions. If the OWNER and the CONTRACTOR are unable to agree as to the amount or length of the Change Order, a claim may be made as provided in Articles 11 and 12.
- E. The CONTRACTOR's failure to give written notice of differing site conditions within 14 days of their discovery and before they are disturbed shall constitute a waiver of all claims in connection therewith, whether direct or consequential in nature.

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4.04 PHYSICAL CONDITIONS - UNDERGROUND UTILITIES

- A. Shown or Indicated: The information and data shown or indicated in the Contract Documents with respect to existing Underground Utilities at or contiguous to the site are based on information and data furnished to the OWNER or the ENGINEER by the owners of Underground Utilities or by others. Unless it is expressly provided in the Supplementary General Conditions and/or the Section entitled "Protection and Restoration of Existing Facilities" of the Technical Specifications, the OWNER and the ENGINEER shall not be responsible for the accuracy or completeness of any Underground Utilities information or data. The CONTRACTOR's responsibility relating to underground utilities are: review and check all information and data, locate all Underground Utilities shown or indicated in the Contract Documents, coordinate the WORK with the owners of Underground Utilities during construction, the safeguard and protect the of Underground Utilities, and repair any damage to Underground Utilities resulting from the WORK. The cost of all these activities will be considered as having been included in the Contact Price.
- B. Not Shown or Indicated: If an Underground Utility not shown or indicated in the Contract Documents is uncovered or revealed at or contiguous to the site and which the CONTRACTOR could not reasonably have been expected to be aware of, the CONTRACTOR shall give written notice to the OWNER of that utility and the ENGINEER, specifying the location of the utility in question.

4.05 REFERENCE POINTS

- A. The ENGINEER will provide one bench mark, near or on the site of the WORK, and will provide two points near or on the site to establish a base line for use by the ENGINEER for alignment control. Unless otherwise specified in the Technical Specifications, the CONTRACTOR shall furnish all other lines, grades, and bench marks required for proper execution of the WORK.
- B. The CONTRACTOR shall preserve all bench marks, stakes, and other survey marks. In case of their removal or destruction by its own employees or by its subcontractor's employees, the CONTRACTOR shall be responsible for the accurate replacement of reference points by professionally qualified personnel at no additional cost to the OWNER.

GENERAL CONDITIONS

ARTICLE 5 - BONDS AND INSURANCE

5.01 PERFORMANCE AND OTHER BONDS

- A. The CONTRACTOR shall furnish Performance and Payment Bonds, each in the amount set forth in the Supplementary General Conditions as security for the faithful performance and payment of all the CONTRACTOR's obligations under the Contract Documents. All insurance companies, sureties, and bond companies shall have an AM Best rating of A- or better, with a Financial Size Category of XII or better. Sureties shall also be listed on the Department of the Treasury's Circular 570, with an acceptable underwriting limitation limit. The Performance Bond shall remain in effect at least until one year after the date of Notice of Completion, except as otherwise provided by Law or Regulation or by the Contract Documents. After the ENGINEER issues the Notice of Completion, the amount of the Performance Bond may be reduced to 10 percent of the Contract Price, or \$1,000, whichever is greater. The CONTRACTOR shall also furnish such other Bonds as are required by the Supplementary General Conditions.
- B. If the surety on any Bond furnished by the CONTRACTOR is declared a bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the WORK is located, the CONTRACTOR shall within 7 days after written approval by the OWNER of a substitute Bond and Surety substitute the approved Bond and Surety.

5.02 INSURANCE

- A. The CONTRACTOR shall purchase and maintain the insurance required under this paragraph. All insurance companies, sureties, and bond companies shall have an AM Best rating of A- or better, with a Financial Size Category of XII or better. Sureties shall also be listed on the Department of the Treasury's Circular 570, with an acceptable underwriting limitation limit. This insurance shall include the specific coverages set out herein and be written for not less than the limits of liability and coverages provided in the Supplementary General Conditions, or required by law, whichever is greater. The CONTRACTOR's liabilities under the Agreement shall not be deemed limited in any way to the insurance coverage required.
- B. The CONTRACTOR shall furnish the OWNER and ENGINEER with certificates indicating the type, amount, class of operations covered, effective dates and expiration dates of all policies. All insurance policies purchased and maintained (or the certificates or other evidence thereof) shall contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 30 days' prior written

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notice has been given to the OWNER by certified mail. All insurance shall remain in effect until the ENGINEER issues the Notice of Completion and at all times thereafter when the CONTRACTOR may be correcting, removing, or replacing defective work in accordance with Paragraph 13.06 or completing punch list items required by the Notice of Completion. In addition, the insurance required herein (except for Worker's Compensation and Employer's Liability) shall name the OWNER, the ENGINEER, and their officers, agents, and employees as "additional insured" under the policies.

1. Workers' Compensation and Employer's Liability: This insurance shall protect the CONTRACTOR against all claims under applicable state workers' compensation laws. The CONTRACTOR shall also be protected against claims for injury, disease, or death of employees which, for any reason, may not fall within the provisions of a workers' compensation law. This policy shall include an "all states" endorsement. The CONTRACTOR shall require each subcontractor similarly to provide Workers' Compensation Insurance for all of the latter's employees to be engaged in the WORK unless its employees are covered by the protection afforded by the CONTRACTOR's Workers' Compensation Insurance. In the event a class of employees is not protected under the Workers' Compensation Statute, the CONTRACTOR or Subcontractor, as the case may be, shall provide adequate employer's liability insurance for the protection of its employees not protected under the statute.
2. Comprehensive General Liability: This insurance shall be written in comprehensive form and shall protect the CONTRACTOR against all claims arising from injuries to persons other than its employees and damage to property of the OWNER or others arising out of any act or omission of the CONTRACTOR or its agents, employees or subcontractors. The policy shall include the following endorsements: (1) Protective Liability endorsement to insure the contractual liability assumed by the CONTRACTOR under the indemnification provisions in these General Conditions; (2) Broad Form Property Damage endorsement; (3) Personal Injury endorsement to cover personal injury liability for intangible harm. The Comprehensive General Liability coverage shall contain no exclusion relative to blasting, explosion, collapse of building, or damage to underground structures.
3. Comprehensive Automobile Liability: This insurance shall be written in comprehensive form. The policy shall protect the CONTRACTOR against all claims for injuries to employees, members of the public and

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damage to property of others arising from the use of CONTRACTOR's motor vehicles, whether they are owned, non-owned, or hired, and whether used or operated on or off the site. The motor vehicle insurance required under this paragraph shall include: (a) motor vehicle liability coverage; (b) personal injury protection coverage and benefits; and (c) uninsured motor vehicle coverage.

4. Subcontractor's Insurance: The CONTRACTOR shall require each of its subcontractors to procure and to maintain Comprehensive General Liability Insurance and Comprehensive Automobile Liability Insurance of the type and in the amounts specified in the Supplementary General Conditions or insure the activities of its subcontractors in the CONTRACTOR's own policy, in like amount.
5. Builder's Risk: This insurance shall be of the "all risk" type, shall be written in completed value form, and shall protect the CONTRACTOR, the OWNER, and the ENGINEER against damage to buildings, structures, materials and equipment. The amount of this insurance shall not be less than the insurable value of the WORK at completion. Builder's risk insurance shall provide for losses to be payable to the CONTRACTOR, the OWNER, and the ENGINEER as their interests may appear. The policy shall contain a provision that in the event of payment for any loss under the coverage provided, the insurance company shall have no rights of recovery against the CONTRACTOR, the OWNER, and the ENGINEER. The Builder's Risk policy shall insure against all risks of direct physical loss or damage to property from any external cause including flood and earthquake. Allowable exclusions, if any, shall be as specified in the Supplementary General Conditions.

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ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

6.01 SUPERVISION AND SUPERINTENDENCE

- A. The CONTRACTOR shall supervise and direct the WORK competently and efficiently, devoting the attention and applying the skills and expertise necessary to perform the WORK in accordance with the Contract Documents. The CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction and safety precautions and programs incidental thereto. The CONTRACTOR shall be responsible to see that the finished WORK complies accurately with the Contract Documents.
- B. The CONTRACTOR shall employ the Superintendent named in "Information Required of Bidder" on the work site at all times during the progress of the WORK. The superintendent shall not be replaced without the OWNER's written consent. The superintendent will be the CONTRACTOR's representative at the site and shall have authority to act on behalf of the CONTRACTOR. All communications given to the superintendent shall be as binding as if given to the CONTRACTOR. The CONTRACTOR shall issue all its communications to the OWNER through the ENGINEER.
- C. The CONTRACTOR's superintendent shall be present at the site of the WORK at all times while work is in progress. Failure to observe this requirement shall be considered suspension of the WORK by the CONTRACTOR until the superintendent is again present at the site.

6.02 LABOR, MATERIALS, AND EQUIPMENT

- A. The CONTRACTOR shall provide skilled, competent and suitably qualified personnel to survey and lay out the WORK and perform construction as required by the Contract Documents. When required in writing by the OWNER or ENGINEER, the CONTRACTOR or any subcontractor shall discharge any person who is, in the opinion of the OWNER or ENGINEER, incompetent, disorderly, or otherwise unsatisfactory and shall not again employ the discharged person on the WORK without the consent of the OWNER or ENGINEER. The CONTRACTOR shall at all times maintain good discipline and order at the site.
- B. Except in connection with the safety or protection of persons the WORK, or property at the site or adjacent thereto, all work at the site shall be performed during regular working hours, and the CONTRACTOR will not permit overtime work or the performance of work on Saturday, Sunday or any legal holiday without the OWNER's written consent given after prior written notice

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to the ENGINEER. Except as otherwise provided in this Paragraph, the CONTRACTOR shall receive no additional compensation for overtime work, i.e., work in excess of 8 hours in any one calendar day or 40 hours in any one calendar week, even though such overtime work may be required under emergency conditions and may be ordered by the ENGINEER in writing. Additional compensation will be paid the CONTRACTOR for overtime work in the event extra work is ordered by the ENGINEER and the Change Order specifically authorizes the use of overtime work, but only to the extent that the CONTRACTOR pays overtime wages on a regular basis being paid by for overtime work of a similar nature in the same locality.

- C. All costs of inspection and testing performed during overtime work approved solely for the convenience of the CONTRACTOR shall be borne by the CONTRACTOR. The OWNER shall have the authority to deduct the costs of all inspection and testing from any partial payments otherwise due to the CONTRACTOR.
- D. Unless otherwise specified in the Contract Documents, the CONTRACTOR shall furnish, erect, maintain and remove the construction plant, and temporary works and assume full responsibility for all materials, equipment, labor, transportation, construction equipment, machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities and all other facilities and incidentals necessary for the furnishing, performance testing, start-up and completion of the WORK.
- E. All materials and equipment incorporated into the WORK shall be of new and good quality, except as otherwise provided in the Contract Documents. If required by the ENGINEER, the CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. The CONTRACTOR shall apply, install, connect, erect, use, clean, and condition all material and equipment in accordance with the instructions of the manufacturer and Supplier except as otherwise provided in the Contract Documents.

6.03 ADJUSTING PROGRESS SCHEDULE

- A. The CONTRACTOR shall submit any adjustments in the progress schedule to the ENGINEER for acceptance in accordance with the provisions for "Contractor Submittals" in the Technical Specifications.

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6.04 SUBSTITUTES OR "OR-EQUAL" ITEMS

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to ENGINEER for review under the circumstances described below:
1. "Or-Equal" Items: If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by ENGINEER as an "or-equal" item, in which case review and approval of the proposed item may, in ENGINEER's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this paragraph 6.04.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment ENGINEER determines that: (i) it is a least equal in quality, durability, appearance, strength, and design characteristics; (ii) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole, and;
 - b. CONTRACTOR certifies that: (i) there is no increase in cost to the OWNER; and (ii) it will conform substantially, even with deviations, to the detailed requirements of the item named in the Contract Document.
 2. Substitute Items
 - a. If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR does not qualify as an "or-equal" item under paragraph 6.04.A.1, it will be considered a proposed substitute item.
 - b. CONTRACTOR shall submit sufficient information as provided below to allow ENGINEER to determine that the item of material or

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equipment proposed is essentially equivalent to that named and an acceptable substitute therefore. Requests for review of proposed substitute items of material or equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR.

- c. The procedure for review by ENGINEER will be as set forth in paragraph 6.04.A.2.d, as supplemented in the Technical Specifications and as ENGINEER may decide is appropriate under the circumstances.
 - d. CONTRACTOR shall first make written application to ENGINEER for review of a proposed substitute item of material or equipment that CONTRACTOR seeks to furnish or use. The application shall certify that the proposed substitute item will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified, and be suited to the same use as that specified. The application will state the extent, if any, to which the use of the proposed substitute item will prejudice CONTRACTOR's achievement of Substantial Completion on time, whether or not use of the proposed substitute item will require a change in any of the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) to adapt the design to the proposed substitute item, and whether or not incorporation or use of the substitute item is subject to payment of any license fee or royalty. All variations of the proposed substitute item from that specified will be identified in the application, and available engineering, sales, maintenance, repair, and replacement services will be indicated. The application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change, all of which will be considered by ENGINEER in evaluating the proposed substitute item. ENGINEER may require CONTRACTOR to furnish additional data about the proposed substitute item.
- B. Substitute Construction Methods or Procedures: If a specific means, method, technique, sequence, or procedure of construction is shown or indicated in and expressly required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by ENGINEER. CONTRACTOR shall submit sufficient information to allow ENGINEER, in

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ENGINEER's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The procedure for review by ENGINEER will be similar to that provided in subparagraph 6.04.A.2.

- C. Engineer's Evaluation: ENGINEER will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to paragraphs 6.04.A and 6.04.B. ENGINEER will be the sole judge of acceptability. No "or-equal" or substitute will be ordered, installed or utilized until ENGINEER's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." ENGINEER will advise CONTRACTOR in writing of any negative determination.
- D. Special Guarantee: OWNER may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other surety with respect to any substitute.
- E. ENGINEER's Cost Reimbursement: ENGINEER will record time required by ENGINEER and ENGINEER's Consultants in evaluating substitute proposed or submitted by CONTRACTOR pursuant to paragraphs 6.04.A.2 and 6.04.B and in making changes in the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) occasioned thereby. Whether or not ENGINEER approves a substitute item so proposed or submitted by CONTRACTOR, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER's Consultants for evaluation each such proposed substitute.
- F. CONTRACTOR's EXPENSE: CONTRACTOR shall provide all data in support of any proposed substitute or "or-equal" at CONTRACTOR's expense.

6.05 CONCERNING SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- A. The CONTRACTOR shall be responsible to the OWNER and the ENGINEER for the acts and omissions of its subcontractors and their employees to the same extent as the CONTRACTOR is responsible for the acts and omissions of its own employees. Nothing contained in this paragraph shall create any contractual relationship between any subcontractor and the OWNER or the ENGINEER nor relieve the CONTRACTOR of any liability or obligation under the Agreement.

6.06 PERMITS

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- A. Unless otherwise provided in the Supplementary General Conditions, the CONTRACTOR shall obtain and pay for all construction permits and licenses from the agencies having jurisdiction, including furnishing the insurance and bonds required by such agencies. The costs incurred by the CONTRACTOR in compliance with this paragraph shall not be made the basis for claims for additional compensation. The OWNER shall assist the CONTRACTOR, when necessary, in obtaining such permits and licenses. The CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the WORK, which are applicable at the time of opening of Bids, including all utility connection charges for utilities required by the WORK.

- B. The CONTRACTOR shall pay all license fees and royalties and assume all costs when any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others when issued in the construction of the WORK or incorporated into the WORK. If a particular invention, design, process, product, or device is specified in the Contract Documents for incorporation into or use in the construction of the WORK and if to the actual knowledge of the OWNER or the ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of these rights shall be disclosed by the OWNER in the Contract Documents. The CONTRACTOR shall indemnify, defend and hold harmless the OWNER and the ENGINEER and anyone directly or indirectly employed by either of them from and against all claims, damages, losses, and expenses (including attorneys' fees and court costs) arising out of any infringement of patent rights or copyrights incident to the use in the performance of the WORK or resulting from the incorporation in the WORK of any invention, design, process, product, or device not specified in the Contract Documents.

6.07 LAWS AND REGULATIONS

- A. The CONTRACTOR shall observe and comply with all federal, state, and local laws, ordinances, codes, orders, and regulations which in any manner affect those engaged or employed on the WORK, the materials used in the WORK, or the conduct of the WORK. If any discrepancy or inconsistency should be discovered in the Contract Documents in relation to any law, ordinance, code, order, or regulations, the CONTRACTOR shall report the same in writing to the ENGINEER. The CONTRACTOR shall indemnify, defend and hold harmless the OWNER, the ENGINEER and their officers, agents, and employees against all claims and from violation of any law, ordinance, code, order, or regulation, whether by CONTRACTOR or by its employees or subcontractors. Any particular law or regulation specified or

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referred to elsewhere in the Contract Documents shall not in any way limit the obligation of the CONTRACTOR to comply with all other provisions of federal, state, and local laws and regulations. Where an individual State act on occupational safety and health standards has been approved by Federal authority, then the provision of said State act shall control.

6.08 EQUAL OPPORTUNITY

- A. The Contractor agrees to abide by: the provisions of Title VII of the Civil Rights Act of 1964 (42USC § § 2000e et seq.), which prohibits discrimination against any employee or applicant for employment on the basis of race, religion, color, or national origin; Executive Order No. 11246, as amended, which prohibits discrimination on the basis of sex; 45 CFR 90, which prohibits discrimination on the basis of age; Section 504 of the Rehabilitation Act of 1973, (42 USC § 794), which prohibits discrimination on the basis of handicap; Utah Executive Order dated June 30, 1989, which prohibits sexual harassment in the workplace; and the Americans with Disabilities Act (42 USC § § 12111 et seq.), which prohibits discrimination against qualified employees and applicants with a disability.

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6.09 TAXES

- A. The CONTRACTOR shall pay all sales, consumer, use, and other similar taxes required to be paid by the CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the WORK.

6.10 USE OF PREMISES

- A. The CONTRACTOR shall confine construction equipment, stored materials and equipment, and other operations of workers to (1) the Project site, (2) the land and areas identified for the CONTRACTOR's use in the Contract Documents, and (3) other lands whose use is acquired by Laws and Regulations, rights-of-way, permits, and easements. The CONTRACTOR shall be fully responsible to the owner and occupant of such lands for any damage to the lands or areas contiguous thereto, resulting from the performance of the WORK or otherwise. Should any claim be made against the OWNER or the ENGINEER by owner or occupant of lands because of the performance of the WORK, the CONTRACTOR shall promptly settle the claim by agreement, or resolve the claim through litigation. The CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify, defend, and hold the OWNER and the ENGINEER harmless from and against all claims, damages, losses, and expenses (including, but not limited to, fees of engineers, architects, attorneys, and other professionals and court costs) arising directly, indirectly, or consequentially out of any action, legal or equitable, brought by any owner or occupant of land against the OWNER or the ENGINEER to the extent the claim is based or arises out of the CONTRACTOR's performance of the WORK.

6.11 SAFETY AND PROTECTION

- A. The CONTRACTOR shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the WORK. The CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:
 - 1. All employees on the WORK and other persons and organizations who may be affected thereby.
 - 2. All the WORK and materials and equipment to be incorporated therein, whether in storage on or off the site; and

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3. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.
- B. The CONTRACTOR shall comply with all applicable Laws and Regulations (whether referred to herein or not) of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury, or loss and shall erect and maintain all necessary safeguards for such safety and protection. The CONTRACTOR shall notify owners of adjacent property and utilities when prosecution of the WORK may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.
- C. Unless the CONTRACTOR otherwise designates in writing a different individual as the responsible individual, the CONTRACTOR's superintendent shall be CONTRACTOR's representative at the site whose duty shall be the prevention of accidents.

6.12 SHOP DRAWINGS AND SAMPLES

- A. After checking and verifying all field measurements and after complying with the applicable procedures specified in the Technical Specifications, the CONTRACTOR shall submit all shop drawings to the ENGINEER for review and approval in accordance with the approved schedule for shop drawings submittals specified in the Technical Specifications.
- B. The CONTRACTOR shall also submit to the ENGINEER for review and approval all samples in accordance with the approved schedule of sample submittals specified in the Technical Specifications.
- C. Before submitting shop drawings or samples, the CONTRACTOR shall determine and verify all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar data with respect thereto and review or coordinate each shop drawing or sample with other shop drawings and samples and with the requirements of the WORK and the Contract Documents.

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6.13 CONTINUING THE WORK

- A. The CONTRACTOR shall carry on the WORK and adhere to the progress schedule during all disputes or disagreements with the OWNER. No work shall be delayed or postponed pending resolution of any dispute or disagreement, except as the CONTRACTOR and the OWNER may otherwise mutually agree in writing.

6.14 INDEMNIFICATION

- A. To the fullest extent permitted by Laws and Regulations, the CONTRACTOR shall indemnify, defend, and hold harmless the OWNER, the ENGINEER, and their officers, agents, and employees, against and from all claims and liability arising under or by reason of the Agreement or any performance of the WORK, but not from the sole negligence or willful misconduct of the OWNER and/or the ENGINEER. Such indemnification by the CONTRACTOR shall include but not be limited to the following:
 - 1. Liability or claims resulting directly or indirectly from the negligence or carelessness of the CONTRACTOR or its agents in the performance of the WORK, or in guarding or maintaining the same, or from any improper materials, implements, or appliances used in its construction, or by or on account of any act or omission of the CONTRACTOR or its agents;
 - 2. Liability or claims arising directly or indirectly from or based on the violation of any law, ordinance, regulation, order, or decree, whether by the CONTRACTOR or its agents;
 - 3. Liability or claims arising directly or indirectly from the use or manufacture by the CONTRACTOR, its agents, or the OWNER in the performance of this Agreement of any copyrighted or uncopyrighted composition, secret process, patented or unpatented invention, article, or appliance, unless otherwise specifically stipulated in this Agreement.
 - 4. Liability or claims arising directly or indirectly from the breach of any warranties, whether express or implied, made to the OWNER or any other parties by the CONTRACTOR or its agents;
 - 5. Liabilities or claims arising directly or indirectly from the willful misconduct of the CONTRACTOR or its agents; and,

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6. Liabilities or claims arising directly or indirectly from any breach of the obligations assumed herein by the CONTRACTOR.
 - B. The CONTRACTOR shall reimburse the OWNER, and the ENGINEER for all costs and expense, (including but not limited to fees and charges of engineers, architects, attorneys, and other professional and court costs) incurred by the OWNER, and the ENGINEER in enforcing the provisions of this Paragraph.
 - C. The indemnification obligation under this Paragraph shall not be limited in any way by any limitation of the amount or type of damages, compensation, or benefits payable by or for the CONTRACTOR or any such subcontractor or other person or organization under workers' compensation acts, disability benefit acts, or other employee benefit acts.

6.15 CONTRACTOR'S DAILY REPORTS

- A. The CONTRACTOR shall complete a daily report indicating manpower, major equipment, subcontractors, weather conditions, etc., involved in the performance of the WORK. The daily report shall be completed on forms prepared by the CONTRACTOR and acceptable to the ENGINEER, and shall be submitted to the ENGINEER at the conclusion of each work day.

6.16 ASSIGNMENT OF CONTRACT

- A. The CONTRACTOR shall not assign, sublet, sell, transfer, or otherwise dispose of the Agreement or any portion thereof, or its right, title, or interest therein, or obligations thereunder, without the written consent of the OWNER except as imposed by law. If the CONTRACTOR violates this provision, the Agreement may be terminated at the option of the OWNER. In such event, the OWNER shall be relieved of all liability and obligations to the CONTRACTOR and to its assignee or transferee, growing out of such termination.

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ARTICLE 7 - OTHER WORK

7.01 RELATED WORK

- A. The OWNER may perform other work related to the Project at the site by the OWNER's own forces, have other work performed by utility owners, or let other direct contracts for the performance of the other work which may contain General Conditions similar to these. If the fact that such other work is to be performed was not noted in the Contract Documents, written notice thereof will be given to the CONTRACTOR prior to commencing any other work.

- B. The CONTRACTOR shall afford each utility owner and other contractor who is a party to a direct contract (or the OWNER, if the OWNER is performing the additional work with the OWNER's employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of the other work. The CONTRACTOR shall properly connect and coordinate the WORK with the other work. The CONTRACTOR shall do all cutting, fitting, and patching of the WORK that may be required to make its several parts come together properly and integrate with the other work. The CONTRACTOR shall not endanger any work of others by cutting, excavating, or otherwise altering their work and shall only cut or alter their work with the written consent of the ENGINEER and the others whose work will be affected.

- C. If the proper execution or results of any part of the CONTRACTOR's work depends upon the integration of work with the completion of other work by any other contractor or utility owner (or the OWNER), the CONTRACTOR shall inspect and report to the ENGINEER in writing all delays, defects, or deficiencies in the other work that renders it unavailable or unsuitable for proper integration with the CONTRACTOR's work. Except for the results or effects of latent or nonapparent defects and deficiencies in the other work, the CONTRACTOR's failure to report will constitute an acceptance of the other work as fit and proper for integration with the CONTRACTOR's work and as a waiver of any claim for additional time or compensation associated with the integration of the CONTRACTOR's work with the other work.

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7.02 COORDINATION

- A. If the OWNER contracts with others for the performance of other work on the Project at the site, a coordinator will be identified to the extent that the coordinator can be identified at this time, in the Supplementary General Conditions and delegated the authority and responsibility for coordination of the activities among the various contractors. The specific matters over which the coordinator has authority and the extent of the coordinator's authority and responsibility will be itemized in the Supplementary General Conditions or in a notice to the CONTRACTOR at such time as the identity of the coordinator is determined.

GENERAL CONDITIONS

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.01 COMMUNICATIONS

- A. The OWNER shall issue all its communications to the CONTRACTOR through the ENGINEER.

8.02 PAYMENTS

- A. The OWNER shall make payments to the CONTRACTOR as provided in Paragraphs 14.05 and 14.09.

8.03 LANDS, EASEMENTS, AND SURVEYS

- A. The OWNER's duties with respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. The OWNER shall identify and make available to the CONTRACTOR copies of exploration reports and subsurface conditions tests at the site and in existing structures which have been utilized by the ENGINEER in preparing the Drawings and Technical Specifications as set forth in Paragraph 4.02

8.04 CHANGE ORDERS

- A. The OWNER shall execute approved Change Orders for the conditions described in Paragraph 10.01D.

8.05 INSPECTIONS AND TESTS

- A. The OWNER's responsibility with respect to inspection, tests, and approvals is set forth in Paragraph 13.03B.

8.06 SUSPENSION OF WORK

- A. In connection with the OWNER's right to stop work or suspend work, see Paragraphs 13.04 and 15.01. Paragraphs 15.02 and 15.03 deal with the OWNER's right to terminate services of the CONTRACTOR under certain circumstances.

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ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

9.01 OWNER'S REPRESENTATIVE

- A. The ENGINEER will be the OWNER's representative during the construction period. The duties, responsibilities and the limitations of authority of the ENGINEER as the OWNER's representative during construction are set forth in a separate agreement with the OWNER and are summarized hereafter.

9.02 VISITS TO SITE

- A. The ENGINEER will make visits to the site during construction to observe and inspect the progress and quality of the WORK and to determine, in general if the WORK is proceeding in accordance with the Contract Documents.

9.03 PROJECT REPRESENTATION

- A. The ENGINEER will furnish a Project Representative to observe and inspect the performance of the WORK. The Project Representative and/or other authorized agents of the Engineer shall serve as the chief Owner/Engineer contact(s) with the Contractor during the construction phase. All submittals shall be delivered to and communications between the Engineer and the Contractor shall be handled by the Project Representative and/or other authorized agents. The Project Representative shall be the chief authorized representative of the Owner and the Engineer at the site of the work in all on-site relations with the Contractor.

9.04 CLARIFICATIONS AND INTERPRETATIONS

- A. The ENGINEER will issue with reasonable promptness written clarifications or interpretations of the requirements of the Contract Documents (in the form of Drawings or otherwise) as the ENGINEER may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents.

9.05 AUTHORIZED VARIATIONS IN WORK

- A. The ENGINEER may authorize minor variation in the WORK as described in the Contract Documents when such variations do not involve an adjustment in the Contract Price or the Contract Time and are consistent with the overall intent of the Contract Documents. These variations shall be accomplished by issuing a Field Order. The issuance of a Field Order requires the CONTRACTOR to perform the work described in the order promptly. If the

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CONTRACTOR believes that a Field Order justifies an increase in the Contract Price or an extension of the Contract Time and parties are unable to agree as the amount or extent thereof, the CONTRACTOR may make a claim therefor as provided in Article 11 or 12.

9.06 REJECTION OF DEFECTIVE WORK

- A. The ENGINEER is authorized to reject work which the ENGINEER believes to be defective and require special inspection or testing of the WORK as provided in Paragraph 13.03G, whether or not the WORK is fabricated, installed, or completed.

9.07 CONTRACTOR SUBMITTALS, CHANGE ORDERS, AND PAYMENTS

- A. The ENGINEER will review for approval all Contractor submittals, including shop drawings, samples, substitutes, and "or equal" items, etc., in accordance with the procedures set forth in the Technical Specifications.
- B. In connection with the ENGINEER's responsibilities as to Change Orders, see Articles 10, 11, and 12.
- C. In connection with the ENGINEER's responsibilities with respect to Applications for Payment, see Article 14.

9.08 DECISIONS ON DISPUTES

- A. All claims, disputes, and other matters concerning the acceptability of the WORK, the interpretation of the requirements of the Contract Documents pertaining to the performance of the WORK, and claims for changes in the Contract Price or Contract Time under Articles 11 and 12 will be referred to the ENGINEER in writing with a request for formal decision in accordance with this paragraph. The ENGINEER will render a decision in writing within 30 days of receipt of the request. Written notice of each claim, dispute, or other matter will be delivered by the CONTRACTOR to the ENGINEER promptly (but in no event later than 30 days) after the occurrence of the event. Written supporting data will be submitted to the ENGINEER with the written claim unless the ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim.
- B. When reviewing the claim or dispute, the ENGINEER will not show partiality to the OWNER or the CONTRACTOR and will incur no liability in connection with any interpretation or decision rendered in good faith. The ENGINEER's rendering of a decision with respect to any claim, dispute, or other matter (except any which have been waived by the making or acceptance of final

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payment as provided in Paragraph 14.12) shall be a condition precedent to the OWNER's or the CONTRACTOR's exercise of their rights or remedies under the Contract Documents or by Law or Regulations with respect to the claim, dispute, or other matter.

9.09 LIMITATION ON ENGINEER'S RESPONSIBILITIES

- A. Neither the ENGINEER's authority to act pursuant to its agreement with the OWNER, nor the description of that authority under this Article 9, nor any other description of the ENGINEER's responsibility in the Contract Documents, nor any decision made by the ENGINEER in good faith either to exercise or not exercise its authority, shall give rise to any duty or responsibility on the part of the ENGINEER to the CONTRACTOR, any Subcontractor, any Supplier, any surety or any other person or organization performing any part of the WORK.
- B. Whenever in the Contract Documents the terms "as ordered," "as directed," "as required," "as allowed," "as reviewed," "as approved," or terms of like effect or import are used, or the adjectives "reasonable," "suitable," "acceptable," "proper," or "satisfactory" or adjectives of like effect or import are used to describe a requirement, direction, review, or judgement of the ENGINEER as to the WORK, it is intended that such requirement, direction, review, or judgment will be solely to evaluate the WORK for compliance with the Contract Documents, unless there is a specific statement indicating otherwise. The use of any such term or adjective shall not be effective to assign to the ENGINEER any duty or authority to supervise or direct the performance of the WORK or any duty or authority to undertake responsibility contrary to the provisions of its agreement with the OWNER.
- C. The ENGINEER will not be responsible for the CONTRACTOR's means, methods, techniques, sequences, or procedures of construction not specified in the Contract Documents or the safety precautions and programs incident thereto.
- D. The ENGINEER will not be responsible for the acts or omissions of the CONTRACTOR nor of any subcontractor, supplier, or any other person or organization performing any of the WORK to the extent that such acts or omissions are not reasonably discoverable considering the level of observation and inspection required by the ENGINEER's agreement with the OWNER.

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ARTICLE 10 - CHANGES IN THE WORK

10.01 GENERAL

- A. Without invalidating the Agreement and without notice to any surety, the OWNER may at any time or from time to time, order additions, deletions, or revisions in the WORK; these will be authorized by a written Field Order and/or a Change Order issued by the ENGINEER. Upon receipt of any of these documents, the CONTRACTOR shall promptly proceed with the work involved pursuant to the applicable conditions of the Contract Documents.
- B. If the OWNER and the CONTRACTOR are unable to agree upon the increase or decrease in the Contract Price or an extension or shortening of the Contract Time, if any, that should be allowed as a result of a Field Order, a claim may be made therefor as provided in Articles 11 or 12.
- C. The CONTRACTOR shall not be entitled to an increase in the Contract Price nor an extension of the Contract Time with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented by Change Order, except in the case of an emergency and except in the case of uncovering work provided in the Paragraph 13.03G.
- D. The OWNER and the CONTRACTOR shall execute appropriate Change Orders covering:
 - 1. Changes in the WORK which are ordered by the OWNER pursuant to Paragraph 10.01A;
 - 2. Changes required because of acceptance of defective work under Paragraph 13.06;
 - 3. Changes in the Contract Price or Contract Time which are agreed to by the parties; or
 - 4. Any other changes agreed to by the parties.
- E. If the provisions of any Bond require notice of any change to be given to a surety, the giving of these notices will be the CONTRACTOR's responsibility. The CONTRACTOR shall provide for the amount of each applicable Bond to be adjusted accordingly.

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10.02 ALLOWABLE QUANTITY VARIATIONS

- A. Whenever a unit price and quantity have been established for a bid item in the Contract Documents, the quantity stated may be increased or decreased to a maximum of 25 percent with no change in the unit price. An adjustment in the quantity in excess of 25 percent will be sufficient to justify a change in the unit price. Changes in the quantity of all bid items established in the Contract Documents, regardless of whether the changes are more or less than 25 percent and at the unit price established in the Contract Documents or adjusted otherwise, shall be documented by Change Orders.

- B. In the event a part of the WORK is to be entirely eliminated and no lump sum or unit price is named in the Contract Documents to cover the eliminated work, the price of the eliminated work shall be agreed upon in writing by the OWNER and the CONTRACTOR. If the OWNER and the CONTRACTOR fail to agree upon the price of the eliminated work, the price shall be determined in accordance with the provisions of Article 11.

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ARTICLE 11 - CHANGE OF CONTRACT PRICE

11.01 GENERAL

- A. The Contract Price constitutes the total compensation payable to the CONTRACTOR for performing the WORK. Except as directed by Change Orders, all duties, responsibilities, and obligations assigned to or undertaken by the CONTRACTOR shall be at its expense without change in the Contract Price.

- B. The Contract Price may only be changed by a Change Order. Any claim for an increase in the Contract Price shall be based on written notice delivered by the CONTRACTOR to the ENGINEER promptly (but in no event later than 30 days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the amount of the claim with supporting data shall be delivered with the claim, unless the ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim, and shall be accompanied by the CONTRACTOR's written statement that the amount claimed covers all known amounts (direct, indirect, and consequential) to which the CONTRACTOR is entitled as a result of the occurrence of the event. If the OWNER and the CONTRACTOR cannot otherwise agree on the amount involved, all claims for adjustment in the Contract Price shall be determined by the ENGINEER in accordance with Paragraph 9.08A. No claim for an adjustment in the Contract Price will be valid if not submitted in accordance with this Paragraph 11.01B.

- C. The value of any work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:
 - 1. Where the work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved.
 - 2. By mutual acceptance of a lump sum, which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.
 - 3. On the basis of the cost of work (determined as provided in Paragraphs 11.02 and 11.03) plus a CONTRACTOR's fee for overhead and profit (determined as provided in Paragraph 11.04).

GENERAL CONDITIONS

11.02 COST OF WORK (BASED ON TIME AND MATERIALS)

- A. General: The term "cost of work" means the sum of all costs necessarily incurred and paid by the CONTRACTOR for labor, materials, and equipment in the proper performance of work. Except as otherwise may be agreed to in writing by the OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project.
- B. Labor: The cost of labor used in performing work by the CONTRACTOR, a subcontractor, or other forces will be the sum of the following:
1. The actual wages paid plus any employer payments to, or on behalf of workers for fringe benefits including health and welfare, pension, vacation, and similar purposes. The cost of labor may include the rates paid to foremen when determined by the ENGINEER that the services of foremen do not constitute a part of the overhead allowance.
 2. All payments imposed by state and federal laws including, but not limited to, compensation insurance, and social security payments.
 3. The amount paid for subsistence and travel required by collective bargaining agreements, or in accordance with the regular practice of the employer.

At the beginning of the extra work and as later requested by the ENGINEER, the CONTRACTOR shall furnish the ENGINEER proof of labor compensation rates being paid.

- C. Materials: The cost of materials used in performing work will be the cost to the purchaser, whether CONTRACTOR or subcontractor, from the supplier thereof, except as the following are applicable:
1. Trade discounts available to the purchase shall be credited to the OWNER notwithstanding the fact that such discounts may not have been taken by the CONTRACTOR.
 2. For materials secured by other than a direct purchase and direct billing to the purchaser, the cost shall be deemed to be the price paid to the actual supplier as determined by the ENGINEER. Markup except for actual costs incurred in the handling of such materials will not be allowed.

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3. Payment for materials from sources owned wholly or in part by the purchaser shall not exceed the price paid by the purchaser for similar materials from these sources on extra work items or current wholesale price for the materials delivered to the work site, whichever is lower.
 4. If in the opinion of the ENGINEER the cost of material is excessive, or the CONTRACTOR does not furnish satisfactory evidence of the cost of the material, then the cost shall be deemed to be the lowest current wholesale price for the quantity concerned, delivered to the work site less trade discount. The OWNER reserves the right to furnish materials for the extra work and no claim shall be made by the CONTRACTOR for costs and profit on such materials.
- D. Equipment: The CONTRACTOR will be paid for the use of equipment at the rental rate listed for the equipment specified in the Supplementary General Conditions. The rental rate will be used to compute payments for equipment whether the equipment is under the CONTRACTOR's control through direct ownership, leasing, renting, or another method of acquisition. The rental rate to be applied for use of each item of equipment shall be the rate resulting in the least total cost to the Owner for the total period of use. If it is deemed necessary by the CONTRACTOR to use equipment not listed in the Supplementary General Conditions an equitable rental rate for the equipment will be established by the ENGINEER. The CONTRACTOR may furnish cost data which might assist the ENGINEER in the establishing the rental rate.
1. All equipment shall, in the opinion of the ENGINEER, be in good working condition and suitable for the purpose for which the equipment is to be used.
 2. Before construction equipment is used on the extra work, the CONTRACTOR shall plainly stencil or stamp an identifying number thereon at a conspicuous location, and shall furnish to the ENGINEER, in duplicate, a description of the equipment and its identifying number.
 3. Unless otherwise specified, manufacturers' ratings and manufacturer approved modifications shall be used to classify equipment for the determination of applicable rental rates. Equipment which has no direct power unit shall be powered by a unit of at least the minimum rating recommended by the manufacturer.
 4. Individual pieces of equipment or tools having a replacement value of \$100 or less, whether or not consumed by use, shall be considered to be small tools and no payment will be made therefore.

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5. Rental time will not be allowed while equipment is inoperative due to breakdowns.
- E. Equipment on the Work: The rental time to be paid for equipment used on the WORK shall be the time the equipment is in productive operation on the extra work being performed and, in addition, shall include the time required to move the equipment to the location of the extra work and return it to the original location or to another location that requires no more moving time than that required to return it to its original location. Moving time will not be paid if the equipment is used on other than the extra work, even though located at the site of the extra work. Loading and transporting costs will be allowed, in lieu of moving time, when the equipment is moved by means other than its own power. However, no payment will be made for loading and transporting costs when the equipment is used on other than the extra work even though located at the site of the extra work. The following shall be used in computing the rental time of equipment on the WORK.
1. When hourly rates are listed, any part of an hour less than 30 minutes of operation shall be considered to be 1/2-hour of operation, and any part of an hour in excess of 30 minutes will be considered one hour of operation.
 2. When daily rates are listed, any part of a day less than 4 hours operation shall be considered to be 1/2-day of operation. When owner-operated equipment is used to perform extra work to be paid for on a time and materials basis, the CONTRACTOR will be paid for the equipment and operator, as set forth in Paragraph (3), (4), and (5), following.
 3. Payment for the equipment will be made in accordance with the provisions in Paragraph 11.02D, herein.
 4. Payment for the cost of labor and subsistence or travel allowance will be made at the rates paid by the CONTRACTOR to other workers operating similar equipment already on the WORK, or in the absence of such labor, established by collective bargaining agreements for the type of workmen and location of the extra work, whether or not the operator is actually covered by such an agreement. A labor surcharge will be added to the cost of labor described herein in accordance with the provisions of Paragraph 11.02B, herein, which surcharge shall constitute full compensation for payments imposed by state and federal laws and all payments made to on behalf of workers other than actual wages.

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5. To the direct cost of equipment rental and labor, computed as provided herein, will be added the allowances for equipment rental and labor as provided in Paragraph 11.04, herein.

11.03 SPECIAL SERVICES

- A. Special work or services are defined as that work characterized by extraordinary complexity, sophistication, or innovation or a combination of the foregoing attributes which are unique to the construction industry. The following may be considered by the ENGINEER in making estimates for payment for special services:
 1. When the ENGINEER and the CONTRACTOR, by agreement, determine that a special service or work is required which cannot be performed by the forces of the CONTRACTOR or those of any of its subcontractors, the special service or work may be performed by an entity especially skilled in the work to be performed. After validation of invoices and termination of market values by the ENGINEER, invoices for special services or work based upon the current fair market value thereof may be accepted without complete itemization of labor, material, and equipment rental cost.
 2. When the CONTRACTOR is required to perform work necessitating special fabrication or machining process in a fabrication or a machine shop facility away from the job site, the charges for that portion of the work performed at the off-site facility may by agreement, be accepted as a special service and accordingly, the invoices from the work may be accepted without detailed itemization.
 3. All invoices for special services will be adjusted by deducting all trade discounts offered or available, whether the discounts were taken or not. In lieu of the allowances for overhead and profit specified in Paragraph 11.04, herein, an allowance of 5 percent will be added to invoices for special services.
- B. All work performed hereunder shall be subject to all of the provisions of the Contract Documents and the CONTRACTOR's sureties shall be bound with reference hereto as under the original Agreement. Copies of all amendments to surety bonds or supplemental surety bonds shall be submitted to the OWNER for review prior to the performance of any work hereunder.

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11.04 CONTRACTOR'S FEE

- A. WORK ordered on the basis of time and materials will be paid for at the actual necessary cost as determined by the ENGINEER, plus allowances for overhead and profit. For extra work involving a combination of increases and decreases in the WORK the actual necessary cost will be the arithmetic sum of the additive and deductive costs. The allowance for overhead and profit shall include full compensation for superintendence, bond and insurance premiums, taxes, office expenses, and all other items of expense or cost not included in the cost of labor, materials, or equipment provided for under Paragraphs 11.02B, C, and D, herein including extended overhead and home office overhead. The allowance for overhead and profit will be made in accordance with the following schedule:

ACTUAL NECESSARY COST OVERHEAD AND PROFIT ALLOWANCE

Labor	10 percent
Materials	10 percent
Equipment	10 percent

- B. It is understood that labor, materials, and equipment may be furnished by the CONTRACTOR or by the subcontractor, the allowance specified herein shall be applied to the labor, materials, and equipment costs of the subcontractor, to which the CONTRACTOR may add 5 percent of the subcontractor's total cost for the extra work. Regardless of the number of hierarchical tiers of subcontractors, the 5 percent increase above the subcontractor's total cost which includes the allowances for overhead and profit specified herein may be applied one time only for each separate work transaction.

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ARTICLE 12 - CHANGE OF CONTRACT TIME

12.01 GENERAL

- A. The Contract Time may only be changed by a Change Order. Any claim for an extension of the Contract time shall be based on written notice delivered by the CONTRACTOR to the ENGINEER promptly (but in no event later than 30 days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the extent of the claim with supporting data shall be delivered within 30 days after such occurrence (unless the ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by the CONTRACTOR's written statement that the adjustment claimed is the entire adjustment to which the CONTRACTOR has reason to believe it is entitled as a result of the occurrence of said event. All claims for adjustment in the Contract Time shall be determined by the ENGINEER in accordance with Paragraph 9.08 if the OWNER and the CONTRACTOR cannot otherwise agree. No claim for an adjustment in the Contract Time will be valid if not submitted in accordance with the requirements of this Paragraph 12.01A.

- B. The Contract Time will be extended in an amount equal to time lost if the CONTRACTOR makes a claim as provided in Paragraph 12.01A and the ENGINEER determines that the delay was caused by events beyond the control of the CONTRACTOR. Examples of events beyond the control of the CONTRACTOR include acts or neglect by the OWNER or others performing additional work as contemplated by Article 7, or by acts of God or of the public enemy, fire, floods, epidemics, quarantine restrictions, strikes, labor disputes, sabotage, or freight embargoes.

- C. All time limits stated in the Contract Documents are of the essence.

- D. None of the aforesaid time extensions shall entitle the CONTRACTOR to any adjustment in the Contract Price or any damages for delay. Furthermore, the CONTRACTOR hereby indemnifies and holds harmless the OWNER and ENGINEER, their officers, agents and employees from and against all claims, damages, losses and expenses (including lost property and attorney's fees) arising out of or resulting from the temporary suspension of work whether for the OWNER's convenience as defined in Article 15.01 (a) or for whatever other reasons including the stoppage of work by the ENGINEER for the CONTRACTOR's failure to comply with any order issued by the ENGINEER.

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12.02 EXTENSIONS OF THE TIME FOR DELAY DUE TO INCLEMENT WEATHER

- A. "Inclement weather" is any weather condition or conditions resulting immediately therefrom, causing the CONTRACTOR to suspend construction operations or preventing the CONTRACTOR from proceeding with at least 75 percent of the normal labor and equipment force engaged on the WORK.
- B. Should the CONTRACTOR prepare to begin work at the regular starting time at the beginning of any regular work shift on any day on which inclement weather, or its effects on the condition of the WORK prevents work from beginning at the usual starting time and the crew is dismissed as a result thereof, the CONTRACTOR will not be charged for a working day whether or not conditions change thereafter during the day and the major portion of the day could be considered to be suitable for construction operations.
- C. The CONTRACTOR shall base its construction schedule upon the inclusion of the number of days of inclement weather specified in the paragraph entitled "Inclement weather delays" of the Supplementary General Conditions. No extension of the Contract Time due to inclement weather will be considered until after the stated number of days of inclement weather has been reached. However, no reduction in Contract Time will be made if the number of inclement weather days is not reached.

12.03 EXTENSIONS OF TIME FOR OTHER DELAYS

- A. If the CONTRACTOR is delayed in completion of the WORK beyond the time named in the Contract Documents for the completion of the WORK, by acts of God or of the public enemy, fire, floods, epidemics, quarantine restrictions, strikes, labor disputes, industry-wide shortage of raw materials, sabotage or freight embargoes, the CONTRACTOR shall be entitled to an adjustment in the Contract Time. No such adjustment will be made unless the CONTRACTOR shall notify the ENGINEER in writing of the causes of delay within 15 calendar days from the beginning of any such delay. The ENGINEER shall ascertain the facts and the extent of the delay. No adjustment in time shall be made for delays resulting from noncompliance with the Contract, accidents, failure on the part of the CONTRACTOR to carry out the provisions of the Contract including failure to provide materials, equipment or workmanship meeting the requirements of the Contract Documents; the occurrence of such events shall not relieve the CONTRACTOR from the necessity of maintaining the required progress.
- B. In the event that Contract completion is delayed beyond the Contract Time named in the Specifications by reason of shortages of raw materials required for CONTRACTOR-furnished items, the CONTRACTOR shall be entitled to

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an adjustment in the Contract Time in like manner as if the WORK had been suspended for the convenience and benefit of the OWNER; provided, however, that the CONTRACTOR shall furnish documentation acceptable to the OWNER and ENGINEER that he placed or attempted to place firm orders with suppliers at a reasonable time in advance of the required date of delivery of the items in question, that such shortages shall have developed following the date such orders were placed or attempts made to place same, that said shortages are general throughout the affected industry, that said shortages are shortages of raw materials required to manufacture CONTRACTOR-furnished items and not simply failure of CONTRACTOR's suppliers to manufacture, assemble or ship items on time, and that the CONTRACTOR shall, to the degree possible, have made revisions in the sequence of his operations, within the terms of the Contract, to offset the expected delay. The CONTRACTOR shall notify the ENGINEER, in writing, concerning the cause of delay, within 15 calendar days of the beginning of such delay. The validity of any claim by the CONTRACTOR to an adjustment in the Contract Time shall be determined by the OWNER acting through the ENGINEER, and his findings thereon shall be based on the ENGINEER's knowledge and observations of the events involved and documentation submitted by the CONTRACTOR, showing all applicable facts relative to the foregoing provisions. Only the physical shortage of raw materials will be considered under these provisions as a cause for adjustment of time and no consideration will be given to any claim that items could not be obtained at a reasonable, practical, or economical cost or price, unless it is shown to the satisfaction of the OWNER that such items could have been obtained only at exorbitant prices entirely out of line with current rates taking into account the quantities involved and the usual practices in obtaining such quantities.

- C. If the CONTRACTOR is delayed in completion of the WORK by reason of changes made under the provisions of Article 10 or changed conditions as provided under Article 4.03, or by failure of the OWNER to acquire or clear right-of-way as provided under Article 15.01, or by any act of the ENGINEER or of the OWNER, not contemplated by the Contract, an adjustment in the Contract time will be made by the OWNER in like manner as if the WORK had been suspended for the convenience and benefit of the OWNER, except, that if the WORK is increased as a result of changes, the OWNER, at his sole discretion, may grant an adjustment in the number of calendar days for completion of the Contract. In the event of such delay, the CONTRACTOR shall notify the ENGINEER in writing of the causes of delay within 15 calendar days from the beginning of any such delay.

GENERAL CONDITIONS

ARTICLE 13 - WARRANTY AND GUARANTEE; TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

13.01 WARRANTY, GUARANTEE AND MAINTENANCE PERIOD

- A. The CONTRACTOR warrants and guarantees to the OWNER and the ENGINEER that all work, equipment, materials and workmanship are in accordance with the Contract Documents and are not defective. Prompt notice of defects discovered by the OWNER or ENGINEER shall be given to the CONTRACTOR. All defective work, whether or not in place, may be rejected, corrected, or accepted as provided in this Article 13.

- B. If within one (1) year after the date of Final Completion, as set by the Engineer's Notice of Completion, or a longer period of time prescribed by Laws or Regulations or by the terms of any applicable special guarantee or specific provisions of the Contract Documents, any work is found to be defective, the OWNER shall notify the CONTRACTOR in writing and the CONTRACTOR shall promptly, without cost to the OWNER and in accordance with the OWNER's written notification, either correct the defective work, or, if it has been rejected by the OWNER, remove it from the site and replace it with non-defective work. In the event the CONTRACTOR does not promptly comply with the notification, or in an emergency where delay would cause serious risk of loss or damage, the OWNER may have the defective work corrected or rejected work removed and replaced. All direct, indirect, and consequential costs of the removal and replacement including but not limited to fees and charges of engineers, architects, attorneys and other professionals will be paid by the CONTRACTOR. This paragraph shall not be construed to limit nor diminish the CONTRACTOR's absolute guarantee to complete the WORK in accordance with the Contract Documents.

13.02 ACCESS TO WORK

- A. The ENGINEER, other representatives of the OWNER, testing agencies, and governmental agencies with jurisdictional interests shall have access to the work at reasonable times for their observation, inspections, and testing. The CONTRACTOR shall provide proper and safe conditions for their access.

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13.03 TESTS AND INSPECTIONS

- A. The CONTRACTOR shall give the ENGINEER timely notice of readiness of the WORK for all required inspections, tests, or approvals.
- B. If Laws or Regulations of any public body other than the OWNER, with jurisdiction over the WORK require any work to be specifically inspected, tested, or approved, the CONTRACTOR shall pay all costs in connection therewith. The CONTRACTOR shall also be responsible for and shall pay all costs in connection with any inspection or testing required in connection with the OWNER's or the ENGINEER's acceptance of a Supplier of materials or equipment proposed as a substitution or-equal to be incorporated in the WORK and of materials or equipment submitted for review prior to the CONTRACTOR's purchase for incorporation in the WORK. The cost of all inspections, tests, and approvals with the exception of the above which are required by the Contract Documents shall be paid by the OWNER (unless otherwise specified).
- C. The ENGINEER will make, or have made, such inspections and test as the ENGINEER deems necessary to see that the WORK is being accomplished in accordance with the requirements of the Contract Documents. The Contractor without additional cost to the OWNER, shall provide the labor and equipment necessary to make the WORK available for inspections. Unless otherwise specified in the Supplementary General Conditions or the OWNER-ENGINEER Agreement, all other costs of inspection and testing will be borne by the OWNER. In the event the inspections or tests reveal non-compliance with the requirements of the Contract Documents, the CONTRACTOR shall bear the cost of corrective measures deemed necessary by the ENGINEER, as well as the cost of subsequent re-inspection and retesting. Neither observations by the ENGINEER nor inspections, tests, or approvals by others shall relieve the CONTRACTOR from the CONTRACTOR's obligation to perform the WORK in accordance with the Contract Documents.
- D. All inspections, tests, or approvals other than those required by Laws or Regulations of any public body having jurisdiction shall be performed by properly licensed organizations selected by the OWNER.

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- E. If any work (including the work of others) that is to be inspected, tested, or approved is covered without the ENGINEER's written authorization, it must, if requested by the ENGINEER, be uncovered for testing, inspection, and observation. The uncovering shall be at the CONTRACTOR's expense unless the CONTRACTOR timely notified the ENGINEER of the CONTRACTOR's intention to cover the same and the ENGINEER failed to act with reasonable promptness in response to the notice.
- F. In any work is covered contrary to the written request of the ENGINEER, it must, if requested by the ENGINEER, be uncovered for the ENGINEER's observation and replaced at the CONTRACTOR's expense.
- G. If the ENGINEER considers it necessary or advisable that covered work be observed, inspected or tested by the ENGINEER or others, the ENGINEER shall direct the CONTRACTOR to uncover, expose, or otherwise make available for observation, inspection, or testing that portion of the work in question. The CONTRACTOR shall comply with the ENGINEER's direction and furnish all necessary labor, material, and equipment. If found the work is defective, the CONTRACTOR shall bear all direct, indirect and consequential costs of uncovering, exposure, observation, inspection, and testing and of satisfactory reconstruction of the work, including but not limited to fees and charges for engineers, architects, attorneys, and other professionals. However, if the work is not defective, the CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both. The increase in Contract Time and Contract Price shall be the CONTRACTOR's actual time and costs directly attributable to uncovering and exposing the work. If the parties are unable to agree as to the amount or extent of the changes, the CONTRACTOR may make a claim therefor as provided in Articles 11 and 12.

13.04 OWNER MAY STOP THE WORK

- A. If the WORK is defective, or the CONTRACTOR fails to perform work in such a way that the completed WORK will conform to the Contract Documents, the OWNER may order the CONTRACTOR to stop the WORK, or any portion thereof, until the cause for the order has been eliminated. This right of the OWNER to stop the WORK shall not give rise to any duty on the part of the OWNER to exercise this right for the benefit of the CONTRACTOR or any other party.

13.05 CORRECTION OR REMOVAL OF DEFECTIVE WORK

- A. When directed by the ENGINEER, the CONTRACTOR shall promptly correct all defective work, whether or not fabricated, installed, or completed, or, if the

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work has been rejected by the ENGINEER, remove it from the site and replace it with non-defective work. The CONTRACTOR shall bear all direct, indirect and consequential costs of correction or removal, including but not limited to fees and charges of engineers, architects, attorneys, and other professionals made necessary thereby.

13.06 ACCEPTANCE OF DEFECTIVE WORK

- A. If, instead of requiring correction or removal and replacement of defective work, the OWNER prefers to accept the work, the OWNER may do so. The CONTRACTOR shall bear all direct, indirect, and consequential costs attributable to the OWNER's evaluation of and determination to accept the defective work. If any acceptance of defective work occurs prior to final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the WORK, and the OWNER shall be entitled to an appropriate decrease in the Contract Price.

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ARTICLE 14 - PAYMENTS TO CONTRACTOR, LIQUIDATED DAMAGES AND COMPLETION

14.01 SCHEDULE OF VALUES (LUMP SUM PRICE BREAKDOWN)

- A. The schedule of values or lump sum price breakdown established as provided in the Technical Specifications shall serve as the basis for progress payments and will be incorporated into the form of Application for Payment included in the Contract Documents.

14.02 UNIT PRICE BID SCHEDULE

- A. Progress payments for unit price work will be based on the number of units completed.

14.03 APPLICATION FOR PROGRESS PAYMENT

- A. Unless otherwise prescribed by the Owner, on the 25th of each month, the CONTRACTOR shall submit to the ENGINEER for review and approval, an Application for Payment completed and signed by the CONTRACTOR covering the WORK completed as of the date of the Application and accompanied by such supporting documentation as required by the Contract Documents.
- B. The Application for Payment shall identify, as a sub-total, the amount of the CONTRACTOR's Total Earnings to Date, plus the Value of Materials at the Site which have not yet been incorporated in the WORK, and less a deductive adjustment for materials installed which were not previously incorporated in the WORK, but for which payment was allowed under the provisions of payment for Materials Stored at the Site but not yet incorporated in the WORK.
- C. The Net Payment Due to the CONTRACTOR shall be the above-mentioned sub-total, from which shall be deducted the retainage amount and the total amount of all previous payments made to the CONTRACTOR.
- D. The OWNER may withhold and retain 5% of each approved progress payment to the CONTRACTOR. The total retention proceeds withheld shall not exceed 5% of the total construction price. All retention proceeds shall be placed by the OWNER in an interest-bearing account. The interest accrued shall be for the benefit of the CONTRACTOR and its subcontractors, and it shall be paid after the WORK has been completed and accepted by the OWNER. CONTRACTOR shall ensure that any interest accrued on the

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retainage is distributed by the CONTRACTOR to its subcontractors on a pro rata basis.

- E. Any retention proceeds withheld, and any accrued interest, shall be released by the OWNER pursuant to an Application for Payment from the CONTRACTOR within 45 days from the later of:
1. the date the OWNER receives the final Application for Payment from the CONTRACTOR;
 2. the date that a certificate of occupancy or final acceptance notice is issued to:
 - (a) the Contractor who obtained the building permit from the building inspector or from a public agency;
 - (b) the OWNER; or
 - (c) the ENGINEER.
 3. the date the CONTRACTOR accepts final payment for the Work; or
 4. the date that a public agency or building inspector having authority to issue its own certificate of occupancy does not issue the certificate but permits partial or complete occupancy of a newly constructed or remodeled building; provided, however, that if only partial occupancy of a building is permitted, any retention proceeds withheld and retained, and any accrued interest, shall be partially released in direct proportion to the value of the part of the building occupied.

Each Application for Payment from the CONTRACTOR shall include documentation of lien releases or waivers.

- F. Notwithstanding any other provision in this Article to the contrary,
1. If the CONTRACTOR is in default or breach of the terms and conditions of the Contract Documents, the OWNER may withhold from payment to the CONTRACTOR for so long as reasonably necessary an amount necessary to cure the breach or default of the CONTRACTOR; or
 2. If the WORK or a portion of the WORK has been substantially completed, the OWNER may retain until completion up to twice the

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fair market value of the WORK of the CONTRACTOR that has not been completed:

- (a) in accordance with the Contract Documents; or
 - (b) in the absence of applicable provisions in the Contract Documents to generally accepted craft standards.
3. If the OWNER refuses payment under subparagraphs (F)(i) or (ii), it shall describe in writing within 45 days of withholding such amounts what portion of the WORK was not completed according to the standards specified in the Contract Documents.
- G. The CONTRACTOR shall distribute retention proceeds as outlined below:
1. Except as provided in Paragraph 14.03.G.2, below, if the CONTRACTOR receives retention proceeds, it shall pay each of its subcontractors from whom retention has been withheld each subcontractor's share of the retention received within ten days from the day that all or any portion of the retention proceeds is received from the OWNER.
 2. Notwithstanding Paragraph 14.03.G.1, above, if a retention payment received by the CONTRACTOR is specifically designated for a particular subcontractor, payment of the retention shall be made to the designated subcontractor.
- H. Except as otherwise provided in the Supplementary General Conditions, the value of materials stored at the site shall be valued at 95 percent of the value of the materials. This amount shall be based upon the value of all acceptable materials and equipment stored at the site or at another location agreed to in writing by the OWNER; provided, each individual item has a value of more than \$5,000 and will become a permanent part of the WORK. The Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that the CONTRACTOR has received the materials and equipment free and clear of all liens, charges, security interests, and encumbrances (which are hereinafter in these General Conditions referred to as "Liens") and evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect the OWNER's interest therein, all of which will be satisfactory to the OWNER.

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14.04 CONTRACTOR'S WARRANTY OF TITLE

- A. The CONTRACTOR warrants and guarantees that title to all work, materials, and equipment covered by an Application for Payment, whether incorporated in the WORK or not, will pass to the OWNER no later than the time of final payment free and clear of all liens.

14.05 REVIEW OF APPLICATIONS FOR PROGRESS PAYMENT

- A. The ENGINEER will, within 7 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to the OWNER, or return the Application to the CONTRACTOR indicating in writing the ENGINEER's reasons for refusing to recommend payment. In the later case, the CONTRACTOR may make the necessary corrections and resubmit the Application. Thirty days after presentation of the Application for Payment with the ENGINEER's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.05B) become due and when due will be paid by the OWNER to the CONTRACTOR.
- B. The OWNER may refuse to make payment of the full amount recommended by the ENGINEER to compensate for claims made by the OWNER on account of the CONTRACTOR's performance of the WORK or other items entitling the OWNER to a credit against the amount recommended, but the OWNER must give the CONTRACTOR written notice within 7 days (with a copy to the ENGINEER) stating the reasons for such action.

14.06 PARTIAL UTILIZATION

- A. The OWNER may utilize or place into service any item of equipment or other usable portion of the WORK at any time prior to completion of the WORK. The OWNER shall notify the CONTRACTOR in writing of its intent to exercise this right. The notice will identify the equipment or specific portion or portions of the WORK to be utilized or otherwise placed into service.
- B. It shall be understood by the CONTRACTOR that until such written notification is issued, all responsibility for care and maintenance of all items or portions of the WORK to be partially utilized shall be borne by the CONTRACTOR. Upon the issuance of a notice of partial utilization, the ENGINEER will deliver to the OWNER and the CONTRACTOR a written recommendation as to division of responsibilities between the OWNER and the CONTRACTOR with respect to security, operation, safety, maintenance,

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heat, utilities and insurance. Upon the OWNER's acceptance of these recommendations, the ENGINEER's aforesaid recommendation will be binding on the OWNER and the CONTRACTOR until final payment.

- C. The CONTRACTOR shall retain full responsibility for satisfactory completion of the WORK, regardless of whether a portion thereof has been partially utilized by the OWNER and the CONTRACTOR's one year correction period shall commence only after the date of Final Completion for the WORK.

14.07 LIQUIDATED DAMAGES

- A. The CONTRACTOR shall pay to the OWNER the amount specified in the Supplemental General Conditions, not as a penalty but as liquidated damages, if he fails to complete the WORK or specified parts of the WORK within the time or times agreed upon. The periods for which these damages shall be paid shall be the number of Days from the agreed date or Contract Time as contained in the Agreement, or from the date of termination of any extension of time approved by the OWNER, to the date or dates on which the ENGINEER certifies Substantial Completion of WORK or specified parts of the WORK as provided in Article 14.08, herein. The OWNER may deduct the amount of said damages from any monies due or to become due the CONTRACTOR. After Substantial Completion, if the CONTRACTOR fails to complete the remaining WORK within 45 days or any proper extension thereof granted by OWNER, CONTRACTOR shall pay OWNER the amount stated in the Supplemental General Conditions as liquidated damages for each day that expires after the 45 days until readiness for final payment.
- B. The said amount is fixed and agreed upon by and between the CONTRACTOR and the OWNER because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the OWNER would sustain; and said amount is agreed to be the amount of damages which the OWNER would sustain. Said damages are not in lieu of but in addition to other actual or consequential damages to which the OWNER may be entitled.
- C. All times specified in the Contract Documents are hereby declared to be of the essence.

14.08 SUBSTANTIAL COMPLETION

- A. When the CONTRACTOR considers the WORK ready for its intended use, and the CONTRACTOR has delivered to the ENGINEER all maintenance and operating instructions, schedules, guarantees, bonds, certificates of

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inspection, marked-up record documents and other documents, all as required by the Contract Documents, the CONTRACTOR may notify the OWNER and the ENGINEER in writing that the WORK is substantially complete and request that the ENGINEER prepare a Certificate of Substantial Completion. Within a reasonable time thereafter, the OWNER, the CONTRACTOR, and the ENGINEER shall make an inspection of the WORK to determine the status of completion. If the ENGINEER does not consider the WORK substantially complete, the ENGINEER will notify the OWNER and CONTRACTOR in writing giving the reasons therefor. If the ENGINEER considers the WORK substantially complete, the ENGINEER will prepare and deliver to the OWNER for its execution the Certificate of Substantial Completion signed by the ENGINEER and CONTRACTOR, which shall fix the date of Substantial Completion.

- B. The Certificate of Substantial Completion shall be a release by the CONTRACTOR of the OWNER and its agents from all claims and liability to the CONTRACTOR for anything done or furnished for, or relating to, the WORK or for any act or neglect of the OWNER or of any person relating to or affecting the WORK, to the date of Substantial Completion, except demands against the OWNER for the remainder of the amounts kept or retained from progress payments and excepting pending, unresolved claims filed in writing prior to the date of Substantial Completion. At the time of delivery of the Certificate of Substantial Completion, the ENGINEER will deliver to the OWNER and the CONTRACTOR, if applicable, a written recommendation as to division of responsibilities between the OWNER and the CONTRACTOR with respect to security, operation, safety, maintenance, heat, utilities and insurance. Upon the OWNER's acceptance of these recommendations, the ENGINEER's recommendation will be binding on the OWNER and the CONTRACTOR until final payment.
- C. The OWNER, upon written notice to the CONTRACTOR, shall have the right to exclude the CONTRACTOR from the WORK after the date of Substantial Completion, and complete all or portions of the WORK at the CONTRACTOR's expense.

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14.09 COMPLETION AND FINAL PAYMENT

- A. Upon written certification from the CONTRACTOR that the WORK is complete (if a Certificate of Substantial Completion has been issued this certification must occur within 45 days of that date), the ENGINEER will make a final inspection with the OWNER and the CONTRACTOR. If the OWNER and ENGINEER do not consider the WORK complete, the ENGINEER will notify the OWNER and the CONTRACTOR in writing of all particulars in which this inspection reveals that the WORK is incomplete or defective. The CONTRACTOR shall immediately take the measures necessary to remedy these deficiencies. If the ENGINEER and OWNER consider the WORK complete, the CONTRACTOR may proceed to file its application for final payment pursuant to this Article. At the request of the CONTRACTOR, the ENGINEER may recommend to the OWNER that certain minor deficiencies in the WORK that do not prevent the entire WORK from being used by the OWNER for its intended use, and the completion of which will be unavoidably delayed due to no fault of the CONTRACTOR, be exempted from being completed prerequisite to final payment. These outstanding items of pickup work, or "punch list items", shall be listed on the ENGINEER's Notice of Completion, together with the recommended time limits for their completion, and extended warranty requirements for those items and the value of such items.
- B. After the issuance of the Notice of Completion and after the CONTRACTOR has completed corrections that have not been exempted to the satisfaction of the ENGINEER and delivered to the ENGINEER all required additions and modifications to maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, marked-up record documents and other documents, all as required by the Contract Documents; and after the ENGINEER has indicated that the WORK is acceptable, the CONTRACTOR may make application for final payment following the procedure for progress payments. The final application for payment shall be accompanied by all documentation called for in the Contract Documents and other data and schedules as the OWNER or ENGINEER may reasonably require, including an affidavit of the CONTRACTOR that all labor, services, material, equipment and other indebtedness connected with the WORK for which the OWNER or his property might in any way be responsible, have been paid or otherwise satisfied, and a consent of the payment bond surety to final payment, all in forms approved by the OWNER.

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14.10 FINAL APPLICATION FOR PAYMENT

- A. If, on the basis of the ENGINEER's observation of the WORK during construction and final inspection, and the ENGINEER's review of the final application for payment and accompanying documentation, all as required by the Contract Documents, the ENGINEER is satisfied that the WORK has been completed and the CONTRACTOR has fulfilled all of his obligations under the Contract Documents, the ENGINEER will, within ten days after receipt of the final application for payment, indicate in writing his recommendation of payment and present the application to the OWNER for payment. Thereupon, the ENGINEER will give written notice to the OWNER and the CONTRACTOR that the WORK is acceptable by executing the ENGINEER's Notice of Completion. Otherwise, the ENGINEER will return the application to the CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case the CONTRACTOR shall make the necessary corrections and resubmit the application.
- B. Within 45 calendar days after the ENGINEER's filing of the Notice of Completion, the OWNER will make final payment including all deducted retainage (except as noted below) to the CONTRACTOR. The OWNER's remittance of final payment shall be the OWNER's acceptance of the WORK if formal acceptance of the WORK is not indicated otherwise. The final payment shall be that amount remaining after deducting all prior payments and all amounts to be kept or retained under the provisions of the Contract, including the following items:
1. Liquidated damages, as applicable.
 2. All amounts retained by the OWNER under Paragraph 14.03(F).

14.11 CONTRACTOR'S CONTINUING OBLIGATIONS

- A. The CONTRACTOR's obligation to perform and complete the WORK in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by the ENGINEER, nor the issuance of a Certificate of Substantial Completion or Notice of Completion, nor payment by the OWNER to the CONTRACTOR under the Contract Documents, nor any use or occupancy of the WORK or any part thereof by the OWNER, nor any act of acceptance by the OWNER nor any failure to do so, nor any review of a shop drawing or sample submittal, will constitute an acceptance of work or materials not in accordance with the Contract Documents or a release of the CONTRACTOR's obligation to perform the WORK in accordance with the Contract Documents.

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14.12 FINAL PAYMENT TERMINATES LIABILITY OF OWNER

- A. Final payment is defined as the last progress payment made to the CONTRACTOR for earned funds, less deductions listed in Paragraph 14.10B herein. The acceptance by the CONTRACTOR of the final payment referred to in Paragraph 14.10 herein, shall be a release of the OWNER and its agents from all claims of liability to the CONTRACTOR for anything done or furnished for, or relating to, the work or for any act or neglect of the OWNER or of any person relating to or affecting the work, except demands against the OWNER for the remainder, if any, of the amounts kept or retained under the provisions of Paragraph 14.10 herein; and excepting pending, unresolved claims filed prior to the date of the Certificate of Substantial Completion.

GENERAL CONDITIONS

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.01 SUSPENSION OF WORK BY OWNER

- A. The OWNER acting through the ENGINEER may, by written notice to the Contractor, temporarily suspend the WORK, in whole or in part, for a period or periods of time, but not to exceed 90 days, for the convenience and benefit of the OWNER upon the occurrence of any one or more of the following: (1) unsuitable weather; (2) delay in delivery of OWNER- furnished equipment or materials, or such other conditions as are considered unfavorable for prosecution of the work; (3) Shortfall in construction funds; (4) Constraints imposed by public entities, public utilities, property owners or legal proceedings; (5) Failure or delay in acquisition of easements or right-of-way by the OWNER; or (6) Other conditions which, in the opinion of the OWNER, warrant a delay in the WORK. Suspended WORK shall be resumed by the CONTRACTOR within 10 calendar days of receipt from the ENGINEER of written notice to proceed. Whenever the OWNER temporarily suspends work for any conditions enumerated in this Article 15.01 A, the CONTRACTOR shall be entitled to an adjustment in the Contract Time as specified in Article 12.03 C.

- B. The suspension of work shall be effective upon receipt by the Contractor of the written order suspending the work and shall be terminated upon receipt by the Contractor of the written order terminating the suspension.

- C. The CONTRACTOR hereby indemnifies and holds harmless the OWNER and ENGINEER, their officers, agents and employees, from and against all claims, damages, losses and expenses, including lost profits and attorney's fees, arising out of or resulting from the temporary suspension of the WORK, whether for the OWNER's convenience described in this Article or for whatever other reasons, including the stoppage of work by the ENGINEER for the CONTRACTOR's failure to comply with any order issued by the ENGINEER.

15.02 TERMINATION OF AGREEMENT BY OWNER (CONTRACTOR DEFAULT)

- A. In the event of default by the CONTRACTOR, the OWNER may give written notice to the CONTRACTOR of OWNER's intent to terminate the Agreement. The notice shall state the event of default and the time allowed to remedy the default. It shall be considered a default by the CONTRACTOR whenever the CONTRACTOR shall: (1) declare bankruptcy, become insolvent, or assign its assets for the benefit of its creditors; (2) fail to provide materials or workmanship meeting the requirements of the Contract Documents; (3) disregard or violate provisions of the Contract Documents or ENGINEER's

GENERAL CONDITIONS

instructions, (4) fail to prosecute the WORK according to the approved progress schedule; or, (5) fail to provide a qualified superintendent, competent workmen, or materials or equipment meeting the requirements of the Contract Documents. If the CONTRACTOR fails to remedy the conditions constituting default within the time allowed, the OWNER may then issue a Notice of Termination.

- B. In the event the Agreement is terminated in accordance with Paragraph 15.02A, the OWNER may take possession of the WORK and may complete the WORK by whatever method or means the OWNER may select. The cost of completing the WORK shall be deducted from the balance which would have been due the CONTRACTOR had the Agreement not been terminated and the WORK completed in accordance with the Contract Documents. If such cost exceeds the balance which would have been due, the CONTRACTOR shall pay the excess amount to the OWNER. If such cost is less than the balance which would have been due, the CONTRACTOR shall have no claim to the difference.

15.03 TERMINATION OF AGREEMENT BY OWNER (FOR CONVENIENCE)

- A. The OWNER may terminate the Agreement at any time if it is found that reasons beyond the control of either the OWNER or CONTRACTOR make it impossible or against the OWNER's interests to complete the WORK. In such a case, the CONTRACTOR shall have no claims against the OWNER except: (1) for the value of the work, as determined by the engineer, performed by the Contractor up to the date the Agreement is terminated; and, (2) for the cost of materials and equipment on hand, in transit, or on definite commitment, as of the date the Agreement is terminated, which would be needed in the WORK and which meet the requirements of the Contract Documents. The value of work performed and the cost of materials and equipment delivered to the site, as mentioned above, shall be determined by the ENGINEER in accordance with the procedure prescribed from making the final application for payment and final payment under Paragraphs 14.09 and 14.10.

15.04 TERMINATION OF AGREEMENT BY CONTRACTOR

- A. The CONTRACTOR may terminate the Agreement upon 10 days written notice to the OWNER, whenever: (1) the WORK has been suspended under the provisions of Paragraph 15.01, for more than 90 consecutive days through no fault or negligence of the CONTRACTOR, and notice to resume work or to terminate the agreement has not been received from the OWNER within this time period; or, (2) the OWNER should fail to pay the

GENERAL CONDITIONS

CONTRACTOR any monies due him in accordance with the terms or the Contract Documents and within 60 days after presentation to the OWNER by the CONTRACTOR of a request therefor, unless within said 10-day period the OWNER shall have remedied the condition upon which the payment delay was based. In the event of such termination, the CONTRACTOR shall have no claims against the OWNER except for those claims specifically enumerated in Paragraph 15.03, and as determined in Accordance with the requirements of that paragraph.

GENERAL CONDITIONS

ARTICLE 16 - MISCELLANEOUS

16.01 GIVING NOTICE

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

16.02 TITLE TO MATERIALS FOUND ON THE WORK

- A. The OWNER reserves the right to retain title to all soils, stone, sand, gravel, and other materials developed and obtained from excavations and other operations connected with the WORK. Unless otherwise specified in the Contract Documents, neither the CONTRACTOR nor any subcontractor shall have any right, title, or interest in or to any such materials. The CONTRACTOR will be permitted to use in the WORK, without charge, any such materials which meet the requirements of the Contract Documents.

16.03 RIGHT TO AUDIT

- A. If the CONTRACTOR submits a claim to the OWNER for additional compensation, the OWNER shall have the right, as a condition to considering the claim, and as a basis for evaluation of the claim, and until the claim has been settled, to audit the CONTRACTOR's books. This right shall include the right to examine books, records, documents, and other evidence and accounting procedures and practices, sufficient to discover and verify all direct and indirect costs of whatever nature claimed to have been incurred or anticipated to be incurred and for which the claim has been submitted. The right to audit shall include the right to inspect the CONTRACTOR's plants, or such parts thereof, as may be or have been engaged in the performance of the WORK. The CONTRACTOR further agrees that the right to audit encompasses all subcontracts and is binding upon subcontractors. The right to examine and inspect herein provided for shall be exercisable through such representatives as the OWNER deems desirable during the CONTRACTOR's normal business hours at the office of the CONTRACTOR. The CONTRACTOR shall make available to the OWNER for auditing, all relevant accounting records and documents, and other financial data, and upon request, shall submit true copies of requested records to the OWNER.

16.04 ASBESTOS

- A. If the CONTRACTOR during the course of work observes the existence of asbestos in any structure or building, the CONTRACTOR shall promptly notify the OWNER and the ENGINEER. The OWNER shall consult with the ENGINEER regarding removal or encapsulation of the asbestos material and the CONTRACTOR shall not perform any work pertinent to the asbestos material prior to receipt or special instruction from the OWNER through the ENGINEER.

SUPPLEMENTAL GENERAL CONDITIONS

ARTICLE 17- GENERAL

17.01 GENERAL

1. These Supplemental General Conditions amend or supplement the General Conditions of the Contract and any other provisions of the Contract Documents as indicated herein. All provisions which are not so amended or supplemented remain in full force and effect.
2. The terms used in these Supplemental General Conditions which are defined in the General Conditions of the Contract have the meanings assigned to them in the General Conditions of the Contract herein.

17.02 SUPPLEMENTAL DEFINITIONS

1. ENGINEER

The "Engineer" is

17.03 TESTING COSTS

1. Paragraph 13.03 of the General Conditions is amended as follows: the CONTRACTOR shall pay all testing costs. The Owner reserves the right to have additional tests performed by a testing organization selected by the OWNER and at the OWNER's expense.

SUPPLEMENTAL GENERAL CONDITIONS

ARTICLE 18 - AMOUNTS OF LIQUIDATED DAMAGES, BONDS AND INSURANCE

18.01 AMOUNT OF LIQUIDATED DAMAGES

- A. As provided in Article 14.07 of the General Conditions, the Contractor shall pay to the Owner as liquidated damages the amount of \$1,000 for each calendar day's delay beyond the Contract Time for substantial completion. The Contractor shall pay to the Owner as liquidated damages the amount of \$200 for each calendar day's delay beyond 45 calendar days from the date of substantial Completion until the Engineer issues the Notice of Final Completion.

18.02 PERFORMANCE AND OTHER BOND AMOUNTS

- A. The CONTRACTOR shall furnish a satisfactory Performance Bond in the amount of 100 percent of the Contract Price and a satisfactory Payment Bond in the amount of 100 percent of the Contract Price.

18.03 INSURANCE AMOUNTS

The limits of liability for the insurance required by Paragraph 5.02 of the General Conditions shall provide for not less than the following amounts or greater where required by Laws and Regulations:

- A. Workers' Compensation under Paragraph 5.02B.1 of the General Conditions:

- 1. State: Utah Statutory

- B. Comprehensive General Liability: (under Paragraph 5.02B.2 of the General Conditions):

- 1. Bodily Injury (including completed operations and products liability):

<u>\$ 500,000</u>	Each Occurrence
<u>\$ 1,000,000</u>	Annual Aggregate

Property Damage:

<u>\$ 500,000</u>	Each Occurrence
<u>\$ 1,000,000</u>	Annual Aggregate
or a combined single limit of	<u>\$1,000,000</u>

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2. Property Damage liability insurance including, Explosion, Collapse and Underground coverages, where applicable.

3. Personal Injury, with employment exclusion deleted

\$ 1,000,000

Annual Aggregate

C. Comprehensive Automobile Liability: (Under Paragraph 5.02B.3 of the General Conditions:)

1. Bodily Injury

\$ 500,000

Each Person

\$ 1,000,000

Each Occurrence

2. Property Damage:

\$ 500,000

Each Occurrence

or combined single limit of

\$1,000,000

D. Builders Risk: Not required.

SUPPLEMENTAL GENERAL CONDITIONS

ARTICLE 19 - PHYSICAL CONDITIONS AND WEATHER DELAYS

19.01 INCLEMENT WEATHER DELAYS

- A. The Contractor's construction schedule shall be based upon the inclusion of at least five (5) day(s) of inclement weather delays. Reference Article 12, paragraph 12.02 of the General Conditions for additional requirements.

SUPPLEMENTAL GENERAL CONDITIONS

ARTICLE 20 - SUBCONTRACT LIMITATIONS

20.01 SUBCONTRACT LIMITATIONS

- A. In addition to the provisions of Paragraph 6.05 of the General Conditions, the CONTRACTOR shall perform not less than 20 percent of the WORK with its own forces (i.e., without subcontracting). The 20 percent requirement shall be understood to refer to the WORK, the value of which totals not less than 20 percent of the Contract Price.

ARTICLE 21 - MISCELLANEOUS

21.01 PATENTS AND COPYRIGHTS

The Contractor shall indemnify and save harmless the Owner, the Engineer, and their officers, agents, and employees, against all claims or liability arising from the use of any patented or copyrighted design, device, material, or process by the Contractor or any of his subcontractors in the performance of the work.