CONTRACT PROVISIONS AND PLANS

FOR THE CONSTRUCTION OF:

Salmon Creek Treatment Plant Dewatering Equipment Replacement

VOLUME I – SPECIFICATIONS

Discovery Clean Water Alliance Project No. 93-2021-0058

A Discovery Clean Water Alliance Capital Project with Clark Regional Wastewater District as Administrative Lead

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January 2026

CONTRACT PROVISIONS AND PLANS

Salmon Creek Treatment Plant
Dewatering Equipment Replacement

VOLUME I – SPECIFICATIONS

Discovery Clean Water Alliance Project No. 93-2021-0058

FOR INFORMATION REGARDING
THIS PROJECT CONTACT:

Chris Stangl
Construction Manager
CLARK REGIONAL WASTEWATER DISTRICT
15100 NW McCann Road
VANCOUVER, WASHINGTON 98685
360.921.2386
cstangl@crwwd.com

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VOLUME I – SPECIFICATIONS

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BIDDING REQUIREMENTS

CALL FOR BIDS

Salmon Creek Treatment Plant Dewatering Equipment Replacement
Discovery Clean Water Alliance Project No. 93-2021-0058

NOTICE IS HEREBY GIVEN that electronic sealed bids will be received on the Clark Regional Wastewater District Procurement Portal until 10:00 a.m., P.S.T. on **Thursday, March 19, 2026**, for the Salmon Creek Treatment Plant Dewatering Equipment Replacement; Discovery Clean Water Alliance Project No. 93-2021-0058; and then publicly opened and read via a live Go-To-Meeting link at 11:00 a.m. on Thursday, March 19, 2026. Please join from your computer, tablet, or smartphone at https://meet.goto.com/450332461. You can also dial in using your phone: +1 (571) 317-3112, Access Code: 450-332-461.

PROJECT SPECIFIC DESCRIPTION

The work generally includes the following:

1. Solids Processing Center (Building 72): Replacement of existing dewatering belt filter presses with new dewatering screw presses. Modification of sludge feed piping, W3 water piping, polymer piping, and odor control ducting. Installation of personnel access grating and platforms, a new monorail system, and ancillary equipment.
2. Solids Processing Center (Building 72): Installation of exterior stairs and entrance to upper level of facility.
3. Digester/BFP Feed Control Building (Building 77): Replacement of BFP Feed Pumps with new Screw Press Feed Pumps.
4. Temporary Systems: Installation and relocation of temporary dewatering screw press during the replacement of dewatering system.
5. Installation of new level sensors for the Biosolids Blend Tank (Facility 76) and Sludge Blend Tank (Facility 74).

PROJECT LOCATION

This project is located at the Salmon Creek Treatment Plant, 15100 NW McCann Road, Vancouver, WA 98685.

Mandatory 15% apprentice labor hours of the total labor hours are a requirement of the construction contract. Bidders may contact the Department of Labor & Industries, Apprenticeship Section, to obtain information on available apprenticeship programs.

The Board of Sewer Commissioners reserves the right to waive informalities in the bidding, accept a proposal of the lowest responsible bidder, reject any or all bids, republish the call for bids, revise or cancel the work, or require the work to be done in another way if the best interest of the District is served. Award of contract is not anticipated to occur prior to March 31, 2026.

CONTRACT PROVISIONS, PLANS, AND BID PROPOSAL forms may be obtained by going to the District's procurement portal https://mrscrosters.bonfirehub.com. Free vendor registration is required to use this platform.

A pre-bid meeting is scheduled for Tuesday, March 3, 2026, at 9:00 a.m.. All participants shall meet at the Gene Fix Operations Center at Salmon Creek Treatment Plant, 15100 NW McCann Road, Vancouver, WA 98685.

All Bids must be accompanied by a bid deposit in the form of a surety Bid Bond, certified check, cashier's check, or cash in an amount equal to five percent (5%) of the amount of such proposal on or before the bid deadline provided above. The Bidder shall submit a PDF copy of the Bid Bond and provide original bid bond upon request from the District. An attorney-in-fact who signs the Bid Bond must file with each bond a certified and effectively dated copy of their Power of Attorney. If the Bidder cannot provide a Bid Bond, a certified check, cashier's check, or cash may be provided. The certified check, cashier's check, or cash must be delivered in a sealed envelope marked with the Bid Name and Number and be received at the District office prior to the bid deadline provided above. Should the successful bidder fail to enter into such contract and furnish a satisfactory performance bond within the time stated in the specifications, the bid proposal deposit shall be forfeited to the District.

Technical questions regarding this project shall be submitted via the District's procurement portal. For bidding or contract related questions regarding this project, or if assistance is needed with access to or registration at the District's procurement portal, please contact Michaela Loveridge at (360) 360-5382 or mloveridge@crwwd.com.

DATED this 27th of January 2026.

Bill Owen Digitally signed by Bill Owen
Date: 2026.01.27 13:34:58
-08'00'

Bill Owen, P.E.
Principal Engineer | Transmission & Treatment

NOTICE TO BIDDER

1. The District reserves the right to waive informalities in the bidding, accept a Proposal of the lowest responsible bidder, reject any and all Bids, republish the Call for Bids, revise or cancel the Work, or require the Work to be done in another way if the best interest of the District is served.

2. The District will accept only those Proposals properly executed on the physical forms it provides, or electronic forms that the bidder has been authorized to access.

3. All requests for clarification or interpretation of the Contract Provisions, including the plans, drawings, specifications, bidder criteria, or other items must be received in writing no later than five business days prior to Bid Opening.

4. In the space provided on the signature sheet, the bidder shall confirm that all Addenda have been received.

5. The bidder shall complete a sworn statement, on the Certification of Compliance with Wage Payment Statutes form provided by the District, that they have not willfully violated wage payment laws within the past three-year period immediately preceding the date of the solicitation (RCW 39.04.350).

6. By submitting its Bid, the bidder warrants and represents that it complies with all Mandatory Bidder Responsibility Criteria as defined by RCW 39.04.350(1) and all Supplemental Bidder Criteria as described in the attached Supplemental Criteria Information Form. The lowest and second lowest responsive bidders will be requested to submit a fully executed Supplemental Criteria Information Form with documents verifying such compliance to the Contracting Agency by 12:00 p.m. (Noon) of the second business day following the bid submittal deadline.

7. For public work projects which are expected to cost $1,000,000 or more, the bidder shall submit, on the Subcontractor List form provided, a list of subcontractors who will perform the work of heating, ventilation, and air conditioning, plumbing as described in RCW 18.106 and electrical as described in RCW 19.28, and structural steel installation, and rebar installation as described in RCW 39.30.060. Please refer to the Subcontractor List section of the Bidding Requirements.

8. In accordance with RCW 39.04.320, for all public works estimated to cost two million dollars or more, the District requires no less than 15% of the labor hours be performed by apprentices, unless otherwise stated in the bid advertisement or on the Submittal Questionnaire/Bidding Terms and Conditions. A contractor or subcontractor may not be required to exceed the 15% requirement. The Bidder shall establish a minimum required percentage of apprentice labor hours compared to the total labor hours in the Procurement Portal. The project's apprenticeship utilization rate is calculated using the approved affidavits from the L&I portal.

9. Notice Regarding Tariffs - The recent discussions, negotiations and implementation of tariffs by the U.S. Government has created some uncertainties for contractors and suppliers regarding the cost of materials, supplies or equipment which may be subject to tariffs. The District desires to avoid the uncertainties and potential financial risks associated with potential tariff increases or decreases. Therefore, the bidder's bid should include only those tariffs that are currently in effect as of the bid due date and the bidder should not speculate on the amount of any tariffs that may actually be in effect at the time of the purchase or delivery of the materials, supplies or equipment. Any increases or decreases in applicable tariffs on materials, supplies or equipment which are part of the bid proposal will be subject to an

equitable adjustment in accordance with Paragraph 7.11 and Article 12 of the Standard General Conditions.

10. Please refer to Section 6.03 of the General Conditions for this project regarding Insurance requirements.

11. Proposals of corporations or limited liability companies shall be signed by the officer(s) or member(s) having authority to sign them. If a Bidder is a copartnership, the Proposal shall be signed by an authorized representative of the copartnership. When the Bidder is a joint venture, the Proposal shall be signed by one or more individuals as authorized by the Joint Venture.

12. Failure to execute the "Proposal Signature Page" at the end of this proposal packet will cause the bid to be considered irregular and therefore to be rejected.

13. The following forms and information must be executed in full and submitted with the Bid:
    - ☐ Proposal Form
    - ☐ Bid Deposit
    - ☐ Certification of Compliance with Wage Payment Statutes
    - ☐ Subcontractor List
    - ☐ Proposal Signature Page

PROPOSAL FORM INSTRUCTIONS

1. Bid Proposals must be submitted on the following Proposal Form provided by the Clark Regional Wastewater District (the "District"). Other forms will not be accepted.

2. Bidders shall complete the entire Proposal Form. Bidders may be deemed "non-responsive" if any sections are not filled out correctly and completely.

3. Bidders shall make no changes or amendments to the Proposal Form.

4. The submitted Proposal Form must have the signature of a representative who has the legal capacity to bind the bidder to a formal contract with the District.

5. Bid prices for all designated items, all extensions and total amount of bid must be shown.

6. All prices shall be in legible figures (not words) written in ink or typed, and expressed in U.S. dollars and cents.

7. It is understood and agreed that quantities stated in the Proposal Form (if any) are the District's estimates. Actual quantities installed are subject to final determination upon completion of the Work and prior to final acceptance.

8. The Proposal Form shall be submitted in the time and manner required in the Call for Bids.

9. The Proposal Form is not transferable, and any alteration of the firm's name entered hereon without prior permission will be cause for considering the proposal irregular and subsequent rejection of the bid.

PROPOSAL FORM

To the Board of Sewer Commissioners; From: _____

_____

_____

Commissioners:

Each of the undersigned hereby certifies that they have examined the locations and construction details of work outlined in the Plans and Specifications for:

Salmon Creek Treatment Plant Dewatering Equipment Replacement, Discovery Clean Water Alliance Project No. 93-2021-0058 in Clark County, WA and have read and thoroughly understand the contract provisions, plans, and contract governing the work included in this improvement, and the method by which payment will be made for said work, and hereby proposes to undertake and complete the work included in this improvement in accordance with the said contract provisions, plans, and the following schedule of prices:

LUMP SUM BID PRICE

Item	Description	Amount
1	Lump Sum Bid Price for all Work	$
2	Apprenticeship Utilization Incentive**	$10,000.00
3	Furnish FKC Screw Press package found in Volume IV and Sections 41 22 13.16, 46 71 01, & 46 76 27	$1,661,000.00
4	Subtotal (Sum of Items 1, 2, and 3)	$
5	Sales Tax (8.6 percent of Item 4 above)	$
6	**Lump Sum Bid Price** (Sum of Items 4 and 5 from above)	$

** APPRENTICE UTILIZATION REQUIREMENTS

The apprentice labor hours required for this project are 15% of the total labor hours, unless Good Faith Efforts are accepted. The undersigned agrees to utilize this level of apprentice participation. Apprentice utilization will be determined using the Department of Labor and Industries (L&I) online Prevailing Wage Intent & Affidavit (PWIA) system. A monetary incentive of $10,000.00 will be paid to the contractor meeting the apprentice utilization requirement, without a reduction by Good Faith Efforts. A monetary penalty will be applied to the contractor failing to meet the utilization requirement, unless a Good Faith Effort is approved by the District. The penalty will be assessed for every hour of shortfall of the minimum number of required apprentice hours using the applicable published wage of a Step 1 apprentice laborer. The penalty will not exceed one percent (1%) of the total Contract Sum.

Bidder agrees to accept as full payment the Lump Sum amounts for the work proposed within the documents.

NON-COLLUSION DECLARATION

I, by signing the proposal, hereby declare, under penalty of perjury under the laws of the United States that the following statements are true and correct:

1. That the undersigned person(s), firm, association or corporation has (have) not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with the project for which this proposal is submitted.

2. That by signing the signature page of this proposal, I am deemed to have signed and have agreed to the provisions of this declaration.

CERTIFICATION OF COMPLIANCE WITH WAGE PAYMENT STATUTES

The bidder hereby certifies that, within the 3-year period immediately preceding the bid solicitation date (February 2, 2026), the bidder is not a "willful" violator, as defined in RCW 49.48.082, of any provision of chapters 49.46, 49.48, or 49.52 RCW, as determined by a final and binding citation and notice of assessment issued by the Department of Labor and Industries or through a civil judgment entered by a court of limited or general jurisdiction.

I declare under penalty of perjury under the laws of the State of Washington that the foregoing is true and correct.

_____
Bidder's Business Name

_____
Signature of Authorized Official*

_____
Printed Name

_____
Title

_____ _____ _____
Date City State or County

Check One:
Sole Proprietorship ☐ Partnership ☐ Joint Venture ☐ Corporation/LLC* ☐

State of Incorporation, or if not a corporation, State where business entity was formed:

_____

If an LLC, give firm name under which business is transacted:

_____

** If a corporation or limited liability company, this certificate must be executed in the entity's name by the president or vice-president (or any other corporate officer accompanied by evidence of authority to sign). If an LLC, this certificate must be executed by an authorized member or manager of the LLC*

SUPPLEMENTAL CRITERIA EVIDENCE SUBMISSION AND EVALUATION

As evidence that the Bidder meets the Supplemental Criteria stated above, upon request, the apparent low Bidder must submit to the Contracting Agency by 12:00 PM (noon) of the second business day following the bid submittal deadline, a written statement verifying that the Bidder meets the supplemental criteria together with supporting documentation (sufficient in the sole judgement of the Contracting Agency) demonstrating compliance with the Supplemental Criteria. The Contracting Agency reserves the right to request further documentation as needed from the low Bidder and documentation from other Bidders as well to assess Bidder responsibility and compliance with all bidder responsibility criteria. The Contracting Agency also reserves the right to obtain information from third-parties and independent sources of information concerning a Bidder's compliance with the mandatory and supplemental criteria, and to use that information in their evaluation. The Contracting Agency may consider mitigating factors in determining whether the Bidder complies with the requirements of the supplemental criteria.

The basis for evaluation of Bidder compliance with these mandatory and supplemental criteria shall include any documents or facts obtained by the Contracting Agency (whether from the Bidder or third parties) including but not limited to: (i) financial, historical, or operational data from the Bidder; (ii) information obtained directly by the Contracting Agency from others for whom the Bidder has worked, or other public agencies or private enterprises; and (iii) any additional information obtained by the Contracting Agency which is believed to be relevant to the matter.

If the Contracting Agency determines the Bidder does not meet the bidder responsibility criteria above and is therefore not a responsible Bidder, the Contracting Agency shall notify the Bidder in writing, with the reasons for its determination. If the Bidder disagrees with this determination, it may appeal the determination within two (2) business days of the Contracting Agency's determination by presenting its appeal and any additional information to the Contracting Agency. The Contracting Agency will consider the appeal and any additional information before issuing its final determination. If the final determination affirms that the Bidder is not responsible, the Contracting Agency will not execute a contract with any other Bidder until at least two business days after the Bidder determined to be not responsible has received the Contracting Agency's final determination.

Request to Change Supplemental Bidder Responsibility Criteria Prior To Bid

Bidders with concerns about the relevancy or restrictiveness of the Supplemental Bidder Responsibility Criteria may make or submit requests to the Contracting Agency to modify the criteria. Such requests shall be in writing, describe the nature of the concerns, and propose specific modifications to the criteria. Bidders shall submit such requests to the Contracting Agency no later than five (5) business days prior to the bid submittal deadline and address the request to the Project Engineer or such other person designated by the Contracting Agency in the Bid Documents.

For criteria with check boxes, the bidder will check either "Yes" or "No." For each "Yes" answer on the form, the bidder shall provide a signed and dated statement providing the project information requested and explaining the extenuating circumstances.

"Successfully Completed" means similar projects completed by the bidder within the allowed time and price and demonstrating strong construction management skills and technical competence.

SUPPLEMENTAL CRITERIA INFORMATION FORM

Project Name: SCTP Dewatering Equipment Replacement

Part A. General Company Information	
Company Name:	
Address:	
Contact Phone:	**Contact E-mail:**
Years in business as a Prime Contractor:	**Years in business as a subcontractor:**
Years in business under Present Name:	
List any former company names under which the company, its owners, and/or its principals has operated in the past five (5) years.	
Explain reason for name change(s) in the past five (5 years)	
Part B. Delinquent State Taxes	
Is the bidder delinquent or overdue on paying taxes to the State of Washington Department of Revenue or on assessments of other state agencies?	
Yes ☐ **No** ☐	
If "Yes" attach a copy of the written payment plan approved by the Department of Revenue.	
Part C. Federal Debarment	
Is the bidder listed as a current debarred or suspended bidder on the Federal "System For Award Management" website www.sam.gov.	
Yes ☐ **No** ☐	
Part D. Subcontractor Responsibility	
Does the bidder's standard subcontract form include the subcontractor language required by RCW 39.06.020? Does the bidder have an established procedure which it uses to validate the responsibility of each of its subcontractors? Does the subcontract form require that each of the bidder's subcontractors have and document a similar procedure for sub-tier subcontractors?	
Yes ☐ **No** ☐	
If "Yes" or "No", provide a copy of its standard subcontract form and a copy of the procedures used to validate the responsibility of subcontractors.	
Part E. Prevailing Wages	
In the last five (5) years, has the bidder had prevailing wage complaints filed against it or received violations as determined by the applicable state or federal government agency monitoring prevailing and/or Davis Bacon wage compliance?	
Yes ☐ **No** ☐	

If "Yes," attach a separate signed/dated statement listing the prevailing wage violations, along with an explanation of each violation and how it was resolved. The District shall evaluate these explanations and the resolution of each violation to determine whether the violations demonstrate a pattern of failure to pay prevailing wages to workers unless there are extenuating circumstances acceptable to the District.
Part F. Claims Against Retainage and Bonds
Does the bidder have a record of multiple claims filed against the retainage or payment bonds for public works projects during the previous three (3) years?
Yes ☐ No ☐
If "Yes", attach a separate signed / dated statement for each project with claims which includes the following: 1) Owner and contact information for the owner; 2) a list of claims filed against the retainage and/or payment bond for the project; and 3) a written explanation of the circumstances surrounding the claim and the ultimate resolution of the claim. The District may contact previous owners to validate the information provided by the bidder. The District shall evaluate the information to determine if it demonstrates a lack of effective management by the bidder of making timely and appropriate payments, unless there are extenuating circumstances acceptable to the District in its sole discretion.
Part G. Public Bidding Crime
Has the bidder been convicted of a crime involving bidding on a public works contract within the last five (5) years?
Yes ☐ No ☐
Part H. Termination for Cause/Termination for Default
Has the bidder had any public works contract terminated for cause by any government agency during the previous five (5) years?
Yes ☐ No ☐
If "Yes", attach a separate signed / dated statement listing each contract terminated, the government agency terminating the contract and the circumstances involving the termination for cause. The District will evaluate the information to determine if the termination for cause indicates a lack of bidder's capacity to properly manage and execute its work and contract obligations.
Part I. Lawsuits
Has the bidder been involved in lawsuits (or arbitrations for those instances where arbitration is completed in lieu of a lawsuit) with judgments entered against the bidder for failure to meet terms on contracts in the previous five (5) years?
Yes ☐ No ☐
If "Yes", attach a list of lawsuits and/or arbitrations with judgments / arbitration awards entered against the bidder along with a written explanation of the circumstances surrounding each lawsuit and/or arbitration. The District will evaluate the information to determine if the judgement indicates a lack of bidder's capacity to properly manage and execute its work and contract obligations.

Part J. Work Experience

List at least three construction projects on the attached Work Experience Form, each of which meet all of the following criteria:

- **Successfully completed within the last five (5) years**
- **Contract value exceeding $4,000,000**
- **Construction of new equipment in operating wastewater treatment processes at an existing plant.**

Each of the three projects must demonstrate the following types of work were undertaken: Process equipment installation, mechanical piping, instrumentation and control systems, and electrical construction.

Part K. Mandatory Responsibility Criteria

This project is subject to the apprenticeship utilization requirements in RCW 39.04.320.

Has the bidder been found out of compliance by the Washington State Apprenticeship and Training Council for working apprentices out of ratio, without appropriate supervision, or outside their approved work processes as outlined in their standards of apprenticeship under RCW 49.04 for the one-year period immediately preceding the date of bid solicitation?

Yes ☐ **No** ☐

If "Yes," attach a separate signed/dated statement listing the compliance issues, along with an explanation of each issue and how it was resolved. The District shall evaluate these explanations and the resolution of each issue to determine whether the issue(s) demonstrate a pattern of failure to follow apprenticeship utilization standards unless there are extenuating circumstances acceptable to the District.

Part L. Signature

I hereby certify, warrant and declare under penalty of perjury that the information included herein is correct and complete. Failure to disclose requested information or submitting false or misleading information may result in rejection of my bid, termination of my contract, and may impact my firm's ability to bid on future projects.

Signature of Authorized Representative **Date**

Printed Name of Authorized Representative **Title**

Attachment to Supplemental Bidder Criteria

WORK EXPERIENCE FORM

Please complete one form per project and include the minimum number of projects (and forms) as requested. You may include any additional work experience you deem relevant in determining bidder responsibility. Please be sure to provide a thorough description of the work in order to demonstrate how your firm meets any required experience detailed in the special provisions. You may attach additional documentation if needed.

PROJECT DETAIL

Bidder's Company Name		**Bidder's Contact Name & Phone Number**	
Project Name		**Project Contract Number**	
Project Owner		**Project Location**	
Project Owner Contact Name & Title		**Owner's Telephone Number**	
Notice to Proceed Date	**Final Completion Date**	**Awarded Contract Value**	**Final Contract Price**
Prime Contractor Name (If Not Bidder)		**Contractor Contact Name & Phone Number (If Not Bidder)**	

Did this project require Apprenticeship Participation? Yes ☐ No ☐

If Yes, what was the Apprenticeship Participation Percentage? _____%	**If Yes, What was the actual Apprenticeship Participation Percentage achieved? _____%**

If Yes, Was the apprenticeship requirement met? Yes ☐ No ☐
(If No, attach separate sheet to explain why)

Brief Project Description

Brief Summary of Technical Work Completed by Bidder, Including Any Relevant Details to Demonstrate Similar Experience and any Required Experience Detailed in the Specifications.

SUBCONTRACTOR LIST

(If Applicable – See RCW 39.30.060)

The bidder shall complete and submit this form with the Bid.

The bidder shall not list more than one subcontractor for each category of work identified, unless subcontractors vary with bid alternates, in which case the bidder must indicate which subcontractor will be used for which alternate.

The work to be performed is to be listed below the subcontractor(s) name. The requirement to name the bidder's proposed HVAC, plumbing, electrical, structural steel installation, and rebar installation subcontractors applies only to proposed HVAC, plumbing, electrical, structural steel installation, and rebar installation subcontractors who will contract directly with the bidder submitting the bid to the public entity.

Failure to list subcontractors who are proposed to perform the work of HVAC (heating, ventilation and air conditioning), plumbing, electrical, structural steel installation, and rebar installation or to name itself to perform such work, or naming more than one subcontractor to perform the same work will result in your bid being non-responsive and therefore void.

HVAC
Subcontractor Name / UBI# _____
Work to be Performed _____

Plumbing
Subcontractor Name / UBI# _____
Work to be Performed _____

Electrical
Subcontractor Name / UBI# _____
Work to be Performed _____

Structural Steel Installation
Subcontractor Name / UBI# _____
Work to be Performed _____

Rebar Installation
Subcontractor Name / UBI# _____
Work to be Performed _____

PROPOSAL SIGNATURE PAGE

The undersigned, under penalty of perjury, hereby certifies that said person(s), firm, association or corporation has (have) not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with the project for which this proposal is submitted.

The undersigned declares that before preparing their quote, they have carefully read the specifications and requirements for bidders and that their quote is made with the full knowledge of the kind, quality and quantity of services and equipment to be furnished, and their said quote is as stated on these pages. By signing this page of the quotation, the undersigned acknowledges and agrees to the terms and conditions of the forms, requirements, and qualifications included in the Contract Provisions and furthermore warrants and represents under oath and under penalty of perjury under the laws of the State of Washington that the bidder meets the mandatory and supplemental criteria stated in the Contract Provisions and that all representations by the bidder and the undersigned are true and correct.

The bidder shall insert the number and date of each Addendum received.

No.____ Date:_____ No.____ Date:_____ No.____ Date:_____

No.____ Date:_____ No.____ Date:_____ No.____ Date:_____

Note: Failure to acknowledge receipt of Addenda will render the bid non-responsive and therefore to be rejected.

Authorized Official (Signature)	Date
Print Name of Authorized Official	Title of Authorized Official
Company Name	Telephone Number
Address	City, State, Zip
Email Address	Employment Security Reference Number
WA State Contractors License Number	WA State Unified Business Identifier (UBI#)

NOTES:

1. If the bidder is a co-partnership, so state, giving firm name under which business is transacted.
2. If the bidder is a corporation/LLC, this proposal must be executed by its duly authorized officials.
3. Proposals submitted must be complete and include pricing for the work to be completed, in whole, per the attached plans and specifications.
4. The District reserves the right to adjust the scope of this work to match available funds.
5. No bidder may withdraw its bid after the hour set for the opening thereof, unless the award of contract is delayed for a period exceeding forty-five (45) days. If it is determined to be in the best interest of the District, the District reserves the right to request an extension of bid prices during the review process.

PREVAILING WAGE RATES

PREVAILING WAGE RATES

The State of Washington prevailing wage rates applicable for this public works project, which is located in Clark County, may be found at the following website address of the Department of Labor and Industries:

https://lni.wa.gov/licensing-permits/public-works-projects/prevailing-wage-rates/

Based on the bid submittal deadlines for this project, the applicable effective date for prevailing wages for this project is March 19, 2026.

If you would like a copy of the applicable prevailing wages rates, please contact Michaela Loveridge at (360) 360-5382 or by e-mail at mloveridge@crwwd.com.

CONTRACT FORMS

AGREEMENT

THIS AGREEMENT is by and between Clark Regional Wastewater District (Owner) and

_____ (Contractor).

Owner and Contractor, in consideration of the mutual covenants set forth herein, agree as follows:

1. WORK
   1.1. Contractor shall complete the Work as specified or indicated in the Contract Documents. The Work is generally described as follows:
      1.1.1. The Project consists of the construction of all components of the Salmon Creek Treatment Plant Dewatering Equipment Replacement as described in the contract plans and specifications.
2. THE PROJECT
   2.1. The project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:
      2.1.1. Salmon Creek Treatment Plant Dewatering Equipment Replacement.
3. ENGINEER
   3.1. The Project has been designed by Brown and Caldwell.
4. CONTRACT TIMES
   4.1. Time of the Essence: Time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.
   4.2. Time to Achieve Substantial Completion and Final Payment
      4.2.1. All Work shall be Substantially Completed 714 days after Notice to Proceed is issued by the Owner.
      4.2.2. All Work shall be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions by 30 days after the Substantial Completion date.
   4.3. Liquidated Damages:
      4.3.1. Contractor and Owner recognize that time is of the essence of this Agreement and that Owner will suffer financial loss if the Work is not completed within the times specified in Paragraph Contract Times above, plus any extensions thereof allowed in accordance with Article 11 of the General Conditions. Accordingly, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty) Contractor shall pay Owner at the rate indicated below for each day that expires after the time specified herein for Substantial Completion until the Work is substantially complete. This rate has been calculated to reflect the cost to the Owner for additional consultant and agency staff time involved in managing the project, the investment in infrastructure without the ability to utilize the new facilities, and other impacts associated with the work not being completed on time.

4.3.2. After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by Owner, Contractor shall pay Owner at the rate indicated below for each day that expires after the time specified herein for completion and readiness for final payment until the Work is completed and ready for final payment. This rate has been calculated to reflect the cost to the Owner for additional consultant and agency staff time involved in managing the project to final completion, and other impacts including loss of use and inconvenience to the public associated with the work not being completed on time.

4.3.3. Liquidated Damages Rates:
Substantial Completion of all Work: $1,600.00
Final Completion and Ready for Final Payment: $825.00.

5. CONTRACT PRICE

5.1. Owner will pay Contractor for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined pursuant to the following (price shall include sales tax and shall match the proposal form):

5.1.1. For all work, a lump sum of:

_____ Dollars
(Words)

and _____ Cents $_____
(Words) (Figures)

6. PAYMENT PROCEDURES

6.1. Submittal and Processing of Payments: Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.2. Progress Payments and Retainage: Owner will make progress payments on account of the Contract Price on the basis of Contractor's Application for Payment on the date of each month as established in the preconstruction conference during performance of the Work as provided herein. All such payments will be measured by the Schedule of Values established as provided in Paragraph 2.05 of 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 Requirements. All Progress Payments are subject to retainage as required by RCW 60.28.

6.2.1. Prior to Final Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Engineer may determine or Owner may withhold, including but not limited to liquidated damages, in accordance with Paragraph 15.01 of the General Conditions;

6.2.1.1. Ninety-five percent of Work completed, and 95 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage subject to the provisions of RCW 60.28).

6.3. Final Payment:

6.3.1. Upon final completion and acceptance of the work in accordance with Paragraph 15.06 of the General Conditions and RCW 60.28, Owner will pay the remainder of the Contract Price as recommended by Engineer as provided in Paragraph 15.06.

7. CONTRACTOR'S REPRESENTATIONS
   7.1. In order to induce Owner to enter into this Agreement, Contractor makes the following representations:
      7.1.1. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
      7.1.2. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
      7.1.3. Contractor is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
      7.1.4. Contractor has considered the information known to Contractor; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on 1) the cost, progress, and performance of the Work; 2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Contract Documents; and 3) Contractor's safety precautions and programs.
      7.1.5. Based on the information and observations referred to above, Contractor does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
      7.1.6. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
      7.1.7. Contractor has given Engineer written notice of conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
      7.1.8. The Contract Documents are generally sufficient to indicate and convey understanding of terms and conditions for performance and furnishing of the Work.
8. CONTRACT DOCUMENTS
   8.1. Contents:
      8.1.1. The Contract Documents that form the Contract between the Owner and the Contractor are as follows:
         8.1.1.1. This Agreement.
         8.1.1.2. Payment and Performance bond.
         8.1.1.3. General Conditions, Engineers Joint Contract Documents Committee.
         8.1.1.4. Supplementary Conditions.
         8.1.1.5. Specifications as listed in the Table of Contents of the Project Manual.
         8.1.1.6. Drawings consisting of 103 sheets with each sheet bearing the following general title: "Salmon Creek Treatment Plant Dewatering Equipment Replacement."
         8.1.1.7. Addenda.
         8.1.1.8. All documents contained in the Project Manual.

8.1.2. Exhibits to this Agreement (enumerated as follows):
8.1.2.1. Contractor's Bid.
8.1.2.2. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
8.1.2.2.1. Notice to Proceed.
8.1.2.2.2. Work Change Directives.
8.1.2.2.3. Change Order(s).

8.2. There are no Contract Documents other than those listed above in this Article.

8.3. The Contract Documents may only be amended, modified, or supplemented as provided in Paragraph 11.01 of the General Conditions.

9. APPRENTICE UTILIZATION REQUIREMENTS

9.1. The apprentice labor hours required for this project are 15% of the total labor hours, unless Good Faith Efforts are accepted. The undersigned agrees to utilize this level of apprentice participation. Apprentice utilization will be determined using the Department of Labor and Industries (L&I) online Prevailing Wage Intent & Affidavit (PWIA) system. A monetary incentive of $10,000 will be paid to the contractor meeting the apprentice utilization requirement, without a reduction by Good Faith Efforts. A monetary penalty will be applied to the contractor failing to meet the utilization requirement, unless a Good Faith Effort is approved by the District. The penalty will be assessed for every hour of shortfall of the minimum number of required apprentice hours using the applicable published wage of a Step 1 apprentice laborer. The penalty will not exceed one percent (1%) of the total Contract Sum.

10. MISCELLANEOUS

10.1. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

10.2. Successors and Assigns: Owner and Contractor each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.3. Severability: Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10.4. Assignment of Contract:

10.4.1. Except as specifically provided herein, the parties to this Agreement may not assign any of their rights or obligations hereunder to any non-party without the written consent of all parties to this Agreement. Owner and Contractor specifically agree that Owner may assign any and all title, rights, warranties, rights of action, and obligations related to the Work, this Agreement, and the Contract Documents in whole or in part to the Discovery Clean Water Alliance, a Washington municipal corporation. Owner will give Contractor written notice

of any such assignment. Failure to provide notice will not affect the validity of the assignment.

10.5. Contractor's Certifications:

10.5.1. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this paragraph:

10.5.1.1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in Contract execution;

10.5.1.2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract Price at artificial noncompetitive levels, or (c) to deprive Owner of the benefits of free and open competition;

10.5.1.3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, noncompetitive levels; and

10.5.1.4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement in triplicate. One counterpart each has been delivered to Owner, Contractor, and Engineer. All portions of the Contract Documents have been signed or identified by Owner and Contractor or on their behalf.

This Agreement will be effective on _____, 2026 (which is the Effective Date of the Agreement)

OWNER:	CONTRACTOR:
Clark Regional Wastewater District	_____
By: _____	By: _____
Title: General Manager	Title: _____
Address for giving notices:	Address for giving notices:
_____	_____
_____	_____
(If Owner is a corporation, attach evidence of authority to sign. If Owner is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)	License No. _____ (Where applicable)
	Agent for service or process: _____
	_____
	(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

CONTRACT PAYMENT AND PERFORMANCE BOND

Clark Regional Wastewater District (the "District") has awarded to _____ ("Principal"), a contract for the construction of the project designated as **Salmon Creek Treatment Plant Dewatering Equipment Replacement, Project No. 93-2021-0058**, and said Principal is required under the terms of that Contract to furnish a bond for payment of subcontractors and suppliers and performance of all obligations and duties under the Contract.

The Principal, and _____ ("Surety"), a corporation, organized under the laws of the State of _____, duly authorized to do business in the State of Washington as surety upon bonds of contractors with municipal corporations, and their heirs, executors, administrators, successors and assigns, are jointly and severally held and firmly bound to the District, in the sum of _____ US Dollars ($_____). Total Contract Amount, for the payment of this sum on demand subject to the provisions herein.

This statutory bond shall become null and void, if and when the Principal, its heirs, executors, administrators, successors, or assigns perform all the duties, warranties, and obligations of the Contract and fulfill all the terms and conditions of all duly authorized modifications, additions, and changes to said Contract that may hereafter be made, at the time and in the manner therein specified, and shall also pay all laborers, mechanics, subcontractors, material men, and all persons and governmental agencies as required by RCW 39.08 and shall defend, indemnify and hold harmless the District, its officers and agents from any claim for such payment.

The Surety for value received agrees that no change, extension of time, alteration or addition to the terms of the Contract, the specifications accompanying the Contract, or to the work to be performed under the Contract shall in any way affect its obligation on this bond, except as provided herein, and waives notice of any change, extension of time, alteration or addition to the terms of the Contract, the specifications or the work performed. The Surety agrees that modifications and changes to the terms and conditions of the Contract including any increase the total amount to be paid the Principal shall automatically increase the obligations of the Surety on this bond and notice to Surety is not required and is waived for such increased obligation.

This bond may be executed in two (2) original counterparts to be signed by duly authorized officers of Principal and Surety. This bond will only be accepted if it is accompanied by a fully executed and original (or acceptable equivalent) power of attorney for the officer executing on behalf of the Surety.

PRINCIPAL	**SURETY**
_____	_____
Principal Signature Date	Surety Signature Date
_____	_____
Printed Name	Printed Name
_____	_____
Title	Title

Name, address, and telephone of local office/agent of Surety Company is:

_____

_____

CONDITIONS OF THE CONTRACT

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared By

EJCDC®
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

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GUIDELINES FOR USE OF EJCDC® C-700, STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

1.0 PURPOSE AND INTENDED USE OF THE DOCUMENT

EJCDC® C-700, Standard General Conditions of the Construction Contract (2018), is the foundation document for the EJCDC Construction Series. The General Conditions define the basic rights, responsibilities, risk allocations, and contractual relationship of the Owner and Contractor, and establish how the Contract is to be administered.

2.0 OTHER DOCUMENTS

EJCDC documents are intended to be used as a system and changes in one EJCDC document may require a corresponding change in other documents. Other EJCDC documents may also serve as a reference to provide insight or guidance for the preparation of this document.

These General Conditions have been prepared for use with either EJCDC® C-520, Agreement Between Owner and Contractor for Construction Contract (Stipulated Price), or EJCDC® C-525, Agreement Between Owner and Contractor for Construction Contract (Cost-Plus-Fee) (2018 Editions). The provisions of the General Conditions and the Agreement are interrelated, and a change in one may necessitate a change in the other.

To prepare supplementary conditions that are coordinated with the General Conditions, use EJCDC® C-800, Supplementary Conditions of the Construction Contract (2018).

The full EJCDC Construction series of documents is discussed in the EJCDC® C-001, Commentary on the 2018 EJCDC Construction Documents (2018).

3.0 ORGANIZATION OF INFORMATION

All parties involved in a construction project benefit significantly from a standardized approach in the location of subject matter throughout the documents. Experience confirms the danger of addressing the same subject matter in more than one location; doing so frequently leads to confusion and unanticipated legal consequences. Careful attention should be given to the guidance provided in EJCDC® N-122/AIA® A521, Uniform Location of Subject Matter (2012 Edition) when preparing documents. EJCDC® N-122/AIA® A521 is available at no charge from the EJCDC website, www.ejcdc.org, and from the websites of EJCDC's sponsoring organizations.

If CSI MasterFormat™ is used for organizing the Project Manual, consult CSI MasterFormat™ for the appropriate document number (e.g., under 00 11 00, Advertisements and Invitations), and accordingly number the document and its pages.

4.0 EDITING THIS DOCUMENT

Remove these Guidelines for Use. Some users may also prefer to remove the two cover pages.

Although it is permissible to revise the Standard EJCDC Text of C-700 (the content beginning at page 1 and continuing to the end), it is common practice to leave the Standard EJCDC Text of C-700 intact and unaltered, with modifications and supplementation of C-700's provisions set forth in EJCDC® C-800, Supplementary Conditions of the Construction Contract (2018). If the Standard Text itself is revised, the

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user must comply with the terms of the License Agreement, Paragraph 4.0, Document-Specific Provisions, concerning the tracking or highlighting of revisions. The following is a summary of the relevant License Agreement provisions:

1. The term "Standard EJCDC Text" for C-700 refers to all text prepared by EJCDC in the main body of the document. Document covers, logos, footers, instructions, or copyright notices are not Standard EJCDC Text for this purpose.
2. During the drafting or negotiating process for C-700, it is important that the two contracting parties are both aware of any changes that have been made to the Standard EJCDC Text. Thus, if a draft or version of C-700 purports to be or appears to be an EJCDC document, the user must plainly show all changes to the Standard EJCDC Text, using "Track Changes" (redline/strikeout), highlighting, or other means of clearly indicating additions and deletions.
3. If C-700 has been revised or altered and is subsequently presented to third parties (such as potential bidders, grant agencies, lenders, or sureties) as an EJCDC document, then the changes to the Standard EJCDC Text must be shown, or the third parties must receive access to a version that shows the changes.
4. Once the document is ready to be finalized (and if applicable executed by the contracting parties), it is no longer necessary to continue to show changes to the Standard EJCDC Text. The user may produce a final version of the document in a format in which all changes are accepted, and the document at that point does not need to include any "Track Changes," redline/strikeout, highlighting, or other indication of additions and deletions to the Standard EJCDC Text.

5.0 LICENSE AGREEMENT

This document is subject to the terms and conditions of the **License Agreement, 2018 EJCDC® Construction Series Documents**. A copy of the License Agreement was furnished at the time of purchase of this document, and is available for review at www.ejcdc.org and the websites of EJCDC's sponsoring organizations.

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.

3. *Application for Payment*—The document prepared by Contractor, in a form acceptable to Engineer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

5. *Bidder*—An individual or entity that submits a Bid to Owner.

6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.

7. *Bidding Requirements*—The Advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.

8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.

9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.

10. *Claim*

a. A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment of Contract Price or Contract Times; contesting an initial decision by Engineer concerning the

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requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract.

b. A demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal, or seeking resolution of a contractual issue that Engineer has declined to address.

c. A demand or assertion by Owner or Contractor, duly submitted in compliance with the procedural requirements set forth herein, made pursuant to Paragraph 12.01.A.4, concerning disputes arising after Engineer has issued a recommendation of final payment.

d. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.

12. *Contract*—The entire and integrated written contract between Owner and Contractor concerning the Work.

13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.

14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.

15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.

16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.

17. *Cost of the Work*—See Paragraph 13.01 for definition.

18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.

19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.

20. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.

21. *Electronic Means*—Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow: (a) the transmission or communication of Electronic Documents; (b) the documentation of transmissions, including sending and receipt; (c) printing of the transmitted Electronic Document by the

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recipient; (d) the storage and archiving of the Electronic Document by sender and recipient; and (e) the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

22. *Engineer*—The individual or entity named as such in the Agreement.

23. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.

24. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto.

    a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.

    b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.

    c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.

25. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

26. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.

27. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date, or by a time prior to Substantial Completion of all the Work.

28. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.

29. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.

30. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.

31. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising Contractor's plan to accomplish the Work within the Contract Times.

32. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.

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33. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative (RPR) includes any assistants or field staff of Resident Project Representative.

34. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.

35. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer's review of the submittals.

36. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

37. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.

38. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands or areas furnished by Owner which are designated for the use of Contractor.

39. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.

40. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.

41. *Submittal*—A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; Owner-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers' instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.

42. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion of such Work.

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43. *Successful Bidder*—The Bidder to which the Owner makes an award of contract.

44. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.

45. *Supplier*—A manufacturer, fabricator, supplier, distributor, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.

46. *Technical Data*

    a. Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (1) existing subsurface conditions at or adjacent to the Site, or existing physical conditions at or adjacent to the Site including existing surface or subsurface structures (except Underground Facilities) or (2) Hazardous Environmental Conditions at the Site.

    b. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then Technical Data is defined, with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06, as the data contained in boring logs, recorded measurements of subsurface water levels, assessments of the condition of subsurface facilities, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical, environmental, or other Site or facilities conditions report prepared for the Project and made available to Contractor.

    c. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data, and instead Underground Facilities are shown or indicated on the Drawings.

47. *Underground Facilities*—All active or not-in-service underground lines, pipelines, conduits, ducts, encasements, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems at the Site, including but not limited to those facilities or systems that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude oil products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, or traffic or other control systems. An abandoned facility or system is not an Underground Facility.

48. *Unit Price Work*—Work to be paid for on the basis of unit prices.

49. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.

50. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

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1.02 *Terminology*

A. The words and terms discussed in Paragraphs 1.02.B, C, D, and E are not defined terms that require initial capital letters, but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. *Intent of Certain Terms or Adjectives*: The Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to 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 Article 10 or any other provision of the Contract Documents.

C. *Day*: The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.

D. *Defective*: The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it:

1. does not conform to the Contract Documents;

2. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or

3. has been damaged prior to Engineer's recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or Paragraph 15.04).

E. *Furnish, Install, Perform, Provide*

1. The word "furnish," when used in connection with services, materials, or equipment, means to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word "install," when used in connection with services, materials, or equipment, means to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words "perform" or "provide," when used in connection with services, materials, or equipment, means to furnish and install said services, materials, or equipment complete and ready for intended use.

4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words "furnish," "install," "perform," or "provide," then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

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F. *Contract Price or Contract Times*: References to a change in "Contract Price or Contract Times" or "Contract Times or Contract Price" or similar, indicate that such change applies to (1) Contract Price, (2) Contract Times, or (3) both Contract Price and Contract Times, as warranted, even if the term "or both" is not expressed.

G. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2—PRELIMINARY MATTERS

2.01 *Delivery of Performance and Payment Bonds; Evidence of Insurance*

A. *Performance and Payment Bonds*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner the performance bond and payment bond (if the Contract requires Contractor to furnish such bonds).

B. *Evidence of Contractor's Insurance*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each additional insured (as identified in the Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Contractor in accordance with Article 6, except to the extent the Supplementary Conditions expressly establish other dates for delivery of specific insurance policies.

C. *Evidence of Owner's Insurance*: After receipt of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each additional insured (as identified in the Contract), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.

B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise required by the Contract Documents), Contractor shall submit to Engineer for timely review:

1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;

2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work

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into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work, and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other Submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.

B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Acceptance of Schedules*

A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review the schedules submitted in accordance with Paragraph 2.03.A. No progress payment will be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

4. If a schedule is not acceptable, Contractor will have an additional 10 days to revise and resubmit the schedule.

2.06 *Electronic Transmittals*

A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may send, and shall accept, Electronic Documents transmitted by Electronic Means.

B. If the Contract does not establish protocols for Electronic Means, then Owner, Engineer, and Contractor shall jointly develop such protocols.

C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

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ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

A. The Contract Documents are complementary; what is required by one Contract Document is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents.

C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will govern.

D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.

E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Owner and Contractor, which agree that the Contract Documents will be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

G. Nothing in the Contract Documents creates:

1. any contractual relationship between Owner or Engineer and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or

2. any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity, except as may otherwise be required by Laws and Regulations.

3.02 *Reference Standards*

A. *Standards Specifications, Codes, Laws and Regulations*

1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, means the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard specification, manual, reference standard, or code, and no instruction of a Supplier, will be effective to change the duties or responsibilities of Owner, Contractor, or Engineer from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner or Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility

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inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. *Contractor's Verification of Figures and Field Measurements*: Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.

2. *Contractor's Review of Contract Documents*: If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:

a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer in writing all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work.

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B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.

C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly notify Owner and Contractor in writing that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

A. Contractor and its Subcontractors and Suppliers shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media versions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or

2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein precludes Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

A. The Contract Times will commence to run on the 30th day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the 60th day after the day of Bid opening or the 30th day after the Effective Date of the Contract, whichever date is earlier.

4.02 *Starting the Work*

A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work may be done at the Site prior to such date.

4.03 *Reference Points*

A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the

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established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.04 *Progress Schedule*

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times must be submitted in accordance with the requirements of Article 11.

B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work will be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times.

B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.

C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Such an adjustment will be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:

1. Severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;

2. Abnormal weather conditions;

3. Acts or failures to act of third-party utility owners or other third-party entities (other than those third-party utility owners or other third-party entities performing other work at or adjacent to the Site as arranged by or under contract with Owner, as contemplated in Article 8); and

4. Acts of war or terrorism.

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D. Contractor's entitlement to an adjustment of Contract Times or Contract Price is limited as follows:

1. Contractor's entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.

2. Contractor shall not be entitled to an adjustment in Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor. Such a concurrent delay by Contractor shall not preclude an adjustment of Contract Times to which Contractor is otherwise entitled.

3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 11.

E. Each Contractor request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:

1. The circumstances that form the basis for the requested adjustment;

2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;

3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;

4. The number of days' increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and

5. The impact on Contract Price, in accordance with the provisions of Paragraph 11.07.

Contractor shall also furnish such additional supporting documentation as Owner or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work.

F. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5, together with the provisions of Paragraphs 4.05.D and 4.05.E.

G. Paragraph 8.03 addresses delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

ARTICLE 5—SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *Availability of Lands*

A. Owner shall furnish the Site. Owner shall notify Contractor in writing of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.

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B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas*

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas, or to improvements, structures, utilities, or similar facilities located at such adjacent lands or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.

2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.13, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or in a court of competent jurisdiction; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

B. *Removal of Debris During Performance of the Work*: During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris will conform to applicable Laws and Regulations.

C. *Cleaning*: Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment

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and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading of Structures*: Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

A. *Reports and Drawings*: The Supplementary Conditions identify:

1. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data;

2. Those drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data; and

3. Technical Data contained in such reports and drawings.

B. *Underground Facilities*: Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05, and not in the drawings referred to in Paragraph 5.03.A. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

C. *Reliance by Contractor on Technical Data*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b.

D. *Limitations of Other Data and Documents*: Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto;

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings;

3. the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner's archival documents concerning the Site; or

4. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

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5.04 *Differing Subsurface or Physical Conditions*

A. *Notice by Contractor*: If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site:

1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate;

2. is of such a nature as to require a change in the Drawings or Specifications;

3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

B. *Engineer's Review*: After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine whether it is necessary for Owner to obtain additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.

C. *Owner's Statement to Contractor Regarding Site Condition*: After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.

D. *Early Resumption of Work*: If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.

E. *Possible Price and Times Adjustments*

1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in

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Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

a. Such condition must fall within any one or more of the categories described in Paragraph 5.04.A;

b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,

c. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:

a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise;

b. The existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or

c. Contractor failed to give the written notice required by Paragraph 5.04.A.

3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.

4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

F. *Underground Facilities; Hazardous Environmental Conditions*: Paragraph 5.05 governs rights and responsibilities regarding the presence or location of Underground Facilities. Paragraph 5.06 governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of Paragraphs 5.03 and 5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.

5.05 *Underground Facilities*

A. *Contractor's Responsibilities*: Unless it is otherwise expressly provided in the Supplementary Conditions, the cost of all of the following are included in the Contract Price, and Contractor shall have full responsibility for:

1. reviewing and checking all information and data regarding existing Underground Facilities at the Site;

2. complying with applicable state and local utility damage prevention Laws and Regulations;

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3. verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the Work, by exposing such Underground Facilities during the course of construction;

4. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and

5. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.

B. *Notice by Contractor*: If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated on the Drawings, or was not shown or indicated on the Drawings with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing regarding such Underground Facility.

C. *Engineer's Review*: Engineer will:

1. promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy;

2. identify and communicate with the owner of the Underground Facility; prepare recommendations to Owner (and if necessary issue any preliminary instructions to Contractor) regarding the Contractor's resumption of Work in connection with the Underground Facility in question;

3. obtain any pertinent cost or schedule information from Contractor; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and

4. advise Owner in writing of Engineer's findings, conclusions, and recommendations.

During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

D. *Owner's Statement to Contractor Regarding Underground Facility*: After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.

E. *Early Resumption of Work*: If at any time Engineer determines that Work in connection with the Underground Facility may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the Underground Facility in question and conditions affected by its presence have been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.

F. *Possible Price and Times Adjustments*

1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, to the extent that any existing Underground Facility at the Site that was not shown

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or indicated on the Drawings, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

a. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;

b. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E; and

c. Contractor gave the notice required in Paragraph 5.05.B.

2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.

3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

4. The information and data shown or indicated on the Drawings with respect to existing Underground Facilities at the Site is based on information and data (a) furnished by the owners of such Underground Facilities, or by others, (b) obtained from available records, or (c) gathered in an investigation conducted in accordance with the current edition of ASCE 38, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, by the American Society of Civil Engineers. If such information or data is incorrect or incomplete, Contractor's remedies are limited to those set forth in this Paragraph 5.05.F.

5.06 *Hazardous Environmental Conditions at Site*

A. *Reports and Drawings*: The Supplementary Conditions identify:

1. those reports known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site;

2. drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and

3. Technical Data contained in such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures

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of construction to be employed by Contractor, and safety precautions and programs incident thereto;

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.

D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.

E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.

F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.

G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, as a result of such Work stoppage, such special conditions under which Work is agreed to be resumed by Contractor, or any costs or expenses incurred in response to the Hazardous Environmental Condition, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off. Entitlement to any such adjustment is subject to the provisions of Paragraphs 4.05.D, 4.05.E, 11.07, and 11.08.

H. If, after receipt of such written notice, Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special

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conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.

I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court, arbitration, or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I obligates Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J obligates Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6—BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of Contractor's obligations under the Contract. These bonds must remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the terms of a prescribed bond form, the Supplementary Conditions, or other provisions of the Contract.

B. Contractor shall also furnish such other bonds (if any) as are required by the Supplementary Conditions or other provisions of the Contract.

C. All bonds must be in the form included in the Bidding Documents or otherwise specified by Owner prior to execution of the Contract, except as provided otherwise by Laws or

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Regulations, and must be issued and signed by a surety named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Department Circular 570 (as amended and supplemented) by the Bureau of the Fiscal Service, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority must show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

D. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue bonds in the required amounts.

E. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer in writing and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which must comply with the bond and surety requirements above.

F. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.

G. Upon request to Owner from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Owner shall provide a copy of the payment bond to such person or entity.

H. Upon request to Contractor from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Contractor shall provide a copy of the payment bond to such person or entity.

6.02 *Insurance—General Provisions*

A. Owner and Contractor shall obtain and maintain insurance as required in this article and in the Supplementary Conditions.

B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized in the state or jurisdiction in which the Project is located to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.

C. Alternative forms of insurance coverage, including but not limited to self-insurance and "Occupational Accident and Excess Employer's Indemnity Policies," are not sufficient to meet the insurance requirements of this Contract, unless expressly allowed in the Supplementary Conditions.

D. Contractor shall deliver to Owner, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Contractor has obtained and is maintaining the policies and coverages required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, full disclosure of all relevant exclusions, and evidence of insurance required to be purchased and maintained by

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Subcontractors or Suppliers. In any documentation furnished under this provision, Contractor, Subcontractors, and Suppliers may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those applicable to this Contract.

E. Owner shall deliver to Contractor, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Owner has obtained and is maintaining the policies and coverages required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, and full disclosure of all relevant exclusions. In any documentation furnished under this provision, Owner may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those relevant to this Contract.

F. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, will not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.

G. In addition to the liability insurance required to be provided by Contractor, the Owner, at Owner's option, may purchase and maintain Owner's own liability insurance. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

H. Contractor shall require:

1. Subcontractors to purchase and maintain worker's compensation, commercial general liability, and other insurance that is appropriate for their participation in the Project, and to name as additional insureds Owner and Engineer (and any other individuals or entities identified in the Supplementary Conditions as additional insureds on Contractor's liability policies) on each Subcontractor's commercial general liability insurance policy; and

2. Suppliers to purchase and maintain insurance that is appropriate for their participation in the Project.

I. If either party does not purchase or maintain the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.

J. If Contractor has failed to obtain and maintain required insurance, Contractor's entitlement to enter or remain at the Site will end immediately, and Owner may impose an appropriate set-off against payment for any associated costs (including but not limited to the cost of purchasing necessary insurance coverage), and exercise Owner's termination rights under Article 16.

K. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect (but is in no way obligated) to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price will be adjusted accordingly.

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L. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests. Contractor is responsible for determining whether such coverage and limits are adequate to protect its interests, and for obtaining and maintaining any additional insurance that Contractor deems necessary.

M. The insurance and insurance limits required herein will not be deemed as a limitation on Contractor's liability, or that of its Subcontractors or Suppliers, under the indemnities granted to Owner and other individuals and entities in the Contract or otherwise.

N. All the policies of insurance required to be purchased and maintained under this Contract will contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured and Engineer.

6.03 *Contractor's Insurance*

A. *Required Insurance*: Contractor shall purchase and maintain Worker's Compensation, Commercial General Liability, and other insurance pursuant to the specific requirements of the Supplementary Conditions.

B. *General Provisions*: The policies of insurance required by this Paragraph 6.03 as supplemented must:

1. include at least the specific coverages required;

2. be written for not less than the limits provided, or those required by Laws or Regulations, whichever is greater;

3. remain in effect at least until the Work is complete (as set forth in Paragraph 15.06.D), and longer if expressly required elsewhere in this Contract, and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract;

4. apply with respect to the performance of the Work, whether such performance is by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable; and

5. include all necessary endorsements to support the stated requirements.

C. *Additional Insureds*: The Contractor's commercial general liability, automobile liability, employer's liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies, if required by this Contract, must:

1. include and list as additional insureds Owner and Engineer, and any individuals or entities identified as additional insureds in the Supplementary Conditions;

2. include coverage for the respective officers, directors, members, partners, employees, and consultants of all such additional insureds;

3. afford primary coverage to these additional insureds for all claims covered thereby (including as applicable those arising from both ongoing and completed operations);

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4. not seek contribution from insurance maintained by the additional insured; and

5. as to commercial general liability insurance, apply to additional insureds with respect to liability caused in whole or in part by Contractor's acts or omissions, or the acts and omissions of those working on Contractor's behalf, in the performance of Contractor's operations.

6.04 *Builder's Risk and Other Property Insurance*

A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the Work's full insurable replacement cost (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). The specific requirements applicable to the builder's risk insurance are set forth in the Supplementary Conditions.

B. *Property Insurance for Facilities of Owner Where Work Will Occur*: Owner is responsible for obtaining and maintaining property insurance covering each existing structure, building, or facility in which any part of the Work will occur, or to which any part of the Work will attach or be adjoined. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, providing coverage consistent with that required for the builder's risk insurance, and will be maintained until the Work is complete, as set forth in Paragraph 15.06.D.

C. *Property Insurance for Substantially Complete Facilities*: Promptly after Substantial Completion, and before actual occupancy or use of the substantially completed Work, Owner will obtain property insurance for such substantially completed Work, and maintain such property insurance at least until the Work is complete, as set forth in Paragraph 15.06.D. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, and provide coverage consistent with that required for the builder's risk insurance. The builder's risk insurance may terminate upon written confirmation of Owner's procurement of such property insurance.

D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide advance notice of such occupancy or use to the builder's risk insurer, and obtain an endorsement consenting to the continuation of coverage prior to commencing such partial occupancy or use.

E. *Insurance of Other Property; Additional Insurance*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, then the entity or individual owning such property item will be responsible for insuring it. If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.04, it may do so at Contractor's expense.

6.05 *Property Losses; Subrogation*

A. The builder's risk insurance policy purchased and maintained in accordance with Paragraph 6.04 (or an installation floater policy if authorized by the Supplementary Conditions), will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against

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Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors.

1. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils, risks, or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all individuals or entities identified in the Supplementary Conditions as builder's risk or installation floater insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused.
2. None of the above waivers extends to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.

B. Any property insurance policy maintained by Owner covering any loss, damage, or consequential loss to Owner's existing structures, buildings, or facilities in which any part of the Work will occur, or to which any part of the Work will attach or adjoin; to adjacent structures, buildings, or facilities of Owner; or to part or all of the completed or substantially completed Work, during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06, will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them, and that the insured is allowed to waive the insurer's rights of subrogation in a written contract executed prior to the loss, damage, or consequential loss.

1. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from fire or any of the perils, risks, or causes of loss covered by such policies.

C. The waivers in this Paragraph 6.05 include the waiver of rights due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other insured peril, risk, or cause of loss.

D. Contractor shall be responsible for assuring that each Subcontract contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from fire or other peril, risk, or cause of loss covered by builder's risk insurance, installation floater, and any other property insurance applicable to the Work.

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6.06 *Receipt and Application of Property Insurance Proceeds*

A. Any insured loss under the builder's risk and other policies of property insurance required by Paragraph 6.04 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.

B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.04 shall maintain such proceeds in a segregated account, and distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.

C. If no other special agreement is reached, Contractor shall repair or replace the damaged Work, using allocated insurance proceeds.

ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES

7.01 *Contractor's Means and Methods of Construction*

A. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

B. If the Contract Documents note, or Contractor determines, that professional engineering or other design services are needed to carry out Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures, or for Site safety, then Contractor shall cause such services to be provided by a properly licensed design professional, at Contractor's expense. Such services are not Owner-delegated professional design services under this Contract, and neither Owner nor Engineer has any responsibility with respect to (1) Contractor's determination of the need for such services, (2) the qualifications or licensing of the design professionals retained or employed by Contractor, (3) the performance of such services, or (4) any errors, omissions, or defects in such services.

7.02 *Supervision and Superintendence*

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who will not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.03 *Labor; Working Hours*

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall maintain good discipline and order at the Site.

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B. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of Contractor's employees; of Suppliers and Subcontractors, and their employees; and of any other individuals or entities performing or furnishing any of the Work, just as Contractor is responsible for Contractor's own acts and omissions.

C. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site will be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.04 *Services, Materials, and Equipment*

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.

B. All materials and equipment incorporated into the Work must be new and of good quality, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications will expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment must be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.05 *"Or Equals"*

A. *Contractor's Request; Governing Criteria*: Whenever an item of equipment or material is specified or described in the Contract Documents by using the names of one or more proprietary items or specific Suppliers, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item 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 is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material, or items from other proposed Suppliers, under the circumstances described below.

1. If Engineer in its sole discretion determines that an item of equipment or material proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer will deem it an "or equal" item. For the purposes of this paragraph, a proposed item of equipment or material will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that the proposed item:

1) is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

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2) will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;

3) has a proven record of performance and availability of responsive service; and

4) is not objectionable to Owner.

b. Contractor certifies that, if the proposed item is approved and incorporated into the Work:

1) there will be no increase in cost to the Owner or increase in Contract Times; and

2) the item will conform substantially to the detailed requirements of the item named in the Contract Documents.

B. *Contractor's Expense*: Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.

C. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal," which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.

D. *Effect of Engineer's Determination*: Neither approval nor denial of an "or-equal" request will result in any change in Contract Price. The Engineer's denial of an "or-equal" request will be final and binding, and may not be reversed through an appeal under any provision of the Contract.

E. *Treatment as a Substitution Request*: If Engineer determines that an item of equipment or material proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer consider the item a proposed substitute pursuant to Paragraph 7.06.

7.06 *Substitutes*

A. *Contractor's Request; Governing Criteria*: Unless the specification or description of an item of equipment or material required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material under the circumstances described below. To the extent possible such requests must be made before commencement of related construction at the Site.

1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of equipment or material from anyone other than Contractor.

2. The requirements for review by Engineer will be as set forth in Paragraph 7.06.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.

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3. Contractor shall make written application to Engineer for review of a proposed substitute item of equipment or material that Contractor seeks to furnish or use. The application:

    a. will certify that the proposed substitute item will:

        1) perform adequately the functions and achieve the results called for by the general design;

        2) be similar in substance to the item specified; and

        3) be suited to the same use as the item specified.

    b. will state:

        1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times;

        2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and

        3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.

    c. will identify:

        1) all variations of the proposed substitute item from the item specified; and

        2) available engineering, sales, maintenance, repair, and replacement services.

    d. will contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.

B. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.

C. *Special Guarantee*: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

D. *Reimbursement of Engineer's Cost*: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

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E. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute at Contractor's expense.

F. *Effect of Engineer's Determination*: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request will be final and binding, and may not be reversed through an appeal under any provision of the Contract. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.06.D, by timely submittal of a Change Proposal.

7.07 *Concerning Subcontractors and Suppliers*

A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner. The Contractor's retention of a Subcontractor or Supplier for the performance of parts of the Work will not relieve Contractor's obligation to Owner to perform and complete the Work in accordance with the Contract Documents.

B. Contractor shall retain specific Subcontractors and Suppliers for the performance of designated parts of the Work if required by the Contract to do so.

C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor or Supplier to furnish or perform any of the Work against which Contractor has reasonable objection.

D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within 5 days.

E. Owner may require the replacement of any Subcontractor or Supplier. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors or Suppliers for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor or Supplier so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor or Supplier.

F. If Owner requires the replacement of any Subcontractor or Supplier retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.

G. No acceptance by Owner of any such Subcontractor or Supplier, whether initially or as a replacement, will constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.

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H. On a monthly basis, Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.

I. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors and Suppliers.

J. The divisions and sections of the Specifications and the identifications of any Drawings do not control Contractor in dividing the Work among Subcontractors or Suppliers, or in delineating the Work to be performed by any specific trade.

K. All Work performed for Contractor by a Subcontractor or Supplier must be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract for the benefit of Owner and Engineer.

L. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor for Work performed for Contractor by the Subcontractor or Supplier.

M. Contractor shall restrict all Subcontractors and Suppliers from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed in this Contract.

7.08 *Patent Fees and Royalties*

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If an invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or 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 such rights will be disclosed in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to 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 specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to 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.

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7.09 *Permits*

A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits, licenses, and certificates of occupancy. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

7.10 *Taxes*

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

7.11 *Laws and Regulations*

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It is not Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this does not relieve Contractor of its obligations under Paragraph 3.03.

C. Owner or Contractor may give written notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such written notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.12 *Record Documents*

A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

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7.13 *Safety and Protection*

A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations.

B. Contractor shall designate a qualified and experienced safety representative whose duties and responsibilities are the prevention of Work-related accidents and the maintenance and supervision of safety precautions and programs.

C. 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 persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

D. All damage, injury, or loss to any property referred to in Paragraph 7.13.C.2 or 7.13.C.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

E. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection.

F. Contractor shall notify Owner; the owners of adjacent property; the owners of Underground Facilities and other utilities (if the identity of such owners is known to Contractor); and other contractors and utility owners performing work at or adjacent to the Site, in writing, when Contractor knows that prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.

G. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. Any Owner's safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.

H. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.

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I. Contractor's duties and responsibilities for safety and protection will continue until all the Work is completed, Engineer has issued a written notice to Owner and Contractor in accordance with Paragraph 15.06.C that the Work is acceptable, and Contractor has left the Site (except as otherwise expressly provided in connection with Substantial Completion).

J. Contractor's duties and responsibilities for safety and protection will resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.14 *Hazard Communication Programs*

A. Contractor shall be responsible for coordinating any exchange of safety data sheets (formerly known as material safety data sheets) or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused by an emergency, or are required as a result of Contractor's response to an emergency. If Engineer determines that a change in the Contract Documents is required because of an emergency or Contractor's response, a Work Change Directive or Change Order will be issued.

7.16 *Submittals*

A. *Shop Drawing and Sample Requirements*

1. Before submitting a Shop Drawing or Sample, Contractor shall:

a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;

b. determine and verify:

1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal;

2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and

3) all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto;

c. confirm that the Submittal is complete with respect to all related data included in the Submittal.

2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that Submittal, and that Contractor approves the Submittal.

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3. With each Shop Drawing or Sample, Contractor shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Contract Documents. This notice must be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.

B. *Submittal Procedures for Shop Drawings and Samples*: Contractor shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.

1. *Shop Drawings*

a. Contractor shall submit the number of copies required in the Specifications.

b. Data shown on the Shop Drawings must be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide, and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.C.

2. *Samples*

a. Contractor shall submit the number of Samples required in the Specifications.

b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the Submittal for the limited purposes required by Paragraph 7.16.C.

3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. *Engineer's Review of Shop Drawings and Samples*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. Engineer's review and approval will be only to determine if the items covered by the Submittals will, after installation or incorporation in the Work, comply with the requirements of the Contract Documents, and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction, or to safety precautions or programs incident thereto.

3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will

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document any such approved variation from the requirements of the Contract Documents in a Field Order or other appropriate Contract modification.

5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for complying with the requirements of Paragraphs 7.16.A and B.

6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, will not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.

7. Neither Engineer's receipt, review, acceptance, or approval of a Shop Drawing or Sample will result in such item becoming a Contract Document.

8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.C.4.

D. *Resubmittal Procedures for Shop Drawings and Samples*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous Submittals.

2. Contractor shall furnish required Shop Drawing and Sample submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges.

3. If Contractor requests a change of a previously approved Shop Drawing or Sample, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

E. *Submittals Other than Shop Drawings, Samples, and Owner-Delegated Designs*

1. The following provisions apply to all Submittals other than Shop Drawings, Samples, and Owner-delegated designs:

   a. Contractor shall submit all such Submittals to the Engineer in accordance with the Schedule of Submittals and pursuant to the applicable terms of the Contract Documents.

   b. Engineer will provide timely review of all such Submittals in accordance with the Schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the Schedule of Submittals will be deemed accepted.

   c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Contract Documents as to general form and content of the Submittal.

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d. If any such Submittal is not accepted, Contractor shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.

2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.03. 2.04, and 2.05.

F. Owner-delegated Designs: Submittals pursuant to Owner-delegated designs are governed by the provisions of Paragraph 7.19.

7.17 *Contractor's General Warranty and Guarantee*

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer is entitled to rely on Contractor's warranty and guarantee.

B. Owner's rights under this warranty and guarantee are in addition to, and are not limited by, Owner's rights under the correction period provisions of Paragraph 15.08. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.17 is limited only by applicable Laws and Regulations restricting actions to enforce such rights; provided, however, that after the end of the correction period under Paragraph 15.08:

1. Owner shall give Contractor written notice of any defective Work within 60 days of the discovery that such Work is defective; and

2. Such notice will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the notice.

C. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, or improper modification, maintenance, or operation, by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.

D. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents, a release of Contractor's obligation to perform the Work in accordance with the Contract Documents, or a release of Owner's warranty and guarantee rights under this Paragraph 7.17:

1. Observations by Engineer;

2. Recommendation by Engineer or payment by Owner of any progress or final payment;

3. The issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. Use or occupancy of the Work or any part thereof by Owner;

5. Any review and approval of a Shop Drawing or Sample submittal;

6. The issuance of a notice of acceptability by Engineer;

7. The end of the correction period established in Paragraph 15.08;

8. Any inspection, test, or approval by others; or

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9. Any correction of defective Work by Owner.

E. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract will govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from losses, damages, costs, and judgments (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising from third-party claims or actions relating to or resulting from the performance or furnishing of the Work, provided that any such claim, action, loss, cost, judgment or damage is attributable to bodily injury, sickness, disease, or death, or to damage to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable.

B. In any and all claims against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A will not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

7.19 *Delegation of Professional Design Services*

A. Owner may require Contractor to provide professional design services for a portion of the Work by express delegation in the Contract Documents. Such delegation will specify the performance and design criteria that such services must satisfy, and the Submittals that Contractor must furnish to Engineer with respect to the Owner-delegated design.

B. Contractor shall cause such Owner-delegated professional design services to be provided pursuant to the professional standard of care by a properly licensed design professional, whose signature and seal must appear on all drawings, calculations, specifications, certifications, and Submittals prepared by such design professional. Such design professional must issue all certifications of design required by Laws and Regulations.

C. If a Shop Drawing or other Submittal related to the Owner-delegated design is prepared by Contractor, a Subcontractor, or others for submittal to Engineer, then such Shop Drawing or other Submittal must bear the written approval of Contractor's design professional when submitted by Contractor to Engineer.

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D. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, and approvals performed or provided by the design professionals retained or employed by Contractor under an Owner-delegated design, subject to the professional standard of care and the performance and design criteria stated in the Contract Documents.

E. Pursuant to this Paragraph 7.19, Engineer's review, approval, and other determinations regarding design drawings, calculations, specifications, certifications, and other Submittals furnished by Contractor pursuant to an Owner-delegated design will be only for the following limited purposes:

1. Checking for conformance with the requirements of this Paragraph 7.19;

2. Confirming that Contractor (through its design professionals) has used the performance and design criteria specified in the Contract Documents; and

3. Establishing that the design furnished by Contractor is consistent with the design concept expressed in the Contract Documents.

F. Contractor shall not be responsible for the adequacy of performance or design criteria specified by Owner or Engineer.

G. Contractor is not required to provide professional services in violation of applicable Laws and Regulations.

ARTICLE 8—OTHER WORK AT THE SITE

8.01 *Other Work*

A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.

B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any third-party utility work that Owner has arranged to take place at or adjacent to the Site, Owner shall provide such information to Contractor.

C. Contractor shall afford proper and safe access to the Site to each contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work.

D. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.

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E. If the proper execution or results of any part of Contractor's Work depends upon work performed by others, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

F. The provisions of this article are not applicable to work that is performed by third-party utilities or other third-party entities without a contract with Owner, or that is performed without having been arranged by Owner. If such work occurs, then any related delay, disruption, or interference incurred by Contractor is governed by the provisions of Paragraph 4.05.C.3.

8.02 *Coordination*

A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:

1. The identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;

2. An itemization of the specific matters to be covered by such authority and responsibility; and

3. The extent of such authority and responsibilities.

B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

A. If, in the course of performing other work for Owner at or adjacent to the Site, the Owner's employees, any other contractor working for Owner, or any utility owner that Owner has arranged to perform work, causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment will take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract, and any remedies available to Contractor under Laws or Regulations concerning utility action or inaction. When applicable, any such equitable adjustment in Contract Price will be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times or Contract Price is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

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B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site.

1. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this Paragraph 8.03.B.

2. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due Contractor.

C. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9—OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

9.02 *Replacement of Engineer*

A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents will be that of the former Engineer.

9.03 *Furnish Data*

A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

9.04 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

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9.05 *Lands and Easements; Reports, Tests, and Drawings*

A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.

B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.

C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *Limitations on Owner's Responsibilities*

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

9.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.

B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

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ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *Owner's Representative*

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

10.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe, as an experienced and qualified design professional, the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.07. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Resident Project Representative*

A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in the Supplementary Conditions and in Paragraph 10.07.

B. If Owner designates an individual or entity who is not Engineer's consultant, agent, or employee to represent Owner at the Site, then the responsibilities and authority of such individual or entity will be as provided in the Supplementary Conditions.

10.04 *Engineer's Authority*

A. Engineer has the authority to reject Work in accordance with Article 14.

B. Engineer's authority as to Submittals is set forth in Paragraph 7.16.

C. Engineer's authority as to design drawings, calculations, specifications, certifications and other Submittals from Contractor in response to Owner's delegation (if any) to Contractor of professional design services, is set forth in Paragraph 7.19.

D. Engineer's authority as to changes in the Work is set forth in Article 11.

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E. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.05 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.06 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.07 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, will create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation, and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Contractor under Paragraph 15.06.A, will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 10.07 also apply to the Resident Project Representative, if any.

10.08 *Compliance with Safety Program*

A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs of which Engineer has been informed.

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ARTICLE 11—CHANGES TO THE CONTRACT

11.01 *Amending and Supplementing the Contract*

A. The Contract may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.

B. If an amendment or supplement to the Contract includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order.

C. All changes to the Contract that involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Owner and Contractor may amend other terms and conditions of the Contract without the recommendation of the Engineer.

11.02 *Change Orders*

A. Owner and Contractor shall execute appropriate Change Orders covering:

1. Changes in Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;

2. Changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;

3. Changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.05, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters; and

4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Work Change Directive; Paragraph 11.09, concerning Change Proposals; Article 12, Claims; Paragraph 13.02.D, final adjustments resulting from allowances; Paragraph 13.03.D, final adjustments relating to determination of quantities for Unit Price Work; and similar provisions.

B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

11.03 *Work Change Directives*

A. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.07 regarding change of Contract Price.

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B. If Owner has issued a Work Change Directive and:

1. Contractor believes that an adjustment in Contract Times or Contract Price is necessary, then Contractor shall submit any Change Proposal seeking such an adjustment no later than 30 days after the completion of the Work set out in the Work Change Directive.

2. Owner believes that an adjustment in Contract Times or Contract Price is necessary, then Owner shall submit any Claim seeking such an adjustment no later than 60 days after issuance of the Work Change Directive.

11.04 *Field Orders*

A. Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly.

B. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.05 *Owner-Authorized Changes in the Work*

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Changes involving the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.

B. Such changes in the Work may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work must be performed under the applicable conditions of the Contract Documents.

C. Nothing in this Paragraph 11.05 obligates Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.06 *Unauthorized Changes in the Work*

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.C.2.

11.07 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment of Contract Price must comply with the provisions of Article 12.

B. An adjustment in the Contract Price will be determined as follows:

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1. Where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03);

2. Where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.07.C.2); or

3. Where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.07.C).

C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit will be determined as follows:

1. A mutually acceptable fixed fee; or

2. If a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

a. For costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee will be 15 percent;

b. For costs incurred under Paragraph 13.01.B.3, the Contractor's fee will be 5 percent;

c. Where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.07.C.2.a and 11.07.C.2.b is that the Contractor's fee will be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of 5 percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted Work the maximum total fee to be paid by Owner will be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the Work;

d. No fee will be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;

e. The amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in Cost of the Work will be the amount of the actual net decrease in Cost of the Work and a deduction of an additional amount equal to 5 percent of such actual net decrease in Cost of the Work; and

f. When both additions and credits are involved in any one change or Change Proposal, the adjustment in Contractor's fee will be computed by determining the sum of the costs in each of the cost categories in Paragraph 13.01.B (specifically, payroll costs, Paragraph 13.01.B.1; incorporated materials and equipment costs, Paragraph 13.01.B.2; Subcontract costs, Paragraph 13.01.B.3; special consultants costs, Paragraph 13.01.B.4; and other costs, Paragraph 13.01.B.5) and applying to each such cost category sum the appropriate fee from Paragraphs 11.07.C.2.a through 11.07.C.2.e, inclusive.

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11.08 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment in the Contract Times must comply with the provisions of Article 12.

B. Delay, disruption, and interference in the Work, and any related changes in Contract Times, are addressed in and governed by Paragraph 4.05.

11.09 *Change Proposals*

A. *Purpose and Content*: Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; contest an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; challenge a set-off against payment due; or seek other relief under the Contract. The Change Proposal will specify any proposed change in Contract Times or Contract Price, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents. Each Change Proposal will address only one issue, or a set of closely related issues.

B. *Change Proposal Procedures*

1. *Submittal*: Contractor shall submit each Change Proposal to Engineer within 30 days after the start of the event giving rise thereto, or after such initial decision.

2. *Supporting Data*: The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal.

    a. Change Proposals based on or related to delay, interruption, or interference must comply with the provisions of Paragraphs 4.05.D and 4.05.E.

    b. Change proposals related to a change of Contract Price must include full and detailed accounts of materials incorporated into the Work and labor and equipment used for the subject Work.

    The supporting data must be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event.

3. *Engineer's Initial Review*: Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal. If in its discretion Engineer concludes that additional supporting data is needed before conducting a full review and making a decision regarding the Change Proposal, then Engineer may request that Contractor submit such additional supporting data by a date specified by Engineer, prior to Engineer beginning its full review of the Change Proposal.

4. *Engineer's Full Review and Action on the Change Proposal*: Upon receipt of Contractor's supporting data (including any additional data requested by Engineer), Engineer will conduct a full review of each Change Proposal and, within 30 days after such receipt of the Contractor's supporting data, either approve the Change Proposal in whole, deny it in whole, or approve it in part and deny it in part. Such actions must be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change

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Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

5. *Binding Decision*: Engineer's decision is final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.

C. *Resolution of Certain Change Proposals*: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties in writing that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice will be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

D. *Post-Completion*: Contractor shall not submit any Change Proposals after Engineer issues a written recommendation of final payment pursuant to Paragraph 15.06.B.

11.10 *Notification to Surety*

A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12—CLAIMS

12.01 *Claims*

A. *Claims Process*: The following disputes between Owner and Contractor are subject to the Claims process set forth in this article:

1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;

2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents;

3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters; and

4. Subject to the waiver provisions of Paragraph 15.07, any dispute arising after Engineer has issued a written recommendation of final payment pursuant to Paragraph 15.06.B.

B. *Submittal of Claim*: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim rests with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge

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and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

C. *Review and Resolution*: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim will be stated in writing and submitted to the other party, with a copy to Engineer.

D. *Mediation*

1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate will stay the Claim submittal and response process.

2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process will resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process will resume as of the date of the conclusion of the mediation, as determined by the mediator.

3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.

E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action will be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.

F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim will be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.

G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim will be incorporated in a Change Order or other written document to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13—COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 *Cost of the Work*

A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:

1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or

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2. When needed to determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.

B. *Costs Included*: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work will be in amounts no higher than those commonly incurred in the locality of the Project, will not include any of the costs itemized in Paragraph 13.01.C, and will include only the following items:

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor in advance of the subject Work. Such employees include, without limitation, superintendents, foremen, safety managers, safety representatives, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work will be apportioned on the basis of their time spent on the Work. Payroll costs include, but are not limited to, salaries and wages plus the cost of fringe benefits, which include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, will be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts will accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment will accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, which will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee will be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed or retained for services specifically related to the Work.

5. Other costs consisting of the following:

a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.

b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, which are

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consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

1) In establishing included costs for materials such as scaffolding, plating, or sheeting, consideration will be given to the actual or the estimated life of the material for use on other projects; or rental rates may be established on the basis of purchase or salvage value of such items, whichever is less. Contractor will not be eligible for compensation for such items in an amount that exceeds the purchase cost of such item.

c. *Construction Equipment Rental*

1) Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner as to price (including any surcharge or special rates applicable to overtime use of the construction equipment or machinery), and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs will be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts must cease when the use thereof is no longer necessary for the Work.

2) Costs for equipment and machinery owned by Contractor or a Contractor-related entity will be paid at a rate shown for such equipment in the equipment rental rate book specified in the Supplementary Conditions. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs.

3) With respect to Work that is the result of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price ("changed Work"), included costs will be based on the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, must cease to accrue when the use thereof is no longer necessary for the changed Work.

d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of builder's risk or other property insurance established in accordance with Paragraph 6.04), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses will be included in the Cost of the Work for the purpose of determining Contractor's fee.

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g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. *Costs Excluded*: The term Cost of the Work does not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals, general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.

2. The cost of purchasing, renting, or furnishing small tools and hand tools.

3. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.

4. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.

5. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

6. Expenses incurred in preparing and advancing Claims.

7. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee*

1. When the Work as a whole is performed on the basis of cost-plus-a-fee, then:

a. Contractor's fee for the Work set forth in the Contract Documents as of the Effective Date of the Contract will be determined as set forth in the Agreement.

b. for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work, Contractor's fee will be determined as follows:

1) When the fee for the Work as a whole is a percentage of the Cost of the Work, the fee will automatically adjust as the Cost of the Work changes.

2) When the fee for the Work as a whole is a fixed fee, the fee for any additions or deletions will be determined in accordance with Paragraph 11.07.C.2.

2. When the Work as a whole is performed on the basis of a stipulated sum, or any other basis other than cost-plus-a-fee, then Contractor's fee for any Work covered by a Change

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Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work will be determined in accordance with Paragraph 11.07.C.2.

E. *Documentation and Audit*: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor and pertinent Subcontractors will establish and maintain records of the costs in accordance with generally accepted accounting practices. Subject to prior written notice, Owner will be afforded reasonable access, during normal business hours, to all Contractor's accounts, records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to the Cost of the Work and Contractor's fee. Contractor shall preserve all such documents for a period of three years after the final payment by Owner. Pertinent Subcontractors will afford such access to Owner, and preserve such documents, to the same extent required of Contractor.

13.02 *Allowances*

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. *Cash Allowances*: Contractor agrees that:

1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment for any of the foregoing will be valid.

C. *Owner's Contingency Allowance*: Contractor agrees that an Owner's contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor for Work covered by allowances, and the Contract Price will be correspondingly adjusted.

13.03 *Unit Price Work*

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision

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thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, and the final adjustment of Contract Price will be set forth in a Change Order, subject to the provisions of the following paragraph.

E. *Adjustments in Unit Price*

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:

a. the quantity of the item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

b. Contractor's unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.

2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor's costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.

3. Adjusted unit prices will apply to all units of that item.

ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply with such procedures and programs as applicable.

14.02 *Tests, Inspections, and Approvals*

A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.

B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work will be governed by the provisions of Paragraph 14.05.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

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D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:

1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;

2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;

3. by manufacturers of equipment furnished under the Contract Documents;

4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and

5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests will be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.

F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering will be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

A. *Contractor's Obligation*: It is Contractor's obligation to assure that the Work is not defective.

B. *Engineer's Authority*: Engineer has the authority to determine whether Work is defective, and to reject defective Work.

C. *Notice of Defects*: Prompt written notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.

D. *Correction, or Removal and Replacement*: Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.

E. *Preservation of Warranties*: When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

F. *Costs and Damages*: In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs,

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losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work will be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.

B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.

C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.

1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.

2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *Owner May Stop the Work*

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work,

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or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work will not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 *Owner May Correct Defective Work*

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace defective Work as required by Engineer, then Owner may, after 7 days' written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.

C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

ARTICLE 15—PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 *Progress Payments*

A. *Basis for Progress Payments*: The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments for Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.

B. *Applications for Payments*

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.

2. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment must also be accompanied by: (a) a bill of sale, invoice, copies of subcontract or purchase order payments, or other documentation

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establishing full payment by Contractor for the materials and equipment; (b) at Owner's request, documentation warranting that Owner has received the materials and equipment free and clear of all Liens; and (c) evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

3. Beginning with the second Application for Payment, each Application must include an affidavit of Contractor stating that all previous progress payments received by Contractor have been applied to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

4. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

   a. the Work has progressed to the point indicated;

   b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and

   c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

   a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or

   b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

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4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

    a. to supervise, direct, or control the Work;

    b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;

    c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work;

    d. to make any examination to ascertain how or for what purposes Contractor has used the money paid by Owner; or

    e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.

6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:

    a. the Work is defective, requiring correction or replacement;

    b. the Contract Price has been reduced by Change Orders;

    c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

    d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or

    e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due*

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. *Reductions in Payment by Owner*

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:

    a. Claims have been made against Owner based on Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages resulting from Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

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b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;

c. Contractor has failed to provide and maintain required bonds or insurance;

d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;

e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;

f. The Work is defective, requiring correction or replacement;

g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

h. The Contract Price has been reduced by Change Orders;

i. An event has occurred that would constitute a default by Contractor and therefore justify a termination for cause;

j. Liquidated or other damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;

k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens; or

l. Other items entitle Owner to a set-off against the amount recommended.

2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed will be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld will be treated as an amount due as determined by Paragraph 15.01.D.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than 7 days after the time of payment by Owner.

15.03 *Substantial Completion*

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time

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submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.

B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which will fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have 7 days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.

E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.

F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without

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significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. At any time, Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through 15.03.E for that part of the Work.

2. At any time, Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.04 regarding builder's risk or other property insurance.

15.05 *Final Inspection*

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *Final Payment*

A. *Application for Payment*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.12), and other documents, Contractor may make application for final payment.

2. The final Application for Payment must be accompanied (except as previously delivered) by:

   a. all documentation called for in the Contract Documents;

   b. consent of the surety, if any, to final payment;

   c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.

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d. a list of all duly pending Change Proposals and Claims; and

e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

B. *Engineer's Review of Final Application and Recommendation of Payment*: If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the final Application for Payment to Owner for payment. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Notice of Acceptability*: In support of its recommendation of payment of the final Application for Payment, Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 15.07.

D. *Completion of Work*: The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment and issuance of notice of the acceptability of the Work.

E. *Final Payment Becomes Due*: Upon receipt from Engineer of the final Application for Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for final payment any further sum to which Owner is entitled, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments. Owner shall pay the resulting balance due to Contractor within 30 days of Owner's receipt of the final Application for Payment from Engineer.

15.07 *Waiver of Claims*

A. By making final payment, Owner waives its claim or right to liquidated damages or other damages for late completion by Contractor, except as set forth in an outstanding Claim,

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appeal under the provisions of Article 17, set-off, or express reservation of rights by Owner. Owner reserves all other claims or rights after final payment.

B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted as a Claim, or appealed under the provisions of Article 17.

15.08 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the Supplementary Conditions or the terms of any applicable special guarantee required by the Contract Documents), Owner gives Contractor written notice that any Work has been found to be defective, or that Contractor's repair of any damages to the Site or adjacent areas has been found to be defective, then after receipt of such notice of defect Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. correct the defective repairs to the Site or such adjacent areas;
2. correct such defective Work;
3. remove the defective Work from the Project and replace it with Work that is not defective, if the defective Work has been rejected by Owner, and
4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting from the corrective measures.

B. Owner shall give any such notice of defect within 60 days of the discovery that such Work or repairs is defective. If such notice is given within such 60 days but after the end of the correction period, the notice will be deemed a notice of defective Work under Paragraph 7.17.B.

C. If, after receipt of a notice of defect within 60 days and within the correction period, Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others). Contractor's failure to pay such costs, losses, and damages within 10 days of invoice from Owner will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the failure to pay.

D. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.

E. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

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F. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph are not to be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times directly attributable to any such suspension. Any Change Proposal seeking such adjustments must be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment, or failure to adhere to the Progress Schedule);

2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;

3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or

4. Contractor's repeated disregard of the authority of Owner or Engineer.

B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) 10 days' written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:

1. declare Contractor to be in default, and give Contractor (and any surety) written notice that the Contract is terminated; and

2. enforce the rights available to Owner under any applicable performance bond.

C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.

D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within 7 days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.

E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects,

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attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.

G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond will govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate for Convenience*

A. Upon 7 days' written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and

3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.

B. Contractor shall not be paid for any loss of anticipated profits or revenue, post-termination overhead costs, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon 7 days' written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, 7 days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The

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provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17—FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

A. *Disputes Subject to Final Resolution*: The following disputed matters are subject to final resolution under the provisions of this article:

1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full, pursuant to Article 12; and

2. Disputes between Owner and Contractor concerning the Work, or obligations under the Contract Documents, that arise after final payment has been made.

B. *Final Resolution of Disputes*: For any dispute subject to resolution under this article, Owner or Contractor may:

1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions;

2. agree with the other party to submit the dispute to another dispute resolution process; or

3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18—MISCELLANEOUS

18.01 *Giving Notice*

A. Whenever any provision of the Contract requires the giving of written notice to Owner, Engineer, or Contractor, it will be deemed to have been validly given only if delivered:

1. in person, by a commercial courier service or otherwise, to the recipient's place of business;

2. by registered or certified mail, postage prepaid, to the recipient's place of business; or

3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

18.02 *Computation of Times*

A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

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18.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 *Limitation of Damages*

A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

A. A party's non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination of the Contract or of the services of Contractor.

18.07 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Assignment of Contract*

A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party to this Contract of any rights under or interests in the Contract will be binding on the other party without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is 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.

18.09 *Successors and Assigns*

A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

18.10 *Headings*

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

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SUPPLEMENTARY CONDITIONS
REV 08/2025

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract as indicated below. All provisions that are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof. The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added thereto.

SC-1.01. Renumber Paragraph 1.01.A.3 to 1.01.A.3.a. and add the following new paragraphs:

> 1.01.A.3.b. *Architect*—Entity identified in the Agreement. Synonymous with and having the same meaning as Engineer.

SC-1.01. Renumber Paragraph 1.01.A.11 to 1.01.A.11.a. and add the following new paragraphs:

> 1.01.A.11.b. *Construction Manager*—The authorized representative of Owner who is assigned to the Site or any part thereof. Synonymous with and having same meaning as Resident Project Representative.

SC-1.01. Renumber Paragraph 1.01.A.17 to 1.01.A.17.a. and add the following new paragraphs:

> 1.01.A.17.b. *District*—Clark Regional Wastewater District. Synonymous with and having the same meaning as Owner.

SC-1.01. Add the following language at the end of Paragraph 1.01.A.25:

> Tariffs are included in the definition of Laws and Regulations.

SC-1.01. Renumber Paragraph 1.01.A.32 to 1.01.A.32.a, and add the following new paragraphs:

> 1.01.A.32.b *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.

SC-1.01. Renumber Paragraph 1.01.A.38 to 1.01.A.38.a, and add the following new paragraphs:

1.01.A.38.b. *Specialist*—The term Specialist refers to a person, partnership, firm, or corporation of established reputation (or if newly organized, whose personnel have previously established a reputation in the same field), which is regularly engaged in, and which maintains a regular force of workers skilled in either (as applicable) manufacturing or fabricating items required by the Contract Documents, or otherwise performing Work required by the Contract Documents. Where the Specifications require the installation by a Specialist, that term shall also be deemed to mean either the manufacturer of the item, a person, partnership, firm, or corporation licensed by the manufacturer, or a person, partnership, firm, or corporation who will perform the Work under the manufacturer's direct supervision.

SC-1.01. Renumber Paragraph 1.01.A.39 to 1.01.A.39.a, and add the following new paragraphs:1.01.A.39.b.

1.01.A.39.b *Standard Specifications*—Wherever in these Contract Documents reference is made to the Standard Specifications, said reference shall be understood as referring to the Washington State Department of Transportation (WSDOT) 2025 Standard Specifications for Road, Bridge and Municipal Construction which applicable parts are incorporated herein and made a part of these Documents by specific reference thereto. As noted, references are also made to the 2021 Clark County Stormwater Manual. If requirements contained in the Standard Specifications are modified by or are in conflict with supplemental information in these Contract Documents, the requirements of these Contract Documents shall prevail.

SC-1.01. Add the following language at the end of Paragraph 1.01.A.42:

Substantial Completion is further defined as (i) that degree of completion of the Project's operating facilities or systems sufficient to provide Owner the full time, uninterrupted, and continuous beneficial operation of the Work; and (ii) required functional, performance and acceptance, or startup testing has been successfully demonstrated for components, devices, equipment, and instrumentation and control to the satisfaction of Engineer in accordance with the requirements of the Specifications.

SC-2.01. Delete the phrase (if the Contract requires contractor to furnish such bonds) from Paragraph 2.01.A.

SC-2.01 Delete Paragraph 2.01.B. and Paragraph 2.01.C. in their entirety and insert the following in their place:

2.01.B. Evidence of Contractor's Insurance: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner copies of the policies of insurance (including all endorsements, and identification of applicable self-insured retentions and deductibles) required to be provided by Contractor in Article 6. Contractor may block out (redact) any confidential premium

or pricing information contained in any policy or endorsement furnished under this provision.

2.01.C. Evidence of Owner's Insurance: After receipt from Contractor of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor copies of the policies of insurance to be provided by Owner under Article 6 (if any). Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

SC-2.02. Amend first sentence in Paragraph 2.02.A to read as follows:

2.02.A. If requested, Owner will furnish to Contractor four copies of conformed Contract Documents and four 11 inch by 17 inch copies of Drawings, incorporating and integrating all Addenda (including one fully executed counterpart of the Agreement) and one copy in electronic portable document format (PDF).

SC-3.01. Add the following to the end of Paragraph 3.01.A:

Unless otherwise specifically defined in the Contract Documents, words which have well-known technical meanings or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings. Contract Documents are intended to be complimentary. Whatever is called for in one, is interpreted to be called for in all. However, in the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following descending order of precedence:

1. Permits from outside agencies;

2. The Agreement including exhibits, and addenda and any amendments thereto, with those of later date having precedence over those of an earlier date;

3. Supplementary General Conditions;

4. Standard General Conditions of the Construction Contract, Engineers Joint Contract Documents Committee (EJCDC) 2018;

5. Specifications – Division 01;

6. Specifications – Divisions 02 - 49;

7. Drawings, Figure dimensions, and dimensions that can be computed on plans shall take precedence over scale dimensions. The Drawings with the higher level of detail take precedence over less detailed Drawings;

8. Design Details.

9. Change Orders, Work Change Directives, Field Orders, Engineer's written interpretation and clarifications and Notice to Proceed, in precedence listed, will take precedence over all other Contract Document components referenced herein.

10. References to standard specifications, manuals, codes of any technical society, organization or association, to the laws or regulation of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code, laws or regulations in effect in the jurisdiction where the Project Site is located on the first published date of the Solicitation Document, except as may be otherwise specifically stated.

SC-3.01. Add the following new paragraph immediately after Paragraph 3.01.G:

3.01.H. Sections of Division 01, General Requirements, govern the execution of the Work of all sections of the Specifications.

SC-4.01. Delete the third sentence of Paragraph 4.01.A in its entirety.

SC-4.03. Add the following new paragraphs immediately after Paragraph 4.03.A:

4.03.B. In accordance with Washington Administrative Code 332-120-030, Contractor shall search records and physical area of Site, including road or street resurfacing projects, for the purpose of locating and referencing any known or existing survey monuments.

4.03.C. In accordance with Washington Administration Code WAC 332-120-030, no survey monument shall be removed or destroyed before a permit is obtained from Washington's Department of Natural Resources.

4.03.D. After completion of the activity that caused the removal or destruction of the monument, if applicable, Contractor shall conduct remonumentation activities and file survey monumentation records in accordance with Washington Administrative Code 332-120-060.

SC-4.05.H. Add the following new paragraph immediately after Paragraph 4.05.G.

4.05.H. Failure by the Contractor to timely submit a Change Proposal in accord with this Article shall be deemed a complete waiver of any and all adjustments to Contract Times, Contract Price, and any other equitable or legal remedy related to any delays described in this Article. As a condition precedent to any right to submit a Claim under Article 12, Contractor shall provide proof of a timely submitted Change Proposal as required by this Article.

SC-5.02. Add the following language to the end of Paragraph 5.02.A.1:

Contractor shall not enter upon nor use property not under Owner control until appropriate easements have been executed and a copy is on file at the Site.

SC-5.04. Revise the first sentence of 5.04.E.4 by changing the word "may" to "must".

SC-5.04. Add the following new paragraph immediately after Paragraph 5.04.E.4:

5.04.E.5. Failure by the Contractor to timely submit a Change Proposal in accord with this Article shall be deemed a complete waiver of any and all adjustments to Contract Times, Contract Price, and any other equitable or legal remedy related to a changed or unknown physical condition described in this Article. As a condition precedent to any right to submit a Claim under Article 12, Contractor shall provide proof of a timely submitted Change Proposal as required by this Article.

SC-5.05. Revise the first sentence of 5.05.F.3 by changing the word "may" to "must".

SC-5.05. Add the following new paragraph immediately after Paragraph 5.05.F.4:

5.05.F.5. Failure by the Contractor to timely submit a Change Proposal in accord with this Article shall be deemed a complete waiver of any and all adjustments to Contract Times, Contract Price, and any other equitable or legal remedy related to an Underground Facility described in this Article. As a condition precedent to any right to submit a Claim under Article 12, Contractor shall provide proof of a timely submitted Change Proposal as required by this Article.

SC-5.06. Add the following language following Paragraph 5.06.A.3:

4. The following reports or drawings regarding Hazardous Environmental Conditions at the Site are known to Owner:

Report Title	**Date of Report**	**Technical Data**
None	None	None

SC-6.01. Delete Paragraph 6.01.A in its entirety and insert the following in its place:

6.01.A. Contractor shall furnish a combined performance and payment bond in the full amount of the Agreement, as security for the faithful performance and payment of all Contractor's obligations under the Contract Documents.

SC-6.03. Add the following new paragraphs immediately after Paragraph 6.03.C:

D. Other Additional Insureds: As a supplement to the provisions of Paragraph 6.03.C of the General Conditions, the commercial general liability, automobile liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies must include as additional insureds (in addition to Owner and Engineer) the following:

6.03.D.1. Clark Regional Wastewater District, 8000 N.E. 52nd Court, Vancouver, WA 98665

6.03.D.2. Clark County, Washington 1300 Franklin Street, Vancouver, WA 98660

6.03.D.3. City of Battle Ground, 109 S.W. 1st Street, Battle Ground, WA 98604

6.03.D.4. City of Ridgefield, 230 Pioneer St., Ridgefield, WA 98642

6.03.D.5. Discovery Clean Water Alliance, 8000 N.E. 52nd Court, Vancouver, WA 98665

6.03.D.6. Brown And Caldwell, 4380 S Macadam Ave #250, Portland, OR 97239

6.03.D.7. Terracon Consultants, Inc. 700 NE 55th Ave, Portland, OR 97213

E. Workers' Compensation and Employer's Liability: Contractor shall purchase and maintain workers' compensation and employer's liability insurance, including, as applicable, United States Longshoreman and Harbor Workers' Compensation Act, Jones Act, stop-gap employer's liability coverage for monopolistic states, and foreign voluntary workers' compensation (from available sources, notwithstanding the jurisdictional requirement of Paragraph 6.02.B of the General Conditions).

Workers' Compensation and Related Policies	Policy limits of not less than:
Workers' Compensation	
State	Statutory
Applicable Federal (e.g., Longshoreman's)	Statutory
Foreign voluntary workers' compensation (employer's responsibility coverage), if applicable	Statutory
Jones Act (if applicable)	
Bodily injury by accident—each accident	$1,000,000
Bodily injury by disease—aggregate	$1,000,000
Employer's Liability	
Each accident	$ 2,000,000
Each employee	$ 2,000,000
Policy limit	$ 5,000,000
Stop-gap Liability Coverage	
For work performed in monopolistic states, stop-gap liability coverage must be endorsed to either the worker's compensation or commercial general liability policy with a minimum limit of:	$ 5,000,000

F. *Commercial General Liability—Claims Covered:* Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against claims for:

1. damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees,
2. damages insured by reasonably available personal injury liability coverage, and
3. damages because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.

G. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy must be written on a 1996 (or later) Insurance Services Organization, Inc. (ISO) commercial general liability form (occurrence form) and include the following coverages and endorsements:

1. Products and completed operations coverage.
   a. Such insurance must be maintained for three years after final payment.
   b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
2. Blanket contractual liability coverage, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
3. Severability of interests and no insured-versus-insured or cross-liability exclusions.
4. Underground, explosion, and collapse coverage.
5. Personal injury coverage.
6. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together). If Contractor demonstrates to Owner that the specified ISO endorsements are not commercially available, then Contractor may satisfy this requirement by providing equivalent endorsements.
7. For design professional additional insureds, ISO Endorsement CG 20 32 07 04 "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.

H. *Commercial General Liability—Excluded Content:* The commercial general liability insurance policy, including its coverages, endorsements, and incorporated provisions, must not include any of the following:

1. Any modification of the standard definition of "insured contract" (except to delete the railroad protective liability exclusion if Contractor is required to

indemnify a railroad or others with respect to Work within 50 feet of railroad property).

2. Any exclusion for water intrusion or water damage.
3. Any provisions resulting in the erosion of insurance limits by defense costs other than those already incorporated in ISO form CG 00 01.
4. Any exclusion of coverage relating to earth subsidence or movement.
5. Any exclusion for the insured's vicarious liability, strict liability, or statutory liability (other than worker's compensation).
6. Any limitation or exclusion based on the nature of Contractor's work.
7. Any professional liability exclusion broader in effect than the most recent edition of ISO form CG 22 79.
8. Any exclusion for non-owned watercraft.

I. *Commercial General Liability—Minimum Policy Limits*

Commercial General Liability	**Policy limits of not less than:**
General Aggregate	$ 5,000,000
Products—Completed Operations Aggregate	$ 2,000,000
Personal and Advertising Injury	$ 1,000,000
Bodily Injury and Property Damage—Each Occurrence	$ 2,000,000

J. *Automobile Liability:* Contractor shall purchase and maintain automobile liability insurance for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy must be written on an occurrence basis.

Automobile Liability	**Policy limits of not less than:**
Bodily Injury	
Each Person	$ 1,000,000
Each Accident	$ 2,000,000
Property Damage	
Each Accident	$ 1,000,000
[or]	
Combined Single Limit	
Combined Single Limit (Bodily Injury and Property Damage)	$ 2,000,000

K. *Umbrella or Excess Liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the Paragraphs above. The coverage afforded must be at least as broad as that of each and every one of the underlying policies.

Excess or Umbrella Liability	Policy limits of not less than:
Each Occurrence	$ 5,000,000
General Aggregate	$5,000,000

L. *Using Umbrella or Excess Liability Insurance to Meet CGL and Other Policy Limit Requirements:* Contractor may meet the policy limits specified for employer's liability, commercial general liability, and automobile liability through the primary policies alone, or through combinations of the primary insurance policy's policy limits and partial attribution of the policy limits of an umbrella or excess liability policy that is at least as broad in coverage as that of the underlying policy, as specified herein. If such umbrella or excess liability policy was required under this Contract, at a specified minimum policy limit, such umbrella or excess policy must retain a minimum limit of $5,000,000 after accounting for partial attribution of its limits to underlying policies, as allowed above.

M. *Contractor's Pollution Liability Insurance:* Contractor shall purchase and maintain a policy covering third-party injury and property damage, including cleanup costs, as a result of pollution conditions arising from Contractor's operations and completed operations. This insurance must be maintained for no less than three years after final completion.

Contractor's Pollution Liability	Policy limits of not less than:
Each Occurrence/Claim	$ 1,000,000
General Aggregate	$ 1,000,000

N. *Contractor's Professional Liability Insurance:* If Contractor will provide or furnish professional services under this *Contract*, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance must cover negligent acts, errors, or omissions in the performance of professional design or related services by the insured or others for whom the insured is legally liable. The insurance must be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. The retroactive date on the policy must pre-date the commencement of furnishing services on the Project.

Contractor's Professional Liability	Policy limits of not less than:
Each Claim	$ 1,000,000
Annual Aggregate	$ 1,000,000

O. *Railroad Protective Liability Insurance:* Not Used

P. *Unmanned Aerial Vehicle Liability Insurance:* If Contractor uses unmanned aerial vehicles (UAV—commonly *referred* to as drones) at the Site or in support of any

aspect of the Work, Contractor shall obtain UAV liability insurance in the amounts stated; name Owner, Engineer, and all individuals and entities identified in the Supplementary Conditions as additional insureds; and provide a certificate to Owner confirming Contractor's compliance with this requirement. Such insurance will provide coverage for property damage, bodily injury or death, and invasion of privacy.

Unmanned Aerial Vehicle Liability Insurance	**Policy limits of not less than:**
Each Claim	$ 500,000
General Aggregate	$ 500,000

SC 6.04 Add the following new paragraphs immediately after Paragraph 6.04.E:

F. *Builder's Risk Requirements:* The builder's risk insurance must:

1. be written on a builder's risk "all risk" policy form that at a minimum includes insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment stored and in transit, and must not exclude the coverage of the following risks: fire; windstorm; hail; flood; earthquake, volcanic activity, and other earth movement; lightning; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; and water damage (other than that caused by flood).

    a. Such policy will include an exception that results in coverage for ensuing losses from physical damage or loss with respect to any defective workmanship, methods, design, or materials exclusions.

    b. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake, volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance will be provided through other insurance policies acceptable to Owner and Contractor.

2. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work

under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.

3. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of contractors, engineers, and architects).
4. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier). If this coverage is subject to a sublimit, such sublimit will be a minimum of $500,000.
5. extend to cover damage or loss to insured property while in transit. If this coverage is subject to a sublimit, such sublimit will be a minimum of $500,000.
6. allow for the waiver of the insurer's subrogation rights, as set forth in this Contract.
7. allow for partial occupancy or use by Owner by endorsement, and without cancellation or lapse of coverage.
8. include performance/hot testing and start-up, if applicable.
9. be maintained in effect until the Work is complete, as set forth in Paragraph 15.06.D of the General Conditions, or until written confirmation of Owner's procurement of property insurance following Substantial Completion, whichever occurs first.
10. include as named insureds the Owner, Contractor, Subcontractors (of every tier), and any other individuals or entities required by this Contract to be insured under such builder's risk policy. For purposes of Paragraphs 6.04, 6.05, and 6.06 of the General Conditions, and this and all other corresponding Supplementary Conditions, the parties required to be insured will be referred to collectively as "insureds."

SC-6.05. Add the following language as Paragraph 6.05.E:

6.05.E. Property insurance furnished under this Contract shall have deductibles no greater than $10,000 for direct physical loss in any one occurrence for sublimits except for earthquake, which shall have a maximum deductible of $50,000.

SC-7.03. Delete the words “which will not be unreasonably withheld.” From the end of the last sentence of paragraph 7.03.C.

SC-7.03. Add the following language to the end of Paragraph 7.03.C:

7.03.D. Contractor (and Subcontractors) regular work hours shall be between 7:00 a.m. and 7:00 p.m. on weekdays only not including holidays observed by Clark Regional Wastewater District .

7.03.E. The Contractor shall comply with local ordinances, including Chapter 9.14 of the Clark County Code governing Public Disturbance Noises, and the additional requirements of Section 01 15 00. Normal hours of work for this project are limited from 7:00 a.m. to 7:00 p.m. Permission to work outside these hours will not normally be granted but might be granted for segments of the Project on a case-by-case basis upon application to Clark County and the Owner through the Resident Project Representative. Approval to work outside of the normal hours may be revoked at any time the Contractor exceeds the noise control regulations or complaints are received from the public or adjoining property owners regarding the noise or light glare from the Contractor’s operations. The Contractor shall have no claim for damages or delays should such permission be revoked for these reasons.

7.03.F. Permission to work Saturdays, Sundays, holidays, or other than the agreed upon working hours Monday through Friday may be given subject to certain other conditions set forth by the Owner. These conditions may include but are not limited to: requiring the Engineer or such assistants as the Engineer may deem necessary to be present during the work; requiring the Contractor to reimburse the Owner for the costs in excess of straight-time costs for Owner’s employees who worked during such times, on non-Federal aid projects; considering the work performed on Saturdays, Sundays, and holidays as working days with regards to the Contract time. Assistants may include, but are not limited to, survey crews; inspectors; and other Owner employees when in the opinion of the Resident Project Representative, such work necessitates their presence.

SC-7.06. Add the following language at the end of Paragraph 7.06.D:

Reimbursement rates for Engineer or their officers, directors, members, partners, employees, agents, and other consultants and subcontractors for evaluation of proposed substitutes shall be on the basis established in Paragraph 15.01.E of these Supplementary Conditions.

SC-7.07. Add the following new paragraphs immediately after Paragraph 7.07.D:

7.07.D.1. The identity and acceptance of Subcontractors and Suppliers for the following portions of the Work is required in accordance with the requirements of the Instructions to Bidders:

7.07.D.1.a. Heating, Ventilating, and Air Conditioning (HVAC).

7.07.D.1.b. Plumbing.

7.07.D.1.c. Electrical.

7.07.D.1.d. Structural steel installation.

7.07.D.1.e. Rebar installation.

SC-7.07. Replace the phrase "On a monthly basis" from the beginning of Paragraph 7.07.H with the phrase "When requested by the Resident Project Representative".

SC 7.07. Add the following new paragraphs immediately after Paragraph 7.07.M:

N. The Contractor shall include the language of this paragraph in each of its first-tier subcontracts and shall require each of its subcontractors to include the same language of this section in each of their subcontracts, adjusting only as necessary the terms used for the contracting parties. Upon request of the Owner, the Contractor shall promptly provide documentation to the Owner demonstrating that the subcontractor meets the subcontractor responsibility criteria below. The requirements of this paragraph apply to all subcontractors regardless of tier. At the time of subcontract execution, the Contractor shall verify that each of its first-tier subcontractors meets the following bidder responsibility criteria:

On a project subject to the apprenticeship utilization requirements in RCW 39.04.320, the subcontractor(s) must not have been found out of compliance by the Washington state apprenticeship and training council for working apprentices out of ratio, without appropriate supervision, or outside their approved work processes as outlined in their standards of apprenticeship under chapter 49.04 RCW for the one-year period immediately preceding the date of the Owner's first advertisement of the project.

SC-7.09. Add the following new paragraphs immediately after Paragraph 7.09.A:

7.09.B. Owner will apply for and pay for the following construction permits:

7.09.B.1. Clark County – Commercial Building CME-2025-00471(Facility 72).

7.09.B.2. Clark County – Plumbing Permit PLM-2026-00029.

7.09.C. Information regarding permit requirements is available on the Clark County LMS website. Contractor shall examine the permits and conform to the requirements contained therein, including the purchase of additional bonds or insurance as specified therein, and such requirements are hereby made a part of these Contract Documents as fully and completely as though the same were set forth herein. Failure to examine the permit(s) will not relieve Contractor from compliance with the requirements stated therein. Within 5 days after the date of signing the Agreement, Contractor shall confer with an agent of the permitting agency so that insurance requirements and similar matters can be arranged prior to the time set for that portion of the Work.

7.09.D. The Clark County Commercial Building Permit is not the only permit required for construction for the Project. The Contractor shall obtain and pay of the other permits required for the Project.

7.09.E. The Contractor shall arrange for inspections required for all permits required for the Project. The Contractor is responsible for maintaining all permits required for the Project in good standing with the issuing agency.

SC-7.11. Add the following new paragraph(s) immediately after Paragraph 7.11.C:

7.11.D. While not intended to be inclusive of all Laws or Regulations for which Contractor may be responsible under Paragraph 7.11, the following Laws or Regulations are included as mandated by statute or for the convenience of Contractor:

7.11.D.1. Prevailing Wages:

7.11.D.1.a. Contractor shall pay not less than the prevailing rate of wages in accordance with Washington RCW 39.12.020. Certificates of wage payments by Contractor shall be submitted to the Department of Labor, with a copy to Owner, in accordance with RCW 39.12.040 and shall pay all fees associated therewith. Wage certification forms shall be provided by Contractor.

7.11.D.1.b. No worker, laborer, or mechanic employed in the performance of any part of this Agreement shall be paid less than the "prevailing rate of wage" as determined by the Industrial Statistician of the Department of Labor and Industries. The schedule of the prevailing wage rates for the locality or localities where this Agreement will be performed is by reference made a part of this Agreement as though fully set forth herein.

7.11.D.1.c. In case a dispute arises as to what are the prevailing rates of wages for work of a similar nature and such dispute cannot be adjusted by the parties in interest, including labor and management representatives, the matter shall be referred for arbitration to the Director of the Department of Labor and Industries of the State, and its decision therein shall be final and conclusive and binding on all parties involved in the dispute as provided for by RCW 39.12.060.

7.11.D.1.d. Owner does not guarantee that labor can be procured for the minimum wages in the wage scale. The rates of wages listed are minimum only, below which Contractor cannot pay, and they do not constitute a representation that labor can be procured for the minimum listed. Contractor shall ascertain the wages above the minimum set forth that may have to be paid.

7.11.D.2. In accordance with RCW 39.04.320, for all public works estimated to cost two million dollars or more, the District requires no less than 15% of the labor hours be performed by apprentices, unless otherwise stated in the bid advertisement. A contractor or subcontractor may not be required to exceed the 15% requirement. On applicable projects, the Bidder shall establish a minimum required percentage of apprentice labor hours compared to the total labor hours. The project's apprenticeship utilization rate is calculated using the approved affidavits from the L&I portal.

7.11.D.3. The provisions of RCW 39.04.240 are included as Laws and Regulations incorporated by reference in the Contract Documents.

7.11.D.4 Apprentice Utilization. This Contract includes an Apprentice Utilization Requirement. Fifteen percent or more of project Labor Hours shall be performed by Apprentices unless Good Faith Efforts are accepted. Apprentice Utilization will be determined using the Washington Department of Labor and Industries (L&I) online Prevailing Wage Intent & Affidavit (PWIA) system.

7.11.D.4.a. Definitions. For the purposes of this specification the following definitions apply:

1. Apprentice is a person enrolled in a State-approved Apprenticeship Training Program.

2. Apprentice Utilization is the apprentice labor hours, on the project, expressed as a percentage of project Labor Hours based on certified payrolls or the affidavits of wages paid, whichever is least. The percentage is not rounded up.

3. Apprentice Utilization Requirement is the minimum percentage of apprentice labor hours required by the Contract.

4. Good Faith Effort(s) (GFE) describes the Contractor's efforts to meet the Apprentice Utilization Requirement including but not limited to the specific steps as described elsewhere in this specification.

5. Labor Hours are the total hours performed by all workers receiving an hourly wage who are subject to prevailing wage requirements for work performed on the Contract as defined by RCW 39.04.310. Labor Hours are determined based on the scope of work performed by the individuals, rather than the title of their occupations in accordance with WAC 296-127.

6. State-approved Apprenticeship Training Program is an apprenticeship training program approved by the Washington State Apprenticeship Council.

7. Apprentice Wage Rates are the applicable wage rates that are to be paid for an apprentice registered in a training program, separate from Journey Level rates, as set by the Washington State Apprenticeship Training Council and Washington State Department of Labor and Industries (L&I).

7.11.D.4.b. Electronic Reporting. The Contractor shall use the PWIA System to submit the "Apprentice Utilization Plan". Reporting instructions are available in the application.

7.11.D.4.c. Apprentice Utilization Plan. The Contractor shall submit an "Apprentice Utilization Plan" by filling out the Apprentice Utilization Plan Form (WSDOT Form 424-004) within 30 calendar days of execution, however no later than the preconstruction meeting, demonstrating how and when they intend to achieve the Apprentice Utilization Requirement. The Plan shall be in sufficient detail for the Owner to track the Contractor's progress in meeting the utilization requirements. An Apprentice Utilization Plan shall be updated and resubmitted as the Work progresses or when requested by the Owner.

If the Contractor is unable to demonstrate the ability to meet the Apprentice Utilization Requirement with their initial Apprentice Utilization Plan submission, an effort must be made to find additional registered apprentices to perform on the contract. If after attempts have been made at every tier and every scope, the Contractor must submit GFE documentation to the Owner. The Contractor shall actively seek out opportunities to meet the Apprentice Utilization Requirement during the construction Work.

7.11.D.4.d. Contacts. The Contractor may obtain information on State-approved Apprenticeship Training Programs by using the Apprentice Registration and Tracking System (ARTS) https://secure.lni.wa.gov/arts-public/#/program-search or contacting the Department of Labor and Industries directly at:

Specialty Compliance and Services Division,
Apprenticeship Section,
P.O. Box 44530
Olympia, WA 98504-4530
or by phone at (360) 902-5320.

7.11.D.4.e. Compliance. The Contractor is expected to make attempts to employ Apprentices and shall include the requirement in any subcontracts at any tier. In the event that the Contractor is unable to achieve the Apprentice Utilization Requirement, the Contractor shall submit GFE documentation demonstrating the efforts and attempts they made. Final GFE documentation shall be submitted to the Owner after Substantial Completion but no later than 30 days after Substantial Completion.

If the Contractor fails to actively attempt to employ Apprentices, submit GFE documentation, or if the Owner does not approve the GFE, the Contractor will be assessed a penalty. The Owner will provide the Contractor with a written notice at Final Acceptance of the project informing the Contractor of the failure to comply with this specification which will include a calculation of the penalty to be assessed as provided for in the Payment section in this special provision.

If the Contractor achieves the required Apprentice Utilization an incentive will be assessed with Final Payment.

7.11.D.4.f. Good Faith Efforts. The GFE shall document the attempts (efforts) the Contractor (and any subcontractor at any tier) made to meet the Apprentice Utilization Requirement. Emails, letters, or other written communications with letterhead, titles, and contact information are required.

Documentation must include one or more of the following accepted GFEs:

1. Demonstrated Lack of Availability of Apprentices. Correspondence from State-approved Apprenticeship Training Program(s), with project specific responses confirming there is a lack of availability of Apprentices for this project.

2. Demonstrated Disproportionate Ratio of Material/Equipment/Products to Labor Hours. Documentation explaining the bid includes a disproportionate high cost of material/equipment/products to Labor Hours. (e.g., a $2M estimated contract includes $1M or more in procurement costs of equipment to be installed.)

3. Demonstrated Lack of Necessary Labor Hours. Correspondence from a State-approved Apprentice Training Programs confirming there is not enough time in the project to meet required journey level to apprentice training ratios.

4. Demonstrated Lack of Available Approved Programs. Correspondence from State-approved Apprentice Training Programs, confirming there are no programs that train for the scopes included/anticipated on the project. Contractor and state programs to submit training program detail needs and details that could be used for future program creation.

5. Funding Precedent. Documentation that shows conflicting, more restrictive, or precedent requirements for other training on the Project. Examples include, but are not limited to, Tribal Employment Rights (TERO), Federal Training Hours, or Special Training that affect the ability to use state-registered apprentices.

6. Warranty Work. Documentation from Original Equipment Manufacturers, or similar, confirming that work performed must only be completed by certified journey-level installers or risk voiding warranty, or similar.

7. Other Effort. The Contractor may submit other evidence, documentation, or rationale for not being able to achieve the required Apprentice Utilization that are not covered in the other efforts named. Other efforts will still need to be corroborated by an independent, knowledgeable third-party.

Contractors may receive a GFE credit for graduated Apprentice hours through the end of the calendar year for all projects worked on as long as the Apprentice remains continuously employed with the same Contractor/subcontractor they were working for when they graduated. If an Apprentice graduates during employment on a project of significant duration, they may be counted towards a GFE credit for up to one year after their graduation or until the end of the project (whichever comes first). Determination of whether Contract requirements were met in good faith will be made by subtracting the hours from the journeyman total reported hours for the project and adding them to the apprentice hour total. If the new utilization percentage meets the Contract requirement, the Contractor will be reported as meeting the requirement in good faith.

7.11.D.4.g. Approving Good Faith Efforts. The Owner will review submitted Good Faith Efforts and issue a determination. The Owner may request additional information, documentation, evidence or similar in order to approve such efforts. A determination by the Owner is final. The approved Good Faith Efforts will be loaded into the PWIA system by the Owner.

7.11.D.4.h. Payment. Payment will be made for the following Bid Item:

“Apprenticeship Utilization Incentive”.

An incentive as identified in the bid form will be assessed with the Final Payment only for Contractors who meet the Apprentice Utilization Requirement without a reduction by Good Faith Effort. For the purpose of providing a common proposal for all bidders, the Owner has entered an amount in the proposal to become a part of the total bid by the Contractor.

Apprenticeship Hours will be measured for each hour of work performed by an apprentice as shown on the Monthly Apprentice Utilization Report, based on certified payrolls or the affidavits of wages paid, whichever is least. The percentage is not rounded up.

7.11.D.4.i Penalty for Failure to meet the Apprenticeship Utilization Goals. When the Contractor fails to meet the apprenticeship goal of 15 percent, a penalty will be assessed for each hour that is not achieved, unless a Good

Faith Effort is approved by the Owner. Apprenticeship Utilization Penalty will be calculated as $5.00 per hour of unmet goal. This penalty shall not exceed one percent (1%) of the total contract amount.

7.11.D.4.j The Contractor shall include all related costs in the Bid prices of the Contract, included but not limited to implementing, developing, documenting, and administering an apprenticeship utilization program, recording and reporting hours and all other costs to comply with this provision.

SC-7.11. Add the following new paragraph immediately after Paragraph 7.11.D:

7.11.E. The Contractor's Bid includes all tariffs in effect as of the due date for the Contractor's proposal. If the Contractor incurs any obligation to pay additional amounts relating to new or increased tariffs which take effect after the due date of the Contractor's proposal, the Contractor will be entitled to an adjustment in the Contract Price reflecting the actual amount of the tariffs that Contractor is required to pay for materials, supplies or equipment, but only if the Contractor provides notice to the Owner of the assessment of such new or increased tariff within the time provided by Article 12 of the General Conditions, and only if the Contractor provides supporting documentation reasonably acceptable to the Owner sufficient to establish the actual amounts the Contractor was required to pay for such tariffs and the amount of the tariffs included in the Contractor's Bid. In the event the Contractor pays less for materials, supplies or equipment due to a reduction in tariffs from the amounts included in the Contractor's proposal, the Owner shall be entitled to an adjustment in the Contract Price reflecting the reduced tariffs that Contractor paid for materials, supplies or equipment. The Contractor shall be obligated to provide the Owner with written notice of any decreases to tariffs on material, supplies or equipment from the amounts included in the Contractor's Bid. Upon Owner's request, the Contractor shall be obligated to provide supporting documentation acceptable to the Owner showing the amount of any tariffs included in supplies, materials or equipment included in the Contractor's Bid.

SC-7.17. Delete Paragraph 7.17.A in its entirety and insert the following in its place:

7.17.A Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents, will not be defective, and all material and equipment incorporated as part of the Work is merchantable and fit for its intended purpose. Any warranty limitations or disclaimers by the Contractor, suppliers, vendors, or subcontractors to the contrary shall be ineffective as a limitation upon Contractor's warranty under Paragraph 7.17.A. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.

SC 7.18. Add the following language to the end of Paragraph 7.18.A:

where negligence is proven to be attributable to Contractor or for parties for whom the Contractor is directly responsible.

SC-7.18. Add the following new paragraphs immediately after Paragraph 7.18.B:

7.18.C. For suits, actions, legal or administrative proceedings, Claims, demands, damages, losses, penalties, fines, costs, and expenses caused by or resulting from the concurrent negligence of Owner and Engineer, or Owner's or Engineer's agents or employees, and Contractor or Contractor's agents or employees, in situations where liability for damages arises from Claims of bodily injury to persons or damage to property, the preceding indemnity and defense provisions shall be valid and enforceable only to the extent of Contractor's negligence in accord and to the extent required by RCW 4.24.115.

7.18.C.1. Contractor's duties of indemnity and defense under this Article and as provided elsewhere in the Contract shall be limited to the extent RCW 4.24.115 applies.

7.18.C.2 To the extent this indemnity and defense obligation applies to claims by employees of the Contractor, subcontractors, or suppliers, Contractor specifically waives any immunity granted under the Washington industrial insurance law, Title 51 RCW for the purposes of providing indemnity and defense of third-party claims. This waiver has been mutually negotiated by the parties. The Contractor shall similarly require that each subcontractor and supplier it retains in connection with the Work comply with the terms of this provision and similarly waive Title 51 RCW immunity granted for the purpose of providing indemnity and defense of claims asserted by their employees.

7.18.D. Contractor acknowledges that by entering into a Contract with Owner, Contractor has mutually negotiated the above indemnity provision with Owner.

7.18.E. Contractor's indemnity and defense obligations shall survive the termination or completion of the Work and remain in full force and effect until satisfied in full.

SC-8.02. Add the following new paragraph immediately following Paragraph 8.02.B:

8.02.C. Other work anticipated to be performed at the Site by others that is either directly or indirectly related to the scheduled performance of the Work under these Contract Documents is described in Section 01 11 00, Summary of Work.

SC-8.03. Add the following new paragraph immediately after Paragraph 8.03.C:

8.03.D. Failure by the Contractor to timely submit a Change Proposal in accord with this Article shall be deemed a complete waiver of any and all adjustments to Contract Times, Contract Price, and any other equitable or legal remedy related to the events

and occurrences described in this Article. As a condition precedent to any right to submit a Claim under Article 12, Contractor shall provide proof of a timely submitted Change Proposal as required by this Article.

SC-8.04. Add the following new paragraph immediately after Paragraph 8.03:

SC-8.04. *Claims Between Contractors*

8.04.A. Should Contractor cause damage to the work or property of any other contractor at the Site, or should any claim arising out of Contractor's performance of the Work at the Site be made by any other contractor against Contractor, Owner, Engineer, or the Construction Manager, if applicable, Contractor shall (without involving Owner, Engineer, or Construction Manager) either i) remedy the damage; ii) agree to compensate the other contractor for remedy of the damages; or iii) remedy the damages and attempt to settle with such other contractor by agreement, or to otherwise resolve the dispute by arbitration or at law.

8.04.B. Subject to the provisions of RCW 4.24.115, Contractor shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner, Engineer, the Construction Manager (if applicable) and the officers, directors, members, partners, employees, agents, and other consultants and subcontractors of each and any of them from and against all Claims, costs, losses and damages (including, but not limited to, fees and charges of engineers, architects, attorneys, and other professionals and court and arbitration costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any other contractor against Owner, Engineer, their officers, directors, members, partners, employees, agents, and other consultants and subcontractors, or the Construction Manager (if applicable) to the extent said Claim is based on or arises out of Contractor's performance of the Work.

8.04.C. Subject to the limitations of this section and RCW 4.24.115, if applicable, if Contractor is delayed at any time in performing or furnishing the Work by any act or neglect of another contractor employed by Owner, and Owner and Contractor are unable to agree as to the extent of any adjustment in Contract Times or Contract Price attributable thereto, Contractor may make a Claim for an extension of times or change in compensation attributable thereto, Contractor may only make a Claim for an extension of times or change in compensation in accordance with Article 11 herein. This paragraph does not prevent recovery from Owner or Engineer for activities that are their respective responsibilities.

SC-10.03. Add the following new paragraphs immediately after Paragraph 10.03.B:

10.03.C. Resident Project Representative will be furnished by Owner. The responsibilities, authority, and limitations of the RPR are limited to those of the Owner in accordance with Article 9 and as described below.

10.03.D. Responsibilities and Authority:

10.03.D.1. Schedules: Review the Progress Schedule, Schedule of Submittals, and Schedule of Values prepared by Contractor.

10.03.D.2. Conferences and Meetings: Conduct or attend meetings with Contractor, such as preconstruction conferences, progress meetings, Work conferences and other Project related meetings.

10.03.D.3. Liaison: (i) Serve as Engineer's liaison with Contractor, working principally through Contractor's authorized representative, and assist in understanding the intent of the Contract Documents; (ii) serve as Owner's liaison with Contractor when Contractor's operations affect Owner's onsite operations; (iii) assist in obtaining additional details or information from Owner when required for proper execution of the Work.

10.03.D.4. Interpretation of Contract Documents: Transmit to Contractor clarifications and interpretations issued by Engineer or Owner to Contractor.

10.03.D.5. Submittals: Receive submittals that are furnished by Contractor, and notify Engineer of availability for examination.

10.03.D.6. Modifications: Consider Contractor's suggestions for modifications in Drawings or Specifications; transmit to Contractor, in writing decisions as issued by Engineer.

10.03.D.7. Review of Work and Rejection of Defective Work: (i) Conduct onsite observations of the Work in progress; (ii) inform Contractor whenever RPR believes that any Work is defective; (iii) advise Contractor whenever RPR believes that any Work will not produce a completed Project that conforms generally to the Contract Documents, or has been damaged or does not meet the requirements of any inspection test, or approval required to be made.

10.03.D.8. Inspections, Tests, and System Startups: Verify tests, equipment and systems startups and operating and maintenance training are conducted in the presence of appropriate personnel, and that Contractor maintains adequate records thereof.

10.03.D.9. Payment Requests: Review Applications for Payment with Contractor for compliance with the Contract Documents.

10.03.D.11. Completion: (i) Participate in a Substantial Completion inspection; assist in determination of Substantial Completion and the preparation of lists of items to be completed or corrected; (ii) Participate in a final inspection in the company of Engineer, Owner, and Contractor and

prepare a final list of items to be completed and deficiencies to be remedied; and (iii) observe whether items on final list have been completed or corrected

10.03.E. Limitations of Authority: Resident Project Representative will not:

10.03.E.1. Exceed the limitations of Owner's authority as set forth in Contract Documents; or

10.03.E.2. Undertake any of the responsibilities of Contractor, Subcontractors, Suppliers, or Contractor's authorized representative; or

10.03.E.3. Advise on, issue directions relative to, or assume control over an aspect of the means, methods, techniques, sequences, or procedures of Contractor's work; or

10.03.E.4. Advise on, issue directions regarding, or assume control over safety practices, precautions, and programs in connection with the activities or operations of Contractor; or

10.03.E.5. Participate in specialized field or laboratory tests or inspections conducted offsite by others; or

10.03.E.6. Receive or review Shop Drawings, submittals, or Samples from anyone other than Contractor; or

SC-10.07. Add the following new paragraph immediately after Paragraph 10.07.E:

10.07.F. Contractors, Subcontractors, Suppliers, and others on the Project, or their sureties, shall maintain no direct action against Engineer, its officers, employees, affiliated corporations, and subcontractors, for any Claim arising out of, in connection with, or resulting from the engineering or design services performed. Only the Owner will be the beneficiary of any undertaking by Engineer.

SC-11.07. Add the following new paragraph immediately after Paragraph 11.07.C:

11.07.D. In the event Contractor submits request for additional compensation as a result of a change or differing Site conditions, or as a result of delays, acceleration, or loss of productivity, Owner reserves right, upon written request, to audit and inspect Contractor's books and records relating to the Project. Upon written request for an audit, Contractor shall make its books and records available within 14 days of request. Owner shall specifically designate identity of auditor. As part of audit, Contractor shall make available its books and records relating to the Project, including but not limited to Bidding Documents, cost reports, payroll records, material invoices, subcontracts, purchase orders, daily timesheets, and daily diaries. Audit shall be limited to those cost items which are sought by Contractor in a change order or claim submission to Owner.

SC-11.10. Add the following new paragraph immediately after Paragraph 11.10:

SC-11.11. *Failure to Timely Submit Complete Waiver*

11.11.A. Failure by the Contractor to timely submit a Change Proposal in accord with this Article shall be deemed a complete waiver of any and all adjustments to Contract Times, Contract Price, and any other equitable or legal remedy related directly or indirectly to the Work or this Agreement. As a condition precedent to any right to submit a Claim under Article 12, Contractor shall provide proof of a timely submitted Change Proposal as required by this Article.

SC-12.01.B. Add the following at the end of Paragraph 12.01.B:

The Contractor agrees to waive any Claim for adjustment to the Contract Times, Contract Price, and any other legal or equitable relief related directly or indirectly to the Work or this Agreement if a timely Change Proposal for the claimed relief has not been previously submitted for the relief requested.

SC-13.01. Delete Paragraph 13.01.B.5.c in its entirety and insert the following in its place:

13.01.B.5.c.(1) Rentals of construction equipment and machinery, and the parts thereof in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. Such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

13.01.B.5.c.(2) Costs for equipment and machinery owned by Contractor will be paid at a rate shown for such equipment and include an equipment rate book appropriate for the Project. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs. Costs will include the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of such equipment or machinery, or parts thereof, shall cease to accrue when the use thereof is no longer necessary for the changed Work. Equipment or machinery with a value of less than $1,000 will be considered small tools.

SC 13.01. Add the following language to the end of Paragraph 13.01.B.5.h:

Express and courier services must be approved prior to use.

SC-14.02. Add the following language at the end of Paragraph 14.02.D:

Tests required by Contract Documents to be performed by Contractor that require test certificates be submitted to Owner or Engineer for acceptance shall be made by an independent testing laboratory or agency licensed or certified in accordance with Laws and Regulations and applicable state and local statutes. In the event state license or certification is not required, testing laboratories or agencies shall meet the following applicable requirements:

14.02.D.6. Basic requirements of ASTM E329, "Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection" as applicable.

14.02.D.7. Calibrate testing equipment at reasonable intervals by devices of accuracy, traceable to the National Institute of Standards and Technology or accepted values of natural physical constants.

SC-15.01. Add the following language at the beginning of Paragraph 15.01.B.1:

Prior to submitting initial payment invoice, Contractor and its Subcontractors shall provide Owner with "Statement of Intent to Pay Prevailing Wages" as required by RCW 39.12.040.

SC-15.01. Delete Paragraph 15.01.D.1 in its entirety and insert the following in its place:

15.01.D.1. Thirty days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 15.01.E.) become due and when due will be paid by Owner to Contractor.

SC 15.03.B. Add the following new subparagraph to Paragraph 15.03.B:

SC 15.03.B.1. If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Engineer, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, shall be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.

SC-15.06. Add the following new paragraph immediately after Paragraph 15.06.A.3:

15.06.A.4. When the Final Payment Application has been received and accepted the Owner will submit a "Notice of Completion of Public Works Project" to the State of Washington Department of Revenue, Labor and

Industries, and Employment Security Department. Retainage will be re-leased after the District has receives the following:

1. Department of Labor and Industries "Affidavit of Wages Paid" – Prime Contractor

2. Department of Labor and Industries "Affidavit of Wages Paid" – All Sub Contractors

3. Department of Labor and Industries release for payment of Industrial Insurance

4. Department of Revenue release for payment of state taxes

5. Employment Security Department release for Employment Security Act

6. Release of use of private property for staging and/or storage of materials – if applicable

7. All documentation required by the Contract Provisions

8. The Owner will place an advertisement in the local newspaper allowing 30 days for subcontractors or suppliers to file claims against the project.

SC-15.06. Add the following new subparagraph to Paragraph 15.06.B.:

15.06.B.1. Upon Owner's receipt of (i) Engineer's written recommendation of payment with Contractor's Final Application for Payment and accompanying documentation, and (ii) Engineer's written notice that the Work is acceptable subject to the provisions of Paragraph 14.09, Owner will notify the Department of Revenue of the completion of the Work under these Contract Documents. Provided the Department of Revenue certifies there are no taxes or penalties due and owing from Contractor, and there are no other known Claims or Liens against the retained funds, Owner will make payment to Contractor in accordance with Paragraph 14.07 subject to the provisions of RCW 60.28.010. In the event unsatisfied Claims or Liens for taxes, material, labor, and other services are known to exist, an amount will be further withheld from the retainage sufficient to satisfy the settlement of such Claims and Liens, including attorney's fees incurred, and remainder will be released from escrow, or released from retained funds and paid to Contractor.

SC-15.06. Add the following to the end of the last sentence of Paragraph 15.06.E

> and all documents, notices, and certifications listed herein have been received and accepted by the Owner.

SC-15.08. Delete Paragraph 15.08.B in its entirety and insert the following in its place:

> 15.08.B. Owner shall give any such notice of defect within 120 days of the discovery that such Work or repairs is defective. If such notice is given within such 120 days but after the end of the correction period, the notice will be deemed a notice of defective Work under paragraph 7.17.B.

SC 15.08.C. Revise the first sentence of Paragraph 15.08.C by changing the word "60" to "120".

SC-15.08. Delete Paragraph 15.08.F in its entirety and insert the following in its place:

> 15.08.F. This obligation to correct defects or failure of performance is in addition to all other warranties and obligations under the terms of the Contract including but not limited to manufacturer's warranties and the Contractor's warranty and obligation that the work performed and materials supplied meet or exceed the quality and performance required by the Contract Documents. In addition, the provisions of this paragraph are not a waiver or substitute of the provisions of any applicable statute of limitation or repose.

SC-16.02. Add the following new paragraph immediately after Paragraph 16.02.A.4:

> 16.02.A.5. Contractor otherwise materially breaches the Contract.

SC 16.02. Add the following at the end of Paragraph 16.02.D:

> This paragraph shall apply to cancel or defer termination only if the Owner is reasonably assured that the Contractor will timely perform and complete any such cure.

SC-17.02. Add the following new paragraph immediately after Paragraph 17.01:

SC-17.02. *Forum Selection*

> SC-17.02.A. All disputes that are not otherwise resolved in accord with the resolution provisions of this Agreement shall be determined by litigation in Clark County Superior Court.

SC-18.04.B. Add the following new paragraph immediately after Paragraph 18.04.A:

> SC-18.04.B. Contractor agrees to limit any adjustment to the Contract Price for overhead, extended overhead, impacts, consequential damages, and all other items that are not specifically included in the Cost of the Work to the Contractor's Fee as

provided under Article 11.07.C. Contractor's recovery for all legal and equitable claims and recovery related directly or indirectly to the Work or this Agreement shall be limited exclusively to those adjustments to the Contract Price and Contract Times as specifically provided in this Agreement.

SC-18.11. Add the following new paragraph immediately after Paragraph 18.10:

SC-18.11. *Statute of Limitations*

18.11.A Any applicable statute of limitation shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than the date of substantial completion regardless of the date of discovery of the event giving rise to the cause of action.

END OF SECTION

CONTRACT PROVISIONS AND PLANS

FOR THE CONSTRUCTION OF:

Salmon Creek Treatment Plant Dewatering Equipment Replacement

VOLUME I – SPECIFICATIONS

Discovery Clean Water Alliance Project No. 93-2021-0058

A Discovery Clean Water Alliance Capital Project with Clark Regional Wastewater District as Administrative Lead

CLARK REGIONAL WASTEWATER DISTRICT
8000 N.E. 52nd COURT
VANCOUVER, WASHINGTON 98665
(360) 750-5876
FAX (360) 750-7570
crwwd.com

January 2026

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CONTRACT PROVISIONS AND PLANS

Salmon Creek Treatment Plant
Dewatering Equipment Replacement

VOLUME I – SPECIFICATIONS

Discovery Clean Water Alliance Project No. 93-2021-0058

FOR INFORMATION REGARDING
THIS PROJECT CONTACT:

Chris Stangl
Construction Manager
CLARK REGIONAL WASTEWATER DISTRICT
15100 NW McCann Road
VANCOUVER, WASHINGTON 98685
360.921.2386
cstangl@crwwd.com

PROFESSIONAL SEAL

Signer Name: Quinn Behnke
Signing Reason: I approved this document
Signing Time: 2020-01-20 10:12:24(EST)

Quinn Behnke
Division 01

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SECTION 01 11 00

SUMMARY OF WORK

PART 1 GENERAL

1.01 WORK INCLUDED

A. Construct work as described in the Contract Documents.
   1. Install two new dewatering screw presses.
   2. Temporary install of one new screw press in biosolids storage bays before relocating to final position.
   3. Install two new digested sludge feed pumps.
   4. Provide the civil, architectural, structural, mechanical, electrical, instrumentation and all other work required for a complete and operable project.
   5. Test and place the completed project in operation.
   6. Provide the special tools, spare parts, lubricants, supplies, or other materials as indicated in Contract Documents for the operation and maintenance of the Project.
   7. Salvage and return equipment and components specified within the Contract Documents.
   8. Drawings and specifications do not indicate or describe all of the work required to complete the project. Additional details required for the correct installation of selected products are to be provided by the Contractor and coordinated with the Engineer.

1.02 DESCRIPTION OF WORK

A. Work is described in general, non-inclusive terms as:
   1. Solids Processing Center (Building 72): Replacement of existing dewatering belt filter presses with new dewatering screw presses. Modification of sludge feed piping, W3 water piping, polymer piping, and odor control ducting. Installation of personnel access grating and platforms, a new monorail system, and ancillary equipment.
   2. Solids Processing Center (Building 72): Installation of exterior stairs and entrance to upper level of facility.
   3. Digester/BFP Feed Control Building (Building 77): Replacement of BFP Feed Pumps with new Screw Press Feed Pumps.
   4. Temporary Systems: Installation and relocation of temporary dewatering screw press during the replacement of dewatering system.
   5. Installation of new level sensors for the Biosolids Blend Tank (Facility 76) and Sludge Blend Tank (Facility 74).

1.03 WORK UNDER OTHER CONTRACTS

A. The following items of work are not included in this contract, but may impact construction scheduling, testing, and start up:
   1. General Plant Operations and Maintenance
   2. SCTP UV Replacement Project.

3. SCTP Operations Center HVAC Replace Project.
4. SCTP Well House Building 6 Project.
5. SCTP Digester Tank Cleaning Project.
6. SCTP Diester Gas H2S Reduction Project.

B. Completion of the work described in this contract may impact the construction and testing of the items listed above.

1.04 WORK BY OWNER

A. Owner will provide normal operation and maintenance of the existing and temporary dewatering facilities during construction, unless otherwise stated.

1.05 OWNER-SELECTED PRODUCTS

A. Programmable logic controls per Section 40 63 43.

B. Dewatering screw presses per Section 46 76 27.

C. Shafted Screw Conveyors per Section 41 12 13.16.

D. Shaftless Screw Conveyors/Temporary Screw Conveyors per Section 46 71 01.

E. Variable frequency drives per Section 26 29 23 and 46 76 27.

1.06 OWNER-PROVIDED PRODUCTS – NOT USED

A. There are no Owner provided products for installation by the Contractor.

1.07 CONSTRUCTION OF UTILITIES

A. Existing utilities will be used for this project per Section 01 50 00. Coordinate with others performing work connected to this project.

1.08 OCCUPANCY

A. Buildings associated with the Work will remain in use by the Owner during construction.

B. As soon as any portion of the structure and equipment are ready for use, the Owner shall have the right to operate the portion upon written notice to the Contractor.

C. Testing of equipment and appurtenances including specified test periods, training, and start-up does not constitute acceptance for operation.

D. Owner may accept the facility for continued use after start-up and testing at the option of the Owner. If acceptance is delayed at the option of the Owner, shut down facilities per approved Operation and Maintenance procedures.

E. The execution of bonds is understood to indicate the consent of the surety to these provisions.

F. Provide an endorsement from the insurance carrier permitting occupancy of the structures and use of equipment during the remaining period of construction. The structure will be occupied the entire duration of construction.

G. Conduct operations to insure the least inconvenience to the Owner and general public.

PART 2 PRODUCTS

2.01 MATERIALS

A. Provide materials and products per the individual sections of the specifications.

PART 3 NOT USED

END OF SECTION

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SECTION 01 11 80

ENVIRONMENTAL CONDITIONS

PART 1 GENERAL

1.1 SUMMARY

A. This Section describes the environmental conditions which have been taken from ASHRAE's Climatic Design Conditions summary from a weather station near the project site location and which may reasonably be anticipated throughout the life of the Project.

1.2 CLIMATE CONDITIONS

A. The site of the Work is at an elevation of 25 and 75 above mean sea level.

B. Outdoor climatic data are obtained from the 2021 ASHRAE Fundamentals Handbook for Vancouver, WA, USA and are described as follows:

Description	Value
Location and WMO# Lat/Long Elevation Standard Atmospheric Pressure	Vancouver, WA, #72791845.621N, 122.657W30 ft14.68
Winter (99.6%)	24.4 deg F dry bulb temperature
	9.0 deg F dewpoint
	20.6 miles per hour design wind speed at corresponding dry bulb temperature of 41.0 deg F
Summer (0.4%)	91.4 deg F dry bulb temperature
	66.7 deg F mean coincident wet bulb temperature
Evaporation (0.4%)	69.1 deg F wet bulb temperature
	86.5 deg F mean coincident dry bulb temperature
Annual Extreme Temperatures	18.2/17.0 deg F dry bulb/wet bulb – Annual Minimum
	99.1/72.0 deg F dry bulb/wet bulb – Annual Maximum
Temperature Extremes (n = 50 years)	5.2 / 4.0 deg F dry bulb/wet bulb – 50 Year Minimum
	107.3 / 77.5 deg F dry bulb/wet bulb – 50 Year Maximum

1.3 INDOOR CONDITIONS

A. The HVAC, Odor Control, and other interior systems are designed to provide or accommodate the desired environmental conditions within the various spaces and to protect the equipment and processes from freezing or overheating.

B. The indoor design conditions presented below shall be used for the design of these types of interior systems within the identified spaces.

C. Refer to technical specifications for additional guidance and requirements associated with indoor systems design, installation and testing.

Area	Temperature		Ventilation Rate [e]
Process Rooms	Summer	104 degrees F dry bulb temperature [a, b]	As required to maintain summer design temperature, or as required by the IMC/mechanical Code of jurisdiction. [f]
	Winter	50 degrees F dry bulb temperature	
Electrical Room	Summer	80 degrees F dry bulb temperature	—
		67 degrees F; mean coincident wet bulb temperature (50% RH)	
	Winter	50 degrees F dry bulb temperature [c]	
Personnel Space/ Control Rooms	Summer	75 degrees F dry bulb temperature	Per ASHRAE 55 and ASHRAE 62.1 Required ventilation at 5 cfm/person plus 0.06 cfm/ft2 if actual occupancy density is known. Required ventilation at 7 cfm/person with occupancy density of 50 people per 1000 ft2 if actual occupancy density is not known.
		62.5 degrees F; mean coincident wet bulb temperature (50%RH)	
	Winter	68 degrees F dry bulb temperature	

Notes:

a. Electrical equipment in process areas is generally rated for an ambient temperature of 40 °C (104 °F). Occasional excursions of higher temperatures in the room can be expected for a few hours on the hottest, unseasonable day type of scenario.

b. Non-conditioned ventilation-cooling fans will be sized on the basis of the electrical general ambient temperature rating minus the summer design temperature ventilation air cooling differential temperature.

c. Space temperature will fall and rise based on outside air temperature but is not expected to drop below the winter design temperature due to heat capacity of the structure and other internal space heat gains.

d. Not used

e. Ventilation air will be brought into the degree necessary to pressurize space.

f. Additional ventilation may be necessitated for compliance with NFPA 820. Minimum [6] ACH per NFPA 820 table 6.2.2 (a), Row 17c, and Table 9.1.1.4, Row 3b. During winter with temperatures below 50F, the flowrate for declassification will be reduced to 3 ACH per NFPA 820, Paragraph 9.3.2, if the space is unoccupied.

D. Pressurization:

1. Designing minimum pressure differentials, values are with respect to ambient pressure and to adjacent spaces, discourages undesirable air transfer from one space to another.

Space Type	Pressure Differential (inches WC – with respect to ambient)
Electrical Rooms	[+0.10]
Process Area	[-0.10]
General Office	[+0.05]
Mechanical Spaces	[-0.05]

1.4 APPLICABLE CODES/STANDARDS

ASHRAE		
55	Thermal Environmental Conditions for Human Occupancy	as referenced by state of Washington
62.1	Ventilation for Acceptable Indoor Air Quality	as referenced by state of Washington

ASHRAE		
90.1	Energy Standard for Buildings Except Low-Rise Residential Buildings	as referenced by state of Washington
NFPA		
70	2023 National Electrical Code with local amendments	as referenced by state of Washington
820	2020 Standard for Fire Protection in Wastewater Treatment and Collection Facilities	State of Washington
International Code Council		
IBC	2021 International Building Code with local amendments	as referenced state of Washington
IEBC	2021 International Existing Building Code with local amendments	as referenced by state of Washington
IECC	2021 International Energy Conservation Code with local amendments	as referenced state of Washington
IFC	2021 International Fire Code with local amendments	as referenced by state of Washington
IFGC	2021 International Fuel Gas Code with local amendments	as referenced by state of Washington
IMC	2021 International Mechanical Code with local amendments	as referenced state of Washington
IPC	2021 International Plumbing Code with local amendments	as referenced by state of Washington

1.5 ADDITIONAL CONDITIONS

A. Additional conditions which may be applicable are specified in other sections.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

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SECTION 01 12 16

WORK SEQUENCE

PART 1 GENERAL

1.01 CONTINUITY OF PLANT OPERATIONS

A. The existing wastewater treatment plant is currently and continuously receiving and treating sewage, and those functions shall not be interrupted except as specified herein. The Contractor shall coordinate the work to avoid any interference with normal operation of plant equipment and processes.

1.02 BYPASSING

A. Bypassing of untreated or partially treated sewage to surface waters or drainage courses is prohibited during construction. In the event accidental bypassing is caused by the Contractor's operations, the Owner shall immediately be entitled to employ others to stop the bypassing without giving written notice to the Contractor.

B. Penalties imposed on the Owner as a result of any bypass caused by the actions of the Contractor, their employees, or subcontractors, shall be borne in full by the Contractor, including legal fees and other expenses to the Owner resulting directly or indirectly from the bypass.

1.03 SUBMITTAL

A. In accordance with Section 01 33 00, the Contractor shall submit a detailed outage plan and time schedule for operations which will make it necessary to remove a tank, pipeline, channel, electrical circuit, equipment, system, or structure from service. The schedule shall be coordinated with the construction schedule specified in the General Conditions of the Contract Documents and shall meet the restrictions and conditions specified in this section. The detailed plan shall describe the Contractor's method for preventing bypassing of other treatment units, the length of time required to complete said operation, the necessary plant, and equipment which the Contractor shall provide in order to prevent bypassing of associated treatment units.

B. The Contractor shall observe the following restrictions:
   1. Systems or individual equipment items shall be isolated, dewatered, decommissioned, deenergized, or depressurized in accordance with the detailed outage plan and schedule.
   2. The Construction Manager shall be notified in writing at least one week in advance of the planned operation.

1.04 COORDINATION OF ACTIVITIES

A. Contractor shall plan, schedule, and coordinate their demolition and construction operations and activities in a manner that will facilitate the progress of the work included in these Contract Documents.

B. Contractor shall observe the following conditions and restrictions:
   1. Field verify elevations of existing pipe and equipment at locations where new pipe or equipment crosses. Notify Owner if existing elevations differ from those shown in this document or other prior documents.
   2. Plan the work and carry it out, during all phases, with minimum interference to the operation of the existing facilities. Prior to starting the work, confer with the Owner to develop an approved work schedule which will permit the facilities to function.
   3. Owner's approval must be received prior to proceeding with activities requiring shut down or interruption of any plant facilities. Do not perform demolition work or make connections between existing work and new work until necessary inspection and tests have been completed on the new work and it is found to conform in all respects to the requirements of the Contract Documents.

C. In coordination with the Contractor, Owner forces will lock out and tag any equipment or tankage that needs to be removed from service

1.05 SCHEDULE CONSTRAINTS

A. Following are construction constraints for major critical activities required to accomplish the Work. These construction constraints must be incorporated into the Contractor's construction schedule.
   1. No demolition activities shall commence until the temporary dewatering system is functional and accepted by the Construction Manager.
   2. Truck scale shall remain accessible at all times during construction except in coordination with Owner for specific shutdowns.
   3. Cake storage hopper shall remain accessible at all times during construction.
   4. Laydown area and dumpster placement shall be coordinated with Owner during pre-construction meeting before any mobilization activities commence.
   5. All equipment and material demolition, removal, and installation in upper level of Solids Processing Center shall occur through existing roll up door on south side of building. Contractor responsible for design and installation of any false work required for these activities.
   6. Temporary structural reinforcement of the upper level slab in the Solids Processing Center is required for existing belt filter press removal and new screw press installation. Modifications to the temporary structural reinforcement shown in Contract Documents is not allowed without written consent of Owner and Engineer. Modifications to the roof structure of the Solids Processing Center are not permitted.
   7. The existing belt filter press feed pumps shall remain in service to feed the temporary dewatering system. The screw press feed pumps and piping shall be installed prior to decommissioning the belt filter press feed pumps. Electrical components being reused by new pumps shall be replaced one at a time to ensure at least one feed pump is available at all times. Sludge dewatering system operation with a single feed pump is limited to 24 hours.
   8. PLC panel 72LCP0101 shall be installed prior to new screw press feed pumps, biosolids day tank level transmitter, and sludge blend tank level transmitter.
   9. Any shutdown of the existing ventilation equipment for ductwork modifications requires installation of temporary ventilation equipment to maintain airflows in the impacted space(s).

10. The odor control system operation shall be maintained throughout construction. Modifications to existing odor control ducts shall be performed while system is online.
11. Any shutdown of the sludge dewatering system, including but not limited to belt filter press feed piping, is limited to 24 hours in duration.
12. Coordination with temporary dewatering system (See Section 46 71 01).
    a. Temporary dewatering system, including piping, dewatering equipment, and dewatered cake conveyor, shall be installed prior to shutdown of existing sludge dewatering system.
    b. Install temporary local control station with HMI in biosolids storage bay as part of temporary dewatering system.
    c. Temporary dewatering system shall be started up and operational for 10 consecutive days prior to commencement of existing dewatering equipment demolition. The Owner may elect to release demolition of one existing belt filter press ahead of the 10 day period and will only do so in writing.
    d. Temporary dewatering system shall remain operational until the first new screw press is installed, new screw press feed pumps are installed, and the new sludge dewatering system startup, testing, and commissioning phase is complete.
    e. Temporary dewatering screw press shall then be relocated to its final location in the upper level of the Solids Processing Center. Final startup, testing, and commissioning of the entire system shall then occur.
    f. Temporary piping, appurtenances, local control station, and platform shall then be removed. Any surface repair in biosolids storage bay shall occur after removal of all temporary dewatering system provisions.

B. Process upgrades and maintenance work are on-going activities throughout the plant. Work activities of others that may conflict with Work activities under this Contract will be coordinated by the Owner. Any situation that may disrupt a system process of Work activity shall be immediately brought to the attention of the Owner.

C. Planned Outages:
    1. An outage is defined as taking out of service any process, or component of a process, including utility and control systems. Operating processes, systems, individual equipment items or controls shall be isolated, dewatered, decommissioned, de-energized, or depressurized only by the plant operations staff.
    2. The Owner shall have the right to cancel or terminate a scheduled outage when the potential for a safety hazard or a compromise of plant processes exists. If requested by the Owner, the Contractor shall send a representative to meet with plant operations and the Owner to plan activities during the requested outage.
    3. Outages shall not be scheduled for Fridays or weekends without prior approval of the Owner. Where multiple outages are required for the same system, a subsequent outage shall not occur sooner than seven calendar days following completion of the prior outage and the system returned to normal operation without the approval of the Owner.

4. When an outage requires one or more pipe systems to be removed from service Owner forces will configure equipment and valves to remove the pipe(s) from service. The Contractor will be responsible for confirming with the Owner the precise limits of the piping that has been removed from service. The Contractor will also be responsible for draining the pipe(s), disposing of the contents, cleaning any spills, and preparing the out-of-service pipe for the work. Once the work is complete the Contractor will notify the Owner and Owner forces will configure equipment and valves such that the pipe system is returned to service.
5. Maximum outage durations are as specified below:
    a. Sludge dewatering system: 24 hours.
    b. Sludge blend tank: 72 hours.
    c. Biosolids day tank: 24 hours.

1.06 SEQUENCE AND SCHEDULE OF CONSTRUCTION

A. To permit continuous treatment of wastewater and compliance with effluent quality requirements, the construction schedule required in the General Conditions of the Contract Documents shall provide for the following overall project phases:
    1. Installation and commissioning of the temporary dewatering system consisting of one new dewatering screw press.
    2. Demolition associated with the project per Contract documents and installation of one dewatering screw press and all other equipment.
    3. Relocation of the second dewatering screw press from the temporary to permanent location.

PART 2 NOT USED

PART 3 NOT USED

END OF SECTION

SECTION 01 15 00

MITIGATING COMMUNITY IMPACTS

PART 1 GENERAL

1.01 PURPOSE

A. Owner is undertaking a multi-year project to replace the existing dewatering equipment at Salmon Creek Wastewater Treatment Plant. Land abutting the plant on the south and east has been developed into residential neighborhoods since any significant construction work has been performed at the plant. Owner is committed to mitigating the impacts of construction on these neighbors and the surrounding neighborhood.

B. This section provides requirements to minimize the impacts of traffic, noise, vibration, light, dust, and emissions from construction activities on the neighborhood. The intent of this section is to reduce or eliminate impacts due to construction to the extent possible to avoid complaints from the neighbors to the Owner.

C. Requirements of this section may be more stringent than applicable county, state, or federal laws, codes, regulations, ordinances, or guidelines. If the requirements of other sections conflict with requirements of this section, then this section shall take precedence.

1.02 ENFORCEMENT

A. Contractor is responsible for ensuring the requirements of this section are met implemented by workers on Site, any subcontractors, suppliers, vendors, or any others engaged in the Work or traveling to Site because of the Work. When necessary Contractor shall take corrective action including stopping the Work, changing Work means and methods, and removing workers, subcontractors, suppliers, vendors, or any others engaged in Work from Site.

B. In the event the Contractor should not comply with the requirements of this section the Owner, through the RPR, has the authority to take appropriate actions to enforce the requirements of this section. This includes, but is not limited to, stopping work that is creating the impact, banning any person or subcontractor from the Site, or other action as the RPR deems necessary. Contractor shall make no claim for additional time or cost because RPR has taken actions to enforce this section as long as those actions are reasonable.

C. Requirements of this section may be subjective and up to the judgement of Owner's Resident Project Representative. Contractor shall immediately comply with any directions given by RPR to enforce the requirements of this plan. Contractor may request reconsideration of the direction only after eliminating the impact.

D. Owner will coordinate with the Clark County Sheriff for enforcement of traffic regulations on the public roads. Owner will coordinate with other departments and governmental agencies if needed to enforce requirements of this section.

1.03 REFERENCES

A. The following is a list of standards which are applicable to the Work of this section:
   1. Clark County Washington Code, Chapter 9.14 Public Disturbance Noise.
   2. State of Washington, Chapter 173. 60 WAC Maximum Environmental Noise Levels.

1.04 SUBMITTALS

A. Informational Submittals:
   1. Traffic, Haul Routes, and Parking Plan: Plan shall include how Contractor will communicate this plan to workers on the Site, any subcontractors, suppliers, vendors, or any others engaged in the Work or traveling to the Site because of the Work so they are aware of and comply with this plan at all times. Include training materials to be used.
   2. Construction Noise Mitigation Plan: Plan shall include how Contractor will comply with requirements of this section. Plan shall include how Contractor will communicate this plan to workers on the Site, any subcontractors, suppliers, vendors, or any others engaged in the Work or traveling to the Site because of the Work so they are aware of and comply with this plan at all times. Include training materials to be used.

PART 2 NOT USED

PART 3 EXECUTION

3.01 WORK HOURS

A. Normal hours of work are limited to 7:00 a.m. to 7:00 p.m. on Monday through Friday.

B. Allowable hours of work associated with shutdowns, bypass, or other constraints are described in Section 01 12 16, Work Sequence.

C. Nighttime work outside of the normal work hours shall be limited to those activities that must be completed at night to maintain plant operations, emergency repair activities, or work on the interior of the structures.

D. Approval of Owner is required for any work scheduled outside of normal work hours. Contractor shall make a written request at least 24 hours ahead of time and provide justification for why the work must be done outside of normal work hours.

E. Limitation on hours of work applies to the actual performance of construction work activities and preparing for construction activities. Preparing for construction activities includes any activity that creates construction traffic on McCann Road, noise, vibration, light, dust and emissions. starting equipment prior to actual commencement of construction to “warm up” engines, setting up for concrete pumping, haul trucks traveling on McCann Road, or arriving onsite prior to the start time of normal hours of work, or equipment maintenance and fueling before or after a shift.

F. Limitation on hours of work does not apply to the Contractor’s office administrative work that does not cause traffic, noise, vibration, light, dust and emissions, planning, supervision, or other administrative activities that typically occur indoors or do not generate noise or other nuisances.

3.02 TRAFFIC, HAUL ROUTES, AND PARKING

A. Vehicle access to the SCTP site is via NW McCann Road. This road traverses residential neighborhoods surrounding the SCTP. Contractor shall provide traffic safety training for personnel accessing the Project Site and require the same of all subcontractor personnel accessing the Project Site. NW McCann Road is equipped with traffic calming devices.

B. Supplement to this section shows the allowable route for all vehicle traffic to the Site. Contractor shall require that workers on the Site, any subcontractors, suppliers, vendors, or any others engaged in the Work use the route shown in this attachment.

C. Contractor shall enforce a speed limit of 20 mph for all employee, visitors, deliveries and any other traffic on the access road from the intersection of NW 142nd Street to the plant. Contractor's workers shall observe a speed limit inside plant gate of 5 mph.

D. Material and equipment shall be unloaded on SCTP property in areas designated for Contractor's use. Contractor shall not block access by neighbors to NW McCann Road at any time.

E. Contractor shall schedule material deliveries and other trucks so they do not travel on NW McCann Road between NW 36th Avenue and the plant Site before 7:00 a.m. or after 7:00 p.m. This includes dump trucks, concrete delivery trucks, concrete pump trucks, semi-trailer trucks, flatbed trucks, and any other large vehicles that might cause noise, vibration, or other disturbance. Onsite activities that rely on these delivery trucks shall be scheduled to start later and/or finish earlier in the day to allow delivery trucks to travel to and from the Site within the allowable time period.

F. Speed bumps installed in the pavement on NW McCann Road are a source of noise and vibration complaints when trucks and trailers pass over them. Contractor's traffic plan shall describe what steps will be taken to reduce these complaints. This shall include reduced speed for truck/trailer combinations traveling on NW McCann Road to below the posted speed limit if necessary.

G. Contractor shall identify a location outside of the residential area for trucks that are arriving before 7:00 a.m. to park until they can travel to the Site. Contractor shall communicate this staging Site to subcontractors, suppliers, and any others that will be delivering material to the Site.

H. Parking for construction workers shall be either at the SCTP Site in areas designated for the Contractor's use or at an offsite location provided by Contractor. The existing parking lots around the Administration Building shall not be used for any construction related parking.

3.03 NOISE AND VIBRATION

A. Contractor shall consider noise when selecting construction equipment and methods of work, consider alternative construction methods for activities that are known to be exceptionally noisy such as pile driving or demolition, and incorporate noise control measures when executing any work.

B. Engine driven portable equipment, such as generators, self-priming pumps, or compressors shall be located as far from residential receptors as practicable and placed to make use of existing buildings as screening. Any equipment that will run continuously or run overnight shall have residential grade mufflers and sound attenuating enclosures meeting County noise requirements for night-time residential areas.

C. Impact and vibratory piledriving will only be allowed on the plant Site when Contractor can demonstrate there is no other means to accomplish the Work.

D. Equipment that uses a two-stroke diesel engine will not be allowed to be used onsite at any time.

E. Any construction equipment that is to be used onsite and has an audible warning shall utilize ambient noise sensing, white noise generating technology for backup or movement alarms. Monotone backup or movement alarms shall be immediately changed or disabled. If Contractor chooses to disable an audible alarm, alternative methods to warn employees, as allowed by OSHA regulations, shall be used. Aerial lifts and other equipment that have movement alarms shall be operated so the alarm is sounding only when the piece of equipment is in motion.

F. Construction equipment shall not be started before 7:00 a.m. Any activity that generates noise outside of any building or enclosure shall not be started before 7:00 a.m. These restrictions do not apply to work that is specified to occur outside of normal working hours such as the tie in of new work to existing facilities.

G. Equipment shall not be allowed to sit idling for more than 5 minutes. Equipment that is not in use for more than 5 minutes shall be shut down until needed.

H. Electronic devices that amplify sound, such as a “boom box” or portable radio, will not be allowed to be operated at a sound level that is audible outside of the immediate work area or a distance of 25 feet, whichever is less.

I. Contractor vehicles or privately-owned vehicles used by contractor staff that are excessively loud as determined by the RPR will be prohibited from the Site. This may include vehicles that might otherwise meet noise regulations but are found by the Owner to be causing a disturbance.

J. Contractor shall not allow any unmuffled exhaust brakes to be used on NW McCann Road, plant access road, or plant Site.

3.04 LIGHTING

A. Contractors may use temporary lighting such as portable lights or lights mounted on equipment during winter months when Work will be starting or ending outside of daylight hours. Contractor shall place the temporary lighting to focus the light on Site and reduce the light glare on the surrounding neighbors.

B. Temporary lighting shall be turned off at the end of the work shift unless required for the safety of plant staff.

3.05 DUST AND EMISSIONS

A. All off road construction diesel equipment operating on Site shall use ultra-low sulfur fuel, be in good working order, and shall comply with current emissions standards as applicable to new and used off-road diesel equipment and fuel.

B. Contractor shall prevent mud and debris from being tracked onto the plant access road or the public roads by vehicles and trucks leaving the treatment plant Site. Haul trucks leaving the Site shall be cleaned of any material that might fall off as the truck is moving.

C. Contractor shall immediately clean up debris that has fallen from its haul trucks on NW McCann Road. The traffic calming speed humps have caused material to fall from improperly loaded trucks in the past.

D. Contractor shall sweep the plant Site pavement, plant access road, and public roads if tracking occurs. This includes NW McCann Road to the intersection with NW 36th Avenue. Contractor shall sweep the plant Site pavement that is used by any construction vehicle or equipment daily if necessary because of Contractor activities. Use vacuum equipped sweeping equipment to reduce dust.

3.06 SUPPLEMENT

A. The supplement listed below, following “End of Section,” is a part of this specification:
   1. Traffic Access to SCTP.

END OF SECTION

TRAFFIC ACCESS TO SCTP

SECTION 01 26 00

CONTRACT MODIFICATION PROCEDURES

PART 1 GENERAL

1.01 SCOPE

A. This section specifies the procedures that will be used to administer documents that will be used during construction of the Project to provide information or make changes to the Work. This section only supplements the requirements of the General Conditions. It does not change any of those requirements. Documents that are covered by this section include:
   1. Conformed Documents.
   2. Requests for Information.
   3. Request for Proposal.
   4. Work Change Directive (WCD).
   5. Field Order (FO).
   6. Contractor Requested Change (CRC).
   7. Claim.
   8. Change Order.

B. All potential changes to the Contract Price or Contract Times will be administered using the Change Control Form included as a Supplement at the end of this section as described below.

C. Documents required by this section will be transmitted by the Contractor to the Engineer electronically using an Internet-based project management software package. Access to and the use of this site will be provided at no cost to the Contractor. Documents will be returned to the Contractor electronically using the same site.

1.02 DESCRIPTION

A. Conformed Documents: The Contract Drawings and Specifications may be revised by the Engineer to reflect the changes made by Addendum during the Bid period. This will be considered the Conformed Documents. The Owner will provide copies of these Conformed Documents to the Contractor in accordance with the General Conditions, Paragraph 2.02, Copies of Documents. The Contractor shall inspect them to confirm they accurately reflect the changes made by Addendum and will notify the Engineer if any discrepancies are found. These Conformed Documents are being provided to assist the Contractor in ensuring the documents used during construction reflect the changes made during the bidding period. The Conformed Documents do not change or amend the Contract and are not considered Contract Documents. The Contract Documents as defined by the General Conditions will be used to resolve any dispute that may arise during the course of the Project.

B. Request for Information: The Contractor may request interpretation or clarification of the Contract Documents during the construction of the Project. These requests will be made using the Request for Information (RFI) form included as a supplement at the end of this section. This RFI form will also be used when the Owner, Resident Project Representative (RPR), and Engineer need information from the Contractor. The request section of the form will be filled out by the party initiating the request. It will be sent to the RPR. The RPR will distribute it to the appropriate party for a written response. The written response will be returned to the RPR who will distribute copies. If the response to an RFI causes a change to the contract the RPR shall be notified. If the RPR concurs a Change Control Form will be issued requesting a proposal for the change from the Contractor. A copy of the Change Control (CC) Form is included as a supplement to this section.

C. Request for Proposal: As described below.

D. Work Change Directive: As described below.

E. Field Order: A Field Order (FO) is defined in the General Conditions. Field Orders will be prepared by the RPR using the CC Form and will be issued to the Contractor through by the RPR. A Field Order is to be used for supplemental instructions and minor changes not involving a change in the Contract Price or Contract Time. The Contractor shall promptly notify the RPR if he believes the minor changes covered by the FO will involve a change to the Contract Price or Contract Times.

F. Contractor Requested Change: If the Contractor wants to propose the use of a Substitute Item, as defined in the General Conditions, or to suggest a change to the contract it shall be done using the CC Form submitted with the documentation required by General Conditions, Paragraph 7.05 for Substitute Items. The request will be issued to the RPR and will be assigned a CC Form reference number. The Contractor shall provide documentation describing the change and the cost or credit being proposed. The RPR, Engineer and Owner will consider the changes being suggested and will provide a written decision to the Contractor.

1.03 PROPOSAL REQUESTS

A. Owner may, in anticipation of ordering an addition, deletion, or revision to the Work, request Contractor to prepare a detailed proposal of cost and times to perform contemplated change.

B. Proposal request will include reference number for tracking purposes and detailed description of and reason for proposed change, and such additional information as appropriate and as may be required for Contractor to accurately estimate cost and time impact on Project.

C. Proposal request is for information only; Contractor is neither authorized to execute proposed change nor to stop Work in progress as result of such request.

D. Contractor's written proposal shall be transmitted to Engineer promptly, but not later than 14 days after Contractor's receipt of Owner's written request. Proposal shall remain firm for a maximum period of 45 days after receipt by Engineer.

E. Owner's request for proposal and Contractor's response shall not be considered a Change Order Proposal or Claim as defined in the Contract Documents.

1.04 CLAIMS

A. Claim: A Claim is defined in the General Conditions. Claims can be prepared by either the Owner or the Contractor and will be delivered to the Resident Project Representative (RPR) using the Change Control (CC) Form. The RPR will assign a reference number to the CC Form.

B. Include, at a minimum:
   1. Specific references, including (i) Drawing numbers, (ii) Specification section and article/paragraph number, and (iii) Submittal type, Submittal number, date reviewed, Engineer's comment, as applicable, with appropriate attachments.
   2. Stipulated facts and pertinent documents, including photographs and statements.
   3. Interpretations relied upon.
   4. Description of (i) nature and extent of Claim, (ii) who or what caused the situation, (iii) impact to the Work and work of others, and (iv) discussion of claimant's justification for requesting a change to price or times or both.
   5. Estimated adjustment in price claimant believes it is entitled to with full documentation and justification.
   6. Requested Change in Contract Times: Include at least (i) Progress Schedule documentation showing logic diagram for request, (ii) documentation that float times available for Work have been used, and (iii) revised activity logic with durations including sub-network logic revisions, duration changes, and other interrelated schedule impacts, as appropriate.
   7. Documentation as may be necessary as set forth below for Work Change Directive, and as Engineer may otherwise require.

1.05 WORK CHANGE DIRECTIVES

A. Procedures:
   1. Engineer will:
      a. Initiate, including a description of the Work involved and any attachments.
      b. Affix signature, demonstrating Engineer's recommendation.
      c. Transmit one original to Owner for authorization.
   2. Owner will:
      a. Affix signature, demonstrating approval of the changes involved.
      b. Return one copy to Engineer, who will retain one copy; send one copy to the Resident Project Representative or other field representative; and forward one copy to Contractor.
   3. Upon completion of Work covered by the Work Change Directive or when final Contract Times and Contract Price are determined, Contractor shall submit documentation for inclusion in a Change Order.
   4. Contractor's documentation shall include but not be limited to:
      a. Appropriately detailed records of Work performed to enable determination of value of the Work.
      b. Full information required to substantiate resulting change in Contract Times and Contract Price for Work. On request of Engineer, provide additional data necessary to support documentation.

c. Support data for Work performed on a unit price or Cost of the Work basis with additional information such as:
    1) Dates Work was performed, and by whom.
    2) Time records, wage rates paid, and equipment rental rates.
    3) Invoices and receipts for materials, equipment, and subcontracts, all similarly documented.

B. Effective Date of Work Change Directive: Date of signature by Owner, unless otherwise indicated thereon.

1.06 CHANGE ORDERS

A. Procedure:
1. Engineer will prepare one original of proposed Change Order and transmit such with Engineer's written recommendation and request to Contractor for signature.
2. Contractor shall, upon receipt, either: (i) promptly sign original, retaining one copy for its file, and return original to Engineer for Owner's signature, or (ii) return unsigned original with written justification for not executing Change Order.
3. Engineer will, upon receipt of Contractor signed original, promptly forward Engineer's written recommendation and partially executed original for Owner's signature, or if Contractor fails to execute the Change Order, Engineer will promptly so notify Owner and transmit Contractor's justification to Owner.
4. Upon receipt of Contractor-executed Change Order, Owner will promptly either:
    a. Execute Change Order, retaining original for its file and returning one copy to Engineer.
    b. Return to Engineer unsigned copies with written justification for not executing Change Order.
5. Upon receipt of Owner-executed Change Order, Engineer will transmit one copy to Contractor, one copy to Resident Project Representative or other field representative, and retain one copy, or if Owner fails to execute the Change Order, Engineer will promptly so notify Contractor and transmit Owner's justification to Contractor.
6. Upon receipt of Owner-executed Change Order, Contractor shall:
    a. Perform Work covered by Change Order.
    b. Revise Schedule of Values to adjust Contract Price and submit with next Application for Payment.
    c. Revise Progress Schedule to reflect changes in Contract Times, if any, and to adjust times for other items of Work affected by change.
    d. Enter changes in Project record documents after completion of change related Work.

B. In signing a Change Order, Owner and Contractor acknowledge and agree that:
1. Stipulated compensation (Contract Price or Contract Times, or both) set forth includes payment for (i) the Cost of the Work covered by the Change Order, (ii) Contractor's fee for overhead and profit, (iii) interruption of Progress Schedule, (iv) delay and impact, including cumulative impact, on other Work under the Contract Documents, and (v) extended overheads.

2. Change Order constitutes full mutual accord and satisfaction for the change to the Work.
3. Unless otherwise stated in the Change Order, all requirements of the original Contract Documents apply to the Work covered by the Change Order.

1.07 COST OF THE WORK

A. In determining the supplemental costs allowed for rental equipment and machinery in the General Conditions, the following will apply.

B. Rental of construction equipment and machinery and the parts thereof having a replacement value in excess of $1,000, whether owned by Contractor or rented or leased from others, shall meet the following requirements:
   1. Full rental costs for leased equipment shall not exceed rates listed in the equipment rental rates submitted by Contract, as adjusted to the regional area of the Project. Owned equipment costs shall not exceed the single shift rates established in the equipment rental rates submitted by Contractor.
   2. Rates shall apply to equipment in good working condition. Equipment not in good condition, or larger than required, may be rejected by Engineer, or accepted at reduced rates.
   3. Leased Equipment:
      a. For equipment leased or rented in arm's length transactions from outside vendors, maximum rates shall be determined by the following actual usage/payment category:
         1) Less than 8 Hours: Hourly rate.
         2) 8 or More Hours but Less than 7 Days: Daily rate.
         3) 7 or More Days but Less than 30 Days: Weekly rate.
         4) 30 days or More: Monthly rate.
   4. Arm's length rental and lease transactions are those in which the firm involved in the rental or lease of equipment is not associated with, owned by, have common management, directorship, facilities and/or stockholders with the firm renting the equipment.
   5. Financial arrangements associated with rental and lease transactions that provide Contractor remuneration or discounts not visible to the Owner must be disclosed and integrated with charged rates.
   6. Leased Equipment in Use: Actual equipment use time documented by Engineer shall be the basis that equipment was on and utilized at the Project Site. In addition to the leasing rate above, equipment operational costs shall be paid at the estimated hourly operating cost rate set forth in the equipment rental rates submitted by Contractor if not already included in the lease rate. Hours of operation shall be based upon actual equipment usage to the nearest quarter hour, as recorded by Engineer.
   7. Leased Equipment, When Idle (Standby): Idle or standby equipment is equipment onsite or in transit to and from the Work Site and necessary to perform the Work under the modification, but not in actual use. Idle equipment time, as documented by Engineer, shall be paid at the leasing rate determined above, excluding operational costs.

8. Owned and Other Equipment in Use: Equipment rates for owned equipment or equipment provided in other than arm's length transaction shall not exceed the single shift total hourly costs rate developed in accordance with the equipment rental rates submitted by Contractor and as modified herein for multiple shifts. This total hourly rate will be paid for each hour the equipment actually performs work. Hours of operation shall be based upon actual equipment usage as recorded by Engineer. This rate shall represent payment in full for Contractor's direct costs.
9. Owned and Other Equipment, When Idle (Standby): Equipment necessary to be onsite to perform the Work on single shift operations, but not utilized, shall be paid for at the ownership hourly expense rate, provided its presence and necessity onsite has been documented by Engineer. Payment for idle time of portions of a normal workday, in conjunction with original contract Work, will not be allowed. In no event shall idle time claimed in a day for a particular piece of equipment exceed the normal Work or shift schedule established for the Project. It is agreed that this rate shall represent payment in full for Contractor's direct costs. When Engineer determines that the equipment is not needed to continuously remain at the Work Site, payment will be limited to actual hours in use.
10. Owned and Other Equipment, Multiple Shifts: For multiple shift operations, the single shift total hourly costs rate shall apply to the operating equipment during the first shift. For subsequent shifts, up to two in a 24 hour day, operating rate shall be the sum of the total hourly operating cost and 60 percent of the ownership and overhaul expense. Payment for idle or standby time for second and third shifts shall be 20 percent of the ownership and overhaul expense.
11. When necessary to obtain owned equipment from sources beyond the Project limits, the actual cost to transfer equipment to the Site and return it to its original location will be allowed as an additional item of expense. Move-in and move-out allowances will not be made for equipment brought to the Project if the equipment is also used on original Contract or related Work.
12. If the move-out destination is not to the original location, payment for move-out will not exceed payment for move-in.
13. If move is made by common carrier, the allowance will be the amount paid for the freight. If equipment is hauled with Contractor's own forces, rental will be allowed for the hauling unit plus the hauling unit operator's wage. If equipment is transferred under its own power, the rental will be 75 percent of the appropriate total hourly costs for the equipment, without attachments, plus the equipment operator's wage.
14. Charges for time utilized in servicing equipment to ready it for use prior to moving and similar charges will not be allowed.
15. When a breakdown occurs on any piece of owned equipment, payment shall cease for that equipment and any other owned equipment idled by the breakdown.
16. If any part of the Work is shut down by Owner, standby time will be paid during nonoperating hours if diversion of equipment to other Work is not practicable. Engineer reserves the right to cease standby time payment when an extended shutdown is anticipated.
17. If a rate has not been established in the equipment rental rates submitted by Contractor for owned equipment, Contractor may:
    a. If approved by Engineer, use the rate of the most similar model found, considering such characteristics as manufacturer, capacity, horsepower, age, and fuel type, or
    b. Request Engineer to establish a rate.

1.08 FIELD ORDER

A. Engineer will issue Field Orders, with three copies to Contractor.

B. Effective date of the Field Order shall be the date of signature by Engineer, unless otherwise indicated thereon.

C. Contractor shall acknowledge receipt by signing and returning one copy to Engineer.

D. Field Orders will be incorporated into subsequent Change Orders, as a no-cost change to the Contract.

PART 2 NOT USED

PART 3 NOT USED

END OF SECTION

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SECTION 01 29 00

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies requirements for determining Contractor payments.

1.02 SCHEDULE OF VALUES

A. The Contractor shall submit a detailed Schedule of Values for the Work of the Contract, including quantities and unit prices aggregating the Lump Sum Contract Price, for approval in accordance with Article 14 of the General Conditions - Section 00 72 00.

B. If any unit price in the approved Schedule of Values requires that the said unit price cover and be considered compensation for certain work or material essential to the item, this same work or material will not also be measured or paid for under any other pay item which may appear elsewhere in the Specifications.
   1. Schedule shall be listed in tabular form and include the following:
      a. Schedule item numbers.
      b. Schedule item descriptions.
      c. Unit cost description, bid quantity, bid unit cost, bid total amount per item.
      d. Estimated quantities for previous period, current application period, and total to date per item.
      e. Amount previously billed, amount billed this period, total amount billed and percent completion per item.
   2. Include a proportional amount of CONTRACTOR's overhead and profit for each item.
   3. If progress payments will be requested for materials or equipment stored either on or off site, show the following:
      a. Cost of the materials, delivered and unloaded, with taxes paid.
      b. Total installed value.

C. Upon request, submit documentation to support the values assigned to the Work. Sum of all values shall equal the TOTAL BID.

D. Schedule will be reviewed by the Engineer.
   1. Upon approval by the Engineer, the schedule will become the official reporting form upon which Application Payment will be calculated.
   2. Provide additional breakdown of bid item costs if requested by the Engineer.
   3. Failure to submit this schedule or receive approval may result in withholding of approval of Application for Payment.

1.03 MEASUREMENT OF QUANTITIES

A. Construction Work completed under the Contract shall be measured according to the standards of weights and measures recognized by the U.S. Bureau of Standards.

B. The method of measurement and computations to be used in determination of quantities of material furnished and of work performed under the Contract will be those methods generally recognized as conforming to good engineering practice.

C. Measurement for area computations will be made on the surface. Pay measurements for area computations will not exceed the neat dimensions indicated on the Contract Drawings, unless otherwise ordered in writing by the Construction Manager.

D. Structures will be measured according to neat lines indicated on the Contract Drawings or as altered to fit field conditions. No payment will be made for length, width, or depth, in excess of that indicated on the Contract Drawings or specified for any construction, unless otherwise approved by the Construction Manager in writing.

E. Items which are measured by the linear foot, such as pipe, will be measured parallel to the base or foundation upon which such items are placed.

F. In computing volumes of excavation (when part of a unit price project component), the average end area method, based on horizontal measurements, or other acceptable methods, will be used. If the excavation is incidental or part of a lump sum bid item, no additional payments will be made.

G. The term "each", when used as an item of payment, will mean complete payment for the Work described in the payment item in the Contract Documents. The work described is not intended to be exhaustive.

H. The term "lump sum", when used as an item of payment, will mean complete payment for the Work described in the Contract Documents, including all necessary fittings and accessories, and required testing completed.

I. The term “complete in place”, means the completion of the Contract item or portions thereof as determined by the Construction Manager including the furnishing of all materials, equipment, tools, labor, and work incident thereto, unless otherwise specified.

J. Contingent unit price items work is work not shown on the Contract Drawings and shall be performed only at the direction of the Construction Manager.

1.04 SCOPE OF PAYMENT

A. The Contractor will receive and accept compensation provided for in the Contract Documents as full payment for furnishing materials, labor, tools, and equipment and for performing Work under the Contract in a complete and acceptable manner and for all risk, loss, damage, or expense of whatever character arising out of the nature of the Work or the execution thereof, subject to the provisions of the General Conditions.

B. Mobilization:

1. When included in the Contractor's Schedule of Values, mobilization shall consist of the assembling and setting up for the project, the Contractor's necessary general plant, including Contractor's offices, Construction Manager's field office, shops, plants, storage areas, sanitary and any other facilities, as required by the Specifications and special requirements of the Contract, as well as by local or State law and regulation. The determination of the adequacy of the Contractor's facilities, except as noted above, shall be made by the Contractor. The cost of required insurance and bonds and/or any other initial expense required for the start of Work will be included in this item. The Contractor shall furnish all materials and furnishings required, and these materials and furnishings will not be considered as part of the other various items of the completed Contract.
2. No additional payment will be made for demobilization. Costs for demobilization shall be included in this item.
3. Mobilization will be paid at the approved lump sum price for mobilization and demobilization included in the Contractor's Schedule of Values. The lump sum price for this item shall be payable to the Contractor in accordance with the following schedule:
    a. On the first monthly application for Progress Payment, the amount approved for mobilization or three percent of the total Contract Price, excluding the price for this item, whichever is less, will be paid.
    b. Whenever Work performed equals 25 percent of the total Contract Price excluding the approved price for this item, any remaining amount for mobilization, or an additional two percent of the total Contract Price excluding the approved price for this item, whichever is less, will be paid.
    c. Upon completion of the Project, any remaining amount approved for mobilization will be paid.

C. Request for Payment Package

1. Contractor will provide CPM schedule update along with monthly application for payment.
2. Contractor will include updated Apprenticeship Utilization Report along with monthly application for payment.

PART 2 NOT USED

PART 3 NOT USED

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SECTION 01 32 16

CONSTRUCTION PROGRESS SCHEDULE

PART 1 GENERAL

1.01 SCOPE

A. This section specifies the procedures for preparing, updating, and revising the construction schedule used for planning and managing construction activities. The schedule provides a basis for determining the progress status of the project relative to the completion time, specific dates, and for determining the acceptability of the Contractor's progress payment estimates. The schedule provides the basis for evaluating time impacts in the context of the status of the project.

1.02 DESCRIPTION

A. The Contractor shall prepare a time scale network schedule using a critical path method. A general guide for preparing such a schedule is contained in "The Use of CPM in Construction, a Manual for Contractors," published by the Associated General Contractors of America.

B. The schedule shall depict all significant administrative activities, activities for the review of submittals, procurement activities, construction activities and all items of work listed in the breakdown of contract prices submitted by the Contractor in accordance with the General Conditions of the Contract Documents.

1. Show activities including, but not limited to the following:
    a. Notice to Proceed.
    b. Permits.
    c. Submittals, with review time. Contractor may use Schedule of Submittals specified in Section 01 33 00.
    d. Early procurement activities for long lead equipment and materials.
    e. Initial Site work.
    f. Earthwork.
    g. Specified Work sequences and construction constraints.
    h. Contract Milestone and Completion Dates.
    i. Major structural, mechanical, equipment, electrical, architectural, and instrumentation and control Work.
    j. System startup summary.
    k. System commissioning period.
    l. Project close-out summary.
    m. Demobilization summary.
2. The dependencies between activities shall be indicated so that it may be established what effect the progress of any one activity has on the schedule.
3. The Contractor shall incorporate the plans and anticipated production rates of any subcontractors in the schedule.

C. Completion time and all specific dates given in the Contract Documents, and sequencing requirements described in Section 01 12 16, shall be shown on the schedule. Activities making up the critical path shall be identified. The critical path shall be defined as the longest path.

D. No activity on the schedule shall have a duration longer than 21 calendar days / 15 working days unless approved by the Construction Manager. Activities comprising only fabrication and delivery may extend for more than 21 calendar days / 15 working days. Activities which exceed these limits shall be divided into more detailed components. The scheduled duration of each activity shall be assigned to work calendars that reasonably depict the time periods that work can productively take place during the normal 40 hour work week and that include any applicable restrictions as defined in the Contract Documents, including but not limited to allowances made for legal holidays and normal weather conditions.

E. Float, which may exist for a given activity, milestone, or the project, is not the exclusive property of any party to this Contract. Float may be consumed by any party without penalty or damage to any other party (or parties) to the contract. The Contractor shall not employ any techniques to artificially reduce the amount of float.

1.03 SUBMITTAL PROCEDURES

A. Within 21 calendar days / 15 working days after the date of the Notice to Proceed or at least 5 working days prior to the pre-construction conference (whichever occurs first), the Contractor shall complete a construction schedule conforming to paragraph 1.02 Description and representing in detail all planned procurement and on-site construction activities.

B. The Contractor shall utilize a scheduling software that is acceptable to the District's Construction Manager (i.e. Primavera or Microsoft Project). Upon completion of the schedule, the Contractor shall submit to the Construction Manager in accordance with Section 01 33 00.

C. Within 14 calendar days / 10 working days after receipt of the submittal, the Construction Manager shall review the submitted schedule and return to the Contractor. If the Construction Manager finds that the submitted schedule does not comply with specified requirements, the corrective revisions will be noted on the submittal copy, returned to the Contractor for corrections and resubmitted as specified in Section 01 33 00.

D. All schedule submittals shall include:
   1. A narrative detailing all pertinent information related to the schedule, including:
      a. A description of any assumptions used in the development of the schedule;
      b. A description of any potential conflicts or delays that may impact any activity in the schedule;
      c. A description of the amount of labor resources that will be employed on the project;
      d. A description of the progress that has been attained during an update period (for an update submittal);

e. Statements explaining why the start or finish date of an activity has varied from the baseline or a previous update (for an update submittal); and

f. Other information or explanation of a schedule submittal that may be required by the Construction Manager.

2. A .xer file (Primavera) or .mpp file (Microsoft Project) for the use of the Construction Manager; and

3. Other files or reports that may be requested by the Construction Manager.

E. These reports will serve as the basis for the Contractor's progress payment requests. . The Construction Manager may withhold payment if the Contractor does not submit a schedule in accordance with the requirement of this specification. Acceptance of any schedule submittal by the Construction Manager shall only mean that it is in reasonable compliance with the requirements of this Section and does not warrant its accuracy. Acceptance of any schedule submittal shall not relieve the Contractor of responsibility for the adequacy of the schedule and for managing all construction activities including those of subcontractors and suppliers.

1.04 SCHEDULE REVISIONS

A. As the project progresses, it is anticipated that the Contractor will need to revise the schedule to incorporated changes to plan, added work, budget changes, or for other reasons. The Contractor shall give written notification of any change prior to incorporating that change into the schedule. All changes in logic, activity duration, or the budgeted cost assigned to an activity shall be explained in detail in the narrative.

B. Changes in timing for activities which are not on the critical path may be modified with written agreement of the Contractor and Construction Manager.

C. A change affecting the contract value of any activity, the timing of any activity on the critical path, the completion time and specific dates in the Contract Documents and work sequencing (Section 01 12 16) may be made only in accordance with applicable provisions of the General Conditions of the Contract Documents.

1.05 PROJECT STATUS UPDATE

A. The Contractor shall provide an updated schedule with every pay estimate and/or no less than once a month as indicated in Section 01 31 19. The update shall incorporate the progress that was made during the pay period or update period and the costs that the Contractor intends to bill as part of the progress payment request. The Contractor shall not change the original duration of an activity without the approval of the Construction Manager.

B. Updated Progress Schedule shall reflect:

1. Progress of Work to within 7 calendar days / 5 working days prior to submission.
2. Approved changes in Work scope and activities modified since previous submission.
3. Delays in Submittals or resubmittals, deliveries, or Work.
4. Adjusted or modified sequences of Work.

5. Other identifiable changes.
6. Revised projections of progress and completion.
7. Report of changed logic.

C. Produce detailed sub-schedules during Project, upon request of Owner or Engineer, to further define critical portions of the Work such as facility shutdowns.

D. The contractor shall include activities for delays and time impacts in the schedule. The schedule will serve as the basis for any potential request for additional time. Request for additional time shall be accompanied by and based on a Time Impact Analysis as described in AACE International Recommended Practice No. 52.

E. If Contractor fails to complete activity by its latest scheduled completion date and this Failure is anticipated to extend Contract Times (or Milestones), Contractor shall, within 7 calendar days / 5 working days of such failure, submit a written statement as to how Contractor intends to correct nonperformance and return to acceptable current Progress Schedule. Actions by Contractor to complete the Work within Contract Times (or Milestones) will not be justification for adjustment to Contract Price or Contract Times.

F. Narrative Progress Report:
   1. Format
      a. Organize same as Progress Schedule.
      b. Identify, on a cover letter, reporting period, date submitted, and name of author of report.
   2. Contents
      a. Number of days worked over the period, work force on hand, construction equipment on hand (including utility vehicles such as pickup trucks, maintenance vehicles, stake trucks).
      b. General progress of Work, including a listing of activities started and completed over the reporting period, mobilization/demobilization of subcontractors, and major milestones achieved.
      c. Contractor's plan for management of Site (e.g., lay down and staging areas, construction traffic), utilization of construction equipment, buildup of trade labor, and identification of potential Contract changes.
      d. Identification of new activities and sequences as a result of executed Contract changes.
      e. Documentation of weather conditions over the reporting period, and any resulting impacts to the work.
      f. Description of actual or potential delays, including related causes, and the steps taken or anticipated to mitigate their impact.
      g. Changes to activity logic.
      h. Changes to the critical path.
      i. Identification of, and accompanying reason for, any activities added or deleted since the last report.
      j. Steps taken to recover the schedule from Contractor-caused delays.

PART 2 NOT USED

PART 3 NOT USED

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SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes administrative and procedural requirements for submittals.

1.02 ADMINISTRATIVE REQUIREMENTS

A. General:
   1. Furnish submittal items as specified in the Contract Documents.
   2. Review submittal information to verify it is accurate and fulfills specified submittal requirements before submitting for review and comment.
   3. Edit submittal content to clearly indicate only those items, models, or series of equipment, which are being submitted for review. Cross out or otherwise obliterate extraneous materials.
   4. Ensure there is no conflict with other submittals and notify the Owner's Representative in each case where the submittal may affect the work of another contractor or the Owner.
   5. Coordinate submittals among subcontractors and suppliers including those submittals complying with unit responsibility requirements specified in the Contract Documents.
   6. For each submittal, certify field conditions, compliance with the Contract Documents, and review of the submittal prior to submitting for review.
   7. Designate the installation location within the facility, application, or intended purpose for each submittal item. Review comments are solely applicable to the circumstances designated in the submittal.
   8. Coordinate submittals with the work so that work will not be delayed. Coordinate and schedule different categories of submittals, so that one will not be delayed for lack of coordination with others.
   9. No extension of time will be allowed because of failure to properly schedule, coordinate or compile submittals.
   10. Submittals will be rejected for lack of legibility, lack of coordination, ambiguity, or are incomplete. Incomplete submittals will be returned without review.
   11. Do not proceed with work related to a submittal until the submittal process is complete. This requires that submittals for review and comment be returned to the Contractor stamped "No Exceptions Taken" or "Make Corrections Noted."
   12. If desired, authorize material or equipment suppliers to deal directly with the Owner's Representative regarding a submittal. Such dealings require written authorization from the Contractor and are limited to contract interpretations to clarify and expedite the work.

1.03 DEFINITITIONS

A. Action Submittals:
   1. Action Submittals content require review and response by the Owner's Representative before proceeding with incorporating the subject equipment, materials, or procedure into the work.
   2. Review comments on Action Submittals and perform subsequent actions based on the REVIEW ACTION requirements specified below.

B. Informational Submittals:
   1. Informational Submittals are examined to verify that the specified submittal contents have been furnished as specified.
   2. The Contractor's actions are not contingent on the disposition of review comments on Informational Submittals.
   3. Review comments on Informational Submittals and perform subsequent actions based on the REVIEW ACTION requirements specified below.

C. Closeout Submittals:
   1. Closeout Submittals consist of documentation that is not available for review at the time Action Submittals are submitted for review or documentation that is typically generated or furnished following incorporation of the equipment, materials, or procedure into the work. Closeout submittals include spare parts inventory listing, spare parts, extra stock materials, special tools and other materials or components that are furnished separate from the installed and completed work.
   2. Review comments on Closeout Submittals and perform the subsequent actions based on the REVIEW ACTION requirements specified below.

D. Samples:
   1. Samples include partial sections of components, cuts, or containers of materials, color range sets, and swatches showing color, texture and pattern.
   2. Samples may be Action or Informational submittals.

E. Mock-Ups:
   1. Mock-ups are scale representations of items to be constructed as part of the work as required in the Contract Documents.
   2. Mock-ups are Action Submittals.

F. Review Actions:
   1. The following definitions and actions are associated with the REVIEW ACTIONS DEFINED below:
      a. NO EXCEPTIONS TAKEN: If the review indicates that the material, equipment or work method complies with the Contract Documents, submittal will be marked "NO EXCEPTIONS TAKEN." Implement the work method or incorporate the material or equipment covered by the submittal.

b. MAKE CORRECTIONS NOTED: If the review indicates limited corrections are required, submittals will be marked "MAKE CORRECTIONS NOTED." Implement the work method or incorporate the material and equipment covered by the submittal in accordance with the noted corrections. Where submittal information will be incorporated in O&M data, provide a corrected copy.

c. AMEND AND RESUBMIT: If the review reveals that the submittal is insufficient or contains incorrect data, submittals will be marked "AMEND AND RESUBMIT." Do not undertake work until the submittal has been revised, resubmitted and returned marked either "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED".

d. REJECTED – SEE REMARKS: If the review indicates that the material, equipment, or work method does not comply with Contract Documents, the submittal will be marked "REJECTED - SEE REMARKS." Do not undertake the work covered by such submittals until a new submittal is made and returned marked either "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED" except at your own risk.

1.04 MASTER SUBMITTAL LIST

A. A minimum of five (5) business days following the Notice to Proceed, the Contractor will provide the Owner's Representative a Master Submittal List listing anticipated submittal requirements for the contract.

B. Contractor shall update the list as submittals are completed and transmit to the Owner's Representative. Provide updated list to Owner's Representative monthly.

C. Include the following as a minimum in the updated list:
   1. Submittal number.
   2. Date submitted.
   3. Requested time for return of comments.
   4. Special requests, if any, for that particular submittal.

PART 2 NOT USED

PART 3 EXECUTION

3.01 SUBMITTAL PROCEDURES

A. General:
   1. Owner's Representative will review submittal information and indicate a REVIEW ACTION. Review of submittals does not relieve the Contractor of responsibility for performance of the work according to the Contract Documents.
   2. Coordinate submittal transmittal for related elements of work to ensure the submittals are processed as needed to meet the intent of the work and that delays are minimized.
   3. Submittal review activity will be prioritized based on the order received unless otherwise requested by the Contractor.

4. Submittal sequencing should coincide with the Construction Schedule in Section 01 32 16 - Construction Progress Schedule.
5. A review duration of 15 calendar days is allotted for each submittal, from the date of receipt by the Owner's Representative to the date of return to the Contractor.

B. Submittal Preparation:
1. Excepting, mock-ups, spare parts, physical samples, and other items that cannot be converted to electronic media, furnish submittal contents electronically in a searchable PDF format.
a. Include a table of contents and labeled divider sheets that are coordinated with the table of contents.
b. Diagrams, drawings, pictures, and illustrations presented with a consistent orientation.
c. Action and Closeout Submittals: three (3) copies of submitted information plus one reproducible original.
d. Informational Submittals: three (3) copies of submitted information.
2. Shop Drawings, Samples and Mock-ups
a. Submit one electronic copy per the requirements described above and the following:
1) Shop Drawings: one (1) reproducible and three (3) prints for job site reference. One marked up print will be returned to the Contractor when the review is complete.
2) Samples: three (3) samples
3) Mock-up: As required by individual specification
4) Demonstrations: As required to facilitate installation and inspection
b. Reference applicable specifications for additional requirements

C. Submittal Completeness:
1. Submittals without all required information are not acceptable and may be marked "REJECTED" and returned without review.
2. For a submittal to be deemed complete, provide the information required below and specified in specification sections, including those elements in the special transmittal procedures where required.

D. In the event of the need to "revise and resubmit", provide a complete stand-alone submittal with corrections, revisions, and new information clearly identified.

E. Resubmit changes to submittals that require a stamp and signature by a licensed engineer or other certification with the requisite stamp and signature or certifications.

3.02 TRANSMITTAL PROCEDURE

A. General:
1. Include the following information on the submittal transmittal form:
a. Project names and date, including Owner's Project Number as follows: SCTP Dewatering Equipment Replacement Project No. 93-2021-0058
b. Name of Contractor and Subcontractor

c. Name of supplier and name of manufacturer
d. Number and title of appropriate specification section
e. Drawing number and detail references, as appropriate

2. Equipment and Material Submittals: Unless otherwise specified, complete the Transmittal Form 01 33 00-A - Submittal Transmittal Form specified in Section 01 99 90 - Reference Forms.
3. Operation and maintenance manuals, information and data Submittals: Complete the Transmittal Form 01 78 23-A - Operation and Maintenance Transmittal Form specified in Section 01 99 90 - Reference Forms.
4. Use a separate form for each specific item, class of material, equipment, and items specified in separate, discrete sections, for which a submittal is required. Identify the appropriate equipment numbers for submittal documents common to more than one piece of equipment. Submit a single form for multiple items, if the items taken together constitute a Supplier's package or are functionally related, to facilitate checking or reviewing the group or package as a whole.
5. Assign a unique sequential number to each transmittal form accompanying each item submitted.
   a. Format submittal numbers as follows: "SS SS SS-XXX"; where "SS SS SS" is the referenced 6-digit section number from the Specifications and "XXX" is the sequential number assigned by the Contractor.
   b. Format resubmittals as follows: : "SS SS SS-XXX-YY"; where "XXX" is the originally assigned submittal number and "YY" is a sequential number assigned for resubmittals, i.e., 00, 01, or 02 being the original, 1st, and 2nd resubmittals, respectively. Submittal 43 23 50-001-02, for example, is the second resubmittal of submittal 001 pertaining to Section 43 23 50.
6. Deviation from contract: If deviations from the material, equipment or method of work are proposed, describe the proposed deviation and explain the reason for proposing the deviation under "deviations" on the transmittal form accompanying the submittal copies.

B. Document Management System Specific Procedures:
   1. Unless otherwise specified, submittals regarding material and equipment shall be submitted electronically using a document control program/website.
   2. Login information and instructions will be provided to Contractor upon project award.

C. Check Marked Specification Transmittal Procedures:
   1. When submittal requirements require a "marked" copy of the specification, provide a copy of the specification marked as indicated below. Provide the following when transmitting the submittal:
      a. Provide a copy of the specification section(s) that specifies a marked copy of the specification. Include addendum updates and referenced specification sections, with addendum updates. Complete the following:
         1) Checkmark each paragraph to indicate submittal compliance with that specification requirement. Check marks (✓) shall denote full compliance with that paragraph as a whole.

2) Mark paragraphs where deviations are proposed by underlining text that is the subject of the proposed deviation. Denoting each proposed deviation with a number in the margin to the right of the identified paragraph and provide a detailed written explanation for each numbered deviation. The remaining portions of the paragraph not underlined signify compliance with specified requirements.

3) The Engineer is the final authority for determining acceptability of requested deviations.

b. For equipment specifications, provide a copy of the control diagrams and process and instrumentation diagrams relating to the submitted equipment, with addendum updates that apply to the subject equipment. Complete the following:

1) Mark drawings or diagrams to show specific changes necessary for the equipment proposed in the submittal.

2) If no changes are required, mark the drawings or diagrams with "no changes required".

D. Provide a Certificate of Unit Responsibility assigning unit responsibility in accordance with the requirements of the specification Section. No other submittal material will be reviewed until the certificate has been received and found to be in conformance with the Specifications.

E. Samples and Mock-ups:

1. Submit samples and mock-ups in accordance with the Contract Documents. Package samples to facilitate review. Include the following with the Submittal Transmittal Form:
   a. Generic description of the sample
   b. Sample source
   c. Product name and name of manufacturer
   d. Compliance with recognized standards
   e. Submittal Number
   f. Availability and delivery time
   g. Specification Section
2. Submit samples and mock-ups before installation. Where variation in color, pattern, texture or other characteristics are inherent in the material, submit four units to show variation range.
3. Where samples are for selection of appearance characteristics from a range of standard choices, submit a full set of choices for the material or products.
4. Maintain sets of approved samples and mock-ups at the Project Site, for quality comparisons throughout the course of construction.
5. Demolish and remove all samples and mock-ups prior to substantial completion.

3.03 REVIEW PROCEDURE

A. General:

1. Owner’s Representative will review each submittal, indicate a REVIEW ACTION, and return to the Contractor.

2. Returned submittals indicate one of the following REVIEW ACTIONS: NO EXCEPTIONS TAKEN, MAKE CORRECTIONS NOTED, AMEND AND RESUBMIT, or REJECTED – SEE REMARKS.

3.04 EFFECT OF REVIEW OF CONTRACTOR'S SUBMITTALS

A. General:

1. Review of contract drawings, methods of work, or information regarding materials or equipment the Contractor proposes to provide, does not relieve the Contractor of responsibility for errors therein and is not regarded as an assumption of risks or liability by the Owner's Representative or the Owner, or by any officer or employee thereof, and the Contractor has no claim under the contract on account of the failure, or partial failure, of the method of work, material, or equipment reviewed. A mark of "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED" means that the Owner has no objection to the Contractor, upon his own responsibility, using the plan or method of work proposed, or providing the materials or equipment proposed.

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SECTION 01 35 29

HEALTH, SAFETY, AND EMERGENCY RESPONSE PROCEDURES

PART 1 GENERAL

1.01 REQUIREMENTS

A. Portions of the existing plant are exposed to wastewaters and biosolids of varying degrees of treatment. The Contractor certifies that he is experienced and qualified to anticipate and meet the safety and health requirements of this project.

B. Workmen involved in the removal, renovation, or installation of equipment within the treatment plant may be exposed to disease-producing organisms in wastewater. The Contractor shall require his personnel to observe proper hygienic precautions.

C. Solvents, gasoline, and other hazardous materials enter the plant with incoming sewage, and, therefore, certain areas are hazardous to open flame, sparks, or unventilated occupancy. The Contractor shall take measures to assure his personnel observe proper safety precautions when working in these areas.

1.02 SAFETY AND HEALTH REGULATIONS

A. The Contractor shall comply with Safety and Health Regulations for Construction, promulgated by the Secretary of Labor under Section 107 of the Contract Work Hours and Safety Standards Act, as set forth in Title 29, C.F.R. Copies of these regulations may be obtained from Labor Building, 14th and Constitution Avenue N.W., Washington, DC 20013.

B. The Contractor shall also comply with the provisions of the Federal Occupational Safety and Health Act, as amended.

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PART 3 NOT USED

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SECTION 01 35 43

ENVIRONMENTAL PROCEDURES

PART 1 GENERAL

1.01 SITE MAINTENANCE

A. The Contractor shall keep the work site clean and free from rubbish and debris. Materials and equipment shall be removed from the site when they are no longer necessary. Upon completion of the work and before final acceptance, the work site shall be cleared of equipment, unused materials, and rubbish to present a clean and neat appearance.

1.02 TEMPORARY DAMS

A. Except in time of emergency, earth dams are not acceptable at catch basin openings, local depressions, or elsewhere. Temporary dams of sand bags, asphaltic concrete, or other acceptable material will be permitted when necessary to protect the work, provided their use does not create a hazard or nuisance to the public. Such dams shall be removed from the site as soon as they are no longer necessary.

1.03 AIR POLLUTION CONTROL

A. The Contractor shall not discharge smoke, dust, and other contaminants into the atmosphere that violate the regulations of any legally constituted authority. He shall also abate dust nuisance by cleaning, sweeping, and sprinkling with water, or other means as necessary. The use of water, in amounts which result in mud on public streets, is not acceptable as a substitute for sweeping or other methods.

1.04 NOISE CONTROL

A. Between 7:00 p.m. and 7:00 a.m., noise from Contractor's operations shall not exceed limits established by applicable laws or regulations and in no event shall exceed 86 dBA at a distance of 50 feet from the noise source.

PART 2 NOT USED

PART 3 NOT USED

END OF SECTION

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SECTION 01 45 00

CONTRACTOR QUALITY CONTROL

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies administrative and procedural requirements for quality control services, field inspections and field testing of civil and structural constructs required for this project.

B. The Contractor is responsible for the quality assurance and quality control of their respective work for the construction of this project in accordance with the Contract Documents.

1.02 RELATED SECTIONS

A. This section contains specific references to the following related section. Additional related sections may apply that are not specifically listed below.

1. Section 01 45 23 Testing and Inspection Services

1.03 DEFINITIONS

A. Quality Control System (QCS): The quality control, assurance, and inspection system established and carried out to ensure compliance with the Plans and specifications.

B. QCS Supervisor: That person in responsible charge of the work occurring, as designated by the Contractor in the QCS Plan.

C. QCS Inspector: Responsible, certified personnel inspecting the various constructs at specified milestones and during the project overall and designated by the Construction Manager.

D. Factory Test: Tests made on various materials, products and component parts prior to shipment to the job site.

E. Field Tests: Tests and analyses made at or in the vicinity of the job site in connection with the actual construction.

F. Certified Inspection Report: Reports signed by approved inspectors attesting that the items inspected meet the specification requirements other than any exceptions included in the report.

G. Certificate of Compliance: Certificate from the manufacturer of the material or equipment identifying said manufacturer, product and stating that the mateiral or equipment meet specified standards, and shall be signed by a designated officer of the manufacturer.

H. Standard Compliance: Condition whereby specified materials or equipment must conform to the standards of organizations such as the American National Standard Institute (ANSI), American Society for Testing and Materials (ASTM), Underwriters Laboratories (UL) or similar organization.

I. Quality Assurance: The day-to-day, in-process supervisory observations of work and materials conducted by the Contractor to assure that the proper methods and materials are being used and installed by tradesmen.

J. Source Quality Control: The in-process testing and inspections conducted by the QCS Inspector(s) to verify that the materials, equipment; workmanship and shop manufactured constructs are in compliance with the Contract Documents, applicable Codes and standards.

K. Field Quality Control: The testing and inspections conducted by the QCS Inspector(s) in the field during and at the completion of each construct to verify that the in-process and completed construction is in compliance with the Contract Documents, applicable Codes and standards.

L. Special Inspector – A qualified individual employed or retained by an approved agency and approved by the local governing authorities having jurisdiction (AHJ) as having the competency necessary to inspect a particular type of construction requiring special inspection.

1.04 SUBMITTALS

A. Action Submittals:
   1. Procedures: Section 01 33 00.
   2. A copy of this specification section with each paragraph check-marked to indicate specification compliance or marked to indicate requested deviations from specification requirements.
   3. Check-marks (✓) denote full compliance with a paragraph as a whole. Deviations shall be underlined and denoted by a number in the margin to the right of the identified paragraph. The remaining portions of the paragraph not underlined signify compliance with the specification. Include a detailed, written justification for each deviation. Failure to include a copy of this marked-up specification section, along with justification(s) for requested deviations, with the submittal, is cause for rejection of the entire submittal with no further consideration.
   4. Written description of Contractor's proposed QCS plan in sufficient detail to illustrate adequate measures for verification and conformance to defined requirements. The QCS plan and submittal shall include a log showing anticipated inspections, QCS Inspectors, Special Inspections, and source and field Quality Assurance procedures. Submittal of the QCS plan shall be made prior to commencing field work.
   5. Contractor's proposed QCS Supervisor and QCS Inspectors (other than the Special Inspectors provided by Owner), including qualifications, responsibilities, and if requested, references.
   6. Complete structural system information describing Contractor designed structural systems, including sealed calculations, shop and erection drawings, product literature for the various components, International Code Council (ICC) Evaluation Reports for structural components, and a discussion of risk issues associated with the proposed system which could adversely impact overall project completion.
   7. If requested by the Construction Manager during the work, manufacturer's field services and reports.

B. Informational Submittals:
   1. Procedures: Section 01 33 00.
   2. Manufacturers' field services and reports unless requested by Construction Manager to be submitted for review.
   3. Special Inspection reports, unless otherwise directed in each technical specification Section.

1.05 REGULATORY REQUIREMENTS

A. GENERAL: Comply with all Federal, State, and local Codes as referenced herein. Such regulations apply to activities including, but not limited to, site work and zoning, building practices and quality, on and offsite disposal, safety, sanitation, nuisance, and environmental quality.

B. SPECIAL INSPECTION: Special Inspection shall be performed by the Special Inspector under contract with the Owner or registered design professional in responsible charge acting as the Owner's agent in conformance with the IBC. Special Inspection is in addition to, but not replacing, other inspections and quality control requirements herein. Where sampling and testing required herein conforms to Special Inspection standards, such sampling and testing need not be duplicated.

C. STRUCTURAL OBSERVATION: Registered Design Professional shall make visual inspections of the work to assess general conformance with the Contract Documents at significant construction stages and at completion of the structural system in accordance with IBC 1704.6 Structural Observations requirements.

1.06 CONTRACTOR'S RESPONSIBILITIES

A. Monitor quality assurance over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.

B. Coordinate with, schedule specified inspections by, and provide normal and customary assistance to the QCS Inspectors and Owner provided Special Inspectors.

C. Coordinate with, schedule specified structural observations by Engineer, and provide normal and customary assistance to Engineer performing structural observations.

D. Comply fully with manufacturers' instructions, including each step in sequence.

E. Should manufacturers' instructions conflict with Contract Documents, request clarification before proceeding from Construction Manager.

F. Comply with specified standards as a minimum quality for the work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

G. The Contractor shall retain the services of a licensed land surveyor, registered in the State of Washington, to perform survey work including but not limited to establishing line and grade, in advance of the construction; and to perform other surveying services for the work included under the Contract. The surveyor to be retained by the Contractor shall not be the same surveyor engaged for the Engineer's use. The surveyor shall be subject to the approval of the Engineer. Survey drawings shall be submitted to the Engineer for approval.

H. The Contractor shall take all necessary measurements in the field to verify pertinent data and dimensions shown on the Drawings or to determine the exact dimensions of the Work.

1.07 FIELD SAMPLE PROCEDURES

A. When field samples are specified in a unit of work, construct each field sample to include work of all trades required to complete the field sample prior to starting related field work. Field samples may be incorporated into the project after acceptance by Construction Manager. Remove unacceptable field samples when directed by Construction Manager. Acceptable samples represent a quality level for the work.

1.08 CONTRACTOR DESIGNED STRUCTURAL SYSTEMS

A. DESIGN ENGINEERING: Contractor shall employ and pay for engineering services from a Professional Engineer registered in the State of Washington for structural design of Contractor designed structural systems including but not limited to temporary shoring and bracing, formwork support, interior wall and ceiling systems, and support systems for fire sprinkler, plumbing, mechanical, and electrical systems and equipment.

B. TESTS AND INSPECTIONS OF CONTRACTOR DESIGNED STRUCTURAL SYSTEMS: Contractor shall pay for preliminary testing of concrete, grout, and mortar mix designs where required by Code or these specifications prior to start of work. Contractor shall pay for required shop and site inspection of Contractor designed structural systems where required by Code or these specifications.

1.09 JOB SITE CONDITIONS

A. Schedule to ensure all preparatory work has been accomplished prior to proceeding with current work. Proceeding with the work constitutes acceptance of conditions. Allow adequate time for materials susceptible to temperature and humidity to “stabilize” prior to installation. Establish and maintain environmental conditions (i.e., temperature, humidity, lighting) as recommended by the various material manufacturers for the duration of the work.

PART 2 PRODUCTS

2.01 SOURCE QUALITY CONTROL

A. CONTRACTOR RESPONSIBILITIES: Provide source quality control according to the reviewed and accepted QCS plan and paragraph 1.06 herein. Coordinate with Construction Manager to facilitate the work of the Testing Laboratory specified in Section 01 45 23 and Special Inspector. Provide ready access to sampling and inspection locations and incidental labor customary in such sampling and inspections. Timely prepare and submit submittals, and revise as indicated by review comments. Comply with technical requirements in each specification Section that applies to the work.

B. CONSTRUCTION MANAGER RESPONSIBILITIES: Review Contractor's tracking of QCS activities at monthly meetings. Facilitate completion of submittal review per Section 01 33 00. Assist Contractor to ensure that Special Inspection occurs where and when specified.

C. ACCEPTANCE CRITERIA: Acceptable characteristics and quality of a particular item or construct is defined in that item's or construct's specification Section.

PART 3 EXECUTION

3.01 FIELD QUALITY CONTROL

A. Field quality control responsibilities of the Contractor and Construction Manager are substantially the same as described in paragraph 2.01, with the exception that this work occurs primarily on the jobsite as the work progresses, and Special Inspection will occur more often than at the source.

B. Acceptable characteristics and quality of a particular item or construct is defined in that item's or construct's specification Section.

3.02 REGULATORY COMPLIANCE – SPECIAL INSPECTIONS

A. The types of work requiring Special Inspection are specified in the Construction Documents and required to obtain regulatory approval by State or required by local governing authorities having jurisdiction over the building permit of the project.

B. Section 01 45 23 describes Testing Laboratory sampling, testing and reporting.

C. Contractor designed structural systems are subject to the same Special Inspection requirements as all other work.

3.03 CORRECTION OF DEFECTIVE WORK

A. Any defective or imperfect Work, equipment, or materials furnished by the Contractor which is discovered before the Final Acceptance of the Work, or during a warranty period, shall be removed immediately even though it may have been overlooked by the Engineer and approved for payment. The Contractor shall repair such defect, without compensation, in a manner satisfactory to the Engineer.

B. Unsuitable materials and equipment may be rejected, notwithstanding that such defective Work, materials and equipment may have been previously overlooked by the Engineer and accepted or approved for payment.

C. If any workmanship, materials or equipment shall be rejected by the Engineer as unsuitable or not in conformity with the Specifications or Drawings, the Contractor shall promptly replace such materials and equipment with acceptable materials and equipment at no additional cost to Owner. Equipment or materials rejected by the Engineer shall be tagged as such and shall be immediately removed from the site.

D. The Engineer may order tests of imperfect or damaged Work equipment, or materials to determine the required functional capability for possible acceptance, if there is no other reason for rejection. The cost of such tests shall be borne by the Contractor, and the nature, tester, extent and supervision of the tests will be as determined by the Engineer. If the results of the tests indicate that the required functional capability of the Work, equipment, or material was not impaired, the Work, equipment or materials may be deemed acceptable, in the discretion of the Engineer. If the results of such tests reveal that the required functional capability of the questionable Work, equipment or materials has been impaired, then such Work, equipment or materials shall be deemed imperfect and shall be replaced. The Contractor may elect to replace the imperfect Work, equipment or material in lieu of performing the tests.

END OF SECTION

SECTION 01 45 23

TESTING AND INSPECTION SERVICES

PART 1 GENERAL

1.01 SUMMARY

A. GENERAL REQUIREMENTS: Comply with the testing and inspection specified in this Section and elsewhere in the Construction Documents. For the purpose of this Section, all references made herein to Testing Agency or Special Inspector or Geotechnical Consulting Firm shall be referred to as those tests or inspections which will be conducted by an inspector provided by the Owner.

1. The Owner or registered design professional in responsible charge acting as the Owner's agent will select and employ an independent Testing Agency to conduct the tests and inspections in accordance with applicable standard methods of American Society for Testing and Materials (ASTM) or other standards specified by the local governing authorities having jurisdiction (AHJ) as a requirement of the building permit. The Owner may require other special inspection services to inspect and verify the Work installed is in accordance with the Construction Documents and construction industry standards.
2. The Contractor shall provide and pay for other inspection and testing services where specified in the Construction Documents or required to obtain regulatory approval by State or AHJ.
3. Contractor will coordinate scheduling of independent testing and inspection firm in order to perform their work.

1.02 DEFINITIONS

A. Special Inspector – A qualified individual employed or retained by an approved agency and approved by the AHJ as having the competency necessary to inspect a particular type of construction requiring special inspection.

B. Testing Agency - firm responsible for performing specific inspections and/or tests as part of the Special Inspection program.

1.03 QUALITY ASSURANCE

A. QUALIFICATIONS: The inspector for all Work as hereinafter specified, except for geotechnical inspections, waterproofing and roofing, shall be a registered Special Inspector employed by an approved inspection and/or Testing Agency as listed by the WABO Special Inspection Registration Program. All inspection personnel used on this Project are subject to being disapproved from the Project at the discretion of the Owner. Minimum levels of qualifications as stated in WABO Special Inspection Registration Program for various portions of the required inspections and testing must be complied with.

1. The Special Inspector shall have the required technical knowledge and experience for the product or construction element being installed.
2. Geotechnical Inspection will be performed by a licensed Geotechnical Consulting Firm.

1.04 DUTIES OF OWNER'S TESTING AGENCY

A. GENERAL: The Owner's Testing Agency will conduct testing and inspection services, interpret them, and evaluate the results for compliance with the building permit, the site development permit, and the Construction Documents; agency will report findings to the Owner, Contractor, and AHJ. Testing and inspection services shall be in accordance with applicable standard methods of ASTM or other standards specified by AHJ, the Construction Documents, and construction industry standards. The Testing Agency will reasonably support overtime, second shift, and out-of-area activity if requested by the Contractor and approved at the Owner's sole discretion.

B. TESTING AND INSPECTION: Materials to be tested are specified by the building permit and as required by the Construction Documents, as directed by Owner, or required by AHJ. Quantities and extent of tests and inspections shall be as specified and/or required by the Owner's Inspector or AHJ.

C. NON-CONFORMING WORK: The Owner's Inspector shall document and immediately notify the Contractor and Owner of any Work found defective or not in accordance with the requirements of the Construction Documents. Non-conforming Work shall be corrected.

D. The Owner's inspectors are not authorized to do the following:
   1. Release, revoke, alter or enlarge on requirements of Construction Documents.
   2. Approve or accept any portion of the Work, except as allowed by the special inspection duties delegated by governing AHJ for building permit inspections and testing.
   3. Perform any duties of the Contractor.
   4. Stop Work.

1.05 COSTS

A. The Owner's Testing Agency and Special Inspector costs for initial testing and inspection as specified in the Construction Documents will be paid for by the Owner or registered design professional in responsible charge acting as the Owner's agent . Initial tests and inspections are defined as those required to complete the first tests and inspections specified. Costs for subsequent re-testing and re-inspection of items found not to be in compliance with Construction Documents shall be borne by the Contractor.

B. Additional tests and inspections not herein specified, but requested by the Owner, shall be paid for by the Owner. However, if the results of such tests or inspections are found to be not in compliance with Construction Documents, the Contractor will be back charged for all costs for initial testing as well as re-testing, re-inspection and Owner's Consultants services.

C. Costs for additional tests or inspections required because of Contractor changes to reviewed and accepted products or materials provided, or source, or supply shall be borne by the Contractor.

D. Costs for any Work which is required to correct any deficiencies shall be borne by the Contractor.

E. Costs of any testing which is required solely for the convenience of Contractor in its scheduling and performance of the Work shall be borne by the Contractor.

F. Costs for verification testing of Work done without prior notice, with improper supervision, or contrary to construction practice shall be borne by the Contractor.

G. Costs for testing of materials for which fabrication and mill reports are required but not furnished shall be borne by the Contractor.

H. The cost, if any, of providing access for inspections and tests shall be considered part of the normal expense of conducting business and therefore non-reimbursable.

I. In those instances where inspector(s) arrive at the agreed-upon location, at the agreed upon date and time, and find articles to be inspected are not ready for inspection, the inspector(s) shall return to their home office and all expenses incurred shall be borne by the Contractor.

1.06 TESTS AND INSPECTION REPORTS

A. Copies of Owner and Contractor test and inspection reports shall be distributed at weekly intervals. All reports will be signed by a Washington Association of Building Officials certified Special Inspector or Professional Engineer registered in the State of Washington, as appropriate. Such reports shall include all tests made, regardless of whether such tests indicate that the material is satisfactory or unsatisfactory; a final report should be submitted documenting corrective work done on of any unsatisfactory material and or work identified in the testing or inspection reports. Samples taken, but not tested, shall also be reported. Records of special sampling operations that are required shall also be reported. Test and inspection reports shall be distributed as follows:
   1. Owner
   2. Owner's Testing Agency
   3. Contractor
   4. Authority Having Jurisdiction

B. A report shall be prepared for each inspection and test and shall include:
   1. Date issued.
   2. Project title and number.
   3. Name and signature of inspector.
   4. Date of inspection or sampling and test.
   5. Record of temperature and weather.
   6. Identification of product and Specification Section.
   7. Location in Project.
   8. Type of inspection or test.
   9. Results of inspections and tests, and observations regarding compliance with Laws and Regulations, and standards.

1.07 CONTRACTOR'S RESPONSIBILITIES

A. COORDINATION: It is the Contractor's responsibility to initiate, coordinate, and conform to the required tests and inspections of governing State and AHJ. Inspection of the Work by the Owner's Special Inspectors and/or Testing Agency shall not relieve the Contractor from responsibility for compliance with the Construction Documents requirements. Owner's Special Inspectors and/or Testing Agency and Owner shall have authority to reject Work whenever the provisions of the Construction Documents are not being complied with, and the Contractor shall instruct his employees accordingly.

B. ACCESS FOR THE PURPOSE OF INSPECTION: Ensure the Owner's Special Inspectors and/or Testing Agency have free access to all parts of the Work and to the shops where the Work is in preparation; are provided proper facilities and safe access for such inspection; and are reasonably furnished access, equipment, tools, samples, certifications, test reports, design mixes, storage, and assistance as requested by the Owner's Inspector.

C. STORAGE FACILITIES: Furnish adequate storage facilities as approved by the Owner for the sole use of the Owner's Testing Agency for safe storage and curing of such specimens which must remain on the site prior to transport to the laboratory.

D. DATA: Furnish records, Contract Drawings and shop drawings, certificates, approved Change Orders, and similar data as required by Owner's Inspectors to perform their work to assure compliance with the Construction Documents.

E. NOTICE: Furnish notice to Owner and coordinate with Owner's Inspectors a minimum of five (5) working days in advance of all required tests and a minimum of forty-eight (48) hours in advance of all required inspections, unless otherwise specified.

F. NON-CONFORMING WORK: Remove and replace Non-conforming Work at no additional cost to the Owner prior to Final Completion. Where Non-conforming Work requires design modifications, such re-design shall be performed by the Engineer of Record and costs shall be borne by the Contractor.

G. CANCELLATIONS: Contractor shall give sufficient advance notice to Owner and Inspectors to allow rescheduling of their work load in the event of cancellation or time extension of any scheduled test or inspection

1.08 TEST FAILURES

A. GENERAL: The Owner may require re-test of a sampled material when a sample or procedure has failed to pass the required tests. In the event any test or inspection indicates failure of a material or procedure to meet requirements of Construction Documents, all costs for re-testing or re-inspection shall be borne by the Contractor. The Contractor may opt to replace the imperfect Work, equipment or material in lieu of performing the tests.

1.09 REPORT TEST FAILURES

A. GENERAL: Immediately upon determination of a test failure, the Owner's Inspector shall notify the Owner and Contractor. By the end of the following day the Owner's Inspector shall send written test results to those named on the distribution list.

B. Contractor shall similarly report test failures to Owner resulting from work of testing agencies provided by the Contractor.

PART 2 NOT USED

PART 3 NOT USED

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SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes the requirement for temporary facilities including:
   1. Provide temporary facilities for the proper completion of the Work as required and specified.
   2. Allow other authorized entities to use temporary services and facilities without cost, including, but not limited to:
      a. Construction Manager
      b. Engineer
      c. Testing agencies
      d. Authorities Having Jurisdiction.
   3. See Specification 46 71 01 for Temporary Sludge Dewatering Facilities

1.02 REFERENCES

A. American National Standards Institute (ANSI):
   1. A 117.1: Accessible and Usable Buildings and Facilities.

B. American Society for Testing and Materials (ASTM):
   1. E84: Standard Test Method for Surface Burning Characteristics of Building Materials.
   2. E136: Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750^{o}C.

C. National Fire Protection Association (NFPA):
   1. 70: National Electrical Code.
   2. 241: Standard of Safeguarding Construction, Alteration, and Demolition Operations.
   3. 701: Standard Methods of Fire Tests for Flame Propagation of Textiles and Films.

1.03 OFFICE

A. Contractor shall maintain a temporary field office near the Site for their own use during the period of construction at which readily accessible copies of all Contract Documents shall be kept. In charge of this office, there shall be a competent Superintendent of the Contractor.
   1. The office shall be located where it will not interfere with the progress of the Work.

B. Field Offices shall be prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

C. Field offices shall be provided within 30 working days of expected equipment arrival at site.

D. The Contractor's attention is directed to the condition that no payment for mobilization, or any part thereof, will be approved for payment under the Contract until all field office facilities specified herein, have been provided.

1.04 POWER

A. The Contractor shall provide power for construction at the Site.

B. Contractor shall make arrangements with the Owner for power takeoff points, voltage and phasing requirements, transformers and metering and shall pay the costs and fees arising therefrom.

C. The Contractor shall provide the special connections required for his work.

1.05 TEMPORARY LIGHTING

A. If Contractor intends to work at night, he shall provide and maintain lighting for his operations and those of his subcontractors to achieve:
   1. A minimum lighting level of 2 watt/sq. ft. for construction operations. 1 watt/sq. ft. lighting to exterior staging and storage areas after dark for security purposes.
   2. Contractor shall provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required, for his operations and those of his subcontractors.

B. Contractor shall maintain lighting and provide routine repairs. Contractor is responsible to remove the temporary lighting when no longer required.

1.06 TELEPHONE

A. The Contractor shall provide telephone service at his construction site office. Mobile-only telephone service is acceptable, provided the Contractor can demonstrate suitable signal reliability.

1.07 SANITARY FACILITIES

A. The Owner’s existing sewer system is not available for use.

1.08 POTABLE WATER

A. Contractor shall provide his own potable water source for his construction operations and those of his subcontractors.

B. Contractor shall provide sufficient potable quality drinking water for workers at project site.

1.09 UTILITY WATER

A. For all necessary operations at the Site in the Owner's water service area, (except as noted below), the Owner will provide reasonable quantities of utility water at the then existing pressure from a mutually convenient hydrant of the Owner's water distribution system as long as its use does not hamper plant operation.

B. Contractor shall furnish all necessary pipe or hose extensions to conduct the water to the points of use and exercise due care not to waste water.

C. Contractor shall not contaminate the water supply and shall comply with applicable regulations and code requirements including metering and backflow prevention.

D. If additional treatment or filtering processes are needed to meet testing or operations requirements, they shall be provided at the expense of the Contractor.

E. The Owner reserves the right to limit, suspend, or terminate the supplying of water as set forth above should it consider such action necessary because of damage to the distribution system, the necessity of conserving water, or other emergency. In this event, the Contractor shall obtain water from some other approved source, at their own expense.

1.10 SUBMITTALS

A. Site Plan. Show temporary facilities, utility hookups, staging areas, dumpster, and parking areas for construction personnel.

B. Fire Safety Program. Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire prevention program.

C. Dust and HVAC Control Plan. Submit coordination drawing and narrative that indicates the dust and HVAC control measures proposed for use, proposed locations, and proposed time frame for their operation. Identify further options if proposed measures are later determined to be inadequate. Include the following:
   1. Locations of dust control partitions at each phase of Work.
   2. HVAC system isolation schematic drawing.
   3. Location of proposed air filtration system discharge.
   4. Waste handling procedures.
   5. Other dust control measures.

1.11 QUALITY ASSURANCE

A. Electric Service. Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections. Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

C. Temporary Use of Permanent Facilities. Engage an installer of each permanent service to assume responsibility for the operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance regardless of previously assigned responsibilities.

D. During adverse weather and against the possibility thereof, take necessary precautions so that the Work may be properly completed and is satisfactory. When required, protection shall be provided by use of tarpaulins, wood, and building-paper shelters, or other suitable means.

E. During cold weather preheat materials, if required, and keep sufficiently warm the materials and adjacent structure into which they are to be incorporated so that a proper bond will take place and a proper curing, aging, or drying will result. Artificially heat protected spaces by suitable means that will result in a moist or a dry atmosphere according to the requirements of the Work being protected. Sufficiently heat ingredients for concrete and mortar so the mixture will be warm throughout when used.

PART 2 NOT USED

PART 3 EXECUTION

3.01 INSTALLATION, GENERAL

A. Coordinate locations with Construction Manager and Owner.

B. Provide each temporary facility ready for use when needed to avoid delay. Do not remove until the facilities are no longer needed or are replaced by the authorized use of completed permanent facilities.

3.02 TEMPORARY UTILITY INSTALLATION

A. General. Install temporary service or connect to existing service. Arrange with utility company, the Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Sewers and Drainage. Provide temporary utilities to remove effluent lawfully. Connect temporary sewers to the municipal system as directed by authorities having jurisdiction.

C. Water Service. Install water service and distribution piping in sizes and pressures adequate for construction.

D. Sanitary Facilities. Provide temporary toilets, wash facilities, and drinking water for the use of construction personnel. Comply with the requirements of authorities having jurisdiction for the type, number, location, operation, and maintenance of fixtures and facilities.

E. Heating. Provide temporary heating required by construction activities for the curing or drying of completed installations or for protecting the installed construction from the adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on the completed installations or elements being installed.

F. Isolation of Work Areas in Occupied Facilities. Prevent dust, fumes, and odors from entering the occupied areas.
   1. Prior to commencing Work, isolate the HVAC system in an area where Work is to be performed.
      a. Disconnect the supply and return ductwork in the Work area from the HVAC systems servicing occupied areas.
      b. Maintain negative air pressure within the Work area using HEPA-equipped air filtration units, starting with the commencement of temporary partition construction and continuing until the removal of temporary partitions is complete.
   2. Maintain dust partitions during the Work. Use vacuum collection attachments on dust-producing equipment. Isolate limited Work within occupied areas using portable dust-containment devices.
   3. Perform daily construction cleanup and final cleanup using approved, HEPA filter-equipped vacuum equipment.

G. Ventilation and Humidity Control. Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from the adverse effects of high humidity. Select equipment that will not have a harmful effect on the completed installations or elements being installed. Coordinate ventilation requirements to produce the required ambient condition and minimize energy consumption. Provide dehumidification systems when required to reduce substrate moisture levels to the level required to allow installation or the application of finishes.

H. Electric Power Service. Provide electric power service and a distribution system of sufficient size, capacity, and power characteristics required for the construction operations.

I. Lighting. Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
   1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

J. At each telephone and Emergency Response station and at the main construction office entrance, post a list of important telephone numbers including, but not limited to, those listed below and the Site's address.
   1. Police and fire departments.
   2. Ambulance service.
   3. Contractor's home office.
   4. Contractor's emergency after hours telephone number.
   5. Construction Manager's offices.
   6. Owner's project point of contact.
   7. Principal subcontractors' field and home offices.
   8. Map of the nearest clinic and nearest emergency room.

K. Provide the superintendent with cellular telephone or portable two-way radio for use when away from field office.

3.03 SUPPORT FACILITIES INSTALLATION

A. General. Comply with the following:
   1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E136. Comply with NFPA 241.
   2. Maintain support facilities until Construction Manager schedules Substantial Completion inspection. Remove before Final Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.

B. Temporary Roads and Paved Areas. Construct and maintain temporary roads and paved areas adequate for construction operations in coordination with the Construction Manager. Provide dust control treatment that is nonpolluting and non-tracking. Reapply treatment as required to minimize dust.

C. Temporary Use of Permanent Roads and Paved Areas. Locate temporary roads and paved areas in same location as permanent roads and paved areas to the extent practicable. Construct and maintain temporary roads and paved areas adequate for construction operations. Extend temporary roads and paved areas, within construction limits indicated, as necessary for construction operations.
   1. Coordinate elevations of temporary roads and paved areas with permanent roads and paved areas.
   2. Prepare subgrade and install subbase and base for temporary roads and paved areas.
   3. Recondition the base after temporary use including removing contaminated material, regrading, proof rolling, compacting, and testing.
   4. Delay installation of final course of permanent hot mix asphalt pavement until immediately before Substantial Completion. Repair hot mix asphalt base course pavement before installation of final course.
   5. Repair and restore any damaged permanent roads and paved areas to original condition.

D. Traffic Controls. Comply with the requirements of authorities having jurisdiction.
   1. Protect existing site improvements to remain including curbs, pavement, and utilities.
   2. Maintain access for firefighting equipment and access to fire hydrants.

E. Parking. Provide temporary parking areas for construction personnel. Provide designated parking for the Construction Manager's onsite staff.

F. Dewatering Facilities and Drains. Comply with requirements of authorities having jurisdiction. Maintain Site, excavations, and construction free of water.
   1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
   2. Remove snow and ice as required to minimize accumulations.

G. Waste Disposal Facilities. Provide waste collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction.

1. The Contractor shall be responsible for providing dumpsters for the collection and disposal of waste and debris, except for hazardous or unsanitary waste materials which shall be handled by Contractor producing such waste.
2. Location of dumpsters shall be proposed by the Contractor and approved by the Owner.
3. Comply with NFPA 241 for removal of combustible materials.
4. Hazardous materials shall be containerized for removal from site.

H. Lifts and Hoists. Provide facilities necessary for hoisting materials and personnel. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

I. Temporary Stairs. Until permanent stairs are available, provide temporary stairs where ladders are not adequate.

J. Existing Stair Usage. Use of the Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of corrective Work.

K. Temporary Use of Permanent Stairs. Use of new stairs for construction traffic will be permitted. However, the stairs must be protected, and the finishes must be restored to a new condition at the time of Substantial Completion.

3.04 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Protection of Existing Facilities. Protect existing vegetation, equipment, structures, utilities, and other improvements at the Site and on adjacent properties except those indicated to be removed or altered. Repair damage to existing facilities.

B. Pest Control. Engage pest control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Final Completion. Perform control operations lawfully, using environmentally safe materials.

C. Security Enclosure and Lockup. Coordinate additional security requirements with site security personnel.

D. Barricades, Warning Signs, and Lights. Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

E. Temporary Egress. Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.

F. Temporary Enclosures. Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weather tight enclosure for building exterior. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.

G. Temporary Partitions. Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner from fumes and noise.
   1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant-treated plywood on construction operations side.
   2. Construct dustproof partitions with two layers of 6-mil polyethylene sheet on each side. Cover floor with two layers of 6-mil polyethylene sheet, extending sheets 18 inches up the sidewalls. Overlap and tape full length of joints. Cover floor with fire retardant treated plywood. Construct vestibule and airlock at each entrance through temporary partition with not less than 48 inches between doors. Maintain water-dampened foot mats in vestibule.
   3. Where fire resistance rated temporary partitions are indicated or are required by authorities having jurisdiction, construct partitions according to the rated assemblies.
   4. Insulate partitions to control noise transmission to occupied areas.
   5. Seal joints and perimeter. Equip partitions with gasketed dustproof doors and security locks where openings are required.
   6. Protect air handling equipment.
   7. Provide walk-off mats at each entrance through temporary partition.

H. Temporary Fire Protection. Install and maintain temporary fire protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire prevention program.
   1. Prohibit smoking in construction areas.
   2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
   3. Develop and supervise an overall fire prevention and protection program for personnel at the Site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
   4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.05 MOISTURE AND MOLD CONTROL

A. Contractor's Moisture Protection Plan. Avoid trapping water in finished Work. Document visible signs of mold that may appear during construction.

B. Exposed Construction Phase. Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
   1. Protect porous materials from water damage.
   2. Protect stored and installed material from flowing or standing water.

3. Keep porous and organic materials from coming into prolonged contact with concrete.
4. Remove standing water from decks.
5. Keep deck openings covered or dammed.

C. Partially Enclosed Construction Phase. After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
2. Keep interior spaces reasonably clean and protected from water damage.
3. Periodically collect and remove waste containing cellulose or other organic matter.
4. Discard or replace water damaged material.
5. Do not install material that is wet.
6. Discard, replace, or clean stored or installed material that begins to grow mold.
7. Perform Work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.

D. Controlled Construction Phase of Construction. After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
2. Use a permanent HVAC system to control humidity.
3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.
a. Hygroscopic materials that may support mold growth, including wood and gypsum-based products, that become wet during construction and remain wet for 48 hours are considered defective.
b. Measure the moisture content of materials that have been exposed to moisture during the construction operations or after installation. Record readings beginning at the time of exposure and continuing daily for 48 hours. Identify materials containing moisture levels higher than allowed. Report findings in writing to the Construction Manager.
c. Remove materials that cannot be completely restored to their manufactured moisture level within 48 hours.

3.06 OPERATION, TERMINATION, AND REMOVAL

A. Supervision. Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance. Maintain facilities in good operating condition until removal. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Temporary Facility Changeover. Do not change over from using temporary security and protection facilities to permanent facilities until Final Completion.

D. Termination and Removal. Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor. The Owner reserves right to take possession of the Project identification signs.
2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period.

END OF SECTION

SECTION 01 61 45

AREA EXPOSURE DESIGNATIONS

PART 1 GENERAL

1.01 DESCRIPTION

A. SCOPE:
   1. This section designates area exposure types for each location, room, area, or space at the site of the Work.
   2. Area exposures are used to specify materials based on the corrosion environment that the material is exposed to when the materials for the component are not scheduled or otherwise identified for each specific installation (e.g., pipe, anchor bolts, pipe supports, coatings, etc.). Where materials are scheduled for specific individual components (e.g., equipment, instruments, conduit, panels, etc.), furnish materials as specified.

1.02 RELATED SECTIONS:

A. Section 01 11 00 – Summary of Work

1.03 DEFINITIONS

A. Terminology used in this Section conforms to the following definitions:
   1. Atmospheric: Air space surrounding a structure or process.
   2. Solution: Liquid or solid which may contain water or other free liquid.

B. EXPOSURE TYPE: Included as a supplement to this Section, the Area Exposure Table designates an Exposure Type for each room or area. Each Exposure Type, listed from least to most severe corrosion potential, is defined below:
   1. Indoor Dry: locations inside a building or other enclosed structure not subjected to wash down and not in contact with a liquid holding or earth retaining wall.
   2. Indoor Wet: locations inside a building or structure that are damp, subject to wash down, or surfaces of structures that are in contact with a liquid holding or earth retaining wall or slab.
   3. Outdoor: locations not protected from the weather, or only partly protected by a roof or open enclosure, and exposed to exterior ambient conditions. Local ambient conditions may be expected to vary, generally within the ranges specified in Section 01 11 00.
   4. Buried: below grade wall or roofs; locations covered and in contact with earth/soil.
   5. Submerged: locations inside a covered liquid or solids holding structure that are below a plane located 12 inches below the minimum operating level of the liquid in the tank or structure.
   6. Process Corrosive: locations exposed to high humidity, frequent wash down and/or corrosive gases or vapors from the process stream. Process corrosive includes locations inside an open (not covered) liquid or solids holding structure that are above a plane located 12 inches below the minimum operating level of liquid in the structure and below the top of the wall of the structure.

7. Head Space: locations inside a covered liquid or solids holding structure that are above a plane that starts 1-foot below the minimum operating liquid level in the structure.
8. Chemical Corrosive: walls, ceilings, floors, trenches and other surfaces exposed to delivery, storage, transfer, use or containment of corrosive chemicals.

C. ENVIRONMENTAL CONDITIONS: Environmental conditions for each Exposure Type are tabulated below:

Exposure Type	Environment	Chemical Exposure	Chemical Concentration
Indoor Dry	Atmospheric, Dry	None	Not Applicable
Indoor Wet	Atmospheric, Wet	None	Not Applicable
Outdoor	Atmospheric, Wet	None	Not Applicable
Buried	Solution	Earth/Soil	Not Applicable
Submerged	Solution	Various Chemicals	Dilute
Process Corrosive	Atmospheric	Hydrogen Sulfide Trace Chemicals	1 - 10 ppm Dilute
Head Space	Low Oxygen, Wet	Hydrogen Sulfide Other trace gases	10 - 1500 ppm Dilute

D. AREA EXPOSURE TABLE: The Area Exposure Table schedules an Exposure Type for each location, room, area, or space at the site of the Work. The Area Exposure Table is provided in Part 4 of this Section.

PART 2 NOT USED

PART 3 EXECUTION

A. MATERIAL SELECTION
1. Provide construction materials, coating systems, and lining systems consistent with materials requirements specified in individual equipment/material Specifications for the exposure assigned in the area exposure table. In the event of a conflict between the individual equipment/material specification and this Section, the individual equipment/material specification governs. In the event an area exposure is not designated for a particular location, the area exposure with the most severe corrosion potential from all area exposures for adjacent locations, rooms, areas, or spaces governs, and shall be the basis of the Contract Price.
2. Where components are assigned multiple area exposures, select the material and coating specified for the area exposure that has the most severe corrosion potential. When components cross, span, or straddle the boundary separating two or more area exposures, select materials specified for the area exposure that has the most severe corrosion potential. Where materials change at a boundary between exposures, change the material at the boundary or within the less severe exposure. At material transitions, separate dissimilar metals by a dielectric coupling or other suitable barrier.

PART 4 AREA EXPOSURE TABLE

Facility Number	Facility Name	Room Name / Delineation	Exposure Type	Notes
72	Solids Processing Center	Gravity Belt Thickening (Ground Floor)	Indoor/Dry	Unclassified
72	Solids Processing Center	Blet Filter Press (Upper Floor)	Indoor /Dry	Unclassified, Unfinished
72	Solids Processing Center	Exterior	Outdoor/Wet	Unclassified
77	Digester/BFP Feed Control Building	Interior	Indoor/Dry	Unclassified
78	Biosolids Storage	Storage Bays	Outdoor/Wet	Unclassified
E	Electrical Room General	Interior	Indoor/Dry	Unclassified, Unfinished

END OF SECTION

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SECTION 01 66 00

PRODUCT STORAGE AND HANDLING REQUIREMENTS

PART 1 GENERAL

1.01 DAMAGE

A. Equipment, products and materials shall be shipped, handled, stored, and installed in ways which will prevent damage to the items. Damaged items will not be permitted as part of the work except in cases of minor damage that have been satisfactorily repaired and are acceptable to the Construction Manager.

1.02 PIPE

A. Pipe and appurtenances shall be handled, stored, and installed as recommended by the manufacturer. Pipes with paint, tape coatings, linings or the like shall be stored to protect the coating or lining from physical damage or other deterioration. Pipes shipped with interior bracing shall have the bracing removed only when recommended by the pipe manufacturer.

PART 2 EQUIPMENT

2.01 PACKAGE AND MARKING

A. All equipment shall be protected against damage from moisture, dust, handling, or other cause during transport from manufacturer's premises to site. Each item or package shall be marked with the number unique to the specification reference covering the item.

B. Stiffeners shall be used where necessary to maintain shapes and to give rigidity. Parts of equipment shall be delivered in assembled or subassembled units where possible.

2.02 IDENTIFICATION

A. Each item of equipment and valve shall have permanently affixed to it a label or tag with its equipment or valve number designated in this contract. Marker shall be of stainless steel. Location of label will be easily visible.

2.03 SHIPPING

A. Bearing housings, vents and other types of openings shall be wrapped or otherwise sealed to prevent contamination by grit and dirt.

B. Damage shall be corrected to conform to the requirements of the contract before the assembly is incorporated into the work. The Contractor shall bear the costs arising out of dismantling, inspection, repair and reassembly.

2.04 FACTORY APPLIED COATINGS

A. Unless otherwise specified, each item of equipment shall be shipped to the site of the work with the manufacturer's shop applied epoxy prime coating as specified in Section 09 90 00 . The prime coating shall be applied over clean dry surfaces in accordance with the coating manufacturer's recommendations. The prime coating will serve as a base for field-applied finish coats. Electrical equipment and materials shall be painted by manufacturer as specified in Section 09 90 00-3.03 Electrical and Instrumentation Equipment and Materials.

2.05 STORAGE

A. During the interval between the delivery of equipment to the site and installation, all equipment, unless otherwise specified, shall be stored in an enclosed space affording protection from weather, dust and mechanical damage and providing favorable temperature, humidity and ventilation conditions to ensure against equipment deterioration. Manufacturer's recommendations shall be adhered to in addition to these requirements.

B. Equipment and materials to be located outdoors may be stored outdoors if protected against moisture condensation. Equipment shall be stored at least 6 inches above ground. Temporary power shall be provided to energize space heaters or other heat sources for control of moisture condensation. Space heaters or other heat sources shall be energized without disturbing the sealed enclosure.

2.06 PROTECTION OF EQUIPMENT AFTER INSTALLATION

A. After installation, all equipment shall be protected from damage from, including but not limited to, dust, abrasive particles, debris and dirt generated by the placement, chipping, sandblasting, cutting, finishing and grinding of new or existing concrete, terrazzo and metal; and from the fumes, particulate matter, and splatter from welding, brazing and painting of new or existing piping and equipment. As a minimum, vacuum cleaning, blowers with filters, protective shieldings, and other dust suppression methods will be required at all times to adequately protect all equipment. During concreting, including finishing, all equipment that may be affected by cement dust must be completely covered. During painting operations, all grease fittings and similar openings shall be covered to prevent the entry of paint. Electrical switchgear, unit substation, and motor load centers shall not be installed until after all concrete work and sandblasting in those areas have been completed and accepted and the ventilation systems installed.

PART 3 NOT USED

END OF SECTION

SECTION 01 73 24

DESIGN REQUIREMENTS FOR
NON-STRUCTURAL COMPONENTS AND NON-BUILDING STRUCTURES

PART 1 GENERAL

1.01 SUMMARY

A. Section includes: Minimum structural requirements for the design, anchorage, and bracing of non-structural components such as architectural/mechanical/HVAC/electrical components, equipment, or systems, and non-building structures such as tanks.

B. The requirements of this section apply to design of the structural elements and features of equipment and to platforms/walkways that are provided with equipment or non-building structures.

C. This section applies to non-building structures and non-structural components that are permanently attached to structures as defined below and in ASCE 7.

D. Design and conform to criteria and design codes listed within this section. Engineering design is not required for attachments, anchorage, or bracing detailed on the Drawings or where the size of attachments, anchorage, or bracing is defined in specific technical specification sections.

E. The following non-structural components are exempt from seismic design loading requirements of this section.
   1. Components in Seismic Design Category A.
   2. Furniture (except permanent floor supported storage cabinets over 6 ft tall).
   3. Temporary or movable equipment.
   4. Architectural components in Seismic Design Category B other than parapets supported by bearing walls or shear walls provided that the component importance factor, I_p, is equal to 1.0.
   5. Mechanical and electrical components in Seismic Design Category B.
   6. Mechanical and electrical components in Seismic Design Category C provided that the component importance factor, I_p, is equal to 1.0.
   7. Mechanical and electrical components in Seismic Design Categories D, E, or F where all of the following apply:
      a. The component importance factor, I_p, is equal to 1.0;
      b. The component is positively attached to the structure;
      c. Flexible connections are provided between the component and associated ductwork, piping, and conduit;
      d. And either:
         1) the component weighs 400 lb or less and has a center of mass located 4 ft or less above the adjacent floor level; or
         2) the component weighs 20 lb or less, or in the case of a distributed systems, 5 lb/ft or less.

1.02 RELATED SECTIONS

A. This section contains specific references to the following related section. Additional related sections may apply that are not specifically listed below.
   1. Section 05 05 20 Anchor Bolts
   2. Section 05 50 00 Metal Fabrications

1.03 REFERENCES

A. The references listed below are a part of this section. Where a referenced document contains references to other standards, those documents are included as references under this section as if referenced directly. In the event of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.

Reference	Title
Aluminum Design Manual	Aluminum Association, Aluminum Design Manual with Specifications and Guidelines for Aluminum Structures
AAMA	American Architectural Manufacturer's Association
ACI 318	Building Code Requirements for Structural Concrete
ACI 350	Code Requirements for Environmental Engineering Concrete Structures
ACI 350.3	Seismic Design of Liquid-Containing Concrete Structures
AISC 341	Seismic Provisions for Structural Steel Buildings
ACI 360	Specification for Structural Steel Buildings
ASCE 7	Minimum Design Loads for Buildings and Other Structures
ASTM C635	Manufacture, Performance and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings
ASTM C636	Installation for Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings
AWS D1.1	Structural Welding Code – Steel
AWS D1.2	Structural Welding Code - Aluminum
AWS D1.6	Structural Welding Code – Stainless Steel
AWS D1.8	Structural Welding Code – Seismic Supplement
DOSH	WA Industrial Safety and Health Act administered by the Labor and Industries Division of Occupational Safety and Health
IBC	International Building Code with local amendments
ICC-ES AC 156	Acceptance Criteria for Seismic Certification by Shake Table Testing of Non-structural Components
NFPA-13	Installation of Sprinkler Systems
OSHA	U.S. Dept. of Labor, Occupational Safety and Health Administration
SMACNA	Seismic Restraint Manual Guidelines for Mechanical Systems

1.04 DEFINITIONS

A. Structure: The structural elements of a building that resist gravity, seismic, wind, and other types of loads. Structural components include columns, posts, beams, girders, joists, bracing, floor or roof sheathing, slabs or decking, load-bearing walls, and foundations.

B. Non-structural Components: Non-structural portions of a building include every part of the building and all its contents, except the structural portions, that carry gravity loads and that may also be required to resist effects of wind, snow, impact, temperature and seismic loads. Non-structural components include, but are not limited to, ceilings, partitions, windows, equipment, piping, ductwork, furnishings, lights, etc.

C. Non-building Structures: Self-supporting structures that carry gravity loads and that may also be required to resist the effects of wind, snow, impact, temperature and seismic loads. Non-building structures include, but are not limited to, pipe racks, storage racks, stacks, tanks, vessels and structural towers that support tanks and vessels.

1.05 SUBMITTALS

A. Action Submittals:
   1. Procedures: Section 01 33 00.
   2. A copy of this specification section with each paragraph check-marked to indicate specification compliance or marked to indicate requested deviations from specification requirements.
   3. Check-marks (✓) shall denote full compliance with a paragraph as a whole. Deviations shall be underlined and denoted by a number in the margin to the right of the identified paragraph. The remaining portions of the paragraph not underlined will signify compliance on the part of the Contractor with the specifications. Include a detailed, written justification for each deviation. Failure to include a copy of the marked-up specification sections, along with justification(s) for requested deviations to specification requirements, with the submittal is sufficient cause for rejection of the entire submittal with no further consideration.
   4. For structural elements of non-structural components and non-building structures required to be designed per this section, provide Drawings and design calculations stamped by a licensed professional engineer qualified to perform structural engineering in the state or commonwealth in which the project is constructed.
   5. List of non-structural components and non-building structures requiring wind and seismic design and anchorage.
   6. Shop drawings showing details of complete wind and seismic bracing and anchorage attachment assemblies including connection hardware, and embedment into concrete.
   7. Shop drawings showing plans, elevations, sections and details of equipment support structures and non-building structures, including anchor bolts, structural members, platforms, stairs, ladders, and related attachments.
   8. Identify interface points with supporting structures or foundations, as well as size, location, and grip of required attachments and anchor bolts. Clearly indicate who will be providing each type of attachment/anchor bolt. Equipment vendor shall design anchor bolts, including embedment into concrete, and submit stamped calculations.

9. Calculations for supports, bracing, and attachments shall clearly indicate design criteria applied. Coordinate concrete embedment calculations with thickness and strength of concrete members. Submit a tabulation of the magnitude of unfactored (service level) equipment loads at each support point, broken down by type of loading (dead, live, wind, seismic, etc.). Indicate impact factors applied to these loads in design calculations.
10. Special Seismic Certification for non-structural components identified in article 1.07 of this section.

1.06 QUALITY ASSURANCE

A. Quality Control By Owner:
   1. Special Inspection of non-structural components and non-building structures, and their anchorages shall be performed by the Special Inspector under contract with the Owner and in conformance with IBC Chapter 17. Special Inspector(s) and laboratory shall be acceptable to the Owner in their sole discretion. Special Inspection is in addition to, but not replacing, other inspections and quality control requirements. Where sampling and testing required conforms to Special Inspection standards, such sampling and testing need not be duplicated.
   2. For non-structural components requiring Special Seismic Certification, the Special Inspector shall verify that the label, anchorage, and mounting conform with the Special Seismic certificate of compliance.

1.07 SPECIAL SEISMIC CERTIFICATION

A. Special Seismic Certification is certification of equipment and components to not only withstand the effects of earthquakes, but also to function following the design seismic event.

B. Special Seismic Certification is required for the following non-structural components in Seismic Design Categories C through F, which have a component importance factor of I_p=1.5 (referred to as “Designated Seismic Systems” in ASCE 7):
   1. Components required to function for life-safety purposes after an earthquake, including fire protection sprinkler systems and fire dampers.
   2. Components that contain or convey toxic, hazardous, or explosive substances where the quantity of the material exceeds threshold quantities established by the governing code authority, or the component is attached to a structure classified as a hazardous occupancy.
   3. Components in or attached to a Risk Category IV structure and needed for continued operation.

C. Non-structural components requiring Special Seismic Certification include, but are not limited to, the following:
   1. Fire protection systems and dampers

D. Methods for Achieving Special Seismic Certification

1. For active components (e.g. equipment with parts that rotate, move mechanically, or are energized during operation), Special Seismic Certification is achieved by the following method, unless the component is listed below as being considered inherently rugged:
   a. Shake table testing (see below for requirements).
2. For non-active components and active components listed below as being considered inherently rugged, Special Seismic Certification is achieved by one of the following methods:
   a. Analysis demonstrating a complete load path and capacity of components to resist loading, including seismic loading calculated in accordance with design criteria in this section.
   b. Shake table testing (see below for requirements).
   c. Experience data meeting requirements described in ASCE 7, Chapter 13.

3. Shake table testing requirements:
   a. In accordance with ICC-ES AC 156.
   b. Test for a minimum S_{DS} (0.2 second design spectral response) shown in the design criteria in this section.
   c. Base testing on a ratio of height of component attachment in structure with respect to base of structure of z/h equal to 1.0.
   d. Mount equipment in the shake table test in a similar manner to mounting on the project (e.g. mounting to floor vs wall vs suspended mounting, and rigid vs isolated mountings).

PART 2 PRODUCTS

2.01 GENERAL

A. Provide materials in conformance with information shown on the Drawings and in other technical specification sections. See individual component and equipment specifications for additional requirements.

2.02 DESIGN CRITERIA

A. Design Codes

Design	Code
Buildings/Structures:	International Building Code 2018and ASCE 7-16
Reinforced concrete:	ACI 350-06 and ACI 350.3-06 for Concrete Liquid Containing Structures, ACI 318-14 for all other reinforced concrete
Structural steel:	AISC 360-10 and AISC 341-10
Aluminum:	Aluminum Design Manual, Latest Edition
Welding:	AWS Welding Codes, Latest Edition
Occupational health and safety requirements:	OSHA and DOSH

Note: When conflicting requirements occur, the most stringent requirements will govern the design.

B. Design Loads

1. Design non-structural components and non-building structures for the following minimum loads: (Do not apply wind and snow loads to non-structural components and non-building structures that are located inside buildings.)
2. Dead Loads:
   a. Add an additional allowance for piping and conduit when supported and hung from the underside of equipment and platforms.
   b. Typical allowance for piping and conduit: 20 psf
3. Uniform Live Loads:

Elevated grating floors:	100 psf
Columns:	No column live load reduction allowed
Exitways, stairs and landings:	100 psf
Equipment platforms, walkways/catwalks (other than exitways):	200 psf

4. Snow Loads:

Code:	IBC 2018 & ASCE 7-16
Risk Category:	III (Wastewater Treatment facilities are Risk Category III)
Ground Snow Load (p_g):	30 psf
Exposure Factor (C_e):	C
Thermal Factor (C_t):	1.0
Importance Factor (I_s):	1.1
Flat Roof Snow Load (p_f):	25 psf
Drifting:	Per ASCE 7

5. Wind Loads:

Code:	IBC 2018 & ASCE 7-16
Risk Category:	III (Wastewater Treatment Facilities are Risk Category III)
Basic Wind Speed (Ultimate, 3-second gust) for Risk Category Shown Above:	105 mph
Exposure:	C
Topographic Factor (K_{zt})	1.0

Note:

1. *Design exterior non-strutural components and non-building structures, unless located in a pit or basin, to withstand design wind loads without consideration of shielding effects by other structures.*

6. Seismic Loads:

Code:	IBC 2018 & ASCE 7-16
Risk Category:	III (Wastewater Treatment Facilities are Risk Category III)
0.2 Sec. Mapped Spectral Response, S_S:	0.82 g
1.0 Sec. Mapped Spectral Response, S_1:	0.41 g
Site Class:	D

0.2 Sec. Design Spectral Response, S_{DS}:	0.66 g
1.0 Sec. Design Spectral Response, S_{D1}:	0.43 g
Importance Factor (I_e):	1.25
Component Importance Factor (I_p):	1.0, except I_p=1.5 for components identified in Section 13.1.3 of ASCE 7
Seismic Design Category	D

Notes:

1. *Calculate seismic loads on the basis of governing building code. Include equipment operating loads in structure dead load.*
2. *Check individual members for seismic and full member live load acting simultaneously, except that flooded equipment loads (infrequent occurrence) need not be combined with seismic loads. Combine equipment operating loads with seismic loads.*

7. Impact Loads:
   a. Consider impact loads in design of support systems.
   b. Use the following impact load factors unless recommendations of the equipment manufacturer will cause a more severe load case:

Rotating machinery:	20% of moving load
Reciprocating machinery:	50% of moving load
Monorail Hoists:	
• Vertical	25% of lifted load
• Longitudinal	10% of lifted load
Hangers supporting floors and platforms:	33% of live and dead load

8. Temperature:
   a. Include effects of temperature in design where non-structural components and non-building structures are exposed to differential climatic conditions. See climatic conditions below for temperature extremes.

C. Load Combinations
   1. Design non-structural components and non-building structures to withstand load combinations as specified in the governing building code. Where the exclusion of live load or impact load would cause a more severe load condition for the member under investigation, ignore the load when evaluating that member.

D. Design Considerations
   1. Design non-structural components and non-building structures for the following conditions:
   2. Climatic Conditions:

Maximum design temperature:	90	degrees Fahrenheit
Minimum design temperature:	15	degrees Fahrenheit

   3. Foundations:
      a. Extend foundations supporting non-structural components and non-building structures below the frost line, or support on non-frost susceptible structural fill down to the frost line.

Frost line for foundations:	18 inches

Note: Consult project geotechnical report for allowable soil bearing recommendations at location of structure.

E. Column Base Fixity
   1. Design column bases as pinned connections. No moments shall be assumed to be transferred to foundations.
   2. Where significant shear loads (greater than 5,000 lb. per anchor bolt) are transferred at column base plates, provide a shear key designed to transfer shear load.

F. Deflection
   1. Maximum beam deflection as a fraction of span for walkways and platforms: L/240 for total load and L/360 for live load.
   2. Maximum total load deflection for equipment support: L/450.

PART 3 EXECUTION

3.01 GENERAL

A. Make attachments and braces in such a manner that component force is transferred to the lateral force-resisting system of the structure. Base attachment requirements and size and number of braces per calculations submitted by Contractor.

B. Anchorage of equipment is specified to be made by cast-in anchor bolts in concrete elements unless specifically noted otherwise on the Drawings or other specification sections. Contractor is responsible for remedial work or strengthening (of concrete elements because of superimposed seismic loading) if anchor bolts are improperly installed or omitted due to lack of submittal review or improper placement for any reason, at no additional cost to Owner.

C. Provide anchor bolts in accordance with Section 05 05 20. Base size of anchor bolts and embedment on submitted calculations.

D. Submit details of and calculations for anchorages prior to placement of concrete or erection of other structural supporting members. Submittals received after structural supports are in place will be rejected if proposed anchorage method would create an overstressed condition of the supporting member. Contractor is responsible for revisions to anchorages and/or strengthening of structural support so that there is no overstress condition, at no additional cost to Owner.

END OF SECTION

SECTION 01 73 29

CUTTING AND PATCHING

PART 1 GENERAL

1.01 STRUCTURES

A. The Contractor shall take all precautions necessary to protect the integrity and usefulness of all existing plant facilities. If necessary, the Contractor may, with the approval of the Owner, remove such existing structures, including curbs, gutters, pipelines and utility poles as may be necessary for the performance of the work, and shall rebuild the structures thus removed in as good a condition as found with the requirements specified. He shall also repair existing structures which may be damaged as a result of the work under this contract.

1.02 ROADS AND STREETS

A. Unless otherwise specified, roads and streets in which the surface is removed, broken, or damaged, or in which the ground has caved or settled during the work under this contract, shall be resurfaced and brought to the original grade and section. Roadways used by the Contractor shall be cleaned and repaired. Before resurfacing material is placed, edges of pavements shall be trimmed back far enough to provide clean, solid, vertical faces, and shall be free of loose material. All paved surfaces shall be cut with a pavement saw. Rough cuts are not allowed. Repair work shall conform to the paving specifications.

1.03 CULTIVATED AREAS AND OTHER SURFACE IMPROVEMENTS

A. Cultivated or planted areas and other surface improvements which are damaged by actions of the Contractor shall be restored as nearly as possible to their original condition. Restoration shall take place within 1 week or sooner as directed by the Construction Manager.

B. Existing guard posts, barricades, and fences shall be protected and replaced if damaged.

1.04 PROTECTION OF EXISTING INSTALLATIONS

A. The Contractor shall protect all existing operating facilities and structures from damages. However, if damage occurs, the Contractor shall immediately correct or replace existing equipment, controls, systems, structures, or facilities which are damaged in any way as a result of his operations.

PART 2 NOT USED

PART 3 NOT USED

END OF SECTION

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SECTION 01 78 23

OPERATION AND MAINTENANCE DATA

PART 1 GENERAL

1.01 SCOPE

A. Operation and maintenance (O&M) instructions shall be provided in accordance with this section and as required in the technical sections of this project manual. O&M information shall be provided for each maintainable piece of equipment, equipment assembly or subassembly, and material provided or modified under this contract.

B. O&M instructions must be submitted and accepted a minimum of 7 calendar days before on-site training may start.

1.02 TYPES OF INFORMATION REQUIRED

A. General:
   1. O&M information shall contain the names, addresses, and telephone numbers of the manufacturer, the nearest representative of the manufacturer, and the nearest supplier of the manufacturer's equipment and parts. In addition, one or more of the following items of information shall be provided as applicable.

B. Operating Instructions:
   1. Specific instructions, procedures, and illustrations shall be provided for the following phases of operations:
      a. Safety Precautions: List personnel hazards for equipment and list safety precautions for all operating conditions.
      b. Operator Prestart: Provide requirements to set up and prepare each system for use.
      c. Start-Up, Shutdown, And Postshutdown Procedures: Provide a control sequence for each of these operations.
      d. Normal Operations: Provide control diagrams with data to explain operation and control of systems and specific equipment.
      e. Emergency Operations: Provide emergency procedures for equipment malfunctions to permit a short period of continued operation or to shut down the equipment to prevent further damage to systems and equipment. Include emergency shutdown instructions for fire, explosion, spills, or other foreseeable contingencies. Provide guidance on emergency operations of all utility systems including valve locations and portions of systems controlled.
      f. Operator Service Requirements: Provide instructions for services to be performed by the operator such as lubrication, adjustments, and inspection.
      g. Environmental Conditions: Provide a list of environmental conditions (temperature, humidity, and other relevant data) which are best suited for each product or piece of equipment and describe conditions under which equipment should not be allowed to run.

C. Preventive Maintenance:
   1. The following information shall be provided for preventive and scheduled maintenance to minimize corrective maintenance and repair:
      a. Lubrication Data: Provide lubrication data, other than instructions for lubrication in accordance with paragraph 1.02 Operator Service Requirements.
         1) A table showing recommended lubricants for specific temperature ranges and applications;
         2) Charts with a schematic diagram of the equipment showing lubrication points, recommended types and grades of lubricants, and capacities; and
         3) A lubrication schedule showing service interval frequency.
      b. Preventive Maintenance Plan And Schedule: Provide manufacturer's schedule for routine preventive maintenance, inspections, tests, and adjustments required to ensure proper and economical operation and to minimize corrective maintenance and repair. Provide manufacturer's projection of preventive maintenance man-hours on a daily, weekly, monthly, and annual basis including craft requirements by type of craft.

D. Corrective Maintenance:
   1. Manufacturer's recommendations shall be provided on procedures and instructions for correcting problems and making repairs.
      a. Troubleshooting Guides And Diagnostic Techniques: Provide step-by-step procedures to promptly isolate the cause of typical malfunctions. Describe clearly why the checkout is performed and what conditions are to be sought. Identify tests or inspections and test equipment required to determine whether parts and equipment may be reused or require replacement.
      b. Wiring Diagrams And Control Diagrams: Wiring diagrams and control diagrams shall be point-to-point drawings of wiring and control circuits including factory-field interfaces. Provide a complete and accurate depiction of the actual job-specific wiring and control work. On diagrams, number electrical and electronic wiring and pneumatic control tubing and the terminals for each type identically to actual installation numbering.
      c. Maintenance And Repair Procedures: Provide instructions and list tools required to restore product or equipment to proper condition or operating standards.
      d. Removal And Replacement Instructions: Provide step-by-step procedures and list required tools and supplies for removal, replacement, disassembly, and assembly of components, assemblies, subassemblies, accessories, and attachments. Provide tolerances, dimensions, settings, and adjustments required including criteria for anchor and equipment baseplate bolt torque values. Instructions shall include a combination of test and illustrations.
      e. Spare Parts And Supply Lists: Provide lists of spare parts and supplies required for maintenance and repair to ensure continued service or operation without unreasonably delays. Special consideration is required for facilities at remote locations. List spare parts and supplies that have a long lead time to obtain.
      f. Corrective Maintenance Manhours: Provide manufacturer's projection of corrective maintenance man-hours including craft requirements by type of craft. Corrective maintenance that requires participation of the equipment manufacturer shall be identified and tabulated separately.

E. Appendices:

1. The following information shall be provided; include information not specified in the preceding paragraphs but pertinent to the maintenance or operation of the product or equipment.

   a. Parts Identification: Provide identification and coverage for all parts of each component, assembly, subassembly, and accessory of the end items subject to replacement. Include special hardware requirements, such as requirement to use high-strength bolts and nuts. Identify parts by make, model, serial number, and source of supply to allow reordering without further identification. Provide clear and legible illustrations, drawings, and exploded views to enable easy identification of the items. When illustrations omit the part numbers and description, both the illustrations and separate listing shall show the index, reference, or key number which will cross-reference the illustrated part to the listed part. Parts shown in the listings shall be grouped by components, assemblies, and subassemblies.

   b. Warranty Information: List and explain the various warranties and include the servicing and technical precautions prescribed by the manufacturers or contract documents to keep warranties in force.

   c. Personnel Training Requirements: Provide information available from the manufacturers to use in training designated personnel to operate and maintain the equipment and systems properly.

   d. Testing Equipment And Special Tool Information: Provide information on test equipment required to perform specified tests and on special tools needed for the operation, maintenance, and repair of components.

1.03 TRANSMITTAL PROCEDURE

A. Unless otherwise specified, O&M manuals, information, and data shall be transmitted in accordance with Section 01 33 00 accompanied by Transmittal Form 01 78 23-A and Equipment Record Forms 01 78 23-B and/or 01 78 23-C, as appropriate, all as specified in Section 01 99 90. The transmittal form shall be used as a checklist to ensure the manual is complete. Only complete sets of O&M instructions will be reviewed for acceptance.

B. 3 copies of the specified O&M information shall be provided. For ease of identification, each manufacturer's brochure and manual shall be appropriately labeled with the equipment name and equipment number as it appears in the project manual. The information shall be organized in the binders in numerical order by the equipment numbers assigned in the project manual. The binders shall be provided with a table of contents and tab sheets to permit easy location of desired information.

C. Electronic copies of O&M manuals shall be in PDF, complete with indexing, continuous page numbering, bookmarking, and fully formatted for ease of use.

D. If manufacturers' standard brochures and manuals are used to describe O&M procedures, such brochures and manuals shall be modified to reflect only the model or series of equipment used on this project. Extraneous material shall be crossed out neatly or otherwise annotated or eliminated.

1.04 PAYMENT

A. Acceptable O&M information for the project must be delivered to the Construction Manager prior to the project being 65 percent complete. Progress payments for work in excess of 65 percent completion will not be made until the specified acceptable O&M information has been delivered to the Construction Manager.

1.05 FIELD CHANGES

A. Following the acceptable installation and operation of an equipment item, the item's instructions and procedures shall be modified and supplemented by the Contractor to reflect any field changes or information requiring field data.

B. Any modifications to instructions and procedures shall be provided a minimum of 7 calendar days ahead of final equipment acceptance.

PART 2 NOT USED

PART 3 NOT USED

END OF SECTION

SECTION 01 78 39

PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.01 DRAWINGS

A. Record Documents refer to those documents maintained and annotated by the Contractor during construction and are defined as:
   1. A neatly and legibly marked set of Contract Drawings showing the final location of piping, appurtenances, equipment, electrical conduits, outlet boxes and cables;
   2. Additional documents such as schedules, lists, drawings, electrical and instrumentation diagrams included in the specifications;
   3. Contractor layout and installation drawings such as loop drawings, single line diagrams, control schematics/elementary diagrams, control panel drawings, and wiring drawings; and
   4. Three-dimensional database-driven models used in the development of drawings or schedules, if applicable.

B. Unless otherwise specified, record drawings shall be full size.

PART 2 NOT USED

PART 3 EXECUTION

3.01 USE DURING CONSTRUCTION

A. Record Documents shall be maintained in a clean, dry, and legible condition.

B. Record Documents shall not be used for construction purposes and shall be available for review by the Construction Manager during normal working hours at the Contractor's field office.

3.02 UPDATES

A. Marking of the Record Documents shall be kept current and shall be done at the time the material and equipment are installed.

B. Annotations to the Record Documents shall be made with an erasable colored pencil conforming to the following color code:
   1. Additions – Red
   2. Deletions – Green
   3. Comments – Blue
   4. Dimensions – Graphite*

   **Legibly mark to record actual depths, horizontal and vertical location of underground raceways, cables, and appurtenances referenced to permanent surface improvements.*

C. Monthly Review Meetings:
   1. During the monthly project meetings, the Contractor and Construction Manager shall review the record documents.
   2. At that time the Contractor and Construction Manager shall review the working set of record drawings and initial the accepted areas where everyone has agreed that the location, elevation and/or other construction modification is at the indicated final location.
   3. At the conclusion of each meeting, the Contractor shall submit the up-to-date Record Drawings to the Construction Manager.

D. Underground Utilities:
   1. Contractor shall provide digital photographs of underground piping and conduits, a fixed measurement on the record drawings, and/or GPS coordinates showing locations from buildings or structures prior to burying piping or electrical conduit.
   2. Contractor shall note the depth of buried piping and electrical conduit.

E. Field Routed Utilities:
   1. All field routed utilities shall have the full utility layout documented on the record documents as installed. All fittings, appurtenances, start and end points, connections shall be identified. All elevations shall be clearly noted. Additional sheets shall added to the record drawings as needed to clearly depict the full routing of utilities if a sheet does not exist in the Contract Documents.

3.03 SUBMISSION

A. At the completion of the work, prior to final payment, all record drawings shall be submitted to the Construction Manager.

B. The electrical and instrumentation record drawings are typically the last mark ups to be completed. Final payment shall be withheld until the Contractor, Construction Manager, and Engineer have reviewed, verified and agreed on the final electrical and instrumentation record drawings.

C. At the completion of the work, all models (if applicable) shall be submitted to the Construction Manager in NWD format or other format approved by the Construction Manager and Owner.

END OF SECTION

SECTION 01 79 00

DEMONSTRATION AND TRAINING

PART 1 GENERAL

1.01 DESCRIPTION

A. This section contains requirements for training the Owner's personnel, by persons retained by the Contractor specifically for the purpose, in the proper operation and maintenance of the equipment and systems installed under this contract.

1.02 QUALITY ASSURANCE

A. Where required by the detailed specifications, the Contractor shall provide on-the-job training of the Owner's personnel. The training sessions shall be conducted by qualified, experienced, factory-trained representatives of the various equipment manufacturers. Training shall include instruction in both operation and maintenance of the subject equipment.

1.03 SUBMITTALS

A. The following information shall be submitted to the Construction Manager in accordance with the provisions of Section 01 33 00. The material shall be reviewed and accepted by the Construction Manager as a condition precedent to receiving progress payments in excess of 50 percent of the contract amount and not less than 3 weeks prior to the provision of training.
   1. Lessons plans for each training session to be conducted by the manufacturer's representatives. In addition, training manuals, handouts, visual aids, and other reference materials shall be included.
   2. Subject of each training session, identity and qualifications of individuals to be conducting the training, and tentative date and time of each training session.

PART 2 PRODUCTS

2.01 GENERAL

A. Where specified, the Contractor shall conduct training sessions for the Owner's personnel to instruct the staff on the proper operation, care, and maintenance of the equipment and systems installed under this contract. Training shall take place at the site of the work and under the conditions specified in the following paragraphs. Approved operation and maintenance manuals shall be available at least 30 days prior to the date scheduled for the individual training session.

2.02 LOCATION

A. Training sessions shall take place at the site of the work in the Operations Center.

2.03 LESSON PLANS

A. Formal written lesson plans shall be prepared for each training session. Lesson plans shall contain an outline of the material to be presented along with a description of visual aids to be utilized during the session. Each plan shall contain a time allocation for each subject.

B. One complete set of originals of the lesson plans, training manuals, handouts, visual aids, and reference material shall be the property of the Owner and shall be suitably bound for proper organization and easy reproduction. The Contractor shall furnish ten copies of necessary training manuals, handouts, visual aids and reference materials at least 1 week prior to each training session. An electronic PDF copy of all materials shall also be provided to the Owner.

2.04 FORMAT AND CONTENT

A. Each training session shall be comprised of time spent both in the classroom and at the specific location of the subject equipment or system. As a minimum, training session shall cover the following subjects for each item of equipment or system:
   1. Familiarization
      a. Review catalog, parts lists, drawings, etc., which have been previously provided for the plant files and operation and maintenance manuals.
      b. Check out the installation of the specific equipment items.
      c. Demonstrate the unit and indicate how all parts of the specifications are met.
      d. Answer questions.
   2. Safety
      a. Using material previously provided, review safety references.
      b. Discuss proper precautions around equipment.
   3. Operation
      a. Using material previously provided, review reference literature.
      b. Explain all modes of operation (including emergency).
      c. Check out Owner's personnel on proper use of the equipment.
   4. Preventive Maintenance
      a. Using material previously provided, review preventive maintenance (PM) lists including:
         1) Reference material.
         2) Daily, weekly, monthly, quarterly, semiannual, and annual jobs.
      b. Show how to perform PM jobs.
      c. Show Owner's personnel what to look for as indicators of equipment problems.
   5. Corrective Maintenance
      a. List possible problems.
      b. Discuss repairs--point out special problems.
      c. Open up equipment and demonstrate procedures, where practical.

6. Parts
    a. Show how to use previously provided parts list and order parts.
    b. Check over spare parts on hand. Make recommendations regarding additional parts that should be available.
7. Local Representatives
    a. Where to order parts: name, address, telephone.
    b. Service problems:
        1) Who to call.
        2) How to get emergency help.
8. Operation and Maintenance Manuals
    a. Review any other material submitted.
    b. Update material, as required.

2.05 VIDEO RECORDING:

A. The Owner may retain the services of a commercial video taping service to record each training session. After taping, the material will be edited and supplemented with professionally produced graphics to provide a permanent record. The Contractor shall advise all manufacturers providing training sessions that the material will be video taped and shall make available to the Owner's video taping contractor such utility services and accommodation as may be required to facilitate the production of the video tape record.

PART 3 EXECUTION

3.01 SUMMARY

A. Training shall be conducted in conjunction with or within seven days of the operational testing and commissioning periods. Classes shall be scheduled such that classroom sessions are interspersed with field instruction in logical sequence. The Contractor shall arrange to have the training conducted on consecutive days, with no more than 6 hours of classes scheduled for any one day. Concurrent classes shall not be allowed. Trainings shall not be conducted on Mondays or Fridays. Training shall be certified on Form 43 05 11-B specified in Section 01 99 90.

B. Acceptable operation and maintenance manuals for the specific equipment shall be provided to the Owner prior to the start of any training. Video taping shall take place concurrently with all training sessions.

C. The following services shall be provided for each item of equipment or system as required in individual specification sections. Additional services shall be provided, where specifically required in individual specification sections.
    1. As a minimum classroom equipment training for operations personnel will include:
        a. Using slides and drawings, discuss the equipment's specific location in the plant and an operational overview.
        b. Purpose and plant function of the equipment.
        c. A working knowledge of the operating theory of the equipment.
        d. Start-up, shutdown, normal operation, and emergency operating procedures, including a discussion on system integration and electrical interlocks, if any.

e. Identify and discuss safety items and procedures.
f. Routine preventative maintenance, including specific details on lubrication and maintenance of corrosion protection of the equipment and ancillary components.
g. Operator detection, without test instruments, of specific equipment trouble symptoms.
h. Required equipment exercise procedures and intervals.
i. Routine disassembly and assembly of equipment if applicable (as judged by the Owner on a case-by-case basis) for purposes such as operator inspection of equipment.

2. As a minimum, hands-on equipment training for operations personnel will include:
   a. Identify location of equipment and review the purpose.
   b. Identifying piping and flow options.
   c. Identifying valves and their purpose.
   d. Identifying instrumentation:
      1) Location of primary element.
      2) Location of instrument readout.
      3) Discuss purpose, basic operation, and information interpretation.
   e. Discuss, demonstrate, and perform standard operating procedures and round checks.
   f. Discuss and perform the preventative maintenance activities.
   g. Discuss and perform start-up and shutdown procedures.
   h. Perform the required equipment exercise procedures.
   i. Perform routine disassembly and assembly of equipment if applicable.
   j. Identify and review safety items and perform safety procedures, if feasible.
3. Classroom equipment training for the maintenance and repair personnel will include:
   a. Theory of operation.
   b. Description and function of equipment.
   c. Start-up and shutdown procedures.
   d. Normal and major repair procedures.
   e. Equipment inspection and troubleshooting procedures including the use of applicable test instruments and the "pass" and "no pass" test instrument readings.
   f. Routine and long-term calibration procedures.
   g. Safety procedures.
   h. Preventative maintenance such as lubrication; normal maintenance such as belt, seal, and bearing replacement; and up to major repairs such as replacement of major equipment part(s) with the use of special tools, bridge cranes, welding jigs, etc.
4. Hands-on equipment training for maintenance and repair personnel shall include:
   a. Locate and identify equipment components.
   b. Review the equipment function and theory of operation.
   c. Review normal repair procedures.

d. Perform start-up and shutdown procedures.
e. Review and perform the safety procedures.
f. Perform Owner approved practice maintenance and repair job(s), including mechanical and electrical adjustments and calibration and troubleshooting equipment problems.

END OF SECTION

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SECTION 01 91 00

COMMISSIONING, TESTING AND START-UP

1.01 SUMMARY

A. This Section establishes the Contractor's responsibilities for developing and conducting the complete commissioning, including testing and startup, of all equipment, systems, and facilities (new or existing) which are defined within the Contract Documents. This effort and the associated experience requirements are significant and critical to a safe and successful startup that meets the project schedule requirements.

B. This Section provides the overarching guidelines for commissioning but does not supersede specific testing requirements found elsewhere in the Contract Documents. Where there is any discrepancy, Contractor shall assume the more stringent requirements control unless confirmed otherwise by the Engineer. Refer to Division 26 and Division 40 for specific execution requirements related to electrical and instrumentation components and systems. For pre-commissioning activities, refer to other technical specifications, including Division 03 for requirements for testing of concrete hydraulic structures and Section 40 05 01 for testing requirements of hydraulic structures and piping.

C. All commissioning activities must be coordinated early in the project to minimize interference with the operation of the existing facility, or delays to the project schedule; see Section 01 12 16 for project work sequence and constraints. Unless otherwise specified, or agreed to in advance by the Engineer, Owner and Construction Manager, no commissioning activities will be scheduled to take place on a weekend or holiday recognized by the Owner.

D. This Section contains specific references to the following related specification sections. Additional related sections may apply that are not specifically listed below.
   1. Section 01 11 00 Summary of Work
   2. Section 01 12 16 Work Sequence
   3. Section 01 33 00 Submittal Procedures

E. The Contractor shall provide an experienced Commissioning Manager who will be responsible for overseeing, organizing, administering, recording, and documenting all aspects of the commissioning efforts.

F. A representative or representatives of the equipment manufacturer(s) shall participate in the commissioning phases per the requirements of the Specifications.
   1. Commissioning Overview: The sequence of the commissioning shall proceed as follows. Variations to this sequence may be requested by the Contractor and may be authorized by the Engineer (with input from the Construction Manager) where necessary to meet other constraints described in these Contract Documents. Any requested changes to the extent of testing quality control checks, related sequencing, and/or level or frequency of documentation shall be considered a deviation from the accepted Commissioning Plan and require resubmittal. The equipment and facility startup is a bottom-up approach, where testing starts at the component level, which is then followed by testing at the system, and then facility level.

a. Phase 1 Commissioning: Component Test Phase. The Component Test Phase is comprised of the following three parts.
    1) Part 1 – Component Installation Review
    2) Part 2 – Component Operational Test
    3) Part 3 – Component Network Communications Test
b. Phase 2 Commissioning: Functional Test Phase
    1) Part 1 – Functional Test of Individual Components and Independent Systems
    2) Part 2 – Comprehensive Functional Test of Integrated Systems
c. Phase 3 Commissioning: Operations Test Phase. The Operations Test Phase is comprised of the following two parts.
    1) Part 1 – Walkdown
    2) Part 2 – Seven (7) Day Operations Test
d. Phase 4 Commissioning: Acceptance Test Phase
e. Optimization/Performance Commissioning Phase

2. Unless otherwise specified or agreed to in writing by the Engineer (with input from the Construction Manager), all testing activities required as part of facility construction will occur prior to initiation of Phase 1 Commissioning. These include, but are not limited to, testing hydraulic structures for water tightness, pressure testing of piping systems, etc. Refer to applicable specification sections for specific requirements.

1.02 CONTRACTOR COMMISSIONING MANAGER RESPONSIBILITIES AND QUALIFICATIONS

A. The Contractor shall provide an experienced Commissioning Manager who will be responsible for overseeing, organizing, administering, recording, and documenting all aspects the testing and startup efforts, including development of System Commissioning Plans. Refer to paragraph 1.02 Contractor Commissioning Manager Responsibilities and Qualifications for experience requirements.

B. At 30 days prior to the commencement of the first component testing, the Commissioning Manager shall be full time, working only on the testing and startup activities of this Work.

C. The Commissioning Manager's responsibilities shall include, but are not limited to, the following activities.
1. Direct and oversee the development of all commissioning planning documents.
2. Coordinate and be responsible for all testing and startup activities.
3. Coordinate activities with overall Contractor’s project schedule, providing a schedule update at each meeting.
4. Serve as liaison between the Contractor and the Engineer/Construction Manager for all testing and startup activities. Coordinate directly with Owner's staff as directed by the Construction Manager.
5. Organize, lead, and provide minutes for Commissioning Meetings from the initial development of the System Commissioning Plans until the completion of all testing and startup activities.
6. Maintain the System Commissioning Plans and provide monthly updates to the Startup Team until the month prior to startup, then provide weekly updates until commissioning is complete.

7. Oversee and administer all testing activities, including either direct participation in the testing, and/or oversight and monitoring of all testing, and related documentation.
8. Assure that all tests have been successfully completed in accordance with the submitted testing procedures.
9. Develop, compile, review for completeness and compliance to the specifications, and submit all required completed test submittals and other related documentation in a timely manner
10. Work with the Contractor's Safety Supervisor to provide safe work conditions during commissioning.
11. Prior to submittal, review and approve the content of all training sessions to assure that the training includes all applicable operation, maintenance, safety, and functional, operations, and acceptance testing information.

D. Commissioning Manager's Statement of Qualifications:
   1. A minimum of 10 years of construction experience and 5 years of experience serving in a role with responsibilities similar to those described in this Section.
   2. Experience in the startup of similar systems on at least one completed wastewater facility, with a minimum construction cost of $5 million.
   3. A designated backup Commissioning Manager or commissioning point of contact shall be identified and communicated to the Owner.

1.03 DEFINITIONS

A. Commissioning:
   1. The systematic process composed of all elements and requirements related to testing and startup of the Work.

B. Commissioning Hierarchy:
   1. Area
      a. A collection of systems usually constructed within or primarily within the confines of a single building or structure.
      b. Generally, the Drawings are compiled by Area number, in ascending order. Area numbers used in the Drawings correspond with the numbering system utilized during the last several facility upgrades.
      c. In most cases, Areas correspond with treatment processes. In some cases, however, multiple treatment processes are included in the same Area and/or a single treatment process is incorporated into multiple Areas.
   2. System
      a. An arrangement of components or other systems so related or connected to perform a specific function and which form an identifiable, unified, functional, operational, safe, and independent part of the Owner's facility.
      b. A system may consist of solely new equipment installed as part of the Work, or as a combination of new equipment installed as part of the Work and existing equipment operating in conjunction with each other.
      c. A system may include equipment and facilities in more than one Area.

3. Component
    a. Components comprise every discrete item associated within the Work.
    b. Example components include but are not limited to the following:
        1) Structural system components include buildings, tanks, and reservoirs.
        2) Architectural system components include floors, walls, doors, windows, ceilings, and roofs.
        3) Process system components are usually discrete pieces of equipment and their respective motors and include pumps, tanks, blowers, and other types of treatment equipment.
        4) Piping system components include: the piping, the piping connections, and the valves, whether manual or powered.
        5) Electrical system components include wiring, equipment including but not limited to panelboards, MCCs, starters, and VFDs.
        6) Control system components include Wiring, instruments, control panels, human-machine interfaces (HMIs'), computers, programmable logic controllers (PLCs), instrument networks, and process control networks
        7) Heating, ventilation, and air conditioning (HVAC) system components include pumps discrete pieces of HVAC equipment, and their respective motors and include pumps, heat pumps, heat exchangers, water quality systems, valves, fans, louvers, and ductwork.
        8) Plumbing system components include pumps, strainers, valves, water supply piping, and area collection/drainage for system
        9) Fire alarm system components include fire alarms, and network communication.
        10) Fire suppression system components include sprinklers, valves, and piping.
        11) Security system components include video surveillance, locking systems, identification systems, access to existing or other systems, and security staffing.
        12) Communication systems, including internet connectivity devices, speakers, and receivers.
        13) Access control systems, including motorized gates and interface to existing and/or other systems.
        14) Indoor and outdoor lighting control systems and interface to other systems.

C. Summary of Test Phases. Reference paragraph 3.05 Testing for comprehensive test phase requirements.
    1. Phase 1 Commissioning: Component Test Phase. The Component Test Phase is intended to:
        a. Perform inspection and testing in a logical, stepwise sequence to ensure that the installed components have been safely and properly assembled, serviced, aligned, adjusted, connected, and calibrated prior to operation.
        b. Perform operational tests to prove that the components are operating as needed, intended, and specified.
        c. Perform component network communications tests to prove that all network reporting, data received, and control aspects for a given component are being correctly performed as needed, intended, and specified.

2. Phase 2 Commissioning: Functional Test Phase. The Functional Test Phase is performed on a system, multiple integrated systems and/or a facility to prove that they function as required in conformance with the performance requirements and as needed, intended, and specified. Functional tests use plant water, non-potable water, air, or simulated signals, not the specified media.
3. Phase 3 Commissioning: Operations Test Phase. The Operations Test Phase prepares a system, multiple integrated systems, or a facility for the Acceptance Test Phase, proves that all systems are correctly set up and that the facility will reliably function over time in real world conditions. The Operations Test Phase is intended to:
    a. Provide for operations testing to prove compliance with performance requirements using either plant water, non-potable water, air, or the specified media, depending on the tests performed. For systems exposed to untreated or partially treated wastewater, operations testing is the final step prior to introducing the wastewater.
    b. Perform a complete inspection (walkdown) by the commissioning team to verify readiness for the 7-day operational test.
    c. Provide for 7-day operations test which shall consist of a continuous un-interrupted seven-day run period using the specified media.
4. Phase 4 Commissioning: Acceptance Test Phase. The Acceptance Test Phase operates a system, multiple integrated systems, or a facility with the specified media, by the Owner (with assistance from the Contractor), for 30 days, without operational or performance failure to demonstrate satisfactory performance with the performance requirements specified. Performance tests, specified in individual specification sections to verify guaranteed performance, are performed during Phase 4 Commissioning.
5. Optimization Commissioning Phase: Some systems may be specified with Optimization Testing which is intended to provide the Manufacturer's services to optimize specific systems.

D. Other Key Terms:
1. Tests: Unless otherwise specified, denotes all field-testing including component tests, functional tests, operational tests, acceptance tests, and optimization/performance tests.
2. Startup Constraints: Startup constraints are identified throughout these Contract Documents with major construction constraints with reference to the effects on process startup are being discussed in Section 01 12 16.
3. Commissioning Team. Led by the Commissioning Manager, the Commissioning Team is comprised of key operations and maintenance personnel of the Owner, the Construction Manager, the Engineer, and key representatives of the Suppliers.
4. Commissioning Manager: A testing and startup expert employed by the Contractor who is responsible for overseeing, organizing, administering, recording, and documenting all aspects the commissioning efforts.
5. Temporary Provision: Outages, re-routes, systems, components, materials, or equipment which is temporarily required to allow any test to occur.
6. Integrator: party responsible for control panel fabrication or alteration

7. Programmer: responsible for configuration of controllers (PLC, DCS, RTUs), HMI software. This may be separate from the party responsible for the control panel, fabrications or alternation, instrument installation and configuration.
8. Vendor Programmer: party responsible for controllers or local interface on vendor package equipment, defined as separate from plant or area SCADA systems.

1.04 SYSTEMS FOR PRE-COMMISSIONING AND COMMISSIONING

A. The following lists the major areas and systems within those areas to be commissioned as individual packages:
   1. Area 1: Solids Processing Center (Building 72)
      a. System 1: Dewatering Screw Presses
         1) Wash water system
         2) Polymer system
         3) Digested sludge piping
         4) Filtrate piping
      b. System 2: Monorail Hoist System
   2. Area 2: Digester BFP Feed Control Building (Building 77)
      a. System 1: Screw Press Feed Pumps
   3. Area 3: Biosolids Blend Tank (Facility 76)
      a. System 1: Level Sensor
   4. Area 4: Sludge Blend Tank (Facility 74)
      a. System 1: Level Sensor

1.05 COMMISSIONING PLAN

A. A Master Commissioning Plan for the Work shall be prepared. The Master Commissioning Plan shall be divided into several sub-plans, the first of which is an overall Project Commissioning Plan for the Work, with more detailed System Startup Plans prepared for each system. The number of System Startup Plans is dependent on the number of facilities and systems involved in the Work, the minimum number of which is defined later in this Section.
   1. Project Commissioning Plan. The Project Commissioning Plan shall provide an overview of the efforts related to the testing and startup for the Work. At a minimum, this plan shall cover the following.
      a. An organizational chart of the Commissioning Team and a description of the roles and responsibilities for each member.
      b. A general approach, sequencing, and analysis of major constraints at the facility and system level to performing the testing and startup for the Work.
      c. A listing and brief description of each system to be commissioned.
      d. Updated Construction progress schedule (see Section 01 32 16) which integrates the commissioning plan and schedule into the overall construction schedule. The updated schedule shall identify the schedule duration of each of the system commissioning activities specified in paragraph 1.05 B below; detailed schedule of each system commissioning activity can be provided with each system commissioning plan, as specified in paragraph 1.05 B.3 below.

B. System Commissioning Plans. A System Commissioning Plan shall be created for each system identified in paragraph 1.04 Systems for Pre-Commissioning and Commissioning. The System Commissioning Plan shall be kept updated as testing progresses. At a minimum, these plans shall include the following.

1. System Description. Provide a description of the system and each facility and area(s) into which that the system extends.
2. Testing Descriptions and Sequencing
    a. Overall Testing Description
        1) Provide a summary of the testing activities to be performed for that system.
        2) Provide a summary of the sequencing of the testing to be performed for the system.
        3) Provide a description of how signals from existing equipment not yet integrated into the work, or from new equipment that cannot yet be actuated, will be simulated, or actuated in order to test the system.
    b. Component Testing
        1) Provide a listing, description, and sequencing of each component test.
        2) The sequencing of the component testing shall be optimized to minimize the length of the phase.
        3) Record of field or factory calibration such as for instruments, or configuration specific to requirements specified such as VFD settings.
        4) Instrumentation and control loop tests.
        5) Electrical acceptance tests.
        6) Arc flash hazard and protective device requirements of Division 26.
    c. Functional Testing
        1) For each system, or multiple integrated systems or facilities which will undergo functional testing, provide a list, description, and sequencing of each functional test. The description shall include a narrative of the scenarios to be tested and shall include how the full operational range will be tested.
            a) Local control of all equipment and systems must be tested first. Successful testing of any field interlocks and hardwired controls before proceeding to remote control.
            b) Local control and remote check out are to be structured around the submitted I/O list, as specified in Division 40.
            c) All field terminations, loop checks, and modification within a control panel must be complete commencement of functional testing.
        2) Project process and instrumentation diagrams (P&IDs) shall be marked-up and provided which schematically represent the process and controls of the final construction of the system and shall be marked up noting temporary features necessary for Functional testing.
    d. Operations Testing
        1) For the system, provide a description of the walkdown process.
        2) For the system, provide a list, description, and sequencing of each startup test. The description shall include a narrative of the scenarios to be tested and shall include how the full operational range will be tested.

3) Project P&IDs shall be marked-up and provided that schematically represent the process and controls of the final construction and shall be marked up noting temporary features necessary for Operations Testing.
4) Plan drawings shall also be provided, marked up to show the final construction and temporary features required for Operations Testing.

e. Acceptance Testing
1) For the system, provide a list, description, and sequencing of each acceptance test.

f. Optimization/Performance Testing
1) If required for the facility, provide a list, description, and sequencing of each optimization/performance test.

3. Comprehensive Testing Schedule
a. For each System Commissioning Plan, list all equipment to be tested by specification section number and name, and provide a comprehensive schedule showing the following for each.
1) Section number and/or paragraph number within a section.
2) Forecasted installation completion dates.
3) Forecasted visit dates by the manufacturer.
4) The system within which each equipment item is included and will be tested.
5) Forecasted start and completion for each test (component, functional, operations, acceptance).
6) Forecasted submittal dates for test reports.

b. Update Comprehensive Testing Schedule monthly and coordinate it with the Overall Project Schedule.

4. Control Descriptions. Provide a listing of the control description(s) involved. Provide control descriptions as part of the System Commissioning Plan.

5. Drawings. Provide a listing of the following drawings.
a. All drawings that are part of the Contract Documents and are related to the facility undergoing testing.
b. Shop drawings including wiring diagrams relevant to the facility.
c. List of package system PLCs and their I/O's and wire diagrams for the system.

6. Instruments. Provide a list of the instruments involved with an appendix which includes the correct set points and ranges for the instruments.

7. Testing Consumables. Provide tables with descriptions that describe the consumables and estimated quantities required during testing, including but not limited to potable water, plant water, chemicals, fuels, oils, lubricants, and filters.

8. Testing Equipment Calibration. Provide a description of the measurement devices and the calibration method for the measurement devices which will be used to measure process performance characteristics.

9. Temporary Provisions
a. Provide a listing and description of temporary provisions required to perform all tests, including calibration equipment.

b. Where testing requires a source of water, gas or other medium other than the process fluid, identify the source of the water or fluid, the temporary provisions to employed to deliver the water or fluid to the testing location, the temporary provisions to circulate the water or fluid through the facilities to be tested.

c. Identify the location and method of disposal of the test media (water or fluid, or specified media). Identify temporary provisions required to safely deliver spent media to point of disposal.

10. Hazard Analysis. Provide a description of each potential hazard during the testing activities in the facility and mitigation measures planned for each.

11. A listing of and a short resume for the Manufacturer's representatives who will be involved in testing.

12. Forms: Provide in an appendix with each form and checklist to be used. Starting with forms provided in Section 01 99 90, edit each form to make specific to the components included in each System to be commissioned. Provide additional forms as needed to fully document the commissioning activities specified.

1.06 MANUFACTURER'S FIELD SERVICES

A. Where manufacturer's services are specified in this Section or other specification sections, furnish an authorized representative of the manufacturer who is factory-trained, knowledgeable, and experienced in the technical aspects of their products and systems supplied on the Project and qualified to provide these services. Manufacturer representatives shall be available during equipment installation, commissioning, and training of Owner's personnel.

B. Manufacturer's representatives shall be subject to the acceptance of by the Construction Manager and Engineer as a submittal with each System Commissioning Plan. No substitute representatives will be allowed without prior written approval from the Construction Manager.

C. Manufacturer's Certifications:

1. After equipment installation and before equipment energization, each manufacturer's representative shall prepare a written Manufacturer's Installation Certification Form, Form 43 05 11-A in Section 01 99 90, certifying that each equipment specified in Divisions 26 through 46 that the manufacturer supplied is properly installed and lubricated, has been properly maintained by the Contractor, is in accurate alignment, is free from any undue stress imposed by connecting piping and anchor bolts, and is in accordance with the manufacturer's installation instructions.

2. During Phase 4 Commissioning, each manufacturer's representative shall prepare a written Manufacturer's Operation Certification Form, Form 43 05 11-D in Section 01 99 90, certifying that each equipment specified in Divisions 26 through 46 that the manufacturer supplied is properly lubricated; has been properly maintained by the Contractor; is in accurate alignment; is free from any undue stress imposed by connecting piping and anchor bolts; and has been operated under all design conditions and meets the performance criteria in accordance with the requirements in the applicable specification sections and the manufacturer's operating requirements.

D. The Manufacturer's authorized representative shall perform all services when Manufacturer's services are specified in the individual specification sections. The authorized representative shall be factory-trained and experienced in the technical applications, installation, operation, and maintenance of the equipment, subsystem, or system.

E. The scheduling of all visits to the site by the manufacturer's field services representative shall be determined by the Contractor and coordinated through the Commissioning Manager. The Contractor shall notify the Construction Manager a minimum of 7 days in advance of all visits.

F. The Manufacturer's authorized representative shall not independently determine any requirements can be omitted, reduced, or otherwise change testing requirements, protocols, or required documentation without submitting a request for deviation to the accepted Commissioning Plan or other related submittals.

1.07 SUBMITTALS

A. Action Submittals: The following minimum submittals shall be submitted in accordance with Section 01 33 00.
   1. Within 60 days following Notice to Proceed.
      a. A copy of this Section, with addendum updates included, and all referenced and applicable Sections, with addendum updates included, with each paragraph check-marked to indicate Specification compliance or marked to indicate requested deviations from Specification requirements or those parts which are to be provided by the Contractor or others shall be provided. Check marks (") shall denote full compliance with a paragraph as a whole.
      b. If deviations from the Specifications are indicated, and therefore requested, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a detailed written explanation of the reasons for requesting the deviation. The Engineer shall be the final authority for determining acceptability of requested deviations.
      c. The remaining portions of the paragraph not underlined shall signify compliance with the Specifications. Failure to include a copy of the marked-up specification sections, along with justification(s) for any requested deviations to the requirements of the Specification shall be cause for rejection of the entire submittal and no further submittal material will be reviewed.
      d. Commissioning Manager qualifications and past work experience including contact names, addresses, and current telephone numbers that can be used to verify the accuracy of the provided information.
   2. Within 120 days following Notice to Proceed.
      a. Master Commissioning Plan.
   3. Not less than 120 days prior of the initiation of the first planned component testing in a system.
      a. System Commissioning Plan for the system within which the first components will be tested. Submit system test plans in two parts as described below:
         1) Submit the portion of the system commissioning plan for Component and Functional testing.

2) After successful completion of the Component testing, submit the test plan for the remaining phases of testing and commissioning.

b. Submit remaining System Commissioning Plans not less than 120 days prior to first planned component testing within each system, following the same two-part submittal process described above.

4. Qualifications of equipment manufacturer's representatives, to be submitted with each System Commissioning Plan.
5. Within 7 days following completion of each phase of Commissioning for each System Commissioning Plan, submit documentation demonstrating successful completion of the testing phase for that system. Any issues identified during the testing phase shall be identified along with the actions taken, or planned to be taken, to rectify the issue.
6. Certificates of instrument calibration, provided upon request from the Construction Manager or Engineer.

B. Informational Submittals: The following minimum informational submittals shall be submitted in accordance with the timing requirements specified in these Contract Documents, prior to Substantial Completion and in accordance with Section 01 33 00.
   1. Updates to Comprehensive Testing Schedule.

C. Closeout Submittals: The following minimum closeout submittals shall be submitted in accordance with the timing requirements specified in these Contract Documents, prior to Substantial Completion and in accordance with Section 01 33 00.
   1. Manufacturer's Certificates of Proper Installation, Form 43 05 11-A in Section 01 99 90, or reference to completed certificates provided under separate submittals where specified.
   2. Test Reports, including completed test forms as specified in Section 01 99 90, and paragraph 1.05 Commissioning Plan, or reference to completed test forms provided under separate submittals where specified.
   3. Certificate of Training Completion, Form 43 05 11-B in Section 01 99 90, or reference to completed Certificates of Training Completion provided under separate submittals where specified.
   4. Manufacturer's Certificates of Proper Operation, Form 43 05 11-D in Section 01 99 90, or reference to completed Manufacturer's Certificate of Proper Operation provided under separate submittals where specified.

D. Samples:
   1. Reference the individual specifications within the Contract Documents for items requiring samples to be submitted.

E. Mock-ups:
   1. Reference the individual specifications within the Contract Documents for items requiring mock-ups to be submitted.

PART 2 PRODUCTS

2.01 TEST MATERIALS AND EQUIPMENT

A. Provide calibrated test gauges, meters, recorders and monitors, reagents and test gases and associated assemblies, as required, to supplement or augment the Work specified in the Contract Documents to facilitate compliance with requirements of the commissioning. Select devices designed to measure the performance of the specific equipment and systems incorporated into the Work.

B. When testing requires the use of temporary provisions such as, but not limited to equipment, power, compressed air, or instrumentation which have not yet been placed in service, provide substitute sources acceptable to both the Owner and Construction Manager, and capable of meeting the requirements needed to perform the testing.

PART 3 EXECUTION

3.01 GENERAL

A. The Contractor shall install all equipment in accordance with Manufacturer's requirements and the Contract Documents. Notify the Engineer/Construction Manager of any conflict between a manufacturer's installation recommendations and the Contract Documents.

B. The Contractor shall perform component testing, functional testing, and startup testing, of all installed component and systems. Unless specified otherwise, the Owner shall be responsible for operating the facility during acceptance testing, with assistance and support from the Contractor in performing specific testing activities.

C. The Contractor shall provide the services of all technical and craft personnel required to support the Work throughout the duration of all testing phases, except as otherwise noted in this Section.

D. The Contractor shall maintain the appropriate staff (either on-site or on-call) to be able to respond immediately (24-hours per day) to deficiencies discovered during the Operations Test Phase and the Acceptance Test Phase. The Contractor's qualified personnel must be capable of being on-site within a maximum of 2 hours of notice to correct any deficiencies.

E. Owner's Operations and Maintenance Responsibility during Testing:
   1. Systems, multiple integrated systems, or facilities in the Operations Test Phase which require wastewater to be treated and disposed of shall be operated by the Owner with guidance from the Commissioning Manager.
   2. Unless specified otherwise, systems, multiple integrated systems, or facilities in the Acceptance Test Phase shall be operated by the Owner with assistance and support from the Commissioning Manager.

F. Until completion of the Acceptance Test Phase, the Contractor shall maintain all facilities undergoing testing. This includes, but is not limited to, manufacturer recommended preventative maintenance, repairs as needed, consumables such as lubricants, coating touch-up, etc.

G. The Contractor shall provide temporary systems, piping, valving, drains, power, controls, etc. to facilitate any of the tests, as needed to cycle water or air through the facilities in a manner that simulates the ultimate operation of the system.

H. All testing that may affect the operation of the existing facilities shall be coordinated with the Owner, including the proper isolation (e.g., lock out/tag out) procedures and features prior to commencing Work.

I. Timing of Testing:
   1. No testing shall commence until the related specific System Commissioning Plan has been submitted, reviewed, and received a review action of No Exceptions Taken, or Make Corrections Noted.
   2. No testing shall commence until the O&M Manual for the equipment involved has been reviewed and received a review action of No Exceptions Taken or Make Corrections Noted.
   3. Progression from one test phase to the next shall only be allowed at the written approval of the Construction Manager, following submission of written documentation from the Contractor signifying that the intent of that testing phase has been met with satisfactory results. The written approval will include a listing of items still owed by the Contractor regarding the testing which has occurred.
   4. Operations Testing shall not commence until all tagging and labeling including but not limited to piping, conduit, wires, panels, and equipment, have been completed.
   5. Operations Testing shall not commence if the Owner is operating systems or facilities per paragraph 3.01.E.1.
   6. Acceptance Testing shall not commence until training has been completed.
   7. All life-safety systems, including but limited to ventilation, fire monitoring and alarms, hazard monitoring and alarms, communication systems, associated with a specific system, must have successfully completed operations testing prior to proceeding with Functional Testing of the system.

J. At the satisfactory conclusion of each test phase, the Contractor shall dismantle and remove all temporary valving, hoses, and other equipment used during the test, and return the facilities to conditions as existed before the test.

K. All deficiencies found during any test phase and subsequent correction thereof, must be inspected and approved by the Construction Manager prior to re-testing or continuation of testing. The contractor shall correct all noted deficiencies.

3.02 TESTING AND STARTUP MEETINGS AND WEEKLY REPORTS

A. The Commissioning Manager shall conduct regular commissioning meetings.

B. The first meeting shall be at least 6 months prior to submitting the Project Commissioning Plan and shall include preliminary discussions regarding this plan. Commissioning meetings shall then be held monthly until 120 days prior to the first planned Component Testing. Ongoing development of the individual System Commissioning Plans will be among the topics discussed in these meetings.

C. At a point commencing 120 days prior to the first Component Test Phase, the commissioning meetings shall be held weekly.

D. Commissioning meetings shall be attended by the Construction Manager, key members from the Contractor staff, Subcontractors, key representatives of the Manufacturers, along with representatives for the Owner and the Engineer.

E. The Commissioning Manager shall prepare meeting minutes from the Testing and Start-up and distribute to all attendees not later than 3 days prior to the next meeting, or within 5 working days of each meeting, whichever is sooner. These should be issued as draft with a request for comments within 3 business days, followed by a final issuance.

F. Weekly Test Reports:
   1. During testing activities, submit weekly test reports describing the tests performed, test methods, test strategies implemented during the test, summary of successful testing completed, and specific highlight of any problems and/or deficiencies found during testing.
   2. For all troubleshooting, describe the troubleshooting strategy, methods, and final resolution.

3.03 EQUIPMENT AND MATERIALS REQUIRED FOR TESTING

A. It shall be the Contractor's responsibility to ensure that all required materials and test and repair equipment are on hand during all planned testing activities. Spare parts, specified to be provided as part of the work, shall not be used for testing without the written approval of the Construction Manager.

B. All instruments used to measure performance shall be calibrated. Certificates of calibration shall be current (as required in Division 40), and shall be at the job site during testing, and provided upon request or when specified.

C. Contractor is required to provide all expendables during all tests (not including Acceptance Testing, unless otherwise specified), including but not limited to, chemicals, fuel, oil, and filters (e.g., air, fuel, natural gas, oil, media, etc.). Upon completion of Operational Testing (or Acceptance Testing, where specified) all expendables shall be replaced with new.

3.04 TEMPORARY PROVISIONS

A. Maintain temporary provisions until the testing phase requiring the temporary facilities are complete, or until the permanent facilities are in service where specified.

3.05 TESTING

A. Phase 1 Commissioning: Component Test Phase: The Component Test Phase shall be comprised of the following three parts.
   1. Part 1 – Component Installation Review
      a. Perform inspection and testing in a logical, stepwise sequence to ensure that the installed components have been safely and properly assembled, serviced, aligned, adjusted, connected, and calibrated prior to operation.
      b. Perform all changes, adjustments, and replacements required to make the equipment operate properly.

c. The Component Installation Review includes but is not limited to the following activities.
    1) Verification of adherence to manufacturer's installation and pre-startup requirements and procedures.
    2) For structures and tanks, perform and confirm compliance of structural leakage tests in accordance with Division 03 of these specifications.
    3) For piping, perform and confirm compliance of piping testing in accordance with Section 40 05 01.
    4) Verify wiring continuity for all components, equipment, instruments, panels, and devices. Check power, control, and monitoring circuits for continuity prior to connection to power source. Reference Division 26 and Division 40 for additional specifics regarding installation review of electrical and controls components including, but not limited to:
        a) Electrical acceptance tests per Section 26 08 00, complete.
        b) Arc flash hazard and coordination study, protective device settings, and labeling completed.
    5) Confirm cleanliness of connecting piping systems.
    6) Confirm alignment of connected machinery.
    7) Confirm correct lubrication.
    8) Confirm valve orientation and position status for manual operating mode.
    9) Confirm correct tagging and identification
    10) Confirm proper functioning of all safety components.
    11) Confirm proper connections, alignment, calibration, and adjustment.
    12) Manually rotate or move all moving parts to assure freedom of movement.
    13) Confirm all safety equipment is installed per contract requirements, including but not limited to eye wash stations, warning signs, ventilation systems and equipment, etc.
    14) Provide Manufacturer's Certificate of Proper Installation following the completion of this review.

2. Part 2 – Component Operations Test
    a. Perform testing showing that the component is operating as needed, intended, and specified for the Work including but not limited to the following.
        1) Bump electric motors to verify power and direction of rotation.
        2) Verify correct voltage and phase sequence of all circuits.
        3) Verify correct amperage.
        4) Loop tests per Section 40 61 21.
        5) Complete testing of all control circuits including interlocks.
        6) Verify that every component is operational through its entire range of operation.
    b. Reference Division 26 and Division 40 for specific execution requirements related to electrical and instrumentation components and systems.
    c. Unless otherwise specified or allowed by the Construction Manager, the test media for component operational testing shall be plant water or non-potable water.

3. Part 3 – Component Network Communications Test
    a. The component network communication tests shall prove that all network reporting, data received, and control aspects for a given component are being correctly performed as needed, intended, and specified.
    b. Perform network tests for all network panels, network hardware, network cables, and all other network systems that are required to be installed and operational for each component.
    c. Refer to Division 40 for specific execution requirements for the component network tests.

B. Phase 2 Commissioning: Functional Test Phase:
    1. Functional testing shall be performed on all components and systems as required to prove that they function as required in conformance with the performance requirements and as needed and intended to complete the Work. All components of a system shall be operated together during functional testing.
        a. The Functional Test Phase is required for all process equipment, HVAC equipment, other equipment, piping, electrical, instrumentation, controls, and package system equipment.
        b. Testing for all DCS controls associated with all components with DCS monitoring or DCS controls shall be performed. This test shall include testing of multiple components that have interfaces between them. For packaged equipment this shall include testing of interfaces and interlocks between equipment supplied by the Supplier of the packaged equipment and equipment supplied in other technical specification sections.
        c. When testing requires the use of auxiliary systems such as electrical power, compressed air, control air, or instrumentation which have not yet been placed in service, provide acceptable substitute sources, capable of meeting the requirements of the component or system.
        d. Functionally test each system as an independent system.
            1) Tests shall include all the functional requirements provided in Division 26 and Division 40, within the individual requirements in the Specifications and as required by the Supplier.
            2) Demonstrate that each, and every, component within the system interacts and functionally operates as specified throughout its entire range of operation.
            3) Test each interlock for the system, all local controls, and all DCS controls.
        e. Functionally test multiple integrated systems. The testing shall include individual components and systems that were previously tested independently.
            1) Test in a step-by-step method to accomplish orderly and systematic testing of integrated systems to simulate the functionality of the completed Work.
            2) Tests shall be run through normal operating ranges and to prove specific performance requirements as required by the Specifications or otherwise needed to prove compliance with the Specifications.
            3) To the greatest extent practical, test at conditions which represent the full range of operating parameters (or specified test parameters if greater) as defined in the Contract Documents.
            4) The tests shall include all network controls, all network interlocks, all inter-process interlocks, and all operations interfaces.

5) The tests shall be performed until the specified operating modes or performance has been accomplished without interruption for the specified duration as indicated in the Specifications or in no instance less than 4 hours.

6) Should the functional testing of the integrated systems be halted for any reason, the testing shall be repeated until it has been accomplished without interruption.

7) Coordinate with Construction Manager such that Construction Manager can witness each individual step in the procedures.

f. Following the testing perform the following.

1) Check equipment for loose connections, unusual movement, or other indications of improper operating characteristics.

2) Disassemble and inspect equipment which exhibits unusual or unacceptable operating characteristics. Re-align machines identified as out of alignment. Repair, or remove and replace with new if unable to pass the requirement of the testing. Test until the equipment meets the requirements of the Specifications.

g. Unless otherwise specified or allowed by the Construction Manager and Engineer, the test media for functional testing shall be the water identified in the System Commissioning Plan (e.g., plant water, non-potable water, air, or specified media, depending on the system).

C. Phase 3 Commissioning: Operations Test Phase:

1. General Requirements of the Operations Test Phase

a. Tests shall be performed using the specified media.

b. Disposal of test media shall follow all laws and regulations and with proper permits.

c. Unless otherwise indicated in these Contract Documents or permitted by the Construction Manager, training shall be performed during the Operations Test Phase.

d. The Operations Test Phase shall be conducted at a time and date which is requested by the Contractor and agreed to by the Owner.

e. Coordinate with the Owner for introduction of specified media, disposal (or return to treatment plant) of specified material, and operation of facilities with specified media.

f. Prior to commencement of the Operations Test Phase, the facility shall be fully operational, capable of accepting design flows and performing functions as designed.

g. The Operations Test Phase shall test for normal operational sequence as an integrated system conforming to the requirements of the Specifications through full specified operating range. Test network control logic across multiple systems.

h. During the Operations Test Phase, tests shall be executed for all components. Tests shall include all the operations tests as specified in the individual equipment technical specification sections. This includes vibration tests where specified.

i. Provide required support to the Owner such that the facility attains its fully operational mode.

2. Part 1 -Walkdown: After the completion of the functional testing, a complete inspection by the Startup Team shall be performed to determine if the facility is ready for the Seven (7) Day Operational Test.
    a. Walk through the facility with the Construction Manager, the Owner, and the Engineer to acknowledge facility is ready for the Seven (7) Day Operational Test.
    b. A working punch-list will be developed and provided by the Construction Manager.
    c. The punch-list shall be identified by the following ranking criteria:
        1) Level 1: Significant impact item and no further tests shall be performed until resolved. Requires a signoff prior to proceeding.
        2) Level 2: Minimal impact item that can be corrected later and does not affect continuation of testing.
3. Part 2 - Seven (7) Day Operational Test. The Operations Test Phase shall consist of a continuous un-interrupted seven-day run period using the specified media.

D. Phase 4 Commissioning: Acceptance Test Phase:
1. The Acceptance Test Phase shall be a test of a system or multiple systems by the Owner using the specified media, without operational or performance failure to demonstrate conformance with the performance requirements specified. The minimum duration of the Acceptance Test Phase shall be 30 days, unless otherwise specified within individual equipment specifications. This is the final test to demonstrate the facility including new and existing processes operate together as needed, intended, and specified.
    a. During this test, vary operational parameters during the day, with steady state conditions overnight.
    b. Conduct performance testing where required in individual specification sections. Where practical, coordinate timing of performance testing to fall within the nominal 30 days allocated for Acceptance Testing; however, performance testing outside of this 30-day period may be required in order to fully comply with specified performance testing requirements.
    c. The Acceptance Test Phase shall be judged completed wholly at the discretion of the Engineer with input from the Construction Manager.
    d. This test may last significantly longer than the specified calendar days listed if deficiencies are found, and the test is restarted one or more times. The Contractor shall coordinate with the Owner and provide support, as necessary.
    e. After satisfactory completion, the facility shall be placed into normal operation.
    f. Provide documentation of successful performance testing where required in individual equipment specifications.
    g. Provide Manufacturer's Certificates of Proper Operation.

E. Optimization Testing:
1. Provide optimization testing as required in individual equipment specifications.

3.06 RETESTS

A. If any portion of a test does not pass, the Contractor shall correct the problem in a timely manner and repeat the test until it passes to the satisfaction of the Engineer and Owner.
   1. Functional testing of equipment or a system shall be considered complete when, in opinion of the Engineer and Construction Manager, the system, facility, or designated portion has operated in manner intended for (7) continuous days without significant interruption, unless otherwise agreed upon.
   2. Operational testing of the system, the entire facility or any portion thereof shall be considered complete when, in opinion of the Engineer and Construction Manager, the system, facility, or designated portion has operated in manner intended for (28) continuous days without significant interruption, unless otherwise agreed upon.
   3. Significant Interruption: May include any of the following events:
      a. Failure of Contractor to provide and maintain qualified onsite startup personnel as scheduled.
      b. Failure of any critical equipment or unit process that is not satisfactorily corrected within 6 hours after failure.
      c. Failure of any noncritical equipment or unit process that is not satisfactorily corrected within 24 hours after failure.
   4. Operational testing of the system, the entire facility or any portion thereof shall be considered complete when, in opinion of the Engineer and Construction Manager, the system, all specified testing has been successfully completed, and all deficiencies have been corrected.

B. If a failure of any component or system occurs during any phase of commissioning, the entire phase shall be re-started. If the Commissioning Manager determines that the failure is minor and recommends continuation of the test rather than re-starting, then the Commissioning Manager shall request continuation in writing to the Construction Manager and Engineer, who, if in agreement, may permit continuation of testing.

C. If a failure of any component should occur during any phase of commissioning, the Contractor shall be responsible for the actual cost of any idle time due to such failure. Such costs of idle time shall include personnel costs of Owner's, Construction Manager's, and Engineer's staff who are assigned to coordinate, assist, and witness the commissioning activities. This includes personnel costs, rental costs of equipment and any other incidental costs of the delay.

3.07 AFTER TESTS

A. Once testing has been completed, and until the Construction Manager has issued a certificate of Final Completion, all equipment shall be rechecked once by the Contractor (or more often if specified) for proper alignment and realigned, if necessary. All equipment shall be checked for loose connections, unusual movement, or other indications of improper operating characteristics. Any deficiencies shall be corrected to the satisfaction of the Construction Manager. All equipment or devices which exhibit unusual or unacceptable operating characteristics shall be disassembled, inspected and shall then be repaired or removed from the Site and replaced at no cost to the Owner.

END OF SECTION

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SECTION 01 99 90

REFERENCE FORMS

PART 1 FORMS

1.01 DESCRIPTION

A. The forms listed below and included in this section are referenced from other sections of the project manual:

Form No.	Title
01 33 00-A	Submittal Transmittal Form
01 45 20-A	Equipment Test Report Form
01 78 23-A	Operation and Maintenance Transmittal Form
01 78 23-B	Equipment Record Form
01 78 23-C	Equipment Record Form
09 90 00-A	Coating System Inspection Checklist
26 05 00-A	Wire and Cable Resistance Test Data Form
26 05 00-B	Installed Motor Test Data Form
26 05 00-C	Dry Transformer Test Data Form
26 05 00-D	Motor Control Center Test Form
26 05 00-E	Medium Voltage Motor Starter Test Form
26 05 00-F	Medium Voltage Switchgear Test Form
26 05 00-G	Protective Relay Test Form
26 05 00-H	Low Voltage Switchgear Test Form
26 05 00-I	Medium Voltage Load Interrupter Switch Test Form
26 05 00-J	Liquid-Filled Transformer Test Form
26 05 00-K	Automatic Transfer Switch Test Form
26 05 00-L	Neutral Grounding Resistor Test
40 61 13-A	Loop Wiring and Insulation Resistance Test Data Form
40 61 13-B	Control Circuit Piping Leak Test Form
40 61 13-C	Controller Calibration Test Data Form
40 61 13-D	Panel Indicator Calibration Test Data Form
40 61 13-E	Recorder Calibration Test Data Form
40 61 13-F	Signal Trip Calibration Test Data Form
40 61 13-G	Field Switch Calibration Test Data Form
40 61 13-H	Transmitter Calibration Test Data Form
40 61 13-I	Miscellaneous Instrument Calibration Test Data Form
40 61 13-J	Individual Loop Test Data Form
40 61 13-K	Loop Commissioning Test Data Form
43 05 11-A	Manufacturer's Installation Certification Form
43 05 11-B	Manufacturer's Instruction Certification Form
43 05 11-C	Unit Responsibility Certification Form
43 05 11-D	Manufacturer's Operation Certification Form
43 05 13-A	Rigid Equipment Mount Installation Inspection Checklist
43 05 21-A	Motor Data Form

B. The forms included herein will be made available in Microsoft Word format for the Contractor. The Contractor may choose to utilize their own forms and will have such approved by the Construction Manager prior to use.

01 33 00-A. SUBMITTAL TRANSMITTAL FORM

Submittal Transmittal

Submittal Description: Submittal No:[1] Spec Section:

	Routing	Sent	Received
Owner:	Contractor/CM		
Project:	CM/Engineer		
	Engineer/CM		
Contractor:	CM/Contractor		

We are sending you:
☐ Attached
☐ Under separate cover via _____
☐ Submittals for review and comment
☐ Product data for information only

Remarks: _____

Item	Copies	Date	Section No.	Description	Review action[a]	Reviewer initials	Review comments attached

[a]*Note: NET = No exceptions taken; MCN = Make corrections noted; A&R = Amend and resubmit; R = Rejected*
Attach additional sheets if necessary.

Contractor

Certify either a or b:

a. ☐ We have verified that the material or equipment contained in this submittal meets all the requirements, including coordination with all related work, specified (no exceptions).

b. ☐ We have verified that the material or equipment contained in this submittal meets all the requirements specified except for the attached deviations.

No.	Deviation

Certified by:

Contractor's Signature:

[1]See *Section 01 33 00-1.04. A, Transmittal Procedure.*

01 45 20-A. EQUIPMENT TEST REPORT FORM

NOTE: This example equipment test report is provided for the benefit of the Contractor and is not specific to any piece of equipment to be installed as a part of this project. The example is furnished as a means of illustrating the level of detail required for the preparation of equipment test report forms for this project.

City Of Sample

Example Water Treatment Plant

Stage IV Expansion Project

ABC Construction Company, Inc., General Contractor
XYZ Engineering, Inc., Construction Manager

Equipment Test Report

- Equipment Name: Sludge Pump 2
- Equipment Number: P25202
- Specification Ref: 11390
- Location: East Sedimentation Basin Gallery

	Contractor		Construction Manager	
	Verified	Date	Verified	Date
A. Preoperational Checklist				
1. Mechanical				
a. Lubrication				
b. Alignment				
c. Anchor bolts				
d. Seal water system operational				
e. Equipment rotates freely				
f. Safety guards				
g. Valves operational				
h. Hopper purge systems operational				
i. Sedimentation tank/hopper clean				
j. O&M manual information complete				
k. Manufacturer's installation certificate complete				
2. Electrical (circuit ring-out and high-pot tests)				
a. Circuits:				
1) Power to MCC 5				
2) Control to HOA				
3) Indicators at MCC:				
a) Red (running)				
b) Green (power)				
c) Amber (auto)				
4) Indicators at local control panel				
b. Wiring labels complete				
c. Nameplates:				
1) MCC				
2) Control station				
3) Control panel				

	Contractor		Construction Manager	
	Verified	Date	Verified	Date
d. Equipment bumped for rotation				
3. Piping Systems				
a. Cleaned and flushed:				
1) Suction				
2) Discharge				
b. Pressure tests				
c. Temporary piping screens in place				
4. Instrumentation and Controls				
a. Flowmeter FE2502F calibration				
1) Calibration Report No.				
b. Flow recorder FR2502G calibrated against transmitter				
c. VFD speed indicator calibrated against independent reference				
d. Discharge overpressure shutdown switch calibration				
e. Simulate discharge overpressure Shutdown				
B. Functional Tests				
1. Mechanical				
a. Motor operation temperature satisfactory				
b. Pump operating temperature satisfactory				
c. Unusual noise, etc?				
d. Pump operation: 75 gpm/50 psig				
(1) Measurement:				
(a) Flow:				
(b) Pressure:				
(c) Test gage number:				
e. Alignment hot				
f. Dowelled in				
g. Remarks:				
2. Electrical				
a. Local switch function:				
1) Runs in HAND				
2) No control power in OFF				
3) Timer control in AUTO				
b. Overpressure protection switch PS2502C functional in both HAND and AUTO				
c. Overpressure protection switch PS2502C set at 75 psig				
d. PLC 2500 set at 24-hour cycle, 25 min ON				
C. Operational Test				
1. 48-hour continuous test. Pump cycles as specified, indicators functional, controls functional, pump maintains capacity, overpressure protection remains functional, hour meter functional				

RECOMMENDED FOR BENEFICIAL OCCUPANCY:

Construction Manager	Date

ACCEPTED FOR BENEFICIAL OCCUPANCY

Owner's Representative	Date

01 78 23-A. OPERATION AND MAINTENANCE TRANSMITTAL FORM

Date:	Submittal No:[2]
To:	Contract No:
	Spec. Section:
	Submittal Description:
Attention:	From:

Checklist	Contractor		Construction Manager	
	Satisfactory	N/A	Accept	Deficient
1. Table of contents				
2. Equipment record forms				
3. Manufacturer information				
4. Vendor information				
5. Safety precautions				
6. Operator prestart				
7. Start-up, shutdown, and postshutdown procedures				
8. Normal operations				
9. Emergency operations				
10. Operator service requirements				
11. Environmental conditions				
12. Lubrication data				
13. Preventive maintenance plan and schedule				
14. Troubleshooting guides and diagnostic techniques				
15. Wiring diagrams and control diagrams				
16. Maintenance and repair procedures				
17. Removal and replacement instructions				
18. Spare parts and supply list				
19. Corrective maintenance man-hours				
20. Parts identification				
21. Warranty information				
22. Personnel training requirements				
23. Testing equipment and special tool information				

Remarks:

Contractor's Signature :

[2] See Section 01 33 00-1.04.A, Transmittal Procedure.

01 78 23-B. EQUIPMENT RECORD FORM

Equip Descrip		Equip Loc	
Equip No.	Shop Dwg No.	Date Inst	Cost
Mfgr		Mfgr Contact	
Mfgr Address			Phone
Vendor		Vendor Contact	
Vendor Address			Phone

Maintenance Requirements	D	W	M	Q	S	A	Hours

Lubricants: Recommended:

Alternative:

Misc. Notes:

Recommended Spare Parts					Electrical Nameplate Data			
Part No	Quan	Part Name	Cost		Equip			
					Make			
					Serial No.		Id No.	
					Model No.		Frame No.	
					Hp	V	Amp	Hz
					Ph	Rpm	Sf	Duty
					Code	Insl. Cl	Des	Type
					Nema Des	C Amb	Temp Rise	Rating
					Misc.			
					Mechanical Nameplate Data			
					Equip			
					Make			
					Serial No.		Id No.	
					Model No.		Frame No.	
					Hp	Rpm	Cap	Size
					Tdh	Imp Sz	Belt No.	Cfm
					Psi	Assy No.	Case No.	
					Misc			

01 78 23-C. EQUIPMENT RECORD FORM

Equip Descrip		Equip Loc	
Equip No.	Shop Dwg No.	Date Inst	Cost
Mfgr		Mfgr Contact	
Mfgr Address			Phone
Vendor		Vendor Contact	
Vendor Address			Phone

Maintenance Requirements	D	W	M	Q	S	A	Hours

09 90 00-A COATING SYSTEM INSPECTION CHECKLIST

Project Name			
Owner		Coating System Manufacturer (CSM)	
General Contractor (GC)		Coating System Applicator (CSA)	
Area or Structure		Location within Structure	
Coating System (eg E-1)		Coating Type (eg Epoxy, etc.)	

Coating System Inspection Checklist

Step	Description		Name	Signature	Date
1	Completion of cleaning and substrate decontamination prior to abrasive blast cleaning.	GC QC			
		CSM QC			
		CSA QC			
2	Installation of protective enclosure of structure or area and protection of adjacent surfaces or structures that are not to be coated.	GC QC			
		CSM QC			
		CSA QC			
3	Completion of ambient condition control in structure or building area and acceptance of ventilation methods in structure or Area.	GC QC			
		CSM QC			
		CSA QC			
4	Completion of Surface Preparation for Substrates to Be Coated.	GC QC			
		CSM QC			
		CSA QC			
5	Completion of Primer Application.	GC QC			
		CSM QC			
		CSA QC			
6	Completion of Concrete Repairs If Required and Related Surface Preparation Rework Prior to Coating System Application.	GC QC			
		CSM QC			
		CSA QC			
7	Completion of Concrete Filler/ Surface Application to Concrete.	GC QC			
		CSM QC			
		CSA QC			
8	Completion of First Finish Coat Application and of Detail Treatment at Transitions or Terminations.	GC QC			
		CSM QC			
		CSA QC			

Coating System Inspection Checklist

Step	Description		Name	Signature	Date
9	Completion of Second Finish Coat Application and of Detail Treatment at Transitions and Terminations.	GC QC			
		CSM QC			
		CSA QC			
10	Completion of Full and Proper Cure of Coating System.	GC QC			
		CSM QC			
		CSA QC			
11	Completion of Testing of Cured Coating System including Adhesion, Holiday (Continuity) Testing and Dry Film Thickness.	GC QC			
		CSM QC			
		CSA QC			
12	Completion of Localized Repairs to Coating System Following Testing.	GC QC			
		CSM QC			
		CSA QC			
13	Final Acceptance of Coating System Installation Including Final Clean-Up Complying with Specification Requirements and the CSM's Quality Requirements.	GC QC			
		CSM QC			
		CSA QC			

26 05 00-A. WIRE AND CABLE RESISTANCE TEST DATA FORM

Equipment Tag	Cable Tag	Insulation resistance, megohms								
		Phase to Phase			Phase to Neutral			Phase to Ground		
		A-B	B-C	A-C	A-N	B-N	C-N	A-G	B-G	C-G

Temperature, °F: _____

CERTIFIED _____ Date _____

Contractor's Representative

WITNESSED _____ Date _____

Owner's Representative

26 05 00-B. INSTALLED MOTOR TEST DATA FORM

Motor Equipment Number: _____ Date of test: _____

Equipment Driven: _____

MCC Location: _____

				Ambient temp	°F
Resistance:					
Insulation resistance phase-to-ground megohms:					
Phase A		Phase B		Phase C	
Current at Full Load:					
Phase		Current, amps			
Phase		Current, amps			
Phase		Current, amps			
Thermal Overload Device:	Manufacturer/catalog #		Amperes		
Circuit breaker (MCP) setting:					

Motor Nameplate Markings:

Mfr		Mfr Model		Frame		HP	
Volts		Phase		RPM		Service factor**	
Amps		Freq		Ambient temp rating		°C	
Time rating			Design letter**				
	(NEMA 1-10.35)			(NEMA MG-1.16)			
Code letter			Insulation class				

**Required for 3-phase squirrel cage induction motors only.

CERTIFIED _____ Date _____

Contractor's Representative

WITNESSED _____ Date _____

Owner's Representative

26 05 00-C. DRY TRANSFORMER TEST DATA FORM

(Note: Use Data Form for dry type transformers with voltage rating of 600 Vac or less and sizes to 167 kVA single phase and 500 kVA three phase. Use NETA Test Forms and Test Procedures for higher voltages and larger transformers.)

Equipment Tag No.: _____ Temperature Rating: _____

Description/Location: _____ Feeder size/Source: _____

Primary Voltage: _____ Secondary Voltage: _____ Winding Connection: _____

A. VISUAL INSPECTION

Transformer Inspection	Pass	Fail	Note
1. Nameplate data as specified			
2. Mechanical condition			
a. Free of dents and scratches			
b. Anchored properly			
c. Shipping brackets removed			
d. Spacing from wall per nameplate			
3. Grounding *			
a. Equipment grounding			
b. System grounding			

B. INSULATION-RESISTANCE TESTS:

Perform tests with calibrated megohmeter. Apply 1000 Vdc test voltage for 60 seconds and record readings in megohms at 30-seconds and 60-seconds intervals.

Test Group	Resistance between		30-second reading	60-second reading	Absorption Ratio Index 60-sec. / 30-sec.
Primary Winding to ground	A	GRD			
	B	GRD			
	C	GRD			
Secondary Winding to ground with * N-G Bond removed	a	GRD			
	b	GRD			
	c	GRD			
Primary Winding to Secondary Winding	A	a			
	B	b			
	C	c			

Submit resistance readings to the Construction Manager immediately after the tests that are less than the manufacturer's recommended value or less than 10-megohms. Record the Absorption Ratio Index values for future reference. Ratio must be 1.0 or greater, with infinity (∞) equal to 1.0.

Contractor Representative Certified: _____ Date _____

Owner Representative Witnessed:_____ Date _____

26 05 00-D. MOTOR CONTROL CENTER TEST FORM

Equipment No.: _____ Ambient room temperature: _____

Location: _____

A. MECHANICAL CHECK:

All bolted connections either bus to bus or cable to bus shall be torqued to the manufacturer's recommendations.

B. ELECTRICAL TESTS:

1. Measure insulation resistance of each bus section phase to phase and phase to ground for 1 minute using a megohmmeter at 1000 volts.

Test results (megohms)			
Phase		Phase	
A-GRD		A-B	
B-GRD		B-C	
C-GRD		C-A	

2. Set the circuit breaker in the starter unit to comply with the requirements of NEC, Article 430-52 and Table 430-152.

3. Motor overload heater elements shall be sized and installed based on the actual nameplate full load amperes of the motor connected to the starter.

CERTIFIED _____ Date _____

Contractor's Representative

WITNESSED _____ Date _____

Owner's Representative

26 05 00-E. MEDIUM VOLTAGE MOTOR STARTER TEST FORM

Equipment No.: _____

Location: _____

Room Temperature: _____

The protective devices shall be set in accordance with the specification before the tests are performed.

1. Measure contact resistance (micro-ohms)

Phase:	A		B		C	

Contacts shall be replaced if resistance exceeds 50 micro-ohms.

2. Perform an insulation resistance test (1000 volts DC for 1 minute).

Phase	A		B		C		
Pole to ground							megohms
Across open pole							megohms
Pole to pole	AB		BC		CA		megohms

3. Perform minimum pickup voltage tests on trip and close coils.
4. Motor RTDs shall be tested by using a hot oil bath. The temperature at which the sensor trips shall be recorded for each RTD.
5. The Contactor shall be tripped by operation of each protective device.

26 05 00-F. MEDIUM VOLTAGE SWITCHGEAR TEST FORM

Equipment No.: _____

Location: _____

Room Temperature: _____

The protective devices shall be set in accordance with the specification before the tests are performed.

1. Measure contact resistance (micro-ohms).

Phase:	A		B		C	

Contacts shall be replaced if resistance exceeds 50 micro-ohms.

2. Perform an insulation resistance test (1000 volts DC for 1 minute).

Phase	A		B		C		
Pole to ground							megohms
Across open pole							megohms
Pole to pole	AB		BC		CA		megohms

3. Perform minimum pickup voltage tests on trip and close coils.
4. Verify the instrument transformer ratios. Check the transformer's polarity electrically.
5. The Contactor shall be tripped by operation of each protective device.

26 05 00-G. PROTECTIVE RELAY TEST FORM

Location: _____

Switchgear Breaker No.: _____

Protective Relay Description: _____

The protective relays shall be tested in the following manner:

1. Each protective relay circuit shall have its insulation resistance tested to ground.
2. Perform the following tests on the specified relay setting:
    a. Pickup parameters on each operating element.
    b Timing test shall be performed at three points on the time dial curve.
    c. Pickup target and seal-in units.

The results shall be recorded and signed. A copy shall be given to the Construction Manager in accordance with paragraph 26 05 00-1.05 Corrosive Areas.

26 05 00-H. LOW VOLTAGE SWITCHGEAR TEST FORM

Equipment No.: _____

Location: _____

Room Temperature: _____

The protective devices shall be set in accordance with the specification before the tests are performed.

1. Measure contact resistance (micro-ohms).

Phase:	A		B		C	

Contacts shall be replaced if resistance exceeds 50 micro-ohms.

2. Perform an insulation resistance test (1000 volts DC for 1 minute).

Phase	A		B		C		
Pole to ground							megohms
Across open pole							megohms
Pole to pole	AB		BC		CA		megohms

3. Minimum pickup current shall be determined by primary current injection.
4. Long time delay shall be determined by primary injection at three hundred percent (300%) pickup current.
5. Short time pickup and time delay shall be determined by primary injection of current.
6. Instantaneous pickup current shall be determined by primary injection.
7. Trip unit reset characteristics shall be verified.
8. Auxiliary protective devices, such as ground fault or under voltage relays, shall be activated to ensure operation of shunt trip devices.

26 05 00-I. MEDIUM VOLTAGE LOAD INTERRUPTER SWITCH TEST FORM

Equipment Number: _____

Location: _____

Date: _____

1. Measure switch blade resistance (micro-ohms).

Phase:	A		B		C	

Contacts shall be replaced if resistance exceeds 50 micro-ohms.

2. Perform an insulation resistance test (1000 volts DC for 1 minute).

Phase	A		B		C		
Pole to ground							megohms
Across open pole							megohms
Pole to pole	AB		BC		CA		megohms

The results shall be recorded and signed. A copy shall be given to the Construction Manager in accordance with paragraph 26 05 00-2.06 Product Data.

CERTIFIED _____ Date _____

Contractor's Representative

WITNESSED _____ Date _____

Owner's Representative

26 05 00-J. LIQUID-FILLED TRANSFORMER TEST FORM

Equipment Number: _____

Location: _____

Date/Weather Conditions: _____

A. Perform the "Insulation-Resistance Test" and "Dielectric Absorption Test" using Form 26 05 00-C, Dry Transformer Test Data Form.

B. Perform an applied voltage (low frequency dielectric) test in accordance with ANSI C57.12.90, paragraph 10.5, Applied Voltage Test. Applied voltage levels shall be 75 percent of recommended factory test levels or recommended test levels of ANSI C57.12.00, Table 5.

C. Insulating oil shall be sampled and shall be laboratory tested for the following:

1. Dielectric strength.
2. Acid neutralization.
3. Interfacial tension.
4. Color.
5. Power factor.

D. Perform a turns ratio test between the windings for all tap positions.

E. The temperature and pressure switches shall be tested using a hot oil bath and air pump.

F. The results shall be recorded and signed by the Contractor and Construction Manager. A copy shall be given to the Construction Manager in accordance with paragraph 26 05 00-2.06 Product Data. Any readings which are abnormal to ANSI industry standards shall be reported to the Construction Manager.

26 05 00-K. AUTOMATIC TRANSFER SWITCH TEST FORM

Equipment Number: _____

Location: _____

Date: _____

1. Perform an insulation resistance test (1000 volts DC for 1 minute):

Phase	A		B		C		
Pole to ground							megohms
Pole to pole	AB		BC		CA		megohms

2. Perform the following operations and initial:

   a. Manual transfer _____

   b. Loss of normal power; __sec delay

   c. Return to normal power; _____sec delay

The results shall be recorded and signed. A copy shall be given to the Construction Manager in accordance with paragraph 26 05 00-2.06 Product Data.

CERTIFIED _____ Date _____

Contractor's Representative

WITNESSED _____ Date _____

Owner's Representative

26 05 00-L. NEUTRAL GROUNDING RESISTOR TEST

Equipment No.: _____

Location: _____

The pickup and time delay setting on the ground fault relay shall be set in accordance with Section 26 05 74.

1. The transformer neutral insulation resistance shall be measured with and without the grounding resistor connected to insure no parallel ground paths exist.
2. The protective relay pickup current shall be determined by injecting test current into the current sensor. The pickup current should be within 10 percent of the dial setting. Record the dial setting and actual pickup tie.
3. The relay timing shall be tested by injecting 150 and 300 percent of pickup current into the current sensor. The relay timing shall be in accordance with the manufacturer's published time-current characteristic curves. Record the relay timing at 150 and 300 percent of pickup current.
4. The circuit interrupting device shall be operated by operating the relay.

The results shall be recorded and signed by the Contractor and Construction Manager. A copy shall be given to the Construction Manager in accordance with paragraph 26 05 00-2.06 Product Data.

40 61 13-A. LOOP WIRING AND INSULATION RESISTANCE TEST DATA FORM

Loop No.: _____

List all wiring associated with a loop in table below. Make applicable measurements as indicated after disconnecting wiring.

Wire No.	Panel Tie	Field TB	Continuity Resistance[a]		Insulation Resistance[b]			
			Cond./ Cond.	Cond./ Shield	Shield/ Gnd.	Shield/ Cond.	Cond./ Gnd.	Shield/ Shield
A			--	(A/SH)				
B			(A/B)	--				
C			(A/C)	--				
D			(A/D)	--				
etc.								

NOTES:

a. Continuity Test. Connect ohmmeter leads between wires A and B and jumper opposite ends together. Record resistance in table. Repeat procedure between A and C, A and D, etc. Any deviation of ±2 ohms between any reading and the average of a particular run indicates a poor conductor, and corrective action shall be taken before continuing with the loop test.

b. Insulation Test. Connect one end of a 500 volt megger to the panel ground bus and the other sequentially to each completely disconnected wire and shield. Test the insulation resistance and record each reading.

CERTIFIED _____ Date _____

Contractor's Representative

WITNESSED _____ Date _____

Owner's Representative

40 61 13-B. CONTROL CIRCUIT PIPING LEAK TEST FORM

Loop No.:_____

List tubing associated with loop in table below. Make applicable measurements after isolating any air consuming pilots from circuit.

Tube No.	Tubing Equivalent Length of 1/4-Inch Copper[a]	Test Period (seconds)	Permitted Pressure Drop (psi)[b]	Measured Pressure Drop (psi)
A				
B				
C				
D				
etc.				

NOTES:

a. Convert actual tubing and air motor volume to equivalent 1/4-inch copper tubing.

b. Pressure drop shall not exceed 1 psi per hundred feet 1/4-inch tubing per 5 seconds.

CERTIFIED _____ Date _____

Contractor's Representative

WITNESSED _____ Date _____

Owner's Representative

40 61 13-C. CONTROLLER CALIBRATION TEST DATA FORM

Tag No. and Description: _____

Make & Model No.: _____ Serial No.: _____

Input: _____ Process Variable (PV) Scale: _____

Output: _____ Output Scale: _____

PV Scale Calibration

% of Range	Input	Expected Reading	Actual Reading	% Deviation
0				
50				
100				
			% Deviation Allowed:	

Connect output to PV for following tests:

Set Point (SP) Indicator Accuracy			Output Meter Accuracy			Controller Accuracy		
SP	PV Reading	Expected % Dev.	Actual Reading	Expected Reading	Actual % Dev.	OUTPUT	OUTPUT	% Dev.
(0%)								
(50%)								
(100%)								
% Deviation Allowed:			% Deviation Allowed:			% Deviation Allowed:		

CERTIFIED _____ Date _____

Contractor's Representative

WITNESSED _____ Date _____

Owner's Representative

40 61 13-D. PANEL INDICATOR CALIBRATION TEST DATA FORM

Tag No. and Description: _____

Make & Model No.:_____ Serial No.:_____

Input: _____

Scale: _____ Range: _____

PV Scale Calibration

% of Range	Input	Expected Reading	Actual Reading	% Deviation
0				
50				
100				
			% Deviation Allowed:	

CERTIFIED _____ Date _____

Contractor's Representative

WITNESSED _____ Date _____

Owner's Representative

40 61 13-E. RECORDER CALIBRATION TEST DATA FORM

Tag No. and Description: _____

Make & Model No.: _____ Serial No.: _____

Input: _____ Chart: _____

Scale: _____ Range: _____

% of Range	Input	Expected Reading	Actual Reading	% Deviation
0				
50				
100				
			% Deviation Allowed:	

CERTIFIED _____ Date _____

Contractor's Representative

WITNESSED _____ Date _____

Owner's Representative

40 61 13-F. SIGNAL TRIP CALIBRATION TEST DATA FORM

Tag No. and Description: _____

Make & Model No.: _____ Serial No.: _____

Input: _____

Scale: _____ Range: _____

Set Point(s): _____

After setting set point(s), run signal input through entire range and calculate deadband.

Set Point	Incr. Input Trip Point	Decr. Input Trip Point	Calc. Deadband	Required Deadband

CERTIFIED _____ Date _____

Contractor's Representative

WITNESSED _____ Date _____

Owner's Representative

40 61 13-G. FIELD SWITCH CALIBRATION TEST DATA FORM

Tag No. and Description: _____

Make & Model No.: _____ Serial No: _____

Input: _____

Range: _____

Set Point(s): _____

Simulate process variable (flow, pressure, temperature, etc.) and set desired set point(s). Run through entire range of switch and calculate deadband.

Set Point	Incr. Input Trip Point	Decr. Input Trip Point	Calc. Deadband	Required Deadband

CERTIFIED _____ Date _____

Contractor's Representative

WITNESSED _____ Date _____

Owner's Representative

40 61 13-H. TRANSMITTER CALIBRATION TEST DATA FORM

Tag No. and Description: _____

Make & Model No.: _____ Serial No.: _____

Input: _____

Output: _____

Range: _____ Scale: _____

Simulate process variable (flow, pressure, temperature, etc.) and measure output with appropriate meter.

% of Range	Input	Expected Reading	Actual Reading	% Deviation
0				
50				
100				
			% Deviation Allowed:	

CERTIFIED _____ Date _____

Contractor's Representative

WITNESSED _____ Date _____

Owner's Representative

40 61 13-I. MISCELLANEOUS INSTRUMENT CALIBRATION TEST DATA FORM

(For instruments not covered by any of the preceding test forms, the Contractor shall create a form containing all necessary information and calibration procedures.)

CERTIFIED _____ Date _____

Contractor's Representative

WITNESSED _____ Date _____

Owner's Representative

40 61 13-J. INDIVIDUAL LOOP TEST DATA FORM

Loop No.: _____

Description: (Give complete description of loop's function using tag numbers where appropriate.)

P&ID No.: (Attach copy of P&ID.)

a. Wiring tested:

(Attach test form 40 61 13-A)

b. Instrumentation tubing/piping tested:

(Attach test form 40 61 13-B)

c. Instruments calibrated:

(Attach test forms 40 61 13-C through I)

d. List step-by-step procedures for testing loop parameters. Test loop with instruments, including transmitters and control valves, connected and functioning. If it is not possible to produce a real process variable, then a simulated signal may be used with the Construction Manager's approval.

CERTIFIED _____ Date _____

Contractor's Representative

WITNESSED _____ Date _____

Owner's Representative

40 61 13-K. LOOP COMMISSIONING TEST DATA FORM

Loop No.: _____

a. Loop tested:

(Attach test form 40 61 13-J)

b. Controlled or connected equipment tests confirmed:

c. Give complete description of loop's interface with process.

d. With associated equipment and process in operation, provide annotated chart trace of loop response to changes in set points for verification of performance. This chart should demonstrate 1/4-amplitude damping as output adjusts to set point change. Show set points, starting and finishing times on chart, as well as any other pertinent data.

Connect 2-pen recorder to process variable (PV) and to controller output. Use 1 inch/second chart speed.

Pen 1 - PV - Connections:

Pen 2 - Output - Connections:

CERTIFIED _____ Date _____

Contractor's Representative

WITNESSED _____ Date _____

Owner's Representative

43 05 11-A. MANUFACTURER'S INSTALLATION CERTIFICATION FORM

Contract No:	Specification section:
Equipment name:	
Contractor:	
Manufacturer of equipment item:	

The undersigned manufacturer of the equipment item described above hereby certifies that he has checked the installation of the equipment and that the equipment, as specified in the project manual, has been provided in accordance with the manufacturer's recommendations, and that the trial operation of the equipment item has been satisfactory.

Comments:

Manufacturer	Contractor
Signature of Authorized Representative	Signature of Authorized Representative
Date	Date

43 05 11-B. MANUFACTURER'S INSTRUCTION CERTIFICATION FORM

Contract No:	Specification Section:
Equipment name:	
Contractor:	
Manufacturer of equipment item:	

The undersigned manufacturer certifies that a service engineer has instructed the wastewater treatment plant operating personnel in the proper maintenance and operation of the equipment designated herein.

Operations Check List (check appropriate spaces)	
Start-up procedure reviewed	
Shutdown procedure reviewed	
Normal operation procedure reviewed	
Others:	

Maintenance Check List (check appropriate spaces)	
Described normal oil changes (frequency)	
Described special tools required	
Described normal items to be reviewed for wear	
Described preventive maintenance instructions	
Described greasing frequency	
Others:	

Manufacturer		Signature of Contractor Representative	Date
Signature of Authorized Representative			
Date		Signature of Authorized Representative	Date

43 05 11-C. UNIT RESPONSIBILITY CERTIFICATION FORM

[PROJECT TITLE]

CERTIFICATE OF UNIT RESPONSIBILITY

FOR SPECIFICATION SECTION _____

_____

[SECTION TITLE]

In accordance with Section 43 05 11-1.02 Unit Responsibility of the contract documents, the undersigned manufacturer of driven equipment ("manufacturer") accepts unit responsibility for all components of equipment furnished to the Project under specification Section_____ , and for related equipment manufactured under sections_____, _____, **and** _____ .

We have reviewed the requirements for sections 43 05 11 and 43 23 03 where applicable) and all sections referencing this (these) section(s), including but not limited to drivers, supports for driving and driven equipment and all other specified appurtenances to be furnished to the Project by manufacturer. And, we have further reviewed, and modified as necessary, the requirements for associated variable speed drives and motor control centers. We hereby certify that all specified components are compatible and comprise a functional unit suitable for the specified performance and design requirements whether or not the equipment was furnished by us. We will make no claim nor establish any condition that problems in operation for the product provided under this specification Section _____ are due to incompatibility of any components covered by this Certificate of Unit Responsibility. Nor will we condition or void any warranty for the performance of the product of this specification Section _____ due to incompatibility of any components covered under this Certificate of Unit Responsibility.

Our signature on this Certificate of Unit Responsibility does not obligate us to take responsibility for, nor to warrant the workmanship, quality, or performance of related equipment provided by others under specification sections _____, _____, and _____. Our obligation to warranty all equipment provided by us shall remain unaffected.

Notary Public	Name of Corporation
Commission expiration date	Address
Seal:	By:
	Duly Authorized Official
	Legal Title of Official
	Date

43 05 11-D. MANUFACTURER'S OPERATION CERTIFICATION FORM

A. Contract No:	Specification section:

Equipment name:

Contractor:

Manufacturer of equipment item:

The undersigned manufacturer of the equipment item described above hereby certifies that he has witnessed and/or directed the testing of the equipment described above and confirms that the equipment operates within the manufacturer's guidelines for proper and reliable operation, and that the equipment will meet the specified performance requirements.

Comments:

Manufacturer	Contractor
Signature of Authorized Representative	Signature of Authorized Representative
Date	Date

43 05 13-A. RIGID EQUIPMENT MOUNT INSTALLATION CHECKLIST

[CLIENT, PROJECT NAME]

Equipment Tag No.: _____ Date: _____

Grout Product Name and Type: _____

Grouting System Manufacturer: _____

Grouting Application Contractor: _____

General Contractor: _____

Step 1: Verify Equipment Anchor Installation Conformance to Equipment Pad Details		
Name: Contractor Rep.		Date
Name: Construction Manager		Date
Name: Millwright		Date
Step 2: Completion of Cleaning and Concrete Substrate Preparation Prior to Grouting		
Name: Contractor Rep.		Date
Name: Construction Manager		Date
Name: Grouting Contractor Rep.		Date
Name: Grout Manufacturer's Technical Rep.		Date
Step 3: Equipment Leveling		
Name: Contractor Rep.		Date
Name: Construction Manager		Date
Name: Millwright		Date
Step 4: Installation of Protection of Adjacent Surfaces or Structures NOT TO BE GROUTED		
Name: Contractor Rep.		Date
Name: Construction Manager		Date
Name: Grouting Contractor Rep.		Date
Name: Grout Manufacturer's Technical Rep.		Date
Step 5: Preparation and Construction of Forms and Epoxy Grout Filling Standpipes		
Name: Contractor Rep.		Date
Name: Construction Manager		Date
Name: Grouting Contractor Rep.		Date
Name: Grout Manufacturer's Technical Rep.		Date
Step 6: Completion of Ambient Condition Control in Structure or Building Area and Acceptance of Ambient Conditions as They Apply to Application and Curing Requirements for the Grouting System		
Name: Contractor Rep.		Date
Name: Construction Manager		Date
Name: Grouting Contractor Rep.		Date
Name: Grout Manufacturer's Technical Rep.		Date
Step 7: Epoxy Grout Installation		
Name: Contractor Rep.		Date
Name: Construction Manager		Date
Name: Grouting Contractor Rep.		Date
Name: Grout Manufacturer's Technical Rep.		Date
Step 8: Completion of Full and Proper Cure of Epoxy Grout		
Name: Contractor Rep.		Date
Name: Construction Manager		Date
Name: Grouting Contractor Rep.		Date

Name: Grout Manufacturer's Technical Rep.		Date
Step 9: Completion of Localized Repair of Grout Voids		
Name: Contractor Rep.		Date
Name: Construction Manager		Date
Name: Grouting Contractor Rep.		Date
Name: Grout Manufacturer's Technical Rep.		Date
Step 10: Final Acceptance of Grouting System Installation Including Final Clean-Up of the Work Site Complying with All Specification Requirements and the GSM's Quality Requirements		
Name: Contractor Rep.		Date
Name: Construction Manager		Date
Name: Grouting Contractor Rep.		Date
Name: Grout Manufacturer's Technical Rep.		Date

43 05 21-A. MOTOR DATA FORM

Equipment Name: _____ Equipment No(s): _____

Project Site Location: _____

Nameplate Markings

Mfr:		Mfr Model:		Frame:		Horsepower:	
Volts:		Phase:		RPM:		Service Factor:	
FLA:		LRA:		Frequency:		Amb Temp Rating:	°C

Time rating:	(NEMA MG1-10.35)	Design Letter:	(NEMA MG-1.16)
KVA Code Letter:		Insulation Class:	

The following information is required for explosion-proof motors only:

A. Approved by UL for installation in Class _____, Div _____, Group _____
B. UL frame temperature code ____ (NEC Tables 500-8B)

The following information is required for all motors 1/2 horsepower and larger:

A. Guaranteed minimum efficiency _____

(Section 43 05 21-2.04 Motor Efficiency)

B. Nameplate or nominal efficiency _____

Data Not Necessarily Marked on Nameplate

Type of Enclosure:			Enclosure Material:		
Temp Rise:		°C (NEMA MG1-12.41,42)			
Space Heater included?	☐ Yes	☐ No	If Yes:	Watts	Volts
Type of motor winding over-temperature protection, if specified:					

Provide information on other motor features specified:

_____

TECHNICAL SPECIFICATIONS