

**Four Rivers Sanitation Authority  
Rockford, Illinois**

**Bidding Requirements and Contract Forms**

**for**

**Main Power Transition**

**Capital Project No. 1361**

# Four Rivers Sanitation Authority Rockford, Illinois

**Bidding Requirements and Contract Forms  
and  
General Provisions and Technical Specifications  
for  
Sanitary Sewer Construction**

**for**

## **Main Power Transition**

**Capital Project No. 1361**

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*J.T.B.* 8/22/23  
Exp: 11/30/23

Not to be used for bidding purposes

**Section I**  
**Bidding Requirements**

*Not to be used for bidding purposes*

## Article 1 — Notice to Bidders

The Four Rivers Sanitation Authority (FRSA) will receive signed and sealed bids for the Main Power Transition, Capital Project No. 1361, at the Steve Graceffa Administration Building (Administration Building) at 3501 Kishwaukee Street, Rockford, Illinois until 10:00 a.m. on Friday, September 15<sup>th</sup>, 2023 at which time and place responsive / responsible bids will be publicly opened and read aloud.

The Main Power Transition project consists of addition of a remote switchgear control panel as well as upgrades to the main tie main switchgear automatic transfer scheme and all other appurtenances indicated on the plans and in the specifications.

Bidder's attention is called to Article 2 – Instructions to Bidders 3.8 requirements for Statement of Qualifications. Bidder must have a permanent business office within forty (40) miles of FRSA's office at 3501 Kishwaukee Street in Rockford, Illinois.

All Project work shall be completed by Tuesday, April 30<sup>th</sup>, 2024. Liquidated damages shall be \$300.00 per calendar day. Liquidated damages from failure to restore power shall be \$2,000 per hour.

Bid documents may be obtained at a cost of \$50.00 per set (non-refundable) by contacting the FRSA Engineering Department at 815-387-7660.

Plans and specifications may also be viewed at the offices of the Northern Illinois Building Contractors Association at 1111 S. Alpine Rd, Rockford, Illinois. For more information, visit the FRSA website at [fourrivers.illinois.gov](http://fourrivers.illinois.gov).

**A Mandatory Pre-Bid Meeting for this project will be held on Wednesday, September 6<sup>th</sup>, 2023 at 10:00 a.m. in the FRSA Board Room at 3501 Kishwaukee Street, Rockford, Illinois. All Contractors intending to bid on this project must attend the pre-bid meeting.**

All construction shall be done in accordance with specifications on file with FRSA.

Each Proposal must be accompanied by the FRSA Bid Bond form with an acceptable Bid Security attached, in the amount of five percent (5%) of the total bid price. This amount is a guarantee that, if the Proposal is accepted, a Contract will be entered into and its performance properly secured.

The successful bidder will be required to furnish a satisfactory Performance Bond in the full amount of the Bid or Proposal. No Bid shall be withdrawn without FRSA's consent for a period of sixty (60) days after the scheduled closing time for receipt of bids.

FRSA reserves the right to reject any or all bids, or any part thereof, or to accept any bid or any part thereof, or to waive any formalities in any bids, deemed to be in the best interest of FRSA.

Dated this 21<sup>st</sup> day of August, 2023.

  
BY: Timothy S. Hanson, Executive Director

## Article 2 — Instructions to Bidders

### 1 General

#### 1.1 Scope and Intent

This section of the Contract Documents provides detailed information and requirements for preparing bids to prospective bidders, bidders' responsibility, the preparation and the submission of bids, basis for awarding the Contract and other general information concerned with bidding and executing the Contract.

#### 1.2 Contradictions

If in the case of apparent contradictions between or among the Contract Documents, the Contract Documents shall be consulted in the following order: Addenda, Agreement, Supplementary Drawings, Instructions to Bidders, Detailed Specifications, Plans, and Four Rivers Sanitation Authority (FRSA) General Provisions. The language in the first such document in which language regarding the conflict, error or discrepancy occurs shall control.

#### 1.3 Mandatory Pre-Bid Meeting

**A Mandatory Pre-Bid Meeting for this project will be held on Wednesday, September 6<sup>th</sup>, 2023 at 10:00 a.m. in the FRSA Board Room at 3501 Kishwaukee Street, Rockford, Illinois. All Contractors intending to bid on this project must attend the pre-bid meeting.**

### 2 Legal Requirements

#### 2.1 Illinois Regulations

A. Public Act 100-1177 (820 ILCS 130/) entitled the "Prevailing Wage Act" requires the Bidder to comply with prevailing wages in accordance with the Illinois Department of Labor Standards. The State of Illinois requires contractors and subcontractors on FRSA projects to submit certified payroll reports via the State's Certified Transcript of Payroll Portal currently found at:

<https://www2.illinois.gov/idol/Laws-Rules/CONMED/Pages/certifiedtranscriptofpayroll.aspx>.

The Bidder is responsible for verifying current information at the State's website.

B. Public Act 83-1030 (30 ILCS 565/) entitled the "Steel Products Procurement Act" requires that steel products used or supplied in performance of this Contract or subcontract must be manufactured or produced in the United States with three exceptions.

The provisions of this Section shall not apply:

1. Where the Contract involves an expenditure of less than \$500.
2. Where the executive head of the public agency certifies in writing that
  - a) the specified products are not manufactured or produced in the United States in sufficient quantities to meet the agency's requirements, or
  - b) obtaining the specified products, manufactured or produced in the United States would increase the cost of the Contract by more than 10%.
3. When its application is not in the public interest.

C. Public Act 96-929 (30 ILCS 570/) entitled the "Illinois Workers on Public Works Act" provides that Illinois residents be employed on Illinois public works projects, provided there

has been a period of excessive unemployment (5%) in the State of Illinois as defined in the Act; and, further, that Illinois workers are available and capable of performing the particular type work involved.

- D. Public Act 101-0221 entitled the “Workplace Transparency Act” requires that any party to a contract adopt and promulgate written sexual harassment policies that include, as a minimum, the following information:
1. the illegality of sexual harassment
  2. the definition of sexual harassment under Illinois State law
  3. a description of sexual harassment, utilizing examples
  4. my (our) organization's internal complaint process including penalties
  5. the legal recourse, investigative and complaint process available through the Illinois Department of Human Rights and the Illinois Human Rights Commission
  6. directions on how to contact the Department and the Commission
  7. protection against retaliation as provided by Section 6-101 of the Illinois Human Rights Act

Upon request, this information must be provided to the Illinois Department of Human Rights and the FRSA.

- E. With regard to nondiscrimination in employment, the Contractor for this project will be required to comply with the Illinois Fair Employment Practices Commission's Rules and Regulations.
- F. The Contractor for this project must comply with the Occupational Safety and Health Act.
- G. The Contractor for this project must comply with the Federal Drug-Free Workplace Act.
- H. Public Act 96-1416 requires the Certification of Clean Construction and Demolition Debris (CCDD) and uncontaminated soil prior to disposal at a CCDD fill site. The Contractor for this project must comply with Public Act 96-1416 and be responsible for the certifications and any fees associated with the disposal at a CCDD fill site.
1. In the event that contaminated soil is uncovered on the project, the Contractor must notify FRSA immediately. Any extra costs resulting from the presence of contaminated soil must be evaluated in accordance with FRSA General Provisions.

## **2.2 Americans with Disabilities Act**

The Contractor for this project will comply with all applicable requirements of the Americans with Disabilities Act of 1990 (ADA). The Contractor will hold harmless and indemnify Four Rivers Sanitation Authority (FRSA) and their representatives from all:

- A. suits, claims, or actions
- B. costs, either for defense (including but not limited to reasonable attorney's fees and expert witness fees) or for settlement
- C. damages of any kind (including but not limited to actual, punitive, and compensatory damages) relating in any way to or arising out of the ADA, to which said firm is exposed or which it incurs in the execution of the Contract.



### **3 General Instructions**

#### **3.1 Bidder's Responsibility**

Bidders are cautioned not to submit proposals until having carefully examined the entire site of the proposed work and adjacent premises and the various means of approach and access to the site, and having made all necessary investigations to inform themselves thoroughly as to the facilities for delivering, placing and handling the materials at the site, and having informed themselves thoroughly as to all difficulties involved in the completion of all the work under this Contract in accordance with its requirements.

Bidders must examine the Plans, Specifications and other Contract Documents and shall exercise their own judgment as to the nature and amount of the whole of the work to be done and for the bid prices must assume all risk of variance, by whomsoever made, in any computation or statement of amount or quantities necessary to complete fully the work in strict compliance with the Contract Documents. The Bidder must satisfy himself by making borings or test pits, or by such methods as he may prefer, as to the character and location of the materials to be encountered or work to be performed. No pleas of ignorance of conditions that exist or that may hereafter exist, or of conditions or difficulties that may be encountered in the execution of the work under this Contract, as a result of failure to make the necessary examinations and investigations, will be accepted as an excuse for any failure or omission on the part of the Contractor to fulfill, in every detail, all of the requirements of the Contract Documents, or will be accepted as a basis for any claims whatsoever for extra compensation or for an extension of time.

**The Contractor is responsible for verifying the location of all existing utilities in the project areas.**

The Bidder, therefore, shall satisfy himself by such means as he may deem proper as to the location of all structures that may be encountered in construction of the work.

#### **3.2 Addenda and Interpretations**

No interpretation of the meaning of the Plans, Specifications, or other Contract Documents will be made to any bidder orally. Every request for such interpretation must be in writing addressed to Four Rivers Sanitation Authority, 3501 Kishwaukee Street, Rockford, Illinois. To be given consideration, such request must be received at least five (5) days prior to the date fixed for the opening of bids. Any and all such interpretations and any supplemental instructions will be in the form of written addenda which, if issued, will be sent by email, fax, or certified mail with acknowledgement of receipt requested, to all prospective bidders, at the respective addresses furnished for such purposes, not later than three (3) days prior to the date fixed for the opening of bids. Failure of any bidder to receive any such addenda or interpretation shall not relieve said bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the Contract Documents.

#### **3.3 Laws and Regulations**

The prospective bidder is warned that he must comply with all laws of the United States Government, State of Illinois, all ordinances and regulations of FRSA in the performance of the work under this Contract. The Bidder's attention is specifically called to that provision of the General Conditions regarding the rate of wage to be paid on the work.

#### **3.4 Quantities Estimated Only**

Bidders are warned that the estimate of quantities of the various items of work and materials, as set forth in the Proposal form, is approximate only and is given solely to be used as a uniform basis for

the comparison of bids. The quantities actually required to complete the Contract work may be less or more than so estimated, and if awarded a contract for the work specified, the Contractor further agrees that he will not make any claim for damages or for loss of profits or for an extension of time because of a difference between the quantities of the various classes of work assumed for comparison of bids and quantities of work actually performed.

### **3.5 Form, Preparation, and Presentation of Proposals**

For particulars as to the quantity and quality of the supplies, materials and equipment to be furnished, and the nature and extent of the work or labor to be done, prospective bidders are referred to the Contract Documents, which may be examined or obtained at the office of FRSA.

Each bid will be submitted upon the prescribed Proposal form. All blank spaces for bid prices must be filled in, in ink, with the unit or total sum or both for which the Proposal is made. If the Proposal contains any omissions, erasures, alterations, additions or items not called for in the itemized Proposal, or contains irregularities of any kind, such may constitute sufficient cause for rejection of bid. In case of any discrepancy in the unit price or amount bid for any item in the Proposal, the unit price as expressed in figures will govern. In no case is the agreement form to be filled out or signed by the bidder.

The bid must be verified and be presented on the prescribed form in a sealed envelope on or before the time and at the place stated in the Advertisement for Bids, endorsed with the name of the person, firm or corporation presenting it, the date of presentation, and the title of the work for which the bid is made. If forwarded by mail, the sealed envelope containing the Proposal and marked as directed above, must be enclosed in another envelope addressed to Clerk of the Four Rivers Sanitation Authority, 3501 Kishwaukee Street, Rockford, Illinois, 61109 and be sent preferably by certified mail. FRSA will not accept facsimile generated bids.

### **3.6 Bid Security**

Each Proposal must be accompanied by the FRSA Bid Bond form with an acceptable Bid Security attached, in the amount specified in Article One, Notice to Bidders. This sum is a guarantee that, if the Proposal is accepted, a contract will be entered into and its performance properly secured. The FRSA's Bid Bond Form included in the bid packet must be used. No other Bid Bond form may be substituted.

Within ten (10) days after the opening of bids, the deposits of all but the three lowest bidders will be returned. The deposits of the remaining two unsuccessful bidders will be returned within three (3) days after the execution of the Contract, or, if no such Contract has been executed, within sixty (60) days after the date of opening bids. The deposit of the successful bidder will be returned only after he has duly executed the Contract and furnished the required bond and insurance.

### **3.7 Affidavit of Compliance**

**Each proposal must be accompanied by an executed Affidavit of Compliance.** A separate Affidavit of Compliance form is enclosed with the Proposal packet. Failure to submit an executed Affidavit of Compliance with the Proposal may constitute sufficient cause for rejection of the bid.

### **3.8 Statement of Qualifications**

Each Proposal must be accompanied by a Statement of Qualifications certifying that the bidder is registered to do business in the State of Illinois, has a permanent business office within forty (40) miles of the FRSA office at 3501 Kishwaukee Street in Rockford, IL, and provides documentation that the bidder possesses the appropriate financial, material, equipment, facility and personnel

resources and expertise necessary to meet all contractual obligations. The bidder shall document no less than three (3) contracts for electrical system work within the past five (5) years having equal or greater value to the bid being submitted. FRSA reserves the right to request additional information, as needed, to evaluate bids prior to making an award.

### **3.9 Comparison of Proposals**

Bids on item contracts will be compared on the basis of a total computed price arrived at by taking the sum of the estimated quantities of each item, multiplied by the corresponding unit prices and including any lump sum bids on individual items, in accordance with the estimate of quantities set forth in the Proposal form. Bids on lump sum contracts will be considered upon the basis of the lowest sum bid.

### **3.10 Acceptance of Bids and Basis of Award**

The contract will be award, if at all, to the lowest responsive, responsible bidder. No bidder may withdraw his bid after the scheduled closing time for receipt of bids, for at least sixty (60) days. Four Rivers Sanitation Authority also reserves the right to reject any of all bids.

The bidder whose proposal is accepted will be notified of the Notice of Award issued by FRSA Executive Director. Within ten (10) days of issuance of a Notice of Award by the FRSA Executive Director, the successful bidder shall enter into a written contract for the performance of the Proposal work and shall furnish the required bonds and insurance certificates upon being served such Notice, personally, by mailing, or via email.

If the bidder does not comply with the Notice of Award, FRSA will issue a Deficiency Notice. If the bidder to whom the contract is awarded refuses or neglects to execute it or fails to furnish the required bond and insurance within five (5) days after receipt by him of Deficiency Notice, the amount of his deposit shall be forfeited and shall be retained by FRSA as liquidated damage and not as a penalty. It being now agreed that said sum is a fair estimate of the amount of damages that FRSA will sustain in case said bidder fails to enter into a contract and furnish the required bond and insurance. No plea of mistake in the bid shall be available to the bidder for the recovery of his deposit or as a defense to any action based upon the neglect or refusal to execute a contract.

#### **3.10.1 Evaluation of Responsiveness**

The responsiveness of bidders will be judged on the basis of the completeness of the bid submitted. To be responsive, a Bid must be submitted on the forms provided as part of the Bid Documents and comply with all the requirements of the Instruction to Bidders.

#### **3.10.2 Evaluation of Responsibility**

To be judged as responsible, the bidder shall:

- A. Have adequate financial resources for performance, the necessary experience, organization, technical qualifications, and facilities, or a firm commitment to obtain such by subcontracts;
- B. Be able to comply with the required completion schedule for the project;
- C. Have a satisfactory record of integrity, judgment, and performance, including, in particular, any prior performance on contracts from FRSA;
- D. Have an adequate financial management system and audit procedures, that provide efficient and effective accountability and control of all property, funds, and assets;

- E. Conform to the civil rights, equal employment opportunity and labor law requirements of the Bid Documents.
- F. Have satisfactorily completed no less than three (3) electrical system contracts within the past five (5) years of equal or greater value to the bid being submitted.

### **3.11 The Rejection of Bids**

FRSA reserves the right to reject any bid if the evidence submitted in the statement of the bidder's qualifications, or if investigation of such bidder fails to satisfy FRSA that such bidder is properly qualified to carry out the obligations and to complete the work contemplated therein. Any or all proposals will be rejected if there is reason to believe that collusion exists among the bidders. Conditional bids will not be accepted. FRSA reserves the right to reject any and all bids and to accept the bid which they deem most favorable to the interest of FRSA after all Proposals have been examined and canvassed.

### **3.12 Insurance and Bonding**

Contractor shall provide all necessary insurance and bonds required to complete the project. No more than ten (10) calendar days subsequent to FRSA's issuance of an award letter, the Contractor shall provide documentation to prove that he has obtained all required insurance and bonds. FRSA shall be the sole judge as to the acceptability of any such proof.

Contractor shall provide and maintain all insurance and bonds as required by FRSA.

#### **3.12.1 General**

The Contractor shall ensure that:

- A. All insurance policies shall be specific to the project.
- B. The insurance certificate shall state: This certifies that the insurance coverage meets or exceeds that required for Main Power Transition, Capital Project No. 1361.
- C. FRSA shall be named as Additional Insured in all policies; this shall include the Owners' Contractors' Protective Policy option.
- D. All completed operations coverages and bonds shall remain in force for a period of two (2) years following acceptance of the Project and completed operations shall stay in force for two (2) years following completion of the Project.

#### **3.12.2 Insurance**

The Contractor shall, for the duration of the Contract and for two (2) years following project acceptance, maintain the following:

- A. **General Liability**: \$1,000,000 combined single limit per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to this project or the general aggregate limit shall be twice the required occurrence limit. The Contractor shall provide "XCU" coverage.
- B. **Automobile Liability**: \$1,000,000 combined single limit per accident for bodily injury and property damage including coverages for owned, hired or non—owned vehicles, as applicable.
- C. **Workers' Compensation and Employers Liability**: Workers' Compensation limits as required by statute and Employers Liability limits of \$500,000 per accident and \$500,000 per disease.

- D. **Umbrella:** \$2,000,000 per occurrence/aggregate for contracts valued at \$500,000 or over, or \$1,000,000 for contracts below \$500,000. \$10,000 is maximum allowable self-retained limit.
- E. **Errors and Omissions:** If the Contractor performs professional services, he shall maintain errors and omissions insurance with a limit no lower than \$1,000,000 for the duration of the contract.

The policies shall contain, or be endorsed to contain, the following provisions in the General Liability and Automobile Liability Coverage's:

1. Unless otherwise provided in paragraph "c" of this section, FRSA, its officers, officials, employees and volunteers shall be covered as additional insureds as respects liability arising out of activities performed by or on insured's general supervision of the Contractor, products and completed operations of the Contractor, premises owned, occupied or used by the Contractor, or automobiles owned, leased, hired or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to FRSA, its officers, officials, employees, volunteers, or agents.
2. Unless otherwise provided in paragraph "c" of this section, the Contractor's insurance coverage shall be primary insurance as respects FRSA, its officers, officials, employees, volunteers, and agents. Any insurance or self-insurance maintained by FRSA, its officers, officials, employees, volunteers, or agents shall be excess of the Contractor's insurance and shall not contribute with it.
3. As an acceptable alternative to provisions "a" and "b" of this section, the Contractor may provide owner's and contractor's protective liability insurance with coverage limits, named insureds, and in conformity with all applicable specifications of this section.
4. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to FRSA, its officers, officials, employees, volunteers, or agents.
5. The Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.
6. All Coverages — Each insurance policy required by this clause shall not be suspended, voided, canceled by either party, reduced in coverage, or in limits except after thirty (30) days' prior written notice by certified mail, return receipt requested, has been given to FRSA.

### **3.12.3 Best's Ratings**

FRSA shall be the sole judge of whether or not said insurer's ratios are satisfactory. FRSA's decision shall be final and FRSA's bidding procedures contain no appeal provision.

A. **Alphabetical Rating:** For purposes of this Request for Bids, "insurer" shall mean any surety, insurance carrier, or other organization which proposes to provide an insurance policy or bond for the Contractor. No insurer or surety rated lower than "A-, Excellent" in the current *Best's Key Rating Guide* shall be acceptable to FRSA.

B. **Financial Size Rating:** Provided an insurer's alphabetical rating is satisfactory, FRSA will examine said insurer's financial size rating.

1. If **Best** classifies the insurer XII or larger, said insurer shall be acceptable to FRSA.
2. If **Best** classifies the insurer as smaller than XII, but larger than VI, said insurer shall be submitted to FRSA's Director of Management Services and/or FRSA's insurance consultant for review.

Financial Size ratings less than VII are not acceptable and will disqualify the Contractor.

#### **3.12.4 Performance Bond and Labor & Materials Payment Bond Form**

The Contractor shall provide a Performance Bond and Labor & Materials Payment Bond form acceptable to FRSA. The performance bond shall be for either 100% of the contract price or for the Contractor's unit price times the estimated number of units, as applicable.

This Request for Bids contains a Performance Bond and a Labor & Material Bond form for the Contractor's use.

If the Contractor fails to provide acceptable bonds within the specified time, he shall be in default.

#### **3.12.5 Correction of Contractor's Insurance or Bond Deficiencies**

If FRSA determines that the Contractor's insurance or bond documentation does not conform to these specifications, FRSA shall inform said Contractor of the non-conformity. If said Contractor fails to provide conforming insurance or bond documentation within five (5) calendar days of FRSA's deficiency notice, he shall be in default.

#### **3.12.6 Indemnification Clause**

Contractor shall protect, indemnify, hold and save harmless and defend FRSA, its officers, officials, employees, volunteers, and agents against any and all claims, costs, causes, actions and expenses, including but not limited to attorney's fees incurred by reason of a lawsuit or claim for compensation arising in favor of any person, including the employees, officers, independent contractors, or subcontractors of the Contractor or FRSA, on account of personal injuries or death, or damages to property occurring, growing out of, incident to, or resulting directly or indirectly from the performance by the Contractor or subcontractor, whether such loss, damage, injury or liability is contributed to by the negligence of FRSA or by premises themselves or any equipment thereon whether latent or patent, or from other causes whatsoever, except that the successful bidder shall have no liability for damages or the costs incident thereto caused by the sole negligence of FRSA.

The indemnification shall not be limited by a limitation on amount or type of damages payable by or for the Contractor or its subcontractor under any employee benefits act including, but not limited, to the Workers Compensation Act.

No inspection by FRSA, its employees, or agents shall be deemed a waiver by FRSA of full compliance with the requirements of the Contract. This indemnification shall not be limited by the required minimum insurance coverages in the Contract.

#### **3.13 Tax Exemption**

FRSA is exempt, by law, from paying bidder Federal Excise Tax and Illinois Retailers' Occupational Tax. Therefore, the bidder shall exclude those taxes from his bid. FRSA's tax exemption number is E9992-3696-06. The bidder shall include all other applicable taxes in his bid price.

**Section II**  
**Contract Forms**

*Not to be used for bidding purposes*

# Proposal

**Project:** Main Power Transition, Capital Project No. 1361

**Location:** Four Rivers Sanitation Authority Wastewater Treatment Plant located at 3333 Kishwaukee Street, Rockford, Illinois

**Completion Date:** Tuesday, April 30<sup>th</sup>, 2024

**Liquidated Damages:** \$300/calendar day per each completion date deadline  
\$2000/hour from failure to restore power

To: Board of Trustees  
Four Rivers Sanitation Authority  
3501 Kishwaukee Street  
Rockford, IL 61109

From: \_\_\_\_\_  
(Individual, Partnership or Corporation, as case may be)

\_\_\_\_\_  
(Address of Individual, Partnership or Corporation)

Gentlemen:

I (We), the undersigned, hereby propose to furnish all materials, equipment, tools, services, labor, and whatever else may be required to construct and place in service the above subject project for Four Rivers Sanitation Authority all in accordance with the plans and specifications, provided by Four Rivers Sanitation Authority (FRSA). The undersigned also affirms and declares:

1. That I (we), have, examined and am (are) familiar with all the related contract documents and found that they are accurate and complete and are approved by the undersigned.
2. That I (we), have carefully examined the site of the work, and that, from my (our) investigation, has satisfied myself (ourselves) as to the nature and location of the work, the character, quality, and quantity of materials and the kind and extent of equipment and other facilities needed for the performance of the work, the general and local conditions and all difficulties to be encountered, and all other items which may, in any way, effect the work or its performance.
3. That this bid is made without any understanding, agreement or connection with any other person, firm, or corporation making a bid for the same purposes, and is in all respects fair and without collusion or fraud; and that I (we) are not barred from bidding as a result of a bid-rigging or bid-rotating conviction.



4. That accompanying the Proposal is a Bidder's Bond in the amount specified in Article 1, Notice to Bidders, payable to the Board of Trustees of Four Rivers Sanitation Authority, which it is agreed, shall be retained as liquidated damages by said Four Rivers Sanitation Authority if the undersigned fails to execute the Contract in conformity with the contract documents incorporated in the contract documents and furnish bond as specified, within ten (10) days after notification of the award of the contract to the undersigned.
5. The Bidder is of lawful age and that no other person, firm or corporation has any interest in this Proposal or in the Contract proposed to be entered in to.
6. The Bidder is not in arrears to Four Rivers Sanitation Authority, upon debt or contract, and is not a defaulter, as surety or otherwise, upon any obligation to Four Rivers Sanitation Authority.
7. No officer or employee or person whose salary is payable in whole or in part by FRSA is, shall be or become interested, directly or indirectly as a contracting party, partner, stockholder, surety or otherwise, in this Proposal, or in the performance of the Contract, or in the work to which it is relates, or in any portion of the profits thereof.
8. The Bidder which I represent complies with all applicable requirements of the Americans with Disabilities Act (ADA) and the Occupational Safety and Health Act (OSHA) and that if said bidder is awarded a contract, it will complete all OSHA-required or ADA-required employee and customer training, will make available all required information, and will hold harmless and indemnify FRSA and FRSA's representatives.  
  
In regard to participation in an approved Apprenticeship program, upon request, Contractor will be required to provide written proof of participation.
9. The undersigned, as Bidder, declares that he has adopted and promulgated written sexual harassment policies in accordance with Public Act 99-093 and will make this information available upon request.
10. The undersigned, as Bidder, declares he will comply with prevailing wages in accordance with the Illinois Department of Labor Standards. The State of Illinois requires contractors and subcontractors on public works projects (including Four Rivers Sanitation Authority) to submit certified payroll reports via the State's Certified Transcript of Payroll Portal found at: [www.2.illinois.gov/idol/Laws-Rules/CONMED/Pages/certifiedtranscriptofpayroll.aspx](http://www.2.illinois.gov/idol/Laws-Rules/CONMED/Pages/certifiedtranscriptofpayroll.aspx).
11. The undersigned, as Bidder, declares he will comply with the Federal Drug Free Workplace Act.
12. The undersigned, as Bidder, declares he will comply with Public Act 83-1030 entitled "Steel Products Procurement Act".
13. The undersigned, as Bidder, declares he will comply with Public Act 96-929 (30 ILCS 570) regarding Illinois residents' employment.
14. The undersigned, as Bidder, declares he will comply with non-discrimination in employment in accordance with the Illinois Fair Employment Practices Commissions Rules & Regulations.
15. The undersigned, as Bidder, declares that he currently participates in an apprenticeship or training program that is registered with the United States Department of Labor's Bureau of

Apprenticeship and Training or other acceptable State of Illinois Department of Labor monitored program.

In submitting this bid, it is understood that the right is reserved by Four Rivers Sanitation Authority to reject any and all bids. It is agreed that this bid may not be withdrawn for a period of sixty (60) days from the opening thereof.

The undersigned further declares that he (they) has (have) carefully examined the following items of work and that the cost of all the work to complete this project is given in this Proposal.

Lump Sum Bid Amount

Total Amount of Lump Sum Bid, expressed in figures, for providing all materials, equipment, warranty, and labor to complete this project in conformity with all specifications in this Invitation to Bid.

\$ \_\_\_\_\_

The undersigned acknowledges that he has received Addendum numbers \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, and realizes that all Addenda are considered part of the Contract.

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

Bidder: \_\_\_\_\_  
(Printed Name of Firm)

By: \_\_\_\_\_  
(Authorized Rep's Signature)

\_\_\_\_\_  
(Printed Street Address)

By: \_\_\_\_\_  
(Printed Authorized Rep's Name)

\_\_\_\_\_  
(Printed City, State, Zip)

By: \_\_\_\_\_  
(Printed Authorized Rep's Title)

\_\_\_\_\_  
(Area Code and Phone Number)

By: \_\_\_\_\_  
(Fax Number)

\_\_\_\_\_  
(Authorized Rep's Email Address)

# Fair Employment Practices Affidavit of Compliance

Project: Main Power Transition, Capital Project No. 1361

NOTE: THE BIDDER MUST EXECUTE THIS AFFIDAVIT AND SUBMIT IT WITH ITS SIGNED BID. THE FOUR RIVERS SANITATION AUTHORITY CANNOT ACCEPT ANY BID WHICH DOES NOT CONTAIN THIS AFFIDAVIT

\_\_\_\_\_, being first duly sworn, deposes and says that:  
(Name of person making affidavit)

They are: \_\_\_\_\_ of \_\_\_\_\_  
(Officer's Title) (Company Name)

that said company is and "Equal Opportunity Employer" as defined by Section 2000(e) of Chapter 21, Title 42 of the United States Code annotated and Federal Executive Orders #11375 which are incorporated herein by reference;

and that said company will comply with any and all requirements of Title 44 Admin. Code 750. APPENDIX A – Equal Opportunity Clause, Rules and Regulations, Illinois Department of Human Rights, which read as follows:

"In the event of the contractor's non-compliance with the provisions of this Equal Employment Opportunity Clause, the Illinois Human Rights Act or the Rules and Regulations of the Illinois Department of Human Rights ("Department"), the contractor may be declared ineligible for future contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations, and the contract may be cancelled or voided in whole or in part, and such other sanctions or penalties may be imposed or remedies invoked as provided by statute or regulation. During the performance to this contract, the contractor agrees as follows:

1. That it will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, marital status, national origin or ancestry, citizen status, age, physical or mental handicap unrelated to ability, sexual orientation, military status or an unfavorable discharge from military service; and further that it will examine all job classifications to determine if minority persons or women are underutilized and will take appropriate affirmative action to rectify any such underutilization.
2. That, if he or she hires additional employees in order to perform this contract or any portion of this contract, he or she will determine the availability (in accordance with the Department's Rules and Regulations) of minorities and women in the areas from which he or she may reasonably recruit and he or she will hire for each job classification for which employees are hired in a way that minorities and women are not underutilized.
3. That, in all solicitations or advertisements for employees placed by him or her or on his or her behalf, he or she will state that all applicants will be afforded equal opportunity without discrimination because of race, color, religion, sex, sexual orientation, marital status, national origin or ancestry, citizenship status, age, physical or mental handicap unrelated to ability, sexual orientation, military status or an unfavorable discharge from military service.
4. That he or she will send to each labor organization or representative of workers with which he or she has or is bound by a collective bargaining or other agreement or understanding, a notice advising such labor organization or representative of the contractor's obligations under the Illinois Human Rights Act and the Department's Rules and Regulations. If any labor organization or representative fails or refuses to cooperate with the contractor in his or her efforts to comply with such Act and Rules and Regulations, the contractor will promptly so notify the Department and the contracting agency and will recruit employees from other sources when necessary to fulfill its obligations under the contract.
5. That he or she will submit reports as required by the Department's Rules and Regulations, furnish all relevant information as may from time to time be requested by the Department or the contracting agency, and in all respects comply with the Illinois Human Rights Act and the Departments Rules and Regulations.
6. That he or she will permit access to all relevant books, records, accounts and work sites by personnel of the contracting agency and the Department for purposes of investigation to ascertain compliance with the Illinois Human Rights Act and the Department's Rules and Regulations.
7. That he or she will include verbatim or by reference the provisions of this clause in every subcontract awarded under which any portion of the contract obligations are undertaken or assumed, so that the provisions will be binding upon the subcontractor. In the same manner as with other provisions of this contract, the contractor will be liable for compliance with applicable provisions of this clause by such subcontractors; and further it will promptly notify the contracting agency and the Department in the event any subcontractor fails or refuses to comply with the provisions. In addition, the contractor will not utilize any subcontractor declared by the Illinois Human Rights Commission to be ineligible for contacts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations.

(Source: Amended at 32 Ill. Reg. 16484, effective September 23, 2008)"

Ill. Dept of Human Rights Registration No.: \_\_\_\_\_ Expiration Date: \_\_\_\_\_

\_\_\_\_\_  
Signature

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
Notary Public

## Bid Bond

KNOW ALL MEN BY THESE PRESENTS, that we:

\_\_\_\_\_ (hereinafter called the Principal) and

\_\_\_\_\_ (hereinafter called the Surety)

a Corporation chartered and existing under the laws of the State of \_\_\_\_\_ with its principal offices in the City of \_\_\_\_\_ and authorized to do business in the State of Illinois are held and firmly bound onto the Four Rivers Sanitation Authority (FRSA) of Winnebago County, Illinois, in the full and just sum of: **FIVE PERCENT (5 %) OF THE TOTAL BID PRICE** good lawful money of the United States of America, to be paid upon demand of the FRSA, to which payment will and truly to be made we bind ourselves, our heirs, executors, administrators, and assigns, jointly and severally and firmly by these presents.

WHEREAS, the Principal is about to submit, or has submitted to FRSA, a proposal for Main Power Transition project consists of addition of a remote switchgear control panel as well as upgrades to the main tie main switchgear automatic transfer scheme and all other appurtenances indicated on the plans and in the specifications.

WHEREAS, the Principal desires to file this bond, in accordance with law, to accompany this Proposal.

NOW THEREFORE, The conditions of this obligation are such that if the Proposal be accepted, the Principal shall, within ten days after the date of receipt of a written notice of award of Contract, execute a Contract in accordance with the Proposal and upon the terms, conditions, and prices set forth therein, in the form and manner required by FRSA, and execute a sufficient and satisfactory Contract Performance Bond payable to said FRSA in an amount of one hundred percent (100%) of the Contract price (including alternates) in form and with security satisfactory to said FRSA, then this obligation to be void, otherwise to be and remain in full force and virtue in law; and the Surety shall, upon failure of the Principal to comply with any or all of the foregoing requirements within the time specified above, immediately pay to the aforesaid FRSA, upon demand, the amount hereof in good and lawful money of the United States of America, not as a penalty, but as liquidated damages.

IN TESTIMONY THEREOF, the Principal and Surety have caused these presents to be duly signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
**Principal**

(Seal)

By \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

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

Attest:

\_\_\_\_\_  
Secretary

\_\_\_\_\_

**Surety**

(Seal)

By \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

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

*Not to be used for bidding purposes*

# Agreement

## 1. General

THIS AGREEMENT, made and concluded this \_\_\_\_\_ day of \_\_\_\_\_, 2023, between the Four Rivers Sanitation Authority (FRSA), Rockford, Illinois, acting by and through the Board of Trustees, and \_\_\_\_\_, his/their executors, administrators, successors or assigns:

## 2. Scope of Work

WITNESSETH: That for and in consideration of the payments and agreements made in the Proposal attached hereto, to be made and performed by FRSA and according to the terms expressed in the Bond referring to these presents, the Contractor agrees with FRSA at his/their own proper cost and expense to do all the work, furnish all equipment, materials and all labor necessary to complete the work in accordance with the plans and specifications hereinafter described, and in full compliance with all of the terms of this agreement and the requirements of FRSA and its representative.

And it is also understood and agreed that the Bidding Requirements, Detailed Specifications, Contract Forms, General Conditions, General Requirements, Technical Specifications, Plans, Addenda, and provisions required by law are all essential documents of the contract, and are a part hereof, as if herein set out verbatim or as if attached, except for titles, subtitles, headings, table of contents and portions specifically excluded.

## 3. Contract Price

FRSA shall pay to the Contractor, and the Contractor shall accept, in full payment for the performance of this Contract, subject to any additions or deductions provided for hereby, in current funds, the Total Contract Price of \_\_\_\_\_ and 00/100 (\$\_\_\_\_\_).

Payments are to be made to the Contractor in accordance with and subject to the provisions of Section 7 of this Agreement, which is a part of this Contract.

## 4. Bond

The Contractor has entered into and herewith tenders a bond of even date herewith, in the penal sum of \_\_\_\_\_ and 00/100 (\$\_\_\_\_\_ ) to insure the faithful performance of this Contract, which said bond is hereby made a part of this Contract by reference.

## 5. Maintenance and Guarantee

The Contractor shall promptly repair, replace, restore or rebuild any imperfections that may arise and shall maintain satisfactory to FRSA all work for a period three years from the date of final acceptance of the Contract for trench settlement and for a period of two years all other work, except where periods of maintenance and guarantee are provided for. The Contractor shall, for this period, indemnify and save harmless the FRSA, its officers and agents from any injury done to property or persons as a direct or alleged result of imperfections in the Contractors' work, and shall immediately assume and take charge of the defense of such action or suits in like manner and to all intents and purposes as if said actions and suits had been brought directly against the Contractor.

If the Contractor shall fail to repair, replace, rebuild or restore such defective or damaged work promptly after receiving notice given by FRSA, the FRSA shall have the right to have the work done by others and to call on the Contractor and his bondsman to pay the costs thereof.

## **6. Contract Execution**

IT IS EXPRESSLY UNDERSTOOD AND AGREED that the entire improvement shall be done in a thorough and workmanlike manner, under the direction and to the satisfaction of FRSA and in full compliance with all the requirements of its representative under them. All loss or damage arising out of the nature of the work to be done, or from any detention of unforeseen obstruction or difficulty which may be encountered in the prosecution of the work, or from the action of the elements, shall be sustained by the Contractor.

The Contractor will be held responsible for all accidents, and hereby agrees to indemnify and protect FRSA from all suits, claims, and actions brought against it, and all cost, and damages which FRSA may be put to by reason of an injury or alleged injury, to the person or property of another in the execution of this contract, or the performance of the work, or in guarding the same, or for any material used in its prosecution or in its construction.

Any person employed on the work who shall refuse or neglect to obey the directions of FRSA or its representative, or who shall be deemed by FRSA to be incompetent, or who shall be guilty of any disorderly conduct, or who shall commit any trespass on any public or private property in the vicinity of the work, shall at once be removed from the work by the Contractor when so requested by FRSA.

Any request to extend the contract completion date must be considered by the Board at the Board meeting prior to the then-existing contract termination date. Any deviation from this action will result in the liquidated damage clause in the contract to be exercised.

## **7. Payments to Contractor**

FRSA hereby covenants and agrees, in consideration of the covenants and agreements in this Contract, specified to be kept and performed by the Contractor and subject to the conditions herein contained, and if FRSA receives an acceptable invoice prior to the tenth day of the month and receives approval of the work by the FRSA's Director of Engineering, FRSA shall issue payment before the fifth day of the succeeding month. If FRSA receives an acceptable invoice on or after the tenth day of the month, FRSA shall issue payment before the fifth day of the second succeeding month.

FRSA reserves the right at all times to refuse to issue payment in case the Contractor has neglected or failed to pay any subcontractors, workmen or employee on the work.

## **8. Subcontracts**

No part of the work herein provided for shall be sublet or subcontracted without the express consent of FRSA, to be entered in the records, and in no case shall consent relieve the Contractor from the obligation herein entered into, or change the terms of this Agreement.

## **9. Contractor's Responsibility**

This Contract shall extend to and be binding upon the successors and assigns, and upon the heirs, administrators, executors, and legal representatives of the Contractor.

In consideration of and to induce the award of this Contract to him, the Contractor represents and warrants: that he is not in arrears to FRSA upon debt of the Contract and that he is not a defaulter, as surety, contractor or otherwise; that he is financially solvent and sufficiently experienced and competent to perform the work; that the work can be performed as called for by the Contract; that the facts stated in his proposal and the information given by him is true and correct in all respects, and that he is fully informed regarding all the conditions affecting the work to be done and labor and materials to be furnished for the completion of this Contract and that his information was secured by personal investigation and research.

The Contractor shall pay not less than the prevailing wage rate as determined by the Department of Labor, to all laborers, workmen and mechanics performing work under this Contract. Contractor shall comply with current revisions of the wage standards; as required by law. The Contractor shall be responsible for verifying the prevailing wages each month and notifying all subcontractors of the appropriate monthly rates. The State of Illinois requires contractors and subcontractors on FRSA projects to submit certified payroll reports via the State's Certified Transcript of Payroll Portal currently found at: <https://www2.illinois.gov/idol/Laws-Rules/CONMED/Pages/certifiedtranscriptofpayroll.aspx>. The Contractor is responsible for verifying current website.

In regard to nondiscrimination in employment, Contractor will be required to comply with the Illinois Fair Employment Practices Commission's Rules and Regulations as provided herein.

The Contractor shall comply with the American Disabilities Act of 1990 (ADA). The Contractor will hold harmless and indemnify FRSA and their representatives from all:

- (a) suits, claims, or actions;
- (b) costs, either for defense (including but not limited to reasonable attorney's fees and expert witness fees) or for settlement, and;
- (c) damages of any kind (including but not limited to actual, punitive, and compensatory damages)

relating in any way to or arising out of the ADA, to which said firm is exposed or which it incurs in the execution of the contract.

Contractor shall also comply with Public Act 101-0221, which requires any party to a contract to adopt and enforce a written policy regarding sexual harassment that includes, as a minimum, the following information:

- (a) the illegality of sexual harassment
- (b) the definition of sexual harassment under Illinois State law;
- (c) a description of sexual harassment, utilizing examples;
- (d) my (our) organization's internal complaint process including penalties;
- (e) through the Illinois Department of Human Rights and the Illinois Human Rights Commission;
- (f) directions on how to contact the Department and the Commission; and
- (g) protection against retaliation as provided by Section 6-101 of the Illinois Human Rights Act.

Upon request this information will be provided to the Illinois Department of Human Rights. Upon FRSA award of a contract, FRSA will be provided this information described no more than ten working days after FRSA issues its award notification.



The Contractor shall comply with Public Act 96-929 (30 ILCS 570) which provides that Illinois residents be employed on Illinois public works projects, provided there has been a period of excessive unemployment (5%) in the State of Illinois as defined in the Act; and further, that Illinois workers are available and capable of performing the particular type work involved.

The Contractor shall comply with all rules and regulations of OSHA during the execution of this Contract.

The Contractor shall comply with the Federal Drug Free Workplace Act.

The Steel Products Procurement Act, Illinois Public Act 83-1030, requires that steel products used or supplied in performance of this Contract or subcontract shall be manufactured or produced in the United States with three exceptions, as explained in the Instructions to Bidders.

The Contractor shall comply with Public Act 96-1416 regarding the disposal of CCDD and uncontaminated soil at CCDD fill sites as explained in the Instructions to Bidders.

**10. Time**

Work under this Agreement shall be commenced upon written Notice to Proceed. The completion date for this project shall be Tuesday, April 30<sup>th</sup>, 2024.

**11. Liquidated Damages**

The amount of liquidated damages shall be \$300.00 per calendar day.

The amount of liquidated damages from failure to restore power shall be \$2,000 per hour.

**12. Counterparts**

This Agreement may be executed and recorded in counterparts, each of which shall be deemed an original and all of which, when taken together, shall constitute one and the same instrument. The Parties hereby acknowledge and agree that facsimile signatures or signatures transmitted by electronic mail in so-called "pdf" format shall be legal and binding and shall have the same full force and effect as if an original of this Agreement had been delivered. Each of the parties (a) intend to be bound by the signatures on any document sent by facsimile or electronic mail, (b) are aware that the other party will rely on such signatures, and (c) hereby waive any defenses to the enforcement of the terms of this Agreement based on the foregoing forms of signature.

**13. Seals**

IN WITNESS WHEREOF, the parties have hereunto set their hands and seals, and such of them as are corporations have caused these presents to be signed by their duly authorized officers.

Four Rivers Sanitation Authority  
Winnebago County, Illinois

(Seal)

By \_\_\_\_\_  
President, Board of Trustees

ATTEST: \_\_\_\_\_  
Clerk of the Board

Contractor

(Corporate Seal)

By \_\_\_\_\_  
Contractor's Officer

Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

ATTEST: \_\_\_\_\_

*Not to be used for bidding purposes*

## Labor & Material Payment Bond

TO: \_\_\_\_\_ Contractor Name  
\_\_\_\_\_ Contractor City, State

KNOW ALL MEN BY THESE PRESENTS

That \_\_\_\_\_ (Contractor)

as Principal, and \_\_\_\_\_

a corporation of the State of \_\_\_\_\_ as Surety, are held and firmly bound unto the Four Rivers Sanitation Authority, as Obligee, for the use and benefit of claimants as hereinafter defined in the amount of

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_), for the payment where of Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal has by written agreement dated \_\_\_\_\_ 20\_\_ Entered into a Contract with Obligee for \_\_\_\_\_ in accordance with contract documents prepared by the Four Rivers Sanitation Authority which Contract is by reference made a part hereof, and is hereinafter referred to as "the Contract".

**NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION** is such that if Principal shall promptly pay for all laborers, workers and mechanics engaged in the work under the Contract, and not less than the general prevailing rate of hourly wages of a similar character in the locality in which the work is performed, as determined by the State of Illinois Department of Labor pursuant to the Illinois Compiled Statutes 280 ILCS 130 / 1-12 et.seq. and for all material used or reasonably required for use in the performance of the Contract, then this obligation shall be void; otherwise it shall remain in full force and effect.

1. A claimant is deemed as any person, firm, or corporation having contracts with the Principal or with any of Principal's subcontractors for labor or materials furnished in the performance of the Contract on account of which this Bond is given.
2. Nothing in this Bond contained shall be taken to make the Obligee liable to any subcontractor, material man or laborer, or to any other person to any greater extent than it would have been liable prior to the enactment of The Public Construction Bond Act, approved June 20, 1931, as amended; provided further, that any person having a claim for labor and materials furnished in the performance of the Contract shall have no right of action unless he shall have filed a verified notice of such claim with the Obligee within 180 days after the date of the last item of work or the furnishing of the last item of materials, which claim shall have been verified and shall contain the name and address of the claimant, the business address of the claimant within the State of Illinois, if any, or if the claimant be a foreign corporation having no place of business within the State the principal place of business of the corporation, and in all cases of partnership the names and residences of each of the partners, the name of the Contractor

for the Obligee, the name of the person, firm or corporation by whom the claimant was employed or to whom such claimant furnished materials, the amount of the claim and a brief description of the public improvement for the construction or installation of which the contract is to be performed. No defect in the notice herein provided for shall deprive the claimant of its right of action under the terms and provisions of this Bond unless it shall affirmatively appear that such defect has prejudiced the rights of an interested party asserting the same.

3. No action shall be brought on this Bond until the expiration of 120 days after the date of the last item of work or of the furnishing of the last item of material except in cases where the final settlement between Obligee and the Contractor shall have been made prior to the expiration of the 120 day period, in which case action may be taken immediately following such final settlement; nor shall any action of any kind be brought later than 6 months after the acceptance by the Obligee of the work. Such suit shall be brought only in the circuit court of this State in the judicial district in which the Contract is to be performed.
4. Surety hereby waives notice of any changes in the Contract, including extensions of time for the performance thereof.
5. The amount of this Bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder.
6. The Principal and Surety shall be liable for any attorneys' fees, engineering costs, or court costs incurred by the Obligee relative to claims made against this Bond.

Signed and Sealed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

**CONTRACTOR**

**SURETY**

\_\_\_\_\_  
Contractor Firm Name

By: \_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Title

By: \_\_\_\_\_  
Attorney-in-Fact Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Resident Agent

ATTEST:

\_\_\_\_\_  
Corporate Secretary (Corporations only)

## Performance Bond

**KNOW ALL MEN BY THESE PRESENTS**, that WHEREAS, the Four Rivers Sanitation Authority has awarded to: \_\_\_\_\_ hereinafter designated as the “Principal”, a contract, dated, \_\_\_\_\_, for the Four Rivers Sanitation Authority.

**WHEREAS**, said Principal is required under the terms of said Contract to furnish a bond for the faithful performance of said Contract (the “Bond”);

**NOW, THEREFORE**, we the Principal and \_\_\_\_\_, as Surety, are firmly bound unto the Four Rivers Sanitation Authority in the penal sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_ ) lawful money of the United States for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally firmly by these presents for a performance bond. The conditions of this obligation is such that if the said Principal does well and faithfully performs all the conditions and covenants of said Contract, according to the true intent and meaning thereof, upon its part to be kept and performed, then the above obligation is to be null and void, otherwise to remain in full force and effect.

**THE CONDITION OF THIS OBLIGATION IS SUCH**, that if the above bounden Principal, its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and agreements in the said Contract, including the provisions for liquidated damages in the said Contract, any changes, additions or alterations thereof made as therein provided, on its part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless the Four Rivers Sanitation Authority, its officers and agents, as therein stipulated, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect. And the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder or the specifications accompanying the same and no inadvertent overpayment of progress payments shall in any way affect its obligations on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the specifications or of any inadvertent overpayment of progress payments. The Four Rivers Sanitation Authority shall be named as beneficiary on this Performance Bond.

**IN WITNESS WHEREOF**, the above-bounden parties have executed this instrument under their seal this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

**CONTRACTOR**

**SURETY**

\_\_\_\_\_  
Contractor Firm Name

By: \_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Title

By: \_\_\_\_\_  
Attorney-in-Fact Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Resident Agent

ATTEST:

\_\_\_\_\_  
Corporate Secretary (Corporations only)

Not to be used for bidding purposes

## **Section III**

# **General Conditions and Supplementary Conditions**

Not to be used for bidding purposes

**GENERAL CONDITIONS**

*Not to be used for bidding purposes*



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



Endorsed By



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Not to be used for bidding purposes

# 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



- 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

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.

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.

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*
- 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.
  - 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.
  - 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.

## 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.

- 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

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.

## 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



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.

- 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

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.

- 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.

- 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

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.

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

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;



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

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

- 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

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

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

- 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.

- 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);

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



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.

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.

- 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;

- 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.

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.

- 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.

- 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.

#### 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.



### 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.

- 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.

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

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.

- 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

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.

- 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.

- 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.



- 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.

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.

## 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.

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.

## 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.

- 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:

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.

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



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

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

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

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.

- 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, expeditors, 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

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

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.

- 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,



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,

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

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.

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;

- 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

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

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.

- 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,



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.

- 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,

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

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.

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.

**SUPPLEMENTARY CONDITIONS**

*Not to be used for bidding purposes*

*Not to be used for bidding purposes*

# SUPPLEMENTARY CONDITIONS

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Not to be used for bidding purposes



*Not to be used for bidding purposes*

## SUPPLEMENTARY CONDITIONS

### GENERAL

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (EJCDC C-700, 2018 Edition). All provisions which are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions will 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.

### ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

#### SC - 1.01

Delete subparagraph 1.01.A.18 in its entirety and insert the following in its place.

18. *Drawings* - The part of the Contract Documents that graphically shows the scope, extent, and character of the Work to be performed by the Contractor, as defined in the Agreement.

Delete subparagraph 1.01.A.46.c in its entirety and insert the following in its place.

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

Delete subparagraph 1.01.A.47 in its entirety and insert the following in its place.

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.

Delete subparagraph 1.01.A.49 in its entirety and insert the following in its place.

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.

Add the following paragraphs after paragraph 1.01.A.50:

51. *Lump Sum* – A single price quoted for completing the Work. Also known as stipulated sum.
52. *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.

53. *Startup* - - Coordinated operation of facilities by the Contractor, Subcontractors, Suppliers, and Owner after installation, testing, programming, and instructional services are complete and operation and maintenance data has been submitted and approved. Startup is considered complete when, in the opinion of the Engineer, the facilities have properly operated for 7 continuous days without significant interruption.

## **ARTICLE 2 – PRELIMINARY MATTERS**

### **SC – 2.01**

Delete Paragraph 2.01.C. in its entirety.

### **SC - 2.02**

Delete paragraph 2.02.A. in its entirety and insert the following in its place:

- B. Upon award of the bid, the Engineer shall compile for and deliver to the Owner and Contractor a set of conformed construction documents including relevant portions of addenda. The conformed construction documents are issued for convenience only. The Contract Documents shall consist of the original bid documents and addenda. Should discrepancies exist between the conformed construction documents and the Contract Documents, the Contract Documents shall take precedence.
- C. Electronic files of the Drawings in AutoCAD format will not be provided.

## **ARTICLE 3 –DOCUMENTS: INTENT, REQUIREMENTS, REUSE**

### **SC – 3.01**

Delete Paragraph 3.01.B. in its entirety and replace it with the following:

- 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. Any labor, documentation, services, materials, or equipment that reasonably may be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result will be provided whether or not specifically called for, at no additional cost to Owner.

### **SC – 3.03**

Delete paragraph 3.03.A.3. in its entirety and replace it with the following:

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 knew or reasonably should have known thereof.

### **SC – 3.04**

Add the following subparagraph after paragraph 3.04.A:

1. A request for written interpretation or clarification of the Contract Documents shall be submitted on the Request for Information (RFI) form provided in the Appendix of this Project Manual.

## ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

### SC - 4.01

Delete the last sentence of paragraph 4.01.A. in its entirety and insert the following in its place:

In no event will the Contract Times commence to run later than the 85<sup>th</sup> day after the day of Bid opening or the 30<sup>th</sup> day after the Effective Date of the Agreement, whichever date is earlier.

### SC – 4.05

Delete paragraph 4.05.A in its entirety and replace with the following:

- A. If Owner, Engineer, or other contractors or utility owners performing work for the Owner as contemplated by Article 8, 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 the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete Work within the Contract Times. Except as provided for in paragraph 17.01, Contractor shall make no Claim for damages as delay in the performance of the Work occasioned by acts or neglect by Owner or any of its representatives, including Engineer, or because of any injunction which may be brought against Owner or its representatives, including Engineer, and agrees that any such claim shall be fully compensated for by an extension of time in an amount equal to the time lost due to such delay, and that such time extension shall be Contractor's sole and exclusive remedy for such delay.

Add the following as paragraph immediately after paragraph 4.05.C.4:

5. Weather-Related Delays
- a. If "abnormal weather conditions" as set forth in Paragraph 4.05.C.2 of the General Conditions are the basis for a request for an equitable adjustment in the Contract Times, such request must be documented by data substantiating each of the following: 1) that weather conditions were abnormal for the period of time in which the delay occurred, 2) that such weather conditions could not have been reasonably anticipated, and 3) that such weather conditions had an adverse effect on the Work as scheduled.

Delete paragraph 4.05.D in its entirety and replace with the following:

- D. Contractor's entitlement to an adjustment of Contract Times 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 Times 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 are subject to the provisions of Article 11.

Delete paragraph 4.05.E in its entirety and replace with the following:

- E. Each Contractor request or Change Proposal seeking an increase in Contract Times 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.

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.

Add the following paragraphs immediately after paragraph 4.05.G:

- H. Contractor must submit notification to Owner and Engineer of a potential delay which results in an adjustment in Contract Times under this paragraph within 10 days of the commencement of the delaying, disrupting, or interfering event.
- I. Owner, Engineer, and their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall not be liable to Contractor for any claims, costs, losses, or 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) sustained by Contractor on or in connection with any other project or anticipated project.

**ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS;  
HAZARDOUS ENVIRONMENTAL CONDITIONS**

**SC – 5.03**

Add the following new paragraphs immediately after paragraph 5.03.D.:

- E. The following table lists the reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data, and specifically identifies the Technical Data in the report upon which Contractor may rely:

Report Title	Date of Report	Technical Data
None		

- F. The following table lists the 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 specifically identifies the Technical Data upon which Contractor may rely:

Drawings Title	Date of Drawings	Technical Data
None		

**SC – 5.04**

Delete paragraph 5.04.E.3 in its entirety and replace it with the following:

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

shall be set forth in a Change Order. However, neither Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall be liable to Contractor for any claims, costs, losses, or 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) sustained by Contractor on or in connection with any other project or anticipated project.

Delete paragraph 5.04.E.4 in its entirety and replace it with the following:

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 10 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

#### **SC – 5.05**

Delete Paragraph 5.05.B in its entirety and replace it with the following:

- B. Notice by Contractor: If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated 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), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.

Delete Paragraph 5.05.C in its entirety and replace it with the following:

- C. Engineer's Review: Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; 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 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.

Delete Paragraph 5.05.F.2 in its entirety and replace it with the following:

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 shall be set forth in a Change Order. However, neither Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall be liable to Contractor for any claims, costs, losses, or 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) sustained by Contractor on or in connection with any other project or anticipated project.

Delete Paragraph 5.05.F.3 in its entirety and replace it with the following:

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 10 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

Delete Paragraph 5.05.F.4 in its entirety and replace it with the following:

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 field investigations. If such information or data is incorrect or incomplete, Contractor's remedies are limited to those set forth in this Paragraph 5.05.F.

**SC – 5.06**

Add the following new paragraphs immediately after paragraph 5.06.A.2:

3. The following lists the reports known to Owner relating to Hazardous Environmental Conditions at or adjacent to the Site, and the Technical Data (if any) upon which Contractor may rely:

Report Title	Date of Report	Technical Data
None		

4. The following lists the drawings known to Owner relating to Hazardous Environmental Conditions at or adjacent to the Site, and Technical Data (if any) contained in such Drawings upon which Contractor may rely:

Drawings Title	Date of Drawings	Technical Data
None		

Delete Paragraph 5.06.G in its entirety and replace it with the following:

- 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 or 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 10 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.

**ARTICLE 6 – BONDS AND INSURANCE**

**SC – 6**

Delete Article 6 of the General Conditions in its entirety and insert the following text in its place.

**ARTICLE 6 – BONDS AND INSURANCE**

Bonds and Insurance requirements shall be as identified in the Instructions To Bidders.

**ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES**

**SC – 7.03**

Delete Paragraph 7.03.C in its entirety and replace it with the following:

- 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 shall 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.

#### SC - 7.04

Add the following new paragraph after paragraph 7.04.C.:

- D. Unless otherwise indicated, design of this Project is based upon the material and equipment named first in the list of Supplier's in a Specification section. Engineer has performed an evaluation of other listed Supplier's material and equipment and has determined it to be equal in quality, function and performance to that of the Supplier named first. When other Supplier's are listed, Contractor may be required to make modifications or adjustments, at Contractor's expense, to coordinate the installation of the furnished material and equipment with associated elements of Work, such as, but not limited to, piping and electrical connections, or support and mounting provisions.

#### SC-7.05

Add the following as the last sentence to Paragraph 7.05.A.

Where the specification or description does not contain or is not followed by words reading "or equal", other items of material or equipment or material or equipment of other suppliers may be submitted to Engineer for review under the circumstances described for "substitute" items in GC – 7.06.

#### SC-7.06

Add the following new subparagraph immediately after paragraph 7.06.A.3.d:

- e. The application for review of a substitute shall be on the Contractor's Request For Substitution form provided in the Appendix of the Contract Documents and included with the submittal. The Installation List included with the Request shall include only installations of the proposed substitute in applications of approximately the same size and complexity, and the same design as those to be furnished for this Project. Include in the Installation List, as a minimum, the owner's name, address, and telephone number; engineer's name, address and telephone number; location and name of project; installation date, startup date, and date of final acceptance by owner, and application of material or equipment. If the experience indicated by the Installation List does not demonstrate at least 5 years of successful operation of the proposed substitute item, Owner may require Contractor and Supplier to furnish, at Contractor's expense, a special performance guarantee with surety bond as required by paragraph 7.06.C of the General Conditions with respect to the substitute. Only the time period between final approval of the proposed material or equipment on the referenced project and the Bid date for this Project will count towards the required satisfactory experience of the proposed substitute item. Engineer will be the sole judge of acceptability of experience, time credited, and whether the special performance guarantee will be required for a substitute item. Engineer will notify Contractor which proposed substitute(s) will require a special performance guarantee with surety bond.

Delete Paragraph 7.06.D. in its entirety and insert the following in its place:

- D. Engineer's Cost Reimbursement: Contractor will not reimburse Owner for the charges of Engineer for evaluating substitutes. Contractor will reimburse Owner for the 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 any substitute.

Add the following new subparagraph immediately after paragraph 7.06.D.:

1. If a substitute item of material or equipment proposed by Contractor is approved by Engineer, and the substitution requires a change in any of the Contract Documents to



adapt the design to the proposed substitute, Contractor shall notify Engineer of the changes and be responsible for the costs involved to revise the design and to make modifications or changes to the construction, including the costs associated with the Work of other contractors due to such variance in design or space requirements. Engineer will prepare redesign and revisions to Drawings and other Contract Documents. Contractor shall reimburse Owner for charges of Engineer for redesign and revisions to Drawings and other Contract Documents. Reimbursement of Engineer shall be based on Engineer's direct labor costs, indirect labor costs, profit on total labor, and any direct non-labor expenses such as travel and per diem.

#### **SC – 7.09**

Delete paragraph 7.09.A. in its entirety and insert the following paragraph as 7.09.A:

- A. There are no permits required for the Project.

#### **SC – 7.10**

Add the following new paragraph immediately after paragraph 7.10.A.:

- B. Owner is exempt from payment of sales and compensating use taxes of the State of Illinois and of cities and counties thereof on all materials to be incorporated into the Work.
  - 1. Owner will furnish the required certificates of tax exemption to Contractor for use in the purchase of supplies and materials to be incorporated into the Work.
  - 2. Owner's exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by Contractor, or to supplies or materials not incorporated into the Work.

#### **SC – 7.13**

Delete Paragraph 7.13.G. in its entirety.

#### **SC – 7.15**

Add the following new paragraph immediately after paragraph 7.15.A.:

- B. In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, and Contractor cannot be reached, Owner may act to attempt to prevent threatened damage, injury, or loss. Owner will give Contractor and Engineer prompt written notice of such action and the cost of the correction or remedy shall be charged against Contractor. 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 thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Owner in response to such an emergency, a Work Change Directive or Change Order will be issued.

#### **SC – 7.16**

Delete Paragraph 7.16.D.3 and replace it with the following:

- 3. After Engineer has approved a shop drawing or sample, Engineer will not review subsequent submittals of a different manufacturer or Supplier unless Contractor provides sufficient information to Engineer that the approved material or equipment is unavailable, or time of delivery will delay the construction progress. If Contractor requests a change of a previously approved submittal item under one of the above conditions, Contractor shall be responsible

for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

Delete the last sentence in subparagraph 7.16.E.1.b.

## **ARTICLE 8 - OTHER WORK AT THE SITE**

### **SC – 8.02**

In paragraph 8.02.A. delete the words "Supplementary Conditions" and insert the words "Specifications" in their place.

### **SC-8.03**

Delete paragraph 8.03.A. in its entirety and insert the following paragraph as 8.03.A:

- A. If, in the course of performing other work at or adjacent to the Site for Owner, any other contractor working for Owner, or any utility owner 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 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.

Delete paragraph 8.03.C. in its entirety and insert the following paragraph as 8.03.C:

- 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, the Contractor (without involving Owner, Engineer, or construction coordinator) 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 – OWNERS RESPONSIBILITIES**

### **SC – 9.13**

Add the following new paragraph immediately after paragraph 9.12:

#### **9.13 Site Representative**

- A. Owner will furnish a Site Representative, assistants, and other field staff to observe performance of the Work. The duties and responsibilities of Owner's Site Representative are described as follows:

1. Become familiar with the Contract Documents to observe the progress and quality of the executed Work, and to determine, in general, if the Work is proceeding in accordance with the Contract Documents.
2. Promptly forward to Engineer, reports from Contractor indicating conflict, error or discrepancy in the Contract Documents to enable Engineer to issue a written clarification or interpretation as provided for in paragraph 10.06 of the General Conditions.
3. Provide Engineer with copy of Site Representatives' daily log.

#### **ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION**

Delete Paragraph 10.03.A. in its entirety and insert the following in its place:

- A. Owner will provide a Site Representative whose responsibilities and duties are described in SC - 9.13.

#### **SC - 10.08**

Add the following new paragraph immediately after Paragraph 10.08.A.:

- B. In the event Engineer determines that Contractor's safety plans, programs, and procedures do not provide adequate protection for Engineer, Engineer may direct its employees to leave the Site or implement additional safeguards for Engineer's protection. If taken, these actions will be in furtherance of Engineer's responsibility to its own employees only, and Engineer will not assume any responsibility for protection of any other persons affected by the Work. In the event Engineer observes situations which appear to have potential for immediate and serious injury to persons, Engineer may warn the persons who appear to be affected by such situations. Such warnings, if issued, shall be given based on general humanitarian concerns, and Engineer will not, by the issuance of any such warning, assume any responsibility to issue future warnings or any general responsibility for protection of persons affected by the Work.

#### **ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK**

#### **SC-11.02**

Delete paragraph 11.02.B in its entirety and replace with the following:

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

Add the following new paragraph immediately after subparagraph 11.02.B.:

- C. Change Orders will be prepared on the form included in the Appendix of this Project Manual.

#### **SC – 11.07**

Delete paragraph 11.07.B.2. in its entirety and insert the following in its place:

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

**SC – 11.08**

Add the following new paragraph immediately after paragraph 11.08.B.:

- C. Time extensions provided under paragraph 4.05 of the General Conditions will only be allowed for controlling items of Work (critical path).

**SC – 11.09**

Amend the first sentence of paragraph 11.09.B.1 by striking out the words “30 days” and inserting the words “10 days” in their place.

**ARTICLE 12 – CLAIMS**

**SC – 12.01**

Amend the first sentence or paragraph 12.01.B by striking out both instances of the words “30 days” and inserting the words “10 days” in their place.

**ARTICLE 13 – COST OF WORK; ALLOWANCES; UNIT PRICE WORK**

**SC – 13.01**

Delete paragraph 13.01.B.5.c.2) in its entirety.

Delete paragraph 13.01.E in its entirety and insert the following in its place:

- 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 minimum period of three years or as required by state law in which Work is performed 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.

**SC – 13.03**

Delete Paragraph 13.03.E in its entirety and insert the following in its place:

- E. *Adjustments in Unit Price:* Within 30 days of Engineer’s written decision under the preceding paragraph, the unit price of an item of Unit Price Work shall be subject to reevaluation and adjustment under the following conditions:
  1. if the total cost of a particular item of Unit Price Work amounts to 5% or more of the Contract Price and the variation in the quantity of that particular item of Unit Price Work performed by Contractor differs by more than 25% from the estimated quantity of such item indicated in the Agreement; and
  2. if there is no corresponding adjustment with respect to any other item of Work; and
  3. if Contractor believes that Contractor has incurred additional expense as a result thereof; or if Owner believes that the quantity variation entitles Owner to an adjustment in the unit price, either Owner or Contractor may make a Claim for an adjustment in the Contract

Price in accordance with Article 12 if the parties are unable to agree as to the effect of any such variations in the quantity of Unit Price Work performed.

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

**SC – 14.05**

Delete Subparagraph 14.05.C.2. in its entirety and insert the following in its place:

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 10 days of the determination that the Work is not defective.

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

**SC – 15.01**

Amend the first sentence of subparagraph 15.01.B.1. by striking out the words “20 days” and inserting the words “30 days” in their place.

Amend the first sentence of paragraph 15.01.D.1. by striking out the words “Ten days” and inserting the words “Twenty days” in their place.

**SC – 15.03**

Add the following new subparagraphs immediately after paragraph 15.03.A.:

1. Contractor’s request for issuance of a Certificate of Substantial Completion shall occur after Contractor has, in the opinion of the Engineer, satisfactorily completed the systems demonstrations, and delivered all guarantees, operation and maintenance data, certificates of installation services, certificates of instructional services, a complete set of marked up Drawings as specified in Division 1, General Requirements, and other documents.

Add the following to the end of paragraph 15.03.F.

“The Contractor shall provide a listing of its property that it wishes to remove from the site and obtain Owner’s approval before the property is removed. Only property approved by the Owner can be removed from the site. The Contractor shall schedule the removal of the property with the Owner, and shall obtain permission from the Owner to access the site. The Owner has the right to monitor the removal of the property.”

**SC – 15.06**

Add the following new subparagraph immediately after paragraph 15.06.E:

1. In addition to the liquidated damages set forth in the Agreement, Contractor shall be liable for all additional costs for Engineer’s services beyond Substantial and Final Completion dates. Owner will deduct these costs from any monies due or that may become due Contractor or Surety and pay Engineer for said services.

## **ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION**

### **SC – 16.01**

Amend paragraph 16.01.A. by striking out the words “30 days” in and inserting the words “ten days” in their place.

### **SC - 16.02**

Add the following to end of paragraph 16.02.D.

“within no more than 30 days of receipt of said notice.”

### **SC-16.04**

Amend paragraphs 16.04.A. and 16.04.B. by striking out the words “30 days” in four places and inserting the words “60 days” in their place and by striking out the words “seven days” in two places and inserting the words “ten days” in their place.

## **ARTICLE 17 – FINAL RESOLUTION OF DISPUTES**

Delete paragraph 17.01.B. in its entirety and insert the following in its place:

- B. Final Resolution of Disputes: For any dispute subject to resolution under this Article, Owner or Contractor may:
  - 1. agree with the other party to submit the dispute to another dispute resolution process.
  - 2. give written notice of intent to the other party to submit the dispute to a court of competent jurisdiction, or
- C. Notwithstanding any applicable statute of limitations, a party giving notice under paragraph 17.01.B shall commence an action on the Claim within one year of giving such notice. Failure to do so shall result in the Claim being time-barred and the action or denial shall become final and binding.

## **ARTICLE 18 – MISCELLANEOUS**

### **SC – 18.01**

Delete Paragraph 18.01.A. in its entirety and revise it to read the following:

- 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, and addressed to the specific intended recipient;
  - 2. by registered or certified mail, postage prepaid, to the recipient’s place of business, and addressed to the specific intended recipient; or
  - 3. by e-mail to the specific intended recipient, with the words “Formal Notice” or similar in the e-mail’s subject line. Written notice shall not be considered accepted until receipt is acknowledged by the intended recipient.

### **SC – 18.11**

Add the following new paragraph immediately after paragraph 18.10:

18.11 Lien Waivers:

- A. Owner may at any time require Contractor to furnish lien waivers for labor and materials covered by specified Applications for Payment.

END OF SUPPLEMENTARY CONDITIONS

*Not to be used for bidding purposes*

**Section IV**

**Technical Specifications**

*Not to be used for bidding purposes*



**SPECIFICATIONS**

*Not to be used for bidding purposes*

*Not to be used for bidding purposes*

**DIVISION 01**  
**GENERAL REQUIREMENTS**

*Not to be used for bidding purposes*

SECTION 01 11 00  
SUMMARY OF WORK

**PART 1 – GENERAL**

1.01 SUMMARY

- A. The Main Power Transition project consists of addition of a remote switchgear control panel as well as upgrades to the main tie main switchgear automatic transfer scheme and all other appurtenances indicated on the plans and in the specifications

1.02 WORK BY OTHERS

A. Utilities

- 1. ComEd assistance will be required to obtain outages needed to perform work in the Main Switchgear. Coordinate with ComEd as-needed to complete the Project.

- B. Work on Site which will be, or has been executed prior to, or after, start of Work on this Contract and may be concurrent to this Contract, but is excluded from this Contract:

- 1. AGS
- 2. Primary Filtration
- 3. Collections Maintenance
- 4. Refer to the figure attached to the end of this Section for the approximate working area of each project.

C. Owner

- 1. Application Engineering Services. See Section 40 61 13.
- 2. Owner will perform all electrical switching within the existing Plant buildings.

1.03 WORK SEQUENCE

- A. Construct Work in accordance with following requirements and to accommodate operation of existing facilities during construction period. Coordinate construction progress schedule and operations with Engineer and Owner.

- B. Owner reserves right to place facilities taken out of service by Contractor back into service on emergency basis upon notification to Contractor.

- C. Bypassing of untreated or partially treated sewage to surface water of drainage courses is strictly prohibited during construction. In the event accidentally bypassing is caused by the Contractor's operations, the Owner shall immediately be entitled to employ others, at the Contractor's expense, to stop the bypassing without giving written notice to the Contractor.

- D. Penalties imposed on the Owner as a result of any bypass caused by the actions of the Contractor, his 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.

- E. The Contractor shall request planned shutdowns in written form not less than 7 days prior to the start of each shutdown. The Contractor's requests for planned shutdowns shall include a description of the Contractor's plans and approach to minimize the duration of each

shutdown. Provide an additional 24-hour notice when Owner switching operations are required.

F. Constraints:

1. One ComEd Utility source must remain in service at all times except as stated in the following paragraph.
2. A portion of the work may require a complete outage of the Main Switchgear. The maximum duration the Plant shall operate on temporary power to be 8 hours for each occurrence. Should additional time above the 8 hour limit be required, coordinate with the Owner. During the entire period of the contract, provide restoration of temporary power within 30 minutes during regular business hours, and provide restoration of temporary power within 2 hours at night and on weekends. Failure to restore temporary power within these constraints will result in liquidated damages per the Agreement.
3. Contractor shall provide temporary standby diesel generators as stated on the Drawings. The generators shall provide standby power to equipment during times of a complete outage of the Main Switchgear. Contractor is responsible for providing all necessary equipment, temporary wiring, and labor to connect and place the generator in service. Contractor is responsible for providing all necessary cost and labor for the operation, maintenance, and servicing of the generator including fueling and refueling.
4. Contractor shall coordinate, plan, and schedule all outages and power switchovers with the Owner. All planned outages shall be no greater than 60 minutes.

1.04 CONTRACTOR'S USE OF PREMISES

- A. Conduct operations to ensure least inconvenience to Owner and operation of existing facility. Cooperate with Owner during construction operations to minimize conflict and to facilitate Owner's operations.
- B. When keys to locked areas are needed to provide access to areas to perform Work, obtain from Owner. Return keys at end of day's Work.
- C. Employees of Contractor and Subcontractors involved in Work shall wear identifying button or badge when working in facilities occupied by Owner.
- D. Due to potential health hazards and requirements of the Illinois EPA, and U.S. EPA, existing wastewater treatment facilities must be maintained in operation during the construction of the new facility. Degree of treatment during construction shall be equal to or exceed efficiency of the facility before construction started.
- E. Contractor shall discuss and coordinate with Owner and Engineer prior to removing equipment from service in order to complete Work. Owner will, at Owner's discretion, request equipment to be placed back into service if out of service equipment will cause adverse effects on plant operation.
- F. Obtain and pay for use of additional storage or Work areas needed for operations at no additional cost to Owner.

1.05 OWNER OCCUPANCY OF PREMISES

- A. Owner will occupy site and existing facilities during entire construction period for conduct of normal operations.
- B. Owner reserves right to partially occupy and to place and install equipment in completed areas of facilities, prior to Substantial Completion, provided that such occupancy does not

interfere with completion of Work. Such placing of equipment and partial occupancy shall not constitute acceptance of the Work.

C. Partial occupancy shall conform to requirements of General Conditions.

**PART 2 – PRODUCTS**

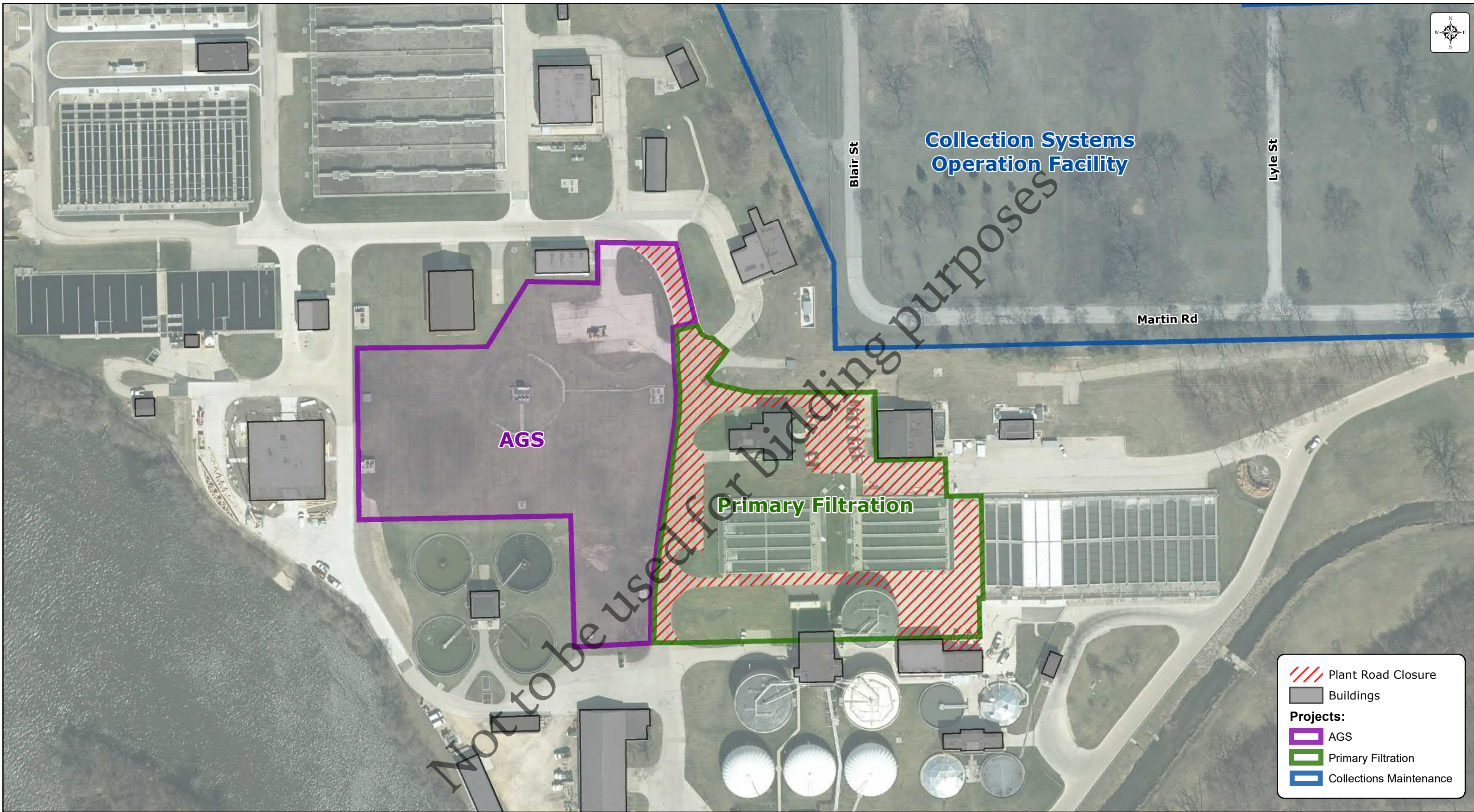
(Not Used)

**PART 3 – EXECUTION**

(Not Used)

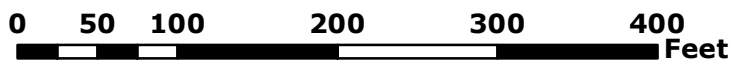
END OF SECTION

*Not to be used for bidding purposes*



	Plant Road Closure
	Buildings
<b>Projects:</b>	
	AGS
	Primary Filtration
	Collections Maintenance

# FRSA Current Construction Projects



SECTION 01 29 73  
SCHEDULE OF VALUES

**PART 1 - GENERAL**

1.01 SUMMARY

- A. Provide a detailed breakdown of the Contract Price showing amounts and quantities allocated to each of the various parts of the Work, as specified herein and as required by General Conditions.
- B. Upon request of Engineer, support amounts and quantities with data substantiating their correctness.

1.02 FORM AND CONTENT OF SCHEDULE OF VALUES

- A. Schedule shall be typed on 8-1/2-in. by 11-in. white paper. Contractor's standard forms and automated printout will be considered for approval by Engineer upon request. Include following:
  - 1. Project title.
  - 2. Project location.
  - 3. Owner.
  - 4. Engineer.
  - 5. Engineer's project number.
  - 6. Name and address of Contractor.
  - 7. Contract designation.
  - 8. Date.
- B. Identify installed value of Work in sufficient detail to serve as basis for computing values for progress payments during construction.
- C. Provide a separate listing of general items, such as bonds, insurance, mobilization, field supervision, construction facilities, allowances, and record documents.
- D. Follow Project Manual table of contents as format for listing component items. At a minimum, listing shall include material cost and total installed cost for each Specification Section for each structure as listed in this Section.
  - 1. Identify each line item with number and title of respective Specification Division and Section.
  - 2. Include directly proportional amount of Contractor's overhead and profit.
  - 3. For items on which progress payments will be requested for stored materials, break down value into:
    - a. Cost of materials, delivered and unloaded.
    - b. Total installed value.
- E. Provide listing of items for sitework and for each structure as follows:
  - 1. Contractor's Overhead.
    - a. Bonds and Insurance
    - b. Mobilization
    - c. Office Support



- d. Field Supervision
- e. Demobilization

- 2. Sitework
- 3. Temporary Generation
- 4. Main Switchgear Building
- 5. Main Pump Building
- 6. System Integration

F. Sum of values listed shall equal total Contract Price.

G. Provide additional breakdown as required by Engineer.

**PART 2 – PRODUCTS**

(NOT USED)

**PART 3 – EXECUTION**

(NOT USED)

END OF SECTION

*Not to be used for bidding purposes*

SECTION 01 31 19  
PROJECT MEETINGS

**PART 1 - GENERAL**

1.01 SUMMARY

- A. Engineer will conduct preconstruction conference in accordance with the General Conditions and this Section.
- B. To enable orderly review during progress of the Work, and to provide for systematic discussion of problems, the Contractor shall conduct progress meetings, construction foreman's meetings, and specially called meetings throughout the construction period. Owner and Engineer may attend meetings. Contractor shall:
  - 1. Prepare agenda.
  - 2. Distribute written notice of specially called meetings a minimum of 1 working day in advance of the meeting date. Notice by electronic mail is acceptable.
  - 3. Make physical arrangements for meetings.
  - 4. Preside at meetings.
  - 5. Record meeting minutes.
  - 6. Prepare formal minutes within 3 working days after meeting and distribute electronic copies to:
    - a. Meeting participants.
    - b. Affected parties.
    - c. Engineer and Owner

1.02 QUALIFICATIONS

- A. Representatives of Contractor, Subcontractors, and Suppliers attending the meetings shall be authorized to act on behalf of entity each represents.
- B. Revisions to Minutes:
  - 1. Unless published minutes are challenged in writing prior to the next regularly scheduled progress meeting; they will be accepted as properly stating the activities and decisions of the meeting.
  - 2. Challenge to the minutes shall be settled at the regularly scheduled meeting.

**PART 2 – PRODUCTS**

(NOT USED)

**PART 3 – EXECUTION**

3.01 PRECONSTRUCTION CONFERENCE

- A. Location: To be selected by Owner.
- B. Attendance:
  - 1. Contractor's Project Manager.
  - 2. Contractor's Resident Superintendent.
  - 3. Contractor's "hands-on" person designated to submit Shop Drawings to Engineer.

4. Subcontractors' or Suppliers' representatives Contractor may desire to invite or Engineer may request.
5. Owner's representatives.
6. Engineer's representatives.
7. Local utility representatives, if applicable.

C. Agenda:

1. Organizational arrangement of Owner's and Engineer's forces.
2. Organizational arrangement of Contractor's, Subcontractors', and material and equipment Suppliers' forces.
3. Contract Documents, including distribution of required copies.
4. Project safety.
5. Preliminary Construction Progress Schedule.
6. Check of required bonds and insurance.
7. Liquidated damages.
8. Preliminary schedule of Shop Drawing submissions.
9. Procedures for handling submittals.
10. O & M submittals.
11. Channels and procedures for communications, correspondence, and project coordination.
12. Weekly and monthly meetings.
13. Provisions for inventory of material stored on-site or off-site.
14. Schedule of values.
15. Application for progress payments.
16. Field Order and Change Order procedures.
17. Project Record Documents.
18. Other business.

3.02 TWICE MONTHLY PROGRESS MEETINGS

- A. Schedule twice monthly meetings.
- B. Location: Contractor's field office/Teleconference.

C. Attendance:

1. Contractor's Project Manager.
2. Contractor's Resident Superintendent.
3. Affected Subcontractors.

D. Suggested Agenda:

1. Review of minutes of previous meeting.
2. Review of Work progress since previous meeting.
3. Safety.
4. Field observations, problems, conflicts.
5. Submittals, RFIs, pending changes and substitutions.
6. Construction Progress Schedule.
7. Issues raised by Owner and Engineer.
8. Maintenance of quality standards.
9. Other business.

- E. Agenda containing specific subjects to be discussed shall be provided to each attendee and to the Owner and Engineer at least 5 working days before the meeting.

END OF SECTION

*Not to be used for bidding purposes*

SECTION 01 32 15  
PROGRESS SCHEDULE  
(CRITICAL PATH METHOD)

**PART 1 – GENERAL**

1.01 SUMMARY

- A. Submit preliminary Progress Schedule in accordance with General Conditions. Preliminary schedule may be in the form of horizontal bar chart and shall outline, in detail, construction activities until the Critical Path Method (CPM) schedule is complete and becomes effective.
- B. Prepare and submit detailed CPM Progress Schedule to Engineer within 60 days after Notice to Proceed.
  - 1. Approximately midway through the 60-day period, representatives of Contractor shall meet with Engineer and Owner for the purpose of review and coordination of draft CPM schedule.

1.02 SUBMITTALS

- A. Three days before the meetings to discuss schedules, submit preliminary schedule or CPM schedule electronically, and subsequent revisions thereof, to Engineer and Owner for review.
- B. Three days prior to monthly progress meetings, submit revised schedule to Owner and Engineer electronically. Furnish revised schedule to Subcontractors as appropriate.
- C. Failure to submit schedules on a timely basis shall be considered cause for withholding progress payments.
- D. Within 10 days after Notice to Proceed, submit name and qualifications of firm proposed to prepare schedule.

1.03 QUALITY ASSURANCE

- A. Progress Schedule and revisions to schedule shall be as directed by Contractor. Coordinate necessary input from Subcontractors and Suppliers.
- B. Engage services of firm specializing in preparation of Progress Schedules or demonstrate to Engineer experience and capabilities to prepare and revise CPM schedules.

1.04 WORKING HOURS

- A. Comply with requirements of General Conditions.
- B. No Work shall be done between 6:00 p.m. and 7:00 a.m., nor on Saturdays, Sundays or legal holidays without written permission of Owner. Emergency work may be done without prior permission.
- C. Such permission may be revoked at any time by Owner if Contractor fails to maintain adequate equipment and supervision for proper prosecution and control of Work. Revocation shall not entitle Contractor to change in Contract Price or Contract Time.

## PART 2 – PRODUCTS

(NOT USED)

## PART 3 – EXECUTION

### 3.01 FORM OF SCHEDULE

- A. Use precedence diagramming method to present manner and timing in which Contractor intends to perform Work. Resource and cost load the schedule in accordance with the payment schedule. Base CPM schedule on 5-day workweek with notations for specific constraints such as winter shut down.
- B. Schedule shall cover on- and off- site activities. Detail individual activities to such a degree that path of construction can be easily followed for each item of work. Provide early and late start and completion dates with float times indicated for each. Present schedule as follows:
  1. Logic diagram with critical path highlighted.
  2. Listing of activity items by activity number.
  3. Listing of activity items by early start dates.
  4. Listing of activity items by late start date.
  5. Listing of activities on critical path.
- C. Content:
  1. Show complete sequence of construction by activity.
  2. Show dates for beginning and completion of each major element of construction and installation dates for major equipment items. Include:
    - a. Each individual task of construction.
    - b. Procurement of equipment and systems including Shop Drawing submittals, Engineer's review of submittals, shop tests, and delivery dates.
    - c. Identification of Work that will affect existing plant operations.
    - d. Services of manufactures' representatives.
    - e. Startup dates for major equipment.
    - f. Field tests.
    - g. Dates of Substantial and Final completion.
    - h. Subcontractor Work items.
    - i. Allowance for inclement weather.
    - j. MBE, WBE, and SBE activities.
    - k. O&M data activities.
    - l. Contractor-provided training.

### 3.02 REVISIONS TO SCHEDULE

- A. Each month Contractor shall receive update information from Subcontractors and Suppliers which shall be included in current schedule. Revised schedule shall indicate changes such as:
  1. Major changes in scope.
  2. Activities modified since previous submittal.
  3. Revised projections of progress and completion.
  4. Other identifiable changes.

- B. Information supplied by Contractor shall include as minimum, activities started during preceding period, activities completed during preceding period, starting and completion dates for each, status of completion of ongoing activities, and major logic changes.
- C. Provide narrative report to define following:
  - 1. Problem area and anticipated delays and their impact on schedule.
  - 2. Corrective action recommended and its effect.

### 3.03 TWICE MONTHLY PROGRESS MEETINGS

- A. Twice each month, in accordance with Section 01 31 19, Progress Schedule will be reviewed. Progress will be reviewed:
  - 1. To identify those activities started and completed during previous period.
  - 2. For remaining duration required to complete each activity started, but not completed.
  - 3. For durations of selected activities not yet started.
  - 4. For effect of Change Orders and proposed sequencing.
- B. During the meeting, logic diagram will be amended as needed and Contractor shall update logic diagram and computer printouts accordingly.

### 3.04 DELAYS AND RECOVERY

- A. If, at any time during the Project, Contractor fails to complete activity by its latest scheduled completion date, Contractor shall, within 5 working days, submit to Engineer written statement as to how and when work force will be reorganized to return to current Progress Schedule.
- B. If, during schedule review meetings, it becomes apparent that milestone completion dates or times established in Section 01 11 00 or Contract completion dates will not be met, Contractor shall take some or all of the following actions:
  - 1. Increase construction staffing in such quantities and crafts as shall eliminate backlog of Work.
  - 2. Increase number of working hours per shift, shifts per day, Work days per week, amount of construction equipment or combination of foregoing sufficient to substantially eliminate backlog of Work.
  - 3. Reschedule Work activities to achieve concurrency of accomplishment.
- C. Under no circumstances will addition of equipment or construction forces, increasing working hours or other method, manner or procedure to return to current Progress Schedule be considered justification for Contract modification or treated as acceleration.
- D. Contractor shall accept risk for delays caused by rate of progress of Work to be performed under other Contracts. If Contractor is delayed in prosecution and completion of work because of such conditions, Contractor shall have no claim for damages to Contract adjustment other than extension of time and waiving of liquidated damages during period of time occasioned by delay.

END OF SECTION

SECTION 01 33 00  
SUBMITTAL PROCEDURES

**PART 1 – GENERAL**

1.01 SUMMARY

- A. Requirements for Work-related (non-administrative) submittals including Substitutes and “Or-Equal” items, Shop Drawings, product data, Samples, test results, operating and maintenance data, and other miscellaneous Work-related submittals.
1. Submittals for certification of installation, instructional, and post-startup services are specified in Section 01 61 00.
  2. Submittals for record drawings are specified in Section 01 78 39.
- B. Administrative Submittals: Procedures concerning items such as listing of manufacturers, Suppliers, Subcontractors, Progress Schedule, bonds, payment applications, insurance certificates, Schedule of Values, and photographs are specified elsewhere.
- C. Work-Related Submittals:
1. Substitute and “Or-Equal” Items:
    - a. Includes material or equipment described in Paragraph 7.04 of General Conditions, Article 7 of the Supplementary Conditions, and Section 01 61 00 which Contractor requests Engineer to accept, after Effective Date of the Agreement.
  2. Shop Drawings:
    - a. As defined in Paragraph 1.01.A.37 of the General Conditions, and in particular includes technical data and drawings specifically prepared for this Project, including fabrication and installation drawings, diagrams, data sheets, schedules, templates, patterns, reports, instructions, design mix formulas, measurements, and similar information not in standard printed form.
  3. Product Data:
    - a. Includes standard catalog type printed information on manufactured materials, equipment and systems that has not been specifically prepared for this Project, including manufactures’ product specifications, catalog cut sheets, standard wiring diagrams, printed performance curves, mill reports, and standard color charts.
  4. Samples:
    - a. As defined in Paragraph 1.01.A.34 of the General Conditions, and in particular includes fabricated and manufactured physical examples of materials, products, and units of Work, including complete units, partial cuts of manufactured or fabricated Work, swatches showing color, texture, and pattern, and units of Work to be used for independent inspection and testing.
    - b. Mock-ups are special forms of Samples too large or otherwise inconvenient for handling in manner specified for transmittal of Sample submittals.
  5. Test Results:



- a. Includes source and field quality inspection and test reports, actual performance curves, and certifications of results prepared specifically for equipment, material, and systems provided for this Project.
- 6. Operating and Maintenance Data:
  - a. Includes information and directions for operating and maintaining equipment provided and installed for this Project. May be standard for equipment or prepared specifically for this Project.
- 7. Miscellaneous Submittals:
  - a. Work-related submittals that do not fit in previous categories, including schedules, guarantees, warranties, certifications, maintenance agreements, workmanship bonds, survey data and reports, physical work records, copies of industry standards, field measurements, extra materials, keys, and similar information, devices, and materials applicable to Work.

## **PART 2 – PRODUCTS**

(NOT USED)

## **PART 3 – EXECUTION**

### **3.01 DOCUMENT MANAGEMENT WEB SITE – ELECTRONIC DOCUMENT SUBMISSION**

#### **A. General**

- 1. Document Management Web Site Supplier:
  - a. eCommunication, by Eastern Engineering
  - b. Procore
  - c. Or Approved Equal.
- 2. Software tool specifically designed for construction related document management.
- 3. Primary means of submittal shall be electronic.
- 4. Provide web based document storage, notification, and transfer.
- 5. Contractor to include costs to set up and to maintain site throughout the duration of the Project.

### **3.02 SUBMITTAL PROCEDURES**

#### **A. Scheduling:**

- 1. Provide preliminary and final schedule of submittals in accordance with the General Conditions indicating time requirements for coordination of submittals with performance of Work.
- 2. Times scheduled shall indicate completion of submittal approval process for Substitute and “Or-Equal” items, Shop Drawings, product data, and Samples not later than 60 days prior to beginning systems demonstrations specified in Section 01 79 10. Completion of submittal process for above submittals will have been achieved when submittals have been returned to Contractor with submittal action of either “Approved” or “Approved As Noted”.
- 3. Adjust schedule of submittals periodically to reflect revisions to Progress Schedule.

#### **B. Coordination:**

1. Coordinate preparation and processing of submittals with performance of Work. Coordinate each submittal with other submittals and related activities such as substitution requests, testing, purchasing, fabrication, delivery, and similar activities.
2. Coordinate submission of different units of interrelated Work so submittal will not be delayed by Engineer's need to review related submittal. Engineer may withhold action on submittal requiring coordination with other submittals until related submittals are provided.
3. Prepare and transmit each submittal sufficiently in advance of scheduled performance of related Work and other applicable activities.

C. Submittal Preparation:

1. Stamp and sign each submittal certifying to review and approval of submittal, verification of material and equipment, field measurements, field construction criteria, and coordination of information with Contract Documents in accordance with paragraph 7.16 of the General Conditions.
2. Submittals shall contain sufficient detail to confirm compliance with the requirements of the respective specification section. Submittals shall not contain excessive, non-pertinent information.
3. Submittals shall be complete for all material and equipment specified in each section. Partial submittals are not acceptable.
4. Transmittal Form: Use CONTRACTOR'S SUBMITTAL TRANSMITTAL form included in Appendix. Identify following:
  - a. Date
  - b. Transmittal and Submittal number
  - c. Project
  - d. Name and signature of Contractor:
  - e. If submittal is for substitute, identify as "Substitute" on transmittal.
  - f. Specification section and/or Drawing numbers.
  - g. Description of submittal (i.e. equipment identification numbers, motor numbers, etc.)
  - h. Variations from Contract Documents
5. The electronic submittal shall be in searchable, bookmarked PDF format.
6. Electronic submittal document shall be created with OCR (Optical Character Recognition) to allow for full alphanumeric recognition of printed characters

D. Resubmittal Preparation:

1. Comply with requirements for Submittal Preparation above, and in addition:
  - a. Identify on transmittal form submittal is a resubmission.
  - b. Make corrections or changes in submittal required by Engineer's notations on returned submittal.
  - c. On transmittal or separate page, answer or acknowledge in writing notations or questions indicated on Engineer's transmittal form of returned submittal.
    - 1) Identify each response by question or notation number established by Engineer.
    - 2) If Contractor does not respond to each notation or question, resubmission will be returned without action by Engineer until Contractor provides written response.
  - d. Contractor-initiated revisions or variations:
    - 1) On transmittal form, identify variations or revisions from previously reviewed submittal.

### 3.03 SPECIFIC SUBMITTAL REQUIREMENTS

#### A. General:

1. Comply with requirements specified below for each indicated type of submittal. Specific submittal requirements for individual units of work are specified in applicable Specification section.
2. If Engineer has responded to Request for Information submitted by Contractor, include Engineer's response with submittal.

#### B. Requests for Substitutes:

1. Collect data for items to be submitted for review as Substitute into one submittal for each item of material or equipment in accordance with paragraph 7.06 of the General and Supplementary Conditions.
2. Include completed CONTRACTOR'S REQUEST FOR SUBSTITUTION form as required by Supplementary Conditions. Use the form included in the Appendix.
3. Submit with other scheduled submittals for material and equipment allowing time for Engineer to evaluate additional information required to be submitted.
4. If Contractor requests to substitute for materials or equipment specified, but not identified in Specification as requiring submittal, Contractor shall indicate substitution in Submittal Schedule.

#### C. Shop Drawings:

1. Maximum size 22 in. by 34 in.
2. Submit graphic information at accurate scale with name of preparer indicated.
3. Show dimensions and note which are based on field measurements.
4. Indicate compliance with standards and notation of coordination requirements.
5. Highlight, encircle or otherwise indicate variation from Contract documents or previous submittals and revisions on resubmittals.
6. Do not use Engineer's Drawings as Shop Drawings.
7. Provide blank space for Contractor stamps.
8. Provide 4-in. by 8-in. blank space for Engineer stamps.

#### D. Product Data:

1. Collect required data into single submittal for each unit of Work or system. Where product data includes information on several similar materials or equipment, some of which are not required for use in Project, mark copies to show which items are not applicable to Project.

#### E. Samples:

1. Provide Samples physically identical with proposed materials and equipment to be incorporated into work. Where variations in color, pattern, and texture are inherent in product, submit multiple units (not less than 3) showing approximate limit of variations.
2. Provide full set of option Samples where selection by Owner or Engineer is required.
3. Include information with Sample to show generic description, source, product name, manufacturer, limitations, and compliance with standards.
4. Submit Samples with other related elements of work.
5. Submit two (2) sets of Samples where Specifications indicate Engineer's selection of color, pattern, texture or similar characteristics from manufacturer's range of standard choices is necessary. Neither set will be returned.
6. Maintain set of Samples at Project site, in suitable condition and available for quality control comparisons throughout course of Work.

F. Test Results:

1. Identify each test by Specification section and type of test.
2. Submittal is to confirm that results of tests verify materials, products, and systems comply with Contract Documents and are not for approval.

G. Operating and Maintenance (O&M) Data:

1. Organize operating and maintenance information into suitable sets of manageable size, and bind into individual binders properly identified and indexed. Include emergency instructions, spare parts list, copies of warranties, wiring diagrams, recommended "turn-around" cycles, inspection procedures, Shop Drawings, product data, and similar applicable information.
2. Binders shall be heavy duty 3 ring, vinyl covered, with pocket folders for folded sheet material. Binders shall be of adequate size to easily hold required amount of sheets.
3. Submit after equipment submittal has been returned "Approved" or "Approved as Noted".
4. Submit two (2) hard copies and one (1) copy in searchable, bookmarked PDF format after approval. Electronic O&M document shall be created with OCR (Optical Character Recognition) to allow for full alphanumeric recognition of printed characters.

H. Miscellaneous:

1. Guarantees, Warranties, Maintenance Agreements, and Workmanship Bonds:
  - a. Refer to Specification sections for requirements.
  - b. Provide 2 executed copies. Provide 2 additional copies where required for operation and maintenance data.
2. Survey Data:
  - a. Refer to Specification sections for requirements of property surveys, building or structure condition surveys, field measurements, quantitative records of actual work, damage surveys, and similar data.
3. Certifications:
  - a. Refer to Specification sections for requirements.
4. Closeout Submittals;
  - a. Refer to Specification sections for requirements of spare parts, extra and overrun stock, maintenance tools and devices, keys, and similar units to be submitted.

3.04 ACTION ON SUBMITTALS

A. General:

1. Except for submittals for record and similar purposes, where action and return is not required or requested, Engineer will review each submittal, mark the appropriate action, and return.
2. Where submittal must be held for coordination, Engineer will so advise Contractor without delay.
3. Engineer will stamp each submittal with uniform, self-explanatory action stamp, appropriately marked with submittal action.

B. Unsolicited Submittals:

1. Engineer will return unsolicited submittals without reviewing.

C. Action Stamp:

1. Marking: "Approved"

- a. Work covered by submittal may proceed provided it complies with Contract Documents. Acceptance of Work depends on that compliance.
- b. After approval, Contractor is to submit two bound copies of all "Approved" submittals to Engineer. Drawings shall be printed at not smaller than 11x17. Engineer, at his discretion, may request drawings printed in 22x34 format. Bound copies shall be stapled, comb bound, or spiral bound. Copies should be in color where required.

2. Marking: "Approved As Noted"

- a. Work covered by submittal may proceed provided it complies with Engineer's notations or corrections on submittal and with Contract Documents. Acceptance of work depends on that compliance. Resubmittal not required.
- b. After approval, Contractor is to submit two bound copies of all "Approved As Noted" submittals to Engineer. Drawings shall be printed at not smaller than 11x17. Engineer, at his discretion, may request drawings printed in 22x34 format. Bound copies shall be stapled, comb bound, or spiral bound. Copies should be in color where required.

3. Marking: "Revise and Resubmit"

- a. Do not proceed with Work covered by submittal.
- b. Revise submittal or prepare new submittal in accordance with Engineer's notations.

4. Marking: "Not Approved"

- a. Work covered by submittal does not comply with Contract Documents. Do not proceed with Work covered by submittal.
- b. Prepare new submittal complying with Contract Documents.

5. Marking: "No Action Required"

- a. Document has not been reviewed and is only filed for record purposes.

D. General Distribution:

1. Unless required elsewhere, provide distribution of submittals to Subcontractors, Suppliers, governing authorities, and others as necessary for performance of Work.
2. Provide copies of submittals bearing Engineer's action stamp to:
  - a. Job site file.
  - b. Record documents file.

END OF SECTION

SECTION 01 35 16  
ALTERATION PROJECT PROCEDURES

**PART 1 – GENERAL**

1.01 SUMMARY

A. Section Includes:

1. Cutting and patching.
2. Alterations to existing buildings or structures.
3. Demolition, removal, and abandonment of existing facilities.

B. Work Includes:

1. Cutting, moving or removal of items as shown on Drawings.
2. Cutting, moving or removal of items as necessary to provide access to allow alterations and new Work to proceed.
3. Cutting, moving or removal of items not shown to be cut, moved or removed, but which must be cut, moved or removed to allow new Work to proceed.
4. Patching or reinstalling Work or items which are to remain in finished Work.
5. Removal of existing surface finishes as needed to install new Work and finishes.
6. Removal of abandoned items.
7. Salvage of material and equipment as noted.
8. Demolition of structures.
9. Removal of portions of structures or utilities.
10. Abandonment of utilities.

1.02 SUBMITTALS

A. Test Results:

1. Facility condition surveys.

B. Miscellaneous Submittals:

1. Alteration and demolition schedule and operational sequence.

C. Submit in accordance with Section 01 33 00.

1.03 QUALITY ASSURANCE

A. Conform to requirements of regulatory agencies and utility companies.

1.04 PROTECTION AND CONTINUITY OF OPERATIONS AND UTILITIES

- A. Perform Work with trades qualified to perform Work in manner causing least damage to each type of Work.
- B. Protect existing finishes, equipment, and adjacent Work which is to remain, from damage.
- C. Protect existing and new Work from weather and extremes of temperature.
- D. Do not pile material to endanger building or structure.

- E. Structural stability of structures adjacent to or affected by Work shall be Contractor's responsibility. Provide shoring, needling, and bracing to keep buildings or structures structurally secure and free of damaging deflection or settlement.
- F. Do not close or obstruct streets, walks, or other facilities occupied and used by Owner and public without prior written permission from Owner and others having jurisdiction.
- G. Notify utilities prior to razing operations to permit them to disconnect, remove, or relocate equipment serving existing facilities.
- H. Protect existing utilities so they will continue to function during and after construction. Where interference with facilities occurs, cooperate with owner of utility and, if necessary, alter utility or facility to eliminate interference.
- I. Service Continuity:
  - 1. Perform Work so as not to interfere with Owner's operations.
  - 2. Provide and maintain continuous electrical, plumbing, and HVAC services to functioning portions of facilities during hours normally in use.
  - 3. Temporary outages are permitted during cutover work at such times and places as can be pre-arranged with Engineer and Owner. Keep such outages to minimum number and length. Make no outages without prior approval.
  - 4. Remove temporary equipment and materials when no longer required.
- J. Plant Operation:
  - 1. Maintain continuity of plant operation to functioning portions of existing plant.
  - 2. Temporary shutoff is permitted during cutover Work at such times and places as can be pre-arranged with Engineer and Owner. Keep such shutoffs to minimum number and length. Once Work has started on temporary shutoff, continue until Work is complete. Make no shutoffs without prior approval.
  - 3. Remove temporary equipment and materials when no longer required.

#### 1.05 TEMPORARY ELECTRICAL AND MECHANICAL SERVICES

- A. Comply with Section 01 52 00.
- B. Electrical:
  - 1. Maintain existing electrical service to existing equipment until removed from service.
  - 2. Provide temporary electrical connections to new equipment if permanent wiring is not complete and equipment is required to be placed into service to continue operation of facility.
  - 3. Provide temporary electrical connections to temporary equipment or existing equipment that has been relocated, but is required to continue operation of facility.
- C. Mechanical:
  - 1. Maintain existing interior work area above 60°F.
  - 2. Provide weather protection, waterproofing, heat, and humidity control to prevent damage to remaining existing and new Work.

### **PART 2 – PRODUCTS**

#### 2.01 SALVAGED MATERIALS

- A. Whenever used in the Documents, the term "salvage" shall indicate material or equipment to be retained by the Owner or to be reused in the Work.
- B. Salvage sufficient quantities of cut or removed material to replace damaged Work of existing construction or patch new Work when material not readily obtainable on current market.
- C. Salvage material and equipment to be retained by Owner or to be reused in Work:
  - 1. None.
- D. Salvaged materials and equipment shall be relocated on-site where indicated by Engineer.
- E. Prior to commencement of removal activities associated with the salvaging of equipment for either reuse by Owner, or reuse in Work, an inspection shall be completed by the Contractor, with the Owner and Engineer present. The inspection shall identify condition of components to be salvaged and itemize known or observed deficiencies. During the inspection, each component shall be photographically logged. A Salvaged Equipment Condition Report shall be submitted for approval by Owner and Engineer identifying condition of each component as "Good" or "Damaged". Components identified as Damaged shall contain a description of extent of damage. Photo log shall be submitted electronically with file names matching equipment tag.
- F. Items to be salvaged for either reuse by Owner, or reuse in Work shall be removed with care to protect the existing condition of the component and ensure component can be reused in a different service. To the greatest extent possible, individual salvaged items shall be removed in one piece. Large items that have bolted connections may be disassembled to facilitate removal, but must be reassembled to same condition at location of storage. If disassembled location contained a gasketing material, a new gasket shall be provided and installed, reuse of the existing gasket will not be permitted unless specifically approved by Engineer.

## 2.02 PRODUCTS FOR PATCHING, EXTENDING, AND MATCHING

- A. Provide same products, salvaged materials, types of construction or finish as that in existing structure, as needed to patch, extend or match existing Work.
- B. If requested by Engineer or Owner, Contractor to provide samples of materials and details of installation a minimum of thirty (30) days prior.

## PART 3 – EXECUTION

### 3.01 PREPARATION

- A. Prior to alteration or demolition of facilities, accomplish following:
  - 1. Owner release of facility.
  - 2. Electrical, HVAC, process, and plumbing services rerouted or shut off outside area of Work.
  - 3. Salvage items scheduled for reuse in new Work or scheduled to be delivered to Owner.
  - 4. Survey and record condition of existing facilities to remain in-place that may be affected by Work. After Work complete, survey conditions again and restore facilities to original condition at no additional cost to Owner. Conduct surveys in presence of Engineer.
- B. Where new Work is to be installed or suspended concealing existing surfaces or spaces, Contractor shall remove foreign substances such as grease, sludge, and odoriferous material before starting Work.



- C. Where surfaces are to remain exposed, Contractor shall remove foreign substances such as grease, sludge, and odoriferous material.
- D. Coordinate alteration and demolition Work so new construction installed before, during, and after Work may commence without undue delay.

### 3.02 TEMPORARY ENCLOSURES

- A. Provide temporary weather tight enclosure for successive areas of buildings as Work progresses. To provide:
  - 1. Acceptable working conditions.
  - 2. Weather protection for materials.
  - 3. Allow for effective temporary heating.
  - 4. Prevent entry of unauthorized persons.
- B. Provide temporary enclosures to separate Work areas from areas of existing buildings occupied by Owner to prevent penetration of dust or moisture into occupied areas, to prevent damage to existing equipment, and to protect Owner's employees and operations.
- C. Use framing and sheet materials complying with structural and fire rating requirements of applicable codes and standards.
- D. Relocate as required by progress of construction, by storage or work requirements, and to accommodate requirements of Owner.
- E. Remove temporary enclosures when no longer required.

### 3.03 CUTTING AND PATCHING

- A. Cut finish surfaces such as masonry, tile, plaster or metals, by methods to terminate surfaces in smooth, straight line at natural point of division. Make cuts parallel with walls and/or floors.
- B. Make joints and finishes match adjacent or similar work.
- C. Do not cut or notch structural members without specific written approval of Engineer.
- D. At request of Engineer or Owner, Contractor shall prepare mockup of proposed materials to be used in locations adjacent to, connecting, or patching into existing surfaces to remain. Owner shall approve of appearance and match prior to Contractor's installation of permanent Work.

### 3.04 REMOVAL OPERATIONS

- A. Remove concrete, steel and masonry to extent indicated on Drawings.
- B. Remove equipment and appurtenances to extent indicated on Drawings.
- C. Remove utilities and piping to elevations and locations shown on Drawings and plug and seal permanently with steel cap, concrete plug, or other approved method in accordance with specified abandonment procedures.
- D. Remove abandoned utilities and underground piping within influence zone of proposed structures or piping.

- E. Where existing materials and equipment are removed or relocated, remove materials no longer used such as studs, straps, conduits, ducts, junction boxes, pull boxes, wires, anchors, and supports. Remove or cut off concealed or embedded materials and equipment to at least 1 in. below final finished surface. Patch floors and walls to match existing.
- F. Repair affected surfaces to conform to type, quality, and finish of adjacent surfaces.
- G. Dispose of removed items as specified herein.

### 3.05 RESTORATION

- A. Where existing partitions are removed, patch floors, walls, and ceilings with finish materials matching existing to provide smooth planes without breaks, steps, or bulkheads. Trim and refinish doors as necessary to clear new floors or flooring material.
  - 1. Where change of plane of 2 in. or more occurs, notify Engineer and request direction.
- B. Patch and replace portions of existing finished surface damaged by Contractor's operations.
  - 1. Provide adequate support of substrate prior to patching finish.
  - 2. Refinish patched portions of painted or coated surfaces to produce uniform color and texture over entire surface.
  - 3. When existing surface finish cannot be matched, refinish entire surface to nearest intersection.
- C. When new Work abuts or finishes flush with existing Work, transition shall match existing adjacent Work in texture and appearance so patch or transition is not visible at a distance of 6 feet.
- D. When smooth transition is not possible, terminate existing surface along straight line at natural division, and provide appropriate trim.
- E. Clean and repair damage caused by installation or by use of temporary facilities.
  - 1. Remove foundations and underground installations used for construction aids.
  - 2. Grade areas affected by temporary installations to required elevations and slopes.
- F. Restore existing facilities used for temporary purposes to specified, or original, condition.

### 3.06 CLEANING

- A. Perform periodic cleaning and final cleaning as specified in Section 01 74 00.
  - 1. Clean Owner occupied areas daily.
  - 2. Clean spillage, overspray, and heavy collection of dust in Owner occupied areas immediately.
- B. At completion of alteration and demolition Work in each area, provide final cleaning and return space to condition suitable for use by Owner.

### 3.07 DISPOSAL

- A. Remove debris from site each day.
- B. Equipment and materials not scheduled to be salvaged or reused in new Work shall become property of Contractor to be disposed of in accordance with applicable laws.

- C. Debris and other undesirable and unsalvageable material resulting from alteration and demolition operations shall be legally disposed offsite.

END OF SECTION

*Not to be used for bidding purposes*

SECTION 01 52 00  
CONSTRUCTION FACILITIES

**PART 1 - GENERAL**

1.01 SUMMARY

- A. Temporary construction facilities required for the Work, including, but not limited to:
  - 1. Utilities including lighting and electricity and telephone service
  - 2. Sanitary facilities.
  - 3. Fire protection.
  - 4. Roads.
  - 5. Security fencing.
  - 6. Enclosures.
  - 7. Parking.
  - 8. Project signs.
  - 9. Field office for Contractor's personnel.
- B. Maintain temporary facilities in proper and safe condition throughout progress of Work.
- C. Comply with federal, state, and local codes and regulations, and utility company requirements.

1.02 LAYOUT OF TEMPORARY FACILITIES

- A. Before starting Work, submit to Engineer, for approval, proposed layout of temporary facilities.
- B. Should Contractor require space in addition to that shown on Drawings, Contractor shall make arrangements for storage of materials and equipment in locations off Site.

**PART 2 - PRODUCTS**

2.01 TEMPORARY LIGHTING AND ELECTRICITY

- A. General:
  - 1. Temporary lighting shall be sufficient to enable Contractor and Subcontractors to complete Work and enable Engineer to observe Work. Illumination shall meet or exceed state code requirements.
- B. Temporary electric power may be obtained from Owner's electrical system as follows:
  - 1. Make arrangements with Owner for temporary electricity.
  - 2. No charge will be made for electricity obtained from Owner's electrical system and used for construction.
  - 3. Provide electrical protection to prevent disruption of plant power from over-current, ground faults, and short circuits.
  - 4. If Contractor requires more than Owner's supply available, Contractor shall obtain an additional source of electric power and pay all costs for power from additional source.
- C. Contractor's responsibilities:
  - 1. Provide, maintain, and remove temporary electric service facilities.
  - 2. Provide temporary electric systems and components in conformance with requirements of National Electric Code and local authorities.

3. Facilities exposed to weather shall be weatherproof type.
4. Enclosures shall be locked to prevent unauthorized access.
5. Provide lamps, wiring, switches, sockets, and similar equipment required for temporary lighting and power tools.

#### 2.02 TEMPORARY TELEPHONE SERVICE

- A. Provide temporary telephone service for Contractor's use and for Owner to contact project site. Mobile or cellular phones are acceptable. Contractor may not use Owner's system for telephone service.

#### 2.03 SANITARY FACILITIES

- A. Do not use existing sanitary facilities.
- B. Provide temporary sanitary facilities conforming to state and local regulations, in sufficient numbers for use of Contractor's and Subcontractor's employees.
- C. Maintain in sanitary condition and properly supply with toilet paper.

#### 2.04 TEMPORARY FIRE PROTECTION

- A. Provide and maintain minimum of one fire extinguisher on each floor of each building, and other fire protection equipment and devices as would be reasonably effective in extinguishing fires during early stages by personnel at Site.

#### 2.05 CONTRACTOR'S STAGING AND WORK AREA

- A. Construct and maintain staging area at location shown on Drawings.
- B. Work Area:
  1. Limit construction operations and storage of equipment and materials to areas shown on Drawings and as determined by Engineer.
  2. Except as provided herein, no sidewalk, private property, or other area adjacent to Site shall be used for storage of Contractor's equipment and materials unless prior written approval is obtained from legal owner of the respective locations.
  3. Contractor shall maintain staging areas during construction in a manner that will not obstruct operations on any street areas. Work shall proceed in an orderly manner, maintaining construction Site and staging area free of debris and unnecessary equipment or materials.

#### 2.06 SECURITY

- A. Security will not be provided by Owner.
- B. Contractor shall be responsible for loss or injury to persons or property where Work is involved, and shall provide security and take precautionary measures to protect Contractor's and Owner's interests.
- C. Provide and maintain temporary fencing of design and type needed to prevent entry onto Site by public.

## 2.07 ENCLOSURES

- A. Provide and maintain all enclosures, scaffolds, tarpaulins, canopies, warning signs, steps, platforms, bridges, and other temporary construction necessary for proper completion of Work.

## 2.08 PARKING

- A. Staging area and designated areas within construction limits may be used for parking of construction personnel's private vehicles and Contractor's lightweight vehicles.
- B. Do not allow heavy vehicles or construction equipment in parking areas.
- C. Make arrangements for additional parking off site as required.

## 2.09 CONTRACTOR'S FIELD OFFICES AND BUILDINGS

- A. If required by Contractor, erect where designated by Engineer, and maintain temporary field office and tool and storage buildings for Contractor's use.
- B. Buildings shall be neat and well constructed, surfaced with plywood, siding, masonite, or other similar material, well painted and void of advertisements.

## PART 3 – EXECUTION

### 3.01 GENERAL

- A. Maintain and operate systems to ensure continuous service for duration of construction.
- B. Modify and extend systems, as Work progress requires.
- C. Material and Equipment provided as part of the project shall not be used for any temporary services.

### 3.02 REMOVAL

- A. Completely remove temporary materials, equipment, signs, and structures when no longer required.
- B. In unfinished areas, clean and repair damaged caused by temporary installations or use of temporary facilities, restore drainage, and evenly grade, seed or plant as necessary to provide appearance equal to or better than original.
- C. In finished areas, restore existing or permanent facilities used for temporary services to specified, or original condition.

### 3.03 DAMAGE TO EXISTING PROPERTY

- A. Contractor is responsible for replacing or repairing damage to existing buildings, structures, sidewalks, roads, parking areas, and other existing assets.
- B. Contractor shall have option of having Owner contract for such Work and have cost deducted from Contract Price.

3.04 OWNER'S USE

- A. Upon acceptance of Work, or portion of work defined and certified as Substantially Complete by Engineer, and Owner commences full-time successful operation of facility or portion thereof, Owner will pay cost for utilities used for Owner's operation. Contractor shall continue to pay for utilities used until final acceptance of Work, except as provided herein. However, heat for building as required for construction purposes shall still be paid by Contractor unless, due to occupancy by Owner, more heat shall be required due to increased temperature or lengthened duration, in which case Owner will bear difference in cost.

END OF SECTION

Not to be used for bidding purposes

SECTION 01 61 00  
COMMON PRODUCT REQUIREMENTS

**PART 1 – GENERAL**

1.01 SUBSTITUTE AND "OR EQUAL" ITEMS

- A. When equipment or material is specified by naming one or more manufacturers or suppliers followed by words "No Substitute is Permitted", Contractor shall provide one of the named manufacturers or suppliers.
- B. "Or Equal" Items: For material or equipment specified by naming one or more suppliers or manufacturers followed by the words "Or Equal", Contractor shall make submittal in accordance with Section 01 33 00. Engineer will review submittal in accordance with Supplementary Conditions.
- C. Substitute Items:
  - 1. For material or equipment specified by naming one or more suppliers or manufactures and not followed by the words "Or equal" or "No Substitute is Permitted", Contractor shall submit "Request for Substitution" in accordance with General Conditions for material or equipment not specifically named.
  - 2. Requests for Substitution will be considered by Engineer, subject to Contractor's representations and review provisions of Contract Documents, when one or more of the following conditions are satisfied.
    - a. Where required equipment or material cannot be provided within Contract Time, but not as result of Contractor's failure to pursue Work promptly or coordinate various activities properly.
    - b. Where packaging of several items of equipment from single source will provide maintenance and coordination advantages to Owner.
    - c. When Contractor proposes to provide Owner with cost savings.
  - 3. If Engineer approves Contractor's Request for Substitution, Contractor shall make submittal in accordance with Section 01 33 00.
- D. Conditions Which Are Not Substitutions:
  - 1. Contractor options provided for in Specifications.
  - 2. Revisions to Contract requested by Owner or Engineer.
  - 3. Contractor's determination of and compliance with governing regulations, except as provided for in Contract Documents.

1.02 REUSE OF EXISTING MATERIAL

- A. Except as specifically indicated or specified, do not use removed materials and equipment in new Work. All material and equipment incorporated into the Work shall be new, and as specified, except as otherwise provided in the Contract Documents.
- B. For material and equipment specifically indicated or specified to be reused in new Work:
  - 1. Use special care in removal, handling, storage, and reinstallation to ensure proper function in completed Work.
  - 2. Provide for transportation, storage, and handling of products which require off-site storage, restoration, or renovation.



### 1.03 MANUFACTURER'S INSTRUCTIONS

- A. Installation of equipment and materials shall comply with manufacturer's written instructions. Maintain one set of complete instructions at job site. Distribute printed copies of instructions to parties involved in installation, including 1 copy to Engineer. Provide 1 electronic copy as a searchable, bookmarked PDF document to the Engineer.
- B. Handle, store, install, connect, clean, condition, and adjust materials and equipment in accordance with manufacturer's written instructions and in conformance with Specifications.
- C. If job conditions or specified requirements conflict with manufacturer's written instructions, consult Engineer for further direction. Do not proceed with Work without written instruction of Engineer.

### 1.04 TRANSPORTATION AND HANDLING

- A. Arrange deliveries of material and equipment in accordance with Construction Progress Schedule.
- B. Deliver materials and equipment in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
- C. Protect bright-machined surfaces, such as shafts and valve faces, with heavy coat of grease prior to shipment.
- D. Immediately upon delivery, inspect shipments to ensure compliance with Contract Documents and approved submittals, and products have been protected and are undamaged.
- E. Provide equipment and personnel to handle materials and equipment by methods recommended by manufacturer to prevent soiling or damage to materials or equipment, or packaging.

### 1.05 STORAGE, PROTECTION, AND MAINTENANCE

- A. Store, protect, and maintain material and equipment in accordance with manufacturer's written instructions.
- B. Temporary storage areas and buildings shall conform to Section 01 52 00.
- C. Owner assumes no responsibility for damage or loss due to storage of materials and equipment.
- D. Interior Storage:
  - 1. Store with seals and labels intact and legible.
  - 2. Store materials and equipment subject to damage by elements in weather tight enclosures.
  - 3. Maintain temperature and humidity within ranges required by manufacturer.
- E. Exterior Storage:
  - 1. Store fabricated materials and equipment above ground, on blocking or skids, to prevent soiling or staining. Cover materials and equipment subject to deterioration with impervious sheet coverings. Provide ventilation to avoid condensation.

2. Store loose granular materials in well-drained area on solid surfaces to prevent mixing with foreign matter.
3. Store materials such as pipe, reinforcing steel, structural steel, and equipment on pallets or racks, off ground.

F. Inspection and Maintenance:

1. Arrange storage to provide easy access for inspection, maintenance, and inventory.
2. Make periodic inspections of stored materials and equipment to ensure materials and equipment maintained under specified conditions are free from damage or deterioration, and coverings are in place and in condition to provide required protection.
3. Perform maintenance on stored material and equipment in accordance with manufacturer's written instructions and in presence of Owner and Engineer.
  - a. Notify Engineer 24 hrs before performing maintenance.
  - b. Submit report of completed maintenance to Engineer with each Application for Payment.
  - c. Failure to perform maintenance, to notify Engineer, or to submit report may result in rejection of material or equipment.

G. Assume responsibility for protection of completed construction and repair and restore damage to completed Work.

H. Wheeling of loads over finished floors, with or without plank protection, not permitted in anything except rubber tired wheelbarrows, buggies, trucks or dollies. This applies to finished floors and exposed concrete floors, as well as those covered with other applied surfacing.

I. Where structural concrete is also finished surface, avoid marking or damaging surface.

1.06 SPECIAL TOOLS AND LUBRICATING EQUIPMENT

- A. Furnish, in accordance with manufacturer's recommendations, special tools and lubricating equipment required for checking, testing, parts replacement, and maintenance.
- B. Instruct Owner's operating personnel in operation, repair, and maintenance of equipment and use of special tools.

1.07 LUBRICATION

- A. Where lubrication is required for proper operation of equipment, incorporate necessary and proper provisions in equipment in accordance with manufacturer's requirements. Where possible, lubrication shall be automated and positive.
- B. Where oil is used, reservoir shall be of sufficient capacity to supply unit for 24-hr period.

**PART 2 – PRODUCTS**

2.01 MATERIALS

- A. Conform to applicable Specifications and standards. Comply with size, make, type, and quality specified or as approved on submittals.
- B. Design, fabricate, and assemble in accordance with engineering and shop practices standard with industry.

- C. Manufacture like parts of duplicate units to standard sizes and gauges, to be interchangeable. Two or more items of same kind shall be identical, by same manufacturer.
- D. Material and equipment shall be suitable for service conditions. Design so working parts are readily accessible for inspection and repair, and easily duplicated and replaced.
- E. Equipment capabilities, sizes, and dimensions shown or specified shall be adhered to, unless specifically approved in accordance with General Conditions.
- F. Equipment shall be adapted to best economy in power consumption and maintenance. Parts and components shall be portioned for stresses occurring during continuous or intermittent operation, and for additional stresses occurring during fabrication or installation.
- G. Do not use material or equipment for purpose other than for which it is designed or specified. Equipment shall not be used for any purpose, or any reason until manufacturer has completed installation services.

### **PART 3 – EXECUTION**

#### **3.01 GENERAL**

- A. Include and pay for Supplier's services, including, but not limited to, those specified.
- B. Workday is defined as an 8-hr period during a calendar day. Workday for purposes of this section does not include travel to and from the Project Site.

#### **3.02 INSTALLATION SERVICES**

- A. Where installation services are called for in Specifications, provide competent and experienced technical representatives of manufacturers' equipment and systems to resolve assembly or installation procedures attributable to, or associated with, equipment furnished.
- B. After equipment installation, manufacturer's representative shall inspect equipment for proper installation in accordance with manufacturer's instructions, equipment has been serviced with the proper lubricants, applicable safety equipment has been properly installed, and that proper electrical and mechanical connections have been made.
- C. Manufacturer's representative shall assist Contractor in performing functional testing.
- D. Perform functional testing to determine if equipment has been installed correctly and operates as intended. Functional testing shall include, but not be limited to, checking for proper rotation, alignment, speed, excessive vibration, and noisy operation. Equipment adjustment and calibration shall be performed to conform with Specifications, manufacturer's requirements and instructions, and industry standards.
- E. Provide "Certificate of Installation Services" stating that equipment has been properly installed, that functional testing has been performed, that proper adjustment and calibration has been made, and that equipment is ready for Startup and Systems Demonstration. Use form in Appendix and furnish two copies to Engineer.

#### **3.03 INSTRUCTIONAL SERVICES**

- A. Where training is called for in Specifications, provide competent and experienced technical representative of Supplier to provide detailed instruction to Owner's personnel for operation of equipment. Training services shall include maintenance of instrumentation, maintenance

of equipment, and operation of instrumentation and equipment in classroom setting on-site. Training shall include electrical, mechanical, and safety aspects of equipment.

- B. Submit 30 days before scheduled training, for Engineer's review and approval, documentation identifying names of specific instructors, factory authorization, and background of individuals to conduct training.
- C. Coordinate training with Engineer.
  - 1. No training shall be conducted unless instructor has been approved by Engineer.
  - 2. Notify Engineer at least 48-hrs in advance so Engineer can make arrangements with Owner's personnel.
  - 3. Cancel training sessions at least 24-hrs in advance.
  - 4. Reschedule canceled training sessions 48-hrs in advance.
  - 5. Failure of instructors to appear for scheduled training, failure to notify Engineer 24-hrs in advance of need to cancel training session, or failure to arrive within 30 minutes of start of scheduled training session shall result in reimbursement to Owner for time lost by Owner's personnel in waiting for arrival of instructor.
- D. Similar types of equipment differing in model, size or manufacturer shall require equal service time as specified.
- E. Successful testing of components and systems required in Section 01 79 10 shall be completed before start of instruction.
- F. Review O&M data contents with Owner's personnel in full detail to explain aspects of operations and maintenance.
- G. Provide "Certificate of Instructional Services" cosigned by Owner and instructor, verifying training accomplished to satisfaction of all parties. Use form in Appendix and furnish 2 copies to Engineer.

#### 3.04 SYSTEMS DEMONSTRATIONS SERVICES

- A. Provide manufacturer's and Supplier's services as required to successfully complete the Work specified in Section 01 79 10 – Systems Demonstrations.

#### 3.05 POST STARTUP SERVICES

- A. After equipment or system has been in operation for at least 1 month, but not longer than 2 months, each equipment manufacturer or authorized equipment representative shall make a final inspection where so required by Specifications. Final inspection will provide assistance to Owner's personnel in making adjustments or calibrations required to ensure equipment or system is operating in conformance with design, manufacturer, and specifications.
- B. Provide "Certificate of Post Startup Services" cosigned by Owner and equipment representatives, verifying this service has been performed. Use form in Appendix and furnish 2 copies to Owner.

END OF SECTION

SECTION 01 78 39  
PROJECT RECORD DOCUMENTS

**PART 1 - GENERAL**

1.01 SUMMARY

- A. Throughout progress of the Work, maintain an accurate record of changes in the Contract Documents.
- B. Maintain at Site one record copy of:
  - 1. Drawings.
  - 2. Project Manual.
  - 3. Addenda.
  - 4. Change Orders and other modifications to Contract.
  - 5. Engineer Field Orders, written instructions, or clarifications.
  - 6. Approved Shop Drawings and other Work-related submittals.
  - 7. Field modifications made to equipment by Contractor, Subcontractors and Suppliers.
  - 8. Field test records.
  - 9. Construction photographs.
  - 10. Associated permits.
  - 11. Certificates of inspection and approvals.

1.02 PAYMENTS

- A. Progress payments will not be made until the Contractor has demonstrated to the Engineer that a marked up set of Drawings is being satisfactorily maintained on the site and is available for Engineer's review as specified herein.

1.03 SUBMITTALS

- A. Prior to Substantial Completion, submit revised operation and maintenance data for field modifications made by Contractor, Subcontractors, and Suppliers. Revised operation and maintenance data shall include electronic files and paper copies.
- B. Prior to Substantial Completion, submit revised copies of approved Shop Drawings and other Work-related submittals for equipment modified in field by Contractor, Subcontractors, and Suppliers.
- C. Prior to submitting request for Substantial Completion, deliver one complete coordinated marked up set of Drawings to Engineer for use in preparation of record drawings.
- D. Prior to submitting request for final payment, submit the remaining Project Record Documents to Engineer for Owner.
- E. Accompany submittals with transmittal letter containing following:
  - 1. Date.
  - 2. Project title and number.
  - 3. Contractor's name and address.
  - 4. Title of record document.
  - 5. Signature of Contractor or authorized representative.

- F. Included with each Pay Application, submit up to date Record Drawings in PDF format for review by Engineer.

## **PART 2 – PRODUCTS**

(NOT USED)

## **PART 3 - EXECUTION**

### **3.01 MAINTENANCE OF DOCUMENTS AND SAMPLES**

- A. Store documents and Samples in Contractor's field office apart from documents used for construction.
  - 1. Provide files and racks for storage of documents.
  - 2. Provide secure storage space for storage of Samples.
  - 3. Provide dedicated location for storage of flash drive that contains electronic documentation, including the most up to date Record Drawings. Flash drive shall be made available for Engineer's use to view files at all times.
- B. Maintain documents in clean, dry, legible condition and in good order.
- C. Do not use record documents for construction purposes.
- D. Record documents shall only contain marks pertaining to recorded changes and should not contain notes, calculations, or other stray information.
- E. Label each document "PROJECT RECORD" in neat, large letters.
- F. Make documents and samples available for inspection by Engineer and Owner.
- G. Failure to properly maintain record documents may be reason to delay a portion of progress payments until records comply with Contract Documents.

### **3.02 RECORD DRAWINGS**

- A. Maintain one record set of Drawings, in electronic PDF format (one PDF file for each drawing volume), legibly annotated to show all changes made during construction and the final location of all underground piping and utilities.
  - 1. The marked up set of Drawings shall be a compilation of all of the changes made by all of the trades involved. Individual sets from the various subcontractors will not be accepted.
  - 2. The marked up set of Drawings shall graphically show the changes. Reference to RFI's, Change Orders, Field Orders, etc. will not be accepted.
  - 3. The marked up set of Drawings shall incorporate changes made to the primary drawings, and shall include the corresponding changes made to the ancillary drawings.
  - 4. Changes made to the process drawings, electrical drawings, and I&C drawings shall be depicted on the P&ID's.
- B. All annotations on Record Drawings shall be done electronically in PDF format.
  - 1. The base drawing used for Record Drawing edits shall be in an original PDF file.
  - 2. Using the following color scheme:
    - a. RED: For drawing additions or elements to be added to the drawing.
    - b. GREEN: For items to be removed or deleted from the drawing.

c. BLUE: For descriptive notes, dimensions, arrows, or other labels to provide direction to drafters but that are not specifically intended to be added to the drawings.

3. Coloring scheme, labels, dimensions, and line work shall be consistent throughout the entire Record Drawing set.
4. Use a straight line drawing tool where appropriate.
5. Use text boxes with appropriately sized text for all text work.
6. Drawing changes shall be to scale.
7. All drawing comments shall be "flattened" prior to submitting any Record Drawings to prevent the inadvertent shifting or changing of any comment or mark-up and to provide final documentation of all mark-ups.

C. Record information concurrently with construction progress.

D. Drawings:

1. Graphically depict changes by modifying or adding to plans, details, sections, elevations, or schedules.
2. Note the following:
  - a. Depths of various elements of foundation in relation to finished first floor elevation.
  - b. Horizontal and vertical locations of underground cable, conduit, duct runs, underground utilities and appurtenances, and underground piping referenced to visible and accessible features. These features shall be located where they leave or enter any structure and at changes in horizontal or vertical direction. The invert elevation of piping and the top of conduit or duct banks shall be noted. GPS coordinates may be used.
  - c. Field changes.
  - d. Details not on original Drawings.
  - e. Location and identification of exposed interior piping, including those shown schematically on Drawings.
  - f. Location and size of equipment including connections.
  - g. Departures from original Drawings.

END OF SECTION

SECTION 01 79 10  
SYSTEMS DEMONSTRATIONS

**PART 1 – GENERAL**

1.01 DESCRIPTION

- A. Before Substantial Completion is considered, Contractor shall demonstrate satisfactory operation of specific equipment systems and associated facilities. Prior to conducting system demonstrations, the Contractor shall prepare a start-up plan unique to each system. Conduct demonstrations on systems listed below. Each system shall include facilities listed and associated structures, channels, conduits, piping, valves, gates, electrical, instrumentation, water, and other utilities necessary for system operation.
1. System 1 – Main Switchgear Controls (Section 26 13 00)
    - a. Manual Controls
    - b. Automatic Controls
    - c. Co-Gen – Simulate inputs from the Co-Gen system to the Main Switchgear
  2. System 2 – Main Switchgear Control Panel (CP-SWGR) Controls (Section 26 13 00)
    - a. Manual Controls
- B. Preliminary:
1. Before Contractor begins Systems Demonstrations, the following Work shall be complete:
    - a. Substantial Completion of Main Switchgear modifications and Main Switchgear Control Panel (CP-SWGR) installation per the Plans and Specifications.
  2. Contractor shall provide services of qualified, certified representatives of Suppliers to be present at Project Site as necessary to successfully complete Systems Demonstrations.
  3. Contractor shall submit evidence of the representative's certification and qualifications to the Engineer for review and approval 30 days prior to the start of Systems Demonstrations.
- C. Coordination:
1. Designate representative of Contractor to be responsible for Systems Demonstrations.
  2. Contractor shall submit schedule of Systems Demonstrations for review by Engineer and Owner 30 days prior to Systems Demonstrations.
  3. Notify Engineer at least 7 days before Systems Demonstrations are to begin.
  4. Reschedule cancelled Systems Demonstrations 7 days in advance.

1.02 SUBMITTALS

A. Start-up Plans

1. For each System identified in Paragraph 1.01.A above, Contractor shall prepare a system specific start-up plan. Submit each start-up plan no later than 1 week prior to the start date of each System's 7 day demonstration test.
2. Each system's start-up plan shall include a detailed step-by-step procedure addressing the requirements of this Section. Each plan shall identify the required activities that need to be completed, who will be responsible for completing each activity, the order in which



the activities need to be completed, and a schedule giving the dates for each activity. Each start-up plan shall describe the documentation that needs to be prepared to confirm that the activities have been successfully completed.

3. Each start-up plan shall identify the Contractor's representative that will be leading the Systems Demonstration during the 7 day testing period.

B. Reports:

1. Prepare report for each system on results and activities encompassing system demonstration. Submit report within two working days of completion of System Demonstration.
2. Report shall describe operational conditions; daily results of systems operation; dates and names of people involved and observing operation; and statement regarding system ability to meet operational criteria.

- C. Submit in accordance with Section 01 33 00.

## PART 2 – PRODUCTS

(Not Used)

## PART 3 – EXECUTION

### 3.01 SYSTEMS DEMONSTRATIONS

- A. Demonstrate operation and performance of each system for 7 consecutive days.

1. Where no specific performance requirements are stated in Specifications, demonstrate to show equipment operates in accordance with acceptable industry standards for application of equipment.
2. System Demonstration shall show equipment operates within manufacturer's tolerances for noise and vibration, equipment is responsive to manual and automatic controls, control and protective devices are properly set, and equipment operates on controlled or intermittent basis when such operation is intended.
3. Demonstrate proper function and process control for each control point, alarm, and safety lockout system.

- B. Temporary facilities and services are Contractor's responsibility. Contractor shall provide temporary facilities and services as required to complete testing and systems demonstrations. Contractor shall also provide required equipment maintenance during the time between the systems demonstration testing and the issuance of a Certificate of Substantial Completion.

- C. For each system, Engineer will consider system demonstration successful and complete when system operates properly for 7 consecutive days without significant interruption.

- D. If, in Engineer's opinion, system is not operating properly at any time during System Demonstration, Contractor shall stop demonstration and adjust, calibrate, or replace material and equipment as required to correct problem. After corrections have been made, restart System Demonstration and operate system for 7 consecutive days without significant interruption.

- E. If the system is not operating properly, and the Contractor opts to continue operating the system until the corrections to the system have been completed and the system can proceed to restarting the Systems Demonstration, the Contractor shall continue to be responsible for providing ongoing required equipment maintenance, temporary facilities and services.

3.02 SUBSTANTIAL COMPLETION

- A. Engineer will not consider Work substantially complete until Systems Demonstrations have been successfully completed.

END OF SECTION

*Not to be used for bidding purposes*

**DIVISION 26**

**ELECTRICAL**

*Not to be used for bidding purposes*

*Not to be used for bidding purposes*

SECTION 26 05 10  
BASIC MATERIALS AND METHODS

**PART 1 – GENERAL**

1.01 SUMMARY

A. Section Includes:

1. Raceway Systems
2. Wire, Cables and Connectors

1.02 SUBMITTALS

A. Product Data.

B. Submit in accordance with Section 01 33 00.

1.03 QUALITY ASSURANCE

A. Items provided under this section shall be listed or labeled by Underwriters Laboratories, Inc. (UL) or other Nationally Recognized Testing Laboratory (NRTL).

1. Term "NRTL" shall be as defined in OSHA Regulation 1910.7.
2. Terms "listed" and "labeled" shall be as defined in National Electrical Code, Article 100.

B. Regulatory Requirements:

1. National Electrical Code (NEC): Components and installation shall comply with National Fire Protection Association (NFPA) 70.

**PART 2 – PRODUCTS**

2.01 METAL CONDUIT

A. Galvanized Rigid Steel Conduit: American National Standards Institute (ANSI) C80.1.

B. Plastic-Coated Steel Conduit and Fittings: National Electrical Manufacturers Association (NEMA) RN 1 and ETL Verified PVC-001 Labeled

2.02 FITTINGS

A. Fittings and conduit bodies for steel conduits:

1. Steel or malleable iron, zinc galvanized or cadmium plated.
2. Do not use set screw or indenter type fittings.
3. Do not use aluminum or die cast fittings.
4. GRS Connectors and Couplings:
  - a. Threaded.
  - b. Insulated throat.
  - c. Gland compression type.
  - d. Rain and concrete type.

5. Comply with NEMA FB 1, compatible with conduit materials.

B. Seals:

1. Wall entrance, OZ/Gedney Type FSK or FSC.

C. Hazardous Areas:

1. Explosionproof.
2. Horizontal seal fittings, Crouse-Hinds Type EYS.
3. Vertical seal fittings, Crouse-Hinds Type EYD.
4. Vertical seal fittings shall have drain plug. When located in exterior locations or in wet locations provide drain suitable for outdoor use.

2.03 BOXES

- A. Of indicated types, sizes and NEMA enclosure classes. Where not indicated, provide units of types, sizes, and classes appropriate for use and location. Provide items complete with covers and accessories required for intended use. Provide gaskets for units in exterior locations or wet locations.

B. Fasteners:

1. General Use: Corrosion resistant screws and hardware including cadmium and zinc plated items.
2. Exterior or Wet Locations: Stainless steel screws and hardware.

C. Pull and Junction Boxes:

1. Boxes shall have screwed or bolted on covers of material same as box and shall be of size and shape to suit application.
2. Galvanized Steel Boxes: Flat rolled, code gauge, sheet steel with welded seams. Hot-dip galvanized after fabrication. Cover shall be gasketed.
3. Stainless-Steel Boxes: Fabricate of stainless steel conforming to Type 316 of American Society for Testing and Materials (ASTM) A167. Cover shall be gasketed.
4. Galvanized Cast-Iron Boxes: Molded of cast iron alloy with gasketed cover and integral threaded conduit entrances.
5. Boxes Approved for Classified Locations: Cast metal or cast nonmetallic boxes conforming to UL 886 listed and labeled for use in specific location classification, and with specific hazardous material encountered. Conduit entrances shall be integral threaded type. When located in exterior locations or in wet locations provide O-ring/gasket or equivalent making box suitable for outdoor use.

2.04 WIRES, CABLES, AND CONNECTORS

- A. Building wires and cables with insulation type, cable construction, and rating as required to meet application and NEC requirements.

- B. Wire and cable for 600 volts and below: Soft drawn, copper wire with 600 volt insulation.

1. Conductors:

- a. Annealed, copper in accordance with ASTM B33.
- b. Stranding: Class B in accordance with ASTM B8.

2. Insulations and Coverings:

- a. Rubber: Conform to NEMA WC 3.
- b. Thermoplastic: Conform to NEMA WC 5.
- c. Cross-Linked Polyethylene: Conform to NEMA WC 7.
- d. Ethylene Propylene Rubber: Conform to NEMA WC 8.

C. Panelboard Branch Circuits:

1. Single Conductor Type THHN/THWN (90 degrees Celsius): Above ground and underfloor conduits.
2. Single Conductor Type XHHW-2: Duct bank conduit.
3. No. 12 American Wire Gauge (AWG) minimum size (unless otherwise noted) for branch circuit wiring, including motor circuits.
4. Size 120 volt branch circuits for length of run on following basis.
  - a. 0 to 50 foot Run from Panelboard to first outlet: No. 12 AWG minimum.
  - b. 51 to 100 foot Run: Increase one wire size, i.e., No. 12 AWG becomes No. 10 AWG.
  - c. 101 to 150 foot Run: Increase two wire sizes, i.e., No. 12 AWG becomes No. 8 AWG.
  - d. 151 feet and above: Wiring sized for 3% maximum voltage drop.
5. For other branch circuits, voltage drop for branch circuits and feeder circuit combined shall not exceed requirements of the NEC.

D. Control Circuits:

1. Single conductor Type THHN/THWN (90 degrees Celsius): Above ground and underfloor conduits.
2. No. 12AWG minimum size (unless otherwise noted).
3. Multi-wire cable assembly: Duct bank conduits.

E. Shielded Instrumentation Wiring, above ground and underfloor conduits:

1. PVC insulation, tinned copper (19 by 27) stranded, No. 16 AWG, twisted pair or triplet cabled with aluminum mylar shielding, stranded, tinned, No. 18 AWG copper drain wire, and overall black FR-PVC, 90 degrees Celsius, 600 volt jacket.
2. Multi-wire cable assembly: duct bank conduits.

F. Multi-Wire Control and Instrumentation Cable Assemblies:

1. Multi-conductor, color-coded cable with number and size of conductors indicated.
2. Where spare conductors are not indicated provide 10% spare conductors. One pair minimum.
3. Control and non-shielded instrumentation.
  - a. Bare soft stranded No. 14 or 12 AWG copper in accordance with ASTM B3.
  - b. Class B stranded in accordance with ASTM B8.
  - c. Type THWN insulation also meeting requirements of NEMA WC-5 with armor-nylon in accordance with UL 83-THHN/THWN.
  - d. Color coded in accordance with NEMA WC-5 Method I Table K-2.
  - e. Cabled with suitable fillers.
  - f. Overall black FR-PVC, 90 degrees Celsius, 600 volt sunlight resistant jacket.
  - g. UL listed for installation in cable trays in accordance with NEC Art. 318 Class 1, Division 2 hazardous areas and in accordance with NEC 340 and for direct burial.
4. Shielded Instrumentation:
  - a. Bare soft stranded No. 16 AWG copper in accordance with ASTM B3.
  - b. Class B stranded tinned copper in accordance with ASTM B8.
  - c. PVC with nylon armor insulation.
  - d. Twisted pairs color coded in accordance with NEMA WC-5 Method I Table K-2, and numbered.
  - e. Individual and overall aluminum Mylar shields and seven strand tinned copper drain wires.
  - f. Overall black FR-PVC 90 degrees Celsius 600 volt sunlight resistant jacket.

- g. UL listed for installation in cable trays in accordance with NEC 318 Class 1, Division 2 hazardous areas in accordance with NEC 340 and for direct burial.

G. Joints, Taps, and Splices:

1. Joints, Taps, and Splices in Conductors No. 10 AWG and Smaller: UL listed preinsulated compression spring-type solderless connectors.
2. Joints, Taps, and Splices in Conductors No. 8 AWG and Larger: Solderless two or four-bolt compression type connectors of type that will not loosen under vibration or normal strains.

H. Terminations:

1. Power Conductors: Compression crimp type lugs.
2. Control and Instrumentation Conductors: Compression crimp type fork tongue, insulated support type lugs on terminal strips. Do not splice.

### PART 3 – EXECUTION

#### 3.01 RACEWAY SYSTEMS

A. Exterior or Wet Locations:

1. Refer to Space Environment and Hazardous Ratings Schedule on Drawings for determination of the Exposure type of each space in which conduit is to be installed. Refer to Material Schedule on Drawings for conduit material to be utilized within each Exposure type.

B. Indoor Dry Locations:

1. Refer to Space Environment and Hazardous Ratings Schedule on Drawings for determination of the Exposure type of each space in which conduit is to be installed. Refer to Material Schedule on Drawings for conduit material to be utilized within each Exposure type.
2. Connection to Vibrating Equipment (including transformers and hydraulic, pneumatic, or electric solenoid or motor-driven equipment): Liquidtight flexible metal conduit.

C. Hazardous classified locations:

1. Refer to Space Environment and Hazardous Ratings Schedule on Drawings for determination of the Exposure type of each space in which conduit is to be installed. Refer to Material Schedule on Drawings for conduit material to be utilized within each Exposure type.

- D. Use 3/4 inch minimum trade size conduit unless otherwise noted except conduit runs to room light switches may be 1/2 inch.

- E. Examine surfaces to receive raceways, wireways, and fittings for compliance with installation tolerances and other conditions affecting performance of raceway system.

- F. Coordinate layout and installation of raceway and boxes with other construction elements to ensure adequate headroom, working clearance, and access.

- G. Complete conduit installation prior to installing cables.

- H. Raceway systems shall be continuous from outlet to outlet and from outlets to cabinets, junction or pull boxes.

- I. Enter and secure to boxes ensuring electrical continuity from point of service to outlets.

- J. Provide watertight conduit system where installed in wet places, underground or where buried in masonry or concrete.



1. Use threaded hubs when entering top of enclosures.
  2. Use sealing type locknuts when entering sides or bottom of enclosures.
- K. Conduit runs extending through areas of different temperature or atmospheric conditions or partly indoors and partly exterior shall be sealed, drained, and installed in manner preventing drainage of condensed or entrapped moisture into cabinets, motors or equipment enclosures.
- L. Route conduit runs above suspended acoustical ceilings not interfering with tile panel removals.
- M. Cap conduits after installation to prevent entry of debris.
- N. Connections to motors and equipment subject to vibration shall be a maximum of 3 feet long. Locate where least subject to physical abuse.
- O. Install conduit expansion fittings complete with bonding jumper in following locations.
1. Conduit runs crossing structural expansion joint.
  2. Conduit runs attached to two separate structures.
  3. Conduit runs where movement perpendicular to axis of conduit may be encountered.
- P. Keep raceways at least 6 inches away from parallel runs of flues and steam or hot water pipes. Install horizontal raceway runs above water and steam piping.
- Q. Install separate ground conductor inside flexible conduit connections.
- R. Use explosionproof fittings and seals in hazardous areas in accordance with NEC.
- S. PVC Coated Galvanized Rigid Steel Conduit: Use only fittings approved for use with that material. Patch nicks and scrapes in PVC coating after installing conduit.

### 3.02 BOXES

- A. Cap unused knockout holes where blanks have been removed and plug unused conduit hubs.
- B. Do not burn holes, use knockout punches or saw.
- C. Provide outlet box accessories as required for each installation such as mounting brackets, fixture studs, cable clamps, and metal straps for supporting outlet boxes compatible with outlet boxes being used and meeting requirements of individual wiring situations.
- D. Sizes shall be adequate to meet NEC volume requirements, but in no case smaller than sizes indicated.
- E. Location of outlets and equipment shown on Drawings is approximate. Verify exact location.
- F. Flush outlets shall have edges or plaster flush with finished wall or ceiling surfaces so plates can be drawn tightly to wall or ceiling surfaces.
- G. Minor modification in location of outlets and equipment is considered incidental up to distance of 10 feet with no additional compensation, provided notification of modification is given prior to roughing in of outlet.
- H. Pull and Junction Boxes:
1. Refer to Space Environment and Hazardous Ratings Schedule on Drawings for determination of the Exposure type of each space in which box is to be installed. Refer to Material Schedule on Drawings for material and NEMA enclosure type to be utilized within each Exposure type.

- 2. NEMA 7 in Class I hazardous classified locations. When located in exterior locations or in wet locations provide O-ring/gasket or equivalent making box suitable for outdoor use.
- I. Do not install boxes back to back or through wall. Offset outlet boxes on opposite sides of wall, minimum 12 inches apart.

3.05 WIRE AND CABLE

- A. Install wires and cables as indicated, according to manufacturer's written instructions and NECA "Standard of Installation".
- B. Run wire and cable in conduit unless otherwise indicated on Drawings.
- C. On branch circuits, use standard colors.
- D. Run ground wire with power circuits; conduit shall not be grounding path.
- E. Provide separate conduit systems for following.
  - 1. Line voltage control.
  - 2. Low voltage control.
  - 3. Shielded instrumentation.
  - 4. As required by NEC.
- F. Terminate control, instrumentation, and communication cables on terminal strips in separate terminal cabinets located near conduit entrances of buildings or as shown on Drawings.
- G. Color Coding: Conductors for lighting and power wiring as indicated below.

Phase	208/120 volts	480/277 volts
A	Black	Brown
B	Red	Orange
C	Blue	Yellow
Travelers	Pink	Purple
Neutral	White	White with non-green stripe
Ground	Green	Green

3.06 JOINTS, TAPS, AND SPLICES

- A. Where pre-insulated spring connectors are used for motor and equipment connections, tape connector to wire to prevent loosening under vibration.
- B. Each tap, joint or splice in conductors No. 8 AWG and larger shall be taped with two half-lap layers of vinyl plastic electrical tape and finish wrap of color coding tape where required by code.
- C. Cable splices shall be made only in distribution boxes and junction boxes.

END OF SECTION

SECTION 26 05 13  
MEDIUM-VOLTAGE CABLE

**PART 1 – GENERAL**

1.01 SUMMARY

A. Section Includes:

1. Single and multiple conductor cables and splices, terminations, and accessories for 12,470-volt electrical distribution systems.

1.02 SUBMITTALS

A. Product Data:

1. Cables and cable accessories descriptions and detailed specifications.
2. Terminations.

B. Test Results:

1. Certified reports of manufacturers' factory production and final tests indicating compliance of cable and accessories with referenced standards.
2. Certified reports of field tests and observations.

C. Operations and Maintenance Data:

1. Maintenance data for cables and accessories.
2. Manufacturer's written instructions for periodic tests of cables in service.
3. Submit in accordance with Section 01 78 23.

D. Submit in accordance with Section 01 33 00.

1.03 QUALITY ASSURANCE

A. Installer Qualifications: Engage experienced Installer of medium- voltage electrical cable to perform installation specified in this section. In addition, for specific work of cable splicing and terminating, engage Installers who are experienced in cable splices for specific types of cable and cable accessories specified in this Section.

B. Manufacturers Qualification:

1. At least 20 yrs service record for Ethylene Propylene Rubber (EPR) insulation system development and in-house mixing.
2. Manufacture under Quality Assurance System modeled after Appendix B of Federal Register 10 CFR 50 and American National Standards Institute (ANSI) N45.2.

C. Items provided under this section shall be listed and labeled by Underwriters Laboratories, Inc. (UL) or other Nationally Recognized Testing Laboratory (NRTL).

1. Term "NRTL" shall be as defined in Occupational Safety and Health Administration (OSHA) Regulation 1910.7.
2. Terms "listed" and "labeled" shall be as defined in National Electrical Code (NEC), Article 100.

D. Regulatory Requirements:

1. NEC: Components and installation shall comply with National Fire Protection Association (NFPA) 70.
2. Institute of Electrical And Electronics Engineers (IEEE) Compliance: Comply with applicable IEEE standards including C2 "National Electrical Safety Code."

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Deliver medium-voltage cable on factory reels conforming to National Electrical Manufacturers Association (NEMA) Standard WC 26.
- B. Store cables on reels on elevated platforms in clean, dry location.

**PART 2 – PRODUCTS**

2.01 MANUFACTURERS

- A. Cable:
  1. Kerite Co.
  2. Okonite Co.
  3. General Cable Corporation.
  4. Or equal.
- B. Cable Terminating Products and Accessories:
  1. Adelet-PLM
  2. Electrical Products Division 3M.
  3. G&W Electric Co.
  4. The Kerite Co.
  5. Raychem Corp.
  6. RTE Components.

2.02 MEDIUM-VOLTAGE CABLE

- A. General: Cable shall be single conductor type MV-105, with types and sizes as indicated, and conforming to UL Standard 1072 and Insulated Cable Engineers Association (ICEA) S-93-639 / NEMA WC74.
- B. Cable: EPR insulated.
- C. Conductors: Class B stranded conforming to American Society for Testing and Materials (ASTM) B8, coated or uncoated annealed copper.
- D. Strand Screen: Energy suppression layer concentrically extruded over stranded conductor.
- E. Insulation: Type EPR with insulation thickness corresponding to 133% insulation level in accordance with referenced standard.
- F. Insulation Screen: Outer energy suppression layer concentrically extruded directly over insulation.
- G. Metallic Shielding: Copper shielding tape, helically applied over semiconducting insulation shield or evenly spaced solid copper wires applied concentrically over semiconducting conductor shielding.
- H. Jacket: Black polyvinyl chloride (PVC) outer jacket.
- I. Phase Identification: Color coded black, red, and blue field-applied colored vinyl tape on outer jacket.

J. Cable Voltage Rating: 15 kilovolts (kV) phase to phase.

K. Cable Temperature Rating:

1. 105 degrees Celsius normal operation.
2. 140 degrees Celsius emergency operation.
3. 250 degrees Celsius short circuit conditions.

## 2.03 TERMINATING PRODUCTS

A. Comply with following standards:

1. IEEE 48
2. IEEE 400
3. IEEE 404
4. IEEE 592
5. UL 486A

B. Types: Compatible with cable materials.

C. Connectors: Compression type as recommended by cable or //and termination// splicing kit manufacturer for application.

D. Terminating Kits: As recommended by manufacturer in writing for specific sizes, ratings, and configurations of cable conductor terminations specified. Kits shall contain components required for complete splice or termination including detailed instructions and shall be product of single manufacturer. Completed terminations shall provide insulation equivalent to insulation class of cable it connects.

E. Conductor Terminations, General:

1. Comply with class of IEEE Standard 48 indicated.
2. Insulation class shall be equivalent to that of cable upon which they are installed. Terminations for shielded cables shall include shield grounding strap. Cable terminations shall include effective moisture seal for end of insulation whether or not this item is included in termination kits. Seal shall be cold shrink rubber sleeve, or heat shrink plastic sleeve as recommended by kit manufacturer. Termination kits shall be performance tested for compliance with IEEE Standard 48 and shall be of following types:
3. Class 1 Termination for Indoor Shielded Cable: Heat-shrinkable type with heat-shrinkable or cold over-roll inner stress control and outer nontracking tubes, multiple molded nontracking skirt modules, and compression-type connector.

## PART 3 – EXECUTION

### 3.01 EXAMINATION

A. Examine raceways, cable trays, pull boxes, manholes, handholes, junction boxes, and other cable installation locations for cleanliness of raceways, minimum bending radii of cables, and conditions affecting performance of cable. Pull mandrel through raceways to check for suitable conditions. Do not proceed with cable installation until unsatisfactory conditions have been corrected.

### 3.02 INSTALLATION, GENERAL

A. Install cable accessory items in accordance with manufacturer's written instructions and as indicated.

### 3.03 INSTALLATION OF CABLES

- A. Pull conductors simultaneously where more than 1 cable is indicated in same raceway. Use UL-listed and manufacturer-approved pulling compound or lubricant where necessary. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- B. Use pulling means including, fish tape, cable, rope, and basket weave wire/cable grips that will not damage cables or raceways. Do not use rope hitches for pulling attachment to cable.
- C. In manholes, handholes, pull boxes, junction boxes and cable vaults, train cables around walls by longest route from entry to exit and support cables at intervals adequate to prevent sag.

### 3.04 INSTALLATION OF TERMINATIONS

- A. Install terminations at ends of conductors and seal multiconductor cable ends with standard kits. Conform to manufacturer's written instructions. Comply with classes of terminations indicated.
- B. Tighten electrical connectors and terminals in accordance with manufacturer's published torque tightening values. Where manufacturer's torquing requirements are not indicated, tighten connectors and terminals to comply with tightening torques specified in UL 486A and UL 486B.

### 3.05 GROUNDING

- A. Ground shields of shielded cable at terminations, splices, and separable insulated connectors. Ground metal bodies of terminators, splices, cable and separable insulated connector fittings, and hardware in accordance with manufacturer's written instructions.

### 3.06 IDENTIFICATION

- A. Provide identification for cable.

END OF SECTION

SECTION 26 05 73  
POWER SYSTEM STUDIES

**PART 1 – GENERAL**

1.01 SUMMARY

A. Section Includes:

1. Short circuit study, protective device evaluation study, protective device coordination study, and arc flash study on the Main Switchgear.
2. Portions of electrical distribution system from normal and alternate sources of power throughout distribution system. Normal system operating method, alternate operation, and operations which could result in maximum fault conditions and maximum incident energy shall be covered in study.
3. Second overcurrent protection settings group for Arc Flash Maintenance System.

B. Contractor shall engage services of independent engineering firm for purpose of performing electric power system studies as specified.

1.02 SUBMITTALS

A. Study Report:

1. Provide summary of results of power system study in final report.
2. Include:
  - a. Description, purpose, basis, and scope of study and single line diagram of power system.
  - b. Tabulations of circuit breaker, fuse, and other protective device ratings versus calculated short circuit duties and commentary regarding same.
  - c. Protective device time versus current color coordination curves, tabulations of relay and circuit breaker trip settings, fuse selection, and commentary regarding same.
  - d. Fault current calculations including definition of terms and guide for interpretation of computer printout.
  - e. Tabulation of appropriate tap settings for relay units.
  - f. Arc flash calculations and tabulation of incident energy level calories /square centimeter (cal/cm<sup>2</sup>) for each equipment location and recommended personal protective equipment (PPE).

B. Submit in accordance with Section 01 33 00.

1.03 QUALITY ASSURANCE

A. Regulatory Requirements:

1. National Electric Code (NEC): Components and installation shall comply with National Fire Protection Association (NFPA) 70.
2. National Electric Safety Code (NESC): Components and installation shall comply with American National Standards Institute (ANSI) C2.
3. Standard for Electrical Safety in the Work Place: National Fire Protection Association (NFPA) 70E.

B. Qualifications of engineering firm.

1. Corporately and financially independent engineering organization which can function as unbiased engineering authority, professionally independent of manufacturers, suppliers and installers of equipment or systems studied as specified.
2. Study report shall be signed and sealed by Professional Engineer registered in same State as project location.
3. Engineering organization may be same as testing organization.

## **PART 2 – PRODUCTS**

(Not Used)

## **PART 3 – EXECUTION**

### **3.01 STUDIES**

A. Studies include following.

1. Utility Company incoming service lines.
2. Main Switchgear Main and Tie Circuit Breakers
3. Main Switchgear Feeder Fused Switches
4. Co-Gen Facility Switchgear and Generators
5. Cable, wire, and conduit systems.

B. Studies do not include equipment as shown on Drawings indicated as future.

C. Contractor and company performing the power system studies are responsible for gathering information on the equipment and conductors required to perform the power system studies.

### **3.02 SHORT CIRCUIT STUDY**

A. Provide complete report with printout data sheets using digital computer type program as part of study.

B. Include utilities' short circuit contribution, resistance and reactance components of branch impedances, X/R ratios, base quantities selected, and other source impedances.

C. Calculate short circuit momentary duty values and interrupting duty values based on assumed 3-phase bolted short circuit at switch gear base medium voltage controller, switchboard, low voltage Motor Control Center (MCC), distribution panelboard, pertinent branch circuit panel, and other significant locations through system. Include short circuit tabulation of symmetrical fault currents and X/R ratios. List with respective X/R ratio each fault location, total duty on bus, and individual contribution from each connected branch.

### **3.03 EQUIPMENT DEVICE EVALUATION STUDY**

A. Provide protective device evaluation study to determine adequacy of circuit breakers, molded case switches, automatic transfer switches, knife switches, controllers, surge arresters, busways, and fuses by tabulating and comparing short circuit ratings of these devices with calculated fault currents. Apply appropriate multiplying factors based on system X/R ratios and protective device rating standards. Notify Engineer of problem areas or inadequacies in equipment due to short circuit currents and provide suggested alternate equipment.

### **3.04 EQUIPMENT DEVICE COORDINATION STUDY**

A. Provide protective device coordination study with necessary calculations and logic decisions required to select or check selection of power fuse ratings, protective relay characteristics and settings, ratios and characteristics of associated current transformers, and low voltage breaker



trip characteristics and settings. Objective of study to obtain optimum protective and coordination performance from these devices.

- B. Include as part of coordination study, medium and low voltage classes of equipment from utility's incoming line protective device down to and including largest rated device in 480 volt MCCs and panelboards. Include phase and ground overcurrent protection as well as settings of other adjustable protective devices.
- C. Draw time-current characteristics of specified protective devices in color on log-log paper or computer printout. Include with plots complete titles, representative one-line diagram and legends, associated Power Company's relays or fuse characteristics, significant motor starting characteristics, complete parameters of transformers, complete operating bands of low voltage circuit breaker trip curves and fuses. Indicate types of protective devices selected, proposed relay taps, time dial and instantaneous trip settings, transformer magnetizing in-rush and ANSI transformer withstand parameters, cable thermal overcurrent withstand limits, and significant symmetrical and asymmetrical fault currents. Provide coordination plots for phase and ground protective devices on system basis. Provide sufficient number of separate curves to indicate coordination achieved.
- D. Provide separate selection and settings of protective devices in tabulated form listing circuit identification, Institute of Electrical and Electronics Engineers (IEEE) device number, current transformer ratios and connection, manufacturer and type, range of adjustment, and recommended settings. Tabulate recommended power fuse selection for medium voltage fuses where applied in system. Notify Engineer of discrepancies, problem areas or inadequacies and provide suggested alternate equipment ratings and/or settings.
- E. Provide second settings group for GE 850 relays that is activated when the Arc Flash Maintenance System control switch is activated. Second settings group shall achieve reduced tripping time by temporarily reducing system coordination while active.

### 3.05 ARC FLASH STUDY

- A. Provide Incident Energy Study – An incident energy study shall be done in accordance with the IEEE 1584, "IEEE Guide for Performing Arc Flash Hazard Calculations" as referenced in NFPA 70E, "Standard for Electrical Safety in the Workplace", in order to quantify the hazard for selection of personal protective equipment (PPE).
- B. Adjust system design to optimize the results of the study as it relates to safety and reliable electrical system operation (e.g. overcurrent device settings, current limiting devices). This includes mitigation, where possible, of incident energy levels that exceed 40 cal/cm<sup>2</sup>. Provide suggested alternate equipment and settings to minimize incident energy levels.
- C. Provide incident energy level (cal/cm<sup>2</sup>) for each equipment location and recommended PPE.
- D. Based on the results of the incident energy study provide and install a warning label (orange <40 cal/cm<sup>2</sup>) or danger label (red > 40 cal/cm<sup>2</sup>) for each piece of equipment. The label must be readable in both indoor and outdoor environments and contain the following information:
  - 1. Arc hazard boundary (feet and inches)
  - 2. Working distance (feet and inches)
  - 3. Arc flash incident energy at the working distance (cal/cm<sup>2</sup>)
  - 4. Voltage rating of the equipment
  - 5. Limited approach distance (feet and inches)
  - 6. Restricted approach distance (feet and inches)
  - 7. Equipment/bus name
  - 8. Date prepared

### 3.06 PROTECTIVE DEVICE TESTING, CALIBRATION, AND ADJUSTMENT

A. Contractor shall implement settings as recommended by the Study.

END OF SECTION

*Not to be used for bidding purposes*

SECTION 26 13 00  
MEDIUM VOLTAGE SWITCHGEAR MODIFICATIONS

**PART 1 - GENERAL**

1.01 SUMMARY

A. Section Includes:

1. Modifications to existing medium-voltage switchgear including:
  - a. Relays
  - b. Bus potential transformers
  - c. Circuit breaker remote racking mechanisms
  - d. Switchgear inspection and maintenance
  - e. Automatic Transfer Scheme Sequence of Operations
2. Contractor shall be responsible for the configuration and setup of the feeder protection relays and circuit breaker remote racking systems provided as part of the switchgear modifications.
3. See Section 40 67 15 for Switchgear Control Panel CP-SWGR construction.

1.02 SUBMITTALS

A. Product Data: For each component, including following:

1. Features, characteristics, and ratings of individual equipment.
2. Time-current characteristic curves for overcurrent protective devices.

B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loadings, required clearances, method of field assembly, components, and location and size of each field connection. Include following:

1. Schematic and Wiring Diagrams: Contractor shall create a new, complete set of switchgear schematic and wiring drawings that updates the existing drawing set. The drawing set shall include both the new features added by the Contractor as well as the existing features that are unchanged by the project. Verification of the correctness of the existing features is the responsibility of the Contractor.

C. Programming Software: Provide software program for the protective relays in electronic format. The program shall include all final settings and Flexlogic used for operation of the automatic transfer system. Any software applications required for viewing, editing or loading the software into the protective relays shall be included.

D. Test Results:

1. Field Test Reports: Indicate and interpret test results for compliance with performance requirements.
2. Product Test Reports: Indicate compliance of switchgear with requirements.

E. Miscellaneous:

1. Manufacturer field service report.
2. Certificates for field testing agency, signed by Contractor, certifying that agency complies with requirements specified in "Quality Assurance" Article below.
3. Report of Field tests and Observations: Certified by testing agency.

F. Operation and Maintenance Data:

1. Submit in accordance with Section 01 33 00.

G. Submit in accordance with Section 01 33 00.

1.03 QUALITY ASSURANCE

A. Manufacturer Qualifications: Engage firm experienced in manufacturing switchgear similar to those indicated for this Project and with record of successful in-service performance.

B. Items provided under this section shall be listed or labeled by UL or other Nationally Recognized Testing Laboratory (NRTL).

1. Term "NRTL" shall be as defined in OSHA Regulation 1910.7.
2. Terms "listed" and "labeled" shall be as defined in National Electrical Code (NEC), Article 100.

C. Regulatory Requirements:

1. NEC: Components and installation shall comply with National Fire Protection Association (NFPA) 70.

D. Comply with Institute of Electrical and Electronics Engineers (IEEE) C2.

1.04 COORDINATION

A. Coordinate layout and installation of equipment with other construction.

**PART 2- PRODUCTS**

2.01 PILOT DEVICES

A. Medium Voltage Switchgear Cubicles: Match Existing.

B. Main Switchgear Control Panel CP-SWGR: Refer to Section 40 67 15.

2.02 RELAYS

A. Manufacturers:

1. GE Multilin 850
2. No substitutes.

B. Part No.: 850-E-P5-NN-G5-H-N-N-A-A-A-G-S-P-C-B-SE-N-N-B-N

2.03 BUS POTENTIAL TRANSFORMERS

A. Manufacturers:

1. AMRAN Instrument Transformers
2. ABB/GE
3. Flex-Core
4. Or Equal

B. General:

1. Located in custom-built, free standing, NEMA 1 metal enclosures.

C. Potential Transformers:

1. Comply with IEEE C57.13.
2. Primary voltage: 12470V
3. Secondary voltage: 120V
4. Insulation class: 15.5kV
5. 110kV BIL
6. Primary fuses: One Fuse, one bushing, sized per manufacturer's recommendations.
7. Secondary fuses: 10A
8. Accuracy class: 0.3 WXYZ, 1.2ZZ at 100% rated voltage with 120V based ANSI burden.

2.04 CIRCUIT BREAKER REMOTE RACKING SYSTEM

A. Manufacturers:

1. Eaton Motorized Remote Racking (MR2)
2. No substitutions

B. Remote Racking System:

1. Motorized racking mechanism powered from internal switchgear CPT.
2. Disconnect, test, and connect breaker positions.
3. Pendant station with minimum 30 feet of cord to operate portable circuit breaker racking system remotely.
4. MODBUS interface to communicate signals back to plant SCADA system. See instrumentation drawings.
5. Provide a RJ45 Ethernet panel interface connector for handheld pendant to interface with MR2 remote racking controller. The connector is front-of-panel mounted type, and manufactured by Grace Technologies or equal

2.05 ARC FLASH MAINTENANCE SYSTEM CONTROL SWITCH

A. 43 selector switch manufactured by Electro Switch Series 24, oval shank style.

1. Switches installed on 52M1, 52T, and 52M2 sections.
2. Feature shall activate a second settings group in reach relay. Setting shall be adjustable down to the minimum instantaneous setting available, and shall be enabled by two position selector switch (ON/OFF) mounted on front of gear. Provide with push to test blue LED indicating light adjacent to selector switch for Arc Flash Maintenance System Active.

2.06 SWITCHGEAR INSPECTION AND MAINTENANCE

- A. Provide inspection and maintenance on three switchgear sections and circuit breakers. Switchgear is Eaton/Cutler-Hammer type VAC-CLAD-W metal-clad switchgear. Circuit breakers are Eaton/Cutler-Hammer type 150VCP-W500. Provide in accordance with manufacturer's instructions; Eaton/Cutler-Hammer original installation instruction booklets IB 32-255 and IB 32-255-1F.

2.07 MAIN SWITCHGEAR CONTROL DESCRIPTION

- A. This paragraph provides information to describe the sequence of operations for the Main Switchgear Main and Tie circuit breakers. This information is complementary to the information shown on the Drawings.

B. The following equipment and devices are referenced throughout:

1. Main Switchgear – located at the Main Switchgear Building, including the following:

- a. Main Circuit Breaker 52M1 (South) and 850M1 relay
  - b. Main Circuit Breaker 52M2 (North) and 850M2 relay
  - c. Tie Circuit Breaker 52T and 850T relay
2. Switchgear Control Panel CP-SWGR – located in the Main Pump Building Office
  3. Co-Gen Switchgear – Located in the Co-Gen Building Control Room
  4. Co-Gen PLC – Located in the Co-Gen Building Control Room
  5. Auto/Manual selector switch – located at Cubicle 2A of the Main Switchgear
  6. Automatic Transfer Scheme – GE Multilin 850 relay based automatic transfer scheme. Open transition transfer, closed transition (less than 100ms) retransfer.
  7. Initiate Transfer Pushbutton – Located at Cubicle 2A of the Main Switchgear and CP-SWGR.
- C. Automatic Transfer Scheme

1. Initial Conditions: The Auto Transfer Scheme is put into operation by placing Auto/Manual switch into Auto. The Auto Transfer Scheme is Ready for Auto Transfer when the following conditions are met:
  - a. All lockout relays are Reset.
  - b. All protective relay trips from the Multilin 850 relay are Reset.
  - c. Multilin 850 relay status is Normal.
  - d. Circuit breakers 52M1, 52M2 and 52T in the "Connected" position.
2. Automatic Transfer: The automatic transfer scheme shall operate automatically, without operator intervention, if an undervoltage condition is detected on the ComEd source connected to the switchgear. Undervoltage is defined as the condition when the voltage on the source feeder drops below a set threshold for a set period of time. Under this condition, the Automatic Transfer Scheme shall perform an Open Transition source transfer as follows:
  - a. Trip the source circuit breaker (52M1 or 52M2).
  - b. Trip the cogeneration system (via relay RQTR) if it is operating
  - c. Verify the cogeneration system is off-line (via relay CTR)
  - d. Perform a source transfer as follows:
    1. If the second source is Normal, then transfer service to the second ComEd source.
    2. If the second service is not Normal, then continue operating with both main circuit breakers, 52M1 and 52M2, Open.
    3. If one of the two ComEd sources returns to Normal, then transfer service to the healthy source by closing the main circuit breaker. Close tie circuit breaker 52T if it is Open.
    4. If both of the ComEd sources return to Normal simultaneously, then transfer service to 52M1.
  - e. A retransfer to the opposite source (52M2 or 52M1) shall only be performed via a Manually Initiated Automatic Transfer by an Operator.
3. Manually Initiated Automatic Transfer – When the Initiate Transfer pushbutton is pressed the automatic transfer scheme shall perform a closed transition (less than 100ms) source transfer to the opposite utility source if the following conditions are met:
  - a. ComEd voltage to 52M1 and 52M2 is normal.
  - b. Initial conditions are satisfied.
  - c. Auto/Manual switch is in Auto.
4. Loss of two sources – In the case where both ComEd sources are lost at the same time while the two main breakers are closed, the two main breakers will open.

D. Main Circuit Breaker 52M1 (South)

1. When the Auto/Manual switch is placed in Manual, the circuit breaker may be closed from the control switch on the front of Main Switchgear or CP-SWGR if the following conditions are satisfied:
  - a. 52T is closed AND 52M2 is open OR 52T is open
  - b. Clear to transfer contact from Co-Gen PLC is closed (contact closes when all Co-Gen Switchgear generator circuit breakers are open and not in Standby OR Co-Gen Switchgear main circuit breaker is open) AND
  - c. Remote trip contact from Co-Gen PLC is closed (contact opens when remote trip is requested via the Co-Gen PLC) AND
  - d. Sync check contact is closed (contact closes when 850M1 relay verifies that line and load voltages for 52M1 are synchronized) AND
  - e. 52M1 lockout relay contact is closed (contact opens when 850M1 relay detects a fault)
2. When the Auto/Manual switch is placed in Auto, the circuit breaker may be closed by the automatic transfer scheme if the following conditions are satisfied:
  - a. Clear to transfer contact from Co-Gen PLC is closed (contact closes when all Co-Gen Switchgear generator circuit breakers are open and not in Standby OR Co-Gen Switchgear main circuit breaker is open) AND
  - b. Remote trip contact from Co-Gen PLC is closed (contact opens when remote trip is requested via the Co-Gen PLC) AND
  - c. Sync check contact is closed (contact closes when 850M1 relay verifies that line and load voltages for 52M1 are synchronized) AND
  - d. 52M1 lockout relay contact is closed (contact opens when 850M1 relay detects a fault)
3. When the Auto/Manual switch is placed in Manual, the circuit breaker may be tripped from the control switch on the front of CP-SWGR if the following conditions are satisfied:
  - a. Clear to transfer contact from Co-Gen PLC is closed (contact closes when all Co-Gen Switchgear generator circuit breakers are open and not in Standby OR Co-Gen Switchgear main circuit breaker is open)
4. When the Auto/Manual switch is placed in Auto, the circuit breaker may be tripped by the automatic transfer scheme if the following conditions are satisfied:
  - a. Clear to transfer contact from Co-Gen PLC is closed (contact closes when all Co-Gen Switchgear generator circuit breakers are open and not in Standby OR Co-Gen Switchgear main circuit breaker is open)
5. The circuit breaker may be tripped at any time by the following devices, regardless of the position of the Auto/Manual switch:
  - a. 850M1 relay
  - b. Lockout relay
  - c. Remote trip request from Co-Gen PLC
  - d. Circuit breaker control switch on the front of Main Switchgear

E. Main Circuit Breaker 52M2 (North)

1. Operation and conditions are the same as 52M1. Replace instances of 52M1 with 52M2, 52M2 with 52M1, and 850M1 with 850M2 in the Control Description.

F. Tie Circuit Breaker 52T

1. When the Auto/Manual switch is placed in Manual, the circuit breaker may be closed from the control switch on the front of Main Switchgear or CP-SWGR if the following conditions are satisfied:
  - a. 52M1 is open OR 52M2 is open OR 52M1 AND 52M2 are open
  - b. Clear to transfer contact from Co-Gen PLC is closed (contact closes when all Co-Gen Switchgear generator circuit breakers are open and not in Standby OR Co-Gen Switchgear main circuit breaker is open) AND
  - c. Sync check contact is closed (contact closes when 850T relay verifies that line and load voltages for 52T are synchronized) AND
  - d. 52T lockout relay contact is closed (contact opens when 850T relay detects a fault)
2. When the Auto/Manual switch is placed in Auto, the circuit breaker may be closed by the automatic transfer scheme if the following conditions are satisfied:
  - a. Sync check contact is closed (contact closes when 850T relay verifies that line and load voltages for 52T are synchronized) AND
  - b. 52T lockout relay contact is closed (contact opens when 850T relay detects a fault)
3. When the Auto/Manual switch is placed in Manual, the circuit breaker may be tripped from the control switch on the front of CP-SWGR if the following conditions are satisfied:
  - a. Clear to transfer contact from Co-Gen PLC is closed (contact closes when all Co-Gen Switchgear generator circuit breakers are open and not in Standby OR Co-Gen Switchgear main circuit breaker is open) OR
  - b. 52M1 is open AND 52M2 is open.
4. When the Auto/Manual switch is placed in Auto, the circuit breaker may be tripped by the automatic transfer scheme if the following conditions are satisfied:
  - a. Clear to transfer contact from Co-Gen PLC is closed (contact closes when all Co-Gen Switchgear generator circuit breakers are open and not in Standby OR Co-Gen Switchgear main circuit breaker is open) OR
  - b. 52M1 is open AND 52M2 is open.
5. The circuit breaker may be tripped at any time by the following devices, regardless of the position of the Auto/Manual switch:
  - a. 850T relay
  - b. Lockout relay
  - c. Circuit breaker control switch on the front of Main Switchgear

## 2.08 IDENTIFICATION

- A. Materials: Refer to Section 26 05 10. Identify units, devices, controls, and wiring.

## PART 3- EXECUTION

### 3.01 INSTALLATION

- A. Locations and Layout: Exact locations and physical layout of equipment and components may be varied as required to suit manufacturer's design and as approved, provided required functions and operations are accomplished; follow identification of units indicated on Drawings exactly to ease checking and building maintenance procedures.



### 3.02 IDENTIFICATION

- A. Identify field-installed wiring and components and provide warning signs as specified in Section 26 05 10.

### 3.03 CONNECTIONS

- A. Tighten bus joint, connector, and terminal bolts according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

### 3.04 COORDINATION STUDY

- A. Where coordination study specified in Section 26 05 73 recommends changes in types, classes, features or ratings of equipment or devices from those indicated, make written request for instructions. Obtain instructions from Engineer before ordering equipment or devices recommended to be changed.

### 3.05 FIELD QUALITY CONTROL

#### A. Manufacturer's Field Services:

1. Supplier's or manufacturer's representative for equipment specified herein shall be present at jobsite for workdays indicated, travel time excluded, for assistance during construction, and startup. Include:
  - a. Eaton – Circuit Breaker Remote Racking System
    - 1) 5 workdays for Installation and Testing Services.
    - 2) 1 workday for Post Startup Services.
2. Supplier or manufacturer shall direct services to system and equipment operation, maintenance, troubleshooting, and equipment and system-related areas. See Section 01 61 00.
3. In addition to the services above, provide manufacturer's services as required to successfully complete systems demonstration as specified in Section 01 79 10.

- B. Remove and replace malfunctioning units with new units and retest.

### 3.06 ADJUSTING

- A. The programming and configuration of the GE Multilin relays and integration into the Owner's existing Process Control System (PCS) is the responsibility of the Contractor.

- B. Protective-Relay Settings: Verify that settings are appropriate for final system configuration and parameters. Where discrepancies are found, recommend final relay settings for approval before making final adjustments.

1. Set field adjustable pick-up and time sensitivity ranges in accordance with Section 26 05 73.

- C. Fuse Characteristics: Verify that fuse size and types are appropriate for final system configuration and parameters. Where discrepancies are found, recommend fuse selection for approval before making final adjustments.

### 3.07 TRAINING AND DEMONSTATION

- A. Train Owner's personnel in following:

1. Train Owner's personnel on procedures and schedules related to sequence of operations, startup and shutdown, troubleshooting, servicing, and preventive maintenance.
2. Review data in maintenance manuals. Refer to Section 01 78 23.

END OF SECTION

*Not to be used for bidding purposes*

**DIVISION 40**

**PROCESS INTERCONNECTIONS**

*Not to be used for bidding purposes*

*Not to be used for bidding purposes*

SECTION 40 61 13  
PROCESS CONTROL SYSTEM (PCS) GENERAL PROVISIONS

**PART 1 – GENERAL**

1.01 SUMMARY

- A. Section covers general provisions and requirements for all work necessary for engineering, furnishing, installing, adjusting, testing, documenting, programming, and starting-up the complete process control system.
- B. Unless otherwise noted, the System Integrator shall assume responsibility for Specification Sections:
  - 1. Process Control System I/O Listing Section 40 61 93.
  - 2. Control Panels Section 40 67 15.

1.02 REFERENCES AND ABBREVIATIONS

A. References:

- 1. ANSI: American National Standards Institute
- 2. CSA: Canadian Standards Association
- 3. EN: European Standards (generic)
- 4. FM: Factory Mutual
- 5. IEC: International Electrotechnical Commission
- 6. IEEE: Institute of Electrical and Electronics Engineers
- 7. ISA: International Society of Automation
- 8. NEC: National Electrical Code
- 9. NEIS: National Electrical Installation Standards
- 10. NEMA: National Electrical Manufacturers Association
- 11. NIST: National Institute of Standards and Technology
- 12. NRTL: Nationally Recognized Testing Laboratory
- 13. NFPA: National Fire Protection Agency
- 14. OSHA: Occupational Safety and Health Administration
- 15. UL: Underwriters Laboratory

B. Abbreviations:

- 1. HMI: Human/Machine Interface
- 2. I&C: Instrumentation and Controls
- 3. I/O: Input / Output
- 4. LOS: Line of Sight
- 5. PC: Personal Computer
- 6. PCN: Process Control Network
- 7. PCS: Process Control System
- 8. PLC: Programmable Logic Controller
- 9. OIT: Operator Interface Unit
- 10. SCADA : Supervisory Control and Data Acquisition
- 11. UPS: Uninterruptible Power Supply

1.03 DEFINITIONS

- A. Process Control System: a complete, integrated system of PLCs, computers, instruments, devices, wireless and wired process control networks, software, application engineering, and ancillary equipment for monitoring and control of process systems.

- B. Process Control Network: a complete, integrated and secured communication network consisting of equipment and cabling providing communication between components of the Process Control System.
- C. System Integrator: an organization whose principal function is to design, program, configure, manufacture, install, and service the PCS. Who, under the direction of the Contractor, shall assume complete responsibility for: detail design, manufacture, installation, configuration, technically advising on and certifying correctness of installation, testing and adjusting, documenting and starting-up, and training of the complete PCS.

#### 1.04 SUBMITTALS

- A. In addition to the requirements of Section 01 33 00, the following information shall be provided in tabbed, booklet format covering all Project work.
- B. Shop Drawings:
  - 1. General:
    - a. Drawings shall include ancillary devices such as terminal strips, relays, fuses, utility lights and receptacles, fans, heaters, etc.
    - b. Typical drawings for multiple circuits or systems are not acceptable.
  - 2. Panel Layout Drawings - Drawings shall show all panel mounted devices to scale and dimensioned and shall include legend.
    - a. Include cross-reference to a bill of material for components used.
    - b. Component designations shall match those used on elementary schematic diagrams and physical component labeling required per Section 40 67 15.
    - c. Prepare in general accordance with NFPA 79, Annex D.
  - 3. Elementary Schematic Diagrams – Ladder type circuit diagrams prepared to facilitate the understanding of the system function for maintenance and fault detection.
    - a. Control devices shall be shown between vertical lines that represent control power wiring, with the left line representing control circuits common and right representing operating coils common except where permitted by Clause 9 of NFPA 79.
    - b. Control devices shall be shown on numbered horizontal lines (rungs) between the vertical lines.
    - c. Drawings shall include a cross referencing scheme used in conjunction with each relay, output device, limit switch, and other devices so that any contact related to a device can be readily located on the drawing.
    - d. Component designations shall be included for all devices, with the same designations used on panel layout drawings.
    - e. Each panel terminal within a terminal strip shall be numbered; when multiple terminal strips exist each shall be given a unique identification. Terminal strip identification shall be included on panel layout drawings.
    - f. All wires shall be numbered; wire numbers shall be applied to labels in accordance with Section 40 67 15. Wiring and devices external to panel shall be clearly identified.
    - g. Control devices shall utilize the symbology depicted in NFPA 79 and IEEE315.
    - h. Switch symbols shall be shown with utilities turned off and devices in their normal starting condition. Include control settings on the diagrams when available.
  - 4. Panel Interconnection Diagrams – Wiring interconnection diagrams prepared to show all signal and power wiring for external connections to control panels provided for the project.

Wire and cable tags information shall be provided to Contractor in an electronic format for use in physical wire and cable tagging.

- a. Drawings prepared on a per control panel basis.
  - b. Show interconnecting wiring between field devices and control panel.
  - c. Interconnecting wiring shall include wire and cable tag numbers.
  - d. Field device information shall include device tag and description, signal description, signal electrical characteristics, and range.
  - e. Control panel information shall include terminal strip identification and terminal number.
  - f. Drawings shall indicate source of control signal power.
  - g. Prepare drawings in accordance with requirements of NFPA 79.
5. Equipment layout drawings including processing equipment, I/O components, power supplies, and peripheral devices.
  6. PCS equipment layout drawings including detailed enclosure layouts for servers, switches and communications systems with overall dimensions and equipment bill of
  7. Process control network drawings showing connections between connected devices including PLCs, feeder protection relays, and other network devices. Drawings shall indicate network domain and device addresses, subnet masks, gateways, and other pertinent network address information.
  8. Electrical power, UPS, Grounding, and DC Power Schematics for all equipment.
  9. Heat calculations for all enclosures.
  10. Test reports.
- C. List of special tools (including software) required for instrument calibration, startup, checking, testing, parts replacement, troubleshooting, and maintenance of all components of the Process Control System. Identify any special tools specially designed or adapted for use on parts of this system.
- D. Product Data:
1. Catalog Information - Provide catalog information and descriptive literature on all equipment associated with the PCS.
  2. Product Data (Specification) Sheets – Provide product data sheets for each component provided under this Section. The purpose of the data sheets is to supplement the generalized catalog information provided by citing all specific features for each specific component (e.g., scale range, materials of construction, special options included). Product Data Sheets shall follow General ISA S20 format.
- E. Test Outline and Procedure Submittal
1. A detailed description of each specified test procedure and demonstration shall be submitted for approval. The decision of Engineer upon the acceptability of the procedure shall be final.
  2. It is required that this be a two-step submittal: outlines first followed, upon receipt of Engineer's approval, by specific test descriptions.
  3. Test descriptions shall be in sufficient detail to fully describe the specific tests to be conducted to demonstrate conformance with these Specifications.
  4. Provide detailed step-by-step field test procedure. Include proposed test documentation and sign-off sheets and punch list forms.
  5. Identify complete inventory of equipment to be tested at factory including make, model, and serial number. Label each piece of equipment.
- F. Operation and Maintenance (O&M) Data: Submit in accordance with Section 01 78 23.

1. Fully document copy of all application programs including PLC, PC and Server-based applications.

G. Record Drawings: Submit in accordance with Section 01 78 39.

#### 1.05 QUALITY ASSURANCE

- A. Contractor shall engage the services of a qualified System Integrator for the purposes of furnishing the Process Control System, providing technical assistance on the installation of System, and certifying the correctness of said installation.
- B. Equipment shall be of the latest and most modern design at the time of the Notice to Proceed.
- C. All software and firmware used in this project shall be the latest version that is compatible with each other at the time of the Notice to Proceed.
- D. Like items of equipment shall be end products of single manufacturer to achieve standardization for maintenance, spare parts, operation, and service.
- E. Coordination - In order to ensure timely performance of the contract and the System's conformance with specifications, coordination meeting(s) shall be held during the course of the project.
  1. Within 45 days of date of contract commencement, submit progress meeting schedule, submittal schedule, and activity schedule for final coordination by Owner/Engineer, Contractor, and Systems Integrator.
  2. Progress meetings shall be held at the project site and designated by Owner with Owner, Engineer's, Contractor's, Application Engineer, and System Integrator's representatives in attendance.
  3. Purpose of progress meetings is to obtain Owner/Engineer's clarification on intent of contract documents during submittal preparation and prior to HMI and PLC software configuration. Progress meeting(s) shall cover following:
    - a. Review of functional descriptions describing equipment operation.
    - b. Owner/Engineer selection of options.
    - c. Owner/Engineer review documentation.
  4. Prepare and submit startup schedule, coordinated with overall Construction Schedule including the following:
    - a. Review of wiring sign-off forms by Owner/Engineer.
    - b. I/O checkout by System Integrator.
    - c. Plant startup.
    - d. Training.
    - e. Post-startup services.

#### 1.06 SYSTEM INTEGRATOR RESPONSIBILITY

- A. System Integrator shall inspect equipment provided under this Section prior to shipment to Project sites.
- B. System Integrator shall coordinate work with Contractor to ensure that:
  1. All components provided are properly installed.
  2. All components provided are properly configured.
  3. The proper type, size, and number of control wires with conduits are provided.



4. Proper electric power circuits are provided for all components and systems.
- C. System Integrator shall be responsible for coordination of voltage levels and signal types for signals connected to Process Control System. Provide relays, signal isolators, termination or pull-up resistors, signal conditioners or other devices as required for proper interfacing and operation of non-compatible devices.
- D. System Integrator shall be responsible for establishing proper communication of all control system equipment as shown on drawings and specified.
- E. System Integrator shall be responsible for the operational testing of the HMI and PLC software programs.
- F. Systems Integrator shall coordinate with Owner and equipment supplier to provide all I/O's as shown on Drawings and as requested by the Owner.
- G. System Integrator shall coordinate Process Control Network addressing schemes with Owner and incorporate agreed upon scheme for all equipment on the PCS including vendor supplied equipment.
- H. All field located conduits, wiring and cables shall be provided in accordance with Division 26 – Electrical. Exceptions to this are copper Ethernet cable which shall be provided in accordance with Division 40.
- I. Modifications to existing control equipment.
  1. Owner will complete terminations in the PLC panels (SWT and PLC-MPS).
  2. Provide equipment necessary to affect changes to existing control equipment as shown on drawings and specified.
  3. Provide interposing relays and current-to-current isolation relays only as required to affect signal interfacing with non-compatible devices.
  4. Modify documents of existing control equipment to reflect new as-built conditions. Where documents of existing control equipment are not readily available, System Integrator is responsible for field verification and provision of document reflect as-built conditions. Submit drawings of modified existing control equipment per Section 01 33 00.
- J. Contractor shall furnish Owner with copy of all configured PLC application programs after on-site acceptance test.

#### 1.07 APPLICATION ENGINEERING SERVICES

- A. Application Engineering Services shall include the following:
  1. Develop written loop descriptions from the details shown on project drawings. These loop descriptions will define the proposed operation and control of the plant equipment and treatment systems affected by the work on this project.
  2. Supplying all HMI and PLC software fully configured for the project requirements
  3. Develop sample human machine interface (HMI) graphic screen layouts.
  4. PLC and HMI programming shall follow existing Plant programming guidelines and standards. Any and all deviations shall be approved by the Owner prior to initiating programming work.
  5. Develop PLC and HMI application software associated with the project.
  6. Install and test PLC and HMI application software developed by Application Engineer. Develop the alarm notification feature of the HMI software to alert Owner personnel of alarm conditions.
  7. Develop standard trends and set up custom trend features.

8. Prepare an operation and maintenance manual for the new PLC and HMI application software. The manual will serve as the basis for training provided by Application Engineer.

#### 1.08 WORK FOR HIRE

- A. Any and all configuration, programming, setup or other software functions (Software) performed on all intelligent devices provided as part of this Project is to be considered "Work for Hire" under the 1976 Copyright Act as amended (Title 17 of the United States Code). The Software shall be owned by Owner and shall be turned over to Owner fully documented as the work is completed.
- B. Owner intends only to obtain the Software for its own use.
- C. Owner will not prevent the Software supplier from reuse of the Software concepts and ideas for other projects. Any reuse of the Software concepts and ideas generated under this Project is solely the responsibility of the Software supplier. The Software supplier shall defend, indemnify and hold harmless Owner from all claims, damages and expenses (including reasonable litigation costs), arising out of any use, misuse or misapplication of Software concepts and ideas.

#### 1.09 WARRANTY

- A. System Integrator shall warranty the Process Control System for a period of one year from the date of substantial completion.

### PART 2 – PRODUCTS

#### 2.01 SYSTEM INTEGRATORS

- A. Gasvoda & Associates, Inc., Calumet City, IL.
- B. Allan Integrated Control Systems, Inc., Milwaukee, WI.
- C. Austgen Electric, Inc., Griffin, IN.
- D. L.W. Allen, Inc./Altronex, Madison, WI.
- E. Toric Engineering, Inc., Danville, IN

#### 2.02 SYSTEM INTEGRATOR EXPERIENCE REQUIREMENT

- A. The System Integrator shall have the following organizational and individual experience, knowledge, and capability:
  1. Be regularly engaged in the design, installation, and servicing of wastewater treatment process controls systems.
  2. Have previously executed a minimum of five wastewater treatment PCS projects of similar size and complexity to this Project using the PLC and HMI platforms included in this project.
  3. Have previously successfully executed wireless and wired networked projects of comparable size and complexity to this project.
  4. The person(s) performing the required field work shall have a minimum of five-year experience on similar PLC-based systems.
  5. Provide an on-site control systems engineer for commissioning, functional testing, start-up, and training of the Process Control System. The individual shall have authored and commissioned control logic for no fewer than three projects of similar or greater

complexity, and shall have a demonstrated proficiency in authoring logic in PLC Function Block Language.

6. Upon request of Owner and in addition to other specified requirements, Contractor shall provide a minimum of five System Integrator references to confirm compliance with these requirements.

## 2.03 EQUIPMENT, SYSTEMS, AND SERVICES

- A. Equipment, systems, and services provided under this Section shall conform to the following requirements.

1. UL 508 - Standards for Safety, Industrial Control Equipment.
2. NEMA ICS 1 - General Standards for Industrial Control and Systems.
3. NEMA ICS 2 - Standards for Industrial Control Devices, Controllers and Assemblies.
4. NEMA ICS 3 - Industrial Systems.
5. NEMA ICS 6 - Enclosures for Industrial Controls and Systems.
6. NEMA ICS 250 - Enclosures for Electrical Equipment.
7. NFPA 79 - Electrical Standard for Industrial Machinery
8. UL 698A Intrinsic Safe Circuits.

## PART 3 – EXECUTION

### 3.01 INSTALLATION

- A. Contractor shall install and wire Process Control System equipment in accordance with System Integrator's and equipment manufacturer's written instructions and approved submittals.
- B. PCS components shall be grounded in accordance with NEC requirements.
- C. The System Integrator shall supervise final power and signal connections by Contractor to all equipment provided or interfacing with the Process Control System.
- D. Instrumentation transmitters, displays, and other indicators shall be orientated such that they are easily readable and accessible from operating locations.
- E. System Integrator shall field calibrate and completely configure equipment and instruments at time of startup on loop-by-loop basis and make adjustments necessary to place equipment in satisfactory operation.

### 3.02 FIELD QUALITY CONTROL

- A. Protection during construction.
  1. Throughout the contract Contractor shall provide protection for materials and equipment against loss or damage and the effects of weather. Prior to installation, store items in indoor, dry locations. Provide heating in storage areas for items subject to corrosion under damp conditions. Specific storage requirements shall be in accordance with the System Integrator's recommendations.
- B. Cleaning and touch-up painting.
  1. Keep the premises free from accumulation of waste material or rubbish. Upon completion of work, remove materials, scraps, and debris from premises and from interior and exterior of all devices and equipment. Touch-up scratches, scrapes, or chips in interior

and exterior surfaces of devices and equipment with finishes matching as nearly as possible the type, color, consistency, and type of surface of the original finish.

C. Panels and panel-mounted equipment.

1. Panels and panel-mounted devices shall be assembled as completely as possible at the System Integrator's facility. No work other than field terminations and correction of minor defects or minor transit damage shall be done on the panels at the job site.

D. Inspections.

1. System Integrator shall provide services of qualified service personnel to supervise and inspect equipment installation to ensure system is installed in accordance with System Integrator's recommendations.
2. All materials, equipment, and workmanship shall be subject to observation at any time by Engineer's representatives.

END OF SECTION

Not to be used for bidding purposes

SECTION 40 61 93  
PROCESS CONTROL SYSTEM (PCS) – INPUT/OUTPUT LIST

**PART 1 – GENERAL**

1.01 SUMMARY

- A. Items specified in this Section shall conform to general requirements of Section 40 61 13.
- B. Section includes Process Control System hard-wired PLC I/O and programming parameters. Section to be used in conjunction with the following sections:
  - 1. Section 40 61 13.
  - 2. Section 40 67 15.
- C. This Section includes:
  - 1. Schedule 1 to Section 40 61 93, Input/Output List.
- D. I/O LIST as shown in Schedule 1 of this Section contains information to configure I/O subsystem hardware and to indicate range conversion or signal function.

1.02 ABBREVIATIONS AND REFERENCES

- A. I/O: Inputs/Outputs
- B. PLC: Programmable Logic Controller

**PART 2 – SERVICES**

2.01 I/O LIST DEFINITIONS

- A. LOCATION is the tag number for the PLC the I/O point is interfaced to.
- B. DRAWING is the Drawing number of Process and Instrumentation Diagram (P&ID) in which the I/O point is located.
- C. TAG is the field tagname given to the I/O point as designated on the Drawings.
  - 1. This list is not to be considered a comprehensive list of PLC tagnames.
- D. EQUIPMENT describes associated equipment.
  - 1. Equipment in Schedule 1 table may be truncated and/or abbreviated due to space considerations.
  - 2. Shop Submittals for PLC Drawings shall have Equipment tagnames as described on Process and Instrumentation Diagram (P&ID) Drawings.
- E. FUNCTION describes associated process parameter or programmable controller action.
- F. I/O TYPE is defined as one of following:
  - 1. AI      Designates Analog Input.
  - 2. DI      Designates Discrete Input.
  - 3. AO      Designates Analog Output.
  - 4. RO      Designates Relay Output; momentary, maintained or latched relay contact output.

5. DO Designates Discrete Output (non Relay)
6. RTD Designates Resistance Temperature Detector Input.
7. READ Designates signals read by PLC and transmitted over Ethernet network.
8. WRITE Designates signals written by PLC and transmitted over Ethernet network.

G. SIGNAL TYPE Description:

1. Analog Input (AI):

- a. 4-20mA DC.
- b. DATA 1: Process parameter range.
- c. DATA 2: Process parameter engineering units.
- d. POLL TIME: 0.25 second.

2. Digital Input (DI):

- a. 120Vac.
- b. DATA 1: Condition existing when field contact open.
- c. DATA 2: Condition existing when field contact closed.
- d. POLL TIME: Change-of-State, exception-based.

3. Analog Output (AO):

- a. 4-20mA DC.
- b. DATA 1: Process parameter range.
- c. DATA 2: Process parameter engineering units.

4. Relay Output (RO):

- a. 120Vac.
- b. DATA 1: Contact open function.
- c. DATA 2: Contact closed function.

5. Word:

- a. 16-bit long character.
- b. DATA 1: Process parameter range.
- c. DATA 2: Process parameter engineering units.

6. Boolean:

- a. 1-bit long character.
- b. DATA 1: Bit is set to 1.
- c. DATA 2: Bit is set to 0.

H. DATA\_1 and DATA\_2 describe function or signal characteristics. These are further defined under SIGNAL TYPE above.

1. I/O point data fields are subject to review and modification by Engineer during Shop Drawing review phase. Incorporate modifications into entire system.

### PART 3 – EXECUTION

#### 3.01 I/O CONFIGURATION

- A. I/O shall be configured such that any single I/O module failure shall not shut down all the process

equipment for a given process. The objective of this configuration is to avoid a strategy failure because of a single I/O module failure.

1. For example, if a treatment system includes 4 pumps, the I/O for each pump should be placed such that the failure of an I/O point or module will only affect one of the four pumps, with the remaining pumps operating normally.
  - a. Allowable exceptions to this are specialty I/O points such as RTD in an effort to reduce the total quantity of specialty I/O modules. All exceptions shall be noted/highlighted during shop drawing submittals for Engineer approval of proposed I/O distribution.

B. I/O Point Spares Utilization

1. Provide 25% prewired spare points per panel. Incorporate spare points into active point data base. Include changing point names, descriptions, ranges, or status from spare to new point. Include related documentation changes. Spares utilization will be subject to following limitations:
  - a. Incorporation shall not significantly alter control software functions. Minor change is addition of device alarm input. Significant change is addition of control device.
  - b. Incorporation shall not significantly alter local area panels or field wiring to device. Minor alterations include additions of signals to terminations. Significant alterations include addition of major equipment.
  - c. Additions shall not increase size of reports beyond that specified elsewhere.
  - d. Changes shall not be made subsequent to submittal approval for a given panel or process area loop drawings.
  - e. Treat changing of active points to spare points in same manner as incorporation of spares.

(See following pages for Schedule 1 of this Section)

SCHEDULE 1 - I/O LIST\*\*

LOCATION	DRAWING	TAG	EQUIPMENT	FUNCTION	I/O TYPE	SIGNAL TYPE	DATA 1	DATA 2
SWT	1-N-01	SWT-SWGR-AUTO	SWITCHGEAR TRANSFER MODE SWITCH	IN AUTO	DI	120VAC	NOT IN AUTO	IN AUTO
SWT	1-N-01	SWT-SWGR-MAN	SWITCHGEAR TRANSFER MODE SWITCH	IN MANUAL	DI	120VAC	NOT IN MANUAL	IN MANUAL
SWT	1-N-01	SWT-SWGR-UPS	SWITCHGEAR UPS	CHECK SWITCHGEAR UPS	DI	120VAC	NORMAL	ALARM
SWT	1-N-01	SWT-COGEN-TRIP	CO GEN SYSTEM	REMOTE TRIP	DI	120VAC	NOT TRIPPED	TRIPPED
SWT	1-N-01	SWT-COGEN-CLEAR	CO GEN SYSTEM	CLEAR TO TRANSFER	DI	120VAC	NOT CLEAR	CLEAR
SWT	1-N-01	SWT-52M1-AFMS	MAIN BREAKER 52M1 ARC FLASH MAINTENANCE SWITCH	ACTIVATED	DI	120VAC	NOT ACTIVATED	ACTIVATED
SWT	1-N-01	SWT-52M2-AFMS	MAIN BREAKER 52M2 ARC FLASH MAINTENANCE SWITCH	ACTIVATED	DI	120VAC	NOT ACTIVATED	ACTIVATED
SWT	1-N-01	SWT-52T-AFMS	TIE BREAKER 52T ARC FLASH MAINTENANCE SWITCH	ACTIVATED	DI	120VAC	NOT ACTIVATED	ACTIVATED
SWT	1-N-01	SWT-52M1-RDY	MAIN BREAKER 52M1 SOUTH FEEDER RELAY	AUTO TRANSFER READY	DI	120VAC	NOT READY	READY
SWT	1-N-01	SWT-52M1-FAIL	MAIN BREAKER 52M1 SOUTH FEEDER RELAY	FAILURE	DI	120VAC	NORMAL	ALARM
SWT	1-N-01	SWT-52M2-RDY	MAIN BREAKER 52M2 NORTH FEEDER RELAY	AUTO TRANSFER READY	DI	120VAC	NOT READY	READY
SWT	1-N-01	SWT-52M2-FAIL	MAIN BREAKER 52M2 NORTH FEEDER RELAY	FAILURE	DI	120VAC	NORMAL	ALARM
SWT	1-N-01	SWT-52T-RDY	TIE BREAKER 52T FEEDER RELAY	AUTO TRANSFER READY	DI	120VAC	NOT READY	READY
SWT	1-N-01	SWT-52T-FAIL	TIE BREAKER 52T FEEDER RELAY	FAILURE	DI	120VAC	NORMAL	ALARM
SWT	1-N-01	SWT-52M1-AVAIL	52M1 SOUTH INCOMING SOURCE	AVAILABLE	DI	120VAC	UNAVAILABLE	AVAILABLE
SWT	1-N-01	SWT-52M2-AVAIL	52M2 NORTH INCOMING SOURCE	AVAILABLE	DI	120VAC	UNAVAILABLE	AVAILABLE
SWT	1-N-01	SWT-COGEN-XFER	CO GEN SYSTEM	TRANSFER REQUEST	DO	120VAC	DO NOT TRANSFER	TRANSFER
SWT	1-N-01	SWT-SWGR-RDY	SWITCHGEAR	AUTO TRANSFER READY	DO	120VAC	NOT READY	READY
SWT	1-N-01	SWT-PLC-FAIL	SWT PLC	PLC FAIL	DO	120VAC	NORMAL	ALARM
SWT	1-N-01	SWT-52M1-AAVG	52M1 SOUTH INCOMING SOURCE	AVERAGE CURRENT	READ	WORD	*	AMP
SWT	1-N-01	SWT-52M1-VLAVG	52M1 SOUTH INCOMING SOURCE	AVERAGE L-N VOLTAGE	READ	WORD	*	VOLT
SWT	1-N-01	SWT-52M1-VPVAVG	52M1 SOUTH INCOMING SOURCE	AVERAGE PHASE VOLTAGE	READ	WORD	*	VOLT
SWT	1-N-01	SWT-52M1-VAN	52M1 SOUTH INCOMING SOURCE	AN RMS VOLTAGE	READ	WORD	*	VOLT
SWT	1-N-01	SWT-52M1-VBN	52M1 SOUTH INCOMING SOURCE	BN RMS VOLTAGE	READ	WORD	*	VOLT
SWT	1-N-01	SWT-52M1-VCN	52M1 SOUTH INCOMING SOURCE	CN RMS VOLTAGE	READ	WORD	*	VOLT
SWT	1-N-01	SWT-52M1-VAB	52M1 SOUTH INCOMING SOURCE	AB RMS VOLTAGE	READ	WORD	*	VOLT
SWT	1-N-01	SWT-52M1-VBC	52M1 SOUTH INCOMING SOURCE	BC RMS VOLTAGE	READ	WORD	*	VOLT
SWT	1-N-01	SWT-52M1-VCA	52M1 SOUTH INCOMING SOURCE	CA RMS VOLTAGE	READ	WORD	*	VOLT
SWT	1-N-01	SWT-52M1-VNEU	52M1 SOUTH INCOMING SOURCE	NEUTRAL VOLTAGE	READ	WORD	*	VOLT
SWT	1-N-01	SWT-52M1-ANEU	52M1 SOUTH INCOMING SOURCE	NEUTRAL CURRENT	READ	WORD	*	AMP
SWT	1-N-01	SWT-52M1-AGRN	52M1 SOUTH INCOMING SOURCE	GROUND CURRENT	READ	WORD	*	AMP
SWT	1-N-01	SWT-52M1-AA	52M1 SOUTH INCOMING SOURCE	PHASE A CURRENT	READ	WORD	*	AMP
SWT	1-N-01	SWT-52M1-AB	52M1 SOUTH INCOMING SOURCE	PHASE B CURRENT	READ	WORD	*	AMP
SWT	1-N-01	SWT-52M1-AC	52M1 SOUTH INCOMING SOURCE	PHASE C CURRENT	READ	WORD	*	AMP
SWT	1-N-01	SWT-52M1-APOL	52M1 SOUTH INCOMING SOURCE	POLARIZING CURRENT	READ	WORD	*	AMP
SWT	1-N-01	SWT-52M1-ASGRN	52M1 SOUTH INCOMING SOURCE	SENSITIVE GROUND CURRENT	READ	WORD	*	AMP
SWT	1-N-01	SWT-52M1-PF	52M1 SOUTH INCOMING SOURCE	3 PHASE POWER FACTOR	READ	WORD	*	
SWT	1-N-01	SWT-52M1-FREQ	52M1 SOUTH INCOMING SOURCE	SYSTEM FREQUENCY	READ	WORD	*	HZ
SWT	1-N-01	SWT-52M1-KW	52M1 SOUTH INCOMING SOURCE	REAL POWER	READ	WORD	*	KW
SWT	1-N-01	SWT-52M1-KVAR	52M1 SOUTH INCOMING SOURCE	REACTIVE POWER	READ	WORD	*	KVAR
SWT	1-N-01	SWT-52M1-KVA	52M1 SOUTH INCOMING SOURCE	APPARENT POWER	READ	WORD	*	KVA
SWT	1-N-01	SWT-52M1-PER	52M1 SOUTH INCOMING SOURCE	LOAD TO TRIP (%)	READ	WORD	*	%
SWT	1-N-01	SWT-52M1-UV	52M1 SOUTH INCOMING SOURCE	UNDER-VOLTAGE CONDITION	READ	BOOLEAN	NORMAL	ALARM
SWT	1-N-01	SWT-52M2-AAVG	52M2 NORTH INCOMING SOURCE	AVERAGE CURRENT	READ	WORD	*	AMP
SWT	1-N-01	SWT-52M2-VLAVG	52M2 NORTH INCOMING SOURCE	AVERAGE L-N VOLTAGE	READ	WORD	*	VOLT
SWT	1-N-01	SWT-52M2-VPVAVG	52M2 NORTH INCOMING SOURCE	AVERAGE PHASE VOLTAGE	READ	WORD	*	VOLT
SWT	1-N-01	SWT-52M2-VAN	52M2 NORTH INCOMING SOURCE	AN RMS VOLTAGE	READ	WORD	*	VOLT
SWT	1-N-01	SWT-52M2-VBN	52M2 NORTH INCOMING SOURCE	BN RMS VOLTAGE	READ	WORD	*	VOLT
SWT	1-N-01	SWT-52M2-VCN	52M2 NORTH INCOMING SOURCE	CN RMS VOLTAGE	READ	WORD	*	VOLT
SWT	1-N-01	SWT-52M2-VAB	52M2 NORTH INCOMING SOURCE	AB RMS VOLTAGE	READ	WORD	*	VOLT
SWT	1-N-01	SWT-52M2-VBC	52M2 NORTH INCOMING SOURCE	BC RMS VOLTAGE	READ	WORD	*	VOLT
SWT	1-N-01	SWT-52M2-VCA	52M2 NORTH INCOMING SOURCE	CA RMS VOLTAGE	READ	WORD	*	VOLT
SWT	1-N-01	SWT-52M2-VNEU	52M2 NORTH INCOMING SOURCE	NEUTRAL VOLTAGE	READ	WORD	*	VOLT
SWT	1-N-01	SWT-52M2-ANEU	52M2 NORTH INCOMING SOURCE	NEUTRAL CURRENT	READ	WORD	*	AMP
SWT	1-N-01	SWT-52M2-AGRN	52M2 NORTH INCOMING SOURCE	GROUND CURRENT	READ	WORD	*	AMP
SWT	1-N-01	SWT-52M2-AA	52M2 NORTH INCOMING SOURCE	PHASE A CURRENT	READ	WORD	*	AMP



SCHEDULE 1 - I/O LIST\*\*

LOCATION	DRAWING	TAG	EQUIPMENT	FUNCTION	I/O TYPE	SIGNAL TYPE	DATA 1	DATA 2
SWT	1-N-01	SWT-52M2-AB	52M2 NORTH INCOMING SOURCE	PHASE B CURRENT	READ	WORD	*	AMP
SWT	1-N-01	SWT-52M2-AC	52M2 NORTH INCOMING SOURCE	PHASE C CURRENT	READ	WORD	*	AMP
SWT	1-N-01	SWT-52M2-APOL	52M2 NORTH INCOMING SOURCE	POLARIZING CURRENT	READ	WORD	*	AMP
SWT	1-N-01	SWT-52M2-ASGRN	52M2 NORTH INCOMING SOURCE	SENSITIVE GROUND CURRENT	READ	WORD	*	AMP
SWT	1-N-01	SWT-52M2-PF	52M2 NORTH INCOMING SOURCE	3 PHASE POWER FACTOR	READ	WORD	*	
SWT	1-N-01	SWT-52M2-FREQ	52M2 NORTH INCOMING SOURCE	SYSTEM FREQUENCY	READ	WORD	*	HZ
SWT	1-N-01	SWT-52M2-KW	52M2 NORTH INCOMING SOURCE	REAL POWER	READ	WORD	*	KW
SWT	1-N-01	SWT-52M2-KVAR	52M2 NORTH INCOMING SOURCE	REACTIVE POWER	READ	WORD	*	KVAR
SWT	1-N-01	SWT-52M2-KVA	52M2 NORTH INCOMING SOURCE	APPARENT POWER	READ	WORD	*	KVA
SWT	1-N-01	SWT-52M2-PER	52M2 NORTH INCOMING SOURCE	LOAD TO TRIP (%)	READ	WORD	*	%
SWT	1-N-01	SWT-52M2-UV	52M2 NORTH INCOMING SOURCE	UNDER-VOLTAGE CONDITION	READ	BOOLEAN	NORMAL	ALARM
SWT	1-N-01	SWT-52M1-OPEN	MAIN BREAKER 52M1 SOUTH RACKING CONTROLLER	CIRCUIT BREAKER OPEN	READ	BOOLEAN	NOT OPEN	OPEN
SWT	1-N-01	SWT-52M1-CLOSED	MAIN BREAKER 52M1 SOUTH RACKING CONTROLLER	CIRCUIT BREAKER CLOSED	READ	BOOLEAN	NOT CLOSED	CLOSED
SWT	1-N-01	SWT-52M1-CON	MAIN BREAKER 52M1 SOUTH RACKING CONTROLLER	CIRCUIT BREAKER CONNECTED	READ	BOOLEAN	NOT CONNECTED	CONNECTED
SWT	1-N-01	SWT-52M1-DIS	MAIN BREAKER 52M1 SOUTH RACKING CONTROLLER	CIRCUIT BREAKER DISCONNECTED	READ	BOOLEAN	NOT DISCONNECTED	DISCONNECTED
SWT	1-N-01	SWT-52M1-TEST	MAIN BREAKER 52M1 SOUTH RACKING CONTROLLER	CIRCUIT BREAKER IN TEST POSITION	READ	BOOLEAN	NOT IN TEST POSITION	IN TEST POSITION
SWT	1-N-01	SWT-52M1-INOPR	MAIN BREAKER 52M1 SOUTH RACKING CONTROLLER	MOTOR INOPERATIVE	READ	BOOLEAN	NORMAL	ALARM
SWT	1-N-01	SWT-52M1-INTER	MAIN BREAKER 52M1 SOUTH RACKING CONTROLLER	INTERMEDIATE	READ	BOOLEAN	NORMAL	ALARM
SWT	1-N-01	SWT-52M2-OPEN	MAIN BREAKER 52M2 NORTH RACKING CONTROLLER	CIRCUIT BREAKER OPEN	READ	BOOLEAN	NOT OPEN	OPEN
SWT	1-N-01	SWT-52M2-CLOSED	MAIN BREAKER 52M2 NORTH RACKING CONTROLLER	CIRCUIT BREAKER CLOSED	READ	BOOLEAN	NOT CLOSED	CLOSED
SWT	1-N-01	SWT-52M2-CON	MAIN BREAKER 52M2 NORTH RACKING CONTROLLER	CIRCUIT BREAKER CONNECTED	READ	BOOLEAN	NOT CONNECTED	CONNECTED
SWT	1-N-01	SWT-52M2-DIS	MAIN BREAKER 52M2 NORTH RACKING CONTROLLER	CIRCUIT BREAKER DISCONNECTED	READ	BOOLEAN	NOT DISCONNECTED	DISCONNECTED
SWT	1-N-01	SWT-52M2-TEST	MAIN BREAKER 52M2 NORTH RACKING CONTROLLER	CIRCUIT BREAKER IN TEST POSITION	READ	BOOLEAN	NOT IN TEST POSITION	IN TEST POSITION
SWT	1-N-01	SWT-52M2-INOPR	MAIN BREAKER 52M2 NORTH RACKING CONTROLLER	MOTOR INOPERATIVE	READ	BOOLEAN	NORMAL	ALARM
SWT	1-N-01	SWT-52M2-INTER	MAIN BREAKER 52M2 NORTH RACKING CONTROLLER	INTERMEDIATE	READ	BOOLEAN	NORMAL	ALARM
SWT	1-N-01	SWT-52T-OPEN	TIE BREAKER 52T RACKING CONTROLLER	CIRCUIT BREAKER OPEN	READ	BOOLEAN	NOT OPEN	OPEN
SWT	1-N-01	SWT-52T-CLOSED	TIE BREAKER 52T RACKING CONTROLLER	CIRCUIT BREAKER CLOSED	READ	BOOLEAN	NOT CLOSED	CLOSED
SWT	1-N-01	SWT-52T-CON	TIE BREAKER 52T RACKING CONTROLLER	CIRCUIT BREAKER CONNECTED	READ	BOOLEAN	NOT CONNECTED	CONNECTED
SWT	1-N-01	SWT-52T-DIS	TIE BREAKER 52T RACKING CONTROLLER	CIRCUIT BREAKER DISCONNECTED	READ	BOOLEAN	NOT DISCONNECTED	DISCONNECTED
SWT	1-N-01	SWT-52T-TEST	TIE BREAKER 52T RACKING CONTROLLER	CIRCUIT BREAKER IN TEST POSITION	READ	BOOLEAN	NOT IN TEST POSITION	IN TEST POSITION
SWT	1-N-01	SWT-52T-INOPR	TIE BREAKER 52T RACKING CONTROLLER	MOTOR INOPERATIVE	READ	BOOLEAN	NORMAL	ALARM
SWT	1-N-01	SWT-52T-INTER	TIE BREAKER 52T RACKING CONTROLLER	INTERMEDIATE	READ	BOOLEAN	NORMAL	ALARM
PLC-MPS	1-N-01	SWT-52M1-AFMS	MAIN BREAKER 52M1 ARC FLASH MAINTENANCE SWITCH	ACTIVATED	DO	120VAC	NOT ACTIVATED	ACTIVATED
PLC-MPS	1-N-01	SWT-52M2-AFMS	MAIN BREAKER 52M2 ARC FLASH MAINTENANCE SWITCH	ACTIVATED	DO	120VAC	NOT ACTIVATED	ACTIVATED
PLC-MPS	1-N-01	SWT-52T-AFMS	TIE BREAKER 52T ARC FLASH MAINTENANCE SWITCH	ACTIVATED	DO	120VAC	NOT ACTIVATED	ACTIVATED
PLC-MPS	1-N-01	MPS-52M1-OPEN	MAIN BREAKER 52M1 SOUTH	CIRCUIT BREAKER OPEN	DO	120VAC	NOT OPEN	OPEN
PLC-MPS	1-N-01	MPS-52M1-CLOSED	MAIN BREAKER 52M1 SOUTH	CIRCUIT BREAKER CLOSED	DO	120VAC	NOT CLOSED	CLOSED
PLC-MPS	1-N-01	MPS-52M1-CON	MAIN BREAKER 52M1 SOUTH	CIRCUIT BREAKER CONNECTED	DO	120VAC	NOT CONNECTED	CONNECTED
PLC-MPS	1-N-01	MPS-52M1-DIS	MAIN BREAKER 52M1 SOUTH	CIRCUIT BREAKER DISCONNECTED	DO	120VAC	NOT DISCONNECTED	DISCONNECTED
PLC-MPS	1-N-01	MPS-52M1-TRIP	MAIN BREAKER 52M1 SOUTH	CIRCUIT BREAKER TRIPPED	DO	120VAC	NOT TRIPPED	TRIPPED
PLC-MPS	1-N-01	MPS-52M1-TEST	MAIN BREAKER 52M1 SOUTH	CIRCUIT BREAKER IN TEST POSITION	DO	120VAC	NOT IN TEST POSITION	IN TEST POSITION
PLC-MPS	1-N-01	MPS-52M1-INOPR	MAIN BREAKER 52M1 SOUTH	MOTOR INOPERATIVE	DO	120VAC	NORMAL	ALARM
PLC-MPS	1-N-01	MPS-52M1-INTER	MAIN BREAKER 52M1 SOUTH	INTERMEDIATE	DO	120VAC	NORMAL	ALARM
PLC-MPS	1-N-01	MPS-52M2-OPEN	MAIN BREAKER 52M2 NORTH	CIRCUIT BREAKER OPEN	DO	120VAC	NOT OPEN	OPEN
PLC-MPS	1-N-01	MPS-52M2-CLOSED	MAIN BREAKER 52M2 NORTH	CIRCUIT BREAKER CLOSED	DO	120VAC	NOT CLOSED	CLOSED
PLC-MPS	1-N-01	MPS-52M2-CON	MAIN BREAKER 52M2 NORTH	CIRCUIT BREAKER CONNECTED	DO	120VAC	NOT CONNECTED	CONNECTED
PLC-MPS	1-N-01	MPS-52M2-DIS	MAIN BREAKER 52M2 NORTH	CIRCUIT BREAKER DISCONNECTED	DO	120VAC	NOT DISCONNECTED	DISCONNECTED
PLC-MPS	1-N-01	MPS-52M2-TRIP	MAIN BREAKER 52M2 NORTH	CIRCUIT BREAKER TRIPPED	DO	120VAC	NOT TRIPPED	TRIPPED
PLC-MPS	1-N-01	MPS-52M2-TEST	MAIN BREAKER 52M2 NORTH	CIRCUIT BREAKER IN TEST POSITION	DO	120VAC	NOT IN TEST POSITION	IN TEST POSITION
PLC-MPS	1-N-01	MPS-52M2-INOPR	MAIN BREAKER 52M2 NORTH	MOTOR INOPERATIVE	DO	120VAC	NORMAL	ALARM
PLC-MPS	1-N-01	MPS-52M2-INTER	MAIN BREAKER 52M2 NORTH	INTERMEDIATE	DO	120VAC	NORMAL	ALARM
PLC-MPS	1-N-01	MPS-52T-OPEN	TIE BREAKER 52T	CIRCUIT BREAKER OPEN	DO	120VAC	NOT OPEN	OPEN
PLC-MPS	1-N-01	MPS-52T-CLOSED	TIE BREAKER 52T	CIRCUIT BREAKER CLOSED	DO	120VAC	NOT CLOSED	CLOSED
PLC-MPS	1-N-01	MPS-52T-CON	TIE BREAKER 52T	CIRCUIT BREAKER CONNECTED	DO	120VAC	NOT CONNECTED	CONNECTED
PLC-MPS	1-N-01	MPS-52T-DIS	TIE BREAKER 52T	CIRCUIT BREAKER DISCONNECTED	DO	120VAC	NOT DISCONNECTED	DISCONNECTED

SCHEDULE 1 - I/O LIST\*\*

LOCATION	DRAWING	TAG	EQUIPMENT	FUNCTION	I/O TYPE	SIGNAL TYPE	DATA 1	DATA 2
PLC-MPS	1-N-01	MPS-52T-TRIP	TIE BREAKER 52T	CIRCUIT BREAKER TRIPPED	DO	120VAC	NOT TRIPPED	TRIPPED
PLC-MPS	1-N-01	MPS-52T-TEST	TIE BREAKER 52T	CIRCUIT BREAKER IN TEST POSITION	DO	120VAC	NOT IN TEST POSITION	IN TEST POSITION
PLC-MPS	1-N-01	MPS-52T-INOPR	TIE BREAKER 52T	MOTOR INOPERATIVE	DO	120VAC	NORMAL	ALARM
PLC-MPS	1-N-01	MPS-52T-INTER	TIE BREAKER 52T	INTERMEDIATE	DO	120VAC	NORMAL	ALARM
PLC-MPS	1-N-01	SWT-COGEN-TRIP	CO GEN SYSTEM	REMOTE TRIP	DI	120VAC	NOT TRIPPED	TRIPPED
PLC-MPS	1-N-01	SWT-COGEN-CLEAR	CO GEN SYSTEM	CLEAR TO TRANSFER	DI	120VAC	NOT CLEAR	CLEAR
PLC-MPS	1-N-01	MPS-SWGR-AUTO	SWITCHGEAR TRANSFER MODE SWITCH	IN AUTO	DO	120VAC	NOT IN AUTO	IN AUTO
PLC-MPS	1-N-01	MPS-SWGR-MAN	SWITCHGEAR TRANSFER MODE SWITCH	IN MANUAL	DO	120VAC	NOT IN MANUAL	IN MANUAL
PLC-MPS	1-N-01	MPS-52M1-AVAIL	52M1 SOUTH INCOMING SOURCE	AVAILABLE	DO	120VAC	UNAVAILABLE	AVAILABLE
PLC-MPS	1-N-01	MPS-52M2-AVAIL	52M2 NORTH INCOMING SOURCE	AVAILABLE	DO	120VAC	UNAVAILABLE	AVAILABLE
PLC-MPS	1-N-01	MPS-SWGR-RDY	SWITCHGEAR	AUTO TRANSFER READY	DO	120VAC	NOT READY	READY

\* Measuring ranges shall be confirmed with existing PLC program prior to implementation.

\*\* System Integrator to provide additional I/O's indicated as spares on Drawings upon Owner's request.

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SECTION 40 67 15  
CONTROL PANELS

**PART 1 – GENERAL**

1.01 SUMMARY

- A. Items specified in this section shall conform to general requirements of Section 40 61 13.
- B. Section includes panel and enclosure requirements for Process Instrumentation and Control Equipment.

1.02 ABBREVIATIONS AND REFERENCES

- A. ISA: Instrument Society of America
- B. NEC: National Electrical Code
- C. NEIS: National Electrical Installation Standards
- D. NEMA: National Electrical Manufacturers Association
- E. NFPA: National Fire Protection Agency
- F. NRTL: Nationally Recognized Testing Laboratory
- G. OSHA: Occupational Safety and Health Administration
- H. UL: Underwriters Laboratories

1.03 SUBMITTALS

- A. General:
  - 1. Submit Product Data in sufficient detail to confirm compliance with requirements of this Section. Submit Product Data and Shop Drawings in one complete submittal package. Partial submittals are not acceptable.
- B. Product Data:
  - 1. Catalog cuts and product specifications for panels and enclosures specified.
- C. Shop Drawings:
  - 1. Installation and assembly drawings and specifically prepared technical data and schematics for panels and enclosures specified.
  - 2. Submit in accordance with Section 01 33 00.

1.04 QUALITY ASSURANCE

- A. Devices shall be latest and most modern design at time of bidding.
- B. Manufacturer Qualifications: Firms experienced in manufacturing panels and enclosures of types and materials indicated that have record of successful in-service performance.
- C. Enclosures and components contained within the enclosure provided under this Section shall

be listed or labeled by Underwriters Laboratories Inc. (UL) or other Nationally Recognized Testing Laboratory (NRTL).

1. Term "NRTL" shall be as defined in Occupational Safety and Health Administration (OSHA) Regulation 1910.7.
2. Terms "listed" and "labeled" shall be as defined in National Electrical Code (NEC), Article 100.

#### 1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver panels and enclosures to their final locations in protective wrappings, containers, and other protection that will exclude dirt, moisture and prevent damage from construction operations. Remove protection only after equipment is made safe from such hazards, and is ready for immediate installation.
- B. Store panels and enclosures in clean, dry location.

#### 1.06 MAINTENANCE

##### A. Extra Materials:

1. Furnish extra materials matching products installed, as described below packaged with protective covering for storage, dated and identified with labels describing contents.
  - a. Provide minimum of 5 or 10%, whichever is greater, of each type fuse used on project.
  - b. Provide minimum of 5 or 10%, whichever is greater, of each type control relay used on project.
  - c. Provide minimum of 5 or 10%, whichever is greater, of each type pilot light replacement bulb used on project.

### PART 2 – PRODUCTS

#### 2.01 MANUFACTURERS

- A. Hoffman.
- B. Saginaw.
- C. Hammond.
- D. Rittal.
- E. Or equal.

#### 2.02 GENERAL REQUIREMENTS

- A. Panels shall be constructed using factory-fabricated enclosures.
- B. Provide a minimum of 25% free back panel space for future expansion unhindered by current devices, wiring, etc.
- C. Provide a minimum of 25% free terminal blocks of each type used in each panel. This is in addition to planned spare wiring terminations. Spares shall be shown on panel drawings.
- D. The panel builder shall be a current Underwriters Laboratories listed UL-508A industrial

control panel builder and shall present its follow-up service procedure file number on submittals. All devices within the panel shall be UL listed and/or recognized where applicable and shall be mounted and wired in accordance with the most current edition of UL-508A and the NEC. A serialized UL-508A label shall be applied to all control panels prior to shipment to the Project site.

E. Install instruments and devices, plumb, and wire panels at panel shop or other facility prior to shipment to job-site.

F. Standard Signal Interfaces:

1. Unless otherwise specified, discrete input and output signals shall conform to the following:
  - a. Isolated non-powered (dry) contact closure.
  - b. Dry contacts shall be powered from panel or device receiving signal.
  - c. PLC based outputs shall be provided with an interposing relay when any of the following conditions apply:
    - 1) When driving solenoids.
    - 2) Potential in-rush current exceeds 75% of rated capacity of the I/O Module.
    - 3) The current requirement of the driven device is insufficient to fully engage the output module consistently.
    - 4) The voltage required to drive the output is incompatible with the output module.
2. Unless otherwise specified, analog input and output signals shall conform to the following:
  - a. 4-20 mA dc.
  - b. For 2-wire, loop-powered transmitters, provide regulated, fused, and isolated 24Vdc power supply at panel for driving of devices. Size power supply for 30% minimum spare capacity minimum.
  - c. Where isolation is required for interfacing with particular equipment supplied, provide necessary current/current converters. Provide current/current converters where impedance capabilities of new or existing signal transmitter will be exceeded by addition of PLC input.

G. Wiring:

1. In addition to Division 26, NEC and NEMA requirements, wiring shall conform to following:
  - a. Power: 12 AWG stranded minimum, type MTW, 600V.
  - b. Control: 16 AWG stranded minimum, type MTW, 300V.
  - c. Analog Signal: Twisted pair, 18 AWG, Beldon 8760 or equal.
  - d. Copper Ethernet: Enhance 4 pair Category 6 cable, #23AWG solid bare copper.
2. Wire color code:
  - a. AC neutral conductor: White.
  - b. AC hot conductor: Black.
  - c. Grounding conductor: Green.
  - d. AC control conductor, powered from within panel: Red.
  - e. AC control conductor, powered from remote source: Orange.
  - f. DC (+) power conductor, discrete signal: Blue.
  - g. DC (-) power conductor, discrete signal: Blue with white stripe.
  - h. DC control conductor, discrete signal: Blue.
  - i. Twisted pair cable (+) signal conductor, analog signal: White.

- j. Twisted pair cable (-) signal conductor, analog signal: Black.
  - k. Intrinsically safe wiring: Light Blue.
3. Design control panels to keep 480Vac power, 120Vac power and discrete signals, and analog and other low voltage signals separated.
- a. Do not run 480Vac power, 120Vac power and discrete signals, or analog or other low voltage signals in the same conduit or wire-duct.
  - b. Where 480Vac power, 120Vac power and discrete signals, or analog or other low voltage signals must cross, they shall do so at right angles.
4. Wiring Within Wire Duct:
- a. Wherever feasible plastic wire duct with cover shall be used for routing of wire within control panel.
  - b. Size wire duct to be no more than 50% full.
  - c. Maintain 2" clearance between wire duct and terminals.
5. Wiring outside of wire duct.
- a. Wiring outside of ducts shall be restrained by use of plastic wire-ties.
  - b. Restrain wiring every six inches (minimum).
  - c. Provide abrasion protection for wires passing through holes or across abrasive metal edges.
  - d. Adhesive type wire fasteners shall not be used. Hard screw type shall be employed.
6. Each conductor or twisted pair cable shall be labeled near its termination point.
7. Color-coded multi-conductor cable or multi-pair cable shall be labeled on overall jacket near its point of fan-out. Each pair of a multi-pair cable, when not color-coded, shall be labeled at its termination point in addition to the overall jacket.
8. Labels shall be machine-printed wrap-around types with tag visible from front without removal of wire from termination.
- H. Terminations:
- 1. Wiring within control panel shall be continuous and terminated only at terminal blocks or equipment terminals. Splices or butt connectors shall not be used within panel.
  - 2. No more than two wires shall be terminated at any one terminal.
  - 3. Make external connections by way of numbered terminal blocks on numbered terminal strips.
  - 4. When signals are powered from remote location, switched terminal blocks shall be used where conductors enter or leave panel.
  - 5. When signals are powered from within panel, fused terminal blocks shall be used where conductors enter or leave panel.
  - 6. Provide integral bussing system on terminal block array where more than two terminations require common source or drain connection. Jumpered terminations shall not be acceptable.
  - 7. Provide knife disconnect-type terminal blocks with test sockets for all analog loops.
  - 8. Include provisions for grounding of shields on shielded twisted pair cables entering or leaving panel. Cable shields shall be grounded at terminal block end only. Shields shall run entire length of cable within panels. Running of twisted pairs without shields within panels is not permissible.
9. Provide separate terminal strips for each of the following types of signals.
- a. 480Vac power circuits.

- b. 120Vac power circuits.
- c. 120Vac discrete signals.
- d. 12Vdc, 24Vdc or 48Vdc discrete signals.
- e. Analog signals.
- f. Serial or parallel digital communication signals.
- g. Intrinsically safe circuits.

I. Power Distribution:

1. Panels having 240Vac or 480Vac power supply:

- a. Provide internal main circuit breaker to isolate power to panel.
- b. Provide circuit breakers for all motor starters provided.
- c. If panel includes separate 120Vac control power supply, provide auxiliary contact to isolate control power when main circuit breaker is opened.
- d. 480Vac to 120Vac control power transformer requirements:
  - 1) Both primary leads shall be fused.
  - 2) First secondary lead shall be fused.
  - 3) Second secondary lead shall be grounded.
  - 4) Provide single-phase surge suppression/line conditioner, sized for total panel loadings (Benden Isotrol, or equal) between secondary leads and 120vac power distribution block.

2. Panels having 120Vac power supply:

- a. Provide circuit breaker on power supply entering panel.
- b. Provide single-phase surge suppression/line conditioner, sized for total panel loadings (Benden, Isotrol) between circuit breaker and 120Vac power distribution block.
- c. Provide monitoring relay on incoming power supply to indicate presence of utility power to the PLC. Utility Power, UPS Status, and Surge Protection Device (SPD) status shall be continuously monitored by SCADA system.

3. Provide separately fused power supply to each major panel component.

4. Additional panel requirements.

- a. Provide separately fused power circuits for panel powered devices entering panel from field. Provide separate circuit for each device. Devices may be 5-Amp fused terminal blocks.
  - 1) Solenoid actuated valves
  - 2) Loop powered transmitters
  - 3) 120Vac switched cord and receptacles
  - 4) Relays
- b. Include digital transient surge suppressor/varistor installed in parallel with output contact at terminal strip for each PLC output signal driving an inductive load including:
  - 1) Relays.
  - 2) Solenoids.
  - 3) Motor starters.
  - 4) Motors.

J. Labels and Nameplates:

1. Panel Designation:

- a. Engraved with Engineer's tag number and description shown on the Drawings and in Specifications.
  - b. Laminated white plastic with ½-in. high black characters.
  - c. Fastened with stainless steel screws.
2. Front of panel mounted devices.
    - a. Provide nameplate for each front of panel device with descriptive phrase using nomenclature as listed on Drawings and in Specifications.
    - b. Laminated white plastic with 3/16-in. high black characters.
    - c. Fastened with stainless steel screws.
  3. Rear of panel mounted devices.
    - a. Provide nametag for each rear of panel device with labels used on panel drawings.
    - b. Thermo-embossed or laser printed with 1/8-in. high black characters on clear or white background or laminated white plastic with 3/16-in. high black characters.
    - c. Self-adhesive backing.
    - d. Clean area with mineral spirits prior to affixing labels
- K. Panel Finish:
1. Remove mill scale, grease, and oil.
  2. Primer thickness shall be 0.8 mil., minimum.
  3. Finish coat shall be two-part epoxy or baked dry powder, 3-mil., minimum dry film thickness.
  4. Color: Standard manufacturer's finish.
- L. Conveniences:
1. Freestanding and floor mounted control panels shall be provided with door-activated, internal fluorescent panel lighting units.
    - a. One unit shall be provided for every 3 feet of panel width and shall be mounted on the inside, top of the panel.
    - b. Lighting shall be consistent for entire project.
  2. Freestanding and floor mounted control panels shall be provided with 120Vac, service outlet circuits within the back-of-panel area. The circuits shall be provided with three-wire, 120Vac, 15-ampere duplex GFCI receptacles, one for every 3 feet of panel width and spaced evenly along the back-of-panel area. GFCI receptacles shall not be used for supplying power to UPS.
  3. UPS receptacle – Provide simplex non-GFCI receptacle for plug in of UPS where applicable. Receptacle shall be labeled "120VAC FOR UPS ONLY".

## 2.03 PILOT DEVICES

- A. Manufacturer:
1. Allen Bradley 800T/800H.
  2. Square D Class 9001, Type K.
  3. Or Equal.
- B. Construction:



1. Heavy duty.
2. Watertight.
3. Oil-tight.
4. Flush panel mounting.
5. Size to mount in 30.5-mm diameter cutout.
6. Match NEMA rating of device with the installed location environmental classification.

C. Pushbuttons:

1. Flush head unless specified elsewhere.
2. Contact Blocks:
  - a. Double break silver contacts.
  - b. Ac Ratings: 7,200 va make, 720 va break.
  - c. Single pole, single throw.
  - d. Up to six tandem blocks.
3. Momentary contact unless specified elsewhere.
4. Non-illuminated.
5. Legend plates, as required, for type of operation or as specified elsewhere.

D. Selector Switches:

1. 43 selector switch manufactured by Electro Switch Series 24, pistol grip style.

E. Pilot Lights:

1. LED Lamp.
2. Transformer type.
3. Bayonet, 6Vac bulb.
4. Colored lens as specified elsewhere.
5. Interchangeable lenses.
6. Transformer rated for 120Vac
7. Push to test.
8. Legend plates as specified elsewhere.

2.04 CONTROL RELAYS

A. Manufacturer:

1. Allen Bradley
2. Potter and Brumfield.
3. Idec.
4. Magnecraft.
5. Or Equal.

B. Operating Data:

1. Pickup Time: 13 ms maximum.
2. Dropout Time: 10 ms maximum.
3. Operating Temperature: -45°F to 150°F.

C. ac Coil:

1. 120Vac.
2. Continuous rated.

3. 3.5va inrush maximum.
4. 1.2va sealed, maximum.
5. 50-60 Hz.
6. Light to indicate energization.
7. Minimum Dropout Voltage: 10% of coil rated voltage.

D. dc Coil:

1. 24Vdc.
2. Continuous rated.
3. Light to indicate energization.
4. Minimum Coil Resistance:

a. 24Vdc: 450  $\Omega$ .

E. Contacts:

1. Gold flashed fine silver, gold diffused for 1 amp or less resistive load.
2. Silver cadmium oxide.
3. 3 form C.
4. 300Vac.
5. 10 amp make, 1.5 amp break, (inductive).

F. Rated at 10 million operations.

G. 11 pin, square socket.

H. DIN rail mountable.

I. Enclosed and protected by polycarbonate cover.

J. Visible indication of energized coil.

K. Provide relay-retaining clips.

2.05 TERMINAL BLOCKS

A. Manufacturer:

1. Phoenix Contact.
2. Weidmuller.
3. Or Equal.

B. 300 v rating for 120 v circuits and below, 600 v rating for 480 v circuits.

C. Clamping screw type.

D. Isolating end caps for each terminal.

E. Identification on both terminals.

F. Clip-mounted on DIN rail.

G. Accepts AWG 12 to 22.

H. Feed-Through Terminals:

1. 20 Amp rating
  - I. Switched Terminals:
    1. Knife disconnect with test sockets.
    2. 10 Amp rating.
  - J. Fused Terminals:
    1. Hinged fuse removal/disconnect.
    2. 10 Amp rating.
  - K. Include blown fuse indication.
- 2.06 PANEL CONSTRUCTION – INDOOR ENCLOSURES
- A. Indoor enclosures shall conform to NEMA requirements as follows:
    1. NEMA 12
  - B. In addition to NEMA standards, conform to the following requirements:
    1. Minimum metal thickness: 14 Ga.
    2. Indoor enclosures: equip with rubber-gasketed doors with continuous metal hinges. Equip doors with 3-point lockable latches.
    3. Outdoor enclosures: equip with hinged dead-front inner doors and rubber-gasketed, continuous metal hinged outer weather doors. Equip weather doors with toggle style door clamps.
    4. Equip outdoor enclosures with thermostatically controlled heaters capable of maintaining internal panel temperature of 50°F with 20mph wind at ambient temperature of -20°F. Heater shall operate at 120Vac, 60Hz power.
    5. Size to adequately dissipate heat generated by equipment mounted in or on panel.
  - C. Prior to final fabrication of panels, verify layout of front-of-panel devices with respect to rear-of-panel devices. Maintain minimum of 3 inches clearance between door and sub-panel mounted devices.

### **PART 3 – EXECUTION**

#### **3.01 INSTALLATION**

- A. Install and wire in accordance with equipment/instrument manufacturer's written instructions, approved submittals, applicable requirements of the NEC, NEIS, and recognized industry practices.
- B. Coordinate housecleaning pad dimensions with enclosure dimensions.
- C. Install control panels in locations indicated on Drawings and in accordance with manufacturer's written instructions and approved submittals.
- D. Touch-up panel finish if marred during installation using manufacturer's paint matching enclosure.
- E. Each Panel shall have (3) sets of "as built" final circuit Drawings.
- F. Perform In-Factory inspection and testing of PCS control panels at site of panel fabrication.

Inform Engineer at least 3 weeks prior to date of scheduled testing. Owner and Engineer shall witness test at their discretion.

G. Field installation and wiring of panel components shall be in accordance with approved submittals, manufacturer's recommendations, and any applicable federal, state, and local codes.

H. Perform field test of PCS upon completion of installation, wiring and field inspection.

I. Field testing shall conform to Section 40 61 13.

### 3.02 IDENTIFICATION

A. Engrave Engineer tag number as listed in Specifications and on Drawings.

END OF SECTION

Not to be used for bidding purposes

**APPENDIX**

*Not to be used for bidding purposes*

*Not to be used for bidding purposes*

## APPENDIX

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**Contractor's Application for Payment**

<b>Owner:</b> _____	<b>Owner's Project No.:</b> _____
<b>Engineer:</b> _____	<b>Engineer's Project No.:</b> _____
<b>Contractor:</b> _____	<b>Contractor's Project No.:</b> _____
<b>Project:</b> _____	
<b>Contract:</b> _____	

**Application No.:** \_\_\_\_\_ **Application Date:** \_\_\_\_\_

**Application Period:** From \_\_\_\_\_ to \_\_\_\_\_

1. Original Contract Price	\$	-
2. Net change by Change Orders	\$	-
3. Current Contract Price (Line 1 + Line 2)	\$	-
4. Total Work completed and materials stored to date (Sum of Column G Lump Sum Total and Column J Unit Price Total)	\$	-
5. Retainage		
a. _____ X \$ _____ Work Completed	\$	-
b. _____ X \$ _____ Stored Materials	\$	-
c. Total Retainage (Line 5.a + Line 5.b)	\$	-
6. Amount eligible to date (Line 4 - Line 5.c)	\$	-
7. Less previous payments (Line 6 from prior application)		
8. Amount due this application	\$	-
9. Balance to finish, including retainage (Line 3 - Line 4 + Line 5c)	\$	-

**Contractor's Certification**

The undersigned Contractor certifies, to the best of its knowledge, the following:

(1) All previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with the Work covered by prior Applications for Payment;

(2) Title to all Work, materials and equipment incorporated in said Work, or otherwise listed in or covered by this Application for Payment, will pass to Owner at time of payment free and clear of all liens, security interests, and encumbrances (except such as are covered by a bond acceptable to Owner indemnifying Owner against any such liens, security interest, or encumbrances); and

(3) All the Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

**Contractor:** \_\_\_\_\_

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

<b>Recommended by Engineer</b>	<b>Approved by Owner</b>
<b>By:</b> _____	<b>By:</b> _____
<b>Title:</b> _____	<b>Title:</b> _____
<b>Date:</b> _____	<b>Date:</b> _____
<b>Approved by Funding Agency</b>	
<b>By:</b> _____	<b>By:</b> _____
<b>Title:</b> _____	<b>Title:</b> _____
<b>Date:</b> _____	<b>Date:</b> _____





**Progress Estimate - Lump Sum Work**

**Contractor's Application for Payment**

Owner: \_\_\_\_\_  
 Engineer: \_\_\_\_\_  
 Contractor: \_\_\_\_\_  
 Project: \_\_\_\_\_  
 Contract: \_\_\_\_\_

Owner's Project No.: \_\_\_\_\_  
 Engineer's Project No.: \_\_\_\_\_  
 Contractor's Project No.: \_\_\_\_\_

Application No.:		Application Period:		From		to		Application Date:	
A	B	C	D		E	F	G	H	I
Item No.	Description	Scheduled Value (\$)	Work Completed		Materials Currently Stored (not in D or E) (\$)	Work Completed and Materials Stored to Date (D + E + F) (\$)	% of Scheduled Value (G / C) (%)	Balance to Finish (C - G) (\$)	
			(D + E) From Previous Application (\$)	This Period (\$)					
<b>Change Orders</b>									
		<b>Change Order Totals</b>	\$ -	\$ -	\$ -	\$ -	\$ -		\$ -
<b>Original Contract and Change Orders</b>									
		<b>Project Totals</b>	\$ -	\$ -	\$ -	\$ -	\$ -		\$ -

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**Progress Estimate - Unit Price Work**

**Contractor's Application for Payment**

Owner: _____	Owner's Project No.: _____
Engineer: _____	Engineer's Project No.: _____
Contractor: _____	Contractor's Project No.: _____
Project: _____	
Contract: _____	

Application No.: \_\_\_\_\_ Application Period: From \_\_\_\_\_ to \_\_\_\_\_ Application Date: \_\_\_\_\_

A	B	C	D	E	F	G	H	I	J	K	L
Bid Item No.	Description	Contract Information				Work Completed		Materials Currently Stored (not in G) (\$)	Work Completed and Materials Stored to Date (H + I) (\$)	% of Value of Item (J / F) (%)	Balance to Finish (F - J) (\$)
		Item Quantity	Units	Unit Price (\$)	Value of Bid Item (C X E) (\$)	Estimated Quantity Incorporated in the Work	Value of Work Completed to Date (E X G) (\$)				
Original Contract											
					-		-		-		-
					-		-		-		-
					-		-		-		-
					-		-		-		-
					-		-		-		-
					-		-		-		-
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<b>Original Contract Totals</b>					\$	-		\$	-	\$	-

Not to be used for bidding purposes

**Progress Estimate - Unit Price Work**

**Contractor's Application for Payment**

Owner: \_\_\_\_\_  
 Engineer: \_\_\_\_\_  
 Contractor: \_\_\_\_\_  
 Project: \_\_\_\_\_  
 Contract: \_\_\_\_\_

Owner's Project No.: \_\_\_\_\_  
 Engineer's Project No.: \_\_\_\_\_  
 Contractor's Project No.: \_\_\_\_\_

Application No.: \_\_\_\_\_ Application Period: From \_\_\_\_\_ to \_\_\_\_\_ Application Date: \_\_\_\_\_

A	B	C	D	E	F	G	H	I	J	K	L
Bid Item No.	Description	Contract Information				Work Completed		Materials Currently Stored (not in G) (\$)	Work Completed and Materials Stored to Date (H + I) (\$)	% of Value of Item (J / F) (%)	Balance to Finish (F - J) (\$)
		Item Quantity	Units	Unit Price (\$)	Value of Bid Item (C X E) (\$)	Estimated Quantity Incorporated in the Work	Value of Work Completed to Date (E X G) (\$)				
Change Orders											
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					-		-		-		-
					Change Order Totals	\$	-	\$	-	\$	-
Original Contract and Change Orders											
					Project Totals	\$	-	\$	-	\$	-

Not to be used for bidding purposes



## CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner: \_\_\_\_\_ Owner's Project No.: \_\_\_\_\_  
Engineer: \_\_\_\_\_ Engineer's Project No.: \_\_\_\_\_  
Contractor: \_\_\_\_\_ Contractor's Project No.: \_\_\_\_\_  
Project: \_\_\_\_\_  
Contract Name: \_\_\_\_\_

This  Preliminary  Final Certificate of Substantial Completion applies to:  
 All Work  The following specified portions of the Work:

**[Describe the portion of the work for which Certificate of Substantial Completion is issued]**

Date of Substantial Completion: **[Enter date, as determined by Engineer]**

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Work or portion thereof designated above is hereby established, subject to the provisions of the Contract pertaining to Substantial Completion. The date of Substantial Completion in the final Certificate of Substantial Completion marks the commencement of the contractual correction period and applicable warranties required by the Contract.

A punch list of items to be completed or corrected is attached to this Certificate. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

Amendments of contractual responsibilities recorded in this Certificate should be the product of mutual agreement of Owner and Contractor; see Paragraph 15.03.D of the General Conditions.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance, and warranties upon Owner's use or occupancy of the Work must be as provided in the Contract, except as amended as follows:

Amendments to Owner's Responsibilities:  None  As follows:

**[List amendments to Owner's Responsibilities]**

Amendments to Contractor's Responsibilities:  None  As follows:

**[List amendments to Contractor's Responsibilities]**

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

**[List attachments such as punch list; other documents]**

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents, nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract Documents.

---

ISSUED BY ENGINEER:	AUTHORIZED BY OWNER:	ACKNOWLEDGED BY CONTRACTOR:
By: _____ (Authorized signature)	By: _____ Owner (Authorized Signature)	By: _____ Contractor (Authorized Signature)
Title: _____	Title: _____	Title: _____
Date: _____	Date: _____	Date: _____

Not to be used for bidding purposes

**WORK CHANGE DIRECTIVE NO.: [Number of Work Change Directive]**

Owner:

Owner's Project No.:

Engineer:

Engineer's Project No.:

Contractor:

Contractor's Project No.:

Project:

Contract Name:

Date Issued:

Effective Date of Work Change Directive:

Contractor is directed to proceed promptly with the following change(s):

Description:

**[Description of the change to the Work]**

Attachments:

**[List documents related to the change to the Work]**

Purpose for the Work Change Directive:

**[Describe the purpose for the change to the Work]**

Directive to proceed promptly with the Work described herein, prior to agreeing to change in Contract Price and Contract Time, is issued due to:

**Notes to User—Check one or both of the following**

Non-agreement on pricing of proposed change.  Necessity to proceed for schedule or other reasons.

Estimated Change in Contract Price and Contract Times (non-binding, preliminary):

Contract Price: \$ \_\_\_\_\_ **[increase] [decrease] [not yet estimated].**

Contract Time: \_\_\_\_\_ days **[increase] [decrease] [not yet estimated].**

Basis of estimated change in Contract Price:

Lump Sum  Unit Price  Cost of the Work  Other

Recommended by Engineer

Authorized by Owner

By: \_\_\_\_\_

Title: \_\_\_\_\_

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



**FIELD ORDER NO.: [Number of Field Order]**

Owner: \_\_\_\_\_ Owner's Project No.: \_\_\_\_\_  
Engineer: \_\_\_\_\_ Engineer's Project No.: \_\_\_\_\_  
Contractor: \_\_\_\_\_ Contractor's Project No.: \_\_\_\_\_  
Project: \_\_\_\_\_  
Contract Name: \_\_\_\_\_  
Date Issued: \_\_\_\_\_ Effective Date of Field Order: \_\_\_\_\_

Contractor is hereby directed to promptly perform the Work described in this Field Order, issued in accordance with Paragraph 11.04 of the General Conditions, for minor changes in the Work without changes in Contract Price or Contract Times. If Contractor considers that a change in Contract Price or Contract Times is required, submit a Change Proposal before proceeding with this Work.

**Reference:**

Specification Section(s): \_\_\_\_\_

Drawing(s) / Details (s): \_\_\_\_\_

**Description:**

[Description of the change to the Work]

**Attachments:**

[List documents supporting change]

**Issued by Engineer**

By: \_\_\_\_\_ (signature)

Title: \_\_\_\_\_ (printed name)

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

## CERTIFICATE OF INSTALLATION SERVICES

Project

Equipment

Specification Section

Contract

I hereby certify the equipment supplier/manufacturer has inspected this equipment and that it has been properly installed, adjusted, and calibrated. I further certify this equipment may now be operated for test purposes and/or normal use.

### MANUFACTURER'S REPRESENTATIVE

Signature

Date

Name (print)

Title

Representing

### CONTRACTOR

Signature

Date

Name (print)

Title

Comments:

This form shall be completed and submitted to ENGINEER prior to training of OWNER'S personnel in accordance with Section 01 61 00.

**CERTIFICATE OF INSTRUCTIONAL SERVICES**

Project

Equipment

Specification Section

Contract

I hereby certify the equipment supplier/manufacturer has instructed OWNER'S personnel in the startup, operation, and maintenance of this equipment as required in the Specifications.

**CONTRACTOR**

Signature

Date

Name (print)

Title

I hereby certify that my operating personnel received \_\_\_\_\_ days instruction from \_\_\_\_\_  
for startup, operation, and maintenance of this equipment.

**OWNER**

Signature

Date

Name (print)

Title

Comments:

This form shall be completed and submitted to ENGINEER after training of OWNER'S personnel in accordance with Section 01 61 00.

## CERTIFICATE OF POST STARTUP SERVICES

Project

Equipment

Specification Section

Contract

I hereby certify the equipment supplier/manufacturer has inspected this equipment, made adjustments and calibrations, and that it is operating in conformance with the design, Specification, and manufacturer's requirements. Notation of improper operation shall be detailed and recommendations made and attached to this form.

### MANUFACTURER'S REPRESENTATIVE

Signature

Date

Name (print)

Title

Representing

### CONTRACTOR

Signature

Date

Name (print)

Title

### OWNER

Signature

Date

Name (print)

Title

Comments:

This form shall be completed and submitted to OWNER upon completion of the POST STARTUP SERVICES as required by the Specifications.

**CHANGE ORDER NO. \_\_\_\_\_**

CHANGE ORDER  
DATE OF ISSUANCE \_\_\_\_\_

COMMENCEMENT OF  
CONTRACT TIME \_\_\_\_\_

OWNER \_\_\_\_\_

CONTRACTOR \_\_\_\_\_

PROJECT \_\_\_\_\_ CONTRACT NO. \_\_\_\_\_

ENGINEER \_\_\_\_\_

YOU ARE DIRECTED TO MAKE THE FOLLOWING CHANGES IN THE CONTRACT DOCUMENTS:  
DESCRIPTION:

REASON FOR CHANGE ORDER:

ATTACHMENTS:

CHANGE IN CONTRACT PRICE
Original Contract Price: \$ _____
Net increase (decrease) from previous Change Orders: \$ _____
Net increase (decrease) of this Change Order: \$ _____
Revised Contract Price: \$ _____

CHANGE IN CONTRACT TIMES
Original Contract Times: <i>(days or dates)</i> Substantial Completion: _____ Ready for Final Payment: _____
Net increase (decrease) from previous Change Orders: <i>(days)</i> Substantial Completion: _____ Ready for Final Payment: _____
Net increase (decrease) of this Change Order: <i>(days)</i> Substantial Completion: _____ Ready for Final Payment: _____
Revised Contract Times: <i>(days or dates)</i> Substantial Completion: _____ Ready for Final Payment: _____

CONTRACTOR agrees that this Change Order includes any and all costs associated with or resulting from the change ordered herein, including all impacts, delays, and accelerated costs. Other than the dollar amount and time allowance listed above, there shall be no other dollar or time compensation as a result of this Change Order.

THIS DOCUMENT SHALL BECOME AN AMENDMENT TO THE CONTRACT AND ALL  
STIPULATIONS AND COVENANTS OF THE CONTRACT SHALL APPLY HERETO.

RECOMMENDED:

APPROVED:

ACCEPTED:

By: \_\_\_\_\_  
ENGINEER (signature)

By: \_\_\_\_\_  
OWNER (signature)

By: \_\_\_\_\_  
CONTRACTOR (signature)

\_\_\_\_\_  
ENGINEER (printed name)

\_\_\_\_\_  
OWNER (printed name)

\_\_\_\_\_  
CONTRACTOR (printed name)

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

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

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

*Note: OWNER is required to complete the Change Order Authorization form on the back if change increase or decrease is for \$10,000 or more, or time of completion is 30 days or more.*

*Not to be used for bidding purposes*

**CHANGE ORDER AUTHORIZATION**

**for**

**Illinois Public Projects**

Name of Project: \_\_\_\_\_

Change Order No.: \_\_\_\_\_

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

This Change Order authorizes: *(check applicable boxes)*

- (a) an increase/decrease in Contract cost by \$10,000 or more \$ \_\_\_\_\_  
(amount)
- (b) an increase/decrease in Contract completion date by 30 days or more \_\_\_\_\_  
(amount)
- (c) other (please describe below)

\_\_\_\_\_

\_\_\_\_\_

OWNER (or it's designee \_\_\_\_\_) has determined that the circumstances said to necessitate the change in performance, which are: *(give circumstances requiring change)*

\_\_\_\_\_

\_\_\_\_\_

*(check one)*

- (a) were not reasonably foreseeable at the time the Contract was signed.
- (b) were germane to the original Contract as signed.
- (c) are in the best interest of the District and authorized by law.

\_\_\_\_\_  
Prepared by ENGINEER

\_\_\_\_\_  
Date

\_\_\_\_\_  
Authorized by OWNER

\_\_\_\_\_  
Date

OWNER shall preserve a copy of this Authorization in a permanent Contract file that is open to the public in accordance with P.A. 85-1295, Ill. Rev. Stat. Ch. 38, par. 33E-9.

**CONTRACTOR'S REQUEST FOR SUBSTITUTION**  
(Include With Submittal)

*Provisions requiring submittal of this form are described in Specification Sections 01 33 00 and 01 61 00 and paragraph 6.05 of the General and Supplementary Conditions.*

Substitution Request No.: \_\_\_\_\_

Project: \_\_\_\_\_

Contract: \_\_\_\_\_

We hereby apply for consideration of \_\_\_\_\_  
*(Proposed Substitute Manufacturer)*  
as a substitute manufacturer to the manufacturer(s) named in Specification Section \_\_\_\_\_

Paragraph/Drawing No. \_\_\_\_\_ for the following reasons. *(Check one or more.)*

\_\_\_\_\_ The specified equipment or material is unavailable or the time of delivery will substantially delay the construction of the project, but not as result of CONTRACTOR'S failure to pursue Work promptly or coordinate various activities. *(Provide supporting information.)*

\_\_\_\_\_ The proposed equipment or material will provide for packaging and coordination with other equipment from a single source supplier. *(Submit name of source supplier and other equipment to be packaged.)*

\_\_\_\_\_ The proposed equipment or material is a "Substitute Item" to that specified and the CONTRACTOR will provide the OWNER with a credit of \$ \_\_\_\_\_ if the equipment or material is accepted.

We certify that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar in substance to the specified, be suited to the same use as that specified, and will not prejudice CONTRACTOR'S achievement of Substantial Completion on time.

Contractor: \_\_\_\_\_

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

Name (print): \_\_\_\_\_

Title: \_\_\_\_\_

NOTE: ENGINEER may require CONTRACTOR to furnish, at CONTRACTOR'S expense, additional data about the proposed substitute including but not limited to, an analysis by CONTRACTOR of the equivalency of the proposed substitute to the named item.



A. Physical Characteristics of Proposed Substitute (if applicable).

Operating Weight: \_\_\_\_\_ Height: \_\_\_\_\_ Width: \_\_\_\_\_ Depth: \_\_\_\_\_

Voltage: \_\_\_\_\_ Hertz: \_\_\_\_\_ KW or HP: \_\_\_\_\_

B. Will acceptance of the proposed substitute by the OWNER:

1. Require a change in the Drawings or Specifications: Yes \_\_\_\_\_ No \_\_\_\_\_

*If yes, attach an explanation and detailed drawings or specifications.*

2. Require payment of any license fee or royalty: Yes \_\_\_\_\_ No \_\_\_\_\_

*If yes, attach an explanation.*

3. Result in a change of contract time: Yes \_\_\_\_\_ No \_\_\_\_\_

*If yes, attach an explanation.*

C. Variations of proposed substitute from specified material, equipment, methods or procedures include: *(If none, state none. Attach separate listing if more space is needed.)*

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

D. Service Source (Maintenance, Repair, and Replacement) Availability:

1. Name of Business: \_\_\_\_\_

Address: \_\_\_\_\_

Years in Business: \_\_\_\_\_ Factory Authorized: Yes \_\_\_\_\_ No \_\_\_\_\_

Parts Stocked: Major: Yes \_\_\_\_\_ No \_\_\_\_\_ Minor: Yes \_\_\_\_\_ No \_\_\_\_\_

Field Service Staff Available: Yes \_\_\_\_\_ No \_\_\_\_\_

2. Name of Business: \_\_\_\_\_

Address: \_\_\_\_\_

Years in Business: \_\_\_\_\_ Factory Authorized: Yes \_\_\_\_\_ No \_\_\_\_\_

Parts Stocked: Major: Yes \_\_\_\_\_ No \_\_\_\_\_ Minor: Yes \_\_\_\_\_ No \_\_\_\_\_

Field Service Staff Available: Yes \_\_\_\_\_ No \_\_\_\_\_

E. Identify costs, direct or indirect, if any, associated with acceptance of this proposed substitute.

*(If none, state none.)*

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

**INSTALLATION LIST**

Location: \_\_\_\_\_ Telephone No.: \_\_\_\_\_

Date Installed: \_\_\_\_\_ Date Started Up: \_\_\_\_\_

Owner's Representative to be Contacted: \_\_\_\_\_

Engineer's Representative to be Contacted: \_\_\_\_\_

Firm's Name: \_\_\_\_\_ Telephone No.: \_\_\_\_\_

\*\*\*\*\*

Location: \_\_\_\_\_ Telephone No.: \_\_\_\_\_

Date Installed: \_\_\_\_\_ Date Started Up: \_\_\_\_\_

Owner's Representative to be Contacted: \_\_\_\_\_

Engineer's Representative to be Contacted: \_\_\_\_\_

Firm's Name: \_\_\_\_\_ Telephone No.: \_\_\_\_\_

\*\*\*\*\*

Location: \_\_\_\_\_ Telephone No.: \_\_\_\_\_

Date Installed: \_\_\_\_\_ Date Started Up: \_\_\_\_\_

Owner's Representative to be Contacted: \_\_\_\_\_

Engineer's Representative to be Contacted: \_\_\_\_\_

Firm's Name: \_\_\_\_\_ Telephone No.: \_\_\_\_\_

\*\*\*\*\*

Location: \_\_\_\_\_ Telephone No.: \_\_\_\_\_

Date Installed: \_\_\_\_\_ Date Started Up: \_\_\_\_\_

Owner's Representative to be Contacted: \_\_\_\_\_

Engineer's Representative to be Contacted: \_\_\_\_\_


Firm's Name: \_\_\_\_\_ Telephone No.: \_\_\_\_\_

## REQUEST FOR INFORMATION

Request No.	Date:
Contractor:	Specification Section / Drawing No.:
Project: FRSA Main Power Transition	
Contract: Capital Project No. 1361	
This is a request for a information on the following:	
Prepared By:	Date Response Needed:
Response:	
Prepared By:	Date:
Response Returned to Contractor On:	
cc: Owner Resident Project Representative _____	

# CONTRACTOR'S SUBMITTAL TRANSMITTAL

CONTRACT: \_\_\_\_\_

	<b>[NTU: INSERT CONTRACTOR OF OWNER LOGO]</b>
<b>To:</b>  //Donohue Shop Drawing Coordinator// Donohue & Associates, Inc. //3311 Weeden Creek Road// //Sheboygan, WI 53081// Phone: //920-803-7358// Email: //person@donohue-associates.com//	<b>From:</b>  //INSERT CONTRACTOR NAME, ADDRESS, PHONE NUMBER, AND EMAIL//

<b>Specification Section:</b>	<<Section Number>> (same as selected in eCommunication database)
<b>Donohue Title:</b>	<<Section Title from TOC>> (same as selected in eCommunication database)
<b>Description:</b>	Xxxx xxxx xxxx (same as entered in eCommunication database)
<b>Type:</b>	(same as selected in eCommunication database)

Applicable Contract Clarification / Interpretation Request(s) were submitted and response(s) received:

No     Yes    If Yes, List RFI Numbers: \_\_\_\_\_

Submittal includes variations from the requirements of the Contract Documents:

No     Yes    If Yes, Variations are identified below and in accordance with paragraph 7.16 of the General Conditions:

Variations are as follows:

1. <<None>>

Contractor certifies that this submittal has been prepared in accordance with paragraph 7.16 of the General Conditions and Contractor has reviewed and approved this submittal in accordance with paragraph 7.16 of the General Conditions:

Yes     No

Contractor:	
Signature:	Date:
Name ( <i>print</i> ):	
Title:	

Not to be used for bidding purposes