



### AGENDA ITEM EXECUTIVE SUMMARY

Agenda Item:	Consider draft resolution awarding Contract with Kelso-Burnett Company for the South Street Substation Relay Upgrade Project.		
Presenter & Title:	Hal Wright, Superintendent of Electrical Services		
Date:	September 3, 2019		
<b>Please Check Appropriate Box:</b>			
<input checked="" type="checkbox"/>	Committee of the Whole Meeting	<input type="checkbox"/>	Special Committee of the Whole Meeting
<input checked="" type="checkbox"/>	City Council Meeting	<input type="checkbox"/>	Special City Council Meeting
<input type="checkbox"/>	Public Hearing	<input type="checkbox"/>	Other -
Associated Strategic Plan Goal/Objective: EMS-II			
Estimated Cost: \$253,000.00	Budgeted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Other Funding? <input type="checkbox"/> Yes <input type="checkbox"/> No	
<i>If "Other Funding," please explain how the item will be funded:</i>			
<b>Executive Summary:</b>			
<p>City of Geneva Electric Division has identified the protection relays at the South Street Substation as needing replacement due to time in service. This equipment has been in service continually since the substation was built in 2001 and are now reaching their end of expected time in service.</p> <p>This contract will encompass the removal of the old relays, door panels, wiring and RTU (demolition) and installation of new relays, door panels, wiring and RTU (construction).</p> <p>Bids were advertised and two bidders responded. Stanley Consultants estimated construction costs of \$384,000.00. Based on this information and past projects, staff feels the bid amounts were fair and reasonable. It the judgement of Staff that the prices are fair and re-bidding to attain three bids would not yield any better response.</p> <p>The following bids were received:</p>			
	Kelso-Burnett	\$253,000.00	
	MJ Electric	\$375,251.31	

Due to the complexity of the project, staff is recommending that a 10% contingency be included in the overall not-to-exceed amount to account for any unforeseen field changes that may occur. Any field changes (Change Orders) must be approved by the City Administrator to be applied to the contingency.

**Attachments:** *(please list)*

- Resolution
- Recommendation of Award Letter from Stanley Consultants
- Contract for South Street Substation Relay Upgrade

**Voting Requirements:**

*This motion requires 6 affirmative votes for passage.*

*The Mayor may vote on three occasions: (a) when the vote of the aldermen or trustees has resulted in a tie; (b) when one half of the aldermen or trustees elected have voted in favor of an ordinance, resolution, or motion even though there is no tie votes; or (c) when a vote greater than a majority of the corporate authorities is required by state statute or local ordinance to adopt an ordinance, resolution, or motion.*

**Recommendation / Suggested Action:** *(how item should be listed on agenda)*

Award Contract to Kelso-Burnett Company for the South Street Substation Relay Upgrade Project at a cost of \$253,000.00 and allow the City Administrator to approve up to \$25,300.00 in change orders for a total not-to-exceed amount of \$278,300.00.

**RESOLUTION NO. 2019-76**

**RESOLUTION AUTHORIZING EXECUTION OF  
Contract with Kelso-Burnett Company for the South Street Substation Relay Upgrade Project**

**BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF GENEVA, KANE COUNTY, ILLINOIS**, as follows:

**SECTION 1:** That the City Administrator is hereby authorized to award, on behalf of the City of Geneva, the Contract with Kelso-Burnett Company for the South Street Substation Relay Upgrade Project, in the form attached hereto.

**SECTION 2:** This Resolution shall become effective from and after its passage as in accordance with law.

**PASSED** by the City Council of the City of Geneva, Kane County, Illinois, this 3<sup>rd</sup> day of September, 2019

**AYES: \_\_ NAYS: \_\_ ABSENT: \_\_ ABSTAINING: \_\_ HOLDING OFFICE: \_\_**

Approved by me this 3<sup>rd</sup> day of September, 2019.

\_\_\_\_\_  
Mayor

ATTEST:

\_\_\_\_\_  
City Clerk



August 13, 2019

Mr. Aaron Holton  
Electric Operations Manager  
City of Geneva  
1800 South Street  
Geneva, IL 60134

**RE: Engineer's Recommendation for Award of Contract  
Construction – Substation Relay Upgrades  
South Street Substation**

Dear Aaron:

On August 12, 2019, bids from two construction firms were received in response to the request for proposal for the South Street Substation Construction Contract. The bids were opened and read aloud by the City of Geneva. The bids were then sent to Stanley Consultants to be reviewed in Stanley Consultants' office.

The bid breakout is as follows:

<u>Bidder</u>	<u>Bid Total</u>
Kelso-Burnett Co.	\$253,000.00
MJ Electric	\$375,251.31

Of the two bids received, Kelso-Burnett Co. is the apparent low bidder for the following reasons: Kelso-Burnett Co.'s total bid is more than \$120,000 less than the bid submitted by MJ Electric. Kelso-Burnett Co. also provided all the expected documents as requested under 00\_41\_13 section 8.01 of the bid specification, whereas MJ Electric omitted several of these documents from their bid including 8.01 items F, G, I, and W. Lastly, Kelso-Burnett Co. took no exceptions to the technical or commercial requirements of the bid specification, whereas the bid submitted by MJ Electric lists numerous exceptions and clarifications to the spec.

A copy of our final bid tabulation is included for your review.

Stanley Consultants recommends awarding this contract to Kelso-Burnett Co. for the bid price of \$253,000.00.

Please review and if Geneva agrees with this recommendation, prepare a Notice-to-Proceed letter for Kelso-Burnett Co., and sign three copies of the draft conformed contract Agreement Page (section 00 42 13, page 5). Once you have signed the agreement pages, please mail back to me along with the original signed pages from Kelso-Burnett Co. bid. I will then proceed with getting final signatures from Kelso-Burnett Co. and prepare the conformed contract.



If you have any questions, please contact me at 563.264.6461.

Sincerely,

Stanley Consultants, Inc.

Philip E. Schulz, P.E.  
Project Manager

Enclosure: Bid Tabulation  
Draft Conformed Contract

29175 Construction REC ltr 2019-08-13


**BID TABULATION SHEET**

<b>Bid Number</b>	1	2			
<b>Name of Bidder</b>	Kelso-Burnett Co.	MJ Electric			
<b>Bid Security</b>	10%	10%			
<b>Addenda</b>	1	No			
<b>Door &amp; Equipment Procurement/Assembly Cost</b>	\$186,000.00	\$112,928.55			
<b>Construction &amp; Installation Cost</b>	\$67,000.00	\$262,322.76			
<b>Total Bid</b>	<b>\$253,000.00</b>	<b>\$375,251.31</b>			
<b>Site Services of Service Engineer Cost</b>	\$1,500.00 (per day)	Did not include			
<b>Travel of Service Engineer to Site Cost</b>	\$1,500.00 (per round trip)	Did not include			
<b>Exceptions</b>	None	<p>-Will bill "premium time" if asked to work in inclement weather</p> <p>-Proposal limits disposal of removed equipment to designated onsite areas</p> <p>-Proposal excludes site construction security services</p> <p>-Notes that "If MJE is required to purchase additional materials, it will be submitted for a scope change at cost plus 5%"</p>			
<b>Comments:</b>	None	<p>-No evidence of authority to do business in Illinois (00_41_13 8.01.F)</p> <p>-License Number not provided (00_41_13 8.01.G)</p> <p>-Didn't include signed non-collusion affidavit (00_41_13</p>			



**BID TABULATION SHEET**

		8.01.I) -Did not include warranty (00_41_13 8.01.W)			
<b>Notes:</b>	-Proposed Supplier: Kemco Industries  -Delivery Schedule: Wiring – 4 weeks after NTP, Doors – 8-12 Weeks after approval of wiring diagrams	-Proposed Supplier: Systems Control  -Delivery Schedule: “December Start, deliver 2 panels per week			

TABULATED BY: S. G. Weiss  
CHECK BY: P. E. Schulz

DATE: 8/12/19  
DATE: \_\_\_\_\_

# **Project Manual**

**for**

## **South Substation Substation Relay Upgrade**

**between**

**City of Geneva  
Geneva, Illinois**

**And**

**Kelso-Burnett Co.  
Rolling Meadows, Illinois**

**August 2019**



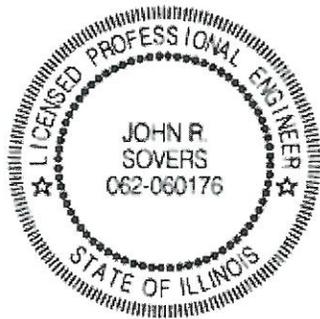
A Stanley Group Company  
Engineering, Environmental and Construction Services - Worldwide

# Project Manual

for

## South Substation Substation Relay Upgrade

City of Geneva  
Geneva, Illinois



*John R. Sovers*  
\_\_\_\_\_  
Signature  
*7-18-19*  
\_\_\_\_\_  
Date

License Expiration Date: 11-30-2019  
Illinois Firm Registration No. 184-001533



A Stanley Group Company  
Engineering, Environmental and Construction Services - Worldwide

SOUTH STREET  
SUBSTATION RELAY UPGRADECITY OF GENEVA  
GENEVA, ILLINOIS**PROCUREMENT AND CONTRACTING REQUIREMENTS GROUP**

## DIVISION 00      PROCUREMENT AND CONTRACTING REQUIREMENTS

Resp. Charge	Section	Title	Page
JRS	00 01 15	Drawing List	1
JRS	00 52 13	Agreement between Owner and Contractor – EJCDC C-520 (2013 Edition)	1 thru 8
JRS	00 61 13-13	Performance Bond – EJCDC C-610 (2013 Edition)	1 thru 3
JRS	00 61 13-16	Payment Bond – EJCDC C-615 (2013 Edition)	1 thru 3
JRS	00 72 13	Standard General Conditions of the Construction Contract – EJCDC C-700 (2013 Edition)	1 thru 38
JRS	00 73 00	Supplementary Conditions – EJCDC C-800 (2013 Edition)	1 thru 12
	00 91 13-1	Addendum No. 1 – August 2, 2019	

**SPECIFICATIONS GROUP****GENERAL REQUIREMENTS SUBGROUP**

## DIVISION 01      GENERAL REQUIREMENTS

JRS	01 11 00	Summary of Work	1 thru 2
JRS	01 20 00	Price and Payment Procedures	1 thru 3
JRS	01 30 00	Administrative Requirements	1 thru 3
JRS	01 32 00	Construction Progress Documentation	1 thru 2
JRS	01 33 00	Submittal Procedures	1 thru 6
JRS		Submittal Transmittal Form	1
JRS	01 40 00	Quality Requirements	1 thru 3
JRS	01 50 00	Temporary Facilities and Controls	1 thru 4
JRS	01 60 00	Product Requirements	1 thru 2
JRS	01 70 00	Execution and Closeout Requirements	1 thru 3
JRS	01 78 23	Operating and Maintenance Data	1 thru 3
JRS		Operating and Maintenance Manual Cover Diagram	1

**FACILITY CONSTRUCTION SUBGROUP**

Resp. Charge	Section	Title	Page
DIVISION 02      EXISTING CONDITIONS			
JRS	02 41 00	Demolition	1 thru 5

**SITE AND INFRASTRUCTURE SUBGROUP**

## DIVISION 33      UTILITIES

JRS	33 05 70	Common Work Results for Utilities	1 thru 10
JRS	33 72 33-16	Metering and Relaying Panels	1 thru 16

Drawing No.	Title	Rev. No.
00041-02-D	15KV OUTDOOR SWITCHGEAR PANEL LAYOUT	3
00041-03-D	15KV OUTDOOR SWITCHGEAR ONE LINE DIAGRAM (SH.1 OF 3)	1
00041-04-D	15KV OUTDOOR SWITCHGEAR ONE LINE DIAGRAM (SH.2 OF 3)	1
00041-05-D	15KV OUTDOOR SWITCHGEAR ONE LINE DIAGRAM (SH.3 OF 3)	2
00041-06-D	15KV OUTDOOR SWITCHGEAR THREE LINE DIAGRAM (SH.1 OF 5)	2
00041-07-D	15KV OUTDOOR SWITCHGEAR THREE LINE DIAGRAM (SH.2 OF 5)	3
00041-08-D	15KV OUTDOOR SWITCHGEAR THREE LINE DIAGRAM (SH.3 OF 5)	3
00041-09-D	15KV OUTDOOR SWITCHGEAR THREE LINE DIAGRAM (SH.4 OF 5)	4
00041-10-D	15KV OUTDOOR SWITCHGEAR THREE LINE DIAGRAM (SH.5 OF 5)	3
00041-11-D	15KV OUTDOOR SWITCHGEAR AC PANELBOARD & CIRCUITS	3
00041-12-D	15KV OUTDOOR SWITCHGEAR DC PANELBOARD CIRCUITS	3
00041-13-D	UNIT 1 (TOP) – CIRCUIT SWG. CS-1 DC CONTROL SCHEMATIC	4
00041-14-D	UNIT 1 (BOTTOM) – MAIN BREAKER 52-M1 DC CONTROL SCHEMATIC	3
00041-15-D	UNIT 3 (TOP) – FEEDER BREAKER 52-F1 DC CONTROL SCHEMATIC	3
00041-16-D	UNIT 3 (BTM) – FEEDER BREAKER 52-F2 DC CONTROL SCHEMATIC	3
00041-17-D	UNIT 4 (TOP) – FEEDER BREAKER 52-F3 DC CONTROL SCHEMATIC	1
00041-18-D	UNIT 4 (BTM) – FEEDER BREAKER 52-F4 DC CONTROL SCHEMATIC	3
00041-19-D	UNIT 1 (TOP) – DIFF. CKTS. 86M1 & 86L1 DC CONTROL SCHEMATIC	3
00041-20-D	DIFF. CKTS. 86B1 & 86T1 DC CONTROL CIRCUITS	4
00041-21-D	ANNUNCIATOR SCHEMATIC	4
00041-21A-D	ANNUNCIATOR SCHEMATIC	4
00041-22-D	COMMUNICATION SCHEMATIC	4
00041-23-D	RTU SCHEMATIC (SHEET 1 OF 2)	4
W-11-D	NTU SCHEMATIC WIRING DIAGRAM	B
490/0124114/A-D	CONTROL CABINET AUTOMATIC VOLTAGE REGULATION	
EO01	15KV OUTDOOR ONE LINE DIAGRAM	0
EO02	12KV SWITCHGEAR ONE LINE DIAGRAM (SHEET 1 OF 2)	0
EO03	12KV SWITCHGEAR ONE LINE DIAGRAM (SHEET 2 OF 2)	0
EO04	COMMUNICATION ONE LINE DIAGRAM	0
EO06	15KV OUTDOOR THREE LINE DIAGRAM (SHEET 1 OF 2)	0
EO07	15KV OUTDOOR THREE LINE DIAGRAM (SHEET 2 OF 2)	0
EO08	12KV INDOOR SWITCHGEAR THREE LINE DIAGRAM (SHEET 1 OF 3)	0
EO09	12KV INDOOR SWITCHGEAR THREE LINE DIAGRAM (SHEET 2 OF 3)	0
EO10	12KV INDOOR SWITCHGEAR THREE LINE DIAGRAM (SHEET 3 OF 3)	0
EO11	AC PANELBOARD SCHEMATIC DIAGRAM	0
EO12	DC PANELBOARD SCHEMATIC DIAGRAM	0
EO13	SCHEMATIC DIAGRAM 34.5KV MAIN DC SCHEMATIC	0
EO14	34.5KV CS-1 CONTROL DC SCHEMATIC	0
EO15	TRANSFORMER T1 DC SCHEMATIC	0
EO16	12.47KV MAIN BREAKER 52M1 DC SCHEMATIC	0
EO17	12.47KV BUS DIFFERENTIAL DC SCHEMATIC	0
EO18	12.47KV FEEDER BREAKER 52-F1 DC SCHEMATIC	0
EO19	12.47KV FEEDER BREAKER 52-F2 DC SCHEMATIC	0
EO20	12.47KV FEEDER BREAKER 52-F3 DC SCHEMATIC	0
EO21	12.47KV FEEDER BREAKER 52-F4 DC SCHEMATIC	0
EO22	SCHEMATIC DIAGRAM AXION RTAC & POWER COUPLER	0
EO23	SCHEMATIC DIAGRAM RTU INPUTS (SHEET 1 OF 3)	0
EO24	SCHEMATIC DIAGRAM RTU INPUTS (SHEET 2 OF 3)	0
EO25	SCHEMATIC DIAGRAM RTU INPUTS (SHEET 3 OF 3)	0
EO26	SCHEMATIC DIAGRAM NETWORK SWITCH	0
EO27	SCHEMATIC DIAGRAM NTX-20 CONTROLLER	0
EO28	SCHEMATIC DIAGRAM XFMR AUTOMATIC VOLTAGE REGULATION	0
EP01	15KV SWITCHGEAR PANEL LAYOUT	0

**THIS AGREEMENT** is by and between City of Geneva, Illinois (Owner) and Kelso-Burnett Co. (Contractor). Owner and Contractor hereby agree as follows:

#### **ARTICLE 1 - WORK**

1.1 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as removing the existing relay panel doors and furnishing and installing 8 new assembled relay panel doors containing transformer, bus, main breaker, feeder relaying/metering and SCADA RTU equipment. Additionally, the project will include removing the existing RTU and annunciator along with any associated equipment and installing an ACS protocol converter in the existing RTU panel.

#### **ARTICLE 2 - THE PROJECT**

2.1 The Project for which Work under the Contract Documents may be the whole or only a part is generally described as South Street Substation Relay Upgrade.

#### **ARTICLE 3 - ENGINEER**

3.1 The Project has been designed by Stanley Consultants, Inc.

3.2 The Owner has retained Stanley Consultants, Inc. (Engineer) to act as Owner's representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

#### **ARTICLE 4 - CONTRACT TIMES**

4.1 *Time of the Essence.* All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.2 *Contract Times: Dates.* The Work will be substantially completed three months after the start of construction in accordance with paragraph 4.3 but no later than February 28, 2020, and completed and ready for final payment in accordance with paragraph 15.06 of the General Conditions on or before March 31, 2020.

4.3 *Milestones.* Equipment procurement may start within 21 days after Notice to Proceed. Construction shall not begin sooner than October 8, 2019.

4.4 The City shall be notified 48 hours prior to any shipment of materials or equipment. Please contact Mr. Aaron Holton at (630) 232-1503 during the hours of 7:00 am to 3:00 pm Monday through Friday.

4.5 Deliveries shall be made during City of Geneva Electric Utility business hours of 7:00 am to 11:30 am and 12:30 pm to 3:00 pm Monday through Friday.

4.4 *Liquidated Damages.* Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.1 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.2 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

- A. Substantial Completion: Contractor shall pay Owner \$750 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.2 above for Substantial Completion until the Work is substantially complete.
- B. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$750 for each day that expires after such time until the Work is completed and ready for final payment.
- C. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.

4.6 *Special Damages.* In addition to the amount provided for liquidated damages, Contractor shall reimburse Owner (1) for any fines or penalties imposed on Owner as a direct result of the Contractor's failure to attain Substantial Completion according to the Contract Times, and (2) for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Substantial Completion (as duly adjusted pursuant to the Contract), until the Work is substantially complete.

4.7 After Contractor achieves Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times, Contractor shall reimburse Owner for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Work to be completed and ready for final payment (as duly adjusted pursuant to the Contract), until the Work is completed and ready for final payment.

## ARTICLE 5 - CONTRACT PRICE

5.1 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents the amounts that follow, subject to adjustment under the Contract:

- A. For all Work, other than Unit Price Work, a Lump Sum of:

Two Hundred Fifty-Three Thousand (\$253,000)  
(words) (figures)

- B. *Unit Adjustment Prices.* To adjust Lump Sum for changes from quantities required by Contract Documents.

Item No.	Description	Unit	Unit Adjustment Price
1.	Site services of Service Engineer	per day	\$ 1,500.00
2.	Transportation, travel time, and out-of-pocket expenses for travel of Service Engineer to Site	per round trip	\$ 1,500.00

## ARTICLE 6 - PAYMENT PROCEDURES

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

6.2 *Progress Payments; Retainage.* Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the last day of each month during performance of the Work as provided in Paragraph 6.2.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

- A. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below, but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract:
1. 90% percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and
  2. 90% of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
- B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 90% of the Work completed, less such amounts set off by Owner pursuant to paragraph 15.01. E. of the

General Conditions and less 10% of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.3 *Final Payment.* Upon final completion and acceptance of the Work in accordance with paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said paragraph 15.06.

#### **ARTICLE 7 - INTEREST**

7.1 All amounts not paid when due shall bear interest at the rate of 4% per annum.

#### **ARTICLE 8 - CONTRACTOR'S REPRESENTATIONS**

8.1 In order to induce Owner to enter into this Contract, Contractor makes the following representations:

- A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
- B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. No site related reports are available for this project.

#### **ARTICLE 9 - CONTRACT DOCUMENTS**

9.1 *Contents:* The Contract Documents consist of the following:

- A. This Agreement (pages 1 to 8, inclusive).
- B. Performance Bond (pages 1 to 3, inclusive).
- C. Payment Bond (pages 1 to 3, inclusive).
- D. General Conditions (pages 1 to 38, inclusive).
- E. Supplementary Conditions (pages 1 to 12, inclusive).
- F. Specifications as listed in Project Manual table of contents.
- G. Drawings as listed on the Drawing List.
- H. Addenda number 1, inclusive.
- I. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
  - 1. Notice to Proceed.
  - 2. Instructions to Contractors.
  - 3. Change Orders.
  - 4. Field Orders.

9.2 The documents listed in paragraph 9.1 are attached to this Agreement (except as expressly noted otherwise above).

9.3 There are no Contract Documents other than those listed above in this Article 9.

9.4 The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

#### **ARTICLE 10 - MISCELLANEOUS**

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

10.2 *Assignment of Contract.* Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto 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 Documents.

10.3 *Successors and Assigns.* 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.

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

10.5 *Contractor's Certification.* Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.5:

- A. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process or in the Contract execution;
- B. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
- C. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
- D. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

10.6 *Other Provisions.* Owner stipulates that the General Conditions that are made a part of this Contract are based on EJCDC® C-700, Standard General Conditions for the Construction Contract, published by the Engineers Joint Contract Documents Committee®, and Owner is the party that has furnished said General Conditions, and has plainly shown all modifications to the standard wording of such published document to the Contractor in the Supplementary Conditions.

**IN WITNESS WHEREOF**, Owner and Contractor have signed this Agreement. This Agreement will be effective on \_\_\_\_\_, 20\_\_ (which is the Effective Date of the Agreement).

**OWNER:**

**CONTRACTOR:**

\_\_\_\_\_

\_\_\_\_\_

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

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

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

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

*(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)*

Attest \_\_\_\_\_

Attest \_\_\_\_\_

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

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

Address for giving notices:

Address for giving notices:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

*(If Owner is a corporation, attach evidence of authority to sign. If Owner is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of Owner-Contractor Agreement.)*

License No. \_\_\_\_\_

*(Where applicable)*

END OF DOCUMENT



# KELSO-BURNETT CO. UTILITY DIVISION

5200 Newport Drive · Rolling Meadows, Illinois 60008-3886 · (847) 342-0420 · Fax (847) 259-4317

## Article 8 – Attachments to the Bid

- A. Statement of no Exceptions and Clarifications:
  - None
- B. Exceptions and Clarifications to Contract Documents:
  - None
- C. Required Bid Security
  - Attached
- D. List of Proposed Subcontractors
  - None
- E. List of Proposed Suppliers
  - Kemco Industries
- F. Evidence of Authority to do business in the State of Illinois
  - City of Chicago Electrical license attached.
- G. Contractor's License Number
  - # ECC00150
- I. Affidavit of Non-Collusion
  - a. Attached
- J. Attachment A – Certification of Compliance
  - a. Attached
- L. Completed metering and relay panel Data Sheets
  - a. Metering and relay panel equipment are called out by Stanley Consultants in Specification Section 33 72 33, pages 15, 16 & 17. We will provide the specified products as listed.
- M. Preliminary elevation and outline drawings with estimated dimensions and weights.
  - a. To be provided upon Notice to Proceed.
- N. Submittal schedule and complete equipment delivery schedule
  - a. Wiring diagrams 4 weeks after NTP, Doors with relays 8-12 weeks after wiring diagrams are approved (Target start date of actual construction would be end of December, 2019).
- O. Special equipment, tools, and accessories
  - a. None
- P. Welding qualifications program
  - a. Onsite welding is not required
- Q. List of proposed equipment including model numbers description of devices
  - a. Metering and relay panel equipment are called out by Stanley Consultants in Specification Section 33 72 33, pages 15, 16 & 17. We will provide the specified products as listed. Kemco Industries will provide the fabrication of the doors and is the same manufacturer that Kelso-Burnett has used on multiple City of Geneva Projects in the past (Peyton Street, Business Park #2, East Side Drive).
- R. Information as defined in ANSI C37.21
  - a. To be provided upon award of contract



- S. List of Items Requiring Field Assembly
  - a. Not applicable
- T. Recommended Spare Parts with Pricing
  - a. None Recommended
- U. Recommended long term and short-term storage requirements, and procedures
  - a. None Recommended
- V. Geographical location of manufacturing facility
  - a. Kemco Industries – Sanford, Florida
- W. Copy of Warranty
  - a. See attached



# KELSO-BURNETT CO. UTILITY DIVISION

5200 Newport Drive • Rolling Meadows, Illinois 60008-3886 • (847) 342-0420 • Fax (847) 259-4317

**Owner:** City of Geneva, Illinois  
**Address:** 22 South First Street  
 Geneva Illinois 60134

**Project:** City of Geneva South Street Substation Relay Upgrade Project

<b>Re:</b>	<b>Substantial Completion Date</b>	<b>02/28/20</b>
	<b>Warranty Period thru</b>	<b>02/28/21</b>

In accordance with the project documents, drawings, specifications and other relevant items, we herewith guarantee all work on the above referenced project against any defective or substandard labor, material, equipment or workmanship for a period of one (1) year from the date of substantial completion. Should any defects develop in the materials, or workmanship within the specified warranty period, this subcontractor agrees within five (5) days after receiving written or verbal notice from the Owner or General Contractor, without expense to the Owner or General Contractor, to repair, replace, and in general, to perform all necessary corrective work, with regard to the defective or nonconforming work or material, together with work in other trades that are distributed as a result of such corrective work, to the satisfaction of the Owner. The foregoing shall not in any manner limit the Owner's remedy to this subcontractor's liability to those defects appearing within the warranty period. This subcontractor agrees to perform the work in a proper manner and time period so as to minimize any consequential damage sustained by the Owner and so as not to interfere with or in any way disrupt the operations of the Owner.

By:

KELSO-BURNETT COMPANY

*John D. Weir*

John D. Weir  
 Division Manger

## PERFORMANCE BOND

CONTRACTOR *(name and address)*:

SURETY *(name and address of principal place of business)*:

OWNER *(name and address)*:

### CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location)*:

### BOND

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract)*:

Amount:

Modifications to this Bond Form:  None  See Paragraph 16

---

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

### CONTRACTOR AS PRINCIPAL

\_\_\_\_\_  
Contractor's Name and Corporate Seal *(seal)*

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

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Title

Attest: \_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

### SURETY

\_\_\_\_\_  
Surety's Name and Corporate Seal *(seal)*

By: \_\_\_\_\_  
Signature *(attach power of attorney)*

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Title

Attest: \_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

**Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.**

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.
2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after:
  - 3.1 The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;
  - 3.2 The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
  - 3.3 The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.
4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.
5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:
  - 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;
  - 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;
  - 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or
  - 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:
    - 5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
    - 5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.
6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.
7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:
  - 7.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
  - 7.2 additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and
  - 7.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.
8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.
9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.

10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
11. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit shall be applicable.
12. Notice to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.
13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
14. Definitions
  - 14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.
  - 14.2 Construction Contract: The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.
  - 14.3 Contractor Default: Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.
  - 14.4 Owner Default: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
  - 14.5 Contract Documents: All the documents that comprise the agreement between the Owner and Contractor.
15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.
16. Modifications to this Bond are as follows:

## PAYMENT BOND

CONTRACTOR *(name and address)*:

SURETY *(name and address of principal place of business)*:

OWNER *(name and address)*:

### CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location)*:

### BOND

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract)*:

Amount:

Modifications to this Bond Form:  None  See Paragraph 18

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

### CONTRACTOR AS PRINCIPAL

### SURETY

\_\_\_\_\_  
Contractor's Name and Corporate Seal

\_\_\_\_\_  
Surety's Name and Corporate Seal

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

By: \_\_\_\_\_  
Signature *(attach power of attorney)*

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

Attest: \_\_\_\_\_  
Signature

Attest: \_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

**Notes:** (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond shall arise after the following:
  - 5.1 Claimants who do not have a direct contract with the Contractor,
    - 5.1.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
    - 5.1.2 have sent a Claim to the Surety (at the address described in Paragraph 13).
  - 5.2 Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
  - 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
  - 7.2 Pay or arrange for payment of any undisputed amounts.
  - 7.3 The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.
8. The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by

anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

## 16. Definitions

16.1 **Claim:** A written statement by the Claimant including at a minimum:

1. The name of the Claimant;
2. The name of the person for whom the labor was done, or materials or equipment furnished;
3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
4. A brief description of the labor, materials, or equipment furnished;
5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
7. The total amount of previous payments received by the Claimant; and
8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

16.2 **Claimant:** An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

16.3 **Construction Contract:** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

16.4 **Owner Default:** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

16.5 **Contract Documents:** All the documents that comprise the agreement between the Owner and Contractor.

17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

18. Modifications to this Bond are as follows:

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



Issued and Published Jointly by



These General Conditions have been prepared for use with the Agreement Between Owner and Contractor for Construction Contract (EJCDC® C-520, Stipulated Sum, or C-525, Cost-Plus, 2013 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other.

To prepare supplementary conditions that are coordinated with the General Conditions, use EJCDC's Guide to the Preparation of Supplementary Conditions (EJCDC® C-800, 2013 Edition). The full EJCDC Construction series of documents is discussed in the Commentary on the 2013 EJCDC Construction Documents (EJCDC® C-001, 2013 Edition).

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STANDARD GENERAL CONDITIONS OF THE  
CONSTRUCTION CONTRACT

TABLE OF CONTENTS

	Page
Article 1 – Definitions and Terminology .....	1
1.01 Defined Terms .....	1
1.02 Terminology.....	3
Article 2 – Preliminary Matters.....	4
2.01 Delivery of Bonds and Evidence of Insurance.....	4
2.02 Copies of Documents.....	4
2.03 Before Starting Construction.....	4
2.04 Preconstruction Conference; Designation of Authorized Representatives .....	4
2.05 Initial Acceptance of Schedules .....	4
2.06 Electronic Transmittals.....	4
Article 3 – Documents: Intent, Requirements, Reuse.....	5
3.01 Intent .....	5
3.02 Reference Standards .....	5
3.03 Reporting and Resolving Discrepancies .....	5
3.04 Requirements of the Contract Documents .....	6
3.05 Reuse of Documents.....	6
Article 4 – Commencement and Progress of the Work.....	6
4.01 Commencement of Contract Times; Notice to Proceed .....	6
4.02 Starting the Work.....	6
4.03 Reference Points .....	6
4.04 Progress Schedule.....	6
4.05 Delays in Contractor’s Progress.....	6
Article 5 – Availability of Lands; Subsurface and Physical Conditions; Hazardous Environmental Conditions .....	7
5.01 Availability of Lands .....	7
5.02 Use of Site and Other Areas .....	7
5.03 Subsurface and Physical Conditions .....	8
5.04 Differing Subsurface or Physical Conditions.....	8
5.05 Underground Facilities .....	9
5.06 Hazardous Environmental Conditions at Site.....	10
Article 6 – Bonds and Insurance .....	11
6.01 Performance, Payment, and Other Bonds .....	11
6.02 Insurance—General Provisions.....	11
6.03 Contractor’s Insurance.....	12
6.04 Owner’s Liability Insurance .....	13
6.05 Property Insurance.....	13
6.06 Waiver of Rights.....	14
6.07 Receipt and Application of Property Insurance Proceeds .....	15

Article 7 – Contractor’s Responsibilities .....	15
7.01 Supervision and Superintendence .....	15
7.02 Labor; Working Hours.....	15
7.03 Services, Materials, and Equipment.....	16
7.04 “Or Equals” .....	16
7.05 Substitutes .....	16
7.06 Concerning Subcontractors, Suppliers, and Others .....	17
7.07 Patent Fees and Royalties .....	18
7.08 Permits .....	18
7.09 Taxes .....	19
7.10 Laws and Regulations.....	19
7.11 Record Documents.....	19
7.12 Safety and Protection.....	19
7.13 Safety Representative .....	20
7.14 Hazard Communication Programs .....	20
7.15 Emergencies.....	20
7.16 Shop Drawings, Samples, and Other Submittals .....	20
7.17 Contractor’s General Warranty and Guarantee.....	21
7.18 Indemnification.....	22
7.19 Delegation of Professional Design Services .....	22
Article 8 – Other Work at the Site.....	22
8.01 Other Work .....	22
8.02 Coordination .....	23
8.03 Legal Relationships .....	23
Article 9 – Owner’s Responsibilities .....	23
9.01 Communications to Contractor .....	23
9.02 Replacement of Engineer.....	23
9.03 Furnish Data.....	24
9.04 Pay When Due .....	24
9.05 Lands and Easements; Reports, Tests, and Drawings .....	24
9.06 Insurance .....	24
9.07 Change Orders .....	24
9.08 Inspections, Tests, and Approvals.....	24
9.09 Limitations on Owner’s Responsibilities .....	24
9.10 Undisclosed Hazardous Environmental Condition.....	24
9.11 Evidence of Financial Arrangements .....	24
9.12 Safety Programs.....	24
Article 10 – Engineer’s Status During Construction .....	24
10.01 Owner’s Representative.....	24
10.02 Visits to Site.....	24
10.03 Project Representative .....	24
10.04 Rejecting Defective Work .....	25
10.05 Shop Drawings, Change Orders and Payments .....	25
10.06 Determinations for Unit Price Work .....	25
10.07 Decisions on Requirements of Contract Documents and Acceptability of Work.....	25
10.08 Limitations on Engineer’s Authority and Responsibilities.....	25
10.09 Compliance with Safety Program.....	25

Article 11 – Amending the Contract Documents; Changes in the Work.....	25
11.01 Amending and Supplementing Contract Documents .....	25
11.02 Owner-Authorized Changes in the Work.....	26
11.03 Unauthorized Changes in the Work .....	26
11.04 Change of Contract Price.....	26
11.05 Change of Contract Times .....	27
11.06 Change Proposals.....	27
11.07 Execution of Change Orders .....	27
11.08 Notification to Surety .....	27
Article 12 – Claims.....	27
12.01 Claims .....	27
Article 13 – Cost of the Work; Allowances; Unit Price Work.....	28
13.01 Cost of the Work.....	28
13.02 Allowances.....	30
13.03 Unit Price Work.....	30
Article 14 – Tests and Inspections; Correction, Removal or Acceptance of Defective Work.....	30
14.01 Access to Work.....	30
14.02 Tests, Inspections, and Approvals.....	30
14.03 Defective Work.....	31
14.04 Acceptance of Defective Work .....	31
14.05 Uncovering Work .....	31
14.06 Owner May Stop the Work.....	32
14.07 Owner May Correct Defective Work.....	32
Article 15 – Payments to Contractor; Set-Offs; Completion; Correction Period .....	32
15.01 Progress Payments .....	32
15.02 Contractor’s Warranty of Title .....	34
15.03 Substantial Completion.....	34
15.04 Partial Use or Occupancy .....	35
15.05 Final Inspection.....	35
15.06 Final Payment .....	35
15.07 Waiver of Claims .....	36
15.08 Correction Period.....	36
Article 16 – Suspension of Work and Termination .....	36
16.01 Owner May Suspend Work .....	36
16.02 Owner May Terminate for Cause.....	36
16.03 Owner May Terminate For Convenience.....	37
16.04 Contractor May Stop Work or Terminate .....	37
Article 17 – Final Resolution of Disputes.....	38
17.01 Methods and Procedures.....	38
Article 18 – Miscellaneous.....	38
18.01 Giving Notice.....	38
18.02 Computation of Times .....	38
18.03 Cumulative Remedies.....	38
18.04 Limitation of Damages .....	38

18.05 No Waiver .....	38
18.06 Survival of Obligations.....	38
18.07 Controlling Law .....	38
18.08 Headings.....	38

## 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 form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting 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, or both; 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, or both; 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; or (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. 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), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. ("CERCLA"); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5501 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. ("RCRA"); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree 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 the 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. *Engineer*—The individual or entity named as such in the Agreement.
21. *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.
22. *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. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.
23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
25. *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.
26. *Notice of Award*—The written notice by Owner to a Bidder of Owner’s acceptance of the Bid.
27. *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.
28. *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.
29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor’s plan to accomplish the Work within the Contract Times.
30. *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.
31. *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.
32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or “RPR” includes any assistants or field staff of Resident Project Representative.
33. *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.
34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals and the performance of related construction activities.
35. *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.
36. *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.
37. *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 furnished by Owner which are designated for the use of Contractor.
38. *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.
39. *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.
40. *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 thereof.
41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.

42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
43. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, 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.
44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) 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 the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.
45. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
46. *Unit Price Work*—Work to be paid for on the basis of unit prices.
47. *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.
48. *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 the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

### B. Intent of Certain Terms or Adjectives:

1. 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:

1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

### D. Defective:

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
- does not conform to the Contract Documents; or
  - does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
  - 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 15.04).

### E. Furnish, Install, Perform, Provide:

- The word “furnish,” when used in connection with services, materials, or equipment, shall mean 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.
- The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
- The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean 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. 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 Bonds and Evidence of Insurance*

- A. *Bonds*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.
- C. *Evidence of Owner’s Insurance*: After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), 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 executed 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 specifically 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 *Initial 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 for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall 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.

### 2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall

accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.

- B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items 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 items, or from those established in applicable transmittal protocols.

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

#### 3.01 Intent

- A. The Contract Documents are complementary; what is required by one 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 or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall 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.

#### 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, shall mean 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, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, 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, Engineer, or any of their officers, directors, members, partners,

employees, agents, consultants, or subcontractors, 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 Documents 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 Documents 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 shall 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 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 thereunder.
- 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 give written notice to Owner and Contractor 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 editions, 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 shall preclude 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 thirtieth 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 sixtieth day after the day of Bid opening or the thirtieth 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 shall 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 shall 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 shall 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 the Contract Times and Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the 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. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall 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 utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
  4. acts of war or terrorism.
- D. 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.
- E. Paragraph 8.03 governs 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.
- F. Contractor shall not be entitled to an adjustment in Contract Price or 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.
- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

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

### **5.01 Availability of Lands**

- A. Owner shall furnish the Site. Owner shall notify Contractor 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; 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 7.12, 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 at law; 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 shall 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 known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;
  2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); 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 upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. 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; or
  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.

#### 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 either:
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; or
  2. is of such a nature as to require a change in the Drawings or Specifications; or
  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 the necessity of Owner's obtaining 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 above; 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. *Possible Price and Times Adjustments*:
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, 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 conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
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; or
    - 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 as 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, or both, then any such adjustment shall 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, or both, 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.
    - a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
    - b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
    - c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
    - d. 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 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.
  - 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.
  - 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. Possible Price and Times Adjustments:
    1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, 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:

#### 5.05 Underground Facilities

- A. *Contractor's Responsibilities:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:
  1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and
  2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
    - a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
    - b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
    - c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
    - d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.

- a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
  - 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;
  - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times; and
  - d. 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, or both, then any such adjustment shall 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, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

#### 5.06 *Hazardous Environmental Conditions at Site*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
  1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
  2. 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 Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. 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; or
  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, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, 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.
- 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 or 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.H shall obligate 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 shall obligate 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 all of Contractor's obligations under the Contract. These bonds shall 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 Supplementary Conditions, or

other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.

- B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, 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 shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.
- D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.
- E. 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.
- F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

### 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. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is maintaining the policies, coverages, and endorsements 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 and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

- D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements 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 and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- E. 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, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- F. If either party does not purchase or maintain all of 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.
- G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.
- H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect 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 shall be adjusted accordingly.
- I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.
- J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

### 6.03 Contractor's Insurance

- A. *Workers' Compensation:* Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.
2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).
4. Foreign voluntary worker compensation (if applicable).

- B. *Commercial General Liability—Claims Covered:* Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:

1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.
2. claims for damages insured by reasonably available personal injury liability coverage.
3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.

- C. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:

1. Products and completed operations coverage:
  - a. Such insurance shall be maintained for three years after final payment.
  - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
3. Broad form property damage coverage.
4. Severability of interest.
5. Underground, explosion, and collapse coverage.
6. Personal injury coverage.
7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.
8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—

Engineers, Architects or Surveyors Not Engaged by the Named Insured” or its equivalent.

- D. *Automobile liability*: Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.
- E. *Umbrella or excess liability*: Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer’s liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.
- F. *Contractor’s pollution liability insurance*: Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result of pollution conditions arising from Contractor’s operations and completed operations. This insurance shall be maintained for no less than three years after final completion.
- G. *Additional insureds*: The Contractor’s commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.
- H. *Contractor’s professional liability insurance*: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.
- I. *General provisions*: The policies of insurance required by this Paragraph 6.03 shall:
1. include at least the specific coverages provided in this Article.
  2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.
  3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
  4. remain in effect at least until final payment (and longer if expressly required in this Article) 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 Documents.
  5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor’s performance of the Work and Contractor’s other obligations under the Contract Documents, whether it is to be performed 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.
- J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

#### 6.04 *Owner’s Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner’s option, may purchase and maintain at Owner’s expense Owner’s own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.
- B. 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.

#### 6.05 *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 full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
  1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder’s risk policy, as insureds or named insureds. For purposes of the remainder of

this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as “insureds.”

2. be written on a builder’s risk “all risk” policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder’s risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.
  3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
  4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).
  5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
  6. extend to cover damage or loss to insured property while in transit.
  7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder’s risk insurance.
  8. allow for the waiver of the insurer’s subrogation rights, as set forth below.
  9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
  10. not include a co-insurance clause.
  11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
  12. include performance/hot testing and start-up.
  13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.
- B. *Notice of Cancellation or Change:* All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed 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.
  - C. *Deductibles:* The purchaser of any required builder’s risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
  - 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 notice of such occupancy or use to the builder’s risk insurer. The builder’s risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder’s risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder’s risk insurance.
  - E. *Additional Insurance:* 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 6.05, it may do so at Contractor’s expense.
  - F. *Insurance of Other Property:* If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.
- 6.06 *Waiver of Rights*
- A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder’s risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers 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. 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 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 Subcontractors, all individuals or entities identified in the Supplementary Conditions as 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. None of the above waivers shall extend 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. 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:
1. loss 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 perils whether or not insured by Owner; and
  2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner 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.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.
- D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work 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 any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

#### 6.07 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 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 6.05 shall 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, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

### ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

#### 7.01 *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. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

#### 7.02 *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 at all times maintain good discipline and order at the Site.
- B. 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, which will not be unreasonably withheld.

### 7.03 *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 shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall 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 shall 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.

### 7.04 *“Or Equals”*

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the 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 material or equipment, or items from other proposed suppliers under the circumstances described below.
  - 1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an “or equal” item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:
    - a. in the exercise of reasonable judgment Engineer determines that:
      - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
      - 2) it 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) it has a proven record of performance and availability of responsive service; and
- 4) it is not objectionable to Owner.

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

- 1) there will be no increase in cost to the Owner or increase in Contract Times; and
- 2) it 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 shall result in any change in Contract Price. The Engineer’s denial of an “or-equal” request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.
- E. *Treatment as a Substitution Request:* If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an “or-equal” item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

### 7.05 *Substitutes*

- A. Unless the specification or description of an item of material or equipment 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 material or equipment under the circumstances described below. To the extent possible such requests shall 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 material or equipment from anyone other than Contractor.
  - 2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.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 material or equipment that Contractor seeks to furnish or use. The application:

- a. shall 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 that specified, and
  - 3) be suited to the same use as that 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 that specified, and
  - 2) available engineering, sales, maintenance, repair, and replacement services.
- d. shall 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 shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

#### 7.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.
- B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities 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, Supplier, or other individual or entity 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 five days.
- E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. 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, Suppliers, or other individuals or entities 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, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.

- F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, 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, Supplier, or other individual or entity, whether initially or as a replacement, shall 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 fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.
- J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.
- K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.
- L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.
- N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.
- O. Nothing in the Contract Documents:

- 1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor
- 2. shall create 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.

#### 7.07 *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 a particular 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 shall be disclosed by Owner 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.

#### 7.08 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits and licenses. 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

#### 7.09 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.

#### 7.10 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. Except where otherwise expressly required by applicable Laws and Regulations, 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 shall not be Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Owner or Contractor may give 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 notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

#### 7.11 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.

#### 7.12 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. 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.
- B. 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. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when 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.
- C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
- D. 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.
- E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.A.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).

- F. Contractor's duties and responsibilities for safety and protection shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).
- G. Contractor's duties and responsibilities for safety and protection shall 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.

#### 7.13 Safety Representative

- A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

#### 7.14 Hazard Communication Programs

- A. Contractor shall be responsible for coordinating any exchange of 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 threatened 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 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 Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

#### 7.16 Shop Drawings, Samples, and Other Submittals

- A. Shop Drawing and Sample Submittal Requirements:
  - 1. Before submitting a Shop Drawing or Sample, Contractor shall have:
    - a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
    - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
    - c. determined and verified 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

- d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
  - 2. Each submittal shall 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 submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.
- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.
- 1. Shop Drawings:
    - a. Contractor shall submit the number of copies required in the Specifications.
    - b. Data shown on the Shop Drawings will 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.D.
  - 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.D.
  - 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. *Other Submittals:* Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.
- D. Engineer's Review:

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. 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, conform to the information given in 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 shall 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.
  5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 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, shall 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, Sample, or other submittal shall 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.D.4.
- E. Resubmittal Procedures:
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 submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.
  3. If Contractor requests a change of a previously approved submittal item, 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.
- 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 and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.
  - B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
    1. abuse, modification, or improper 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.
  - C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
    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. any inspection, test, or approval by others; or
    8. any correction of defective Work by Owner.
  - D. 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 shall 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 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 performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury 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 shall 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.
- C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
  - 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
  - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

### 7.19 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.
- B. If professional design services or certifications by a design professional related to systems, materials, or equipment

are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this paragraph, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

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

- D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, 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.

#### 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 at or adjacent to the Site for Owner, the Owner's employees, 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 be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. 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 shall 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. When applicable, any such equitable adjustment in Contract Price shall 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 is conditioned on such adjustment being essential

to Contractor's ability to complete the Work within the Contract Times.

- 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. 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 to 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.
- C. 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 to Contractor.
- D. 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 shall 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 Documents (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 10.08. 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 *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 Paragraph 10.08. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent, or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

#### 10.04 *Rejecting Defective Work*

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

#### 10.05 *Shop Drawings, Change Orders and Payments*

- A. Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.
- B. Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, are set forth in Paragraph 7.19.
- C. Engineer's authority as to Change Orders is set forth in Article 11.
- D. Engineer's authority as to Applications for Payment is set forth in Article 15.

#### 10.06 *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.

#### 10.07 *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.

#### 10.08 *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, shall 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 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 10.08 shall also apply to the Resident Project Representative, if any.

#### 10.09 *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 (if any) of which Engineer has been informed.

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

#### 11.01 *Amending and Supplementing Contract Documents*

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

##### 1. Change Orders:

- a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
- b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not 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, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.

- 2. *Work Change Directives:* 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 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the

Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.

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

#### 11.02 *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. Such changes shall be supported by Engineer's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes 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 shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate 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.

#### 11.03 *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.

#### 11.04 *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 shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall 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); or

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 11.04.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 11.04.C).
- C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit shall 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 shall be 15 percent;
    - b. for costs incurred under Paragraph 13.01.B.3, the Contractor's fee shall be five 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 11.01.C.2.a and 11.01.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.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 five 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 shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;
    - d. no fee shall 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 will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
    - f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 11.04.C.2.a through 11.04.C.2.e, inclusive.

### 11.05 *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 shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.
- B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

### 11.06 *Change Proposals*

- A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.

1. *Procedures:* Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. 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. The supporting data shall 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. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.
2. *Engineer's Action:* Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall 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.
3. *Binding Decision:* Engineer's decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.

- B. *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 that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

### 11.07 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
  1. changes in the 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 11.02, (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 in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.
- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

### 11.08 *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 shall be submitted 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; and

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.
- 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 shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, 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 shall 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 shall 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 shall 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 shall 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 shall 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 shall 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 shall be incorporated in a Change Order 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. 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 shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall 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. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, 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, shall 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 shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall 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, who 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 shall 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 for services specifically related to the Work.
  5. Supplemental costs including 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, and hand tools not owned by the workers, 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.
    - c. Rentals of all construction equipment and machinery, and the parts thereof, whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
    - 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 property insurance established in accordance with Paragraph 6.05), 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 shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall 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 shall not include any of the following items:
1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety 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. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
  3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
  4. 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.

5. 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*: When the Work as a whole is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 11.04.C.
- E. *Documentation*: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

### 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 on account of any of the foregoing will be valid.
- C. *Contingency Allowance*: Contractor agrees that a 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 on account of Work covered by allowances, and the Contract Price shall 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, subject to the provisions of the following paragraph.
- E. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:
1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement;
  2. there is no corresponding adjustment with respect to any other item of Work; and
  3. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.

## 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 will 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 therewith 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 shall 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 shall 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 shall 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 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 shall 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 special 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, or both, 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 shall 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 rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven 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 on account of 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. 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 shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and 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.
  2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
  3. 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, or
  - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
  - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
  - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, 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 on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of 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 that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
  - j. liquidated 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;
  - l. there are other items entitling 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 shall 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 shall be treated as an amount due as determined by Paragraph 15.01.C.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 seven 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 shall 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 seven 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 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 6.05 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 7.11), and other documents, Contractor may make application for final payment.

2. The final Application for Payment shall 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 disputes that Contractor believes are unsettled; 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 Application and Acceptance:

1. 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 ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall 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. At the same time Engineer will also give written notice

to Owner and Contractor that the Work is acceptable, subject to the provisions of Paragraph 15.07. 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. *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.
- D. *Payment Becomes Due*: Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

#### 15.07 *Waiver of Claims*

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.
- 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 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 terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then 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 other adjacent areas;
  2. correct such defective Work;
  3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, 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 therefrom.

- B. If 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 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 correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).
- C. 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.
- D. 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.
- E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not 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, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall 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) ten 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) 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 seven 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 shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.
- 16.03 *Owner May Terminate For Convenience***
- A. Upon seven 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 on account of loss of anticipated overhead, profits, or revenue, 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 seven 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, seven 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; and
  2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising 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; or
  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 Documents requires the giving of written notice, it will be deemed to have been validly given if:
1. delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or
  2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

### 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 shall not constitute a waiver of that provision, nor shall 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 or completion of the Contract or termination 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 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract, EJCDC® C-700 (2013 Edition). All provisions that are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added thereto.

## ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

### SC-1.01 *Defined Terms*

Add the following new paragraphs immediately after paragraph 1.01.A.48 of the General Conditions to read as follows:

49. *Instruction to Contractor* — Same as "Field Order."
50. *Geotechnical Baseline Report (GBR)* — The interpretive report prepared by or for Owner regarding subsurface conditions at the Site, and containing specific baseline geotechnical conditions that may be anticipated or relied upon for bidding and contract administration purposes, subject to the controlling provisions of the Contract, including the GBR's own terms. The GBR is a Contract Document.

## ARTICLE 2 – PRELIMINARY MATTERS

### SC-2.01 *Delivery of Bonds and Evidence of Insurance*

Delete Paragraphs 2.01 B. and C. in their entirety and insert the following in their place:

- B. *Evidence of Contractor's Insurance*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner copies of the policies of insurance (including all endorsements, and identification of applicable self-insured retentions and deductibles) required to be provided by Contractor in Article 6. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- C. *Evidence of Owner's Insurance*: After receipt from Contractor of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor copies of the policies of insurance to be provided by Owner under Article 6 (if any). Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

### SC-2.02 *Copies of Documents*

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

- A. Owner will furnish to Contractor 1 copy of the conformed Contract Documents incorporating and integrating all Addenda and any amendments negotiated prior to the Effective Date of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies of the conformed Contract Documents will not be provided.

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

### SC-3.01 *Intent*

Delete Paragraph 3.01C in its entirety.

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

*SC/GBR-5.04 Differing Subsurface or Physical Conditions*

- A. Notice: If Contractor believes that any subsurface condition that is uncovered or revealed at the Site:
1. differs materially from conditions shown or indicated in the GBR; or
  2. differs materially from conditions shown or indicated in Contract Documents other than the GBR, to the extent the GBR are inapplicable; or
  3. to the extent the GBR are inapplicable, 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; or
  4. to the extent the GBR are inapplicable, is of such a nature as to require a change in the Drawings or Specifications; or
  5. to the extent the GBR are inapplicable, 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 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 the necessity of Owner's obtaining 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 SC/GBR 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption or continuation 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 or continuation 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. *Possible Price and Times Adjustments:*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, 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 SC/GBR 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 of the General Conditions; and,

- c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
  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; or
    - 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 as required by Paragraph SC/GBR 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, or both, then any such adjustment shall 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, or both, 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.

#### *SC-5.06 Hazardous Environmental Condition*

Delete Paragraphs 5.06.A and 5.06.B in their entirety and insert the following:

- A. No reports or drawings related to Hazardous Environmental Conditions at the Site are known to Owner.

### **ARTICLE 6 – BONDS AND INSURANCE**

#### *SC-6.01 Performance, Payment and Other Bonds*

Add the following paragraph immediately after Paragraph 6.01.F:

- G. Performance and payment bond shall be deemed amended automatically and immediately without formal and separate amendments hereto, upon any amendment to the contract so as to bind the Principal and Surety to the full and faithful performance of the contract, as so amended, providing only that the total amount of all increases in the cost shall not exceed 20 percent of the amount of the maximum price set forth in the original contract.

#### *SC-6.02 Insurance—General Provisions*

Add the following paragraph immediately after Paragraph 6.02.B:

1. Contractor may obtain worker's compensation insurance from an insurance company that has not been rated by A.M. Best, provided that such company (a) is domiciled in the state in which the project is located, (b) is certified or authorized as a worker's compensation insurance provider by the appropriate state agency, and (c) has been accepted to provide worker's compensation insurance for similar projects by the state within the last 12 months.

SC-6.03 Contractor's Insurance

In paragraph 6.03.I.3., delete the words "materially changed"

Add the following new paragraph immediately after paragraph 6.03.J:

- K. The limits of liability for the insurance required by paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:
1. Workers' Compensation, and related coverages under paragraphs 6.03.A.1 and A.2 of the General Conditions:
    - a. State: Statutory
    - b. Federal, if applicable (e.g., Longshoreman's): Statutory
    - c. Jones Act coverage, if applicable:

Bodily injury by accident, each accident	\$ <u>    N/A    </u>
Bodily injury by disease, aggregate	\$ <u>    N/A    </u>
    - c. Employer's Liability:

Bodily injury, each accident	\$ <u>  500,000  </u>
Bodily injury by disease, each employee	\$ <u>  500,000  </u>
Bodily injury/disease, aggregate	\$ <u>  500,000  </u>
    - d. For work performed in monopolistic states, stop-gap liability coverage shall be endorsed to either the worker's compensation or commercial general liability policy with a minimum limit of: \$     N/A
    - e. Foreign voluntary worker compensation \$     N/A
    - f. Workers' Compensation and Employer's Liability insurance shall include the proprietor/partners/executive officers.
  2. Contractor's Commercial General Liability under Paragraphs 6.03.B and 6.03.C of the General Conditions:

a. General Aggregate	\$ <u> 2,000,000  </u>
b. Products--Completed Operations Aggregate	\$ <u> 3,000,000  </u>
c. Personal and Advertising Injury	\$ <u> 1,000,000  </u>
d. Each Occurrence (Bodily Injury and Property Damage)	\$ <u> 1,000,000  </u>
e. Damage to Rented Premises (Each Occurrence)	\$ <u>    500,000  </u>
  3. Business Automobile Liability under paragraph 6.03.D of the General Conditions:
    - a. Bodily Injury

Each person	\$ <u> 1,000,000  </u>
Each accident	\$ <u> 1,000,000  </u>
    - b. Property Damage

- Each accident \$ 1,000,000
- 4. Excess or Umbrella Liability:
  - a. General Aggregate \$ 3,000,000
  - b. Each Occurrence \$ 2,000,000
- 5. Contractor's Pollution Liability:
  - a. General Aggregate \$ 2,000,000
  - b. Each Occurrence \$ 1,000,000
  - c. If box is checked, Contractor is not required to provide Contractor's Pollution Liability insurance under this Contract
- 6. Additional Insureds: Stanley Consultants, City of Geneva shall be specifically named on policy as additional insureds by endorsement, including completed operations.
- 7. Contractor's Professional Liability:
  - a. Each Claim \$ 1,000,000
  - b. Annual Aggregate \$ 2,000,000

SC-6.05 *Property Insurance*

In paragraph 6.05.A.2., change the words "all risk policy" to read "special perils policy."

Add the following to the list of requirements in Paragraph 6.05.A, as a numbered item:

- 13. be subject to a deductible amount of choice for direct physical loss in any one occurrence.

Add the following to the list of items in Paragraph 6.05.A, as numbered items:

- 14. include for the benefit of Owner loss of profits and soft cost coverage including, without limitation, fixed expenses and debt service for a minimum of 12 months with a maximum deductible of 30 days, plus attorneys fees and engineering or other consultants' fees, if not otherwise covered;
- 15. include by express endorsement coverage of damage to Contractor's equipment.

Delete Paragraph 6.05.A in its entirety and insert the following in its place:

- A. Contractor shall provide and maintain installation floater insurance for property under the care, custody, or control of Contractor. The installation floater insurance shall be a broad form or "all risk" policy providing coverage for all materials, supplies, machinery, fixtures, and equipment that will be incorporated into the Work. Coverage under the Contractor's installation floater will include:
  - 1. any loss to property while in transit,
  - 2. any loss at the Site, and
  - 3. any loss while in storage, both on-site and off-site.

Coverage cannot be contingent on an external cause or risk, or limited to property for which the Contractor is legally liable. The Contractor shall be solely responsible for any deductible carried under this coverage and claims on materials, supplies, machinery, fixture, and equipment that will be incorporated into the Work while in transit or in storage. This policy will include a waiver of subrogation applicable to Owner, Contractor, Engineer, all

Subcontractors, and the officers, directors, partners, employees, agents and other consultants and subcontractors of any of them.

Delete the first sentence of Paragraph 6.05.A and insert the following sentence in its place:

- A. Owner will purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). . . .

## ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

### SC-7.02 Labor; Working Hours

Amend the first and second sentences of Paragraph 7.02.B to read:

" all Work at site shall be performed during regular working hours, and Contractor shall not permit overtime work or performance of Work on Saturday, Sunday, or any legal holiday without Owner's written consent given after prior written notice to Engineer."

Add the following new subparagraphs immediately after Paragraph 7.02.B:

- 1. Regular working hours will be established by the City of Geneva.
- 2. Owner's legal holidays will be established by the City of Geneva.

Add the following new paragraph immediately after Paragraph 7.02.B:

- C. Contractor shall be responsible for the cost of any overtime pay or other expense incurred by the Owner for Engineer's services (including those of the Resident Project Representative, if any), Owner's representative, and construction observation services, occasioned by the performance of Work on Saturday, Sunday, any legal holiday, or as overtime on any regular work day. If Contractor is responsible but does not pay, or if the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.

Add the following new subparagraph immediately after Paragraph 7.02.C:

- 1. For purposes of administering the foregoing requirement, additional overtime costs are defined as work performed not during regular working hours and Contractors shall not permit overtime work.

### SC-7.04.C "Or-Equals"

Amend the third sentence of paragraph 7.04.C of the General Conditions to read as follows:

"No "or-equal" item will be ordered, furnish, 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 a Change Order or other written communication. Engineer will advise Contractor in writing of any negative determination"

### SC-7.09 Taxes

Add a new paragraph immediately after Paragraph 7.09.A:

- B. Owner is exempt from payment of sales and compensating use taxes of the State of [insert name of state where Project is located] 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-7.12 *Safety and Protection*

Insert the following after the second sentence of Paragraph 7.12.C:

- C. . . . The following Owner safety programs are applicable to the Work: \_\_\_\_\_ . . .

Add a new paragraph immediately after paragraph 7.12.G:

- H. Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connections with the Work. The Owner and Engineer will not have such responsibility. No action under taken by the Owner or Engineer under General Conditions paragraphs 16.01 or 16.02, or article 10 will constitute a transfer of this responsibility or acceptance of this responsibility by the Owner or Engineer.

#### SC-7.16 *Shop Drawings, Samples, and Other Submittals*

Amend paragraph 7.16 by deleting the following words:

"and approval" and "and approve"

Delete paragraph 7.16.A.3. in its entirety and insert the following in its place:

3. If Contractor wishes to propose a variation from the requirements of the Contract Documents and a drawing or sample will be used to help describe the variation, the drawing or Sample shall not be submitted as a Shop Drawing or Sample, but rather will have specific notations regarding the variation and shall be transmitted to the Engineer with a letter describing all aspects of the variation, including any effect the variation will have on work of separate contractors, if any, and its effect, if any, on the Contract Price or Contract Time. If Engineer determines that the variation will be acceptable, the variation will be authorized by a Change Order executed by the Owner and Contractor.

Delete paragraph 7.16.D.3. in its entirety and insert the following in its place:

3. Engineer's review of Shop Drawings or Samples shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents; nor will any review by Engineer relieve Contractor from responsibility for errors or omissions in the Shop Drawings or from responsibility for having complied with the requirements of paragraph 7.16.A.3.

Add the following new paragraphs immediately after Paragraph 7.16.E:

- F. Contractor shall furnish required submittals with sufficient information and accuracy in order to obtain required review of an item with no more than 3 submittals. Engineer will record Engineer's time for reviewing subsequent submittals of Shop Drawings, samples or other items requiring review and Contractor shall reimburse Owner for Engineer's charges for such time.
- G. In the event that Contractor requests a substitution for a previously approved item, Contractor shall reimburse Owner for Engineer's charges for such time unless the need for such substitution is beyond the control of Contractor.

#### SC-7.18 *Indemnification*

Add a new paragraph immediately after paragraph 7.18.C.2.

- D. Contractor (and any Subcontractor into whose subcontract this clause is incorporated) agrees to assume the entire liability for all personal injury claims suffered by its own employees, including without limitation claims under the Illinois Structural Work Act, asserted by persons allegedly injured on the Project; waives any limitation of liability defense based upon the Worker's Compensation Act, court interpretations of said Act or otherwise; and agrees to indemnify and defend Owner and Engineer and their agents,

employees and consultants (the "Indemnitees") from and against all such loss, expense, damage or injury, including reasonable attorneys' fees, that the Indemnitees may sustain as a result of such claims, except to the extent that Illinois law prohibits indemnity for the Indemnitees' own negligence.

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

### *SC-8.02 Coordination*

Delete Paragraph 8.02.A in its entirety and replace with the following:

- A. Owner intends to contract with others for the performance of other work at or adjacent to the Site.
  - 1. Owner shall have authority and responsibility for coordination of the various contractors and work forces at the Site;

## **ARTICLE 9 – OWNER'S RESPONSIBILITIES**

### *SC-9.12 Safety Programs*

Delete Paragraph 9.12.A in its entirety.

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

### *SC-10.03 Project Representative*

Add the following new paragraphs immediately after Paragraph 10.03.A:

- B. The Resident Project Representative (RPR) will be Engineer's representative at the Site, will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding RPR's actions.
  - 1. General: RPR's dealings in matters pertaining to the Work in general shall be with Engineer and Contractor. RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner only with the knowledge of and under the direction of Engineer.
  - 2. Schedules: Review the progress schedule, schedule of Shop Drawing and Sample submittals, and Schedule of Values prepared by Contractor and consult with Engineer concerning acceptability.
  - 3. Conferences and Meetings: Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings, and prepare and circulate copies of minutes thereof.
  - 4. Liaison:
    - a. Serve as Engineer's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.
    - b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.
    - c. Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.
  - 5. Interpretation of Contract Documents: Report to Engineer when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by Engineer.

6. Shop Drawings and Samples:
  - a. Record date of receipt of Samples and Contractor-approved Shop Drawings.
  - b. Receive Samples which are furnished at the Site by Contractor, and notify Engineer of availability of Samples for examination.
  - c. Advise Engineer and Contractor of the commencement of any portion of the Work requiring a Shop Drawing or Sample submittal for which RPR believes that the submittal has not been approved by Engineer.
7. Modifications: Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report such suggestions, together with RPR's recommendations, if any, to Engineer. Transmit to Contractor in writing decisions as issued by Engineer.
8. Review of Work and Rejection of Defective Work:
  - a. Conduct on-Site observations of Contractor's work in progress to assist Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.
  - b. Report to Engineer whenever RPR believes that any part of Contractor's work in progress is defective, will not produce a completed Project that conforms generally to the Contract Documents, or will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise Engineer of that part of work in progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.
9. Inspections, Tests, and System Start-ups:
  - a. Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate Owner's personnel, and that Contractor maintains adequate records thereof.
  - b. Observe, record, and report to Engineer appropriate details relative to the test procedures and systems start-ups.
10. Records:
  - a. Prepare a daily report or keep a diary or log book, recording Contractor's hours on the Site, Subcontractors present at the Site, weather conditions, data relative to questions of Change Orders, Field Orders, Work Change Directives, or changed conditions, Site visitors, deliveries of equipment or materials, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to Engineer.
  - b. Record names, addresses, fax numbers, e-mail addresses, web site locations, and telephone numbers of all Contractors, Subcontractors, and major Suppliers of materials and equipment.
  - c. Maintain records for use in preparing Project documentation.
11. Reports:
  - a. Furnish to Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the Progress Schedule and schedule of Shop Drawing and Sample submittals.

- b. Draft and recommend to Engineer proposed Change Orders, Work Change Directives, and Field Orders. Obtain backup material from Contractor.
  - c. Immediately notify Engineer of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, force majeure or delay events, damage to property by fire or other causes, or the discovery of any Constituent of Concern or Hazardous Environmental Condition.
12. Payment Requests: Review applications for payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Engineer, noting particularly the relationship of the payment requested to the Schedule of Values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.
13. Certificates, Operation and Maintenance Manuals: During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Contract Documents to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to Engineer for review and forwarding to Owner prior to payment for that part of the Work.
14. Completion:
- a. Participate in Engineer's visits to the Site to determine Substantial Completion, assist in the determination of Substantial Completion and the preparation of a punch list of items to be completed or corrected.
  - b. Participate in Engineer's final visit to the Site to determine completion of the Work, in the company of Owner and Contractor, and prepare a final punch list of items to be completed and deficiencies to be remedied.
  - c. Observe whether all items on the final list have been completed or corrected and make recommendations to Engineer concerning acceptance and issuance of the notice of acceptability of the work.
- C. The RPR shall not:
- 1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).
  - 2. Exceed limitations of Engineer's authority as set forth in the Contract Documents.
  - 3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.
  - 4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of Contractor's work.
  - 5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.
  - 6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.
  - 7. Accept Shop Drawing or Sample submittals from anyone other than Contractor.
  - 8. Authorize Owner to occupy the Project in whole or in part.
- B. On this Project, by agreement with the Owner, Engineer will not furnish a Resident Project Representative to represent Engineer at the Site or assist Engineer in observing the progress and quality of the Work

**ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN WORK**SC-11.04 *Change of Contract price*

Amend Paragraph 11.04.C.1 to read:

“a mutually acceptable fixed fee;”

Delete Paragraph 11.04.C.2 and all subparagraphs in their entirety.

SC-11.06 *Change Proposals*

Delete Paragraph 11.06.A.3 in its entirety and insert the following in its place:

3. Binding *Decision*:
  - a. In the event the change order causes a change in completion date of increase in contract price exceeding 10% of the original contract price, the decision will only be binding pending approval by Geneva City Council at the next regularly scheduled City Council meeting after Engineer’s approval of change order.
  - b. Change orders causing an increase in the original contract price that does not exceed 10% of the original price will be binding after the approval of the Engineer’s approval by the Geneva City Administrator.

**ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK**SC-13.01 *Cost of the Work*

Delete Paragraph 13.01.B.5.c in its entirety and insert the following in its place:

- c. Construction Equipment and Machinery:
  - 1) Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
  - 2) Costs for equipment and machinery owned by Contractor will be paid at a rate shown for such equipment in the Lump Sum Bid. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs. Costs will include the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, shall cease to accrue when the use thereof is no longer necessary for the changed Work. Equipment or machinery with a value of less than \$1,000 will be considered small tools.

SC-13.03 *Unit Price Work*

Delete Paragraph 13.03 and all subparagraphs in their entirety.

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

### SC-15.01.A *Basis for Progress Payments:*

Amend Paragraph 15.01.A to read as follows:

- 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 cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.”

### SC-15.01.D *Payment Becomes Due*

Delete subparagraph 15.01.D.1 in its entirety and insert the following in its place:

1. Forty -five days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer’s recommendation, including but not limited to, liquidated damages, will become due and, will be paid by Owner to Contractor.

### SC-15.03 *Substantial Completion*

Add the following new subparagraph to Paragraph 15.03.B:

1. If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Engineer, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, shall be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.

### SC-15.06 *Final Payment*

Amend Paragraph 15.06.D by deleting “Thirty” and replacing with “Forty-five”.

## ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

### SC-16.04 *Contractor May Stop Work or Terminate*

Amend Paragraph 16.04.A by deleting “30” and replacing with “45”.

Amend Paragraph 16.04.B by deleting “30” and replacing with “45”.

## ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

Add the following new paragraph immediately after Paragraph 17.01.

### SC-17.02 *Attorneys’ Fees*

#### SC-17.03 *Attorneys’ Fees*

- A. For any matter subject to final resolution under this Article, the prevailing party shall be entitled to an award of its attorneys’ fees incurred in the final resolution proceedings, in an equitable amount to be determined in the discretion of the court, arbitrator, arbitration panel, or other arbiter of the matter subject to final resolution, taking into account the parties’ initial demand or defense positions in comparison with the final result.

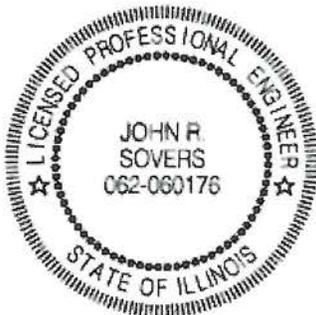
END OF DOCUMENT

# Addendum No. 1

for

## South Substation Substation Relay Upgrade

City of Geneva  
Geneva, Illinois



*John R. Sovers*

Signature

*08-02-19*

Date

License Expiration Date: 11-30-2019  
Illinois Firm Registration No. 184-001533



A Stanley Group Company  
Engineering, Environmental and Construction Services - Worldwide



ADDENDUM NO. 1

August 2, 2019

SOUTH SUBSTATION  
SUBSTATION RELAY UPGRADE  
CITY OF GENEVA  
GENEVA, ILLINOIS

1. DOCUMENT 00 52 13 – AGREEMENT BETWEEN OWNER AND CONTRACTOR

"ARTICLE 4 – CONTRACT TIMES"

Change subparagraph 4.2 to read:

- 4.2 *Contract Times: Dates.* The Work will be substantially completed three months after the start of construction in accordance with paragraph 4.3 but no later than February 28, 2020, and completed and ready for final payment in accordance with paragraph 15.06 of the General Conditions four months after start of construction but no later than March 31, 2020.

END OF ADDENDUM NO. 1

- 1) P.E. Schulz  
2) J.R. Sovers

## **PART 1 GENERAL**

### **1.01 WORK COVERED BY CONTRACT DOCUMENTS**

- A. Work of this Agreement is comprised of removing the existing relay panel doors and furnishing and installing 8 new assembled relay panel doors containing transformer, bus, main breaker, feeder relaying/metering and SCADA RTU equipment. Additionally, the project will include removing the existing RTU and annunciator along with any associated equipment and installing an ACS NTX-20 in the existing RTU panel at the City of Geneva, South Street Substation.
- B. Develop wiring diagrams for replacement doors based on panel elevations, one-line diagram, and ac and dc schematics provided by Engineer.
- C. Substation testing and checkout: Provide 4 days of 1 person on site, during testing performed by others to correct issues found by testing firm.

### **1.02 AGREEMENT**

- A. Construct Work under single lump sum Agreement.

### **1.03 WORK SEQUENCE**

- A. Construct Work in stages to provide for public convenience. Do not close off public use of public and private roads.

### **1.04 CONTRACTOR'S USE OF PREMISES**

- A. Complete and exclusive use of premises for execution of Work.
- B. Limit Contractor's use of premises for Work and for storage, to allow for: Public and private use streets and roads.
- C. Coordinate use of premises under direction of Contractor. Contractor shall confine construction equipment, storage of materials and equipment and operations of workers to areas permitted by law, ordinances, permits, or requirements of Contract Documents, and shall not unreasonably encumber premises with construction equipment or other material or equipment.
- D. Assume full responsibility for protection and safekeeping of items under this Agreement, stored on Site.
- E. Move any stored items, under Contractor's control, which interfere with operations of Owner or separate contractor.
- F. Obtain and pay for use of additional storage or Work areas needed for operations.

### **1.05 OWNER-FURNISHED ITEMS**

- A. Owner's responsibilities:
  - 1. Arrange for and deliver necessary Shop Drawings and Samples to Contractor.
  - 2. Arrange and pay for product delivery to Site, in accordance with construction schedule.
  - 3. Deliver supplier's bill of materials to Contractor.
  - 4. Inspect deliveries jointly with Contractor.
  - 5. Submit claims for transportation damage.
  - 6. Arrange for replacement of damaged, defective, or missing items.
  - 7. Arrange for manufacturer's warranties, Bonds, service, inspections, as required.

B. Contractor's responsibilities:

1. Designate delivery date for each product in Construction Schedule.
2. Protect products from exposure to elements, and from damage.
3. Repair or replace items damaged by Contractor.

**PART 2 PRODUCTS**

NOT USED

**PART 3 EXECUTION**

NOT USED

END OF SECTION

## **PART 1 GENERAL**

### **1.01 SCHEDULE OF VALUES**

- A. Submit a printed schedule on EJCDC C-620 – Contractor's Application for Payment.
- B. Submit Schedule of Values in duplicate within 15 days after date established in Notice to Proceed.
- C. Format: Use Table of Contents of this Project Manual. Identify each line item with number and title of major specification Section.
- D. Include within each line item, a direct proportional amount of Contractor's overhead and profit.
- E. Revise schedule to list approved Change Orders, with each Application for Payment.

### **1.02 APPLICATIONS FOR PAYMENT**

- A. Submit 3 copies of each application on EJCDC C-620 – Contractor's Application for Payment.
- B. Content and format: Use Schedule of Values for listing items in Application for Payment.
- C. Submit an updated construction schedule with each Application for Payment.
- D. Payment period: Submit at intervals stipulated in Agreement.
- E. Submit with transmittal letter as specified for Submittals in Section 01 33 00.
- F. Include a Company invoice for the amount listed on the payment application.
- G. Substantiating data: When Engineer requires substantiating information, submit data justifying dollar amounts in question. Include following with application:
  - 1. Current construction photographs specified in Section 01 32 33.
  - 2. Partial release of liens from major subcontractors and vendors.
  - 3. Record documents as specified in Sections 01 32 00 and 01 70 00, for review by Owner which will be returned to Contractor.
  - 4. Affidavits attesting to off-site stored products.
  - 5. Construction progress schedules, revised and current as specified in Section 01 32 00.
  - 6. Certified payroll for Contractor and all Subcontractors.

### **1.03 CHANGE PROCEDURES**

- A. Submittals: Submit name of individual authorized to receive change documents, and be responsible for informing others in Contractor's employ or Subcontractors of changes to Work.
- B. Engineer will advise of minor changes in Work not involving an adjustment to Contract Price or Contract Time by issuing supplemental instructions on Engineer's Instruction to Contractor (ITC) Form SC2264-1299.
- C. Engineer may issue a notice of change which includes detailed description of proposed change with supplementary or revised Drawings and Specifications, change in Contract Time for executing change and period of time during which requested price will be considered valid. Contractor will prepare and submit an estimate within 7 days.
- D. Contractor may propose changes by submitting a request for change to Engineer, describing proposed change and its full effect on Work. Include a statement describing reason for change, and

effect on Contract Price and Contract Time with full documentation and a statement describing effect on Work by separate or other contractors.

- E. Stipulated price Change Order: Based on notice of change and Contractor's fixed price quotation or Contractor's request for a Change Order as approved by Engineer.
- F. Work Directive Change: Engineer may issue a directive, on EJCDC C940 - Work Directive Change signed by Owner, instructing Contractor to proceed with a change in Work, for subsequent inclusion in a Change Order. Document will describe changes in Work, and designate method of determining any change in Contract Price or Contract Time. Promptly execute change.
- G. Document each quotation for a change in cost or time with sufficient data to allow evaluation of quotation.
- H. Change Order Forms: EJCDC C-941 Change Order.
- I. Execution of Change Orders: Engineer will issue Change Orders for signatures of parties as provided in Conditions of Contract.
- J. Correlation of Contractor submittals:
  - 1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust Contract Price.
  - 2. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by change, and resubmit.
  - 3. Promptly enter changes in Project Record Documents.

#### 1.04 DEFECT ASSESSMENT

- A. Replace Work, or portions of Work, not conforming to specified requirements.
- B. If, in opinion of Engineer, it is not practical to remove and replace Work, Engineer will direct an appropriate remedy or adjust payment.
- C. Individual specification sections may modify these options or may identify a specific formula or percentage price reduction.
- D. Authority of Engineer to assess defect and identify payment adjustment, is final.
- E. Nonpayment for rejected products: Payment will not be made for rejected products for any of following:
  - 1. Products wasted or disposed of in a manner that is not acceptable.
  - 2. Products determined as unacceptable before or after placement.
  - 3. Products not completely unloaded from transporting vehicle.
  - 4. Products placed beyond lines and levels of required Work.
  - 5. Products remaining on hand after completion of Work.
  - 6. Loading, hauling, and disposing of rejected products.

#### 1.05 UNIT ADJUSTMENT PRICES

- A. Unit adjustment prices will be used to adjust Contract Price for additions to or deductions from quantities required by Contract Documents.
  - 1. Additions to Work will be made at 115% of prices submitted.
  - 2. Deletions from Work will be made at 90% of prices submitted.
  - 3. Net changes of quantities shall first be determined before price factors are applied.
- B. Unit adjustment prices apply only to additions to or deductions from quantities required by Contract Documents made necessary by unforeseen conditions or changes deemed necessary or desirable by

Engineer or Owner during construction. Additions or deductions necessary to accommodate equipment furnished and installed under Agreement shall be made by Contractor at its expense, and unit adjustment prices shall not apply.

**PART 2 PRODUCTS**

NOT USED

**PART 3 EXECUTION**

NOT USED

END OF SECTION

## **PART 1 GENERAL**

### **1.01 COORDINATION AND PROJECT CONDITIONS**

- A. Coordinate scheduling, submittals, and Work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements.
- B. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- C. Coordinate space requirements, supports, and installation of electrical Work which is indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- D. Coordinate completion and clean-up of Work of separate sections in preparation for Substantial Completion.
- E. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

### **1.02 COPIES OF DRAWINGS AND PROJECT MANUALS**

- A. After Notice of Award, Contractor may obtain, at no charge, up to 3 printed or hard copies of the Drawings and Project Manual and one set in electronic format. Additional copies will be furnished upon request at the cost of reproduction plus handling charge.
- B. Additional copies of project manuals may be obtained under following conditions:
  - 1. Furnished at Engineer's reproduction cost plus handling charge.
  - 2. If Contractor's requirement for additional project manuals necessitates reprinting of project manuals, Contractor shall pay entire cost of such reprinting.
  - 3. Partial sets of project manuals will not be provided.
- C. Revised Drawings and project manuals, if required, will be provided by Engineer to show authorized changes or extra Work under following conditions:
  - 1. Project manuals: Furnished at no charge, in same quantity as original issuance.
  - 2. Half-size Drawings:
    - a. Half-size Drawings will be available as revised Drawings.
    - b. One revised, complete set of half-size Drawings will be issued, at no charge, for each half-size set originally issued and for each half-size set purchased by Contractor after Notice of Award.
  - 3. Full-size Drawings:
    - a. One revised, complete set of full-size Drawings will be issued, at no charge, for each full-size set originally issued.
    - b. One revised, complete set of full-size Drawings will be issued, at no charge, for each full-size set originally issued, and for each full-size set purchased by Contractor after Notice of Award, up to 4 copies maximum.
  - 4. One full-size reproducible set will be issued to accommodate fifth and subsequent sets purchased by Contractor. Contractor shall use reproducible set to complete printing for additional Drawings in its possession.

### **1.03 PROJECT SITE ADMINISTRATION**

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

- B. Except in connection with safety or protection of persons or Work or property at site or adjacent thereto, and except as otherwise indicated in Contract Documents, all Work at site shall be performed during regular working hours, and Contractor shall not permit overtime work or performance of Work on Saturday, Sunday, or any legal holiday without Owner's written consent given after prior written notice to Engineer.
- C. Incompetent or incorrigible employees shall be dismissed from Work by Contractor or its representative when requested by Engineer, and such persons shall not again be permitted to return to Work without written consent of Engineer.
- D. Workmanship shall be of best quality.

#### 1.04 PRECONSTRUCTION MEETING

- A. Engineer will schedule a meeting 15 days after Notice to Proceed.
- B. Attendance Required: Owner, Engineer, and Contractor.
- C. Agenda:
  - 1. Execution of Owner-Contractor Agreement.
  - 2. Submission of executed bonds and insurance certificates.
  - 3. Distribution of Contract Documents.
  - 4. Submission of list of Subcontractors, list of products, schedule of values, and progress schedule.
  - 5. Designation of personnel representing the parties in Contract, Owner, and the Engineer.
  - 6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
  - 7. Scheduling.
- D. Record minutes and distribute copies within 2 days after meeting to participants, with 1 copy to those affected by decisions made.

#### 1.05 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the Work at maximum monthly intervals.
- B. Attendance Required: Job superintendent, major subcontractors and suppliers, Owner, Engineer, as appropriate to agenda topics for each meeting.
- C. Agenda:
  - 1. Review minutes of previous meetings.
  - 2. Review of Work progress.
  - 3. Field observations, problems, and decisions.
  - 4. Identification of problems which impede planned progress.
  - 5. Review of submittals schedule and status of submittals.
  - 6. Review of off-site fabrication and delivery schedules.
  - 7. Maintenance of progress schedule.
  - 8. Corrective measures to regain projected schedules.
  - 9. Planned progress during succeeding work period.
  - 10. Coordination of projected progress.
  - 11. Maintenance of quality and work standards.
  - 12. Effect of proposed changes on progress schedule and coordination.
  - 13. Other business relating to Work.
- D. Record minutes and distribute copies within 2 days after meeting to participants, with 1 copy to those affected by decisions made.

## **PART 2 PRODUCTS**

### **2.01 EQUIPMENT ELECTRICAL CHARACTERISTICS AND COMPONENTS**

- A. Wiring Terminations: Provide terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated. Include lugs for terminal box.

## **PART 3 EXECUTION**

### **3.01 CUTTING AND PATCHING**

- A. Employ skilled and experienced installer to perform cutting and patching.
- B. Submit written request in advance of cutting or altering elements which affect:
  - 1. Structural integrity of element.
  - 2. Integrity of weather-exposed or moisture-resistant elements.
  - 3. Efficiency, maintenance, or safety of element.
  - 4. Visual qualities of sight exposed elements.
  - 5. Work of Owner or separate Contractor.
- C. Execute cutting, fitting, and patching including excavation and fill, to complete Work, and to:
  - 1. Fit the several parts together, to integrate with other Work.
  - 2. Uncover Work to install or correct ill-timed Work.
  - 3. Remove and replace defective and non-conforming Work.
  - 4. Remove samples of installed Work for testing.
  - 5. Provide openings in elements of Work for penetrations of mechanical and electrical Work.
- D. Execute work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
- E. Cut masonry and concrete materials using masonry saw or core drill.
- F. Restore Work with new products in accordance with requirements of Contract Documents.
- G. Fit Work tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- H. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.
- I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with material to full thickness of the penetrated element.
- J. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for an assembly, refinish entire unit.
- K. Identify hazardous substances or conditions exposed during the Work to the Engineer for decision or remedy.

END OF SECTION

**PART 1 GENERAL****1.01 CONSTRUCTION PROGRESS SCHEDULES**

- A. Promptly after Notice of Award, prepare and submit to Engineer estimated construction progress schedules for Work, with subschedules of related activities which are essential to its progress.
- B. Submit revised progress schedules with each Application for Payment.

**1.02 FORM OF SCHEDULES**

- A. Prepare schedules in form of horizontal bar chart.
  - 1. Provide separate horizontal bar for each trade or operation.
  - 2. Horizontal time scale: Identify first work day of each week.
  - 3. Scale and spacing: To allow space for notations and future revisions.
  - 4. Minimum sheet size: 11 x 17.
- B. Format of listings: Chronological order of start of each item of Work.
- C. Identification of listings: By major Specification Section numbers.

**1.03 CONTENT OF SCHEDULES**

- A. Construction Progress Schedule show:
  - 1. Complete sequence of construction by activity, with Contract Price breakdown at each stage.
  - 2. Dates for beginning, and completion of, each major element of construction specifically listing:
    - a. Equipment ordering and shipping.
    - b. Site utilities.
    - c. Subcontractor Work.
    - d. Equipment installations.
    - e. Finishings.
  - 3. Projected percentage of completion for each item, as of first day of each month.
- B. Provide subschedules to define critical portions of prime schedules.

**1.04 PROGRESS REVISIONS**

- A. Indicate progress of each activity to date of submission.
- B. Show changes occurring since previous submission of schedule:
  - 1. Major changes in scope.
  - 2. Activities modified since previous submission.
  - 3. Revised projections of progress and completion.
  - 4. Other identifiable changes.
- C. Provide narrative report as needed to define:
  - 1. Problem areas, anticipated delays, and impact on schedule.
  - 2. Corrective action recommended, and its effect.
  - 3. Effect of changes on schedules of other prime contractors.

**1.05 SUBMISSIONS**

- A. Submit initial schedules within 15 days after Notice of Award.
  - 1. Engineer will review schedules and return review copy within reasonable time after receipt.
  - 2. If required, resubmit within 7 days after return of review copy.
- B. Submit revised progress schedules with each Application for Payment.

- C. Submit number of opaque reproductions which Contractor requires, plus 5 copies which will be retained by Engineer.

1.06 DISTRIBUTION

- A. Distribution copies of reviewed schedules to:
  - 1. Job site file.
  - 2. Subcontractors.
  - 3. Other concerned parties.
- B. Instruct recipients to report promptly to Contractor, in writing, any problems anticipated by projects shown in schedules.

**PART 2 PRODUCTS**

NOT USED

**PART 3 EXECUTION**

NOT USED

END OF SECTION

## **PART 1 GENERAL**

### 1.01 SUBMITTAL PROCEDURES

- A. Deliver submittals to Engineer listed below when required by Specification Sections:

Mr. Philip Schulz  
schulzphil@stanleygroup.com  
Stanley Consultants, Inc.  
Stanley Building  
225 Iowa Avenue  
Muscatine, Iowa 52761-3764

- B. Submittals shall be in English language.
- C. Weights, measures, and units shall be English units with SI metric values following in parenthesis.
- D. Symbols and drawings shall conform to ANSI Y32.2/IEEE 315/CSA Z99.

### 1.02 CONTRACTOR RESPONSIBILITIES

- A. Review submittals prior to submission.
- B. Determine and verify:
1. Field measurements.
  2. Field construction criteria.
  3. Catalog numbers and similar data.
  4. Conformance to Specifications.
- C. Coordinate each submittal with other submittals and with requirements of Work and of Contract Documents.
- D. Notify Engineer in writing, at time of submission, of any deviations in submittals from requirements of Contract Documents. Any such deviations permitted by Engineer will require modifications of Contract Documents.
- E. When Shop Drawings are revised for resubmission, identify all changes made since previous submission.
- F. Submittals containing language imposing duties on others (such as verification of dimensions or supply of related information) inconsistent with contract language shall be null and void.
- G. Submittals shall not be used as media for inquiries for information or for verification of information that must be supplied by others to Contractor. Inquiries or verification of information shall be made by separate Contractor submittal using Request for Information (RFI) process.
- H. Begin no fabrication or Work which requires submittal review until return of submittals by Engineer with stamp, as either "Reviewed," "Reviewed as Noted," or "Reviewed as Noted-Resubmit."
- I. Distribute copies of reviewed submittals that carry Engineer stamp as either "Reviewed" or "Reviewed as Noted" as appropriate. Instruct parties to promptly report any inability to comply with requirements.
- J. Submittals not requested will not be recognized or processed.
- K. Contractor shall submit Shop Drawings on all hardware and components supplied as a part of this contract. Contractor does not need to submit Shop Drawings on equipment where manufacturer and

model number are supplied without alternate prior to ordering parts. Contractor shall provide Shop Drawings after parts have been ordered.

### 1.03 ENGINEER DUTIES

- A. Review required submittals with reasonable promptness and in accord with schedule, only for general conformance to design concept of Project and compliance with information given in Contract Documents. Review shall not extend to means, methods, sequences, techniques, or procedures of construction or to safety precautions or program incident thereto. Review of a separate item as such will not indicate approval of assembly in which item functions.
- B. Affix stamp and initials or signature, and indicate requirements for resubmittal, or review of submittal. Engineer's action on submittals is classified as follows:
  - 1. Reviewed: Submittal has been reviewed and appears to be in conformance to design concept of Project and Contract Documents. Contractor may proceed with fabrication of work in submittal.
  - 2. Reviewed As Noted: Submittal has been reviewed and appears to be in conformance to design concept of Project and Contract Documents, except as noted by reviewer. Contractor may proceed with fabrication of work in submittal with modifications and corrections as indicated by reviewer.
  - 3. Reviewed As Noted-Resubmit: Submittal has been reviewed and appears to be in conformance to design concept of Project and Contract Documents, except as noted by reviewer. Contractor may proceed with fabrication of work in submittal with modifications and corrections as indicated by reviewer. Contractor shall make any corrections indicated by reviewer and resubmit for review.
  - 4. Resubmit: Submittal has been reviewed and appears not to be in conformance to design concept of Project or with Contract Documents. Contractor shall not proceed with fabrication of work in submittal, but instead shall make any corrections required by reviewer and resubmit for review.
  - 5. Returned without Review: Submittal is being returned without having been reviewed because: 1) not required by Contract Documents; 2) grossly incomplete; 3) indicates no attempt at conformance to Contract Documents; 4) cannot be reproduced; 5) lacks Contractor's completed approval stamp; or 6) lacks design professional's seal when required by law or Contract Documents. If submittal is required by Contract Documents, Contractor shall not proceed with Work as detailed in submittal, but instead shall correct defects and resubmit for review.
  - 6. For Information Only: Submittal has not been reviewed but is being retained for informational purposes only.
  - 7. Void: Submittal is voided because it is no longer required or has been superseded by another submittal.
- C. Return 1 copy of submittals to Contractor. Contractor shall make additional copies as required.
- D. Review of submittals shall not relieve Contractor from responsibility for any variation from Contract Documents unless Contractor has, in writing, called Engineer's attention to such variation at time of submission, and Engineer has given written concurrence pursuant to Contract Documents to specific variation, nor shall any concurrence by Engineer or other reviewer relieve Contractor from responsibility for errors or omissions in submittals.

### 1.04 SHOP DRAWINGS SUBMITTALS

- A. Submit for review for limited purpose of checking for conformance to information given and design concept expressed in Contract Documents. Produce copies and distribute in accordance with article "Submittal Procedures" and for record documents purposes as described in Section 01 70 00.
- B. Designate in construction schedule, or in separate coordinated submittal schedule, dates for submission and dates that reviewed submittals will be needed.
- C. Make submittals promptly in accordance with approved schedule, and in such sequence as to cause no delay in Work or in work of other contractors.
- D. Present in clear and thorough manner, complete with respect to dimensions, design criteria, materials of construction, and like information to enable review of information as required.

- E. Details shall be identified by reference to sheet and detail, schedule or room numbers shown on Drawings.
- F. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- G. Equipment which is identified on Contract Documents with tag number or name shall be identified on Shop Drawing with same tag.
- H. Schedule submittals to expedite Project. Coordinate submission of related items.
- I. For each submittal for review, allow 15 days excluding delivery time to and from Contractor.
- J. Identify variations from Contract Documents and product or system limitations which may be detrimental to successful performance of completed Work.
- K. Shop Drawings shall not be submitted in electronic format.
- L. Number required:
  - 1. Submit 2 copies of each Shop Drawing.
  - 2. Copies of Shop Drawings submitted shall be black line on white background.
  - 3. Reviewer will reproduce additional copies of Shop Drawings as required for internal distribution.
  - 4. Shop Drawings shall be suitable for reproduction in black and white. Shop Drawings submitted which are not suitable for reproduction will not be reviewed.
  - 5. If Contractor will not grant permission to reviewer to reproduce Shop Drawings, submit two copies of each Shop Drawing.
  - 6. Samples: Submit number stated in each Specification section.
  - 7. Drawings larger than 8-1/2" x 11" shall be rolled.
- M. Submittals shall contain:
  - 1. Date of submission and dates of any previous submissions.
  - 2. Project title and number.
  - 3. Contract identification.
  - 4. Names of:
    - a. Contractor.
    - b. Supplier.
    - c. Manufacturer.
  - 5. Identification of product, with Specification section number and article number.
  - 6. Field dimensions, clearly identified as such.
  - 7. Relation to adjacent or critical features of Work or materials.
  - 8. Applicable standards, such as ASTM or Federal Specification numbers.
  - 9. Identification of deviations from Contract Documents.
  - 10. Identification of revisions on resubmittals.
  - 11. An 8" x 3" blank space for Contractor and reviewer stamps.
  - 12. Indication of Contractor's approval, initialed or signed, with wording substantially as follows:

"Contractor represents to Owner and Engineer that Contractor has either determined and verified all quantities, dimensions, field construction criteria, materials, catalog numbers, and similar data, or assumes full responsibility for doing so and has reviewed or coordinated each submittal with requirements of Work and Contract Documents."
- 13. If Contract Documents include performance specifications stating required results which can be verified as meeting stipulated criteria, so that further design by Contractor prior to fabrication is necessary, Submittal depicting such design must be prepared under seal of professional Engineer licensed in appropriate state and Submittal shall be signed and sealed in accordance with applicable regulations and with following certification statement:

"I hereby certify that this Engineering document was prepared by me or under my direct personal supervision, that I am a duly licensed professional Engineer under laws of state of Iowa and I accept responsibility for adequacy of this document to meet criteria stipulated in Contract Documents."

N. Product Data:

1. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
2. Indicate product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

O. Design data:

1. Submit for Engineer's knowledge as contract administrator or for Owner.
2. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

P. Manufacturer's instructions:

1. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, to Engineer for delivery to Owner in quantities specified for Product Data.
2. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

Q. Operations and maintenance manuals:

1. Designate in construction schedule, or in separate coordinated schedule, dates for submission and dates that reviewed operations and maintenance manuals will be needed.
2. Operations and maintenance manuals shall be presented in clear and thorough manner, complete with respect to dimensions, design criteria, materials of construction, and like information to enable reviewer to review information as required. Details shall be identified by reference to sheet and detail, schedule or room numbers shown on Drawings.

1.05 RESUBMISSION REQUIREMENTS

- A. Make any corrections or changes in submittals required by Engineer and resubmit until stamped as either "Reviewed," "Reviewed as Noted," or "For Information Only."
- B. Text and depictions changed on Submittal shall be back-circled (clouded).
- C. Engineer will assume that portions of Submittal not back-circled have not been changed by Contractor from previous submission.
- D. Indicate revision number and date in document revision block.

1.06 DISTRIBUTION

- A. Distribute reproductions of Shop Drawings which carry Engineer stamp as either "Reviewed" or "Reviewed as Noted" to:
  1. Record Documents file.
  2. Other affected contractors.
  3. Subcontractors.
  4. Supplier or fabricator.
- B. Distribute Samples which carry Engineer stamp as either "Reviewed" or "Reviewed as Noted" as directed by Engineer.

## 1.07 CONSTRUCTION PROGRESS DOCUMENTATION

- A. Construction progress schedules: Submit initial schedules to Engineer within 15 days after date of Owner-Contractor Agreement. After review, resubmit required revised data within ten days.
- B. Form of schedules:
  - 1. Prepare schedules in form of horizontal bar chart.
    - a. Provide separate horizontal bar for each trade or operation.
    - b. Horizontal time scale: Identify first work day of each week.
    - c. Scale and spacing: To allow space for notations and future revisions.
    - d. Minimum sheet size: 8.5" x 11".
  - 2. Format of listings: Chronological order of start of each item of Work.
  - 3. Identification of listings: By major Specification Section numbers.
- C. Construction progress schedule shall show:
  - 1. Complete sequence of construction by activity, with Contract Price breakdown at each stage.
  - 2. Dates for beginning, and completion of, each major element of construction specifically listing:
    - a. Site utilities.
    - b. Subcontractor Work.
    - c. Equipment installations.
    - d. Finishes.
  - 3. Projected percentage of completion for each item, as of first day of each month.
- D. Submittal schedule shall show:
  - 1. Dates for Contractor's submittals.
  - 2. Dates submittals will be required for Owner-furnished products.
- E. Products delivery schedule show delivery dates for: Products specified in Project Manual.
- F. Distribution copies of reviewed schedules to:
  - 1. Owner.
  - 2. Subcontractors.
  - 3. Other concerned parties.
- G. Instruct recipients to report promptly to Contractor, in writing, any problems anticipated by projects shown in schedules.

## 1.08 SUBMITTAL TRANSMITTAL FORM PROCEDURES

- A. Submittals shall be accompanied by completed copies of Submittal Transmittal form, bound herein. An electronic version of transmittal form is available and may be obtained from Engineer. Reproduce additional copies required.
- B. Submit 1 copy of transmittal form for initial submittals and resubmittals. Sequentially number transmittal form. Revise submittals with original number and sequential alphabetic suffix.
- C. Do not include submittals for more than one section of Specifications on Submittal Transmittal form.
- D. Identify project title, location, and number and contract title and number.
- E. Identify preparer name and, submittal number, including preparer's submittal revision number.
- F. A brief description should clearly identify specific application of equipment or material covered by Submittal, utilizing where possible same title used in Drawings and Specifications.
- G. Identify Specification Section number.

- H. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with requirements of Work and Contract Documents.

**PART 2 PRODUCTS**

NOT USED

**PART 3 EXECUTION**

NOT USED

END OF SECTION

Date Received \_\_\_\_\_  
 Date Distributed \_\_\_\_\_

**SUBMITTAL TRANSMITTAL**

Transmittal No. 167

Project Title \_\_\_\_\_ Project No. \_\_\_\_\_ Contract No. \_\_\_\_\_  
 Project Location \_\_\_\_\_ Contract Title \_\_\_\_\_

**CONTRACTOR'S TRANSMITTAL**

**ENGINEER'S/ARCHITECT'S ACTION**

Status Abbreviations:

R - Reviewed

RN - Reviewed as Noted

RNR - Reviewed as Noted

Resubmit

RS - Resubmit

RET - Returned Without Review

FIO - For Information Only

V - Void

Preparer	Preparer Submittal No.	Rev. No.	Title	Section No.	SC Submittal No.	Status	Distribution (No.)						
							Cont	RPR	Own	Des			

Contractor Remarks

Address

By \_\_\_\_\_ Date \_\_\_\_\_

By Signature above, the Contractor shall certify that they have reviewed the submittal and that they comply with all applicable specification sections and contract drawings. Action of any kind on submittal by Engineer/Architect does not relieve Contractor from responsibility for errors, correctness of details, or conformance to the contract.

Engineer/Architect Remarks



**Stanley Consultants**  
 A Stanley Group Company  
 Engineering, Environmental and Construction Services - Worldwide

By \_\_\_\_\_  
 Date \_\_\_\_\_

## **PART 1 GENERAL**

### 1.01 QUALITY CONTROL AND CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Engineer before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform Work by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on Shop Drawings or as instructed by manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

### 1.02 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Engineer before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

### 1.03 BUILDING CODES AND PERMITS

- A. Obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses.
- B. Pay all governmental charges and inspection fees necessary for prosecution of Work, which are applicable at time of opening of Bids. Pay all charges of utility service companies for connections to Work. Owner will pay all charges of such companies for capital costs related thereto.
- C. Give all notices and comply with all laws, ordinances, building and construction codes, rules, and regulations applicable to Work. If Contractor observes that Specifications or Drawings are at variance therewith, give Engineer prompt written notice thereof, and any necessary changes shall be adjusted by appropriate Modification.
- D. If Contractor performs any Work knowing or having reason to know that it is contrary to such laws, ordinances, rules, and regulations, and without such notice to Engineer, Contractor shall bear all costs arising therefrom; however, it shall not be Contractor's primary responsibility to make certain that Specifications and Drawings are in accordance with such laws, ordinances, rules, and regulations.

### 1.04 REFERENCES

- A. For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

- B. Conform to reference standard by date of issue current on date for receiving bids, date of Owner-Contractor Agreement when there are no Bids, except where a specific date is established by code.
- C. Obtain copies of standards where required by product specification sections.
- D. Should specified reference standards conflict with Contract Documents, request clarification from the Engineer before proceeding.
- E. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of the Engineer shall be altered from the Contract Documents by mention or inference otherwise in any reference document.
- F. Abbreviations used in Drawings and Specifications are as specified in ASME Y14.38 and IEEE 260.
- G. Schedule of references:
  - 1. AAR –Association of American Railroads
  - 2. ACI - American Concrete Institute
  - 3. ANSI - American National Standards Institute
  - 4. ASTM – International Standards Worldwide
  - 5. AWS - American Welding Society
  - 6. IEEE - Institute of Electrical and Electronics Engineers
  - 7. NEMA - National Electrical Manufacturers' Association
  - 8. NETA - International Electrical Testing Association
  - 9. NFPA - National Fire Protection Association
  - 10. OSHA – U. S. Department of Labor, Occupational Safety and Health Administration
  - 11. SJI - Steel Joist Institute
  - 12. SMACNA - Sheet Metal and Air Conditioning Contractors' National Association

#### 1.05 WELDING CERTIFICATES

- A. Promptly after Notice of Award, submit to Engineer one copy, unless specified otherwise, for each person, by name, assigned to do field welding of materials installed under this Agreement.
- B. Show on certificates that each person has passed tests specified by AWS.
- C. Submit certificates prior to execution of any welding. Certificates not required for nonstructural tack welding.

#### 1.06 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.
- B. Submit qualifications of observer to Engineer 30 days in advance of required observations. Observer subject to approval of Engineer and Owner.
- C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

## PART 2 PRODUCTS

NOT USED

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new Work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Verify that utility services are available, of the correct characteristics, and in the correct locations.

#### **3.02 PREPARATION**

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

#### **3.03 FIELD PERFORMANCE TESTS**

- A. If equipment or system fails to function properly, or guaranteed performance is not indicated, Contractor shall make necessary corrections, including replacement, at no cost to Owner, and after such corrections are completed, demonstrate to Engineer that equipment or system functions properly and guaranteed performance is obtainable.

END OF SECTION

**PART 1 GENERAL**

1.01 TEMPORARY ELECTRICITY

- A. Provide and pay for power service required from Owner as needed for construction operation.
- B. Provide power outlets for construction operations, with branch wiring and distribution boxes located as required. Provide flexible power cords as required.
- C. Provide main service disconnect and over-current protection at convenient location meter.
- D. Permanent convenience receptacles may not be utilized during construction.

1.02 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

- A. Provide and maintain lighting for construction operations.
- B. Provide and maintain lighting to exterior staging and storage areas for after dark for security purposes.
- C. Provide and maintain lighting to interior work areas after dark for security purposes.
- D. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.
- E. Maintain lighting and provide routine repairs.
- F. Permanent building lighting may be utilized during construction.

1.03 TEMPORARY HEATING

- A. Existing facilities shall not be used.
- B. Provide heating devices and heat as needed to maintain specified conditions for construction operations.

1.04 TEMPORARY COOLING

- A. Existing facilities shall not be used.
- B. Provide and pay for cooling devices and cooling as needed to maintain specified conditions for construction operations. Provide separate metering and reimburse Owner for cost of energy used.

1.05 TEMPORARY VENTILATION

- A. Ventilate enclosed areas to achieve curing of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

1.06 TELEPHONE SERVICE

- A. Provide, maintain, and pay for telephone service to field office at time of project mobilization, if needed.

1.07 FACSIMILE SERVICE

- A. Provide, maintain and pay for facsimile service to field office at time of project mobilization, if needed.

1.08 TEMPORARY WATER SERVICE

- A. Provide and pay for suitable quality portable water service as needed to maintain specified conditions for construction operations.

1.09 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Existing facility use is not permitted. Provide at time of project mobilization.

1.10 FIELD OFFICES AND SHEDS

- A. Provide field office and sheds as needed.
- B. Office: Weather tight, with lighting, electrical outlets, heating, cooling and ventilating equipment, and equipped with sturdy furniture drawing rack, and drawing display table.
- C. Locate offices and sheds a minimum distance of 30' from existing and new structures.
- D. Environmental control: Heating, cooling, and ventilating for offices: Automatic equipment to maintain comfort conditions.
- E. Storage Areas and sheds: Size to storage requirements for products of individual Sections, allowing for access and orderly provision for maintenance and for inspection of products to requirements of Section 01 60 00.
- F. Preparation: Fill and grade sites for temporary structures to provide drainage away from buildings.
- G. Maintenance and cleaning:
  - 1. Weekly janitorial services for offices; periodic cleaning and maintenance for office and storage areas.
  - 2. Maintain approach walks free of mud, water, and snow.
- H. Removal: At completion of Work remove buildings, foundations, utility services, and debris. Restore areas.

1.11 VEHICULAR ACCESS

- A. Location approved by Owner.
- B. Provide unimpeded access for emergency vehicles.
- C. Provide and maintain access to fire hydrants and control valves free of obstructions.
- D. Provide means of removing mud from vehicle wheels before entering streets and parking lots.
- E. Existing on-site roads may be used for construction traffic.

1.12 PARKING

- A. Arrange for temporary parking areas to accommodate construction personnel.
- B. Locate as approved by Owner.
- C. When site space is not adequate, provide additional off-site parking.
- D. Tracked vehicles not allowed on paved areas.

- E. Do not allow heavy vehicles or construction equipment in parking areas.
- F. Do not allow vehicle parking on existing pavement.
- G. Designate 1 parking space for the Owner.
- H. Permanent Pavements and parking facilities:
  - 1. Prior to Substantial Completion the base for permanent roads and parking areas may be used for construction traffic.
  - 2. Avoid traffic loading beyond paving design capacity. Tracked vehicles not allowed.
- I. Maintenance:
  - 1. Maintain traffic and parking areas in a sound condition free of excavated material, construction equipment, products, mud, snow, and ice.
  - 2. Maintain existing and permanent paved areas used for construction; promptly repair breaks, potholes, low areas, standing water, and other deficiencies, to maintain paving and drainage in original, or specified, condition.
- J. Removal, repair:
  - 1. Remove temporary materials and construction at Substantial Completion.
  - 2. Remove underground work and compacted materials to a depth of 2' (600 mm); fill and grade site as specified.
  - 3. Repair existing facilities damaged by use, to original condition.
- K. Mud from site vehicles: Provide means of removing mud from vehicle wheels before entering streets.

#### 1.13 PROGRESS CLEANING AND WASTE REMOVAL

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and rubbish from site weekly and dispose off-site.

#### 1.14 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas to allow for Owner's use of site, and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.
- C. Provide protection for plants designated to remain. Replace damaged plants.
- D. Protect nonowned vehicular traffic, stored materials, site, and structures from damage.

#### 1.15 ENCLOSURES AND FENCING

- A. Construction: Commercial grade chain link fence.
- B. Provide 6' (1.8 m) high fence around construction site; equip with vehicular and pedestrian gates with locks.

1.16 SECURITY

- A. Security program:
  - 1. Protect Work existing premises and Owner's operations from theft, vandalism, and unauthorized entry.
  - 2. Initiate program in coordination with Owner's existing security system at project mobilization.
  - 3. Maintain program throughout construction period until Owner occupancy.
- B. Entry control:
  - 1. Restrict entrance of persons and vehicles into Project site and existing facilities.
  - 2. Allow entrance only to authorized persons with proper identification.
  - 3. Maintain log of workers and visitors, make available to Owner on request.
  - 4. Coordinate access of Owner's personnel to site in coordination with Owner's security forces.
- C. Restrictions:
  - 1. Do not allow cameras on site or photographs taken except by written approval of Owner.
  - 2. Do no work on days indicated in Owner-Contractor Agreement.

1.17 NOISE CONTROL

- A. Provide methods, means, and facilities to minimize noise produced by construction operations.

1.18 PEST CONTROL

- A. Provide methods, means, and facilities to prevent pests and insects from entering the facility.

1.19 POLLUTION CONTROL

- A. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.

1.20 RODENT CONTROL

- A. Provide methods, means, and facilities to prevent rodents from accessing or invading premises.

1.21 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, prior to Substantial Completion inspection.
- B. Remove underground installations to a minimum depth of 2' (600 mm). Grade site as indicated.
- C. Clean and repair damage caused by installation or use of temporary work.
- D. Restore existing and permanent facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

**PART 2 PRODUCTS**

NOT USED

**PART 3 EXECUTION**

NOT USED

END OF SECTION

## **PART 1 GENERAL**

### **1.01 PRODUCTS**

- A. Provide products of qualified manufacturers suitable for intended use. Provide products of each type by a single manufacturer unless specified otherwise.
- B. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.
- C. Provide interchangeable components of the same manufacturer for components being replaced.

### **1.02 PRODUCT DELIVERY REQUIREMENTS**

- A. Transport and handle products in accordance with manufacturer's instructions.
- B. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

### **1.03 PRODUCT STORAGE AND HANDLING REQUIREMENTS**

- A. Store and protect products in accordance with manufacturers' instructions.
- B. Store with seals and labels intact and legible.
- C. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.
- D. For exterior storage of fabricated products, place on sloped supports above ground.
- E. Provide off-site storage and protection when site does not permit on-site storage or protection.
- F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- G. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- H. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- I. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

### **1.04 PRODUCT OPTIONS**

- A. Products specified by reference standards or by description only: Any product meeting those standards or description.
- B. Products specified by naming one or more manufacturers: Products of one of manufacturers named and meeting specifications, no options or substitutions allowed.

**PART 2 PRODUCTS**

NOT USED

**PART 3 EXECUTION**

NOT USED

END OF SECTION

## **PART 1 GENERAL**

### 1.01 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Engineer's review.
- B. Provide submittals to Engineer that are required by governing or other authorities.
- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- D. Owner will occupy all of the building as specified in Section 01 11 00.

### 1.02 FINAL CLEANING

- A. Execute final cleaning prior to final project assessment.
- B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces.
- C. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- D. Replace filters of operating equipment.
- E. Clean debris from roofs, gutters, downspouts, and drainage systems.
- F. Clean site; sweep paved areas, rake clean landscaped surfaces.
- G. Remove waste and surplus materials, rubbish, and construction facilities from the site.

### 1.03 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of products to Owner's personnel 2 weeks prior to date of Substantial Completion.
- B. Demonstrate Project equipment by a qualified individual who is knowledgeable about the Project.
- C. For equipment or systems requiring seasonal operation, perform demonstration for other season within 6 months.
- D. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.
- E. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at agreed time at equipment location.
- F. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.
- G. Amount of time required for instruction on each item of equipment and system is that specified in individual sections.

### 1.04 TESTING, ADJUSTING AND BALANCING

- A. Owner will appoint, employ, and pay for services of an independent firm to perform testing.

- B. Reports will be submitted by the independent firm to the Engineer indicating observations and results of tests and indicating compliance or noncompliance with the requirements of the Contract Documents.
- C. Provide 4 days of on-site assistance during Owner-provided testing.

#### 1.05 PROTECTING INSTALLED CONSTRUCTION

- A. Protect installed Work and provide special protection where specified in individual specification sections.
- B. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- E. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- F. Prohibit traffic from landscaped areas.

#### 1.06 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
  - 1. Drawings.
  - 2. Specifications.
  - 3. Addenda.
  - 4. Change Orders and other modifications to the Contract.
  - 5. Reviewed Shop Drawings, Product Data, and Samples.
  - 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress, not less than weekly.
- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
  - 1. Manufacturer's name and product model and number.
  - 2. Product substitutions or alternates utilized.
  - 3. Changes made by Addenda and modifications.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
  - 1. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
  - 2. Field changes of dimension and detail.
  - 3. Details not on original Contract Drawings.
- G. Submit documents to Engineer with claim for final Application for Payment.

#### 1.07 SPARE PARTS AND MAINTENANCE PRODUCTS

- A. Provide spare parts, maintenance, and extra products in quantities specified in individual specification sections.

- B. Deliver to Project site and place in location as directed; obtain receipt prior to final payment.

#### 1.08 PRODUCT WARRANTIES AND PRODUCT BONDS

- A. Obtain warranties and bonds executed in triplicate by responsible subcontractors, suppliers, and manufacturers, within ten days after completion of the applicable item of work.
- B. Execute and assemble transferable warranty documents and bonds from subcontractors, suppliers, and manufacturers.
- C. Verify that documents are in proper form, contain full information, and are notarized.
- D. Co-execute submittals when required.
- E. Provide Table of Contents and assemble in 3-D side ring binder with durable plastic cover.
- F. Submit prior to final Application for Payment.
- G. Time of Submittals:
  - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
  - 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
  - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty or bond period.

#### 1.09 MAINTENANCE SERVICE

- A. Furnish service and maintenance of components indicated in specification sections during the warranty period.
- B. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
- C. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.
- D. Maintenance service shall not be assigned or transferred to any agent or Subcontractor without prior written consent of the Owner.

### **PART 2 PRODUCTS**

NOT USED

### **PART 3 EXECUTION**

NOT USED

END OF SECTION

**PART 1 GENERAL**

## 1.01 OPERATING AND MAINTENANCE DATA REQUIREMENTS

- A. Operating and maintenance data shall be in English language.
- B. Compile product data and related information appropriate for Owner's maintenance and operation of products furnished under Agreement.
- C. Prepare operating and maintenance data as specified in this section and as referenced in other pertinent sections of Specifications.

## 1.02 QUALITY ASSURANCE

- A. Preparation of data shall be done by personnel:
  - 1. Trained and experienced in maintenance and operation of described products.
  - 2. Familiar with requirements of this section.
  - 3. Skilled as technical writers to extent required to communicate essential data.
  - 4. Skilled as draftsmen competent to prepare required drawings.

## 1.03 FORM OF SUBMITTALS

- A. Prepare data in form of an instructional manual for use by Owner's personnel.
- B. Format:
  - 1. Size 8-1/2" x 11" (216 mm x 279 mm).
  - 2. Paper: 20 lb minimum, white, for typed pages.
  - 3. Text: Manufacturer's printed data, or neatly typewritten.
  - 4. Drawings:
    - a. Provide reinforced punched binder tab, bind in with text.
    - b. Fold larger drawings to size of text pages.
  - 5. Provide fly-leaf for each separate product, or each piece of operating equipment.
    - a. Provide typed description of product, and major component parts of equipment.
    - b. Provide indexed tabs.
  - 6. Cover: Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS." List:
    - a. Title of Project.
    - b. Identity of separate structure as applicable.
    - c. Identity of general subject matter covered in manual.
  - 7. Binders:
    - a. Commercial quality 3-ring binders with durable and cleanable plastic covers.
    - b. Maximum ring size: 1" (25 mm).
    - c. When multiple binders are used, correlate data into related consistent groupings.

## 1.04 CONTENT OF MANUAL

- A. Neatly typewritten table of contents for each volume, arranged in systematic order.
  - 1. Seller, name of responsible principal, address, and telephone number.
  - 2. List of each product required to be included, indexed to content of volume.
- B. Product data:
  - 1. Include only those sheets which are pertinent to specific product.
  - 2. Annotate each sheet to:
    - a. Clearly identify specific product or part installed.
    - b. Clearly identify data applicable to installation.
    - c. Delete references to inapplicable information.

- C. Drawings:
  - 1. Supplement product data with Drawings as necessary to clearly illustrate:
    - a. Relations of component parts of equipment and systems.
    - b. Control and flow diagrams.
  - 2. Coordinate Drawings with information in Project record documents to assure correct illustration of completed installation.
  - 3. Do not use Project record documents as maintenance Drawings.
- D. Written text, as required to supplement product data for particular installation.
  - 1. Organize in consistent format under separate headings for different procedures.
  - 2. Provide logical sequence of instructions for each procedure.
- E. Copy of each warranty, Bond, and service contract issued.
  - 1. Provide information sheet for Owner's personnel, giving:
    - a. Proper procedures in event of failure.
    - b. Instances which might affect validity of warranties or Bonds.

#### 1.05 MANUAL FOR EQUIPMENT AND SYSTEMS

- A. Submit 3 hard copies and one electronic copy on USB of complete manual in final form.
- B. Contents, for each unit of equipment and system, as appropriate:
  - 1. Description of unit and component parts:
    - a. Function, normal operating characteristics, and limiting conditions.
    - b. Performance curves, engineering data, and tests.
    - c. Complete nomenclature and commercial number of replaceable parts.
  - 2. Operating procedures:
    - a. Startup, break-in, routine, and normal operating instructions.
    - b. Summer and winter operating instructions.
    - c. Special operating instructions.
  - 3. Maintenance procedures:
    - a. Routine operations.
    - b. Guide to "trouble-shooting."
    - c. Disassembly, repair, and reassembly.
    - d. Alignment, adjusting, and checking.
  - 4. Servicing and lubrication schedule: List of lubricants required.
  - 5. Manufacturer's printed operating and maintenance instructions.
  - 6. Description of sequence of operation by control manufacturer.
  - 7. Original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
    - a. Predicted life of parts subject to wear.
    - b. Items recommended to be stocked as spare parts.
  - 8. As-installed control diagrams by controls manufacturer.
  - 9. Each contractor's coordination Drawings. As-installed color-coded piping diagrams.
  - 10. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.
  - 11. Other data as required under pertinent sections of Specifications.
- C. Content, for each electrical and electronic system, as appropriate.
  - 1. Description of system and component parts:
    - a. Function, normal operating characteristics, and limiting conditions.
    - b. Performance curves, engineering data, and tests.
    - c. Complete nomenclature and commercial number of replacement parts.
  - 2. Circuit directories of panelboards:
    - a. Electrical service.
    - b. Controls.
    - c. Communications.
  - 3. As-installed color-coded wiring diagrams.

4. Operating procedures:
  - a. Routine and normal operating instructions.
  - b. Sequences required.
  - c. Special operating instructions.
5. Maintenance procedures:
  - a. Routine operations.
  - b. Guide to "trouble-shooting".
  - c. Disassembly, repair, and assembly.
  - d. Adjustment and checking.
6. Manufacturer's printed operating and maintenance instructions.
7. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.
8. Other data as required under pertinent sections of Specifications.

D. Prepare and include additional data when need for such data becomes apparent during instruction of Owner's personnel.

E. Additional requirements for operating and maintenance data: Respective sections of Specifications.

#### 1.06 SUBMITTAL SCHEDULE

A. Preliminary draft::

1. Submit 1 copies to Owner.
2. Submit 2 copies to Engineer of proposed formats and outlines of contents prior to start of Work. Engineer will review draft and return 1 copy with comments.

B. Submit 1 copy of completed data in final form 15 days prior to final inspection or acceptance. Copy will be returned after final inspection or acceptance, with comments.

C. Submit specified copies of approved data in final form 10 days after final inspection or acceptance.

#### **PART 2 PRODUCTS**

NOT USED

#### **PART 3 EXECUTION**

NOT USED

END OF SECTION



## **PART 1 GENERAL**

### 1.01 SECTION INCLUDES

- A. Removal and disposal of existing relay panel doors and Annunciator equipment.
  - 1. Existing RTU to be retained and stored for future use after removal.
- B. Remove and legally dispose of items.

### 1.02 MEASUREMENT AND PAYMENT

- A. No separate measurement or payment will be made for demolition work under this contract. Include costs in connection with Work in lump sum Contract Price.

### 1.03 DEFINITIONS

- A. Deconstruction: Disassembly of buildings for the purpose of recovering materials.
- B. Construction and demolition (C&D) materials: Materials produced in the process of construction, renovation and/or demolition of structures, where structures include buildings (residential, commercial, institutional), roads, and bridges. C&D materials typically include concrete, asphalt, wood, gypsum wallboard, paper, glass, rubble, and roofing materials. Also includes land clearing debris, such as stumps, rocks, and dirt.
- C. Environmental pollution and damage: Presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human or animal life; affect other species of importance to humanity; or degrade utility of environment for aesthetic, cultural or historical purposes.
- D. Inert fill:
  - 1. Permitted facility that accepts inert waste such as asphalt and concrete exclusively for purpose of disposal.
  - 2. Inert solids and waste: Nonliquid solid waste including, but not limited to, soil and concrete, that does not contain hazardous substances or soluble pollutants at concentrations in excess of water-quality standards established by regional water board and does not contain significant quantities of decomposable solid waste.
- E. Demolition waste: Building materials and solid waste resulting from construction, remodeling, repair, cleanup, or demolition operations that are not hazardous. Term includes, but is not limited to, asphalt concrete, portland cement concrete, brick, lumber, gypsum wallboard, cardboard and other associated packaging, roofing material, ceramic tile, carpeting, plastic pipe, and steel. The materials may include rock, soil, tree stumps, and other vegetative matter resulting from land clearing and landscaping for construction or land development projects.
- F. Chemical waste: Includes petroleum products, bituminous materials, salts, acids, alkalis, herbicides, pesticides, organic chemicals and inorganic wastes.
- G. Recycling: Process of sorting, cleansing, treating and reconstituting materials for purpose of using altered form in manufacture of new product. Recycling does not include burning, incinerating or thermally destroying solid waste.
- H. Reuse: Use, in same or similar form as it was produced, of material which might otherwise be discarded.
- I. Solid waste: Putrescible and nonputrescible solid, semisolid, and liquid wastes, including garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, abandoned vehicles and parts thereof, discarded home and industrial appliances, dewatered, treated, or chemically fixed sewage sludge which is not hazardous waste, manure, vegetable or animal solid

and semisolid wastes, and other discarded solid and semisolid wastes. "Solid waste" does not include hazardous waste, radioactive waste, or medical waste as defined or regulated by State law.

#### 1.04 PRE-DEMOLITION MEETING

- A. Site can be observed at Pre-Bid meeting.

#### 1.05 SCHEDULING

- A. Perform Work in manner which will provide least interference and most protection to public and existing construction. Contractor's operations subject to approval by Owner prior to commencement of Work.
- B. Take care to minimize outages of electrical systems.

#### 1.06 CLOSEOUT SUBMITTALS

- A. Record drawings: Identify and accurately locate capped utilities and other subsurface structural, electrical, or mechanical conditions.

#### 1.07 QUALITY ASSURANCE

- A. Demolition firm qualifications: Engage licensed demolition contractor and an experienced firm that has successfully completed demolition Work similar to that indicated for this Project.
- B. Regulatory requirements:
  - 1. Comply with governing EPA notification regulations before starting demolition. Comply with hauling and disposal regulations of authorities having jurisdiction. Obtain and pay for all permits required.
  - 2. Conform to applicable requirements of federal, state, and other governmental agencies for demolition work.

#### 1.08 SITE CONDITIONS

- A. Known underground piping, foundations, and other underground obstructions in vicinity of new construction are shown on Drawings.
- B. Protect underground facilities encountered during excavation until it is determined whether they are active or inactive. Repair, without compensation, existing active facilities shown on Drawings damaged during operations.
- C. Notify Engineer and Owner of unexpected subsurface conditions and discontinue Work in area until Owner provides notification to resume Work.

### **PART 2 PRODUCTS**

#### 2.01 MATERIALS OWNERSHIP

- A. Demolished materials shall become Contractor's property and shall be removed, recycled, or disposed from Project Site in appropriate and legal manner.

### **PART 3 EXECUTION**

#### 3.01 VERIFICATION OF CONDITIONS

- A. Inspect buildings and structures where demolition is required. Inspect existing Drawings of buildings and structures; Drawings are available from Owner. Contractor shall be familiar with items that require demolition and patching.

- B. Perform excavation and dewatering necessary to accomplish Work.
- C. Determine actual Site conditions, extent to which demolition is required, and method of demolition.
- D. Schedule work with Owner and work in other parts of these Contract Documents.
- E. Verify that utilities have been disconnected and capped.
- F. Survey existing conditions and correlate with requirements indicated to determine extent of demolition and recycling required.

### 3.02 PREPARATION

- A. Prepare drawings, documents, and applications and obtain government agency approvals and permits required for demolition activities.
- B. Conduct demolition operations and remove C&D materials to ensure minimum interference with roads, streets, walks, and other adjacent occupied and utilized facilities.
- C. Do not close or obstruct streets, walks, or other adjacent occupied or utilized facilities without permission from authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
- D. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around demolition area.
  - 1. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction.
  - 2. Protect existing Site improvements, appurtenances, and landscaping that are designated to remain in place.

### 3.03 EXPLOSIVES

- A. Explosives: Use of explosives not permitted.

### 3.04 ENVIRONMENTAL CONTROLS

- A. Comply with federal, state and local regulations pertaining to water, air, solid waste, recycling, chemical waste, sanitary waste, sediment and noise pollution.
- B. Protection of natural resources: Preserve natural resources within project boundaries or restore to equivalent condition.
  - 1. Confine demolition activities to areas defined by public roads, easements, and work area limits indicated on drawings.
  - 2. Temporary construction: Remove indications of temporary construction facilities, such as haul roads, work areas, structures, stockpiles or waste areas.
  - 3. Water resources:
    - a. Comply with applicable regulations concerning direct or indirect discharge of pollutants to underground and natural surface waters.
    - b. Oily substances:
      - 1) Prevent oily or other hazardous substances from entering ground, drainage areas, or local bodies of water in such quantities as to affect normal use, aesthetics, or produce measurable ecological impact on area.
      - 2) Store and service construction equipment at areas designated for collection of oil wastes.
  - 4. Dust control, air pollution, and odor control: Prevent creation of dust, air pollution and odors:
    - a. Use temporary enclosures and other appropriate methods to limit dust and dirt rising and scattering in air to lowest practical level.
    - b. Properly maintain equipment to reduce gaseous pollutant emissions.
  - 5. Noise control: Perform demolition operations to minimize noise.

- a. Repetitive, high level impact noise will be permitted only between hours of 8:00 a.m. and 3:00 p. m. Repetitive impact noise on property shall not exceed following dB limitations:

Sound Level in dB	Time Duration of Impact Noise
70	More than 12 minutes in any hour
80	More than 3 minutes in any hour

- b. Provide equipment, sound-deadening devices, and take noise abatement measures that are necessary to comply with requirements of this Contract.
- c. At least once every 5 successive working days while work is being performed above 55 dB noise level, measure sound level for noise exposure due to demolition. Measure sound levels on 'A' weighing network of general purpose sound level meter at slow response. To minimize the effect of reflective sound waves at buildings, measurements may be taken 3' to 6' in front of building face. Submit recorded information to State noting problems and alternatives before mitigating actions.
- 6. Disposal practices and waste hauling:
  - a. Use permitted waste hauler or Contractor's trucking services and personnel.
  - b. Do not burn, bury or otherwise dispose of rubbish and waste materials on project site.
- 7. Revenue:
  - a. Revenues or other savings obtained from recycled, re-used, or salvaged materials shall accrue to Contractor unless otherwise noted in Contract Documents.
  - b. Remove and transport C&D materials in manner that will prevent spillage on adjacent surfaces, streets, and areas or dust being emitted into atmosphere.
  - c. Clean adjacent streets of dust, dirt, and C&D materials caused by demolition operations. At end of each work day, return adjacent areas to condition existing before start of demolition.

3.05 PROTECTION

- A. Protect existing facilities from damage by falling debris, dust, and construction operations.
- B. Provide shoring and bracing where necessary to support existing construction and protect personnel during demolition operation.

3.06 DEMOLITION - GENERAL

- A. Completely remove below-grade construction, including footings.
- B. Damages: Promptly repair damages to adjacent facilities caused by demolition operations.
- C. Remove existing construction as specified and shown and as required to permit new construction.
- D. Perform removal in manner that will minimize dust, noise, and other nuisance. Maintain haul routes for disposal of material clean and free of debris.
- E. Remove existing construction carefully providing for neat and orderly junctions at construction to remain in place. Final appearance of exposed surfaces shall be similar and equal to that of adjacent existing work. Grind off rough surfaces to remove sharp projections.
- F. Perform demolition operations in manner that in no way endangers personnel, public, existing structures, utilities, roadways, or facilities not to be demolished.
- G. Any portion of existing construction whether structural, or accessory which has become unstable through removal of other parts of construction shall be removed as soon as practicable, and no such unstable part shall be left free-standing or inadequately braced against causes of collapse at end of each day's work.
- H. No demolition shall be performed on piping, electrical circuits, or equipment until system has been isolated by Owner. Contractor shall verify isolation of system.

- I. Contractor shall relocate existing active miscellaneous piping, conduit, and electrical circuits and devices not detailed on Drawings but required for installation of equipment and items installed by this Contract.
- J. To reduce fire hazards during demolition, Contractor shall:
  - 1. Maintain sufficient number of fire extinguishers to check and extinguish small fires in areas where Work is being performed.
  - 2. Wherever cutting torch or other equipment which might cause fire is being used, fire extinguishers shall be kept nearby and ready for instant use. Users of such equipment shall be instructed in proper method of preventing fires and extinguishing fire.
  - 3. Burning of waste lumber and other building materials or trash on Site will not be permitted.
- K. Use of blasting not permitted.
- L. Provide temporary personnel and vehicle protection at openings or ledges made by demolition.

### 3.07 HANDLING OF DEMOLISHED MATERIALS

- A. Storage of materials to be removed not permitted to accumulate on site. Promptly remove and dispose of unsalvageable equipment and materials.
- B. Burning: Do not burn demolished materials.
- C. No material, obstructions, or debris shall be placed or allowed to accumulate within 15' (4.5 m) of any fire hydrant. Fire hydrants shall be accessible at all times.

### 3.08 REPAIR AND RESTORATION

- A. Contractor shall be responsible for damage to personnel, public, roadways, streets, structures, utilities, facilities, and equipment caused by operations and shall repair any damage at its own expense or replace items damaged beyond repair.
- B. Do not operate vehicles or equipment on existing construction or roadways that could be damaged.
- C. Backfill applicable excavated areas, open pits, and other depressions as work progresses. Backfill materials shall conform to requirements of Drawings.
- D. Grade areas disturbed by construction to smooth, uniform surfaces sloped to drain.
- E. Replace construction removed to facilitate operations with construction of equal quality to that removed.

### 3.09 CLEAN-UP

- A. Maintain public streets, alleys, or other thoroughfares used in carrying out disposal free of litter or soil attributable to this operation. Equip and load trucks or other vehicles to prevent leakage, blowing off, or other escape of any portion of whatsoever is being hauled. Cost incurred by Owner in cleaning up such litter will be charged to Contractor and deducted from monies due or to become due it under this contract.
- B. Upon completion of demolition work in each area, thoroughly clean area of materials not to remain.

END OF SECTION

- 1) S.G. Weiss
- 2) P.E. Schulz

## **PART 1 GENERAL**

### 1.01 SECTION INCLUDES

- A. General electrical requirements for equipment and services including, but not limited to:
1. Low-voltage field wiring.
  2. Low-voltage splices and terminations.
  3. Low-voltage cabinets and electrical enclosures.
  4. Low voltage fuses and fuse blocks.
  5. Plates and covers.
  6. Panel-boards.
  7. Shop finish.
  8. Rust-inhibiting compounds.
  9. Hardware.
  10. Lighting.
  11. Packaging, identification, and tagging.
  12. Nameplates.
  13. Fireproofing and fire ratings.

### 1.02 ACTION SUBMITTALS

- A. Product Data:
1. List of proposed material identifying manufacturer, type and model number for equipment to be provided for complete job.
  2. Manufacturer's catalog sheets marked to indicate specific type, model or catalog number of equipment to be provided.
  3. List of special maintenance tools required for installation and operation of equipment.
  4. Dimensional layout and assembly drawings of panelboards and instrument transformer cabinets.

### 1.03 MAINTENANCE MATERIALS

- A. Extra materials: Provide touchup paint in same type and color to repair at least 25% of finish-painted equipment surface. Paint shall be sufficient to perform touch-up painting in accordance with shop-applied material instructions for repair painting.
- B. Each piece of equipment shall be furnished with special tools as required for installation, maintenance, and dismantling of equipment.
1. Furnish in quantities as necessary to complete work on schedule.
  2. Tools shall be new and shall become property of Owner.
  3. Tools and intended use shall be identified in assembly instructions. Tools shall only be used for their intended purpose.

### 1.04 QUALITY ASSURANCE

- A. Manufacturer qualifications:
1. Manufacturer of equipment specified shall be recognized in industry for normally supplying this type of equipment.
  2. Manufacturer shall be ISO certified.
  3. When requested by Engineer, provide list of similar equipment installations that have employed identical equipment from manufacturer.
- B. Installer qualifications:
1. Installer shall be skilled in trade and shall have thorough knowledge of products and equipment specified.
  2. Cutting, drilling, trenching, or channeling necessary to properly install equipment shall be performed by competent skilled crafts people in safe, professional manner.

- C. Regulatory requirements: Perform electrical construction in accordance with NEC, local and state codes as applicable to job site.
- D. Materials and equipment furnished for permanent installation shall be new, unused, and undamaged.
- E. Asbestos not allowed.
- F. Parts shall be manufactured to American industry standard sizes and gages to facilitate maintenance and interchangeability. Metric sized components not allowed unless specifically requested and approved.

#### 1.05 DELIVERY, STORAGE, AND HANDLING

- A. Pack, ship, handle, and store in accordance with manufacturer's requirements.
- B. Ship equipment completely factory assembled unless physical size, arrangement, configuration, or shipping and handling limitations make this impracticable. Shipping splits and required field assembly shall be identified with equipment submittals.
- C. Costs associated with sections, accessories, or appurtenances requiring field assembly shall be Contractor's responsibility.
- D. Separately packaged parts and accessories shall be consolidated and shipped together with equipment. Mark each container clearly to identify contents and as belonging with main equipment.
  - 1. Provide individual weatherproof itemized packing slips attached to outside of each container for contents included. Provide duplicate inside each container.
  - 2. Attach master packing list, covering accessory items for equipment, to main piece of equipment.
  - 3. Mark each container with project identification number for equipment and container number followed by total number of containers.
- E. Equipment shall be suitably protected during shipment, handling, and storage. Damage incurred during shipment shall be repaired at not cost to Owner.
- F. Protect coated surfaces against impact, abrasion, and discoloration.
- G. Electrical equipment and insulation systems shall be protected against ingress of moisture. Use space heaters if necessary to protect against moisture.
- H. Exposed threads shall be greased and protected.
- I. Pipe, tube, and conduit connections shall be closed with rough usage plugs. Seal and tape open ends of piping, tubing, and conduit.
- J. Equipment openings shall have covers, and taped to seal equipment.
- K. Store materials in clean, dry place. Protect from weather, dirt, water, construction debris, and physical damage in accordance with manufacturer's instructions.

#### 1.06 SCHEDULING

- A. Coordinate with Owner early and late shipping and delivery schedules for items requiring storage and handling at Site.

#### 1.07 WARRANTY

- A. Electrical equipment shall be provided with manufacturer's standard warranty, but not less than 1 year.

## PART 2 PRODUCTS

### 2.01 DESIGN REQUIREMENTS

- A. Service conditions: Provide equipment and material suitable for intended service and installation at location indicated.

### 2.02 FIELD WIRING

- A. Nationally or internationally recognized cable manufacturer shall produce cable provided. Comply with code and Project requirements directly associated with use of each cable type.
- B. Cables specified are for voltages 600 volts and below.
- C. Conductor shall be copper with not less than 98% conductivity, unless specified otherwise.
- D. General-purpose building conductor used on interior lighting circuits and general-purpose branch circuits routed entirely in conduit shall be single conductor.
  - 1. Voltage rating: 600-volt.
  - 2. Conductor: Class B, solid or stranded, annealed, uncoated copper, minimum size No. 12 AWG (4.0mm<sup>2</sup>).
  - 3. Insulation: PVC complying with physical and electrical requirements of UL for type THHN/THWN.
  - 4. Jacket: Overall clear nylon jacket applied over conductor insulation, UL-listed as gasoline and oil resistant.
  - 5. Provide conductor sizes No. 8 AWG and smaller in colors to match wire color-codes. Sizes No. 6 AWG and larger shall be color-coded with field-applied tape.
  - 6. Rated continuous operating temperature shall be 90°C in wet and dry locations for operation at maximum 75°C.
- E. Single-conductor, low-voltage power cable for, feeders, branch circuits, and dc circuits routed in conduit:
  - 1. Voltage rating: 600-volt.
  - 2. Conductor: Annealed, bare copper, Class B, stranded, minimum size No. 6 AWG (16 mm<sup>2</sup>).
  - 3. Insulation: Ethylene propylene rubber (EPR), complying with physical and electrical requirements for NEC Type RHH or RHW-2.
  - 4. Jacket: Flame-retardant, heat, moisture, and sunlight resistant; cross-linked low-smoke, nonhalogen polyolefin (XLPO).
  - 5. Conductor sizes No. 8 AWG and smaller shall be provided in colors to match wire color-codes. Sizes No. 6 AWG and larger may be color-coded with field applied tape.
  - 6. Wire shall be identified by surface marking indicating manufacturer, conductor size, conductor material, voltage rating, UL symbol, and listed type.
  - 7. Conductors shall pass IEEE 1202 70,000 Btu/hr, and ICEA T-29-520, 210,000 Btu/hr vertical tray flame tests, and UL VW-1 vertical flame test.
  - 8. Temperature rating shall be 90° C for normal operation in wet or dry locations.
  - 9. Manufacturer: Okonite-Okolon, or equal.
- F. Multi-conductor cable for control, interlocks, current transformers (CTs), voltage transformers (VTs), meters, and relays routed in conduit:
  - 1. Voltage rating: 600-volt.
  - 2. Sizes:
    - a. Breaker control, interlock control, metering, relaying, and general power control circuits: Minimum size No. 10 AWG (6.0 mm<sup>2</sup>).
    - b. CT circuits: Minimum No. 10 AWG (6.0 mm<sup>2</sup>).
    - c. VT circuits: Minimum No. 10 AWG (6.0 mm<sup>2</sup>).
  - 3. Conductors: Annealed, bare copper, Class B, stranded.
  - 4. Insulation: Flame-retardant, cross-linked polyethylene (XLPE) or cross-linked polyolefin (XLPO), complying with physical and electrical requirements for NEC Type XHHW-2.

5. Jacket: Flame-retardant, heat, moisture, and sunlight resistant; cross-linked, low-smoke, nonhalogen polyolefin (XLPO).
  6. Conductors shall be cabled together with nonhygroscopic fillers.
  7. Cover cable assembly with helically applied binding tape with minimum 10% overlap.
  8. Marking:
    - a. Insulated conductors shall have colored insulation meeting ICEA Method 1, Table E2 color code to identify conductors.
    - b. Each cable shall be identified by means of surface ink printing indicating manufacturer, number of conductors, size, voltage rating, and UL listing.
  9. Cables shall pass IEEE 1202 70,000 Btu/hr, and ICEA T-29-520, 210,000 Btu/hr vertical tray flame tests, and individual conductors UL VW-1 vertical flame test.
  10. Temperature rating shall be 90°C maximum continuous operating temperature in wet or dry locations.
  11. Manufacturer: Okonite Type P30, or equal.
- G. Instrumentation cable installed indoor or outdoor routed in, conduit, and ducts:
1. Voltage rating: 600-volt.
  2. Conductors: Annealed, bare copper, Class B, stranded, minimum size No. 16 AWG (1.5 mm<sup>2</sup>).
  3. Insulation: Flame-retardant, cross-linked polyethylene (XLPE) or cross-linked polyolefin (XLPO).
  4. Jacket: Flame-retardant, heat, moisture, and sunlight resistant; cross-linked, low-smoke, nonhalogen polyolefin (XLPO).
  5. Pairs/triads: Each twisted with lay not exceeding 2" (50 mm).
  6. Color code: Pairs black/white, Triads black/white/red.
  7. Assembly:
    - a. Each pair or triad shall be cabled together with aluminum/polyester tape shield helically wrapped with minimum lap of 15% of tape width and isolation tape. Entire cable assembly shall have overall aluminum/polyester tape shield helically wrapped.
    - b. Flexible strand tin-coated No.18 AWG (1.0 mm<sup>2</sup>) copper drain wire shall be helically wound between twisted conductors and tape shield.
  8. Each instrumentation cable shall be identified by means of surface ink printing indicating manufacturer, conductor size, and quantity, UL listing.
  9. Cables shall pass IEEE 1202 70,000 Btu/hr, and ICEA T-29-520, 210,000 Btu/hr vertical tray flame tests, and individual conductors UL VW-1 vertical flame test.
  10. Temperature rating shall be 90°C maximum continuous operating temperature in wet or dry locations.

## 2.03 SPLICES AND TERMINATIONS

- A. Splices, except as in lighting and general purpose power circuits specified below, not allowed unless specifically indicated on Drawings or required for connection to equipment.
- B. Temperature rating of splices and terminations shall be rated no less than 75°C.
- C. Splices allowed in lighting and general-purpose power circuits.
  1. Provide wire and cable connectors of high-conductivity, corrosion-resistant material with contact area equal to at least current carrying capacity of wire or cable.
  2. General lighting and general-purpose building power circuits:
    - a. Twist-type, insulated spring connectors for splices on solid or stranded conductors smaller than No. 6 AWG.
    - b. Use indent, hex screw, or bolt clamp-type connectors, with or without tongue for splices on solid or stranded conductors No. 6 AWG and larger.
    - c. Apply insulating 600-volt tape.
- D. Insulating tapes and compounds for terminations and splices shall be UL-listed for intended use, location, and voltage by manufacturer.
- E. Termination of conductors to equipment with bolted connections:
  1. Manufacturer: Panduit lugs.

2. Compression lugs for cables 250 kcmil and larger shall have at least 2 clamping elements of compression indents, and provision for at least 2 bolts for joining to apparatus terminals.
  3. Crimping hand tools used for securing conductors in compression type connectors or terminal lugs shall be made for purpose and conductor sizes involved.
  4. Crimping tools shall be ratchet-type preventing tool from opening until crimp action is completed.
  5. Tools shall be product approved by connector manufacturer.
- F. Terminals:
1. Conductors No. 10 AWG and smaller: Marathon 1500 Series.
  2. Conductors larger than No. 4/0 AWG: Terminate to tinned copper bus bar drilled and tapped with standard NEMA sized and spaced holes.
- G. Provide 600-volt rated terminal blocks for instrumentation and control conductors for connection to circuits external to specified equipment, and for internal circuits crossing shipping splits.
1. Use crimp-on terminals matching termination point terminations in manufacturer-furnished panels. Splices not allowed.
  2. Furnish with white marking strips.
  3. Where permitted by safety codes and standards, provide without covers. Neither step-type terminal blocks nor angle mounting of terminal blocks allowed.
  4. Fuses may be mounted on terminal blocks.
  5. Maximum 2 conductors in accordance with termination point.
- H. Terminal blocks for external connections shall leave from centrally mounted location, not from individual devices in enclosure.
1. Group-in instrument and control compartment for easy accessibility.
  2. Provide sufficient space on each side of each terminal block to allow orderly arrangement of leads to be terminated on block.
  3. Locate auxiliary equipment in compartments, enclosures, or junction boxes so service personnel will have direct access without interference from structural members and instruments without removal of barriers, cover plates, or wiring.
  4. Do not mount terminal blocks in compartments containing cables or buses operating at voltages above 600 volts.
  5. Size for wire sizes of incoming conductors as necessary.
- I. Install shorting-type terminal blocks nearest current transformer in accessible location for each set of CTs supplied with equipment furnished, no other shorting-type terminal blocks allowed, unless specified otherwise.
- J. Install fuses and fuse blocks for protection of VT circuits on line and load side as shown on Drawings.
- K. Terminate each conductor in multi-conductor control cable or as shown on Drawings. Provide 10% spare terminals for circuit modifications.
- L. Circuit identification number listed on either circuit schedule or panel schedule shall be used to identify circuit, positioned as near as possible to end of each conductor on multiple single wire circuits and on cable jacket for multi-conductor cables.
- M. Cable designations shall be visible after installation without requiring physical movement of cable.

#### 2.04 FUSES AND FUSE BLOCKS

- A. Modular-type, Class H screw terminal fuse blocks with Bakelite frame and reinforced retaining clips. Blocks shall be similar in construction and by same manufacturer.
- B. Slow blow fuses: Bussmann Type MDL or Gould Shawmut Type GDL with ampere ratings of 1/4, 1/2, 1, or 2.

- C. Fast acting fuses: Bussmann Type NON or Gould Shawmut Type OT with ampere ratings of 1, 3, 6, 10, 15, 20, or 30.
- D. Extremely fast acting fuses: Bussmann Type KAB with ampere ratings of 1, 3, 6, 10, 15, 20, or 30.

## 2.05 PLATES AND COVERS

- A. Provide finish plates and covers of appropriate type and size for wiring and control devices, signal, and communication outlets.
- B. Mark each plate and cover to show circuit and panel designation. Unless indicated to be engraved plate, use self-sticking, clear membrane, UV-resistant labels with typed black letters. Handwritten labels not allowed.
- C. Coordinate color with adjacent surfaces.
- D. Raised cover galvanized steel plates shall be acceptable for use on surface-mounted outlet boxes in unfinished areas where weatherproof plates are not required.
- E. For weatherproof installations, cover plates shall be gasketed and rated for NEMA Type 4 installation.
- F. Device plate mounting hardware shall be countersunk and finished to match plate.

## 2.06 FINISHES

- A. Supplied by relay panel door manufacturer.

## 2.07 RUST-INHIBITOR COMPOUNDS

- A. Uncoated machined and ferrous surfaces subject to corrosion shall be protected with rust-inhibitor compounds.
- B. Rust-inhibitor compounds used to protect surfaces of equipment and piping exposed to feedwater or steam shall be completely water-soluble.
- C. Surfaces to be field welded shall be coated with consumable rust-inhibitor compounds that will not affect quality of weld.
- D. External gasket surfaces, flange faces, couplings, rotating equipment shafts and bearings shall be thoroughly cleaned and coated with rust-inhibitor compounds.

## 2.08 IDENTIFICATION AND TAGGING

- A. Provide power, control, and instrumentation cables with permanent type identification markers with typed cable numbers and from/to information at each point of termination. Cable numbers and from/to information will be provided for circuits not associated with low-voltage panelboards.
  - 1. Position cable markers to be readily visible for inspection.
  - 2. Cable numbers shall match those as shown on Drawings.
  - 3. Provide wire tags at each termination point for each conductor. Tags shall be permanent, wrap around, non-shrinkable PVC type with typewritten information.
- B. Color-code power conductors with electrical tape or provide with colored jacket.
  - 1. Source voltage of 120/240 volts:
    - a. Phase X: Black.
    - b. Phase Y: Red.
    - c. Neutral: Blue.
  - 2. Service entrance and equipment ground conductors shall be bare copper or green insulated conductor. Equipment bonding conductors shall be bare copper.

3. Isolated ground conductors shall be insulated; green in color with integral yellow stripe. No substitutions.

## 2.09 EQUIPMENT NAMEPLATES

- A. Laminated black-over-white plastic such that face is black with white letters, with 1/8" (3 mm) engraved letters securely fastened with minimum of 2 stainless steel machine screws, nuts and washers.
- B. Circuit breakers within main switchboards and distribution switchboards shall be provided with nameplates identifying related equipment being served.
- C. Panelboards shall have front cover-mounted nameplates identifying panelboard, matching information shown on Drawings and associated panel schedule. Nameplate shall have at least 4 lines of text consisting of:
  - 1. Line 1: Panel equipment identification number.
  - 2. Line 2: IEEE Voltage Designation.
- D. Nameplates shall meet requirements of NFPA 70E

## 2.10 HARDWARE

- A. Provide hardware including, but not limited to, anchor bolts, nuts, washers, expansion anchors, wire nuts needed for installation.
- B. Hardware smaller than 3/4" (19 mm) shall match NEMA standard size bolt holes on electrical equipment.

## **PART 3 EXECUTION**

### 3.01 GENERAL REQUIREMENTS

- A. Determine locations and arrangement of equipment from Drawings.
- B. Locations shown on Drawings are approximate unless dimensioned. Choose precise location to clear obstructions and to provide sufficient space for operation and maintenance.
- C. Install equipment in strict accordance with manufacturer's recommendations.
- D. Adjust lighting fixtures to provide best illumination for areas intended.

### 3.02 EXAMINATION OF SITE

- A. Contractor shall be responsible for familiarity with Project Site conditions. Equipment furnished and installed shall be capable of withstanding most severe conditions that will be encountered.

### 3.03 PROTECTION OF WORK

- A. Protect installed Work and provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- B. Damage occurring to building or equipment during installation shall be repaired or replaced to conditions existing prior to damage at no additional cost or delay to project or Owner.

### 3.04 INSTALLATION

- A. Install equipment and materials in accordance with manufacturer's recommendations and Drawings.
- B. Except as otherwise specified or indicated on Drawings, equipment shall be installed plumb, square, and level.

- C. Sheet metal junction boxes, equipment enclosures, sheet metal raceways, and similar items mounted on earth-bearing walls shall be separated from wall not less than 1/4" (6 mm) by corrosion-resistant spacers.
- D. Conduits, cables, and terminals shall be in accordance with Owner requirements.
- E. Coordinate timing of installation and locations of equipment with work of other trades.

### 3.05 CABLE

- A. Prior to installation of each cable or cable group into assigned raceway, verify that raceway has been correctly sized.
  - 1. Where raceway is not indicated in circuit schedule or on Drawings, size in accordance with requirements of NEC.
  - 2. If raceway size indicated on Contract Documents is inadequate, notify Engineer.
- B. Replace cables pulled into wrong raceway or cut too short to rack and train.
- C. Do not reinstall cables installed in wrong raceway and removed. Discard cables unless inspected and accepted by Owner's Representative in writing.
- D. Protect cables from dirt, water, oil, damaging chemicals, and from physical injury prior to, and during installation.
- E. Perform fishing and pulling with flexible round metal tape, CO<sub>2</sub> propelled polyethylene cord, nylon rope, or manila rope.
- F. Cable damage caused by improper pulling tension and excessive sidewall pressures shall be considered for any cable pulls that require use of mechanized cable pulling machine, whether installed underground or overhead.
  - 1. NEC requirements shall be used as guideline. Calculations shall be performed for duct bank runs over 300' (90 m), and for installations in conduit over 100' (30 m).
  - 2. Monitor pulling tension during installation of cable. Tension shall not exceed maximum recommended by cable manufacturer.
  - 3. To avoid damage from excessive sidewall pressure at bends, pulling tension shall not exceed cable manufacturer's recommendation.
  - 4. Pulling mechanisms, manual or power type, shall have rated capacity in tons legibly marked on mechanism.
  - 5. During installation, observer shall constantly watch dynamometer and record maximum tension achieved during pull.
    - a. If excessive strain develops, stop pulling operation at once. Determine difficulty and correct.
    - b. Provide records of dynamometer readings to Engineer.
    - c. Inform Owner prior to cable pulls.
  - 6. Do not use woven wire cable grips. Use only pulling eyes for pulling cables.
  - 7. As soon as cable is pulled into place, remove pulling eyes and reseal cable.
- G. Insert reliable nonfreezing type of swivel or swivel connection between pulling rope and eye to prevent twisting under strain.
- H. Only use lubricants as recommended by cable manufacturer. Water-based lubricants not allowed.
- I. Outside of each cable reel shall be carefully inspected. Remove protruding nails, fastenings, or other objects that might damage cable.
  - 1. Perform visual inspection for flaws, breaks, or abrasions in cable sheath as cable leaves reel. Pulling speed shall be slow enough to permit inspection.
  - 2. Damage to sheath or finish of cable shall be sufficient cause for rejecting cable.
  - 3. Cable damaged during installation shall be replaced at no expense to Owner.

- J. Permanent radius of each bend after cable installation shall be in accordance with manufacturer's recommendations.
- K. Cable supports and securing devices shall have bearing surfaces located parallel to surfaces of cable sheath. Install to provide adequate support without deformation of cable jackets or insulation.
- L. Provide adequate cable end lengths. Properly install in junction boxes and manholes to avoid longitudinal strains and distorting pressures on cable at conduit bushings and duct end bells.
- M. Final inspection shall be made after cables are in place. Where supports, bushings, and end bells deform cable jacket, provide additional supports.
- N. Splices, joints, and connections shall be made only in accessible junction boxes in accordance with methods specified and instructions of cable manufacturer. Splices not allowed unless shown on Drawings.
- O. Rough-in wiring terminated in junction boxes shall have at least 8" (200 mm) of free conductor coiled in box for connection to equipment and receptacles.
- P. Circuit information for circuits originating from panelboards is indicated on panel schedules. Other circuits are identified on circuit schedule.
  - 1. Do not combine receptacle loads with lighting loads.
  - 2. Circuits fed from panelboards shall not be combined with circuits from circuit schedule.
- Q. Panelboard circuits are indicated as individual runs. Circuits may be combined into common conduits in accordance with rules of NEC. Perform work associated with combining of circuits at no additional cost to Owner.
- R. Unused wires shall be removed completely.

### 3.06 FIRE PROOFING AND FIRE RATINGS

- A. Maintain fire-resistive integrity during construction.
- B. Penetrations through fire-resistive structures shall be sealed with fire-resistive material compatible with construction penetration.
- C. Where required by codes, local building officials, or fire marshal, furnish UL fire sealing systems and install in accordance with manufacturer's recommendations.

### 3.07 STARTUP AND TESTING

- A. Clean equipment interiors and exteriors prior to start-up and testing.
- B. Unless specified otherwise, tests performed shall be standard tests listed by ANSI/IEEE for intended equipment.
- C. Equipment shall be checked and placed in service ready for operation.
- D. Circuits shall be electrically tested after installation. Test power and motor circuits prior to final connection to equipment. Splices shall be complete prior to testing.
  - 1. Provide equipment and labor required for testing.
  - 2. Circuit failing to test satisfactorily shall be replaced or repaired, and retested at no additional cost to Owner.
  - 3. Check power and motor circuits, dc power, and control circuits for:
    - a. Correct terminations.
    - b. Continuity.
    - c. Unintentional shorts and grounds.
  - 4. Check power conductors for correct phasing.

5. Motor circuits shall be checked for proper rotation to verify correct machine rotation.
6. Control and instrumentation wire shall be checked for correct termination, continuity, freedom from shorts or grounds, and identification.
7. Current transformer wiring shall be loop checked by injecting current at one end of loop and checking with clip-on ammeter at each field termination point to assure continuity and phase identification.
8. Voltage transformer wiring shall be test by applying voltage at one point and checking with voltmeter phase rotation meter and phase angle meter at each field termination point to assure continuity, identification and phase shift.

### 3.08 DEMONSTRATION

- A. Final start-up and check out shall be completed prior to Owner acceptance of project.
- B. Electrical installation shall be complete in every detail and capable of normal operation in presence of Owner to verify its readiness.

END OF SECTION

- 1) S. G. Weiss
- 2) P. E. Schulz

## **PART 1 GENERAL**

### 1.01 SECTION INCLUDES

- A. Furnishing and installing assembled relay panel doors containing protective relaying, control equipment, metering, and accessories including:
  1. Connections external to panel doors.
  2. Receipt and storage of panel doors.
  3. Relay panel door design.
  4. Panel door wiring diagrams.

### 1.02 WORK BY OTHERS

- A. Relay schematic design.

### 1.03 INFORMATIONAL SUBMITTALS

- A. Product Data:
  1. Material list.
  2. Installation information.
  3. If required, current transformer saturation, excitation and ratio correction factor curves.
  4. Corporate license for any and all relay, metering, and equipment software provided including that required for setting, calibration, and display of any and all functions.
- B. Quality assurance data:
  1. Certified shop test reports.
  2. Proposed testing plan for complete switchgear and accessories prior to performing shop testing.
  3. Submittal index.

### 1.04 ACTION SUBMITTALS

- A. Product Data:
  1. Complete nameplate data.
  2. Component and accessories list.
  3. Additional information requested by Engineer.
- B. Shop Drawings:
  1. Certified completed Data Sheets.
  2. Certified elevation and outline drawings with dimensions including front and rear view, anchor locations, lifting points, and conduit entrances.
  3. Certified plan view drawings with dimensions.
  4. Panel layout drawings including Terminal block terminations, device terminal numbers, and internal diagrams shall be shown in detail. Typical drawings not acceptable.
  5. Interface coordination details.
  6. Complete wiring and termination drawings showing interconnections of all component devices and equipment.
  7. Nameplate drawing.
  8. Nameplate schedule prior to fabricating nameplates.
  9. Complete Bill of Materials.
  10. Factory testing plan.

### 1.05 CLOSEOUT SUBMITTALS

- A. Complete set of Record Drawings.
- B. Operation and maintenance manuals. Provide at a minimum:
  1. General description and technical data.
  2. Receiving, storage, installation, and testing instructions.

3. Operating and maintenance procedures for all devices in panels.
  4. Complete set of final drawings.
  5. Instruction and installation manuals for all equipment furnished in panels.
  6. Complete documentation of inspections and tests performed, including any logs, curves, and certificates. Documentation shall note any replacement of equipment or components that failed during testing.
  7. Spare parts lists.
  8. Installation field reports.
- C. Complete instruction manuals and software for protective relays, metering equipment, instrumentation.
1. General description and technical data, including actual weights and dimensions.
  2. List of instruments and accessories supplied, listing manufacturer, model number, operating ranges, and equipment tag numbers.
  3. Receiving, storage, installation, handling, and testing instructions.
  4. Operating and maintenance procedures.
  5. Complete set of reviewed drawings that require no further action.
  6. Data Sheets modified to include field installation conditions.
  7. Complete documentation of inspections and tests performed, including logs, curves, and certificates. Documentation shall note any replacement of equipment or components that failed during testing.
  8. Recommended spare parts list, including circuit breakers.
  9. Nameplate information and shop order numbers for each item of equipment furnished.
  10. Certified copies of final test reports.

#### 1.06 MAINTENANCE MATERIALS

- A. Provide 1 quart of matching touch-up paint in aerosol spray cans for panel doors.

#### 1.07 QUALITY ASSURANCE

- A. Manufacturer qualifications:
1. Manufacturer of major components within assembly.
  2. ISO 9001 certified.
  3. Manufacturer shall have produced similar electrical equipment for a minimum period of 10 years.
  4. When requested by Engineer, provide acceptable list of similar equipment installations complying with requirements of this specification.
- B. Regulatory requirements:
1. Work shall be in accordance with NFPA 70.
  2. Panels and equipment contained in or on panels shall be designed, fabricated and tested in accordance with applicable standards of IEEE, ANSI and NEMA including, but not limited to: IEEE C37.21 – IEEE Standard for Control Switchboards.
  3. Standards of foreign organizations shall not be used without written approval from Engineer.

#### 1.08 DELIVERY, STORAGE, AND HANDLING

- A. Delivery:
1. Provide suitable crating, blocking, and supports so equipment will withstand shipping and handling shocks and vibration.
  2. During delivery and storage, handle equipment to prevent damage, denting, or scoring.
  3. Panel doors shall be shipped for ease of installation.
  4. Prepare detailed packing lists and shipping notification.
- B. Materials used for shipping shall be acceptable for protecting equipment when manufacturer's recommended storage procedures are maintained.
- C. Storage:

1. Store equipment and components in clean, dry place. Protect from weather, dirt, water, construction debris, and physical damage in accordance with manufacturer's instructions.
2. Store in accordance with all manufacturers' recommendation.

1.09 WARRANTY

- A. Furnish manufacturer's standard warranty on parts, labor, materials and equipment.
- B. As minimum, warranty shall be 1 year after energization or 18 months after delivery to job Site, whichever occurs first.

**PART 2 PRODUCTS**

2.01 MANUFACTURERS

- A. Birmingham Control Systems.
- B. EP<sup>2</sup> (Electrical Power Products).
- C. Harlo Corporation.
- D. Kemco Industries, Inc.
- E. Keystone Electrical Manufacturing Company.
- F. System Controls, Inc.
- G. Schweitzer Engineering Laboratories (SEL).

2.02 SYSTEM DESCRIPTION

- A. Panel doors shall include instruments and equipment as specified herein and detailed on Data Sheets and Drawings.
- B. Panel doors shall be completely assembled, wired, and tested with equipment, relays, meters, controls, instruments, wiring, miscellaneous equipment, and accessories as shown on Data Sheets, specified, and included on drawings.
- C. Attached Data Sheets specify major components and accessories to be provided.
- D. Data Sheets do not provide complete parts list or Bill of Materials for Scope of Work.
- E. If arrangement has been furnished, and detailed engineering design by manufacturer requires rearrangement, coordinate new arrangement with Engineer prior to Bid or drawing submittal.
- F. If arrangement changes after award of Contract, submit drawings reflecting actual scope of Work and configuration.
- G. Panels shall be wired and constructed for individual installation.
- H. Create wiring diagrams for panel doors in accordance with provided schematics as shop drawings.

2.03 DESIGN REQUIREMENTS

- A. Determine required equipment from one-line diagram.
- B. Location of wire bundle: See Data Sheets.

- C. Equipment shall include required accessories.
- D. Like equipment shall be interchangeable.
- E. Where drawings or specifications are not provided, Contractor shall use its standard design.
- F. Cabling design principles:
  - 1. Classify wiring according to relative sensitivity to electromagnetic interference exhibited by circuits connected to wire and relative ability to generate interference in adjacent wires.
  - 2. Interference level shall be defined by assigned number and, where applicable, by additional letter.
  - 3. Low number wire shall be one that is susceptible to interference, while high number shall be one prone to producing interference in wires of lower levels.
  - 4. Group wires of similar level classification together in cable, combining both sides of circuit leads; signal leads for lower levels shall be twisted and individually shielded by signal pairs. For middle levels, give 1 outer shield.
  - 5. For higher levels no shield required.
  - 6. Power cables shall contain necessary wires to contain sources currents in one cable to minimize induction of undesired voltages in other wiring.
  - 7. Provide definite separation between levels and prevent unnoticed intermixing of levels.
  - 8. Separate cables of different level ratings by more than minimum distance to set limits on electrical interference generated.
  - 9. Avoid multiple crossing of one level of cables with another, even when in trays or conduit.
  - 10. Where 2 cables of different levels must cross, perform once, at right angles to each other with appropriate spacing.
  - 11. Cabling interference level designation:
    - a. Level 1 - Analog low level signals.
      - 1) Analog (continuous) signals from 0.0 to 5.0 volts dc and current less than 60 MA. Typical: Analog control signals, display signals.
      - 2) Analog signals up to 12 volts dc rms, less than 5 kHz. Typical: Analog signals for circuit voltage supply, LVDT excitation and signals, servo valve signals, current type transmitter signals.
    - b. Level 2 - Digital signals (logic level) and pulsed information (medium level). Digital signals to 18 voltage supply wiring. Typical: Standard digital signal circuits, voltage to frequency converter pulse outputs, and digital communication lines.
    - c. Level 3 - High level signals and control.
      - 1) Signal circuits, dc or ac rms of 18 to 130 volts and less than 20 amperes.
      - 2) Typical: Noise tolerant pressure switch, circuit inputs such as position switch contacts, 125 volts dc lighting circuits.
      - 3) Dc switching circuits greater than 36 volts up to 250 volts dc and less than 20 amperes.
      - 4) Continuous dc voltages with rating less than 20 amperes, and 250 volts.
    - d. Cable type requirements:
      - 1) Provide shield cable with external insulation cover to prevent grounding of cable to metallic containment along its length.
      - 2) Shield shall be unbroken electrically through entire cable length.
      - 3) Provide bare copper drain wire running entire length of cable in contact with shield for tape or metallized tape shielded cables.
      - 4) Ground cable shield of Level 1 and Level 2 cables to signaling ground bus.
      - 5) Cable shields may be aluminum, either tape or metallized insulating material or copper braid having at least 85% coverage.
      - 6) Cables shall have continuous, unspliced runs between, junction boxes or equipment termination. This applies to both internal copper conductors and shielding.
      - 7) Twisting of wires in cable shall have maximum lay of 2", 6 turns per foot. Smaller lay numerical value will significantly reduce electromagnetic interference.
    - e. Specific requirements for each interference level:
      - 1) Level I - Analog signals: Shielded cables. Multiple pair cable with single shield overall acceptable, although individually shielded, twisted pairs will provide better isolation on runs over 300' (91 m).
      - 2) Level 2 – Digital medium level: Cable will be selected as for Level 1.

- 3) Level 3 - High level signal: Twisting or shielding not required. Arrange wiring to same device or destination to be in same cable to avoid undesired loop induction. Overall shield may be used.

- 4) Minimum spacing for between each classification of cable:

	Level 2	Level 3
Level 1	2"	6"
Level 2	---	6"

- G. Environmental requirements:
1. Ambient conditions: See Data Sheets.
  2. Design equipment in accordance with relevant sections of the most recent local building code.

## 2.04 PANEL DOOR CONSTRUCTION

- A. Type: Vertical, mounted relay doors.
- B. Nominal dimensions: As shown on Drawings.
- C. Metal enclosure construction, minimum 11-gage, cold-rolled sheet steel, or equivalent hot-rolled stretcher leveled steel, formed with rolled lip on top, bottom, and sides.
- D. Provide stiffening members no less than welded 1-1/4" (31 mm) by 1/4" (6 mm) flat stock stiffeners welded to doors and panel to provide adequate strength to support structure and any door panels.
- E. Metal work shall be free from burrs and sharp edges.
- F. Color of finish: ANSI No. 61, semi-gloss, light gray.
- G. Terminal blocks: Reuse existing terminal blocks inside switchgear cubicles.
- H. Equipment mounting:
1. Mount components on vertical surfaces only.
  2. Arrangement of devices: as shown on drawings.
  3. Do not obstruct access to devices mounted on front panel.
- I. Welding:
1. Procedures:
    - a. Welding shall be in accordance with panel manufacturer's standard welding procedures.
    - b. As a minimum, production fillet and butt welds shall satisfy following visual acceptance criteria:
  2. No cracks or lack of fusion shall be acceptable.
  3. Sum of weld porosity diameters shall not exceed 3/8" (10 mm) in any linear inch (linear mm) of weld and shall not exceed 3/4" (19 mm) in any 12" (300 mm) length of weld.
  4. Fill weld craters to full cross section of weld.
  5. Undercut:
    - a. Undercut shall not exceed 1/32" (0.8 mm).
    - b. Establish lesser value of undercut if required to satisfy design requirements.
  6. Weld filler metal reinforcement: 0 to 1/8" (0 to 3 mm) maximum between abutting surfaces. Provide gradual transition (30° maximum) to plane of base metal surfaces.
- J. Hinges: Provide new hinges able to be installed on existing switchgear enclosure.
- K. Latches: Provide 2 point hinges not interfering with equipment mounted on panels.
- L. Doors shall open minimum of 90°.
- M. Existing doorstops and brackets with detents to hold doors in fully open position shall be reused.
- N. Doors shall not open so far as to allow damage to devices mounted on adjacent doors.

- O. Finish:
  - 1. Primer coat: Rust-resisting primer.
  - 2. Finish coat color: As specified on Data Sheets.
  - 3. Protect undersurface of switchgear and aisle from corrosion with suitable protective coating.

## 2.05 POWER DISTRIBUTION

- A. Wire circuits for single-point termination in panel section identified on Data Sheets.
- B. Circuits and services:
  - 1. 125 volts dc: Dc loads including, but not limited to, control, protection relays, dc communication equipment, etc.
  - 2. Provide single-point connection for Owner-furnished field wiring.

## 2.06 INSTRUMENT AND CONTROL SWITCHES

- A. Type: Rotary, enclosed, rear mounting; Electroswitch Series 24 with built-in LEDs, or equal.
- B. Breaker control switches (Device 52CS):
  - 1. Trip-close escutcheon, center normal position, and spring return to normal from close and trip.
  - 2. Pistol-grip handles.
  - 3. Furnish with red and green indication lights.
- C. Local-Remote switches (Device 43 LR): Catalog No. 24203B with Escutcheon Code 010D-2L24.
- D. Recloser cutoff switch (Device 79CO): Catalog No. 24203B with Escutcheon Code 010D-2R14AE.

## 2.07 LOCKOUT RELAYS

- A. Mount lockout relays on concerned breaker panel.
- B. Wire to trip breaker and simultaneously block closing of breaker.
- C. Rated operating trip voltage shall be capable of allowing coil operation at 75% of rated voltage.
- D. Furnish with required number of contacts to perform functions and with additional spare contacts for customer use in quantities as indicated on Data Sheets.
- E. Wire normal and spare contacts to terminal blocks.
- F. Provide all used and spare contacts with test switches wired in series to facilitate relay testing.
- G. Provide with local tripped indication and pistol-grip handle. Lockout relays shall be manually reset.
- H. Provide LEDs integrated into nameplate.
  - 1. Green light shall be illuminated to indicate LOR is ready to respond and coil continuity is intact. If coil fails, light shall go out and contact shall close to initiate alarm.
  - 2. Red light shall illuminate when LOR has tripped, and shall stay lit until relay is reset regardless of whether trip signal is maintained or not.
- I. Manufacturer: Electroswitch Series 24 LOR with lighted target nameplate, or equal.

## 2.08 PROTECTIVE RELAYS

- A. Mounting:
  - 1. Mount relays on front of switchboard with panel-mounted option hardware to provide level surface when viewed from front.

2. Relays surface-mounted within switchboard shall have molded plastic or metal cases and shall be suitable for connection from front.
3. Mount accessories not designed for flush mounting on rear-hinged sub panels.
4. Hinged rear panels shall contain 30% extra space to mount future unnamed devices.

B. Provide auxiliary relays and accessories as required.

C. Protective relays:

1. Relays shall be solid-state microprocessor-type; flush panel mounted self-contained units; operable from designated control power source.
2. Relay functions, type and manufacturer shall be in accordance with Data Sheet.
3. Programming of relay shall be from face of unit without requiring additional equipment. Programming of relay shall also be possible from lap top computer.
4. Provide all software required for relay settings and communications.
5. Operation, troubleshooting, and trip indication information shall be displayed on unit face.
6. Relays shall have built-in self-test functions with relay failure alarm contact for remote indication.
7. Separate trip alarm contact shall also be furnished for remote trip indication.

D. Provide relays with test switches on VT and CT circuits to isolate relay for testing.

## 2.09 TEST SWITCHES

A. Unless specifically noted, wire current and voltage inputs to relays and meters, relay trip outputs, and normally-open lockout relay contacts through test switches

B. Identify each voltage and current switch by group and phase.

1. Orientation shall be Phase A-B-C, left-to-right when looking at test switch from front.
2. Extend voltage and current wiring for each relay and meter for incorporation into single test block.

C. Provide screw-on black covers for protection when not in use.

D. Test switches shall be back-wired unless installed in location requiring front-wired type.

E. Test switches shall be industrial grade, manually operated, knife-blade type, 10-pole with voltage and current elements with screw-on cover for personnel protection.

F. Meter, relay and lockout test switches: 10 single-pole potential elements, cover, wired in series with coils and normally open contacts of lockout relays, ABB "Flexitest" Type FT-1. Flush-mounted, rear-connected.

G. Nameplate:

1. Label each bank of test switches "Meter Test Switches," "Protection Relay Test Switches," or "Lockout Relay Test Switches," as appropriate.
2. Provide one 10- or 14-line nameplate per test switch bank with test switch letters A-J or A-M as appropriate. Labels shall be abbreviated statements about switch circuit function.
3. Labels shall have lettering not less than 1/4" (6 mm) in height and 1/4" (6 mm) in width.
4. Locate test switch nameplate directly above tests switches to which it applies.
5. Wired spare test switches shall be left blank on nameplate for future engraving.
6. Label shall be not less than 5" (125 mm) in length and 2" (50 mm) tall.

H. Color:

1. Trip circuit, breaker or lockout relay test switch: Red.
2. Other switches: Black.

I. Lockout relay tests switches, 10-pole:

1. Switch A: LOR trip circuit.
2. Switches B-J: Normally open contracts on LOR.
3. Wire tests switches to LOR.

- J. Manufacturer: ABB "Flexitest" Type FT-1 or FT-14.

## 2.10 METERS

- A. Meters shall be microprocessor-based, multifunction type. Metering unit shall provide local indication and be capable of remote communication for all functions.
- B. Meters mounted on front of switchgear shall be semi-flush, draw-out type with test facilities and rear-connecting terminals if draw-out type cases are not available, exception shall be noted in Bid. Meter functions, type and manufacturer shall be in accordance with Data Sheet.
- C. Provide meters with test switches on VT and CT circuits to isolate meter for testing.
- D. Programming of meters:
  - 1. From face of unit without requiring additional equipment.
  - 2. Possible from lap-top computer. Provide software required for meter settings and communications
- E. Meters shall be digital, LED display with at least 1% accuracy, 4-1/2" (114 mm) square switchboard type, with taut band suspension, unless otherwise specified.
- F. Revenue quality meters shall have accuracy guaranteed by testing traceable to NBS. Revenue power meters shall meet requirements of ANSI C12.20.

## 2.11 ALARMS

- A. Provide alarm contact wired to terminals for functions indicated on Drawings.
- B. Wire alarm contacts to physically adjacent terminal blocks.

## 2.12 GROUNDING

- A. Equipment cases: Ground to panel by use of external star backwashers on at least 1 mounting stud.

## 2.13 INDICATING LIGHTS

- A. Type: Round, light-emitting diodes (LEDs), low drain, 125-volt dc; General Electric Type ET-16.
- B. Provide color caps as required.
- C. Ship lamps separately packed in cartons. Provide minimum of 12 spare lamps.

## 2.14 SUPERVISORY EQUIPMENT CONNECTIONS

- A. Provide wiring to terminal blocks in each panel for supervisory connection (connections to terminal blocks by others) for the following:
  - 1. Local/remote switch position.
  - 2. Operation indication for each lockout.
  - 3. Operation indication for each relay.
  - 4. Loss of dc voltage at breaker close circuit, breaker trip circuit, or lockout relay circuit.
  - 5. Circuit breaker operation.

## 2.15 RELAY COMMUNICATIONS PROCESSOR

- A. Construct, and test in conformance to NEMA ICS 1, ICS 2, and ICS 3.
- B. Provide power supplies, communications, interconnecting cables as required and necessary voltage regulation or conditioning equipment for complete and operable system meeting performance and control description specifications.

- C. Provide I/O points identified on drawings EO23-25.
- D. Field wiring shall not have to be removed to replace an I/O device during repair or maintenance.
- E. RTU inputs and outputs shall conform to ANSI C37.90a Surge Withstand Test.
- F. RTU shall internally check for status changes and report only when a change occurs. A periodic integrity check will also be made.
- G. Major assemblies, subassemblies, circuit cards, and devices shall be permanently marked with manufacturer's part or identification number.
- H. RTU communications functions shall be performed by microprocessor
- I. Provide I/O type and number as defined on drawings EO23 & EO24 and as necessary for a complete and operable system.
- J. Label I/O cards, strips, and wires with English descriptions.
- K. Power supply: 125-volt dc supply.
- L. RTU shall include all connectors, cabling, wiring and applicable cards for complete and spare points specified on drawings E022-25.
- M. Manufacturer: Schweitzer Engineering Laboratory Model SEL-2241X0X211X0XXXXXX (RTAC)

#### 2.16 ETHERNET SWITCH

- A. Ethernet switch to communicate as master with protection relays.
- B. Refer to Drawings for communications system overview diagrams for each panel.
- C. Install ethernet switch and terminal strips for all relaying and metering communications.
- D. Control power:
  - 1. Provide and isolate with circuit breakers following power circuits:
  - 2. Provide control power distribution system per panel per Data Sheets:
    - a. 125-volt dc power circuit from station battery.
- E. UL-listed; ANSI 37.90.1 for surge withstand and fast transient voltage.
- F. Ethernet Ports: 1 front panel, 24 rear panel, RJ45 female.
- G. Protocol: TCP/IP
- H. Communications rates: Up to 1,000 Mbps.
- I. Mounting: Panel mount.
- J. Memory: 512 MB
- K. I/O board: None.
- L. Protocol cards: None.
- M. Provide communication cables required from relays and meters to ethernet switch. Determine required length from Drawings.

N. Manufacturer: Schweitzer Engineering Laboratory Model SEL-2730M0ARAX1111AAAAX0.

## 2.17 SOFTWARE

- A. Provide 2 copies of software and corporate license for each type of microprocessor-based relay and meter.
- B. Deliver:
  - 1. Copy to Engineer for use in setting relays.
  - 2. Copy of software with panels.

## 2.18 NAMEPLATES

- A. Nameplates and placards including warning signs and safety placards shall meet NFPA 70E requirements.
- B. Material: Laminated letters on black background, with 1/8" (3 mm) engraved white letters
- C. Locations:
  - 1. Front and rear of each panel identifying panel including identification number of equipment being served.
  - 2. Each device including, but not limited to, protective relays, lockout relays, meters, switches, instruments, and indicating lights shall have nameplate on outside and on inside of panel.
  - 3. Each terminal block.
- D. Lettering: Engraved approximately 3/16" (5 mm) high.
- E. Wording: Furnished after award of Contract.
- F. Caution nameplates: Yellow with black letters.
- G. Warning nameplates: Red with white letters.
- H. Adhesive nameplates: Not acceptable.

## 2.19 WIRING

- A. Wire markers:
  - 1. Permanent, legible sleeve-type wire markers on both ends of each wire, identification on sleeves shall match.
  - 2. Manufacturer: Floy Tag Manufacturing, Inc., or equal.
- B. Level 3 control power wiring:
  - 1. Cable shall be selected for electrical and environmental conditions of installation, and suitable for unusual service conditions where encountered.
  - 2. Proper temperature application cable shall be used throughout, but shall not be less than 90°C rated.
  - 3. Conductors routed over hinges shall utilize extra flexible stranding.
  - 4. Cable insulation shall be rated for maximum service voltage utilized, but not less than 600 volts.
  - 5. Splices not acceptable.
  - 6. Panel: Flame-retardant, cross-linked polyethylene (XLP) or flame-retardant ethylene-propylene rubber (EPR) insulation that meet or exceed requirements of UL 44 for Types SIS, and XHHW.
  - 7. Conductors: Annealed bare copper Class B stranding passing IEEE 1202 and UL VW-1 flame test.
  - 8. Wire: Stranded, tinned copper. Flame-resisting switchboard panel type, SIS No. 12 AWG minimum, 600-volt, 90°C, tinned copper, NEC type SIS, UL listed.
  - 9. Minimum size: No. 14 AWG.
  - 10. Current transformer: 10 AWG, 600-volt, 90°C, tinned copper, NEC type SIS, UL listed.

C. Terminations:

1. Conductor terminal connectors: Insulated, ring tongue, compression type connectors properly sized for conductor and terminal.
  - a. Construct connectors of copper and tin-plate.
  - b. Interior surface of connector wire barrel shall be serrated; exterior surface of connector wire barrel shall be furnished with crimp guides.
2. Use uninsulated terminal connectors for conductors terminated on devices equipped with individual fitted covers, such as, but not limited to, control switches and lockout relays.
3. Provide connections requiring disconnect plug and receptacle type devices with factory-terminated conductors on each plug and receptacle.
  - a. Plugs and receptacles shall be factory wired into junction boxes containing terminal blocks for external connections.
  - b. Conductors on disconnect portion of plug-receptacle assemblies shall be in common jacket.
4. Temporary wiring installed in factory for equipment testing shall be removed prior to shipment of equipment.
5. Current transformers shall terminate on shorting type terminal blocks and shall be shipped with shorting jumpers installed.
6. Unless otherwise specified or shown, fuse voltage transformer and control circuits appropriately with pull-out type fuse blocks.

D. Identification and labeling:

1. Provide conductor identification sleeve on each end of each internal conductor.
2. Mark each sleeve with opposite end destination identification.
3. Conductor identification sleeves: UV-resistant, self-adhesive type or PVC, not less than 1/2" (13 mm) long. Print conductor identification on sleeve with nonsmudging, permanent black ink.
4. Identify each internal interconnecting wire at both ends with sleeve-type wire markers. Label markers with "from" and "to" information.
5. Each terminal block, terminal, conductor, relay, breaker, fuse block, and other auxiliary devices shall be permanently labeled to coincide with identification indicated on manufacturer's drawings.
6. Cable identifications shall be visible after installation without requiring physical movement of cable.
7. Manufacturer: Floy Tag Manufacturing, Inc., or equal.

2.20 TERMINATIONS

- A. Use ring-type crimp-on terminals for all wires.
- B. Terminate wires with insulated sleeve ring-type terminals, Panduit, or equal. Install with ratchet controlled tool recommended by manufacturer, T&B "Shure-Stake," or equal.

2.21 ACCESSORIES

- A. Required software for microprocessor-based relays and meters.
- B. Test plug for each style of relay case and test switch.
- C. Test plug for each style of current and potential test switch.

2.22 SOURCE QUALITY CONTROL

- A. Notify Owner at least 30 days prior to final testing so arrangements can be made for Owner to witness tests.
- B. Completed unit assembly shall be energized and checked completely for operation before shipment.
- C. Perform routine factory test in compliance with applicable ANSI, IEEE, and NEMA standards.
- D. Assemble panel and equipment in manufacturer's plant as required and test circuits, including those from terminal strips through device to assure proper functioning of all items of equipment.

- E. Panels shall be completely interconnected and tested to ensure correctness of interconnection wiring.
- F. Perform tests at 60 Hz.
- G. Dielectric tests: Perform in accordance with latest revision of ANSI C37.90 on all electrical components and wiring, except any equipment specifically stated as exception to these tests by its manufacturer.
- H. Test results shall indicate that equipment meets standards specified before shipment can be made.
- I. Perform following tests on equipment specified in accordance with latest edition of ANSI standards.
  - 1. Manufacturer's standard production inspections and testing on panel assemblies.
  - 2. Complete wiring check including function operation.
  - 3. Provide Engineer with certified copies of test data and reports.
  - 4. Control wiring insulation check.
- J. Test results shall indicate that equipment meets specified standards before shipment can be made.

### **PART 3 EXECUTION**

#### **3.01 DEMOLITION**

- A. Remove existing panel doors, including hinges and latches, and other equipment as shown on Drawings.
- B. Salvageable materials, except items specified to remain property of Owner, shall become property of Contractor and shall be removed from Site as Work progresses.
- C. Storage of materials to be removed shall not accumulate on site. Promptly remove and dispose of unsalvageable equipment and materials.
- D. No material, obstructions, or debris shall be placed or allowed to accumulate within 15' (4.5 m) of any fire hydrant. Fire hydrants shall be accessible at all times.

#### **3.02 PREPARATION**

- A. Interior and exterior of relay panel doors shall be cleaned prior to placing into service.
- B. Debris shall be removed and appropriately discarded.

#### **3.03 INSTALLATION**

- A. Install in accordance with manufacturer's recommendations.
- B. Seal conduit, cable, and bus duct penetrations into panels with materials and methods designed for intended use maintaining NEMA rating of enclosure.
- C. Measure size and location of breaker drawout openings on existing panels and reproduce on new panels. Contractor shall ensure openings do not interfere with equipment mounted on panels.

#### **3.04 NAMEPLATES**

- A. Securely attach nameplates flush on relay panel doors with minimum of 2 stainless steel machine screws, nuts and washers.

#### **3.05 WIRING**

- A. Install wiring from terminal to terminal. Splices not acceptable.

- B. Provide wiring, fuse blocks, and terminal blocks within panel as necessary.
- C. Wiring, raceway and terminal blocks shall be installed in accordance with requirements of Section 33 05 70.
- D. Train wire bundle from new doors to the terminal blocks so as not to impede door operation.
- E. Bundle wiring exiting panel and attach bundle to top of panel on hinged side of door. All wiring shall extend 10' beyond where the bundle is attached to the door.
- F. Label opposite end termination point and wire name on each wire.
- G. Control components mounted within assembly, such as fuse blocks, relays, pushbuttons, and switches shall be suitably marked for identification corresponding to appropriate designations on wiring diagrams.
- H. Wire in neat and organized manner.
- I. Bundle and secure wiring with nylon ties.
- J. Each internal interconnecting wire shall be identified at both ends with sleeve type wire markers.

### 3.06 TERMINAL BLOCKS AND TERMINATIONS

- A. Terminate each conductor in multi-conductor control cable as shown on Drawings.
- B. Terminate each conductor of wire bundle from new doors as shown on Drawings.

<b>DATA SHEETS METERING AND RELAYING PANEL DOORS</b>		<b>Equipment: Metering and Relaying Panel Doors Rev.</b>	
DESCRIPTION	UNITS	SPEC DATA	VENDOR DATA
<b>Site Conditions:</b>			
24 Hr. Avg. Ambient Design Temperature	°C	30	
Maximum Ambient Temperature	°C	40	
Minimum Ambient Temperature	°C	-30	
Site Elevation Above Sea Level	ft	Less than 3,300 ft	
Specific local Building Code and specific sections on seismic requirements used in equipment design	---	By Manufacturer	
<b>General:</b>			
Control Voltage	-	125 VDC	
Cable Bundle Location	Top / Bottom	Top	
Percent spare terminal blocks in each panel (Total terminal blocks required for terminations * (1 + %))	%		
<b>Equipment specification:</b>			
Breaker Control Switches	-	Electroswitch Model No. 24PB57D, with integral Red and Green LEDs	
Local/Remote Switches	-	Electroswitch Model No. 24203B with Escutcheon Code 010D-2L24	
Recloser Cutoff Switches	-	Electroswitch Model No. 24203B with Escutcheon Code 010D-2R14AE	
Lockout Relays	-	Electroswitch Model No. 78PB05D, with integral Red and Green LEDs	
Test Switches	-	ABB FT-1	
<b>Unit 1 Upper Panel:</b>			
Panel Type or Rating	-	NEMA 1	
Height	in.	47 3/4"	
Depth	in.	1"	
Width	in.	36"	
Circuit Switcher Control Switches	Qty.	1	
Local/Remote Switches	Qty.	1	
Lock-Out Relays	Qty.	2	
Test Switches	Qty.	As Required	
Incon 1250B-0-R-I-S-120	Qty.	1	
SEL-035175A3B542X1	Qty.	1	
SEL-0387503X55XX4XX	Qty.	1	
Shark-100-60-10-V3-D2-INP10-X	Qty.	1	
<b>Unit 1 Lower Panel:</b>			
Panel Type or Rating	-	NEMA 1	
Height	in.	46 1/4"	
Depth	in.	1"	
Width	in.	36"	
Breaker Control Switches	Qty.	1	
Local/Remote Switches	Qty.	1	
Test Switches	Qty.	As Required	
SEL-035175A3B542X1	Qty.	1	

<b>DATA SHEETS METERING AND RELAYING PANEL DOORS</b>		<b>Equipment: Metering and Relaying Panel Doors Rev.</b>	
DESCRIPTION	UNITS	SPEC DATA	VENDOR DATA
Shark-100-60-10-V3-D2-INP10-X	Qty.	1	
<b>Unit 2 Upper Panel:</b>			
Panel Type or Rating	-	NEMA 1	
Height	in.	47 3/4"	
Depth	in.	1"	
Width	in.	36"	
SEL-2242R1X0 (Backplane)	Qty.	1	
SEL-224311X0 (Power Coupler)	Qty.	1	
SEL-2241X0X211X0XXXXXX (RTAC)	Qty.	1	
SEL-22442424X0 (Digital Input Card)	Qty.	2	
SEL-22452121XX0 (Analog Input Card)	Qty.	1	
SEL-2730M0ARAX1111AAAAX0	Qty.	1	
<b>Unit 2 Lower Panel:</b>			
Panel Type or Rating	-	NEMA 1	
Height	in.	46 1/4"	
Depth	in.	1"	
Width	in.	36"	
Lock-Out Relay	Qty.	1	
Test Switches	Qty.	As Required	
SEL-0587Z0X325312XX	Qty.	1	
<b>Unit 3 Upper Panel:</b>			
Panel Type or Rating	-	NEMA 1	
Height	in.	47 3/4"	
Depth	in.	1"	
Width	in.	36"	
Breaker Control Switches	Qty.	1	
Local/Remote Switches	Qty.	1	
Reclosing Cutout Switches	Qty.	1	
Test Switches	Qty.	As Required	
SEL-035175A3B542X1	Qty.	1	
Shark-100-60-10-V3-D2-INP10-X	Qty.	1	
<b>Unit 3 Lower Panel:</b>			
Panel Type or Rating	-	NEMA 1	
Height	in.	46 1/4"	
Depth	in.	1"	
Width	in.	36"	
Breaker Control Switches	Qty.	1	
Local/Remote Switches	Qty.	1	
Reclosing Cutout Switches	Qty.	1	
Test Switches	Qty.	As Required	
SEL-035175A3B542X1	Qty.	1	
Shark-100-60-10-V3-D2-INP10-X	Qty.	1	
<b>Unit 4 Upper Panel:</b>			
Panel Type or Rating	-	NEMA 1	
Height	in.	47 3/4"	
Depth	in.	1"	

<b>DATA SHEETS METERING AND RELAYING PANEL DOORS</b>		<b>Equipment: Metering and Relaying Panel Doors Rev.</b>	
DESCRIPTION	UNITS	SPEC DATA	VENDOR DATA
Width	in.	36"	
Breaker Control Switches	Qty.	1	
Local/Remote Switches	Qty.	1	
Reclosing Cutout Switches	Qty.	1	
Test Switches	Qty.	As Required	
SEL-035175A3B542X1	Qty.	1	
Shark-100-60-10-V3-D2-INP10-X	Qty.	1	
<b>Unit 4 Lower Panel:</b>			
Panel Type or Rating	-	NEMA 1	
Height	in.	46 1/4"	
Depth	in.	1"	
Width	in.	36"	
Breaker Control Switches	Qty.	1	
Local/Remote Switches	Qty.	1	
Reclosing Cutout Switches	Qty.	1	
Test Switches	Qty.	As Required	
SEL-035175A3B542X1	Qty.	1	
Shark-100-60-10-V3-D2-INP10-X	Qty.	1	
<b>Additional Equipment:</b>			
ACS NTX-20 Controller	Qty.	1	

END OF SECTION

- 1) S. G. Weiss
- 2) P. E. Schulz