



City of Flint

Department of Purchases & Supplies

Sheldon A. Neeley

TO: All Proposers
FROM: Lauren Rowley
Purchasing Manager
DATE: **July 13, 2021**
SUBJECT: **Addendum #03** – Bid# 22000048 – WPC Third Avenue Pumping Station
Improvements

This addendum has been issued because of the following:

1. Part 1 – Revised Contract Documents

All other bidding terms, requirements, and conditions continue as indicated in the remaining original bid documents.

The Purchasing Manager, Lauren Rowley, is an officer for the City of Flint with respect to this RFP.

In the submission of their proposal, Proposer must acknowledge receipt of this addendum. Proposer shall acknowledge this addendum by signing and returning one copy of this notice with their submission.

Company Name: _____

Address: _____

City / State / Zip: _____

Telephone: _____ Fax: _____ Email: _____

Print Name: _____ Title: _____

Signature: _____ Date: _____

Thank you,


Lauren Rowley
Purchasing Manager

Section 00 9113 Addendum No. 03

WPC Third Avenue Pumping Station Improvements
City of Flint, 1101 South Saginaw Street, Flint, Michigan 48502

To all prospective bidders and others concerned, YOU ARE HEREBY ADVISED THAT the Contract Documents for the above referenced Project are revised in the following particulars:

Pre-Bid Meeting

A virtual/in-person pre-bid meeting was held on Wednesday, July 7, 2021, at 10:00 AM. The sign-in sheet(s) and meeting minutes from the meeting accompanies this Addendum.

Additional Site Visit

An additional site visit has been scheduled for potential bidders and vendors to view the Third Avenue Pumping Station facilities on July 16, 2021 at 9:00 AM (EST) until 11:00 AM (EST). If you plan on attending, please note that the site visit will end promptly at 11:00 AM.

<u>Section</u>	<u>Description of Change</u>
00 4243	<p>On page 2 of Section 00 4243, Proposal, the paragraph addressing Substantial and Final Completion shall be deleted in its entirety and revised to read as follows:</p> <p>“The undersigned agrees that time is of the essence and, if awarded Contract, that the Work will be Substantially Completed within Three Hundred Sixty-Five (365) calendar days after the Notice to Proceed has been issued and completed within Three Hundred Ninety-Five (395) calendar days of the Notice to Proceed has been issued.”</p>
00 5200	<p>In Section 00 5200, Agreement, Article 1 shall be revised to read as follows:</p> <p>“...instrumentation and controls. Work will also include installing two new valves – a 72-inch and a 50-inch knife gate – in a new Valve Vault structure, including appurtenances. Work at both...”</p>
00 5200	<p>In Section 00 5200, Agreement, Article 2 shall be deleted in its entirety and revised to read as follows:</p> <p>“The undersigned agrees that time is of the essence and, if awarded Contract, that the Work will be Substantially Completed within Three Hundred Sixty-Five (365) calendar days after the Notice to Proceed has been issued and completed within Three Hundred Ninety-Five (395) calendar days of the Notice to Proceed has been issued.”</p>
00 7200	<p>Section 00 7200, General Conditions, shall be incorporated into the Contract Documents. A copy of this Section accompanies this Addendum.</p>
01 1100	<p>In Section 01 1100, Summary of Work, Article 1.01 shall be revised to read as follows:</p> <p>“...instrumentation and controls. Work will also include installing two new valves – a 72-inch and a 50-inch knife gate – in a new Valve Vault structure, including appurtenances. Work at both...”</p>
01 1100	<p>In Section 01 1100, Summary of Work, delete Article 1.05.A in its entirety and replace it with the following:</p>

A. An audio/video route survey, as specified in Section 01 3300, Submittal Procedures, shall be required for this Project. Complete coverage shall include the area inside and immediately adjacent to the building(s) being renovated at the Third Avenue Pumping Station, as well as the area of the proposed Valve Vault at the WPCF and the surrounding area.

01 1213 In Section 01 1213, Work Sequence, the following shall be added to the end of Article 1.02.F:

“CONTRACTOR is responsible for draining piping once isolation valve(s) are closed. Existing isolation valve(s) may leak; CONTRACTOR shall plan for potential leakage.”

01 1213 In Section 01 1213, Work Sequence, the following shall be added to the end of Article 1.03.B.9:

“In the event that this valve is inoperable, CONTRACTOR shall install a 50-inch line stop at WPCF to isolate this line.”

06 8026 In Section 06 8026, Glass-Fiber Reinforced Products and Fabrications, the following manufacturer shall be added to Article 2.02.B: Fibergrate

07 5600 Section 07 5600, Cold Fluid Applied Roofing, shall be deleted and replaced with the revised Section 07 5600 which accompanies this Addendum.

32 1216 In Section 32 1216, Bituminous Paving, delete “tennis courts” in Article 1.01 and delete Article 3.28 in its entirety.

32 1216 In Section 32 1216, Bituminous Paving, revise the third sentence in Article 3.31.A to read as follows:

“...testing laboratory approved by ENGINEER. Cost for testing and coring shall be at the expense of CONTRACTOR and shall be incidental to the project. The testing laboratory shall...”

40 0552 In Section 40 0552, Process Valves and Actuators, delete the second sentence in Article 2.01.A and replace it with the following:

“Valves shall be complete with outside lever and spring suitable for vertical or horizontal service and shall be Clow Figure 1106SL, Golden Anderson Figure 230, Crispin, Kennedy or ENGINEER-approved equal.”

40 0552 In Section 40 0552, Process Valves and Actuators, delete Article 2.03 in its entirety and replace it with the following:

2.03 Knife Gate Valves (KN)

- A. Knife gate valves shall be bonneted, single- or double-seated, as indicated in the Schedule, wafer-type with through bolting designed to fit between ANSI B16.1 or ANSI B16.5 Class 125 flanges of the scheduled size. Valves shown to be fitted between existing flanges shall be fabricated to the correct flange drilling. Wetted parts shall be 304 stainless steel unless otherwise listed on Schedule or noted below. Valve pressure rating shall be 75 psi unless otherwise noted on Schedule.
- B. Valve stem shall be 304 stainless steel. Stem nut shall be acid resistant bronze-mounted in the steel yoke.
- C. Valve gate shall be 316 stainless steel, beveled to provide a wedging action to seal the gate against the seat and to aid in cutting through any accumulated solids and shall be finished on both sides to 63 rms. Gate

shall seal against a stainless steel seat with a neoprene O-ring or D-ring integrally mounted therein to aid in providing a positive seal.

- D. Packing shall be PTFE/graphite, mounted around the stem on top of the bonnet. It shall be held in place by a carbon steel follower. Packing shall be replaceable without disassembling the bonnet.
- E. A graphite wiper assembly may be mounted between the gate and valve body to prevent solids from entering the bonnet housing.
- F. Valves shall be primed and finish coated with manufacturer's standard coating system.
- G. Valves shall be clearly marked to indicate the seat side of the valve.
- H. Subject to conformance with these specifications, knife gate valves shall be the product of DeZurik, ITT Fabri-Valve, or ENGINEER-approved equal.

40 0552 In Section 40 0552, Process Valves and Actuators, delete Article 2.04 in its entirety and replace it with the following:

2.03 Metal Seated Gate Valves (MSGV)

- A. Materials: Except as modified or supplemented herein, materials used in the manufacture of metal seated gate valves shall conform to the requirements of ANSI/AWWA C500 OSY.
- B. Metal Seated Gate Valves shall be double disc type and shall be rising stem, suitable for use in raw sewage.
- C. Gaskets: Gaskets shall be free of asbestos and corrosive ingredients.
- D. Valves shall be coated with the manufacturer's standard priming and coating system.
- E. Valve Construction and Function:
 - 1. Valve shall consist of two independent discs that, when closed, are forced against a seat on each side of the body by wedges. Discs may be revolving or non-rotating.
 - 2. Valve body and gate discs shall be fabricated of ductile iron. Valve stem shall be 304 stainless steel. Disc and body seat rings shall be bronze, with the disc ring incorporating an O-ring. Cleanout ports shall be provided on body invert and bonnet.
 - 3. Ends:
 - a. Valve ends shall be compatible with connecting piping. Except as modified or supplemented herein, the ends shall conform to the applicable requirements of ANSI/AWWA C500.
 - b. Flanges shall be finished to true plane surfaces within a tolerance limit of 0.005 inch (125 μ m). The finished face shall be normal to the longitudinal valve axis within a maximum angular variation tolerance of 0.001 inch per inch (1 μ m/mm) of flange diameter.
 - c. Flanges shall be drilled and spot-faced per ANSI B16.1, Class 125, or ANSI B16.5 if connecting to steel pipe.

4. Stem Seals: Stuffing box stem seals shall be provided for all gate valves with rising stems (outside screw-and-yoke type). O-ring stem seals shall be provided for all buried gate valves, and for all gate valves with non-rising stems.
5. Rotation: Direction of rotation of the handwheel or the wrench nut to open the valve shall be to the left (counterclockwise).
6. Metal Seated Gate Valves shall be Crispin, J and S Valve, Kennedy, Pratt, or ENGINEER-approved equal.

40 0552 In Section 40 0552, Process Valves and Actuators, at the end of the Section, delete the Valve Schedule in its entirety and replace it with the following:

Service	Tag Number	Location	Type	Size	Quantity	Operator	Notes
Raw Sewage	DVG 01, DVG 02, DVG 04	TAPS	MSGV	42"	3	CW	Replacing Existing Valves
Raw Sewage	KVG 5	TAPS	KN	60"	1	M 460/3/60 O/S	Replace Existing Valve, include wall-mounted controls
Raw Sewage	SCV 06	TAPS	SCV	24"	1	-	
Raw Sewage	GV 07	TAPS	MSGV	24"	1	HW	
Raw Sewage	KGV 15	WPCF VV	KN	72"	1	M 460/3/60 O/S	Class 50
Raw Sewage	KGV 16	WPCF VV	KN	50"	1	M 460/3/60 O/S	Class 50

40 0576.23 In Section 40 0576.23, Line Stops, Article 1.04.A shall be revised to read as follows:

- A. Firm Qualifications: Company specializing in the type of work required with documented experience installing line stops of the size(s) specified in the Contract Documents. Submit qualifications and certificates certifying operators are qualified to operate pipe plugging equipment and hot tapping operations.

43 2515 In Section 43 2515, Wastewater Non-Clog Dry Pit Submersible Pumps, delete Article 1.10 in its entirety.

Exhibit 3 Exhibit 3, which contains historical drawings that were used during the design of the proposed improvements for the Third Avenue Pumping Station specified in the Contract Documents, shall be incorporated into the Contract Documents. These drawings are being provided for informational purposes only and may not reflect actual as-built conditions. A copy of Exhibit 3 accompanies this Addendum.

Exhibit 4 Exhibit 4, which contains historical drawings that were used during the design of the proposed Valve Vault at the Water Pollution Control Facility specified in the Contract Documents, shall be incorporated into the Contract Documents. These drawings are being provided for informational purposes only and may not reflect actual as-built conditions. A copy of Exhibit 4 accompanies this Addendum.

Exhibit 5 Exhibit 5, which contains a historical soil boring and geotechnical report in the nearby vicinity of the proposed Valve Vault at WPCF, shall be incorporated into the Contract Documents. This soil boring and geotechnical report are being provided for informational purposes only and may not reflect the exact soil conditions in the area of the proposed Valve Vault. A copy of Exhibit 5 accompanies this Addendum.

This Addendum is hereby incorporated into the original Contract Documents for the bidding referred to above and is considered as binding as though originally appearing therein. RECEIPT OF THIS ADDENDUM MUST BE NOTED in the place provided on the Proposal page 00 4243-1 dated **July 12, 2021**.



PRE-BID MEETING MINUTES

Meeting Topic: WPC Third Avenue Pumping Station Improvements (SRF #5696-01)

Meeting Date: July 7, 2021 **Meeting Time:** 10:00 AM EST

Meeting Location: Water Pollution Control Facility, G-4652 Beecher Road, Flint, MI 48532

Date Issued: July 12, 2021 **Issued by:** John Arvai, PE

Attendees: (see attached sign-in sheets)

Welcome & Housekeeping

1. Sign-In
2. Minutes from this meeting will be distributed as part of an Addendum and will include questions posed by potential bidders during the meeting.

Introduction

1. Owner: City of Flint
 Jeanette Best, WPC Manager
 John Florshinger, SCADA & Maintenance Supervisor
2. Engineer: Wade Trim (WT)
 John Arvai, PE, Project Manager

 Hubbell, Roth & Clark (HRC)
 Trevor Wagenmaker, PE, Project Engineer

Purchasing Department Requirements

1. Bidding documents, including Contract Drawings, the Contract Manual (including procurement documents and technical specifications), as well as all Addenda to date are posted to the City's website: <https://www.cityofflint.com/finance/purchasing/bids-2/>
2. When looking for documents related to this project, please use "B22-048" in the Search window.
3. Currently there are two (2) Addenda posted for this project.
4. Bids are to be submitted no later than 2:00 PM (EST) on July 22, 2021 to the City of Flint's Finance Department.
5. Division of Purchases and Supplies, 1101 S. Saginaw St., Room 203, Flint, MI, 48502. Bids must be in a sealed envelope clearly identifying the proposal name and proposal number. Bidders must submit:
 - a. One (1) printed, signed, original proposal and addenda
 - b. One (1) electronic copy of the proposal and addenda on flash drive
 - c. One (1) printed, signed, copy of the proposal and addenda (unbound)
6. For bidders that have not bid on projects with the City of Flint previously, new bidders (i.e., vendors) should complete and submit a vendor application, IRS W-9 Form, and Vendor ACH Payment Authorization Form with the City of Flint. Links to these forms are available at <https://www.cityofflint.com/finance/accounts-payable-department/>.

City of Flint Contracting Requirements

1. Submittal with Detailed Summary of Pricing (Exhibit A): Quantities for Brick Repointing and Limestone Repointing in Exhibit A are approximate only and will be used as a basis of comparison of Bids, and award of Contracts. Payment will be made on basis of actual quantities of Work performed in accordance with the Contract Documents.
2. Qualifications and License Requirements (Exhibit B): Information regarding bidder's qualifications and licenses to perform the work must be submitted with the Bid.
3. Disclosure of Supplier Responsibility Statement (Exhibit C): Information regarding legal position of a Bidder with respect to the City of Flint.
4. List of References (Exhibit D): Bidders are required to submit contact information for 3 references where a similar scope of work was performed within the last 5 years.
5. Certificate of Insurance (Exhibit E): Minimum insurance limits are provided for insurance coverages required by the City.
6. Non-Bidder's Response (Exhibit F): The City of Flint is interested in ascertaining reasons for prospective bidder's failure to respond to "Invitations to Bid". If a Plan Holder is not responding to this bid, please indicate the reason(s) by checking any appropriate item(s) below and return this form to the City.
7. Affidavit

Other Contracting Requirements

1. American Iron & Steel Requirements (Section 00 2213, Article 1.01): This project is funded with monies made available by the State Revolving Fund and/or Drinking Water Revolving Fund and as such law contains provisions commonly known as "American Iron and Steel (AID)" that requires iron and steel products to be produced in the US, including iron and steel provided by the Contractor.
2. Proposal (Section 00 4243): The overall contract is a Lump Sum contract, but there are two allowances, one for SCADA programming and process integration (\$12,000) and the second for an Owner-Controlled Contingency Allowance (\$500,000).
 - a. Estimated quantities have been provided for Brick Repointing and Limestone Repointing in Exhibit A are approximate only and will be used as a basis of comparison of Bids, and award of Contracts. Payment will be made on basis of actual quantities of Work performed in accordance with the Contract Documents.
3. Bid Bond Form (Section 00 4313)
4. Certification Regarding Debarment, Suspension and Other Responsibility Matters (Section 00 4345) must be submitted with each Proposal and must clearly define the legal status of the Bidder.
5. Disadvantages Business Enterprise (Section 00 4539.13): Contractors bidding on this project must follow, document, and maintain documentation of their Good Faith Efforts to ensure DBEs have the opportunity to participate in the project.

6. Contract Time (Section 00 5200): Work will be substantially completed within **three hundred thirty five (335) calendar days** of the issuance of the Notice to Proceed and completed and ready for final payment in accordance with the General Conditions within **three hundred sixty five (365) calendar days** of said Notice.
7. Liquidated Damages (Section 00 5200): **Two Thousand Five Hundred Dollars (\$2,500.00)** for each day that expires after Substantial Completion until the Work is Substantially Complete; liquidated damages charged shall be deducted from the Contractor's progress payment.
8. Bonds:
 - a. Performance Bond (Section 00 6112)
 - b. Labor and Material Payment Bond (Section 00 6113)
 - c. Maintenance and Guarantee Bond (Section 00 6119)
9. Prevailing Federal Wage Rate (Section 00 6521): This project is funded by federal dollars and is subject to the prevailing federal wage rate determination. An updated wage determination, if available, will be provided as part of an Addendum closer to the bid opening.
10. Insurance Requirements (Section 00 7300): Lists additional insureds.
11. Contract Closeout (Section 01 7700): Cleaning, project record documents, O&M data, spare parts and special tools, start-up, substantial completion, warranties, final payment and acceptance.

Project Summary

1. Work is split between to sites:
 - a. Third Avenue Pumping Station (TAPS), located at 2398 University Avenue, Flint, MI 48504.
 - b. Water Pollution Control Facility (WPCF), located at G-4652 Beecher Road, Flint, MI 48532.
2. This Project includes improvements to the Third Avenue Pumping Station including building improvements in the form of brick repair, roof replacement and new windows; removal and replacement of a 60-inch diameter isolation valve with a new 60-inch diameter knife gate and coupling, including an electric motor actuator; removal of an existing wet weather pump with an 18-mgd dry-pit submersible pump for dry weather, including piping, fittings, valves, variable frequency drive, instrumentation and controls. Work will also include replacing two existing valves at the WPCF with two new valves – a 72-inch and a 50-inch knife gate – including a new valve vault structure and appurtenances.

Please note that the existing valves at the WPCF will not be removed as part of this project and are to remain in place.

3. This project is funded through the State Revolving Fund (SRF) program.
4. Time is of the essence with this project, and it is the City's intention that once the Work has been started, it shall proceed expeditiously.

Important Project Elements

1. A portion of this project will be constructed within an existing building located at TAPS and the information provided in the drawings is the best available, based on historical drawings and information provided by WPCF staff. The historical drawings that were utilized will be included in a future Addendum for reference purposes.
 - a. Wade Trim has also scanned the interior of the pump station building and potential bidders may access the scanned imagery via the following link: <https://flint.iv.navvis.com/>. It should be noted that:
 - i. Available imagery from this site is current as of the date/time of capture; any possible building or other modifications made after that time will need to be considered by bidders.
 - ii. A measurement tool is available; the measurement tool is subject to the accuracy of the user, however. Typical usage often involves rounding to the nearest nominal dimension (e.g., a window width measuring 4'-1/4" might actually be 4'-0").
 - b. Bidders logging into NavVis will need to enter the following login information (which is case sensitive):
 - i. Bidder Login: Bidder_Access
 - ii. Password: BA_COF21
2. The other portion of this project will be constructed at the WPCF and the information provided in the drawings is the best available, based on historical drawings and information provided by WPCF staff. The historical drawings that were utilized will be included in a future Addendum for reference purposes.
3. Sequence of Construction (Section 01 1213)
4. Submittal Procedures (Section 01 3300): Schedules, shop drawings, product data, O&M data, audio-video route survey, photographs. Electronic submittals are acceptable and encouraged.
 - a. The audio-video survey shall include the exterior and interior of the TAPS facilities, including the pumping station and the screening building (exterior only), as well as the fenced in area of the facility.
 - b. The audio-video survey shall include the exterior area of WPCF in the general location of the proposed Valve Vault as well as the surrounding area that may be affected.
5. Quality Control (Section 01 4500): Certification of materials. Field Testing by Contractor (concrete, compaction, etc).
6. Temporary Facilities and Control (Section 01 5000): Site access and parking; public road maintenance, emergency access, public access to roadways, maintaining traffic, temporary utilities (power, sanitary, water, etc.).
 - a. Contractor will be required to provide a Field Office, which may be situated adjacent to the existing building where the Work is to take place.

7. Permits

- a. Building Permit is to be obtained by the Contractor from Flint Township.
- b. WPCF has obtained a Part 41 Permit from EGLE for the proposed construction work at both TAPS and WPCF.

8. Project Timeline

- | | |
|---------------------------------------|---|
| a. Bid Advertisement: | Monday, July 22, 2021 |
| b. Mandatory Pre-bid Meeting: | Wednesday, July 7, 2021 at 10:00 AM EST |
| c. Final Date for Questions: | Thursday, July 13, 2021 by 10:00 AM EST |
| d. Final Addendum: | Tuesday, July 20, 2021 by 5:00 PM EST |
| e. Bid Due Date: | Thursday, July 22, 2021 by 2:00 PM EST |
| f. Bid Review: | Friday, July 23, 2021 |
| g. Introduce to Finance Committee: | Wednesday, August 4, 2021 |
| h. Anticipated City Council Approval: | Wednesday, August 18, 2021 |
| i. Anticipated Contract Execution: | Friday, September 24, 2021 |
| j. *Anticipated Notice to Proceed: | TBD |
| k. **Substantial Completion | TBD |
| l. **Final Completion | TBD |

**This project is funded through SRF and the bond closing date is scheduled for TBD.*

***Assumes NTP issued and 335 calendar days until SC and 365 calendar days to FC.*

Addenda

1. The next addendum to be issued and will include pre-bid meeting minutes and sign-in sheet, revised specifications (if applicable), reissued Contract Drawings (if applicable), revised wage determination (if applicable) and any other contract documents necessary for clarification.

Questions by Audience

Q: For the site visit on Monday, what is the date, time and location for the meeting?

A: A second site will take place July 12, 2021 starting at 9:00 AM and running through Noon. We'll meet up at TAPS (2305 University Avenue, Flint, MI).

Q: You mentioned substantial completion date is 365 days until final. However, the specs say 420 calendar days for substantial and 480 days for final. Which is correct?

A: Substantial completion will be 365 days; final completion will be 395 days. The discrepancy will be addressed in the next addendum.

Q: Will an engineer's cost estimate be made available?

A: No, an estimate will not be provided.

Q: Was this pre-bid meeting mandatory? The addendum issued by the City did not indicate that it was.

A: No, the pre-bid meeting was not mandatory.



PRE-BID MEETING MINUTES

Adjournment

Meeting was adjourned at 11:00 AM and was immediately followed by a site visit. The site visit concluded as 12:30 PM at the Third Avenue Pumping Station.

The above notes represent the writer's understanding of the items discussed and conclusions reached at the meeting. Please notify the writer immediately if your understanding is different. A clarification or correction will be issued to all parties. This document will be considered accurate if no corrections or clarifications are received within one week of issuance.

Minutes by,
Wade Trim, Inc.

Alexander A Ware

Alexander Ware, Engineer

TLH:ahw

COF107301F

PW\COF1073\01F\Construction\300-00 Bid & Award\300-04 Pre-Bid Conference

cc: All Attendees

Section 00 7200
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Article 1 Definitions

1.01 Defined Terms

- A. Wherever used in these General Conditions or in the other Contract Documents, the following terms have the meanings indicated which are applicable to both the singular and plural thereof:
1. Addenda -- Written or graphic instruments issued prior to the opening of Bids which clarify, correct or change the Contract Documents.
 2. Agreement -- The written Agreement between OWNER and CONTRACTOR covering the Work to be performed; other Contract Documents are attached to the Agreement and made a part thereof as provided therein.
 3. Application and Certificate for Payment -- The form included in the Contract Documents which is to be used by CONTRACTOR in requesting progress or final payment and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. Bid -- The offer or proposal of the bidder submitted on the prescribed form setting forth the price(s) for the Work to be performed.
 5. Bidding Requirements -- The Advertisement for Bids, Instructions to Bidders, Supplementary Instructions to Bidders, Proposal, Legal Status of Bidder, Bid Bond, and any other documents identified in the Proposal, to be submitted with the Bid.
 6. Bonds -- Bid, Performance and Payment bonds and other instruments of security.
 7. Change Order -- A written order to CONTRACTOR, reviewed by the ENGINEER and signed by OWNER, issued after execution of the Contract, authorizing a change in the Work or an adjustment in the Contract Price or the Contract Time. The Contract Price and Contract Time may be changed only by Change Order. A Change Order signed by CONTRACTOR indicates his agreement therewith, including that the Change Order constitutes a final adjustment in the Contract Price or Contract Time for all issues addressed or described in the Change Order.
 8. Change Proposal -- A written request by CONTRACTOR, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times; contesting an initial decision by ENGINEER concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 9. Claims --
 - a. A demand or assertion by OWNER directly to CONTRACTOR, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment of Contract Price or Contract Times; contesting an initial decision by ENGINEER concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting ENGINEER's decision regarding a Change Proposal; seeking resolution of a contractual issue that ENGINEER has declined to address; or seeking other relief with respect to the terms of the Contract.

- b. A demand or assertion by CONTRACTOR directly to OWNER, duly submitted in compliance with the procedural requirements set forth herein, contesting ENGINEER's decision regarding a Change Proposal, or seeking resolution of a contractual issue that ENGINEER has declined to address.
 - c. A demand or assertion by OWNER or CONTRACTOR, duly submitted in compliance with the procedural requirements set forth herein, arising after ENGINEER has issued a recommendation of final payment.
 - d. A demand for money or services by a third party is not a Claim.
- 10. Constituents of Concern -- Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
 - 11. Contract -- The entire and integrated written contract between OWNER and CONTRACTOR concerning the Work
 - 12. Contract Documents -- Those items so designated in the Agreement, and which together comprise the Contract.
 - 13. Contract Price -- The monies or other considerations payable by OWNER to CONTRACTOR for completion of acceptable Work in accordance with the Contract Documents as stated in the Agreement.
 - 14. Contract Time -- The number of days or the date stated in the Agreement:
 - a. to achieve Substantial Completion of all or any specified portions of the Work, and;
 - b. to complete the Work so that it is ready for final payment as evidenced by ENGINEER's written recommendation of final payment in accordance with paragraph 14.11.
 - 15. CONTRACTOR -- The person, firm or corporation with whom OWNER has entered into the Agreement.
 - 16. 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 in paragraph 12.01.
 - 17. Day -- A calendar day of 24 hours measured from midnight to the next midnight.
 - 18. Defective -- An adjective which 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 inspection, reference standard, test or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER's recommendation of final payment.
 - 19. Drawings -- See Plans.

20. Effective Date of Agreement -- The date indicated in the Agreement on which it becomes effective, but if no such date is indicated it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.
21. Electronic Document -- Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.
22. Electronic Means -- Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow:
 - a. the transmission or communication of Electronic Documents;
 - b. the documentation of transmissions, including sending and receipt;
 - c. printing of the transmitted Electronic Document by the recipient;
 - d. the storage and archiving of the Electronic Document by sender and recipient; and
 - e. the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.
23. ENGINEER -- The person, firm, or corporation identified in the Supplementary Instructions to Bidders hired by OWNER to prepare Plans and Specifications for the Project and to assist OWNER in interpreting Plans and Specifications during the performance of the Work. ENGINEER's authority and responsibility are set forth in the Contract between OWNER and ENGINEER. CONTRACTOR acknowledges and agrees that ENGINEER's obligations and duties under ENGINEER's contract with OWNER are obligations and duties to OWNER only, and ENGINEER has no independent obligation to CONTRACTOR of any kind, including but not limited to providing services, or to take any action or to refrain from taking action on behalf of CONTRACTOR or any Subcontractor, Sub-Subcontractor or Supplier.
24. Field Order -- A written order issued by ENGINEER which clarifies or interprets the Contract Documents or orders minor changes in the Work in accordance with paragraphs 9.04 and 9.05 but which does not involve a change in the Contract Price or the Contract Time.
25. Hazardous Environmental Conditions -- The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto.
 - a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.
 - b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.

- c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.
26. Laws and Regulations; Laws or Regulations Any and all applicable laws, rules, regulations, ordinances, codes and orders of any and all governmental bodies, agencies, authorities and courts having jurisdiction.
27. Lump Sum -- Construction Work where the OWNER pays a single stipulate price (Lump Sum) for the entire scope of Work; plus or minus alternates and/or allowances. However, unit prices may be required for individual items of Work for the purposes of changes, additions, or deletions.
28. Milestone -- A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of the Work.
29. Notice of Award -- The written notice by OWNER to the apparent successful Bidder stating that, upon compliance by the apparent successful Bidder with the conditions precedent enumerated therein, within the time specified, OWNER will sign and deliver the Agreement.
30. Notice to Proceed -- A written notice given by OWNER to CONTRACTOR (with a copy to ENGINEER) fixing the date on which the Contract Time will commence to run and on which CONTRACTOR shall start to perform his obligation under the Contract Documents.
31. OWNER -- The public body or authority, corporation, limited liability company, association, partnership, or individual with whom CONTRACTOR has entered into the Agreement and for whom the Work is to be provided and as identified in the Supplementary Instructions to Bidders.
32. Partial Utilization -- Use by OWNER of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all the Work.
33. Plans -- The part of the Contract Documents which graphically show the extent, character and Scope of the Work to be furnished and performed by CONTRACTOR and which have been prepared or approved by the ENGINEER or OWNER; sometimes also referred to as Drawings.
34. Progress Schedule -- A schedule, prepared and maintained by CONTRACTOR, describing the sequence and duration of the activities comprising CONTRACTOR's plan to accomplish the Work within the Contract Times.
35. Project -- The total construction of which the Work to be provided under the Contract Documents may be the whole or a part as indicated elsewhere in the Contract Documents.
36. Project Manual -- The volume assembled for the Project which may include, among other parts, Procurement Requirements, Contracting Requirements and Specifications.
37. Proposal -- The offer or bid of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
38. Radioactive Material -- Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 as amended.

39. Resident Project Representative -- The authorized representative of ENGINEER who may be assigned to the Site or any part thereof.
40. Samples -- Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
41. Schedule of Submittals -- A schedule, prepared and maintained by CONTRACTOR, of required Submittals and the time requirements for ENGINEER's review of the Submittals.
42. 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.
43. Shop Drawings -- All drawings, diagrams, illustrations, schedules and other data or information required by the Contract Documents which are specifically prepared or assembled by or for CONTRACTOR and submitted by CONTRACTOR to illustrate material or equipment for some portion of the Work.
44. Site -- Lands or areas indicated in the Contract Documents as being furnished by OWNER upon which the Work is to be performed, including rights-of-way and easements, and such other lands or areas furnished by OWNER which are designated for the use of CONTRACTOR.
45. Specifications -- That part of the Contract Documents which consist of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto.
 - a. Project Specifications are those portions of the Contract Documents which have been prepared specifically for this Project and which are identified by the job number in the lower right-hand corner of each page.
 - b. Standard Specifications are Specification sections that are the same from Project to Project as of the revision date shown in the lower left-hand corner of the page.
 - c. Standard Specification Section Revisions -- Section 00 9120 of the Specifications which amends or supplements the Standard Specification Sections.
46. Subcontractor -- An individual, firm or corporation having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the Site.
47. Submittal -- A written or graphic document, prepared by or for CONTRACTOR, which the Contract Documents require CONTRACTOR to submit to ENGINEER, or that is indicated as a Submittal in the Schedule of Submittals accepted by ENGINEER. Submittals may include Shop Drawings and Samples; schedules; product data; OWNER-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers' instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record

documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by ENGINEER, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.

48. Substantial Completion -- The Work (or a specified part thereof) has progressed to the point where, in the opinion of ENGINEER as evidenced by the Certificate of Substantial Completion, it is sufficiently complete, in accordance with the Contract Documents, so that the Work (or specified part) can be utilized for the purposes for which it was intended; or if no such certificate is issued, when the Work is complete and ready for final payment as evidenced by ENGINEER's written recommendation of final payment in accordance with paragraph 14.11. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.
49. Supplementary Conditions -- The part of the Contract Documents which amends or supplements these General Conditions.
50. Supplementary Instructions to Bidders -- The part of the Contract Documents which amends or supplements the Instructions to Bidders.
51. Supplier -- A manufacturer, fabricator, supplier, distributor, material man, or vendor having a direct contract with CONTRACTOR, or with any Subcontractor, or with OWNER, to furnish materials or equipment to be incorporated in the Work by CONTRACTOR or any Subcontractor.
52. Unit Price -- Construction Work where the OWNER pays a fixed sum (Unit Price) per each completed unit of Work. Units are listed on the Proposal Form.
53. Utilities -- Underground or above ground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any structures or encasements containing such facilities, which have been installed to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems, water or other liquids or chemicals.
54. Work -- The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. Work includes and is the result of performing or furnishing labor and furnishing and incorporating materials and equipment into the construction, and performing or furnishing services and furnishing documents, all as required by the Contract Documents.
55. Work Change Directive -- A written directive to CONTRACTOR, issued on or after the Effective Date of the Agreement and signed by OWNER and reviewed by ENGINEER, ordering an addition, deletion or revision in the Work, or responding to differing or unforeseen physical conditions under which the Work is to be performed as provided in paragraph 4.03 or to emergencies under paragraph 6.18. A Work Change Directive will not change the Contract Price or Contract Time but is evidence that the parties expect that the change directed or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Time as provided in paragraph 10.01.

1.02 Terminology

- A. The following words, terms, or phrases are not defined but, when used in the Contract Documents, have the following meaning:
1. Whenever in the Contract Documents the terms “as ordered,” “as directed,” “as required,” “as allowed,” “as approved” or terms of like effect or import are used; or the adjectives “reasonable,” “suitable,” “acceptable,” “proper” or “satisfactory” or adjectives of like effect or import are used to describe a requirement, direction, review or judgment of ENGINEER as to the Work, it is intended that such requirement, direction, review or judgment will be solely to evaluate, in general, the completed Work for compliance with the technical requirements of and information in the Contract Documents and conformance with the design concept of the completed 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 shall not be effective to assign to ENGINEER any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.10 or any other provision of the Contract Documents.
 2. 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.
 3. 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.
 4. 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.
 5. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of CONTRACTOR, “provide” is implied.
- B. Unless stated otherwise in the Contract Documents, words or phrases which 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 Insurance

- A. When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds and Insurance Certificates and other evidence of Insurance requested as CONTRACTOR may be required to furnish in accordance with Article 5. No Work at the site may begin or progress payments made to CONTRACTOR until all Bonds and Insurance Certificates in the form and substance required in Article 5 have been submitted and approved by OWNER.

2.02 Copies of Documents

- A. OWNER shall furnish to CONTRACTOR up to 5 copies of the Contract Documents (including at least one fully signed counterpart of the Agreement) as are reasonably necessary for the execution of the Work. Additional copies will be furnished, upon request, at the cost of reproduction.

2.03 Commencement of Contract Time; Notice to Proceed

- A. Time is of the essence in the performance of the Work. The Contract Time will commence to run on the 30th day after the effective date of the Agreement, 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 Agreement. In no event will the Contract Time commence to run later than the 30th day after the effective date of the Agreement. Time limits stated in the Contract Documents are of the essence of the Agreement.

2.04 Starting the Project

- A. CONTRACTOR shall start to perform the Work within 10 days of when the Contract Time commences to run, but no Work shall be done at the Site prior to the date on which the Contract Time commences to run. CONTRACTOR shall notify the ENGINEER at least 3 working days in advance of the time he intends to start Work.

2.05 Preconstruction Meeting

- A. Within 10 days of the Effective Date of the Agreement and prior to the delivery of materials or the start of any construction, the CONTRACTOR shall request a Preconstruction Meeting from ENGINEER. A minimum of 3 full working days' notice shall be required.
- B. Prior to the scheduling of the Preconstruction Meeting, CONTRACTOR shall submit to ENGINEER for review:
1. A preliminary Progress Schedule indicating the starting and completion dates of the various stages of the Work, including any Milestones specified in the Contract Documents;
 2. A preliminary Schedule of Submittals which will list each required Submittal and the times for submitting, reviewing and processing such Submittal;
 3. An estimated monthly payment schedule, and a preliminary Schedule of Values for all of the Work.
- C. The Preconstruction Meeting will be held for review and acceptance of the schedules, to establish procedures for handling Shop Drawings and other Submittals, for processing Applications for Payment, and to establish a working understanding among the parties as to the Work.

2.06 Electronic Transmittals

- A. Except as otherwise stated elsewhere in the Contract, the OWNER, ENGINEER, and CONTRACTOR may send, and shall accept, Electronic Documents transmitted by Electronic Means.
- B. If the Contract does not establish protocols for Electronic Means, then OWNER, ENGINEER, and CONTRACTOR shall jointly develop such protocols.
- C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

Article 3 Contract Documents Intent and Reuse

3.01 Intent

- A. The Contract Documents are complementary; what is required by one Contract Document is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. ENGINEER will issue clarifications and interpretations of the Contract Documents as provided herein.
- F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon OWNER and CONTRACTOR, which agree that the Contract Documents will be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.
- G. Nothing in the Contract Documents creates:
 - 1. any contractual relationship between OWNER or ENGINEER and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or
 - 2. any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity, except as may otherwise be required by Laws and Regulations; or
 - 3. any obligation on the part of ENGINEER to CONTRACTOR.

3.02 Reference to Standards and Specifications of Technical Societies

- A. Reference to standards, specifications, manuals or codes of any technical society, organization or association, or to the Laws or Regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard, specification, manual, or Laws or Regulations in effect at the time of opening of Bids or, on the effective date of the Agreement if there were no Bids, except as may be otherwise specifically stated in the Contract Documents.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result shall be furnished and performed whether or not it is specifically called for.

- C. No provision of any standard, specification, manual, code or instruction shall be effective to change the duties and responsibilities of OWNER, CONTRACTOR or ENGINEER, or any of their Subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall it be effective to assign to OWNER, ENGINEER or any of ENGINEER's consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of paragraph 9.10 or any other provision of the Contract Documents.

3.03 Reporting and Resolving Discrepancies

- A. Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. CONTRACTOR has a duty to and shall promptly report in writing to ENGINEER any conflict, error, ambiguity, or discrepancy which CONTRACTOR should reasonably have discovered and shall obtain a written interpretation or clarification from ENGINEER before proceeding with any Work affected thereby.
- B. If, during the performance of the Work, CONTRACTOR discovers any conflict, error, ambiguity or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, CONTRACTOR shall report it to ENGINEER in writing at once, and, CONTRACTOR shall not proceed with the Work affected thereby (except in an emergency as authorized by paragraph 6.18) until receiving written instruction or clarification from ENGINEER or OWNER. However, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any such conflict, error, ambiguity or discrepancy unless CONTRACTOR knew or reasonably should have known thereof.
- C. Except as otherwise specifically stated in the Contract Documents or as may be provided by amendment or supplement issued by one of the methods indicated in paragraph 3.05, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity or discrepancy between the provisions of the Contract Documents and;
 - 1. the provisions of any standard, specification, manual, code or instruction (whether or not specifically incorporated by reference in the Contract Documents); or
 - 2. 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 Contract Documents

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

- B. ENGINEER will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. ENGINEER's written clarification, interpretation, or decision will be final and binding on CONTRACTOR, unless it appeals by submitting a Change Proposal, and on OWNER, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve
 - 1. the performance or acceptability of the Work under the Contract Documents,
 - 2. the design (as set forth in the Drawings, Specifications, or otherwise), or
 - 3. other engineering or technical matters, then ENGINEER will promptly notify OWNER and CONTRACTOR in writing that ENGINEER is unable to provide a decision or interpretation. If OWNER and CONTRACTOR are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in paragraph 11.01.

3.05 Order of Precedence

- A. In resolving conflicts, errors or discrepancies between Plans and Specifications,
 - 1. figured dimensions shall govern over scaled dimensions;
 - 2. Plans shall govern over Standard Specifications;
 - 3. and Project Specifications shall govern over Standard Specifications and Plans.

3.06 Amending and Supplementing Contract Documents

- A. The Contract Documents may be amended to provide for additions, deletions and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways:
 - 1. a Field Order (pursuant to paragraph 9.05), or,
 - 2. a Change Order (pursuant to paragraph 10.01.A.1), or
 - 3. a Work Change Directive Order (pursuant to paragraph 10.01.A.2)
- B. In addition, the requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, in one or more of the following ways:
 - 1. a Field Order (pursuant to paragraph 9.05),
 - 2. ENGINEER's review of a Shop Drawing or Sample (pursuant to paragraph 6.21), or
 - 3. ENGINEER's written interpretation or clarification (pursuant to paragraph 9.04).

3.07 Reuse of Documents

- A. Neither CONTRACTOR nor any Subcontractor, manufacturer, fabricator, Supplier, distributor, or other person or organization performing or furnishing any of the Work under a direct or indirect contract with OWNER:
 - 1. shall have or acquire any title to or ownership rights in any of the Plans, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER or ENGINEER's Consultant, and

2. they shall not reuse any of such Plans, Specification, other documents or copies on extensions of the Project or any other project without written consent of OWNER and ENGINEER and specific written verification or adaptation by ENGINEER.

3.08 Electronic Data

- A. Except as otherwise stated elsewhere in the Contract Documents, 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. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

Article 4 Availability of Lands; Subsurface and Physical Conditions; Reference Points

4.01 Availability of Lands

- A. OWNER shall furnish, as indicated in the Contract Documents and not later than the established date for beginning Work on the Contract, the lands upon which the Work is to be performed, rights of way and easements for access thereto, and such other lands which are designated for the use of CONTRACTOR. OWNER shall identify any encumbrances or restrictions not of general application but specifically related to use of lands so furnished with which CONTRACTOR will have to comply in performing the Work. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by OWNER, unless otherwise provided in the Contract Documents. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment unless otherwise provided in the Contract Documents.

4.02 Subsurface and Physical Conditions; Investigations and Reports

- A. Reference is made to the Supplementary Conditions for identification of those reports of investigations and tests of subsurface and physical conditions at the Site or otherwise affecting cost, progress or performance of the Work which have been reviewed in preparation of the Contract Documents. Such reports are not guaranteed as to accuracy or completeness and are not part of the Contract Documents.
- B. The locations of utilities or other physical conditions relating to existing surface or subsurface structures at or contiguous to the Site as shown on the Plans are taken from drawings from sources believed to be reliable. Neither the OWNER nor ENGINEER will be responsible for any omissions of, or variations from, the indicated location of existing utilities which may be encountered in the Work.
- C. CONTRACTOR shall draw its own conclusions as to the general accuracy of the "technical data" contained in such reports and drawings, and confirms such reports and drawings are not Contract Documents. CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER or any of ENGINEER's Consultants with respect to:

- a. 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
 - b. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings, or
 - c. any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such data, interpretations, opinions or information.
2. The cost of all the following will be included in the Contract Price and CONTRACTOR shall have full responsibility for:
- a. reviewing and checking all such information and data,
 - b. locating all Utilities during construction,
 - c. coordination of the Work with the owners of such Utilities, and
 - d. the safety and protection of all such Utilities as provided in paragraph 6.15 and repairing any damage thereto resulting from the Work.

4.03 Unforeseen Physical Conditions

- A. A. If CONTRACTOR discovers one or both of the following physical conditions of surface or subsurface at the Project or improvement Site, before disturbing the physical condition, the CONTRACTOR shall immediately notify OWNER and ENGINEER of the physical condition; and follow up within 48 hours in writing:
 1. A subsurface or a physical condition at the Site differing materially from those indicated in the Contract Documents, or
 2. An unknown physical condition at the Site of a nature differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for the improvement project.
- 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 4.03.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 4.03.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 12.03; 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 pursuant to paragraph 10.05.
 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 4.03.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 or Work Change Directive.
 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.

4.04 Utilities

- A. CONTRACTOR's Responsibilities. The information and data shown or indicated in the Contract Documents with respect to existing Utilities at or adjacent to the Site, if any, is based on information and data furnished to OWNER or ENGINEER by the owners of such Utilities, including OWNER, or by others.
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 Utilities at the Site;
 - b. locating all Utilities shown or indicated in the Contract Documents as being at the Site;
 - c. coordination of the Work with the owners (including OWNER) of such Utilities, during construction; and
 - d. the safety and protection of all existing Utilities at the Site, and repairing any damage thereto resulting from the Work.
- B. Notice by CONTRACTOR. If CONTRACTOR believes that an Utilities 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 6.18), 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:
 1. promptly review the Utilities and conclude whether such Utilities was not shown or indicated in the Contract Documents,
 2. or was not shown or indicated with reasonable accuracy;
 3. obtain any pertinent cost or schedule information from CONTRACTOR;
 4. prepare recommendations to OWNER regarding the CONTRACTOR's resumption of Work in connection with the Utilities in question;
 5. 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 Utilities;
 6. 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 Utilities. 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 Utilities 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 Utilities 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:

- 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 Utilities 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 12.03;
 - 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 4.04.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.

4.05 Reference Points

- A. OWNER shall provide engineering surveys for construction to establish property corners, monuments, bench marks and similar reference points which in his judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for the preservation of established reference points and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to ENGINEER whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations. Reference points destroyed by negligence of CONTRACTOR will be replaced by OWNER at the expense of CONTRACTOR. Construction Staking will be furnished by OWNER as provided in Division 01 of the Specifications.

4.06 Constituents of Concern

- A. OWNER shall be responsible for any Constituents of Concern uncovered or revealed at the Site which was not shown or indicated in Plans or Specifications or identified in the Contract Documents to be within the scope of the Work and which may present a substantial danger to persons or property exposed thereto in connection with the Work at the Site. OWNER shall not be responsible for any such materials brought to the Site by CONTRACTOR, Subcontractor, Suppliers or anyone else for whom CONTRACTOR is responsible.
- B. Upon discovering any such material, CONTRACTOR shall immediately:
 1. stop all Work in connection with such Hazardous Environmental Condition and in any area affected thereby (except in emergency as required by paragraph 6.18), and
 2. notify OWNER and ENGINEER (and 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 Hazardous Environmental Condition or take corrective action, if any.

- C. CONTRACTOR shall not be required to resume Work in connection with such Hazardous Environmental Condition or in any such affected areas until after OWNER has obtained any required permits related thereto and delivered to CONTRACTOR special written notice:
 - 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.
- D. If OWNER and CONTRACTOR cannot agree as to entitlement to, or the amount, or extent of an adjustment, if any, in Contract Price or Contract Terms as a result of such Work stoppage or such special conditions under which Work is agreed by CONTRACTOR to be resumed, either party may make a Claim therefor as provided in paragraph 11.01.
- E. If after receipt of such special 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 such portion of the Work that is in connection with such condition, or in such affected area, to be deleted from the Work. If OWNER and CONTRACTOR cannot agree as to entitlement to, or the amount, or extent of an adjustment, if any, in Contract Price or Contract Time as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in paragraph 11.01. OWNER may have such deleted portion of the Work performed by OWNER's own forces or others in accordance with paragraph 7.01.
- F. To the fullest extent permitted by Laws and Regulations, OWNER shall indemnify and hold harmless CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants and the officers, directors, employees, agents, other consultants and subcontractors of each and any of them from and against all claims, costs, losses, damages and expenses arising out of or resulting from such condition per this paragraph 4.06, provided that:
 - 1. 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, and
 - 2. nothing in this paragraph 4.06 shall obligate OWNER to indemnify any person or entity from and against the consequences of that person's or entity's own negligence.
- G. The provisions of paragraph 4.03 are not intended to apply to the presence of Constituents of Concern or Hazardous Environmental Conditions uncovered or revealed at the Site.

Article 5 Bonds and Insurance

5.01 Performance and Other Bonds

- A. CONTRACTOR shall furnish performance and payment Bonds, on the form included in the Contract Documents, 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 Documents. These Bonds shall remain in effect at least until 1 year after the date when final payment becomes due, except as otherwise provided by Laws and Regulations or as specified in the Contract Documents or Bond. CONTRACTOR shall also furnish such other Bonds as are required by the Supplementary Conditions.

- B. All Bonds shall be in the forms prescribed by the Contract Documents and be executed by such Sureties as
 - 1. are licensed to conduct business in the state where the Project is located, and
 - 2. are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the U.S. Department of Treasury, Financial Management Service, Surety Bond Branch.
- C. All Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.
- D. If Surety on any Bond furnished by CONTRACTOR is declared as bankrupt or becomes insolvent, or its right to do business is terminated in any state where any part of the Project is located, or it ceases to meet the requirements of clauses (1) and (2) of paragraph 5.01, CONTRACTOR shall within 5 days thereafter substitute another Bond and Surety, both of which shall be acceptable to OWNER.

5.02 Licensed Insurers and Sureties

- A. Bonds and insurance required by the Contract Documents to be purchased and maintained by OWNER or CONTRACTOR shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue Bonds or insurance policies for the limits and coverages so required.

5.03 Insurance

- A. CONTRACTOR shall purchase and maintain during the term of the Project such insurance as will protect him, OWNER(s) and ENGINEER(s) from Claims arising out of the Work described in this Contract and performed by CONTRACTOR, Subcontractor(s) or Sub subcontractor(s) consisting of:
 - 1. Workers' Compensation Insurance including Employer's Liability to cover employee injuries or disease compensable under the Workers' Compensation Statutes of the states in which Work is conducted under this Contract; disability benefit laws, if any; or Federal compensation acts such as U.S. Longshoremen or Harbor Workers', Maritime Employment, or Railroad Compensation Act(s), if applicable. Self-insurance plans approved by the regulatory authorities in the state in which Work on this Project is performed are acceptable.
 - 2. An occurrence form Commercial General Liability policy to cover bodily injury to persons other than employees and for damage to tangible property, including loss of use thereof, plus appropriate endorsements to protect OWNER and ENGINEER against Claims, demands, and lawsuits from employees of CONTRACTOR and Subcontractors, including the following exposures:
 - a. All premises and operations.
 - b. Explosion, collapse and underground damage.
 - c. CONTRACTOR's Protective coverage for independent contractors or Subcontractors employed by him.

- d. Broad form blanket, contractual liability for the obligation assumed in the Indemnification or Hold Harmless agreement found in the General Conditions or Supplementary Conditions of this Contract.
 - e. Personal Injury Liability endorsement with no exclusions pertaining to employment.
 - f. Products and Completed Operations coverage. Coverage shall extend through the Contract guarantee period.
 - g. Broad form property damage.
 - h. Cross liability endorsement.
 - i. For design professional additional insureds, ISO Endorsement CG 20 32 04 13, "Additional Insured-Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
3. Comprehensive Automobile Liability policy to cover bodily injury and property damage arising out of the ownership, maintenance or use of any motor vehicle, including owned, non-owned and hired vehicles. Comprehensive General Liability and the Comprehensive Auto Liability shall be written by the same insurance carrier, though not necessarily in one policy.
 4. CONTRACTOR shall purchase for OWNER an Owner's Protective Liability policy to protect OWNER, ENGINEER, their consultants, agents, employees and such public corporations in whose jurisdiction the Work is located for their liability for Work performed by the CONTRACTOR, the Subcontractor(s) or the Sub subcontractor(s) under this Contract.
 5. When a limit of liability is identified in the Supplementary Conditions, CONTRACTOR shall purchase a Builder's Risk Installation Floater in a form acceptable to OWNER covering property of the Project for the full cost of replacement as of the time of any loss which shall include, as named insureds,
 - a. CONTRACTOR,
 - b. all Subcontractors,
 - c. all Sub subcontractors,
 - d. OWNER, and ENGINEER(s) or Architect(s), as their respective interests may prove to be at the time of loss, covering insurable property which is the subject of this Contract, whether in place, stored at the Site, stored elsewhere, or in transit at the risk of the insured(s).

Coverage shall be effected on an "All Risk" form including, but not limited to, the perils of fire, wind, vandalism, collapse, theft, flood and earthquake, with removal of passive design error exclusion. Except as may otherwise be required by OWNER, CONTRACTOR may arrange for such deductibles as CONTRACTOR deems to be within CONTRACTOR's ability to self-assume, but CONTRACTOR will be held solely responsible for the amount of such deductible and for any co-insurance penalties. Any insured loss shall be adjusted with OWNER and CONTRACTOR and paid to OWNER and CONTRACTOR as Trustee for the other insureds.

6. Umbrella or Excess Liability
 - a. The CONTRACTOR is granted the option of arranging coverage under a single policy for the full limit required or by a combination of underlying policies with the balance provided by an Excess or Umbrella Liability policy equal to the total limit(s) requested. Umbrella or Excess policy wording shall be at least as broad as the primary or underlying policy(ies) and shall apply both to CONTRACTOR's General Liability and Automobile Liability Insurance and shall be written on an occurrence basis.
 7. Railroad Protective Liability
 - a. Where any of the Work is within a railroad right-of-way or where a limit of liability is identified in the Supplementary Conditions, CONTRACTOR will provide coverage in the name of each railroad company having jurisdiction over rights of way across which Work under the Contract is to be performed. The form of policy and the limits of liability shall be determined by the railroad company(ies) involved. See the Supplementary Conditions for limits and coverage requested.
 8. CONTRACTOR's Professional Liability Insurance
 - a. 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 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.
- B. OWNER's responsibilities in respect of purchasing and maintaining insurance are set forth below:
1. OWNER shall assume responsibility for such boiler and machinery insurance as may be required or considered to be necessary by OWNER in the course of construction, testing or after completion.
 - a. OWNER shall assume responsibility for such insurance as will protect the OWNER against any loss of use of OWNER's property due to those perils insured pursuant to paragraph 1 above.

5.04 Limits of Liability

- A. The required limits of liability for insurance coverages required in paragraphs 5.03 shall be not less than those specified in the Supplementary Conditions.

5.05 Notice of Cancellation or Intent Not to Renew

- A. Policies will be endorsed to provide that at least 30 days written notice shall be given to OWNER and to ENGINEER of cancellation, intent not to renew, or material modification of the coverage.

5.06 Evidence of Coverage

- A. Prior to commencement of the Work, CONTRACTOR shall furnish to OWNER and ENGINEER, Certificates of Insurance in force on current Accord® Certificate of Insurance form. Other forms of Certificate are acceptable only if;
 - 1. they include all of the items prescribed in the current Accord® Certificate of Insurance form, including agreement to cancellation provisions outlined in paragraph 5.05 above; and
 - 2. they have approval of OWNER and ENGINEER.
- B. Prior to the commencement of the Work, CONTRACTOR shall furnish to OWNER complete "originally signed" copies of the Owner's Protective Liability Policy. The number of copies shall be the same as the number of counterparts of the Agreement. OWNER reserves the right to request complete copies of other policies if deemed necessary to ascertain details of coverage not provided by the certificates. Such policy copies shall be "Originally Signed Copies," and so designated.

5.07 Qualification of Insurers

- A. In order to determine financial strength and reputation of insurance carriers, all companies providing the coverages required shall be licensed or approved by the Insurance Bureau of the state in which the Project is located and shall have a financial rating not lower than XI and a policyholder's service rating no lower than B+ as listed in A.M. Best's Key Rating Guide, current edition. Companies with ratings lower than B+:XI will be acceptable only upon written consent of OWNER.

5.08 Damage Claims - Acknowledgment and Reports

- A. CONTRACTOR shall furnish to OWNER an acknowledgment receipt from the insurance carrier for each damage claim against the Project. The receipt shall include the insurance carrier's assigned claim number.
- B. Upon request, CONTRACTOR or his insurance carrier shall also furnish to OWNER a status report on all damage claims. This report shall include inspections made, the disposition of claims, and what action has been taken towards settlement of each claim.
- C. Failure of CONTRACTOR to comply with this paragraph 5.08 may result in the amount of such damage claims being withheld from CONTRACTOR's monthly pay estimate. Such withholding shall be reimbursed in the monthly pay estimate following compliance with this paragraph.

5.09 Cost of Insurance

- A. The unit cost of the insurance herein specified will not be a specific bid item, but the cost of such insurance will be included by the CONTRACTOR in the various prices bid.

5.10 Waiver of Rights

- A. OWNER and CONTRACTOR intend that all policies purchased in accordance with paragraph 5.03 will protect OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants (and all other persons or entities identified in the Supplementary General Conditions to be listed as insureds or additional insureds in such policies) and will provide primary coverage for all losses and damages caused by the perils covered thereby. Such policies 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 of the insureds or additional insureds thereunder.

- B. OWNER and CONTRACTOR waive all rights against each other and their respective officers, directors, employees and agents for all losses and damages caused by, arising out of or resulting from any of the perils covered by such policies and any other property insurance applicable to the Work; and in addition, waive all such rights against Subcontractors, ENGINEER, ENGINEER's Consultants and any other persons or entities identified in the Supplementary General Conditions to be listed as insureds or additional insureds under such policies for loss 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 as trustee or otherwise payable under any policy so issued.

5.11 Receipt and Application of Insurance Proceeds

- A. Any insured loss under the policies of insurance required by paragraph 5.03.A.5 will be adjusted with OWNER and made payable to OWNER as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause. If no other special agreement is reached the damaged Work shall be repaired or replaced, the monies so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order, Field Order or Work Change Directive.
- B. OWNER as fiduciary shall have power to adjust and settle any loss under the policies required by paragraph 5.03.A.5 with the insurers unless one of the parties in interest shall object in writing within fifteen days after the occurrence of loss to OWNER's exercise of this power. If such objection be made, OWNER as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, OWNER as fiduciary shall adjust and settle the loss with the insurers.

Article 6 Contractor's Responsibilities

6.01 Supervision and Superintendence

- A. CONTRACTOR shall supervise 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. CONTRACTOR shall be responsible to see that the finished Work complies with the Contract Documents. However, if specific means, methods, techniques, sequences and procedures of construction are prescribed in the Plans or Specifications, CONTRACTOR shall be responsible to comply therewith, but may implement such prescribed Work in a manner of CONTRACTOR's choosing so long as the Work complies with the requirements of the Plans and Specifications.
- B. At all times during the progress of the Work, CONTRACTOR shall assign and maintain a competent superintendent who shall not be replaced without written notice to OWNER and ENGINEER except under extraordinary circumstances. Any superintendent or foreman who neglects to have Work done in accordance with the Plans and Specifications shall be removed from the Project. The superintendent will be CONTRACTOR's representative at the Site and shall have authority to act on behalf of CONTRACTOR. All communications given to the superintendent shall be as binding as if given to CONTRACTOR.

6.02 Labor and Working Hours

- A. CONTRACTOR shall provide competent, suitably qualified personnel in their various duties. CONTRACTOR shall at all times maintain good discipline and order at the Site. Except as otherwise required for the safety or protection of persons, the Work, property at the Site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all Work at the Site shall be performed during regular working hours (7:00 a.m. to 7:00 p.m.), and CONTRACTOR will not permit the performance of Work on Sunday or any legal holiday without OWNER's written consent given after prior written notice to ENGINEER.

6.03 Services, Materials and Equipment

- A. Unless otherwise specified in the Contract Documents, CONTRACTOR shall furnish 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 furnishing, performance, testing, start up and completion of the Work.
- B. All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Contract Documents 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 kind and quality of materials and equipment to be incorporated in the Work. The CONTRACTOR shall not use material in the Work until Shop Drawing or Submittals have been reviewed by the ENGINEER. All materials which do not meet the requirements of the Specifications at the time they are to be used will be rejected, and unless otherwise permitted by ENGINEER, shall be plainly marked and removed immediately from the Work.
- C. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable manufacturer, fabricator, Supplier or distributor, except as otherwise provided in the Contract Documents.

6.04 Substitutes and "Or-Equals"

Whenever an item of materials or equipment is specified or described in the Contract Documents for installation in the Work by using the name of a proprietary item or the name of a particular manufacturer, fabricator, supplier or distributor; or means, methods, techniques, sequences and procedures of construction are prescribed in the Plans or Specifications; the specification or description is intended to establish the type, function and quality required or the means, methods, techniques, sequences and procedures of construction required. Unless the specification or description contains or is followed by words indicating that no like, equivalent or "or-equal" item or no substitution is permitted, other items of material or equipment or materials or equipment of other manufacturers, fabricators, suppliers or distributors; or other means, methods, techniques, sequences and procedures of construction may be accepted by ENGINEER under the following circumstances:

1. “Or-Equal”: If in ENGINEER’s sole discretion an item of material or equipment proposed by CONTRACTOR is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by ENGINEER as an “or-equal” item, in which case review and approval of the proposed item may, in ENGINEER’s sole discretion, be accomplished without compliance with some or all of the requirements for acceptance of proposed substitute items.
 2. Substitute Items: If in ENGINEER’s sole discretion an item of material or equipment proposed by CONTRACTOR does not qualify as an “or-equal” item under paragraph 6.04.A; or a proposed means, methods, techniques, sequences and procedures of construction are different from what is prescribed in the Plans or Specifications, it will be considered a proposed substitute item.
- B. CONTRACTOR shall submit sufficient information as provided below to allow ENGINEER to determine that the item of material or equipment or means, methods, techniques, sequences and/or procedures proposed is essentially equivalent to that named and an acceptable substitute therefor. The procedure for review by the ENGINEER will include the following, as supplemented in the Specifications, and as ENGINEER may decide is appropriate under the circumstances. Requests for review of substitute items of material and equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR.
- C. If CONTRACTOR wishes to furnish or use a substitute, CONTRACTOR shall make written application to ENGINEER on the Substitution Request Form provided for acceptance thereof, certifying that the proposed substitute will:
1. perform adequately the functions and achieve the results called for by the general design,
 2. be similar in substance to that specified,
 3. and be suited to the same use and capable of performing the same function as that specified.

The application will state the extent, if any, to which the evaluation and acceptance of the proposed substitute will prejudice CONTRACTOR’s achievement of Substantial Completion on time, whether or not acceptance of the proposed substitute for use in the Work will require a change in the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) to adapt the design to the proposed substitute, and whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fee or royalty.

- D. All variations of the proposed substitute from that specified shall be identified in the application and available maintenance, repair and replacement service shall be indicated. The application shall also contain an itemized estimate of all costs or credits that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which shall be considered by ENGINEER in evaluating the proposed substitute. ENGINEER may require CONTRACTOR to furnish additional data about the proposed substitute.

- E. All data to be provided by CONTRACTOR in support of any proposed “or-equal” or substitute item will be at CONTRACTOR’s expense. ENGINEER will be the sole judge of acceptability, and ENGINEER’s determination shall be final and binding, may not be reversed through an appeal under any provisions of the Contract Documents, and no “or-equal” or substitute shall be ordered, installed or utilized without ENGINEER’s prior written acceptance. OWNER may require CONTRACTOR to furnish at CONTRACTOR’s expense a special performance guarantee or other surety with respect to any “or-equal” or substitute which has been approved by ENGINEER.
- F. ENGINEER will record time required by ENGINEER and ENGINEER’s consultants in evaluating substitutions proposed by CONTRACTOR and in making changes in the Contract Documents occasioned thereby. Whether or not ENGINEER accepts a proposed substitute, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER’s consultants for evaluating any proposed substitute and in making any changes in the Contract Documents resulting therefrom.

6.05 Concerning Subcontractors

- A. CONTRACTOR shall not employ any Subcontractor, Supplier or other person or organizations, including those who are to furnish the principal items of materials or equipment, whether initially or as a substitute, against whom OWNER or ENGINEER may have reasonable objection. CONTRACTOR shall furnish ENGINEER a complete list of any Subcontractor, Supplier or other person or organization furnishing principal items of material or equipment within 4 days of request. Failure to object to any Subcontractor, Supplier, other person or organization by OWNER or ENGINEER shall not constitute a waiver of any right of OWNER or ENGINEER to reject defective Work.
- B. If OWNER or ENGINEER, after due investigation, has reasonable objection to any Subcontractor, Supplier, other person or organization proposed by CONTRACTOR after the Notice of Award, CONTRACTOR shall submit an acceptable substitute and the Contract Price shall be increased or decreased by the difference in cost occasioned by such substitution, and an appropriate Change Order shall be issued. CONTRACTOR shall not be required to employ any Subcontractor, Supplier, other person or organization against whom CONTRACTOR has reasonable objection.
- C. The CONTRACTOR shall not award Work to Subcontractor(s), in excess of 50% of the Contract Price, without prior written approval of the OWNER.

CONTRACTOR shall be fully responsible for all acts and omissions of his Subcontractors, Suppliers and of persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR just as CONTRACTOR is responsible for CONTRACTOR’s own acts and omissions. Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, Supplier or other person or organization any contractual relationship between OWNER or ENGINEER and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any moneys due any Subcontractor, Supplier or other person or organization. OWNER or ENGINEER may furnish to any Subcontractor, Supplier or other person or organization, to the extent practicable, evidence of amounts paid to CONTRACTOR on account of specific Work done.

- D. CONTRACTOR shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR. CONTRACTOR shall require all Subcontractors, Suppliers and such other persons and organizations performing or furnishing any of the Work to communicate with ENGINEER through CONTRACTOR.
- E. If the amount of the subcontract or the nature of the Work to be performed thereunder warrants, OWNER may require Subcontractor to furnish, for the benefit of OWNER and CONTRACTOR jointly, Bonds in an amount proportioned to the amount of his subcontract, and for the same purpose and under the same specifications as those of the general Contract. The Surety on the general Contract shall not be eligible to furnish such Subcontract Bonds.
- F. All Work performed for CONTRACTOR by a Subcontractor or Supplier will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and ENGINEER. Whenever any such agreement is with a Subcontractor or Supplier who is listed as and additional insured on the property insurance provided in paragraph 5.03.A.5, the agreement between the CONTRACTOR and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against OWNER, CONTRACTOR, ENGINEER, ENGINEER's Consultants and all other additional insureds for all losses and damages caused by, arising out of or resulting from any of the perils covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, CONTRACTOR will obtain the same. CONTRACTOR shall file a true copy of such agreement with OWNER.

6.06 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 Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall defend, indemnify and hold harmless OWNER and ENGINEER and anyone directly or indirectly employed by either of them from and against all claims, costs, losses, damages and expenses arising out of or resulting from 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, and shall defend all such claims in connection with any alleged infringement of such rights.

6.07 Permits and Licenses

- A. 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, permit, review, and inspection fees necessary for the prosecution of the Work, which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility owners for connections to the Work.

6.08 Laws and Regulations

- A. CONTRACTOR shall give all notices and comply with all laws, ordinances, rules, and regulations applicable to furnishing and performance of the Work. Neither OWNER nor ENGINEER shall be responsible for monitoring CONTRACTOR's compliance with any Laws, ordinances, rules, and Regulations.
- B. If CONTRACTOR performs any Work that is contrary to such laws, ordinances, rules and regulations, CONTRACTOR shall bear all claims, costs, losses, damages and expenses caused by, arising out of, or resulting therefrom. However, it shall not be CONTRACTOR's primary responsibility to make certain that the Specifications and Plans are in accordance with such laws, ordinances, rules, 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.

6.09 Taxes

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

6.10 Use of Premises

- A. CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of workers to the Project Site and land and areas identified in and permitted by the Contract Documents and other land and areas permitted by Laws and Regulations, rights of way, permits and easements, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area or to the owner or occupant thereof or of any adjacent land or areas resulting from the performance of the Work. Should any claim be made by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly settle with any such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law. CONTRACTOR's continuing obligations under paragraph 6.24 shall be applicable to any claim hereunder.

6.11 Removal of Debris and Cleaning

- A. During the progress of the Work, CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the Work CONTRACTOR shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery, and surplus materials, and shall leave the Site clean and ready for occupancy by OWNER at Substantial Completion of the Work. CONTRACTOR shall restore to their original condition all property not designated for alteration by the Contract Documents. If CONTRACTOR shall fail to keep the above noted areas cleaned of dust or debris resulting from CONTRACTOR's operations, CONTRACTOR shall be so notified in writing by ENGINEER. If within 24 hours after receipt of such notice CONTRACTOR shall fail to clean such areas satisfactorily, OWNER may have such other agency as he shall designate, perform the work and all costs of such cleaning shall be paid for by CONTRACTOR.

6.12 Loading Structures

- A. 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 property to stresses or pressures that will endanger it.

6.13 Protection of Utilities

- A. When it is possible for construction operations to endanger any public or private utility, conduit, or structure, CONTRACTOR shall notify the utility owner of this possibility, and safeguard and support such utilities, conduits, or structures. Where it is the policy of any utility owner to make its own repairs to damaged conduit or other structures, CONTRACTOR shall cooperate to the fullest extent with the utility, and he shall see that his operations interfere as little as possible with these operations, and CONTRACTOR shall assume the cost of any charge against OWNER therefor. In cases where existing Utilities or Utility service connections are encountered, CONTRACTOR shall perform his operations in such a manner that service will be uninterrupted, and the cost thereof shall be at CONTRACTOR's expense, unless otherwise provided.

6.14 Record Documents

- A. CONTRACTOR shall maintain in a safe place at the Site 1 record copy of all Specifications, Plans, Addenda, Change Orders, Work Change Directives, and Field Orders, in good order and annotated to show all changes made during construction. These record documents together with all Samples and all Shop Drawings shall be available to ENGINEER for examination and shall be delivered to ENGINEER for OWNER upon completion of the Work.

6.15 Safety and Protection

- A. CONTRACTOR shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. 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 Work Site or who may be affected by the Work,
 2. all the Work and materials or 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, and Utilities and not designated for removal, relocation or replacement in the course of construction.
- B. CONTRACTOR shall comply with all applicable Laws and Regulations and orders of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property, Utilities, and utility owners when prosecution of the Work may affect them.
- C. CONTRACTOR shall restore, at his own expense, any public or private property damaged or injured in consequence of any act or omission on his part, or on the part of his employees or agents, to a condition equal or better than that existing before such injury or damage was done. If CONTRACTOR neglects to restore or make good such damages or injury, OWNER may, upon 48 hours' notice, proceed to restore or make good such damage or injury and to order the cost thereof deducted from any monies that are due, or may become due, to CONTRACTOR for this Work.
- D. CONTRACTOR's duties and responsibilities for the safety and protection of the Work 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 14.11 that the Work is Acceptable.
- E. CONTRACTOR shall comply with the applicable requirements of OWNER's safety programs, if any. Any OWNER's safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.
- F. 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.
- G. CONTRACTOR's duties and responsibilities for safety and protection will continue until all the Work is completed, ENGINEER has issued a written notice to OWNER and CONTRACTOR in accordance with paragraph 14.11 that the Work is acceptable, and CONTRACTOR has left the Site (except as otherwise expressly provided in connection with Substantial Completion).
- H. CONTRACTOR's duties and responsibilities for safety and protection will resume whenever CONTRACTOR or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

6.16 Safety Representative

- A. CONTRACTOR shall be responsible to designate for itself and its employees, and its Subcontractors 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.

6.17 Hazard Communication Program

- A. CONTRACTOR shall be responsible for coordinating any exchange of 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 applicable Laws or Regulations.

6.18 Emergencies

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, CONTRACTOR, without special instruction or authorization from OWNER or ENGINEER, 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. 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 to document the consequences of such action.

6.19 Shop Drawings and Samples

- A. CONTRACTOR shall submit Shop Drawings required by the Contract Documents to ENGINEER for review, in accordance with an accepted schedule. All Submittals will be identified as ENGINEER may require and in the number of copies specified in the Specifications. The 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 materials and equipment CONTRACTOR proposes to provide and to enable ENGINEER to review the information for the limited purposes required by paragraph 6.21.
- B. CONTRACTOR shall also submit all samples required by the Contract Documents to ENGINEER for review in accordance with an accepted schedule. Each Sample will be identified clearly 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 6.21. The number of each sample to be submitted will be as specified in the Specifications.

6.20 Submittal Procedures

- A. Before submitting each Shop Drawing or Sample, CONTRACTOR shall have determined and verified:
 - 1. all field measurements, quantities, dimension, specified performance criteria, installation requirements, manufacturer's recommendations, material, catalog numbers and similar information with respect thereto,
 - 2. all materials with respect to intended use, fabrication, shipping, handling, storage, assembly and installation pertaining to the performance of the Work, and
 - 3. all information relative to CONTRACTOR's responsibilities in respect of means, methods, techniques, sequences and procedures of construction and safety precautions and programs incident thereto.
- B. CONTRACTOR shall have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.
- C. Each Submittal will bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR's obligations under the Contract Documents with respect to review and approval of that Submittal.

- D. At the time of each submission, CONTRACTOR shall in writing call ENGINEER's attention to any deviations that the Shop Drawings or Samples may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawing's or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to ENGINEER for review of each such variation.
- E. 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. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous Submittals.
- F. 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 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.
- G. 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.

6.21 Engineer's Review

- A. ENGINEER will review Shop Drawings and Samples in accordance with the Schedule of Submittals accepted by ENGINEER as required by paragraph 2.05. ENGINEER's review shall be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, sequences, techniques or procedures of construction or to safety precautions or programs incident thereto. The review of a separate item as such will not indicate review of the assembly in which the item functions.
- B. ENGINEER's review of Shop Drawings or samples shall not relieve CONTRACTOR from responsibility for any variations from the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to such variation at the time of submission and ENGINEER has given written concurrence to the specific variation, nor shall any concurrence by ENGINEER relieve CONTRACTOR from responsibility for errors or omissions in the Shop Drawings. ENGINEER's review shall not relieve CONTRACTOR from responsibility for complying with the requirements of paragraph 6.20.
- C. Where a Shop Drawing or sample is required by the Contract Documents or the Schedule of Submittals accepted by ENGINEER per paragraph 2.05, no related Work shall be commenced until the Submittal has been reviewed by the ENGINEER.

6.22 Continuing the Work

- A. 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, except as CONTRACTOR and OWNER may otherwise agree in writing.

6.23 Contractor's General Warranty and Guarantee

- A. CONTRACTOR warrants and guarantees to OWNER, ENGINEER, and ENGINEER's Consultants that all work will be in accordance with the Contract Documents and will not be defective. CONTRACTOR's warranty and guarantee excludes defects or damage caused by:
1. abuse, modification, or improper maintenance or operation by persons other than CONTRACTOR, Subcontractors, Suppliers, or their employees, agents, or representatives, or any person or entity for whom CONTRACTOR is responsible; or
 2. normal wear and tear under normal usage.
- B. 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 of any progress or final payment by ENGINEER;
 3. the issuance of a certificate of Substantial Completion or any payment by OWNER to CONTRACTOR under the Contract Documents;
 4. use or occupancy of any part of the Work by OWNER;
 5. any acceptance by OWNER or failure to do so;
 6. any review or approval of a Shop Drawing or Sample Submittal or the issuance of a notice of acceptability by ENGINEER per paragraph 14.11;
 7. any inspection, test or approval by others; or
 8. any correction of defective Work by OWNER.
- C. If 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.
- D. CONTRACTOR shall assign to OWNER all warranties extended to CONTRACTOR by material Suppliers and Subcontractors. If an assignment of warranty requires the material Supplier or Subcontractor to consent to same, then CONTRACTOR shall secure the material Supplier's or Subcontractor's consent to assign said warranties to OWNER.
- E. The warranties provided in this section shall be in addition to, and not in limitation of, any other warranty or remedy required by law.

6.24 Indemnification

- A. To the fullest extent permitted by law, CONTRACTOR shall indemnify, defend (with counsel acceptable to OWNER) and hold harmless OWNER, ENGINEER and any additional indemnitees identified in the Supplementary Conditions and their respective directors, officers, members, partners, affiliates, employees, agents and successors, from and against any and all liabilities, claims, causes of action, lawsuits, liens, injuries, damages, losses and expenses (collectively "Demands") to the extent caused by, arising out of, resulting from or occurring in connection with:

1. CONTRACTOR's breach of, or failure to comply with, the Agreement, the Contract Documents, or any other contract that it enters into regarding the Work, including any default in performance; or
 2. Personal injury or death to any person (including, but not limited to, CONTRACTOR, CONTRACTOR's employees, Subcontractors, Subcontractors' employees, and material Suppliers) or injury to or destruction of property (including claims for loss of use) caused by, arising out of, resulting from, or in any way connected with
 - a. the Work,
 - b. any activity associated with the Work, or
 - c. the operations or acts of commission or omission of CONTRACTOR, CONTRACTOR's employees, Subcontractors, Subcontractors' employees, material suppliers, or anyone for whom CONTRACTOR is legally liable in the performance of Work, whether arising before or after completion of the Work.
- B. To the extent caused by, arising out of, resulting from, or occurring in connection with the provisions of the above paragraph 6.24.A, CONTRACTOR's indemnity obligations under this Agreement shall include, but are not limited to:
1. Indemnity for all damages and judgment interest, all costs and fees, including, but not limited to, all defense costs, expenses and actual attorneys' fees, and all settlement payments relating to, arising out of, resulting from or in any way connected with any demand requiring indemnity by this Agreement;
 2. All expenses, including but not limited to, costs, expenses and actual attorneys' fees, incurred in securing and enforcing indemnity from CONTRACTOR if CONTRACTOR fails or refuses promptly to fulfill any of the indemnity obligations under this Agreement;
 3. All indemnification obligations imposed upon OWNER or ENGINEER, or both, arising out of or in connection with the Work; and
 4. Indemnification for any penalties and/or fines arising or resulting from CONTRACTOR's or any SUBCONTRACTOR's failure to comply with laws and/or regulations applicable to its/their Work.
- C. Contractor's duty to indemnify under Subpart A.2. of Article 6.24 is limited to the negligence of Contractor, Contractor's employees, Subcontractors, Subcontractor's employees, material Suppliers, or anyone for whom Contractor is legally liable in the performance of the Work, whether arising before or after the completion of the Work.
- D. The indemnification rights under this Agreement shall not be construed to negate, abridge, or otherwise reduce any other right or obligations of indemnity which would otherwise exist.
- E. OWNER, at its option, may select counsel to defend any demand brought against it without impairing any obligation of the CONTRACTOR to provide indemnification.
- F. The indemnification provisions under this Agreement shall survive the completion or termination of this Agreement.

- G. In the case of claims by any employee of CONTRACTOR, anyone directly or indirectly employed by CONTRACTOR, or anyone for whose acts CONTRACTOR may be liable, the indemnification obligations under this Agreement 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 under workers' compensation acts. Such obligations shall not be construed to negate, abridge or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Agreement.
- H. Indemnification, additional insured and hold harmless obligations of CONTRACTOR and Subcontractor under the Contract Documents shall survive the termination of this Agreement.
- I. CONTRACTOR and Subcontractors will compel their insurance company to waive subrogation against OWNER, all ENGINEERS and all CONTRACTORS and Subcontractors identified as additional insureds in the Contract Documents, including any municipal entity now existing or newly created during the term of the Contract Documents.

6.25 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 or 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, equipment, structures, means, methods, techniques or sequences of construction 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 professional properly licensed in the state in which the project is located, 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.
- D. Pursuant to this paragraph 6.25, ENGINEER's review or 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 or approval of Shop Drawings and other Submittals (except design calculations and design drawings) will be only for the purpose stated in paragraph 6.21.
- E. CONTRACTOR shall not be responsible for the adequacy of the performance or design criteria specified by OWNER or ENGINEER.

Article 7 Work by Others

7.01 Related Work at Site

- 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 any part of CONTRACTOR's Work depends on proper execution or results upon the work of any such other contractor or utility owner, CONTRACTOR shall inspect and promptly report to ENGINEER in writing any delays, defects or deficiencies in such other work that render it unavailable, or unsuitable for such proper execution and results of CONTRACTOR's Work. CONTRACTOR's failure to so report shall constitute an acceptance of the other work as fit and proper for integration with CONTRACTOR's Work except for latent or non-apparent defects and deficiencies in the other work.
- C. CONTRACTOR shall afford each contractor who is party to such a direct contract, and each utility owner, (and OWNER, if OWNER is performing the additional work with OWNER's employees), proper and safe access to the Site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work and shall properly connect and coordinate the Work with theirs. Unless otherwise provided in the Contract Documents, CONTRACTOR shall do all cutting, fitting and patching of CONTRACTOR's Work that may be required to make its several parts come together properly and integrate with such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter their work with the written consent of ENGINEER and the others whose work will be affected.
- D. If the performance of additional work by other contractors, utility owner, or OWNER was not noted in the Contract Documents, written notice thereof shall be given to CONTRACTOR prior to starting any such additional work. If CONTRACTOR believes that the performance of such additional work by OWNER or others involves additional expense to CONTRACTOR, or requires an extension of the Contract Time, CONTRACTOR may make a Claim therefor as provided in paragraph 11.01. Claims for delay or inconveniences due to operations of such other parties for work noted in the Contract Documents will not be allowed.

Article 8 Owner's Responsibilities

8.01 Communication to Contractor

- A. Except as otherwise provided in these General Conditions, OWNER shall issue all communications to CONTRACTOR through ENGINEER.

8.02 Replacement of Engineer

- A. In case of termination of the employment of ENGINEER, OWNER shall appoint an engineer against whom CONTRACTOR makes no reasonable objection, whose status under the Contract Documents shall be that of the former ENGINEER.

8.03 Furnishing Data

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

8.04 Pay When Due

- A. OWNER shall make payments to CONTRACTOR promptly after they are due as provided in paragraphs 14.05 and 14.11.

8.05 Lands and Easements; Reports and Tests

- A. OWNER's duties in respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.01 and 4.05. Paragraph 4.02 refers to OWNER's identifying and making available to CONTRACTOR copies of reports of investigations and tests of subsurface and latent physical conditions at the Site.

8.06 Change Orders

- A. In connection with OWNER's rights to request changes in the Work in accordance with Article 10, OWNER (especially in certain instances as provided in paragraph 10.01) is obligated to execute Change Orders.

8.07 Inspections, Tests, and Approvals

- A. OWNER'S responsibility in respect to certain inspections, tests and approvals is set forth in paragraph 13.02.

8.08 Limitation on Owner's Responsibility

- A. 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 furnishing or performance of the Work. OWNER will not be responsible for CONTRACTOR's failure to perform or furnish the Work in accordance with the Contract Documents.

8.09 Undisclosed Hazardous Materials

- A. OWNER's responsibility in respect of undisclosed Constituents of Concern uncovered or revealed at the Site is set forth in paragraph 4.06.

8.10 Owner'S Designated Representative

- A. OWNER shall designate a person to act as its representatives during the performance of the Work. OWNER's designated representative will attend meetings and perform on behalf of OWNER all obligations required of OWNER under the provisions of the Contract Documents.

Article 9 Engineer's Status During Construction

9.01 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 shall be as set forth in the Contract Documents.

9.02 Visits to Site

- A. ENGINEER may make visits to the Site at intervals appropriate to the various stages of construction to observe the progress and quality of the executed Work, and to determine solely for the benefit of OWNER, in general, if the Work is proceeding in accordance with the technical requirements of the Contract Documents. It will not be the responsibility of ENGINEER to make exhaustive or continuous on Site inspections to check the quality or quantity of the Work.

9.03 Resident Project Representative

- A. If OWNER and ENGINEER agree, ENGINEER will furnish a Resident Project Representative to assist ENGINEER in providing more continuous observation of the Work. A Resident Project Representative will act as directed by and under the supervision of ENGINEER and will confer with ENGINEER regarding his actions. Resident Project Representative's dealings in matters pertaining to the on Site Work shall in general be only with ENGINEER and CONTRACTOR, and dealings with Subcontractors shall only be through or with the full knowledge of CONTRACTOR. The Resident Project Representative's duties and responsibilities include:
1. Schedules
 - a. Review the Progress Schedule, Schedule of Submittals and Schedule of Values prepared by CONTRACTOR.
 2. Conferences
 - a. Arrange a schedule of progress meetings and other job conferences as required in consultation with ENGINEER and OWNER, and notify those expected to attend in advance.
 3. Liaison
 - a. Serve as ENGINEER's liaison with CONTRACTOR, working principally through CONTRACTOR's superintendent and assist him in understanding the intent of the technical aspects of the Contract Documents. Assist ENGINEER in serving as OWNER's liaison with CONTRACTOR when CONTRACTOR's operations affect OWNER's on Site operations.
 4. Shop Drawings and Samples
 - a. Advise ENGINEER and CONTRACTOR, or CONTRACTOR's superintendent, immediately of the commencement of any Work requiring a Shop Drawing or Sample submission if the submission was identified on the schedule and has not been reviewed by ENGINEER.
 5. Review of Work, Rejection of Defective Work, Inspections, and Tests:
 - a. Conduct on Site observations of the Work and report to ENGINEER whenever Resident Project Representative believes that technical aspects of any executed Work is unsatisfactory, faulty or defective or does not meet the requirements of any inspections, tests or approval required to be made or has been damaged prior to final payment; and advise ENGINEER when Resident Project Representative believes that any partially completed portion of the Work should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.
 - b. Observe, record and report to ENGINEER appropriate details relative to test procedures and startups.
 - c. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Project, record the outcome of these inspections and report to ENGINEER.

6. Modifications
 - a. Consider CONTRACTOR's suggestions for modifications in Plans or Specifications and report them to ENGINEER.
7. Reports
 - a. Prepare periodic reports as required of progress of the Work and CONTRACTOR's compliance with the approved Progress Schedule and Schedule of Submittals.
8. Completion
 - a. Verify that all items on final list of items requiring completion or correction have been completed or corrected and make recommendations to ENGINEER concerning acceptance.
9. Exceptions
 - a. Resident Project Representative:
 - (1) Shall not authorize any deviation from the Contract Documents or approve any substitute materials or equipment.
 - (2) Shall not approve or accept any portion of the completed Work.
 - (3) Shall not undertake any of the responsibilities of CONTRACTOR, Subcontractors or CONTRACTOR's superintendent, or expedite the Work.
 - (4) Shall not advise on or issue directions relative to any aspect of the means, methods, techniques, sequences or procedures of construction unless such is specifically called for in the Contract Documents.
 - (5) Shall not advise on or issue directions as to safety precautions and programs in connection with the Work.
 - (6) Shall not advise on or issue directions regarding CONTRACTOR's failure to comply with Laws and Regulations applicable to the furnishing or performance of the Work.

9.04 Clarifications and Interpretations

- A. ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the Contract Documents as ENGINEER may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents.

9.05 Authorized Variations in Work - Field Order

- A. ENGINEER may authorize minor adjustments in the Work to avoid obstructions or interferences which do not involve an adjustment in the Contract Price or the Contract Time, and which are consistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order and shall be binding on OWNER, and also on CONTRACTOR who shall perform the change promptly. If OWNER or CONTRACTOR believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a request for a Change Proposal may be made therefore as provided in paragraph 10.06 or a Claim may be submitted as set forth in paragraph 11.01.

9.06 Rejecting Defective Work

- A. ENGINEER will have authority to disapprove or reject completed portions of the Work which ENGINEER believes to be defective and will also have authority to require special inspection or testing of the Work as provided in paragraph 13.04, whether or not the Work is fabricated, installed or completed.

9.07 Shop Drawings, Change Orders, and Payments

- A. ENGINEER's responsibility for Shop Drawings and samples are set forth in paragraphs 6.19 through 6.21 inclusive.
- B. ENGINEER's responsibilities as to Change Orders are set forth in Articles 10, 11, and 12.
- C. ENGINEER's responsibilities in respect of Applications for Payment are set forth in Article 14.

9.08 Determinations for Unit Price Work

- A. ENGINEER will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. ENGINEER will review with CONTRACTOR 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 paragraph 10.06.

9.09 Decisions on Disagreements, Claims

- A. ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work performed thereunder. Claims, disputes and other matters relating to the acceptability of the Work, or the interpretation of the requirements of the Contract Documents pertaining to the execution and progress of the Work, shall be referred initially to ENGINEER in writing with a request for a formal decision in accordance with this paragraph 9.09.
- B. ENGINEER will, with reasonable promptness, render a written decision on the issue referred. If OWNER or CONTRACTOR believe that any such decision entitles them to an adjustment in the Contract Price, or Contract Times, or both, a Claim may be made under paragraph 11.01.
- C. ENGINEER's written decision on the issue referred will be final and binding on OWNER and CONTRACTOR, subject to the provisions of paragraph 11.01.
- D. In this capacity ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.10 Limitations on Engineer's Responsibilities

- A. Neither ENGINEER's authority to act under this Article 9 or elsewhere in the Contract Documents, nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority, shall give rise to any duty or responsibility of ENGINEER to OWNER or CONTRACTOR, any Subcontractor, any manufacturer, fabricator, Supplier, distributor, surety, or any other person, 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 furnishing or performance of the Work. ENGINEER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents. These limitations on authority and responsibility shall also apply to ENGINEER's Consultant's, Resident Project Representative and assistants.
- C. ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, Supplier, or of any other individual or entity performing any of the Work.
- D. ENGINEER will not be responsible to CONTRACTOR or any Subcontractor, or Supplier, or to their agents or employees for injuries, damages, claims, losses, or expenses (including attorney's fees) of whatsoever kind resulting from or caused by any act or omission of ENGINEER in preparation for, arising from, relating to, or concerning the Project. Such acts or omissions include, but are not limited to, ENGINEER's negligence, tortuous conduct, errors, omissions, strict liability, breach of contract, or breach of warranty. ENGINEER makes no representations to CONTRACTOR, Subcontractors, Suppliers or their agents or employees regarding or respecting any work performed by ENGINEER in preparation for, arising from, relating to, or concerning the Project.
- E. Neither CONTRACTOR, its agents or employees, nor any Subcontractors or Suppliers or their agents or employees, are intended beneficiaries of ENGINEER's agreement with OWNER, nor are such parties intended beneficiaries of ENGINEER's duties or responsibilities arising therefrom. ENGINEER disclaims all duties to CONTRACTOR, Subcontractors, Suppliers or their agents or employees arising from, relating to, or concerning ENGINEER's involvement in the Project. OWNER and CONTRACTOR further agree to notify all CONTRACTOR's, Subcontractors or Suppliers of this disclaimer of ENGINEER's liability and require them to abide by this disclaimer.

Article 10 Amending the Contract Documents; Changes in the Work

10.01 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 ENGINEER. Such an amendment shall be set forth in a Change Order.
 2. Work Change Directives.
 - a. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including paragraph 10.04 regarding change of Contract Price.
 - b. 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 issuance of the Work Change Directive.
 - c. 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.
 - a. ENGINEER may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on OWNER and CONTRACTOR, which shall perform the Work involved promptly.
 - b. If CONTRACTOR believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, CONTRACTOR shall submit a Change Proposal as provided herein.

10.02 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.
- B. 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 10.02 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.

10.03 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 6.18 or in the case of uncovering Work as provided in paragraph 13.03.

10.04 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 10.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of paragraph 11.01.
- 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 12.03); 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 10.04.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 12.01) plus a CONTRACTOR's fee for overhead and profit (determined as provided in paragraph 10.04.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 paragraph 12.01.B.1 and 12.01.B.2, the CONTRACTOR's fee shall be 15 percent;
 - b. for costs incurred under paragraph 12.01.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 10.04.C.2.a and 10.04.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 12.01.B.1 and 12.01.B.2 by the Subcontractor that actually performs the Work, at whatever tier, and

- (2) with respect to CONTRACTOR itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of 5 percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor;

provided, however, that for any such subcontracted work the maximum total fee to be paid by OWNER 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 12.01.B.4, 12.01.B.5, and 12.01.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 5 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 10.04.C.2.a through 10.04.C.2.e, inclusive.

10.05 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 10.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of paragraph 11.01.
- B. An adjustment of the Contract Times shall be subject to the limitations set forth in paragraph 12.04, concerning delays in CONTRACTOR's progress.

10.06 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 seeking 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. Each Change Proposal will address only 1 issue, or a set of closely related issues.
 - 1. Procedures. CONTRACTOR shall submit each Change Proposal to ENGINEER promptly (but in no event later than 5 days) after the start of the event giving rise thereto, or after such initial decision. CONTRACTOR shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any) to 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 the ENGINEER's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under paragraph 11.01.
 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 paragraph 11.01.
- 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 paragraph 11.01.

10.07 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 10.02,
 - b. required because of OWNER's acceptance of defective Work under paragraph 13.08 or OWNER's correction of defective Work under paragraph 13.09, 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 10.06, or Article 16.
- B. If OWNER or CONTRACTOR refuses to execute a Change Order that is required to be executed under the terms of this paragraph 10.07, it shall be deemed to be of full force and effect, as if fully executed.

10.08 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 11 Claims

11.01 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 10 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 16 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 16 for 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 12 Cost of the Work; Allowances; Unit Price Work

12.01 Cost of 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 12.01 are used 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 12.01.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. Costs 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 12.01.
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. 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.
 - b. 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.
 - (1) The rental rate established for each piece of CONTRACTOR owned equipment, including appurtenances and attachments to the equipment, used will be determined by use of the Rental Rate Blue Book for Construction Equipment, Volume 1, 2 or 3, as applicable; the edition which is current at the time the Work was started will apply. The established rental rate will be equal to the "Monthly" rate divided by 176; modified by the rate adjustment factor and the applicable map adjustment factor, plus the "Estimated Operating Costs per Hour."

- (2) For equipment not listed in the Rental Rate Blue Book, Volume 1, 2 or 3, the rental rate will be determined by using the rate listed for a similar piece of equipment or by proportioning a rate listed so that the capacity, size, horsepower, and age are properly considered.
 - (3) For equipment for which there are no comparables in the Rental Rate Blue Book, Volume 1, 2 or 3, the monthly rate shall be reasonable, but not more than 5 percent of the current list price, or invoice, of the equipment. The base hourly rate shall then be determined by dividing the monthly rate by 176 to which 20 percent will be added to the sum which will account for adjustments and operating costs.
- c. Sales, consumer, use, and other similar taxes related to the Work, and for which CONTRACTOR is liable, as imposed by laws and regulations.
 - d. 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.
 - e. 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 5.03), 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
 - f. The cost of utilities, fuel, and sanitary facilities at the Site.
 - g. 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 12.01.B.1 or specifically covered by paragraph 12.01.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 12.01.B.
- D. CONTRACTOR's Fee: 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 10.04.C.
- E. Documentation: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 12, CONTRACTOR will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to ENGINEER on a daily basis, an itemized cost breakdown together with supporting data.

12.02 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 of 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.

12.03 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 Proposal.

- 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 12.03.E.
- E. Within 30 days of ENGINEER's written decision under the preceding paragraph 12.03.D, CONTRACTOR may submit a Change Proposal, or OWNER may file a Claim, seeking and 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 estimate quantity of such item indicated in the Proposal (in no event will any change in quantities of less than 25% be considered a material or significant change from the estimated quantities); and
 - 2. there is no corresponding adjustment with respect to any other item of Work.

12.04 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 request an equitable adjustment in the Contract Times and Contract Price. However, CONTRACTOR's entitlement to an adjustment of the Contract Times or Contract Price is expressly 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 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 only the following:

1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 2. acts or failures to act of utility owners (other than those performing other works at or adjacent to the Site by arrangement with the OWNER, as specified in paragraph 7.01); and
 3. acts of war or terrorism.
- D. CONTRACTOR's entitlement to an adjustment of Contract Times or Contract Price is limited as follows:
1. CONTRACTOR's entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.
 2. CONTRACTOR shall not be entitled to an adjustment in Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of CONTRACTOR. Such a concurrent delay by CONTRACTOR shall not preclude an adjustment of Contract Times to which CONTRACTOR is otherwise entitled.
 3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 10.
- E. Each CONTRACTOR request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:
1. The circumstances that form the basis for the requested adjustment;
 2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;
 3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;
 4. The number of days' increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and
 5. The impact on Contract Price, in accordance with the provisions of Paragraph 10.04.
- CONTRACTOR shall also furnish such additional supporting documentation as OWNER or ENGINEER may require including, where appropriate, a revised Progress Schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work
- F. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by paragraphs 4.03 and 4.06.
- G. Paragraph 7.01 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.

- H. CONTRACTOR shall not be entitled to any 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.
- I. CONTRACTOR must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 5 days of the commencement of the delaying, disrupting, or interfering event.
- J. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Time (or Milestones) due to delay beyond the control of both OWNER and CONTRACTOR, an extension of the Contract Times (or Milestones) in an amount equal to the time lost due to such delay shall be CONTRACTOR's sole and exclusive remedy for such delay. In no event shall OWNER or ENGINEER be liable to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization, or to any surety or employee or any agent of them, for 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 resulting from:
 - 1. delays caused by or within the control of CONTRACTOR (or Subcontractor or Supplier);
 - 2. delays beyond the control of both OWNER and CONTRACTOR, including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God, or acts of neglect by utility owners or other contractors performing other work;
- K. Nor shall OWNER or ENGINEER or each of them 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.
- L. Nothing in this paragraph 12.04 bars a change in Contract Price to compensate CONTRACTOR due to delay, interference, or disruption directly attributable to actions or inactions of OWNER or anyone for whom OWNER is responsible. Except for an adjustment to the Contract Times and Contract Price, the CONTRACTOR shall not be entitled to and hereby waives any and all damages that it may suffer by reason of such delay or for any Act of God, including but not limited lost profits, overhead, and other consequential damages.

Article 13 Tests and Inspection; Correction, Removal or Acceptance of Defective Work

13.01 Access to Work

- A. OWNER, ENGINEER and ENGINEER's representatives, other representatives of OWNER, testing agencies and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspection and testing. CONTRACTOR shall provide proper and safe conditions for such access and advise OWNER and ENGINEER of CONTRACTOR's Site safety procedures and programs so that OWNER and ENGINEER may comply therewith as applicable.

13.02 Tests and Inspections

- A. CONTRACTOR shall give ENGINEER and testing agency at least 24-hour notice, unless otherwise specified, of readiness of the Work for all required inspections, tests or approvals, and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

- B. If any Law and Regulation, code, or order of any public body having jurisdiction requires any Work or part thereof to specifically be inspected, tested or approved, CONTRACTOR shall assume full responsibility therefor, pay all costs in connection therewith and furnish ENGINEER the required certificates of inspection, testing or approval.
- C. CONTRACTOR shall also be responsible for and shall pay all costs in connection with any inspection or testing required in connection with OWNER's or ENGINEER's acceptance of a manufacturer, fabricator, Supplier or distributor of materials or equipment proposed to be incorporated in the Work, or of materials or equipment submitted for approval prior to CONTRACTOR's purchase thereof for incorporation in the Work.
- D. The cost of all other inspections, tests and approvals required by the Contract Documents shall be paid by OWNER unless otherwise specified.
- E. All inspections, tests or approvals other than those required by law, ordinance, rule, regulation, code or order of any public body having jurisdiction shall be performed by organizations acceptable to OWNER and CONTRACTOR or by ENGINEER if so specified.
- F. Cost of materials to be used in inspection and transportation costs shall be paid for by the CONTRACTOR.
- G. Neither observations by ENGINEER nor inspections, tests or approvals by others shall relieve CONTRACTOR from his obligations to perform the Work in accordance with the Contract Documents.

13.03 Uncovering Work

- A. If any Work that is to be tested, inspected or approved is covered without written concurrence of ENGINEER, or contrary to the written request of ENGINEER, it shall, if requested by ENGINEER, be uncovered by CONTRACTOR for ENGINEER's observation. Such uncovering shall be at CONTRACTOR's expense unless CONTRACTOR has given ENGINEER timely written notice of his intention to cover such Work and ENGINEER has not acted with reasonable promptness in response to such notice.
- B. If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, 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, furnishing all necessary labor, material, and equipment. Except as otherwise specified in paragraph 13.04, the cost of Work shall be paid for as follows:
 - 1. If it is found that such Work is defective, CONTRACTOR shall bear all the expenses of such uncovering, exposure, observation, inspection and testing, and of satisfactory reconstruction, (including, but not limited to, fees and charges of engineers, architects, attorneys, and other professionals) and an appropriate deductive Change Order shall be issued. If the parties are unable to agree as to the amount or extent of any change in Contract Price or Contract Time, OWNER may make a Claim as provided in paragraph 11.01.

2. If, however, such Work is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time or both, directly attributable to such uncovering, exposure, observation, inspection, testing, and reconstruction. If the parties are unable to agree as to the amount or extent of any change in Contract Price or Contract Time, CONTRACTOR may make a Claim as provided in paragraph 11.01.

13.04 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.

13.05 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 furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, 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, Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 Correction or Removal of Defective Work

- A. If required by ENGINEER or OWNER, CONTRACTOR shall promptly either correct all defective Work, whether or not fabricated, installed or completed, or if the Work has been rejected by ENGINEER, remove it from the Site and replace it with non-defective Work. CONTRACTOR shall pay all claims, costs, losses, damages and expenses caused by or resulting from such correction or removal (including, but not limited to all costs of repair or replacement of work of others) and shall take no action that would void or otherwise impair OWNER's special warranty or guarantee, if any, on such Work.

13.07 Guarantee Period

- A. If within 1 year after the date of Substantial Completion (or such longer period of time as may be prescribed by Laws or Regulations or 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, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER's written instructions:
 1. repair defective land or areas;
 2. correct such defective Work;
 3. if the defective Work has been rejected by OWNER, remove it from the Site and replace it with Work that is not defective, and
 4. satisfactorily correct or repair or remove and replace any damage to other Work or the work of others or other land or areas resulting therefrom.

- B. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or the rejected Work removed and replaced, and all claims, costs, losses, damages and expenses caused by or resulting from such removal and replacement (including but not limited to all costs of repair or replacement or work of others) shall be paid by CONTRACTOR.
- C. Repair or replacements made under the guarantee shall bear an additional 1 year guarantee dated from the acceptance of repair or replacement.

13.08 Acceptance of Defective Work

- A. If, instead of requiring correction or removal and replacement of defective Work, OWNER (and, prior to ENGINEER'S recommendation of final payment, also ENGINEER) prefers to accept it, OWNER may do so. CONTRACTOR shall pay all claims, costs, losses, damages and expenses attributable to OWNER's evaluation of and determination to accept such defective Work (such costs to be approved by ENGINEER as to reasonableness). In such case, if acceptance occurs prior to ENGINEER's recommendation of final payment, a Change Order shall be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate reduction in the Contract Price. If the acceptance occurs after such recommendation, an appropriate amount shall be paid by CONTRACTOR to OWNER.

13.09 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 in accordance with paragraph 13.06, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents (including any requirements of the Progress Schedule), OWNER may, after 48 hours' written notice to CONTRACTOR and his Surety without prejudice to any other remedy he may have, correct and remedy any such deficiency.
- B. In exercising his rights and remedies under this paragraph 13.09, OWNER shall proceed expeditiously. To the extent necessary to complete corrective and 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, take possession of CONTRACTOR's tools, appliances, construction equipment and machinery at the Site 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's consultants such access to the Site as may be necessary to enable OWNER to exercise his rights and remedies under this paragraph 13.09.
- C. All claims, costs, losses, damages and expenses incurred or sustained by OWNER in exercising such rights and remedies shall be charged against CONTRACTOR and a Change Order shall be issued incorporating the necessary revisions in the Contract Documents with respect to the Work. OWNER shall be entitled to an appropriate reduction in the Contract Price equivalent to such claims, costs, losses, damages and expenses including 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 Time because of any delay in performance of the Work attributable to the exercise by OWNER of OWNER's rights under this Article 13.

Article 14 Payments to Contractor and Completion

14.01 Schedules

- A. At least 10 days prior to submitting the first Application for Payment, CONTRACTOR shall submit to ENGINEER a final Schedule of Submittals, and, where applicable, a Schedule of Values for the Work. These schedules shall be satisfactory in form and substance to ENGINEER as provided in Article 2.
- B. The Schedule of Values shall include quantities and unit prices aggregating the Contract Price and shall subdivide the Work into component parts. Each unit cost so established shall include its proportionate share of CONTRACTOR's general operating charges such as profit, overhead, supervision, insurance, bond premiums, interest, equipment cost, depreciation and rental, contingencies, expendable tools, equipment and supplies. The total cost of the items and quantities CONTRACTOR lists in the Schedule of Values shall equal the total Contract Price established in the Proposal.
- C. The Schedule of Values shall include a complete set of detailed work sheets on bid take off and bid summary covering estimated general conditions expense (field overhead), general overhead, profit mark ups and revisions leading to the final bid amount.
- D. When the Schedule of Values is approved by the ENGINEER, it shall become part of the Agreement and shall be used as the basis for CONTRACTOR progress payments.
- E. Progress payments based upon Unit Price Work will be based upon the number of units completed.

14.02 Application for Progress Payment

- A. At least 20 days before each Application for Payment falls due (but not more often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment, Contractor's Declaration, Payment Schedule, and updated Progress Schedules indicating the anticipated completion dates of the various stages of the Work and estimated payments during the next 3 months. Contractor's Application for Payment shall be filled out on the form provided in the Contract Documents and signed by CONTRACTOR covering the Work completed as of the date of the Application for Payment and accompanied by such supporting documentation as is required by the Contract Documents and as ENGINEER or OWNER may reasonably require. The Payment Schedule shall be on the form provided in the Contract Documents or in a format acceptable to the ENGINEER or OWNER. On the second and all subsequent payments, partial Waivers of Lien and Sworn Statement shall be required for all Work completed and paid for on previous certificates.
- B. 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 such data, satisfactory to OWNER, as will establish OWNER's title to the material and equipment and protect OWNER's interest therein, including applicable insurance. A receipted vendor's invoice showing the quantities of materials and the amounts paid will be required and shall accompany the Application for Payment.

- C. Retainage with respect to progress payments will be in accordance with paragraph 14.03, and it will be retained until after completion of the entire Work and its final acceptance. When the amount to be retained is reduced to less than 10 percent, CONTRACTOR shall file with OWNER the written consent of the Surety to such reduction and shall furnish an affidavit that all CONTRACTOR's indebtedness by reason of the Contract has been paid.

14.03 Retainage

- A. On Contracts with a dollar value of \$30,000 and greater or on Contracts that provide for more than 3 progress payments, progress payments and retainage shall be governed by the provisions of any statutes, rules or regulations regarding retention and these are incorporated herein by reference and made a part of this Contract.
- B. If there are no statutes, rules, or regulations applicable to retention, retainage shall be 10%, or such an amount as OWNER deems necessary.

14.04 Review of Applications for Progress Payment

- A. ENGINEER will, within 10 days after receipt of each Contractor's Application for Payment and Payment Schedule, including each resubmittal, either indicate in writing a recommendation of payment and present an Engineer's Certificate for Payment to OWNER, or may 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.
- B. ENGINEER's recommendation of any payment requested in CONTRACTOR's Application for Payment will constitute a representation by ENGINEER to OWNER, based on ENGINEER's review of the Contractor's Application for Payment and Certificate for Payment and the accompanying data and schedules, as an experienced and qualified design professional that to the best of ENGINEER's knowledge, information and belief;
 - 1. the Work has progressed to the point indicated;
 - 2. the quality of the Work is in accordance with the technical aspects of the Contract Documents subject to an evaluation of the Work as a functioning Project upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for any Unit Price Work under paragraph 12.03, and any qualifications stated in the recommendation; and
 - 3. 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.
- C. However, by recommending any such payment ENGINEER will not thereby be deemed to have represented that:
 - 1. exhaustive or continuous on-Site inspections have been made to check the quality or the quantity of the Work; or
 - 2. involved detailed inspections of the Work beyond the responsibilities specifically assigned to ENGINEER in the Contract; or
 - 3. 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.

- D. Neither ENGINEER's review of CONTRACTOR's Work for the purpose of recommending payments nor ENGINEER's recommendation of any payment, including final payment, will impose responsibility on ENGINEER:
1. to supervise, direct or control the Work;
 2. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;
 3. for the failure of CONTRACTOR to comply with Laws and Regulations applicable to the furnishing or performance of Work;
 4. for any failure of CONTRACTOR to perform or furnish Work in accordance with the Contract Documents;
 5. to make any examination to ascertain how or for what purposes CONTRACTOR has used the moneys paid on account of the Contract Price;
 6. to determine that title to any Work, materials, or equipment has passed to OWNER free and clear of Liens.
- E. ENGINEER may refuse to recommend the whole or any part of any payment if, in ENGINEER's opinion, it would be incorrect to make such representations as stated above to OWNER. ENGINEER may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended to such extent as may be necessary in ENGINEER's opinion to protect OWNER from loss because:
1. the Work is defective, or completed Work has been damaged requiring correction or replacement;
 2. the Contract Price has been reduced because of Change Orders;
 3. OWNER has been required to correct defective Work in accordance with paragraph 13.09, or has accepted defective Work in accordance with paragraph 13.08;
 4. OWNER has been required to remove or remediate a Hazardous Environmental Condition for which CONTRACTOR is responsible;
 5. ENGINEER has actual knowledge of the occurrence of any of the events enumerated in paragraph 15.02.

14.05 Payment Becomes Due

- A. Thirty (30) days after presentation of the Application for Payment to OWNER with ENGINEER's recommendation, the amount recommended will (subject to the provisions of paragraph 14.05.B) become due, (or only if OWNER is a public agency, within 15 days after OWNER receives the funds which are to be provided by a department or agency of the federal or state government, whichever is later, or in accordance with any time periods required by any applicable statute, rule or regulation) and when due will be paid by OWNER to CONTRACTOR.
- B. OWNER may refuse to make payment of the full amount recommended by ENGINEER because:
1. Claims have been made against OWNER based on CONTRACTOR's conduct in the performance or furnishing of the Work, or OWNER has incurred costs, losses, or damages resulting from CONTRACTOR's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries,

- adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
2. 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;
 3. CONTRACTOR has failed to provide and maintain required bonds or insurance;
 4. OWNER has been required to remove or remediate a Hazardous Environmental Condition for which CONTRACTOR is responsible;
 5. 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;
 6. The Work is defective, requiring correction or replacement;
 7. OWNER has been required to correct defective Work in accordance with paragraph 13.09, or has accepted defective Work pursuant to paragraph 13.08;
 8. The Contract Price has been reduced by Change Orders;
 9. An event has occurred that would constitute a default by CONTRACTOR and therefore justify a termination for cause;
 10. Liquidated or other damages have accrued as a result of CONTRACTOR's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 11. 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;
 12. there are other items as set forth in the Contract Documents entitling OWNER to a set off against the amount recommended; or
 13. OWNER has actual knowledge of the occurrence of any of the events enumerated in paragraphs 14.04.E.1 through 14.04.E.5.
- C. If OWNER refuses to make payment of the full amount recommended by ENGINEER, OWNER will give CONTRACTOR immediate written notice (with a copy to ENGINEER) stating the reasons for such action 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, when CONTRACTOR corrects, to OWNER's satisfaction, the reasons for such action. The reduction imposed shall be binding on CONTRACTOR unless CONTRACTOR duly submits a Change Proposal contesting the reduction.
- D. If it is subsequently determined that OWNER's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by paragraph 14.05.

14.06 Contractor's Warranty of Title

- A. CONTRACTOR warrants and guarantees that title to all Work, materials and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER at the time of payment free and clear of all Liens, claims, security interests and encumbrances (hereafter in these General Conditions referred to as "Liens").

14.07 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. Once 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 7 days after receipt of the preliminary certificate during which to make written objection to ENGINEER as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, ENGINEER concludes that the Work is not substantially complete, ENGINEER will, within 14 days after submission of the preliminary certificate to OWNER, notify CONTRACTOR in writing that the Work is not substantially complete, stating the reasons therefore. 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.

14.08 Partial Utilization

- A. Use by OWNER of completed portions of the Work may be accomplished prior to Substantial Completion of all the Work subject to the following:

1. OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any part of the Work which OWNER believes to be substantially complete and which may be so used without significant interference with construction of the other parts of the Work. If CONTRACTOR agrees, CONTRACTOR will certify to OWNER and ENGINEER that said part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time thereafter OWNER, CONTRACTOR and ENGINEER shall make an inspection of that part of the Work to determine its status of completion.
 - a. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify OWNER and CONTRACTOR in writing giving his reasons therefor.
 - b. If ENGINEER considers that part of the Work to be substantially complete, ENGINEER will execute and deliver to OWNER and CONTRACTOR a certificate to that effect, fixing the date of Substantial Completion for that part of the Work, attaching thereto a punch list of items to be completed or corrected before final payment.
2. Prior to issuing a certificate of Substantial Completion for that part of the Work, ENGINEER will deliver to OWNER and CONTRACTOR a written recommendation as to the division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, maintenance, utilities and insurance for that part of the Work, which shall become binding upon OWNER and CONTRACTOR at the time of issuing the definitive certificate of Substantial Completion for that part of the Work unless OWNER and CONTRACTOR shall have otherwise agreed in writing and so informed ENGINEER.
3. OWNER shall have the right to exclude CONTRACTOR from any part of the Work which ENGINEER has so certified to be substantially complete, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the punch list.
4. In lieu of the issuance of a certificate of Substantial Completion as to part of the Work, OWNER may take over operation of a facility constituting part of the Work whether or not it is Substantially Complete if such facility is functionally and separately usable; provided that prior to any such takeover, OWNER and CONTRACTOR have agreed as to the division of responsibilities between OWNER and CONTRACTOR for security, operation, safety, maintenance, correction period, heat, utilities and insurance with respect to such facility.

14.09 Final Inspection

- A. Upon written notice from CONTRACTOR that the Work is complete, ENGINEER will 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 is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.10 Final Application for Payment

- A. After CONTRACTOR has completed all corrections to the satisfaction of ENGINEER and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, marked up record documents and other documents (all as required by the Contract Documents), and after ENGINEER has indicated that the Work is acceptable, subject to the provisions of paragraph 14.13, CONTRACTOR may make application for final payment following the procedure for progress payments.
- B. The final Application for Payment shall be accompanied by all documentation called for in the Contract Documents and such other data and schedules as ENGINEER may reasonably require, consent of Surety, if any, to final payment, together with complete and legally effective releases or waivers, satisfactory to OWNER, of all Liens arising out of or filed in connection with the Work.
- C. In lieu of the releases or waivers of Lien, if approved by OWNER, CONTRACTOR may furnish receipts or releases in full; an affidavit of CONTRACTOR that the releases and receipts include all labor, services, material and equipment for which a Lien could be filed, and that all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or his property might in any way be responsible, have been paid or otherwise satisfied.
- D. If any Subcontractor, manufacturer, fabricator, Supplier or distributor fails to furnish a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Claim or Lien.

14.11 Final Payment and Acceptance

- A. 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 (all as required by the Contract Documents), ENGINEER is satisfied that to the best of ENGINEER's knowledge, information and belief as a design professional that the Work has been completed and CONTRACTOR has fulfilled all of his obligations under the Contract Documents, ENGINEER will, within 10 days after receipt of the final Application for Payment, indicate in writing ENGINEER's Certificate for Payment and present the application to OWNER for payment. At that time ENGINEER will give written notice to OWNER and CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 14.13.
- B. Otherwise, ENGINEER will return the Application 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.
- C. If the Application and accompanying documentation are appropriate as to form and substance, OWNER shall, within 45 days (or within the time period required by any applicable statute, rule or regulation) after receipt thereof pay CONTRACTOR the amount recommended by ENGINEER less any amounts of OWNER claimed set-offs allowed under the Contract Documents, including but not limited to any applicable liquidated damages as determined by OWNER. If OWNER rejects the Application, OWNER shall do so in writing stating the appropriate sections of the Contract Documents upon which the rejection is based. CONTRACTOR may take the necessary remedial actions and resubmit the Application.

14.12 Final Completion Delayed

- A. If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed, and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.01, the written consent of the Surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to ENGINEER with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.13 Waiver of Claims

- A. The making and acceptance of final payment shall constitute:
1. a waiver of all Claims by OWNER against CONTRACTOR, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to paragraph 14.09, or from failure to comply with the Contract Documents or the terms of any special guarantees specified therein; and shall not constitute a waiver by OWNER of any rights in respect of CONTRACTOR's existing or continuing obligations under the Contract Documents; and,
 2. a waiver of all Claims by CONTRACTOR against OWNER other than those previously made in writing and still pending in accordance with Article 16.

14.14 Late Payments

- A. All monies not paid when due hereunder, except monies involving Federal and/or State Loans, Grants, or other sources which are delinquent because of no fault of the OWNER, shall bear interest at the maximum rate allowed by law at the time and place of the Project.

Article 15 Suspension of Work and Termination

15.01 Owner May Suspend Work

- A. OWNER may, at any time and without cause, suspend the Work or any portion thereof for a period as OWNER may deem necessary by notice in writing to CONTRACTOR and ENGINEER. If it should become necessary to stop work for an indefinite period, CONTRACTOR shall store all materials in such manner that they will not become an obstruction, nor become damaged in any way, and CONTRACTOR shall take every precaution to prevent damage or deterioration of the Work performed; provide suitable drainage by opening ditches and drains, and erect temporary structures where necessary. CONTRACTOR may request an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if he makes a Claim therefor as provided in paragraph 11.01.

15.02 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 commences a voluntary case under any chapter of the Bankruptcy Code (Title 11, United States Code), as now or hereafter in effect, or if CONTRACTOR takes any equivalent or similar action by filing a petition or otherwise under any other federal or state law in effect at such time;
 2. a petition is filed against CONTRACTOR under any chapter of the Bankruptcy Code as now or hereinafter in effect at the time of filing, or if a petition is filed seeking any such equivalent or similar relief against CONTRACTOR under any other federal or state law in effect at the time relating to bankruptcy or insolvency;
 3. CONTRACTOR makes a general assignment for the benefit of creditors;
 4. a trustee, receiver, custodian or agent of CONTRACTOR is appointed under applicable law or under contract, whose appointment or authority to take charge of property of CONTRACTOR is for the purpose of enforcing a Lien against such property or for the purpose of general administration of such property for the benefit of CONTRACTOR's creditors;
 5. CONTRACTOR admits in writing an inability to pay its debts generally as they become due;
 6. CONTRACTOR persistently fails 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 established under paragraph 2.05 as revised from time to time);
 7. CONTRACTOR disregards Laws and Regulations of any public body having jurisdiction;
 8. CONTRACTOR disregards the authority of ENGINEER or OWNER; or,
 9. CONTRACTOR otherwise violates any provisions of the Contract Documents.
- B. OWNER may, after giving CONTRACTOR (and the Surety, if there be one) 7 days' written notice, and to the extent permitted by Laws and Regulations, terminate the services of CONTRACTOR, exclude CONTRACTOR from the Site, take possession of the Work and of all CONTRACTOR's tools, appliances, construction equipment, and machinery at the site and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, finish the Work as OWNER may deem expedient, and/or enforce the rights available to OWNER under any applicable Performance Bond.
- C. In such case, CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, damages and expenses sustained by OWNER arising out of or resulting from completing the Work, such excess will be paid to CONTRACTOR. If such claims, costs, losses, damages and expenses exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such claims, costs, losses, damages and expenses incurred by OWNER will be reviewed as to reasonableness by ENGINEER and when so approved, incorporated in a Change Order, but when exercising any rights or remedies under this paragraph, OWNER shall not be required to obtain the lowest price for the Work performed.

- D. Where CONTRACTOR's services have been so terminated by OWNER, the termination shall not affect any rights or remedies of OWNER against CONTRACTOR or its Surety then existing or which may thereafter accrue. Any retention or payment of monies due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

15.03 Termination for Convenience

- A. Upon 7 days' written notice to CONTRACTOR and ENGINEER, OWNER may, without cause and without prejudice to any other right or remedy, elect to terminate the Agreement. In such case, CONTRACTOR shall be paid (without duplication of any items):
 - 1. for completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination;
 - 2. for actual 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; and
 - 3. for reasonable expenses directly attributable to protecting work as a result of termination.
- B. CONTRACTOR shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.
- C. Upon such termination, CONTRACTOR shall:
 - 1. Immediately discontinue Work on the date and to the extent specified in the notice except to the extent necessary to protect Work in place;
 - 2. Place no further orders for materials, services, or facilities, other than as may be necessary or required for completion of such portion of Work under the Contract that is not terminated;
 - 3. Promptly make every reasonable effort to obtain cancellation upon terms reasonably satisfactory to OWNER of all purchase orders and subcontracts to the extent they relate to the performance of Work terminated or assign to OWNER those orders and subcontracts and revoke agreements specified in such notice;
 - 4. Reasonably assist OWNER, as specifically requested in writing, in the maintenance, protection and disposition of property acquired by OWNER under the Contract Documents, as may be necessary;
 - 5. Complete performance of any Work which is not terminated; and
 - 6. Deliver to OWNER an affidavit regarding the identity of potential unpaid Subcontractors or Suppliers and the amounts due to each.

15.04 Contractor May Stop Work or Terminate

- A. If OWNER has failed to pay CONTRACTOR any sum finally determined to be due in accordance with the time limits specified in paragraph 14.05, CONTRACTOR may upon 7 days' written notice to OWNER and ENGINEER, stop the Work until payment of all amounts then due.

- B. If through no act or fault of CONTRACTOR, the Work is suspended for a period of more than 90 days by OWNER, or under an order of court or other public authority, then CONTRACTOR may, upon 7 days written notice to OWNER and ENGINEER and provided OWNER or ENGINEER does not remedy such suspension or failure within that time, terminate the Agreement and recover from OWNER payment on the same terms as provided in paragraph 15.03.
- C. The provisions of this paragraph 15.04 shall not relieve CONTRACTOR of his obligations under paragraph 6.22 to carry on the Work in accordance with the Progress Schedule and without delay during disputes and disagreements with OWNER.

Article 16 Final Resolution of Disputes

16.01 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, the following dispute resolution process shall be followed:
 - a. The parties shall submit the dispute to mediation under the mediation procedures outlined in the Construction Industry Arbitration Rules and Mediation Procedures of the American Arbitration Rules.
 - b. If the dispute is not resolved by mediation, the parties shall proceed to resolve the dispute by arbitration in accordance with the Construction Industry Arbitration Rules and Mediation Procedures of the American Arbitration Association. The decision of the arbitrator(s) shall be final and binding and is enforceable in a court of competent jurisdiction.

Article 17 Miscellaneous

17.01 Giving Notice

- A. Whenever any provision of the Contract Documents requires the giving of written notice to OWNER, ENGINEER, or CONTRACTOR, it shall be deemed to have been validly given only if delivered:
 - 1. in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended;

2. by registered or certified mail postage prepaid to, the last business address known to the giver of the notice;
3. or delivered in person to such person by a commercial courier service or otherwise to the recipient's place of business; or
4. by secure file transfer with receipt documentation or other document control software.

17.02 Computation of Time

- A. When any period of time is referred to in the Contract Documents by days, it shall 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 shall be omitted from the computation.

17.03 General

- 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 shall not 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 Law or Regulation, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this paragraph shall 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.
- B. All representations, warranties and guarantees made in the Contract Documents shall survive final payment and termination or completion of this Agreement.

17.04 Professional Fees and Court Costs Included

- A. Whenever reference is made to "claims, costs, losses, damages and expenses," it shall include in each case, but not be limited to, all fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs.

17.05 Nondiscrimination of Employment

- A. The CONTRACTOR shall covenant and agree not to discriminate against any employee or applicant for employment, to be employed in the performance of this Contract, with respect to his hire, tenure, terms, conditions or privileges of employment, or any matter directly or indirectly related to employment, because of race, color, sex, age, religion, national origin or ancestry, height, weight, or marital status, or any other classification protected by law, and to require a similar covenant on the part of any Subcontractor employed in the performance of the Contract.

17.06 Post Completion Date Engineering and Inspection Costs

- A. All engineering and inspection costs incurred after the specified completion date shall be paid by CONTRACTOR to OWNER prior to final payment authorization. However, CONTRACTOR shall not be charged with any post completion date engineering and inspection costs when the delay in completion of the Work is due to the following and CONTRACTOR has promptly given written notice of such delay to OWNER or ENGINEER:
 1. to any preference, priority or allocation order duly issued by OWNER;

2. to unforeseeable causes beyond the control and without the fault or negligence of CONTRACTOR, including but not restricted to, acts of God, or of the public enemy, acts of OWNER, acts of another contractor in the performance of a Contract with OWNER, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and abnormal and unforeseeable weather; and,
 3. to any delays of Subcontractors or Suppliers occasioned by any of the causes specified in this Article.
- B. Charges after the specified completion date shall be made at such times and in such amounts as ENGINEER shall invoice OWNER, provided, however said charges shall be in accordance with ENGINEER's current rate schedule at the time the costs are incurred. Engineering and inspection costs so incurred shall be deducted from CONTRACTOR's progress payments.

17.07 Waiver of Consequential Damages

- A. CONTRACTOR and OWNER waive Claims against each other for consequential damages arising out of or relating to this Contract or the Work. This mutual waiver includes but is not limited to:
1. damages incurred by OWNER for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
 2. damages incurred by CONTRACTOR for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit in connection with any other project or anticipated project.
- B. This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination or default. Nothing contained in this Section shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents. CONTRACTOR also waives any Claim for consequential damages against ENGINEER where such Claims arise out of or relate in any way to the Project or the Contract Documents.

17.08 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.

17.09 Controlling Law

- A. This Contract is to be governed by the Law of the state in which the Project is located.

17.10 Headings

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

End of Section

Section 07 5600

Cold Fluid Applied Roofing

Part 1 General

1.01 Scope of Work

- A. Protective coating for the roof of the Valve Vault Building as shown on the Drawings.
- B. Roof coating preparation including preparation of concrete deck and substrate to receive fluid-applied waterproofing roofing.
- C. Application of fluid-applied waterproofing roof membrane and flashings to prepared existing concrete deck.

1.02 Submittals for Review

- A. Prepare and submit the following in accordance with "Conditions of the Contract" and Section 01 3300, Submittals Procedures:
 - B. Product Data: Submit manufacturer's product data, with complete general and specific installation instructions, recommendations, and limitations.
 - C. Product Samples: Submit representative samples of specified materials.
 - D. Material Certificates: Submit certificate(s) signed by manufacturer certifying materials comply with specified performance characteristics and physical requirements. Submit certification that system and components, and protection materials are supplied by a single-source manufacturer.
 - E. Contractor Certificate: At time of bid, submit written certification that installer has current Approved Applicator status with material manufacturer.
 - F. NSF Standard 61 Certification: Submit Official NSF Listing for standard roof coating system confirming that product conforms to the requirements of NSF Standard 61 - Drinking Water System Components - Health Effects.

1.03 Quality Assurance

- A. Installer Qualifications:
 - 1. Installing company should have at least three (3) years' experience in work of the type required by this section, who can comply with manufacturer's warranty requirements, and who is an Approved Applicator as determined by system manufacturer.
- B. Manufacturer Qualifications:
 - 1. Waterproofing and all accessory products shall be provided by a single manufacturer with a minimum of 20 years' experience in the direct production and sales of specified waterproofing systems.
 - 2. Manufacturer shall be capable of providing field service representation during construction, approving an acceptable installer, recommending appropriate installation methods, and conducting a final inspection of the waterproofing system applied.

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- C. Pre-Installation Conference:
 - 1. A pre-installation conference shall be held prior to commencement of field installation to establish procedures to maintain required working conditions and to coordinate this work with related and adjacent work.
 - 2. Verify that final waterproofing and waterstop details comply with waterproofing manufacturer's current installation requirements and recommendations.
 - 3. Pre-con meeting attendees should include representatives for OWNER, ENGINEER, and CONTRACTOR.
- D. Materials:
 - 1. Obtain waterproofing roofing materials from a single manufacturer to assure material compatibility.
- E. Roofing Inspector Qualifications: A technical representative of the manufacturer (not engaged in the sale of products) experienced in the installation and maintenance of the specified roofing system, shall be engaged to provide observation services by the CONTRACTOR to review the installation of the waterproofing roofing system. This observer shall be qualified to perform roofing observation and inspection specified in Field Quality Control Article, to determine Installer's compliance with the requirements of this Project and approved by the manufacturer to issue warranty certification. The Roofing Inspector shall be one of the following:
 - 1. An authorized full-time technical employee of the manufacturer.
 - 2. An independent party certified as a Registered Roof Observer by the IIBEC, retained by the CONTRACTOR or the Manufacturer and approved by the Manufacturer.

1.04 Product Delivery, Storage and Handling

- A. Delivery, Storage and Handling:
 - 1. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.
 - 2. Handle and store roofing materials, and place equipment in a manner to avoid significant or permanent damage to deck or structural supporting members.
 - 3. Protect materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting.

1.05 Project Conditions

- A. Protect building, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from roofing operations.
- B. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.

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- C. Weather Limitations: Proceed with roofing work only when existing and forecasted weather conditions permit Work to proceed without water entering into existing roofing system or building.
 - 1. Store all materials prior to application at temperatures between 60 and 90 degrees Fahrenheit.
 - 2. Apply coatings within range of ambient and substrate temperatures recommended by manufacturer. Do not apply materials when air temperature is below 40 or above 85 degrees Fahrenheit, providing the substrate is a minimum of 5 degrees Fahrenheit above the dew point.
 - 3. Do not apply roofing in snow, rain, fog, or mist.
- D. Daily Protection: Coordinate installation of roofing so insulation and other components of roofing system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.

1.06 Warranty

- A. Manufacturer: Manufacturer's standard warranty form, covering work of this Section, in which manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within warranty period.
 - 1. Warranty Period: 20 years from date of completion.
- B. Installer Warranty: Installer's warranty signed by Installer, covering the Work of this Section on form acceptable to Roofing Manufacturer and Owner.
 - 1. Warranty Period: 2 years from date of completion.

Part 2 Products

2.01 Acceptable Manufacturer

- A. Tremco – AlphaGuard PUMA (80 mils)
- B. Substitutions, Materials and Equipment: Product substitutions permitted in accordance with Section 01 2513, Substitution Procedures.

2.02 Performance Requirements

- A. General: Provide recoated roofing membrane and base flashings that remain watertight; do not permit the passage of water; and resist specified uplift pressures, thermally induced movement, and exposure to weather without failure.
 - 1. Accelerated Weathering: Roofing system shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.
- B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.
- C. Roofing System Design: Provide roofing system that is identical to systems that have been successfully tested by a qualified testing and inspecting agency in accordance with ANSI/FM 4474, UL 580, or UL 1897, and to resist uplift pressures.

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1. All Zones (Corner, Perimeter, and Field-of-Roof) Uplift Pressures: As recommended by Mfr.
- D. Flashings: Provide base flashings, perimeter flashings, detail flashings and component materials that comply with requirements and recommendations of the following:
 1. Roof system manufacturer's construction details and recommendations.
 2. NRCA Roofing Manual (Sixth Edition) for construction details and recommendations.
 3. SMACNA Architectural Sheet Metal Manual (Seventh Edition) for construction details.
- E. Exterior Fire-Test Exposure: ASTM E 108, Class A; for application and roof slopes indicated, as determined by testing identical membrane roofing materials by a qualified testing agency. Materials shall be identified with appropriate markings of applicable testing agency.

2.03 Materials

- A. General: Roofing materials recommended by roofing system manufacturer for intended use and compatible with components of existing membrane roofing system.
- B. Temporary Roofing Materials: Selection of materials and design of temporary roofing is responsibility of Contractor.
- C. General: Provide adhesive and sealant materials recommended by roofing manufacturer for intended use and compatible with roofing materials.
 1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.

2.04 Fluid Applied Roofing Membrane

- A. Polyurethane Elastomeric Fluid-Applied System: Two-coat fluid-applied roofing membrane formulated for application over prepared roof substrate.
 1. Polyurethane-modified methyl methacrylate reinforced roof coating system base coat, two-part moisture-curing for use with a compatible top coat.
 2. Basis of design product: Tremco, AlphaGuard PUMA Base Coat.
 3. Combustion Characteristics, UL790: Class A, for two-coat system.
 4. Volatile Organic Compounds (VOC), maximum, ASTM D3960: 0 g/L.
 5. Tensile Strength, ASTM D5147: 177 lbf/in (31.1 N/mm).
 6. Elongation, Reinforced, ASTM D5147: 40 percent.
 7. Crack Bridging, ASTM D5147: Pass- 2 mm.
 8. Hardness, Shore A, minimum, ASTM D2240: 93.
 9. Minimum Thickness, Base Coat: 40 mils (1 L/m²) plus 40 wet mils (1 L/m²) over reinforcing fabric.

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- B. Polyurethane-modified methyl methacrylate roof coating system topcoat, two-component 0 VOC, UV resistant, for application over compatible base coat.
 - 1. Basis of design product: Tremco, AlphaGuard PUMA Top Coat.
 - 2. Combustion Characteristics, UL 790: Class A, for two-coat system.
 - 3. Volatile Organic Compounds (VOC), maximum, ASTM D3960: 0 g/L.
 - 4. Tensile Strength, ASTM D5147: 177 lbf/in (31.1N/mm).
 - 5. Elongation, Reinforced, ASTM D5147: 40 percent.
 - 6. Crack Bridging, ASTM D5147: Pass, 2 mm.
 - 7. Hardness, Shore A, minimum, ASTM D2240: 93.
 - 8. Solar Reflectance Index (SRI), minimum, ASTM E1980: 95.
 - 9. Minimum Thickness: 20 mils (0.50 mm) wet over cured base coat.
- C. Reinforcing Fabric:
 - 1. Polyester Reinforcing and Protection Fabric: 100 percent stitch-bonded mildew-resistant polyester fabric intended for reinforcement of compatible fluid-applied membranes and flashings and as a protection layer under pavers or stone aggregates.
 - 2. Basis of design product: Tremco, Permafab.
 - 3. Tensile Strength, Minimum, ASTM D1682: 50 lbf (23 kg) avg..
 - 4. Elongation, Minimum, ASTM D1682: 60 percent.
 - 5. Tear Strength, Minimum, ASTM D1117: 16 lbf (7.3 kg) avg..
 - 6. Weight: 3 oz./sq. yd (102 g/sq. m).
- D. Primers:
 - 1. As recommended by Mfr.

2.05 Auxiliary Roofing Materials

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with existing roofing system and fluid-applied roofing system.
- B. Concrete Primer:
 - 1. Primer, Methyl Methacrylate: Two-component primer for concrete and metal substrates for application of PUMA coatings.
 - 2. Basis of design product: Tremco, AlphaGuard PUMA Primer - 107.
 - 3. Coverage Rate: 1 gal/100 sq. ft (16 mils) (0.40 mm) wet.
- C. Metal Surface Primer:
 - 1. Primer, Methyl Methacrylate: Two-component primer for concrete and metal substrates for application of PUMA coatings.

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2. Basis of design product: Tremco, AlphaGuard PUMA Primer - 107.
 3. Coverage Rate: 1 gal/100 sq. ft (16 mils) (0.40 mm) wet.
- D. Joint Sealants:
1. Joint Sealant, Polyurethane: ASTM C920, Type S, Grade NS, Class 50 single-component moisture curing sealant, formulated for compatibility and use in dynamic and static joints; paintable.
 2. Basis of design product: Tremco, TremSEAL Pro.
 3. Volatile Organic Compounds (VOC), maximum, ASTM D3960: 40 g/L.
 4. Hardness, Shore A, ASTM C661: 40.
 5. Adhesion to Concrete, ASTM C794: 35 pli.
 6. Tensile Strength, ASTM D412: 350 psi (2413 kPa).
 7. Color: Closest match to substrate.

2.06 Walking Surface Material

- A. Polyurethane-modified methyl methacrylate top coat slip resistant: second top coat, with broadcast slip resistant aggregate.
1. Basis of design product: Tremco, AlphaGuard PUMA Top Coat Slip Resistant.
 2. Minimum Thickness: 16 wet mils, (0.40 mm) wet; over cured top coat.
 3. Silica Sand Aggregate: 20 to 30 lb/100 sq. ft..
 4. Color: As selected from manufacturer's standard colors.

Part 3 Execution

3.01 Examination

- A. Examine roofing substrates, with Installer present, for compliance with requirements and for other conditions affecting application and performance of fluid-applied roofing.
1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance.
 2. Verify that substrates are sound, visibly dry and free of moisture.
 3. Verify that substrates have adequately cured to enable proper bond with base coat.
 4. Application of fluid-applied roofing indicates acceptance of surfaces and conditions.

3.02 Preparation, General

- A. Protect adjacent portions of building and building equipment that is indicated not to receive fluid-applied roofing.
- B. Remove existing equipment on roof necessary to ensure a continuous roof and flashing system. Denote on drawings the metal hatches, and conduit line sitting on concrete deck.

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- C. Shut down air intake equipment in the vicinity of the Work in coordination with the Owner. Cover air intake louvers before proceeding with coating work that could affect indoor air quality or activate smoke detectors in ductwork.
 - 1. Verify that rooftop utilities and service piping affected by the Work have been shut off before commencing Work.
 - 2. Prevent dust, vapors, gases, and odors from entering occupied building during roof installation. When shutting down or blocking air intakes, provide makeup air or additional intake air from sources away from the work area.

3.03 Concrete Deck Preparation

- A. Concrete Deck Preparation, General: Repair, clean, and prepare concrete to sound condition free of grease, oils, coatings, dust, curing compounds and other contaminants.
- B. Mechanical Abrasion: Smooth precast and formed concrete surfaces must be cleaned, roughened and made absorptive by mechanical abrasion. Remove surface laitance and abrade surface to CSP 3-6 in accordance with ICRI Guideline 310.
- C. Testing: Following surface preparation, perform testing to verify concrete substrate is adequate prepared to receive fluid-applied roofing in accordance with manufacturer's written instructions.
 - 1. PH Test: Verify pH level is within range acceptable to roofing manufacturer when tested per ASTM D4262.
 - 2. Pull Test: Verify that the cleaned surface pulls concrete when tested per ASTM D4541.
 - 3. Moisture Test: Verify that concrete substrate is visibly dry and free of moisture when tested by plastic sheet method per ASTM D4263.
 - 4. Submit test reports within 24 hours of performing tests.

3.04 Preparation of Existing Flashings

- A. Existing Flashing and Detail Preparation: Repair flashings, copings, and other roof-related sheet metal and trim elements. Reseal joints, replace loose or missing fasteners, and replace components that cannot be repaired to weathertight and like-new condition.
 - 1. Clean substrates of contaminants such as asphalt, sheet materials, dirt, and debris, and prepare for application of re-coating system.

3.05 Fluid Applied Flashing Application

- A. Surface Priming: Prime flashing substrate with specified primer at rate indicated in Part 2 product listing and allow primer to dry.
- B. Fluid-Applied Flashing and Detail Base Coat Application: Complete base coat and fabric reinforcement at parapets, curbs, penetrations, and drains prior to application of field of fluid-applied membrane. Apply flashing base coat in accordance with manufacturer's written instructions.
 - 1. Apply base coat on prepared and primed surfaces and spread coating evenly. Extend coating minimum of 8 inches or 3 brick courses (200 mm) up vertical surfaces and 4 inches (100 mm) onto horizontal surfaces.

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2. Back roll to achieve not less than minimum coating thickness indicated in Part 2 product listing unless greater thickness is recommended by manufacturer. Verify application thickness as work progresses.
3. Fabric Reinforcement: Place fabric reinforcement onto wet base coat. Lap adjacent flashing pieces of fabric minimum 3 inches along edges and 6 inches at end laps.
 - a. Apply second base coat over installed fabric reinforcement and back roll to achieve not less than minimum coating thickness indicated in Part 2 product listing unless greater thickness is recommended by manufacturer. Verify application thickness as work progresses.
4. Allow base coat to cure prior to application of topcoat.
5. Following curing of base coat and prior to application of topcoat, sand raised or exposed edges of fabric reinforcement.

3.06 Fluid Applied Membrane Application

- A. Concrete Repair: Patch concrete surface with concrete repair resin products compatible with fluid-applied membrane roofing system.
- B. Surface Priming: Prime flashing substrate with specified primer at rate indicated in Part 2 product listing and allow primer to dry.
- C. Base Coat: Apply base coat to field of membrane in accordance with manufacturer's written instructions. Apply base coat on prepared and primed surfaces and spread coating evenly.
 1. Apply base coat on prepared and primed surfaces and spread coating evenly. Extend coating minimum of 8 inches (200 mm) up vertical surfaces and 4 inches (100 mm) onto horizontal surfaces.
 2. Back roll to achieve not less than minimum coating thickness indicated in Part 2 product listing unless greater thickness is recommended by manufacturer. Verify application thickness as work progresses.
 3. Apply first base coat over prepared concrete deck and flashings and back roll to achieve not less than minimum coating thickness indicated in Part 2 product listing unless greater thickness is recommended by manufacturer. Verify thickness as work progresses.
 - a. Apply second base coat over first base coat layer and back roll to achieve not less than minimum coating thickness indicated in Part 2 product listing unless greater thickness is recommended by manufacturer. Verify application thickness as work progresses.
 4. Allow base coat to cure prior to application of topcoat.
 5. Following curing of base coat and prior to application of topcoat, sand raised or exposed edges of fabric reinforcement.
- D. Topcoat: Apply topcoat uniformly in a complete installation to field of roof and flashings.
 1. Prime base coat prior to application of topcoat if topcoat is not applied within 72 hours of the base coat application, using manufacturer's recommended primer.

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2. Apply topcoat to flashings extending coating up vertical surfaces and out onto horizontal surfaces 4 inches. Install topcoat over field base coat and spread coating evenly.
 3. Apply topcoat and back roll to achieve not less than minimum coating thickness indicated in Part 2 product listing unless greater thickness is recommended by manufacturer. Verify application thickness as work progresses.
 4. Avoid foot traffic on new fluid-applied membrane for a minimum of 24 hours.
- E. Slip-Resistant Surfacing Topcoat: Apply second topcoat following application and curing of topcoat. Locate as indicated, or as directed by Owner.
1. Prime first topcoat prior to application of walkway topcoat if walkway topcoat is not applied within 72 hours of the first topcoat application, using manufacturer's recommended primer.
 2. Apply slip resistant topcoat layer and back roll to balance of coated roof area to achieve not less than minimum coating thickness indicated in Part 2 product listing unless greater thickness is recommended by manufacturer. Verify application thickness as work progresses.
 3. Broadcast Slip-Resistant Topcoat Aggregate in wet topcoat at rate indicated in Part 2 product listing or as otherwise recommended by coating manufacturer.
 - a. Back roll sand and topcoat creating even dispersal of sand.

3.07 Field Quality Control

- A. Roof Inspection: Contractor shall engage roofing system manufacturer's technical personnel to inspect roofing installation and submit report to the Architect. Notify Architect or Owner 48 hours in advance of dates and times of inspections. Inspect work as follows:
1. Upon completion of preparation of first component of work, prior to application of re-coating materials.
 2. Following application of re-coating to flashings and application of base coat to field of roof.
 3. Upon completion of re-coating but prior to re-installation of other roofing components.
- B. Repair fluid-applied membrane where test inspections indicate that they do not comply with specified requirements.
- C. Arrange for additional inspections, at Contractor's expense, to verify compliance of replaced or additional work with specified requirements.

3.08 Protecting and Cleaning

- A. Protect roofing from damage and wear during remainder of construction period.
- B. Correct deficiencies in or remove coatings that do not comply with requirements, repair substrates, and reapply coatings.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

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End of Section