



PROJECT:

**Lakewood Elementary School
Kitchen Renovation and Freezer
Installation**

9370 Lancer Road
Hebron, OH 43025

PROJECT MANUAL

Schematic Phase Documents

March 10, 2023

SUBMITTED TO

LAKEWOOD LOCAL SCHOOLS

Board of Education
525 E. Main Street
Hebron, OH 43025

PREPARED BY

RALPH KRAMER

KRAMER ENGINEERS

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SEALED BIDS WILL BE RECEIVED BY:

**Lakewood Local Schools
Board of Education
525 E. Main Street
Hebron, OH 43025**

FOR THE FOLLOWING PROJECT:

**Lakewood Elementary School Kitchen Renovation & Freezer Installation.
9370 Lancer Road
Hebron, OH 43025**

IN ACCORDANCE WITH THE CONTRACT DOCUMENTS PREPARED BY:

**Ralph Kramer
Kramer Engineers
394 Oak Street
Columbus, Ohio 43215
614-233-6911
bid@kramerengineers.com**

Bidders may submit requests for consideration of a proposed Substitution for a specified product, equipment, or service to the Architect/Engineer (“A/E”) no later than 10 days prior to the bid opening. Additional products, equipment, and services may be accepted as approved Substitutions only by written Addendum.

Bids will be received by the Lakewood Local School District Board of Education (the “Owner”), as provided in this notice for the Lakewood Local Schools Kitchen Cooler | Freezer Project (the “Project”) until **March 30, 2023 at 12:00 p.m., when all Bids will be opened and read aloud.**

PRE-BID MEETING: All Bidders are strongly encouraged to attend the Pre-Bid Meeting on **March 22, at 9:00 am until approximately 11:00 pm.,** at Lakewood Elementary School, 9370 Lancer Road, Hebron, OH 43025

BID DOCUMENTS: available online at <https://www.lakewoodlocal.k12.oh.us/>.

MORE INFORMATION: AE contact Ralph Kramer: in writing at bid@kramerengineers.com

THE SCHOOL DISTRICT RESERVES THE RIGHT to waive any informality or to reject any or all bids. Attention of bidders is called to all of the requirements contained in this bid packet, particularly to the labor and prevailing wage requirements, various insurance requirements, various equal opportunity provisions, and the requirement for a payment bond and performance bond for 100% of the contract price. No bidder may withdraw his bid within thirty (30) days after the actual date of the opening thereof.

----- end of advertisement—do not publish this line -----

APPROVED FOR PUBLICATION

In: Columbus Dispatch

On: 3/10, 3/15, 3/17

BY:

Name
Project Coordinator

Date

END OF DOCUMENT

Document 00 11 13 – Notice to Bidders

LEGAL NOTICE

Sealed bids will be received by the Lakewood Local School District Board of Education (the "Owner"), as provided in this notice for the **Lakewood Elementary School Kitchen Renovation and Freezer Installation** Project (the "Project").

BIDS DUE: **March 30, 2023, at 12:00 p.m.**, when all Bids will be opened and read aloud. Bids shall be enclosed in a sealed envelope addressed to Lakewood Local School District Board of Education, at 525 E. Main Street, Hebron, OH 43025 and plainly marked on the outside "LAKEWOOD LOCAL SCHOOL DISTRICT BOARD OF EDUCATION: **Lakewood Local Elementary School Kitchen Renovation and Freezer Installation** PROJECT BID."

PRE-BID MEETING: **March 22, at 9:00 am until approximately 11:00 pm.**, at Lakewood Schools, 9370 Lancer Road, Hebron, OH 43025

BID DOCUMENTS: available online at <https://www.lakewoodlocal.k12.oh.us>.

MORE INFORMATION: Please direct questions regarding the project in writing to AE contact Ralph Kramer at bid@kramerengineers.com

All bids must include a Bid Guaranty, as described in the Instructions to Bidders. No bidder may withdraw its bid within 60 days after the opening; the Owner reserves the right to waive irregularities, reject any or all bids, and conduct necessary investigations to determine bidder responsibility.

(Advertising dates **3/10, 3/15, 3/17**)

Document 00 21 13 – Instructions to Bidders

INSTRUCTIONS TO BIDDERS

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Document 00 21 13 – Instructions to Bidders

ARTICLE 1 – DEFINED TERMS

- 1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:
- A. *Issuing Office* – The office from which the Bidding Documents are to be issued.

ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

- 2.01 Complete sets of the Bidding Documents may be obtained from the Issuing Office in the number and format stated in the advertisement or invitation to bid.
- 2.02 Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.03 Owner and Engineer, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license for any other use.

ARTICLE 3 – QUALIFICATIONS OF BIDDERS

- 3.01 To demonstrate Bidder's qualifications to perform the Work, Bidder shall submit with its Bid (a) written evidence establishing its qualifications such as financial data, previous experience, and present commitments, and (b) the following additional information:
- A. Evidence of Bidder's authority to do business in the state where the Project is located.
- B. Bidder's state or other contractor license number, if applicable.
- C. Subcontractor and Supplier qualification information; coordinate with provisions of Article 12 of these Instructions, "Subcontractors, Suppliers, and Others."
- 3.02 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.
- 3.03 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.
- 3.04 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

NOTE(S) TO USER:

Bidders are usually asked to make certain representations as to genuineness of their Bids, the lack of collusion in connection therewith, and other related matters (see Bid Form, Articles 3 and 4).

Document 00 21 13 – Instructions to Bidders

ARTICLE 4 – SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER'S SAFETY PROGRAM; OTHER WORK AT THE SITE

4.01 *Site and Other Areas*

- A. The Site is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Contractor. Any additional lands required for temporary construction facilities, construction equipment, or storage of materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by Contractor.

ARTICLE 5 – BIDDER'S REPRESENTATIONS

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

- A. examine and carefully study the Bidding Documents, and any data and reference items identified in the Bidding Documents;
- B. visit the Site, conduct a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfy itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. become familiar with and satisfy itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work;
- D. carefully study all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings;
- E. consider the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs;
- F. agree, based on the information and observations referred to in the preceding paragraph, that at the time of submitting its Bid no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;
- G. become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;

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- H. promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder;
- I. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work; and
- J. agree that the submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 6 – PRE-BID CONFERENCE

- 6.01 A pre-Bid conference will be held at the time and location stated in the invitation or advertisement to bid. Representatives of Owner and Engineer will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference. Engineer will transmit to all prospective Bidders of record such Addenda as Engineer considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

ARTICLE 7 – INTERPRETATIONS AND ADDENDA

- 7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to Engineer in writing. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all parties recorded as having received the Bidding Documents. Questions received less than seven days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 7.02 Addenda may be issued to clarify, correct, supplement, or change the Bidding Documents.

ARTICLE 8 – BID SECURITY

- 8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of 10 percent of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form of a certified check, bank money order, or a Bid bond (on the form included in the Bidding Documents) issued by a surety meeting the requirements of Paragraphs 6.01 and 6.02 of the General Conditions.
- 8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract Documents, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults.

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- 8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the Effective Date of the Contract or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.
- 8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within seven days after the Bid opening.

ARTICLE 9 – CONTRACT TIMES

- 9.01 The number of days within which, or the dates by which, the Work is to be substantially completed, and completed and ready for final payment, are set forth in the Agreement.

ARTICLE 10 – LIQUIDATED DAMAGES

- 10.01 Provisions for liquidated damages, if any, for failure to timely attain a Milestone, Substantial Completion, or completion of the Work in readiness for final payment, are set forth in the Agreement.

ARTICLE 11 – SUBSTITUTE AND “OR-EQUAL” ITEMS

- 11.01 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, and those “or-equal” or substitute materials and equipment subsequently approved by Engineer prior to the submittal of Bids and identified by Addendum. No item of material or equipment will be considered by Engineer as an “or-equal” or substitute unless written request for approval has been submitted by Bidder and has been received by Engineer at least 15 days prior to the date for receipt of Bids. Each such request shall comply with the requirements of Paragraphs 7.04 and 7.05 of the General Conditions. The burden of proof of the merit of the proposed item is upon Bidder. Engineer’s decision of approval or disapproval of a proposed item will be final. If Engineer approves any such proposed item, such approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not rely upon approvals made in any other manner.
- 11.02 All prices that Bidder sets forth in its Bid shall be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of “or-equal” or substitution requests are made at Bidder’s sole risk.

ARTICLE 12 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 12.01 A Bidder shall be prepared to retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of the Work if required by the Bidding Documents (most commonly in the Specifications) to do so. If a prospective Bidder objects to retaining any such Subcontractor, Supplier, or other individual or entity, and the concern is not relieved by an Addendum, then the prospective Bidder should refrain from submitting a Bid.
- 12.02 Subsequent to the submittal of the Bid, Owner may not require the Successful Bidder or Contractor to retain any Subcontractor, Supplier, or other individual or entity against which Contractor has reasonable objection.

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- 12.03 The apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to Owner a list of the Subcontractors or Suppliers proposed for the project Work.

If requested by Owner, such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, or other individual or entity. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder shall submit a substitute, Bidder's Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.

- 12.04 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, or other individuals or entities. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.06 of the General Conditions.

ARTICLE 13 – PREPARATION OF BID

- 13.01 The Bid Form is included with the Bidding Documents.
- A. All blanks on the Bid Form shall be completed in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.
 - B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words "No Bid" or "Not Applicable."
- 13.02 A Bid by a corporation shall be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation shall be shown.
- 13.03 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The partnership's address for receiving notices shall be shown.
- 13.04 A Bid by a limited liability company shall be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the firm's address for receiving notices shall be shown.
- 13.05 A Bid by an individual shall show the Bidder's name and address for receiving notices.
- 13.06 A Bid by a joint venture shall be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The joint venture's address for receiving notices shall be shown.

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- 13.07 All names shall be printed in ink below the signatures.
- 13.08 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.
- 13.09 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.
- 13.10 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located, or Bidder shall covenant in writing to obtain such authority and qualification prior to award of the Contract and attach such covenant to the Bid. Bidder's state contractor license number, if any, shall also be shown on the Bid Form.

ARTICLE 14 – BASIS OF BID

- 14.01 Bidders shall submit a Bid on the basis as set forth in the Bid Form.

ARTICLE 15 – SUBMITTAL OF BID

- 15.01 With each copy of the Bidding Documents, a Bidder is furnished one separate unbound copy of the Bid Form, and, if required, the Bid Bond Form. The unbound copy of the Bid Form is to be completed and submitted with the Bid security and the other documents required to be submitted under the terms of Article 7 of the Bid Form.
- 15.02 A Bid shall be received no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid and shall be enclosed in a plainly marked package with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to the Owner specified on the bid form.
- 15.03 Bids received after the date and time prescribed for the opening of bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.

ARTICLE 16 – MODIFICATION AND WITHDRAWAL OF BID

- 16.01 A Bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.
- 16.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 16.01 and submit a new Bid prior to the date and time for the opening of Bids.
- 16.03 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid,

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and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

ARTICLE 17 – OPENING OF BIDS

- 17.01 Bids will be opened at the time and place indicated in the advertisement or invitation to bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 18 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

- 18.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 19 – EVALUATION OF BIDS AND AWARD OF CONTRACT

- 19.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible. If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, then the Owner will reject the Bid as nonresponsive; provided that Owner also reserves the right to waive all minor informalities not involving price, time, or changes in the Work.
- 19.02 If Owner awards the contract for the Work, such award shall be to the responsible Bidder submitting the lowest responsive Bid.
- 19.03 Evaluation of Bids
- A. In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.
 - B. Bid prices will be compared after adjusting for differences in time of Substantial Completion (total number of calendar days to substantially complete the Work) designated by Bidders. The adjusting amount will be determined at the rate set forth in the Agreement for liquidated damages for failing to achieve Substantial Completion, or such other amount that Owner has designated in the Bid Form.
 - 1. The method for calculating the lowest bid for comparison will be the summation of the Bid price shown in the Bid Form plus the product of the Bidder-specified time of Substantial Completion (in calendar days) times the rate for liquidated damages (in dollars per day).
 - 2. This procedure is only used to determine the lowest bid for comparison and contractor selection purposes. The Contract Price for compensation and payment purposes remains the Bid price shown in the Bid Form.
- 19.04 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers

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proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.

- 19.05 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

ARTICLE 20 – BONDS AND INSURANCE

- 20.01 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the Agreement (executed by Successful Bidder) to Owner, it shall be accompanied by required bonds and insurance documentation.

ARTICLE 21 – SIGNING OF AGREEMENT

- 21.01 When Owner issues a Notice of Award to the Successful Bidder, it shall be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as identified in the Agreement. Within 15 days thereafter, Successful Bidder shall execute and deliver the required number of counterparts of the Agreement (and any bonds and insurance documentation required to be delivered by the Contract Documents) to Owner. Within ten days thereafter, Owner shall deliver one fully executed counterpart of the Agreement to Successful Bidder, together with printed and electronic copies of the Contract Documents as stated in Paragraph 2.02 of the General Conditions.

DOCUMENT 00 41 13 - BID FORM

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ARTICLE 1 – BID RECIPIENT

1.01 SEALED BIDS WILL BE RECEIVED BY:

Lakewood Local Schools
Board of Education
525 E. Main Street
Hebron, OH 43025

For:

PROJECT: Lakewood Elementary School Kitchen Renovation & Freezer Installation

Project Location:

Lakewood Elementary School
9370 Lancer Road
Hebron, OH 43025

- 1.02** The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into and Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or Indicated in the Bidding Documents for the process and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDERS ACKNOWLEDGEMENTS

- 2.01** The undersigned Bidder accepts all of the terms and conditions of the Instruction to Bidders, including without limitation those dealing with the disposition of Bid security. The Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 – BIDDERS REPRESENTATIONS

-
- 3.01** The undersigned Bidder has read and examined the proposed Contract Documents prepared by the Architect/Engineer for the above-referenced Project and the following Addenda:

Addendum Number

Date Received

- 3.02** Bidder has visited the site and became familiar with and is satisfied as to the general, local and Site conditions that may affect the cost, progress and performance of the Work.
- 3.03** Bidder is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress and performance of the Work.
- 3.04** Bidder has considered the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences and procedures of construction to be employed by the Bidder, including applying the specific means, methods, techniques, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder's safety precautions and programs.
- 3.05** Based on the observations and information referred to in Paragraph 3.01 above, Bidder does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
- 3.06** Bidder is aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- 3.07** Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents and the written resolution thereof by Engineer is acceptable to Bidder.
- 3.08** The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

ARTICLE 4 – BASE BID

- 4.01** The Bidder will complete the Work in accordance with the Contract Documentation for the following price(s):

BID PACKAGE 101 – GENERAL CONTRACT

BASE BID (all General, Plumbing, HVAC and Electric work):

ALL LABOR AND MATERIALS, for the sum of \$ _____

Sum in words:

_____ and _____ /100 dollars.

- 4.02** The successful Bidder is required to submit a complete schedule of values of the most current CSI Master Format divisions for the lump sum bid items as requested by Owner. Each category and division will include material and labor.

ARTICLE 5 – ALTERNATES, UNIT PRICES (N/A)

ARTICLE 6 – TIME OF COMPLETION

- 6.01** The Bidder agrees that the Work will be substantially complete by August 1st, 2023.

-- remainder of page left blank intentionally --

BIDDER AFFIRMATION AND DISCLOSURE

Bidder acknowledges that by signing the Bid Form on the Bidder Signature and Information page, that it affirms, understands, and will abide by the requirements of Executive Order 2011-12K. If awarded a Contract, the Bidder will become the Contractor and affirms that both the Contractor and its Subcontractors shall perform no services requested under this Contract outside of the United States.

The Bidder shall provide the locations where services under this Contract will be performed in the spaces provided below or by attachment. Failure to provide this information as part of its Bid may cause the Bidder to be deemed non-responsive and no further consideration will be given to its Bid. If the Bidder will not be using Subcontractors, indicate "Not Applicable" in the appropriate spaces.

1. Principal business location of Contractor:

Address

City, State, Zip

2. Location where services will be performed by Contractor:

Address

City, State, Zip

Locations where services will be performed by Subcontractors, if known at time of Bid Opening:

Address

City, State, Zip

Address

City, State, Zip

Address

City, State, Zip

3. Location where state data will be stored, accessed, tested, maintained, or backed-up, by Contractor:

Address

City, State, Zip

Locations where state data will be stored, accessed, tested, maintained, or backed-up by Subcontractors, if known at time of Bid Opening:

Address

City, State, Zip

Address

City, State, Zip

Address

City, State, Zip

BIDDER'S CERTIFICATIONS

The Bidder hereby acknowledges that the following representations in this Bid are material and not mere recitals:

1. The Bidder has read and understands the proposed Contract Documents and agrees to comply with all requirements of the proposed Contract Documents, regardless of whether the Bidder has actual knowledge of the requirements and regardless of any statement or omission made by the Bidder, which might indicate a contrary intention.
2. The Bidder represents that the Bid is based upon the Basis of Design and Acceptable Components specified by the proposed Contract Documents.
3. The Bidder has visited the Site, become familiar with local conditions, and has correlated personal observations about the requirements of the proposed Contract Documents. The Bidder has no outstanding questions regarding the interpretation or clarification of the proposed Contract Documents.
4. The Bidder understands that the execution of the Project will require sequential, coordinated, and interrelated operations, which may involve interference, disruption, hindrance, or delay in the progress of the Bidder's Work. The Bidder agrees that the Contract Sum, as amended from time to time, shall cover all amounts due from the State resulting from interference, disruption, hindrance, or delay that is not caused by the State or its agents and employees. The Bidder agrees that any such interference, disruption, hindrance, or delay is within the contemplation of the Bidder and the State and that the Contractor's sole remedy from the State for any such interference, disruption, hindrance, or delay shall be an extension of time in accordance with the proposed Contract Documents.
5. During the performance of the Contract, the Bidder agrees to comply with Ohio Administrative Code ("OAC") Chapters 123:2-3 through 123:2-9 and agrees to incorporate the monthly reporting provisions of OAC Section 123:2-9-01 into all subcontracts on the Project, regardless of tier. The Bidder understands the State's Equal Opportunity Coordinator or the Contracting Authority may conduct pre-award and post-award compliance reviews to determine if the Bidder maintains nondiscriminatory employment practices, maintains an affirmative action program, and is exerting good faith efforts to accomplish the goals of the affirmative action program. For a full statement of the rules regarding Equal Employment Opportunity in the Construction Industry, see OAC Chapters 123:2-1 through 123:2-9.
6. The Bidder and each Person signing on behalf of the Bidder certifies, and in the case of a Bid by a joint venture each member thereof certifies as to such member's entity, under penalty of perjury, that to the best of the undersigned's knowledge and belief: **(a)** the Base Bid, any Unit Prices, and any Alternate bid in the Bid have been arrived at independently without collusion, consultation, communication or agreement, for the purpose of restricting competition as to any matter relating to such Base Bid, Unit Prices or Alternate bid with any other Bidder; **(b)** unless otherwise required by law, the Base Bid, any Unit Prices and any Alternate bid in the Bid have not been knowingly disclosed by the Bidder and shall not knowingly be disclosed by the Bidder prior to the bid opening, directly or indirectly, to any other Bidder who would have any interest in the Base Bid, Unit Prices or Alternate bid; **(c)** no attempt has been made or shall be made by the Bidder to induce any other Person to submit or not to submit a Bid for the purpose of restricting competition.

-
7. The Bidder understands that the Contract is subject to all the provisions, duties, obligations, remedies and penalties of Ohio Revised Code Chapter 4115 and that the Bidder shall pay any wage increase in the locality during the term of the Contract.
 8. The Bidder shall execute the Agreement with the Contracting Authority, if a Contract is awarded on the basis of this Bid, and if the Bidder does not execute the Agreement for any reason, other than as authorized by law, the Bidder and the Bidder's Surety are liable to the State as provided in **Article 5** of the Instructions to Bidders.
 9. The Bidder certifies that the upon the award of a Contract, as the Contractor it shall make a good faith effort to ensure that all of the Contractor's employees, while working on the Site, shall not purchase, transfer, use, or possess illegal drugs or alcohol or abuse prescription drugs in any way.
 10. The Bidder acknowledges that it read all of the **Instructions to Bidders**, and in particular, **Section 2.10 - Submittals With Bid Form**, and by submitting its Bid certifies that it has read the Instructions to Bidders and it understands and agrees to the terms and conditions stated in them.
 11. The Bidder agrees to furnish any information requested by the Contracting Authority or Architect/Engineer to evaluate the responsibility of the Bidder.
 12. The Bidder agrees to furnish the submittals required by **Section 6.1** of the **Instructions to Bidders** for execution of the Agreement within 10 days of the date of the Notice of Intent to Award.
 13. When the Bidder is a corporation, partnership or sole proprietorship, an officer, partner or principal of the Bidder, as applicable, shall print or type the legal name of the Bidder on the line provided, and **sign the Bid Form**.
 14. When the Bidder is a joint venture, an officer, partner or principal, as applicable, of each member of the joint venture shall print or type the legal name of the applicable member on the line provided, and **sign the Bid Form**.
 15. Bidder acknowledges that by signing the Bid Form on the following Bidder Signature and Information page that it is signing the actual Bid and when submitted as a part of its bid package, shall serve as the Bidder's authorization for the further consideration and activity in the bidding and contract process.
 16. All signatures must be original.

-- remainder of page left blank intentionally --

BIDDER SIGNATURE AND INFORMATION

Bidder's Authorized Signature: _____

Please print or type the following:

Name of Bidder's Authorized Signatory _____

Title: _____

Company Name: _____

Mailing Address: _____

Telephone Number: _____

Facsimile Number: _____

E-Mail Address: _____

Where Incorporated: _____

Federal Tax Identification Number: _____

Date enrolled in an OBWC-approved DFSP (month/date/year): _____ / _____ / _____

Contact person for Contract processing: _____

President's or Chief Executive Officer's Name / Title: _____

JOINT VENTURE ADDITIONAL BIDDER SIGNATURE & INFORMATION

Joint Venture Bidder's Authorized Signature: _____

Please print or type the following:

Name of Joint Venture Bidder's Authorized Signatory _____

Title: _____

Company Name: _____

Mailing Address: _____

Telephone Number: _____

Facsimile Number: _____

E-Mail Address: _____

Where Incorporated: _____

Federal Tax Identification Number: _____

Date enrolled in an OBWC-approved DFSP (month/date/year): _____ / _____ / _____

Contact person for Contract processing: _____

President's or Chief Executive Officer's Name / Title: _____

END OF DOCUMENT

Document 00 43 13 - Bid Security Form

(Form of combined Bid Guaranty and Bond prescribed by Ohio Revised Code Section 153.571)

KNOW ALL PERSONS BY THESE PRESENTS, that we, the undersigned _____,
_____, as Principal,
and _____ as Sureties,
are hereby held and firmly bound unto _____
_____ as Oblige(e)s, in the penal sum of the dollar amount of the Bid submitted by the Principal
to the Oblige(e) on _____ (date) to undertake the Project known as:

Project Number: _____

Project Name: _____

Contract Description: _____
(e.g., General Trades, Plumbing, HVAC, Electrical)

The penal sum, referred to herein, shall be the dollar amount of the Principal's Bid to the Oblige(e), incorporating any additive alternate Bids made by the Principal on the date referred to above to the Oblige(e), which are accepted by the Oblige(e). In no case shall the penal sum exceed the amount of dollars (\$_____). (If the preceding line is left blank, the penal sum will be the full amount of the Principal's Bid, including add alternates. Alternatively, if completed, the amount stated shall not be less than the full amount of the Bid, including Alternates, in dollars and cents. A percentage is not acceptable.) For the payment of the penal sum well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, that whereas the above-named Principal has submitted a Bid for the above referenced Project;

NOW, THEREFORE, if the Oblige(e) accepts the Bid of the Principal, and the Principal fails to enter into a proper contract in accordance with the Bid, Plans, Specifications, details, and bills of material; and in the event the Principal pays to the Oblige(e) the difference, not to exceed ten percent of the penal sum hereof between the amount specified in the Bid and such larger amount for which the Oblige(e) may in good faith contract with the Bidder determined by the Oblige(e) to be the next lowest responsive and responsible to perform the Work covered by the Bid; or in the event the Oblige(e) does not award the Contract to such next lowest responsive and responsible Bidder and resubmits the Project for bidding, the Principal pays to the Oblige(e) the difference not to exceed ten percent of the penal sum hereof between the amount specified in the Bid, or the costs, in connection with the resubmission, of printing new Contract Documents, required advertising and printing and mailing notices to prospective Bidders, whichever is less, then this obligation shall be null and void, otherwise to remain in full force and effect. If the Oblige(e) accepts the Bid of the Principal, and the Principal, within 10 days after the awarding of the Contract, enters into a proper contract and executes the Agreement Form in accordance with the Contract Documents, including without limitation the Bid, Plans, Specifications, details, and bills of material, which said Contract is made a part of this Bond the same as though set forth herein; and

NOW ALSO, IF THE SAID Principal shall well and faithfully perform each and every condition of such Contract; and indemnify the Oblige(e) against all damage suffered by failure to perform such Contract according to the provisions thereof and in accordance with the Contract Documents, including without limitation Plans, Specifications, details, and bills of material therefore; and shall pay all lawful claims of Subcontractors, Material Suppliers and laborers for labor performed and materials furnished in the carrying forward, performing or completing of said Contract; we, agreeing and assenting that this undertaking shall be for the benefit of any Subcontractor, Material Suppliers or laborer having a just claim, as well as for the Oblige(e) herein; then this obligation shall be void; otherwise the same shall remain in full force and effect; it being

expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall in no event exceed the penal amount of this obligation as herein stated.

THE SAID Surety hereby stipulates and agrees that no modifications, omissions or additions, in or to the terms of said Contract, the Work thereunder or the Contract Documents, including without limitation the Plans and Specifications, therefore, shall in any way affect the obligations of said Surety on its bond, and it does hereby waive notice of any such modifications, omissions or additions in or to the terms of the Contract, the Work, or the Contract Documents, including without limitation the Plans and Specifications.

SIGNED AND SEALED this _____ day of _____, _____.

PRINCIPAL:

X _____

By: _____

Title: _____

SURETY:

X _____

By: _____

Attorney-in-Fact

SURETY INFORMATION:

Street

City State Zip

Telephone Number

SURETY AGENT'S INFORMATION:

Agency Name

Street

City State Zip

Telephone Number

END OF DOCUMENT

QUALIFICATIONS STATEMENT

<p>THE INFORMATION SUPPLIED IN THIS DOCUMENT IS CONFIDENTIAL TO THE EXTENT PERMITTED BY LAWS AND REGULATIONS</p>
--

1. SUBMITTED BY:

Official Name of Firm: _____

Address: _____

2. SUBMITTED TO:

3. SUBMITTED FOR:

Owner: _____

Project Name: _____

TYPE OF WORK:

4. CONTRACTOR'S CONTACT INFORMATION

Contact Person: _____

Title: _____

Phone: _____

Email: _____

Document 00 45 13 – Bidders Qualifications

5. AFFILIATED COMPANIES:

Name: _____

Address: _____

6. TYPE OF ORGANIZATION:

☐ SOLE PROPRIETORSHIP

Name of Owner: _____

Doing Business As: _____

Date of Organization: _____

☐ PARTNERSHIP

Date of Organization: _____

Type of Partnership: _____

Name of General Partner(s): _____

☐ CORPORATION

State of Organization: _____

Date of Organization: _____

Executive Officers:

- President: _____

- Vice President(s): _____

Document 00 45 13 – Bidders Qualifications

- Treasurer:

- Secretary:

☐ LIMITED LIABILITY COMPANY

State of Organization:

Date of Organization:

Members:

☐ JOINT VENTURE

Sate of Organization:

Date of Organization:

Form of Organization:

Joint Venture Managing Partner

- Name:

- Address:

Joint Venture Managing Partner

- Name:

- Address:

Document 00 45 13 – Bidders Qualifications

Joint Venture Managing Partner

- Name: _____
- Address: _____

7. LICENSING

Jurisdiction: _____
Type of License: _____
License Number: _____
Jurisdiction: _____
Type of License: _____
License Number: _____

8. CERTIFICATIONS

CERTIFIED BY:

Disadvantage Business Enterprise: _____
Minority Business Enterprise: _____
Woman Owned Enterprise: _____
Small Business Enterprise: _____
Other (_____): _____

9. BONDING INFORMATION

Bonding Company: _____
Address: _____

Bonding Agent: _____

Document 00 45 13 – Bidders Qualifications

Address: _____

Contact Name: _____

Phone: _____

Aggregate Bonding Capacity: _____

Available Bonding Capacity as of date of this submittal: _____

10. FINANCIAL INFORMATION

Financial Institution: _____

Address: _____

Account Manager: _____

Phone: _____

INCLUDE AS AN ATTACHMENT AN AUDITED BALANCE SHEET FOR EACH OF THE
LAST 3 YEARS

11. CONSTRUCTION EXPERIENCE:

Current Experience:

List on **Schedule A** all uncompleted projects currently under contract (If Joint Venture list each participant's projects separately).

Previous Experience:

List on **Schedule B** all projects completed within the last 5 Years (If Joint Venture list each participant's projects separately).

Has firm listed in Section 1 ever failed to complete a construction contract awarded to it?

☐ YES ☐ NO

If YES, attach as an Attachment details including Project Owner's contact information.

Document 00 45 13 – Bidders Qualifications

Has any Corporate Officer, Partner, Joint Venture participant or Proprietor ever failed to complete a construction contract awarded to them in their name or when acting as a principal of another entity?

☐ YES ☐ NO

If YES, attach as an Attachment details including Project Owner's contact information.

Are there any judgments, claims, disputes or litigation pending or outstanding involving the firm listed in Section 1 or any of its officers (or any of its partners if a partnership or any of the individual entities if a joint venture)?

☐ YES ☐ NO

If YES, attach as an Attachment details including Project Owner's contact information.

12. SAFETY PROGRAM:

Name of Contractor's Safety Officer: _____

Include the following as attachments:

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) OSHA No. 500- Log & Summary of Occupational Injuries & Illnesses for the past 5 years.

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) list of all OSHA Citations & Notifications of Penalty (monetary or other) received within the last 5 years (indicate disposition as applicable) - IF NONE SO STATE.

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) list of all safety citations or violations under any state all received within the last 5 years (indicate disposition as applicable) - IF NONE SO STATE.

Provide the following for the firm listed in Section V (and for each proposed Subcontractor furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) the following (attach additional sheets as necessary):

Workers' compensation Experience Modification Rate (EMR) for the last 5 years:

YEAR	_____	EMR	_____
YEAR	_____	EMR	_____

Document 00 45 13 – Bidders Qualifications

YEAR	_____	EMR	_____
YEAR	_____	EMR	_____
YEAR	_____	EMR	_____

Total Recordable Frequency Rate (TRFR) for the last 5 years:

YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____

Total number of man-hours worked for the last 5 Years:

YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____

Provide Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) Days Away From Work, Days of Restricted Work Activity or Job Transfer (DART) incidence rate for the particular industry or type of Work to be performed by Contractor and each of Contractor's proposed Subcontractors and Suppliers) for the last 5 years:

YEAR	_____	DART	_____
YEAR	_____	DART	_____
YEAR	_____	DART	_____
YEAR	_____	DART	_____
YEAR	_____	DART	_____

13. EQUIPMENT:

MAJOR EQUIPMENT:

List on **Schedule C** all pieces of major equipment available for use on Owner's Project.

Document 00 45 13 – Bidders Qualifications

I HEREBY CERTIFY THAT THE INFORMATION SUBMITTED HERewith, INCLUDING ANY ATTACHMENTS, IS TRUE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

NAME OF ORGANIZATION: _____

BY: _____

TITLE: _____

DATED: _____

NOTARY ATTEST:

SUBSCRIBED AND SWORN TO BEFORE ME

THIS _____ DAY OF _____, 20____

NOTARY PUBLIC - STATE OF _____

MY COMMISSION EXPIRES: _____

REQUIRED ATTACHMENTS

1. Schedule A (Current Experience).
2. Schedule B (Previous Experience).
3. Schedule C (Major Equipment).
4. Audited balance sheet for each of the last 3 years for firm named in Section 1.
5. Evidence of authority for individuals listed in Section 7 to bind organization to an agreement.
6. Resumes of officers and key individuals (including Safety Officer) of firm named in Section 1.
7. Required safety program submittals listed in Section 13.
8. Additional items as pertinent.

SCHEDULE A

CURRENT EXPERIENCE

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Status	Cost of Work
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				

SCHEDULE B

PREVIOUS EXPERIENCE (Include ALL Projects Completed within last 5 years)

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Status	Cost of Work
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				

SCHEDULE B

PREVIOUS EXPERIENCE (Include ALL Projects Completed within last 5 years)

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Status	Cost of Work
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				

SCHEDULE C - LIST OF MAJOR EQUIPMENT AVAILABLE

[illegible]

Document 00 45 19 – Non-Collusion Affidavit

STATE OF OHIO

BID Identification

CONTRACTOR _____, being duly sworn,
deposes and says that he is _____ (Sole owner, a partner, president,
secretary, etc.) of _____
, the party making the foregoing BID; that such BID is not made in the interest of or on behalf of any undisclosed person, partnership, company, association, organization, or corporation; that such BID is genuine and not collusive or sham; that said BIDDER has not directly or indirectly induced or solicited any other BIDDER to put in a fake or sham BID and has not directly or indirectly colluded, conspired, connived, or agreed with any BIDDER or anyone else to put in a sham BID, or that any one shall refrain from bidding; that said BIDDER has not in any manner directly or indirectly, sought by agreement, communication or conference with anyone to fix the BID price of said BIDDER or of any other BIDDER, or to fix any overhead, profit, or cost element of such BID price, or of that of any other BIDDER, or to secure any advantage against the OWNER awarding the contract or anyone interested in the proposed contract; that all statements contained in such BID are true; and, further, that said BIDDER has not, directly or indirectly, submitted his BID price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid and will not pay any fee in connection therewith, to any corporation, partnership, company, association, organization, BID depository, or to any member or agent thereof, or to any other individual except to such person or persons as have a partnership or other financial interest with said BIDDER in his general business.

Signed: _____

Subscribed and sworn to before me this ____ day of _____, 20____.

Seal

Notary

Document 00 45 20 – Certification of Non Delinquency Property Tax

**AFFIDAVIT OF CONTRACTOR OR SUPPLIER
OF NON-DELINQUENCY OF
PERSONAL PROPERTY TAXES
O.R.C. 5719.042**

DATE: _____

OWNER: Lakewood Elementary School Kitchen Renovation and Freezer Installation

The undersigned, being first duly sworn, having been a bidder for the **Lakewood Elementary School Kitchen Renovation and Freezer Installation project** hereby states that we are not charged at the time the bid was submitted with any delinquent personal property taxes on the general tax list of personal property of any county in which you as a taxing district have territory and that we were not charged with delinquent personal property taxes on any such tax list.

In consideration of the award of the above contract, the above statement is incorporated in said contract as a covenant of the undersigned.

Contractor Printed Name

Signature

Title

Sworn to before me and subscribed in my presence this _____ day of _____, 20 ____.

Notary Public

Document 00 45 21 – Statement of Liability of Property Tax

**STATEMENT OF CONTRACTOR OR SUPPLIER
OF LIABILITY OF
PERSONAL PROPERTY TAXES**

- Complete either liability or non-liability forms, not both -

State of Ohio)
) SS:
Licking County)

The undersigned, being first duly sworn, says that he may be awarded a contract by Project Owner after competitive bidding; and at the time of the submission of said affiant was charged with delinquent personal property taxes on the general tax list of personal property of Licking County, Ohio and that the amount of such due and unpaid delinquent taxes is \$ _____ and that the amount of due and unpaid penalties and interest is \$ _____.

In consideration of the award of the above contract, the above statement is incorporated in said contract as a covenant of the undersigned.

Contractor Printed Name – see NOTE below

Signature

Title

Sworn to before me and subscribed in my presence this _____ day of _____, 20 ____.

Notary Public

NOTE: Where an individual has submitted a bid, the name of the individual should appear here. Where an individual signs for a partnership, the name of the partner signing for the partnership should appear together with the name of the partnership. Where a corporation has submitted a bid, the name of the officer, his position and the name of the corporation should appear.

Document 00 45 36 – Contractor Equal Opportunity Certification

STATE OF _____

COUNTY OF _____

_____ being first duly sworn, deposes and says that they are
(Printed Name)

_____ of _____
(President, Secretary, etc.) (Name of Company)

the party who made the foregoing bid; that such party as contractor does not and shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, age, disability or military status. If awarded a contract under this bid, said party shall take affirmative action to insure that applicants are employed and that employees are treated, during employment, without regard to their race, color, religion, sex, age, disability or military status. If successful as the lowest and best bidder under the foregoing bid, this party shall post non-discrimination notices in conspicuous places available to employees and applicants for employment, setting forth the provisions of this affidavit.

Signature _____

Affiant _____

Company/Corporation _____

Address _____

City/State/Zip Code _____

Sworn to and subscribed before me this _____ day of _____, 20_____.

Notary Public

My Commission expires _____, 20_____. (Seal)

Document 00 46 20 – Certification, Bidder Non Segregation

CERTIFICATION OF BIDDER REGARDING NON SEGREGATED FACILITIES

Name of Prime Contractor

PROJECT NAME: Lakewood Elementary School Kitchen Renovation and Freezer Installation

The undersigned hereby certifies that:

A certification of Non-Segregated Facilities, as required by the May 9, 1967 order (32 F.R. 7439, May 19, 1967) on elimination of Segregated Facilities, by the Secretary of Labor, must be submitted prior to the award of a subcontract for all subcontractors during a period (I.E., quarterly, semi-annually, or annually).

**Name and Title of Signer
(Print or Typed):**

Company:

Signature

Date

Document 00 46 30 – Hold Harmless Agreement

KNOW ALL MEN BY THESE PRESENTS, that we

I, _____
(Name) (Title)

of, _____
(Company) (Company Address)

As principal, shall indemnify and save harmless the Lakewood Local School District, all within the State of Ohio, their agents ad employees, from all suits and actions of every name and description brought against the Owner for or on account of any injury or damage to persons or property arising from or growing out of the construction of the work in said agreement, specified to be done, or the doing of any work herein described.

Witness our signature(s) for the above agreement this

_____ Day of _____, 20____

Principal Signature: _____

Principal Printed Name: _____

Principal Printed Name: _____

SIGNED IN THE PRESENCE OF:

Witness 1: _____

Witness 2: _____

Document 00 46 40 – Drug Free Workplace

DRUG FREE WORKPLACE REQUIREMENTS:

(1) "Each contractor shall require all subcontractors with whom the contractor is in contract for the public improvement to be enrolled in and be in good standing in the Bureau of Workers' Compensation's Drug-Free Workplace Program or a comparable program approved by the Bureau that meets the requirements specified in section 153.03 of the Revised Code prior to a subcontractor providing labor at the project site of the public improvement."

(2) "Each subcontractor shall require all lower-tier subcontractors with whom the subcontractor is in contract for the public improvement to be enrolled in and be in good standing in the Bureau of Workers' Compensation's Drug-Free Workplace Program or a comparable program approved by the Bureau that meets the requirements specified in section 153.03 of the Revised Code prior to a lower-tier subcontractor providing labor at the project site of the public improvement."

(3) "Failure of a contractor to require a subcontractor to be enrolled in and be in good standing in the Bureau of Workers' Compensation's Drug-Free Workplace Program or a comparable program approved by the Bureau that meets the requirements specified in section 153.03 of the Revised Code prior to the time that the subcontractor provides labor at the project site will result in the contractor being found in breach of the contract and that breach shall be used in the responsibility analysis of that contractor or the subcontractor who was not enrolled in a program for future contracts with the state for five years after the date of the breach."

(4) "Failure of a subcontractor to require a lower-tier subcontractor to be enrolled in and be in good standing in the Bureau of Workers' Compensation's Drug-Free Workplace Program or a comparable program approved by the Bureau that meets the requirements specified in section 153.03 of the Revised Code prior to the time that the lower-tier subcontractor provides labor at the project site will result in the subcontractor being found in breach of the contract and that breach shall be used in the responsibility analysis of that subcontractor or the lower-tier subcontractor who was not enrolled in a program for future contracts with the state for five years after the date of the breach."

BIDDER MUST PROVIDE DOCUMENTATION THAT CERTIFIES THAT THE "DRUG FREE WORKPLACE" REQUIREMENTS HAVE BEEN MET.

Document 00 50 00 – Notice of Award

NOTICE OF AWARD

Date of Issuance:

Owner:

Owner's Contract No.:

Engineer:

Engineer's Project No.:

Project:

Contract Name:

Bidder:

Bidder's Address:

TO BIDDER:

You are notified that Owner has accepted your Bid dated [] for the above Contract, and that you are the Successful Bidder and are awarded a Contract for:

Lakewood Elementary School Kitchen Renovation and Freezer Installation

The Contract Price of the awarded Contract is: \$ []

[] unexecuted counterparts of the Agreement accompany this Notice of Award, and one copy of the Contract Documents accompanies this Notice of Award, or has been transmitted or made available to Bidder electronically.

☐ a set of the Drawings will be delivered separately from the other Contract Documents.

You must comply with the following conditions precedent within 15 days of the date of this Notice of Award:

1. Deliver to Owner [] counterparts of the Agreement, fully executed by Bidder.
2. Deliver with the executed Agreement(s) the Contract security [*e.g., performance and payment bonds*] and insurance documentation as specified in the Instructions to Bidders and General Conditions, Articles 2 and 6.
3. Other conditions precedent (if any):

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Agreement, together with any additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions.

Owner:

Authorized Signature

By:

Title:

Copy: Engineer

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AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

THIS AGREEMENT is by and between _____ (“Owner”) and
_____. (“Contractor”).

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

- 1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

ARTICLE 2 – THE PROJECT

- 2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: _____

ARTICLE 3 – ENGINEER

- 3.01 The part of the Project that pertains to the Work has been designed by _____.
- 3.02 The Owner has retained _____ (“Engineer”) to act as Owner’s representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

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

- 4.02 *Contract Times: Dates*
- A. The Work will be substantially completed on or before _____, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before _____.

[or]

- 4.02 *Contract Times: Days*
- A. The Work will be substantially completed within _____ days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 15.06 of the

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General Conditions within [] days after the date when the Contract Times commence to run.

NOTE(S) TO USER:

If the Contract includes Milestones, add the following Paragraph 4.02.B to the selected version of Paragraph 4.02.A:

- B. Parts of the Work shall be substantially completed on or before the following Milestone(s):
1. Milestone 1 [event & date/days]
 2. Milestone 2 [event & date/days]
 3. Milestone 3 [event & date/days]

4.03 Liquidated Damages

- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):
1. Substantial Completion: Contractor shall pay Owner \$[] for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.
 2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$[] for each day that expires after such time until the Work is completed and ready for final payment.
 3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.
 4. Milestones: Contractor shall pay Owner \$[] for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for achievement of Milestone 1, until Milestone 1 is achieved.
- B. *Bonus*: Contractor and Owner further recognize the Owner will realize financial and other benefits if the Work is completed prior to the time specified for Substantial Completion. Accordingly, Owner and Contractor agree that as a bonus for early completion, Owner shall pay Contractor \$[] for each day prior to the time specified in Paragraph 4.02 for Substantial Completion (as duly adjusted pursuant to the Contract) that the Work is substantially complete. The maximum value of the bonus shall be limited to \$[].
-

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4.04 Special Damages

- A. In addition to the amount provided for liquidated damages, Contractor shall reimburse Owner (1) for any fines or penalties imposed on Owner as a direct result of the Contractor's failure to attain Substantial Completion according to the Contract Times, and (2) for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Substantial Completion (as duly adjusted pursuant to the Contract), until the Work is substantially complete.
- B. After Contractor achieves Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times, Contractor shall reimburse Owner for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Work to be completed and ready for final payment (as duly adjusted pursuant to the Contract), until the Work is completed and ready for final payment.

ARTICLE 5 – CONTRACT PRICE

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

- A. For all Work other than Unit Price Work, a lump sum of: \$.

All specific cash allowances are included in the above price in accordance with Paragraph 13.02 of the General Conditions.

- B. For all Unit Price Work, an amount equal to the sum of the extended prices (established for each separately identified item of Unit Price Work by multiplying the unit price times the actual quantity of that item):

Unit Price Work					
Item No.	Description	Unit	Estimated Quantity	Unit Price	Extended Price
Total of all Extended Prices for Unit Price Work (subject to final adjustment based on actual quantities)					\$

The extended prices for Unit Price Work set forth as of the Effective Date of the Contract are based on estimated quantities. As provided in Paragraph 13.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer.

- C. Total of Lump Sum Amount and Unit Price Work (subject to final Unit Price adjustment) \$.

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- D. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

NOTE(S) TO USER:

1. *If adjustment prices for variations from stipulated Base Bid or other baseline quantities have been agreed to, insert appropriate provisions.*
2. *Depending upon the particular project's pricing structure, use 5.01.A alone; 5.01.A, 5.01.B, and 5.01.C together; 5.01.B alone; or 5.01.D alone, deleting those not used and renumbering accordingly. If 5.01.D is used, Contractor's Bid is attached as an exhibit and listed as a Contract Document in Article 9 below.*

ARTICLE 6 – PAYMENT PROCEDURES

6.01 Submittal and Processing of Payments

- A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 Progress Payments; Retainage

- A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the [] day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.
1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract
 - a. [] percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and
 - b. [] percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
- B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to [] percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less [] percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

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6.03 *Final Payment*

- A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 15.06.

ARTICLE 7 – INTEREST

- 7.01 All amounts not paid when due shall bear interest at the rate of percent per annum.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

- 8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:
 - A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
 - B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 - C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
 - D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
 - E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor's safety precautions and programs.
 - F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
 - G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
 - H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

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- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- J. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 Contents

A. The Contract Documents consist of the following:

- 1. This Agreement (pages 1 to [] , inclusive).
- 2. Performance bond (pages [] to [] , inclusive).
- 3. Payment bond (pages [] to [] , inclusive).
- 4. Other bonds.
 - a. [] (pages [] to [] , inclusive).

NOTE(S) TO USER:

Such other bonds might include maintenance or warranty bonds intended to manage risk after completion of the Work.

- 5. General Conditions (pages [] to [] , inclusive).
- 6. Supplementary Conditions (pages [] to [] , inclusive).
- 7. Specifications as listed in the table of contents of the Project Manual.
- 8. Drawings (not attached but incorporated by reference) consisting of [] sheets with each sheet bearing the following general title: [] [or] the Drawings listed on the attached sheet index.
- 9. Addenda (numbers [] to [] , inclusive).
- 10. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid (pages [] to [] , inclusive).
- 11. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Notice to Proceed.
 - b. Work Change Directives.
 - c. Change Orders.
 - d. Field Orders.

NOTE(S) TO USER:

If any of the items listed are not to be included as Contract Documents, remove such item from the list and renumber the remaining items.

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- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 *Terms*

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

10.02 *Assignment of Contract*

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 *Successors and Assigns*

- A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04 *Severability*

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

10.05 *Contractor's Certifications*

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:
 - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;
 - 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

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3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

10.06 *Other Provisions*

- A. Owner stipulates that if the General Conditions that are made a part of this Contract are based on EJCDC® C-700, Standard General Conditions for the Construction Contract, published by the Engineers Joint Contract Documents Committee®, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process such as highlighting or “track changes” (redline/strikeout), or in the Supplementary Conditions.

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IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on (which is the Effective Date of the Contract).

NOTE(S) TO USER:

1. See Article 21 of the Instructions to Bidders and correlate procedures for format and signing of the documents.
2. The Effective Date of the Contract stated above and the dates of any construction performance bond (EJCDC® C-610 or other) and construction payment bond (EJCDC® C-615 or other) should be the same, if possible. In no case should the date of any bonds be earlier than the Effective Date of the Contract.

OWNER:

CONTRACTOR:

By: _____

By: _____

Title: _____

Title: _____

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

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for giving notices:

Address for giving notices:

License No.: _____
(where applicable)

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

NOTE TO USER: Use in those states or other jurisdictions where applicable or required.

Request for Taxpayer Identification Number and Certification

Give Form to the
requester. Do not
send to the IRS.

Print or type See Specific Instructions on page 2.	1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.	
	2 Business name/disregarded entity name, if different from above	
	3 Check appropriate box for federal tax classification; check only one of the following seven boxes: <input type="checkbox"/> Individual/sole proprietor or single-member LLC <input type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶ _____ Note. For a single-member LLC that is disregarded, do not check LLC; check the appropriate box in the line above for the tax classification of the single-member owner. <input type="checkbox"/> Other (see instructions) ▶ _____	4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3): Exempt payee code (if any) _____ Exemption from FATCA reporting code (if any) _____ <i>(Applies to accounts maintained outside the U.S.)</i>
	5 Address (number, street, and apt. or suite no.)	Requester's name and address (optional)
	6 City, state, and ZIP code	
7 List account number(s) here (optional)		

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the instructions for line 1 and the chart on page 4 for guidelines on whose number to enter.

Social security number										
				-				-		
or										
Employer identification number										
				-						

Part II Certification

Under penalties of perjury, I certify that:

- The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
- I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
- I am a U.S. citizen or other U.S. person (defined below); and
- The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign Here	Signature of U.S. person ▶	Date ▶
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General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. Information about developments affecting Form W-9 (such as legislation enacted after we release it) is at www.irs.gov/fw9.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following:

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)

- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding? on page 2.

By signing the filled-out form, you:

- Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
- Certify that you are not subject to backup withholding, or
- Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
- Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting?* on page 2 for further information.

Note. If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States:

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Publication 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items:

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,
2. You do not certify your TIN when required (see the Part II instructions on page 3 for details),

3. The IRS tells the requester that you furnished an incorrect TIN,

4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or

5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code* on page 3 and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships* above.

What is FATCA reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code* on page 3 and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account, list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9.

a. **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note. ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. **Sole proprietor or single-member LLC.** Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. **Partnership, LLC that is not a single-member LLC, C Corporation, or S Corporation.** Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. **Disregarded entity.** For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

Line 3

Check the appropriate box in line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box in line 3.

Limited Liability Company (LLC). If the name on line 1 is an LLC treated as a partnership for U.S. federal tax purposes, check the "Limited Liability Company" box and enter "P" in the space provided. If the LLC has filed Form 8832 or 2553 to be taxed as a corporation, check the "Limited Liability Company" box and in the space provided enter "C" for C corporation or "S" for S corporation. If it is a single-member LLC that is a disregarded entity, do not check the "Limited Liability Company" box; instead check the first box in line 3 "Individual/sole proprietor or single-member LLC."

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space in line 4 any code(s) that may apply to you.

Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

- 1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)
- 2—The United States or any of its agencies or instrumentalities
- 3—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities
- 4—A foreign government or any of its political subdivisions, agencies, or instrumentalities
- 5—A corporation
- 6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession
- 7—A futures commission merchant registered with the Commodity Futures Trading Commission
- 8—A real estate investment trust
- 9—An entity registered at all times during the tax year under the Investment Company Act of 1940
- 10—A common trust fund operated by a bank under section 584(a)
- 11—A financial institution
- 12—A middleman known in the investment community as a nominee or custodian
- 13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over \$600 required to be reported and direct sales over \$5,000 ¹	Generally, exempt payees 1 through 5 ²
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

¹ See Form 1099-MISC, Miscellaneous Income, and its instructions.

² However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B—The United States or any of its agencies or instrumentalities

C—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G—A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I—A common trust fund as defined in section 584(a)

J—A bank as defined in section 581

K—A broker

L—A trust exempt from tax under section 664 or described in section 4947(a)(1)

M—A tax exempt trust under a section 403(b) plan or section 457(g) plan

Note. You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are a single-member LLC that is disregarded as an entity separate from its owner (see *Limited Liability Company (LLC)* on this page), enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note. See the chart on page 4 for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at www.ssa.gov. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at www.irs.gov/businesses and clicking on Employer Identification Number (EIN) under Starting a Business. You can get Forms W-7 and SS-4 from the IRS by visiting IRS.gov or by calling 1-800-TAX-FORM (1-800-829-3676).

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note. Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if items 1, 4, or 5 below indicate otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code* earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account)	The actual owner of the account or, if combined funds, the first individual on the account ¹
3. Custodian account of a minor (Uniform Gift to Minors Act)	The minor ²
4. a. The usual revocable savings trust (grantor is also trustee) b. So-called trust account that is not a legal or valid trust under state law	The grantor-trustee ¹ The actual owner ¹
5. Sole proprietorship or disregarded entity owned by an individual	The owner ³
6. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))	The grantor ⁴
For this type of account:	Give name and EIN of:
7. Disregarded entity not owned by an individual	The owner
8. A valid trust, estate, or pension trust	Legal entity ⁴
9. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
10. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
11. Partnership or multi-member LLC	The partnership
12. A broker or registered nominee	The broker or nominee
13. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
14. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i)(B))	The trust

¹ List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

² Circle the minor's name and furnish the minor's SSN.

³ You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

⁴ List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships* on page 2.

***Note.** Grantor also must provide a Form W-9 to trustee of trust.

Note. If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records from Identity Theft

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Publication 4535, Identity Theft Prevention and Victim Assistance.

Victims of identity theft who are experiencing economic harm or a system problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

Protect yourself from suspicious emails or phishing schemes. Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to phishing@irs.gov. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at: spam@uce.gov or contact them at www.ftc.gov/idtheft or 1-877-IDTHEFT (1-877-438-4338).

Visit IRS.gov to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.

Document 00 50 20 – Independent Contractor Indemnification

INDEPENDENT CONTRACTOR INDEMNIFICATION CLAUSE

The contractor and the county mutually agree that the relationship formed by this agreement is intended to be that of customer and independent contractor, and is not an employment relationship.

The contractor hereby represents that it is not an entity over whom the National Labor Relations Board has ever declined jurisdiction.

The contractor further agrees and covenants that, should a safety issue or complaint arise from, or involving, an employee, agent or representative of the contractor; the contractor will indemnify and hold the county harmless, and will assume all legal and financial responsibility for said issue or complaint including, but not limited to, all fines, fees, costs, corrective action, provision of equipment, training and administration.

The contractor further agrees and covenants that, should a safety related issue suit, or complaint be filed against the county by an employee, agent, or representative of the contractor, the contractor will pay all associated costs of the county, as the county deems necessary, in order to defend, correct, or resolve said issue or complaint.

NAME OF COMPANY _____

SIGNATURE AND TITLE _____

DATE _____

Sworn to and subscribed in my presence by _____ on the ____ day of _____, 20____.

Notary public _____

My commission expires

Document 00 61 00 – Corporate Resolution, Bidders Affidavit

CORPORATE RESOLUTION

(Name of Corporation Secretary) Secretary of _____
(Corporation Name)

a/an _____ Corporation hereby certify that the Board of Directors of said Corporation on the
(State)

____ Day of _____, 20____, adopted a resolution authorizing the _____
(Corporation Officers' Title)

the of this Company, namely _____ to sign bid proposals, sign
(Corporation Officers' Name)

and enter into any and all contracts and other instruments, sign and/or authorize bid guaranty and performance

bonds for the purpose of furnishing labor and materials at such price and upon such terms and conditions,

including any amendments or modifications thereto, as said _____ in his sole
(Corporation Officers' Title)

discretion shall deem best, and that said actions shall be binding upon the Corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of said

Corporation at _____, _____, on this ____ Day of _____, 20____.
(City) (State)

and I further certify that said resolution is still in full force and effect.

(Name of Corporation Secretary)

Document 00 61 13 - Performance and Payment Bond Form

(Form of Bond prescribed by Ohio Revised Code Section 153.57 - Not to be used as Bid Guaranty)

KNOW ALL PERSONS BY THESE PRESENTS, that we, the undersigned _____,
_____, as Principal,
and _____ as Sureties,
are hereby held and firmly bound unto _____
_____ as Oblige(e)s, in the penal sum of _____ dollars,
for the payment of which well and truly to be made, we jointly and severally bind ourselves, our heirs, executors,
administrators, successors, and assigns.

SIGNED AND SEALED this _____ day of _____, _____.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, that whereas the above-named Principal did on the
_____ day of _____, _____, enter into a Contract with the Oblige(e), which said Contract is
made a part of this Bond the same as though set forth herein and which is more fully described as:

Project Number: _____

Project Name: _____

Contract Description: _____
(e.g., General Trades, Plumbing, HVAC, Electrical)

NOW, THEREFORE, if the above-named Principal shall well and faithfully do and perform the things agreed by the
Oblige(e) to be done and performed according to the terms of said Contract; and shall pay all lawful claims of Subcontractors,
Material Suppliers, and laborers, for labor performed and materials furnished in the carrying forward, performing, or
completing of said Contract; we agreeing and assenting that this undertaking shall be for the benefit of any Subcontractor,
Material Supplier or laborer having a just claim as well as for the Oblige(e) herein; then this obligation shall be void; otherwise
the same shall remain in full force and effect; it being expressly understood and agreed that the liability of the Sureties for
any and all claims hereunder shall in no event exceed the penal amount of this obligation as herein stated.

THE SAID Surety hereby stipulates and agrees that no modifications, omissions, or additions, in or to the terms of
the said Contract or in or to the Plans and Specifications therefor shall in any wise affect the obligations of said Surety on its
bond, and it does hereby waive notice of any such modifications, omissions or additions in or to the terms of the Contract, the
Work or the Contract Documents, including without limitation the Plans and Specifications.

PRINCIPAL:

Principal Signature

By: _____

Title: _____

SURETY:

Surety Signature

By: _____
Attorney-in-Fact

SURETY INFORMATION:

Street

City State Zip

Telephone Number

SURETY AGENT'S INFORMATION:

Agency Name

Street

City State Zip

Telephone Number

END OF DOCUMENT

Document 00 65 00 – Notice to Proceed

NOTICE TO PROCEED

Owner:	Owner's Contract No.:
Contractor:	Contractor's Project No.:
Engineer:	Engineer's Project No.:
Project:	Contract Name:
	Effective Date of Contract:

TO CONTRACTOR:

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on [_____, 20__]. *[see Paragraph 4.01 of the General Conditions]*

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work shall be done at the Site prior to such date. In accordance with the Agreement, [the date of Substantial Completion is _____, and the date of readiness for final payment is _____] **or** [the number of days to achieve Substantial Completion is _____, and the number of days to achieve readiness for final payment is _____].

Before starting any Work at the Site, Contractor must comply with the following:
[Note any access limitations, security procedures, or other restrictions]

Owner:

Authorized Signature

By:

Title:

Date Issued:

Copy: Engineer

Document 00 70 00 – Notice of Commencement

NOTICE OF COMMENCEMENT

Date of Issuance:

Owner:

Owner's Contract No.:

Engineer:

Engineer's Project No.:

Project:

Contract Name:

Bidder:

Bidder's Address:

Notice is hereby given to all interested parties of the following information in relation to the public improvement described herein:

Lakewood Elementary School Kitchen Renovation and Freezer Installation

1. The Affiant:
2. The public Authority will be commencing a public improvement. The name, location, and a number, if any, used by the Public Authority to identify the improvement sufficient to permit the improvement described above.
3. The name and address of all principal Contractors:
4. The following lists of the names and addresses of the sureties for all the principal Contractors:
5. The name and address of the representative of the public authority upon whom service may be made for the purpose of serving an affidavit to 1311.26 of the Revised Code is:

SWORN TO before me and subscribed in my presence this _____ day of _____, 20 ____.

Notary Public

My Commission Expires: _____

Document 00 70 50 – Proposed Subcontractor Form

PROPOSED SUBCONTRACTS BREAKDOWN

SUBCONTRACTOR No. 1			
Contractor Name			
Address			
Principals Name		Principals Phone	
Subcontract Amount		% of Total Dollar Amount	
Scope of Work			
SUBCONTRACTOR No. 2			
Contractor Name			
Address			
Principals Name		Principals Phone	
Subcontract Amount		% of Total Dollar Amount	
Scope of Work			
SUBCONTRACTOR No. 3			
Contractor Name			
Address			
Principals Name		Principals Phone	
Subcontract Amount		% of Total Dollar Amount	
Scope of Work			
SUBCONTRACTOR No. 4			
Contractor Name			
Address			
Principals Name		Principals Phone	
Subcontract Amount		% of Total Dollar Amount	
Scope of Work			

SUBCONTRACTOR No. 5			
Contractor Name			
Address			
Principals Name		Principals Phone	
Subcontract Amount		% of Total Dollar Amount	
Scope of Work			
SUBCONTRACTOR No. 6			
Contractor Name			
Address			
Principals Name		Principals Phone	
Subcontract Amount		% of Total Dollar Amount	
Scope of Work			
SUBCONTRACTOR No. 7			
Contractor Name			
Address			
Principals Name		Principals Phone	
Subcontract Amount		% of Total Dollar Amount	
Scope of Work			
SUBCONTRACTOR No. 8			
Contractor Name			
Address			
Principals Name		Principals Phone	
Subcontract Amount		% of Total Dollar Amount	
Scope of Work			

LOGO HERE

<Date>

<Company Name>

<Company Address>

<Company Phone Number>

<Contact Email>

Background Checks for the Lakewood Local School District

The following employees have obtained a criminal records check in accordance with R.C 3319.39 within the last 365 days and the criminal record check indicates that the individual(s) have not been convicted of or pleaded guilty to any offense described in R.C 3319.39(B)(1);

Name	Date

We understand that Dublin Schools reserves the right to review results of background checks of employees and crew members upon request, if necessary.

Sincerely,

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
 3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 5. *Bidder*—An individual or entity that submits a Bid to Owner.
 6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
 7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
 8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
 9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision

regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer has declined to address. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. (“CERCLA”); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5101 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. (“RCRA”); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents. .
15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
17. *Cost of the Work*—See Paragraph 13.01 for definition.
18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
20. *Engineer*—The individual or entity named as such in the Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.

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23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
25. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.
26. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.
27. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
28. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.
30. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.
31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.
32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or "RPR" includes any assistants or field staff of Resident Project Representative.
33. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer's review of the submittals and the performance of related construction activities.
35. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.
36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and

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- submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
37. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.
38. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
39. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
40. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.
42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
43. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.
45. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
46. *Unit Price Work*—Work to be paid for on the basis of unit prices.
47. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the

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result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.

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

1.02 Terminology

- A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. *Intent of Certain Terms or Adjectives:*

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

C. *Day:*

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

D. *Defective:*

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - a. does not conform to the Contract Documents; or
 - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).

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

1. 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.

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2. 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.
 3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
 4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.
- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

- A. *Bonds*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.
- C. *Evidence of Owner’s Insurance*: After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

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

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1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;
2. a preliminary Schedule of Submittals; and
3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
 1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
 2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
 3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.

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- B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

3.02 *Reference Standards*

- A. Standards Specifications, Codes, Laws and Regulations
 - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
 - 2. No provision of any such standard specification, manual, reference standard, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

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3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies:*

1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.
2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
 - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or
 - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.
- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract

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Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.

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

3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers shall not:
1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

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

4.02 *Starting the Work*

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

4.03 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or

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requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
 - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
 - 1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 - 2. abnormal weather conditions;
 - 3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
 - 4. acts of war or terrorism.
- D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility

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that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.

- E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.
- F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.
- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

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

5.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 *Use of Site and Other Areas*

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

- 1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
- 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise;

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

- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading of Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
 - 1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;
 - 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and
 - 3. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
 - 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and

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

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

5.04 *Differing Subsurface or Physical Conditions*

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

1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or
2. is of such a nature as to require a change in the Drawings or Specifications; or
3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

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

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

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

D. *Possible Price and Times Adjustments:*

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

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

- a. such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
 - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,
 - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
 - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or
 - b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
 - c. Contractor failed to give the written notice as required by Paragraph 5.04.A.
 3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
 4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

5.05 *Underground Facilities*

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

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- c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
 - d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.
- C. *Engineer's Review:* Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer's findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Possible Price and Times Adjustments:*
 - 1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
 - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
 - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times; and
 - d. Contractor gave the notice required in Paragraph 5.05.B.

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2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

5.06 *Hazardous Environmental Conditions at Site*

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

1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
2. Technical Data contained in such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.

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

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

E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required

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by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.

- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.
- H. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.
- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this

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Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

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

ARTICLE 6 – BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.
- B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.
- D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.
- E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.
- F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or

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authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.

- C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
- G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.
- H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.
- I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.
- J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

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6.03 Contractor's Insurance

- A. *Workers' Compensation:* Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.
 - 2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
 - 3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).
 - 4. Foreign voluntary worker compensation (if applicable).
- B. *Commercial General Liability—Claims Covered:* Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:
 - 1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.
 - 2. claims for damages insured by reasonably available personal injury liability coverage.
 - 3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- C. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
 - 1. Products and completed operations coverage:
 - a. Such insurance shall be maintained for three years after final payment.
 - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
 - 2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
 - 3. Broad form property damage coverage.
 - 4. Severability of interest.
 - 5. Underground, explosion, and collapse coverage.
 - 6. Personal injury coverage.
 - 7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.

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8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, “Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured” or its equivalent.
- D. *Automobile liability*: Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.
- E. *Umbrella or excess liability*: Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer’s liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.
- F. *Contractor’s pollution liability insurance*: Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result of pollution conditions arising from Contractor’s operations and completed operations. This insurance shall be maintained for no less than three years after final completion.
- G. *Additional insureds*: The Contractor’s commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.
- H. *Contractor’s professional liability insurance*: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.
- I. *General provisions*: The policies of insurance required by this Paragraph 6.03 shall:
1. include at least the specific coverages provided in this Article.
 2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.
 3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.

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4. remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.
 5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.
- J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

6.04 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.
- B. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

6.05 *Property Insurance*

- A. *Builder's Risk:* Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
 1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."
 2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available

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under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.

3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
 4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).
 5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
 6. extend to cover damage or loss to insured property while in transit.
 7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
 8. allow for the waiver of the insurer's subrogation rights, as set forth below.
 9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
 10. not include a co-insurance clause.
 11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
 12. include performance/hot testing and start-up.
 13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.
- B. *Notice of Cancellation or Change:* All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.
- C. *Deductibles:* The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
- D. *Partial Occupancy or Use by Owner:* If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will

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provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.

- E. *Additional Insurance*: If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.
- F. *Insurance of Other Property*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

6.06 *Waiver of Rights*

- A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:
 - 1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
 - 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of

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payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.

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

6.07 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.
- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

7.01 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.02 *Labor; Working Hours*

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

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

7.03 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.04 *"Or Equals"*

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.
 - 1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that:
 - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
 - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;

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- 3) it has a proven record of performance and availability of responsive service; and
 - 4) it is not objectionable to Owner.
- b. Contractor certifies that, if approved and incorporated into the Work:
 - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense*: Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal", which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer's Determination*: Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.
- E. *Treatment as a Substitution Request*: If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer consider the proposed item as a substitute pursuant to Paragraph 7.05.

7.05 Substitutes

- A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.
 1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.
 2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.
 3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

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- a. shall certify that the proposed substitute item will:
 - 1) perform adequately the functions and achieve the results called for by the general design,
 - 2) be similar in substance to that specified, and
 - 3) be suited to the same use as that specified.
 - b. will state:
 - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,
 - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
 - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
 - c. will identify:
 - 1) all variations of the proposed substitute item from that specified, and
 - 2) available engineering, sales, maintenance, repair, and replacement services.
 - d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
- E. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute at Contractor's expense.

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- F. *Effect of Engineer's Determination:* If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

7.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.
- B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.
- E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.
- F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.
- H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.

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- I. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.
- J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.
- K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.
- L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.
- N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.
- O. Nothing in the Contract Documents:
 - 1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor
 - 2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

7.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not

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identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.08 *Permits*

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

7.09 *Taxes*

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

7.10 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It shall not be Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times

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resulting from such changes, then within 30 days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.11 *Record Documents*

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

7.12 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
 - 1. all persons on the Site or who may be affected by the Work;
 - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
- C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
- D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone

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employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

- F. Contractor's duties and responsibilities for safety and protection shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).
- G. Contractor's duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.13 *Safety Representative*

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

7.14 *Hazard Communication Programs*

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

7.15 *Emergencies*

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

7.16 *Shop Drawings, Samples, and Other Submittals*

A. *Shop Drawing and Sample Submittal Requirements:*

1. Before submitting a Shop Drawing or Sample, Contractor shall have:
 - a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
 - c. determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and

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- d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
 2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.
 3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.
- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.
1. *Shop Drawings:*
 - a. Contractor shall submit the number of copies required in the Specifications.
 - b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.
 2. *Samples:*
 - a. Contractor shall submit the number of Samples required in the Specifications.
 - b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 7.16.D.
 3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Other Submittals:* Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.
- D. *Engineer's Review:*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

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2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.
3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
4. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.
5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.
6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.
8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.D.4.

E. *Resubmittal Procedures:*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.
2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.

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- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 - 1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 - 2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
 - 1. observations by Engineer;
 - 2. recommendation by Engineer or payment by Owner of any progress or final payment;
 - 3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
 - 4. use or occupancy of the Work or any part thereof by Owner;
 - 5. any review and approval of a Shop Drawing or Sample submittal;
 - 6. the issuance of a notice of acceptability by Engineer;
 - 7. any inspection, test, or approval by others; or
 - 8. any correction of defective Work by Owner.
- D. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A shall not be limited in any way by any

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limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

- C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
 - 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
 - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

7.19 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.
- B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.
- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this paragraph, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

ARTICLE 8 – OTHER WORK AT THE SITE

8.01 *Other Work*

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner

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may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.

- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.
- D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
 - 1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
 - 2. an itemization of the specific matters to be covered by such authority and responsibility; and
 - 3. the extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

- A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner for whom the Owner is responsible causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor

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must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.
- C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.
- D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9 – OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

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

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9.02 *Replacement of Engineer*

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

9.03 *Furnish Data*

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

9.04 *Pay When Due*

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

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

- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
- C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

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

9.07 *Change Orders*

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

9.08 *Inspections, Tests, and Approvals*

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

9.09 *Limitations on Owner's Responsibilities*

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

9.10 *Undisclosed Hazardous Environmental Condition*

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

9.11 *Evidence of Financial Arrangements*

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

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9.12 *Safety Programs*

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

ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *Owner's Representative*

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

10.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.08. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 10.08. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent, or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

10.04 *Rejecting Defective Work*

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

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10.05 *Shop Drawings, Change Orders and Payments*

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

10.06 *Determinations for Unit Price Work*

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

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

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

10.08 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 15.06.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 10.08 shall also apply to the Resident Project Representative, if any.

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10.09 *Compliance with Safety Program*

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

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

11.01 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
 - 1. *Change Orders:*
 - a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
 - b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.
 - 2. *Work Change Directives:* A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.
 - 3. *Field Orders:* Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.02 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Such changes shall be supported by Engineer's recommendation, to the extent the change

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involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.03 *Unauthorized Changes in the Work*

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

11.04 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:
 - 1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or
 - 2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or
 - 3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).
- C. *Contractor's Fee:* When applicable, the Contractor's fee for overhead and profit shall be determined as follows:
 - 1. a mutually acceptable fixed fee; or
 - 2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 13.01.B.3, the Contractor's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.04.C.2.a and

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11.04.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 13.01.A.1 and 13.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of five percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;

- d. no fee shall be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
- e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
- f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 11.04.C.2.a through 11.04.C.2.e, inclusive.

11.05 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.
- B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

11.06 *Change Proposals*

- A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.
 - 1. *Procedures:* Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.

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2. *Engineer's Action:* Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.
3. *Binding Decision:* Engineer's decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- B. *Resolution of Certain Change Proposals:* If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

11.07 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
 1. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
 2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
 3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and
 4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.
- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

11.08 *Notification to Surety*

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

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ARTICLE 12 – CLAIMS

12.01 *Claims*

- A. *Claims Process:* The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:
 - 1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
 - 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and
 - 3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.
- B. *Submittal of Claim:* The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.
- C. *Review and Resolution:* The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation:*
 - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.
 - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.
 - 3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval:* If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim:* If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction,

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the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.

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

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

13.01 *Cost of the Work*

- A. *Purposes for Determination of Cost of the Work:* The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or
 2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included:* Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:
1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.
 2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

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3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
 - c. Rentals of all construction equipment and machinery, and the parts thereof, whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
 - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
 - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
 - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 6.05), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.
 - g. The cost of utilities, fuel, and sanitary facilities at the Site.
 - h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.

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- i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.
- C. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:
 - 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
 - 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
 - 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
 - 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
 - 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.
- D. *Contractor's Fee:* When the Work as a whole is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 11.04.C.
- E. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

13.02 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
- B. *Cash Allowances:* Contractor agrees that:
 - 1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
 - 2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

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- C. *Contingency Allowance*: Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
 - D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

13.03 *Unit Price Work*

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of the following paragraph.
- E. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:
 - 1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement;
 - 2. there is no corresponding adjustment with respect to any other item of Work; and
 - 3. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.

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

14.01 *Access to Work*

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

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14.02 *Tests, Inspections, and Approvals*

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
 - 1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
 - 2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
 - 3. by manufacturers of equipment furnished under the Contract Documents;
 - 4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
 - 5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

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

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.

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- C. *Notice of Defects*: Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement*: Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties*: When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages*: In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

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

14.05 *Uncovering Work*

- A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.

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1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

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

15.01 *Progress Payments*

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments:*
1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
 2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
 3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.
- C. *Review of Applications:*
1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
 2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
 - a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for

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- Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
- c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
 - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
 - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
 4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
 - a. to supervise, direct, or control the Work, or
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
 - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
 5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
 6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
 - a. the Work is defective, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
 - e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

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D. *Payment Becomes Due:*

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

E. *Reductions in Payment by Owner:*

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
 - a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
 - b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
 - c. Contractor has failed to provide and maintain required bonds or insurance;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
 - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - f. the Work is defective, requiring correction or replacement;
 - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - h. the Contract Price has been reduced by Change Orders;
 - i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
 - j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
 - l. there are other items entitling Owner to a set off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction

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imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

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

15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

15.03 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor

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may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.

- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
 - 1. At any time Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.
 - 2. At any time Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
 - 3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
 - 4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.05 regarding builder's risk or other property insurance.

15.05 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *Final Payment*

- A. *Application for Payment:*
 - 1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of

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inspection, annotated record documents (as provided in Paragraph 7.11), and other documents, Contractor may make application for final payment.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents;
 - b. consent of the surety, if any, to final payment;
 - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.
 - d. a list of all disputes that Contractor believes are unsettled; and
 - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

B. *Engineer's Review of Application and Acceptance:*

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to the provisions of Paragraph 15.07. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Completion of Work:* The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.

D. *Payment Becomes Due:* Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer

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(less any further sum Owner is entitled to set off against Engineer's recommendation, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

15.07 *Waiver of Claims*

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.
- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted or appealed under the provisions of Article 17.

15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 - 1. correct the defective repairs to the Site or such other adjacent areas;
 - 2. correct such defective Work;
 - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
 - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with

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respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

- E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
 - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);
 - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
 - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
 - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:
 - 1. declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and
 - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs,

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losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
 - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
 - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the

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Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this Article:
 - 1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and
 - 2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this Article, Owner or Contractor may:
 - 1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or
 - 2. agree with the other party to submit the dispute to another dispute resolution process; or
 - 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18 – MISCELLANEOUS

18.01 *Giving Notice*

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

18.02 *Computation of Times*

- A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

18.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of

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them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

- A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

18.07 *Controlling Law*

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

18.08 *Headings*

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

**SECTION 01 10 00
SUMMARY OF WORK**

1.01 GENERAL

- A. This Section includes brief descriptions of the HVAC work, electrical work and special conditions related to the Work. All work is to be performed through a single prime contractor.

1.02 PROJECT DESCRIPTION

- A. A single contract will be issued for all General, Plumbing, HVAC and Electric work.
- B. Base bid scope of work is as follows.
 - 1. Demolition:
 - a. Remove ceiling, kitchen casework, hand sink, lighting and all electrical as noted.
 - b. Remove Hood and all associated ductwork Remove roof mounted exhaust fans and cap curbs. VAC hood, ductwork, fire suppression system etc.
 - c. Remove heating unit an ductwork in the back storage room.
 - 2. New Work:
 - a. Clean and relocate hand sink. Provide new faucet.
 - b. Pipe gas to new makeup air unit.
 - c. Clean floors, walls and all interior surfaces. Paint walls.
 - d. Provide new ceiling and reinstall existing lighting after cleaning and re-lamping. One new light is required.
 - e. Install new hood with exhaust fans makeup air unit and all ductwork. Provide hood with fire suppression system and interlock with the existing fire alarm panel.
 - f. Patch all walls where ducts were removed.
 - g. Install new VRF system.
 - h. Provide new electric for kitchen as noted on the plans
 - i. Install one new horn/strobe.

1.03 CONTRACT DOCUMENTS

- A. Project Work shall be executed in accordance with the Contract Documents (drawings and specifications).
- B. Drawings applicable to all the contracts designated in the "Notice to Bidders" as prime contracts are as listed in the Index of Drawings appearing in the set of Drawings issued with these Specifications, except as otherwise noted.
- C. Each Contractor is responsible for examination of all Contract Documents to ascertain the full extent of the work and coordination requirements under this Contract.
- D. Electrical contractor is responsible for verifying all (new and existing) plumbing and HVAC equipment electrical requirements and wiring prior to ordering equipment or performing any work.

1.04 USE OF SITE

- A. The Contractors may use portions of the project site for staging of materials and equipment, temporary facilities or other purposes as specified and approved by the Library Project Manager, Engineer and the User.
- B. The Contractors shall be responsible for the protection of grounds, facilities and persons. This shall include, but not be limited to:
 - 1. Any damage to the property, buildings and/or building components due to, or caused in conjunction to the contracted work, shall be the responsibility of the Contractors to repair or replace as directed by the User. Also, the Contractors shall be responsible to provide necessary protection(s) to prevent any harm to residents, workers and the general public. This includes, but is not limited to harm caused by unauthorized access to the site, dispersion of debris, fumes or gases, and construction noise.
 - 2. All and any electrical, water, sanitary, storm, alarm and signal systems and their components shall be protected from damage by the Contractors, and the systems shall be continuously operable. Otherwise, the Contractors shall be responsible for any harm to the residents of the building or damage to any part of the building, its contents or equipment caused by the interruption of such systems. The Contractors shall be liable for the repair or replacement of the damaged systems and shall repair or replace them at no additional expense and to the satisfaction of the User.
 - 3. The work areas of the project shall be barricaded by the Contractors. The extent, locations and quality of the barricades shall be subject to review by the User. Make any modifications to such barricades as directed by the User.
 - 4. The Contractors shall repair and/or replace all site work and landscaping damaged by Contractors' work. This shall include, but not be limited to: replacing damaged asphalt and sidewalks, restoration of site grades to pre-Project conditions; reseeding/replanting. Reseeding shall be with perennial grass(es) mix:
 - a. 70% Bluegrass: Rugby II (25%), NuGlade (25%), Blue Moon (20%)
 - b. 30% Perennial Rye: Accent, Goldkeeper.

Replanting shall be per nursery's recommendations; providing ground cover for newly seeded areas (straw at approx. 2 ton/acre); and, watering of reseeded and/or replanted areas twice per week (This is a minimum requirement. Contractors shall water as required until germination has occurred and grass can survive on natural rainfall). If Project conditions (i.e. season, weather, etc.) do not allow for the immediate repair/replacement of landscape, the Contractor shall coordinate with the User an appropriate time/date for this work to occur.

1.05 SCHEDULING AND COMPLETION OF WORK

- A. The HVAC Contractor shall be the **Lead Contractor** on the Project and shall develop an Overall Project CPM Schedule in a manner acceptable to the User.
- B. All Contractors shall be responsible for adhering to the Schedule for all construction work.
- C. Due to the tight schedule for the Project, the Contractors, once the contracts have been signed, and a Notice to Proceed issued, the contractors are to begin as soon as possible that work involving demolition, preparation, piping, electrical, etc., prior to the delivery of long lead time items.

- D. The project schedule is critical in that:
 - 1. Heating has to be up and running as soon as possible. If work is preferred during the heating season, Contractor is responsible for temporary heat as necessary.
- E. The Contractor(s) shall coordinate all work in the various areas with the User. Construction work and use of space by staff requires close coordination.
- F. All means of ingress and egress shall be maintained, by the Contractor, in accordance with state and local codes, and in accordance with User.
- G. All areas in which construction is to be performed and which are used for access to construction areas, and which are used by the facility must be maintained secure when work is not being performed in those areas.
- H. The work areas of the Project shall be barricaded from other areas by the HVAC Contractor. The barricades are to prevent access by other parties from entering the areas of work, and for dust and noise control to occupants and facility users.

1.06 PROTECTION/CLEANING OF ROOMS

- A. Contractors to provide protective coverings for all equipment, furniture, etc. Personnel in spaces will work with contractors to remove or isolate their specific items, computers, etc. as necessary.
- B. Drop clothes should be used in all spaces during demolition and new work to keep dust and debris off the floors.
- C. Thoroughly clean all spaces after completion of work including carpeting, furniture, walls, ceiling, etc. Contractors are responsible for any damage.

1.07 TIME

- A. **WORKING HOURS:** Working hours are 7:00 a.m. to 3:30 p.m. No work shall commence outside these hours or on Saturdays, Sundays, and holidays, unless approved in writing, by the User.
- B. **START DATE:** Work shall begin within fifteen (15) days after award of Contract, or as soon as weather conditions permit unless otherwise notified by the User.
- C. **COMPLETION DATE:** Completion of the Project will be within 180 consecutive calendar days following authorization to proceed with work, unless an extension of time is granted by the User. Completion shall include all necessary clean up, final inspection items, damage repairs, etc.
- D. **SYSTEMS SHUTDOWN:** The Contractors shall be responsible for coordinating/scheduling plumbing and HVAC system(s) and electrical shutdown with the Library. The Contractors shall schedule shutdowns during periods of least impact to the User and during periods that are compatible with outside temperatures (i.e. not during freezing weather), unless approved in writing, by the Library. If the Contractors intend to schedule work on weekends or holidays if necessary, the submitted bid costs must account for such work. The Contractors must have the User's approval for working weekends and holidays and the Contractors must coordinate such work with the User. Heating system replacements shall occur through the months of May through October.

1.08 DEFINITIONS

- A. "Project Manager" refers to Kramer Engineers, Ralph Kramer at 394 Oak Street, Columbus, Ohio 43215, 614-233-6911, rkramer@kramerengineers.com.
- B. "Owner" or "User" in this document or other references to the "Owner" shall refer to Lakewood Schools Heath Ohio.
- C. "Project Manager" for the school district shall refer to Doug Walker, 740-440-5712, dwalker@lakewoodlocal.k12.oh.us.
- D. "Engineer" shall refer to Kramer Engineers (KE), 394 Oak St., Columbus, Ohio 43215, telephone 614-233-6911.
- E. "Contractor" shall refer to the General, Plumbing, HVAC or Electrical Contractors. "Sub-contractor" shall refer to all other contractors, material suppliers, and laborers provided by the prime Contractor.
- F. The HVAC Contractor is to be the lead contractor and is responsible for determining/providing the project schedule and coordinating the work of all other contractors.

END OF SECTION

SECTION 01 31 00
PROJECT MANAGEMENT AND COORDINATION

1.01 PREBID CONFERENCE

- A. A Prebid conference will be held prior to the Bid due date, at the time and place indicated in the Notice to Bidders section of this document. The following people **should** attend:
1. Owner's Representative.
 2. Project Manager/Representative for each Prime Contractor intending to bid on the Project.
 3. Engineer.
- B. The purpose of this meeting will be to discuss, at least, the following items:
1. Bidding procedures and dates.
 2. Mutual relationships and responsibilities of the Bidders.
 3. Any item the Bidders desire to discuss.
 4. Any item the Owner wishes to discuss.
 5. Access to site and buildings.

1.02 PRECONSTRUCTION CONFERENCE

- A. A Preconstruction conference will be held prior to commencing work, at a time and place to be determined after the Contract is signed. The following people will be **required** to attend this Conference:
1. Owner's Representative.
 2. Each Prime Contractor and Project Superintendent.
 3. Engineer
 4. Major Subcontractors
- B. The purpose of this meeting will be to discuss, at least, the following items:
1. Construction schedules, including submittals of shop drawings and samples.
 2. Mutual relationships and responsibilities of the various Contractors.
 3. Site responsibility of all Contractors.
 4. Any item the Contractors desire to discuss.
 5. Any item the Owner wishes to discuss.
 6. Equipment delivery times.
 7. Access to buildings and responsibility for keys to access buildings.

1.03 CONSTRUCTION SCHEDULES

- A. The job construction schedule will be discussed by the Contractors, Library Project Manager and Engineer at the Preconstruction Meeting. Key factors in establishing the schedule are actual extent of work required, work load of the Contractors, the processing of shop drawing submittals and equipment delivery. Prior to the preconstruction meeting the Contractors shall verify delivery times on all equipment. The Contractor shall also deliver all shop drawings to KE in a timely manner so that they may be reviewed and processed immediately. Engineer shall make every attempt to process the shop drawings within five days, but retains the right to take up to 15 days to review.

1.04 PROGRESS MEETINGS

- A. Progress meetings will be scheduled as deemed necessary by KE and the Owner or the Engineer once construction has commenced. The primary purpose of the meetings will be to discuss any items necessary for insuring that the Project is moving as scheduled, and/or to resolve any construction phase issues.
- B. The lead contractor shall hold separate weekly coordination meetings with their subs prior to the normal job meetings. Any scheduling items or issues are then to be discussed in the job meetings.
- C. KE shall be the meeting's chairperson and shall be responsible for recording and disbursal of the meeting's minutes.
- D. Representatives of the Contractor(s), and those subcontractors and material suppliers who have been notified, shall attend each meeting. Each representative in attendance shall be vested with executive authority to speak and make decisions for their company or firm.
- E. Generally, the progress meetings shall be held on the same day of the week and same hour of the day. KE will initially inform Contractors of the date and time, and thereafter each Contractor is required to be present at all scheduled meetings.
- F. Meetings will tentatively be scheduled once every two weeks during the period of prime activity. If it is deemed necessary, the meetings may occur once per week.

END OF SECTION

SECTION 01 33 00
SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
- B. All submittals to be sent to KE.

1.02 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

1.03 DEFINITIONS

- A. Submittals: Written and graphic information and physical samples that require Engineer responsive action. Submittals may be rejected for not complying with requirements. Submittal requirements are as indicated in individual Specification Sections and herein.

1.04 SUBMITTALS

- A. Submittal Schedule
 - 1. Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or modifications to submittals noted by Engineer and additional time for handling and reviewing submittals required by those corrections.
 - 2. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
 - 3. Initial Submittal: Submit concurrently with start-up construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the work and those required early due to long lead time for manufacture or fabrication.
 - 4. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
 - a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.
 - 5. Format: Arrange the following information in tabular format:
 - a. Scheduled date for first submittal.
 - b. Specification number and title.
 - c. Submittal Category: Submittal, Catalog Cut.
 - d. Name of Subcontractor.
 - e. Description of the work covered.
 - f. Scheduled date for Engineer's final release or approval.

- g. Scheduled dates for purchasing.
- h. Scheduled dates for installation.
- i. Activity or event number.
- j.

6. Digital submittals are acceptable.

1.05 CONSTRUCTION SCHEDULE

- A. **Within 1 week** following the Pre-construction meeting, the Electrical contractor shall submit a construction schedule covering all divisions of the work and shall submit copies of this schedule to the Engineer and to all other prime contractors. **Within five days** after this submittal, the Electrical contractor shall submit a final approved construction schedule incorporating all other prime or sub contractors' inputs. Four copies of the final schedule, bearing the approval signature of all prime contractors, shall be submitted to the Engineer. Following approval by the Engineer and the Owner, copies of the final schedule shall be distributed to all interested parties. The schedule shall be broken down to a degree which will permit proper and complete coordination of all trades in each division of work. Tentative dates for the interruption of services and key activities such as crane lifts, etc. shall be incorporated.

1.06 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Engineer Digital Data Files
 - 1. Electronic copies of CAD drawings if the contract documents will be provided by Engineer for Contractor's use in preparing submittals.
 - a. Engineer makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the work are indicated on approved submittal schedule.
 - 3. Submit submittals required by the same specification section as separate packages under separate transmittals.
 - 4. Coordinate transmittal of different types of submittals for related parts of the work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - 5. Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on KE receipt of submittal. No extension of the contract time will be authorized because of failure to transmit submittals enough in advance of the work to permit processing, including resubmittals.
 - 1. Initial Review:

- a. Allow up to 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. KE will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Resubmittal Review:
 - a. Allow up to 10 days for review of each resubmittal.
 3. Sequential Review:
 - a. Where sequential review of submittals by Engineer, or other parties is indicated, allow 21 days for initial review of each submittal.
 4. Submit submittals required by the same specification section as separate packages under separate transmittals.
- D. Identification and Information: Place a permanent label or title block on each paper copy submittal item for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space approximately 4 by 5 inches (100 mm by 125 mm) on label or beside title block to record Contractor's review and approval markings and action taken by Engineer.
 3. Include the following information for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name of Project Manager.
 - d. Name of Engineer.
 - e. Name of Contractor.
 - f. Name of Subcontractor.
 - g. Name of Supplier.
 - h. Name of Manufacturer.
 - i. Submittal Number or other unique identifier, including revision identifier.
 - j. Number and Title of appropriate specification section.
 - k. Drawing number and detail references, as appropriate.
 - l. Location(s) where product is to be installed, as appropriate.
 - m. Other necessary identification.
- E. Electronic Submittals: In addition to the requirements of 1.06(D)(3)a-l of this specification, the following shall be required for Identification and Information of Electronic Submittals:
- a. Assemble complete submittal package into a single indexed file with links enabling navigation to each item.
 - b. Name file with submittal number or other unique identifier, including revision identifier where applicable.
 - c. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Engineer.
 - d. Include the following information as keywords in the electronic file metadata:
 1. Project name.
 2. Number and title of appropriate Specification Section.
 3. manufacturer name.
 4. Product name.

- F. Options: Identify options requiring selection by the Engineer.
- G. Deviations: Identify deviations from the Contract Documents on submittals.
- H. Additional Paper Copies: Unless additional paper copies are required for final submittal, and unless KE observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
- I. Transmittal: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Engineer will return submittals, without review, or discard submittals received from sources other than Contractor.
 - 1. Transmittal Form: Provide locations on form for the following information:
 - a. Project name.
 - b. Date.
 - c. Destination (To:).
 - d. Destination (From:).
 - e. Name of Subcontractor, Manufacturer, and Supplier.
 - f. Category and type of submittal.
 - g. Submittal purpose and description.
 - h. Specifications section number and title.
 - i. Indication of full or partial submittal.
 - j. Drawing number and detail references as appropriate.
 - k. Submittal and transmittal distribution record.
 - l. Remarks.
 - m. Signature of transmitter.
 - 2. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Engineer on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related to submittal.
- J. Resubmittals: Provide the following information on resubmittals:
 - 1. Note date and content of previous submittal.
 - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 - 3. Resubmit submittals until they are marked with approval notation from Engineer action stamp.
- K. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, etc. as necessary for performance of construction activities. Show distribution on transmittal forms.
- L. Use for Construction: Use only final submittals that are marked with approval notation from Engineer action stamp.

PART 2 - PRODUCTS

2.01 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
1. Submit electronic files in PDF format to KE via e-mail.
 - a. KE will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
 2. Submittals: Unless otherwise noted in these specifications, or submitting electronically, provide (9) nine paper copies of each submittal. KE will return (2) two copies.
 3. Closeout Submittals and Maintenance Material Submittals: Comply with the requirements of specification section 017700 "Closeout Procedures".
 4. Certificates and Certifications Submittals: provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 - a. Provide a digital signature with digital certificate on electronically submitted certificates and certifications where indicated.
 - b. Provide a notarized statement on original paper copy certificates and certifications where indicated.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
1. Mark each copy of submittal to show which products and options are applicable.
 2. Include the following information, as applicable:
 - a. Manufacturer's Catalog Cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
 3. For equipment, include the following in addition to the above, as applicable:
 - a. Wiring diagrams showing factory installed wiring.
 - b. Printed performance curves.
 - c. Operational range diagrams.
 - d. Clearances required to other construction.
 4. Submit Product Data before or concurrent with Samples.
 5. Submit Product Data in the following format:
 - a. PDF electronic file.
 - b. (9) Nine paper copies.

- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, unless submittal based upon Engineer digital data drawing files is otherwise permitted.
1. Preparation: fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.
 2. Submit Shop Drawings in the following format:
 - a. PDF electronic file.
 - b. (9) nine paper copies.
- D. Qualification Data: Prepare written information that demonstrates capabilities and experience of all foremen working on the project. Include lists of completed projects with project names and addresses, date completed, and contact information of architects/engineers and owners. Indicate number of years of experience and expertise.
- E. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific project. Submit the following Certifications:
1. Welders: Copy of Certification

PART 3 - EXECUTION

3.01 DISTRIBUTION

- A. Forward all submittals to KE with a completed transmittal form.
1. Kramer Engineers:
Attn: Ralph Kramer
394 Oak Street
Columbus, OH 43215
614-233-6911
dstaudt@kramerengineers.com

3.02 TIMING OF SUBMITTALS

- A. Submit all shop drawings, samples, material lists, manufacturer's data and other required information at the preconstruction meeting or as soon as possible after award of the Contract and consistent with Overall Project Schedule.
- B. Make all submittals far enough in advance of scheduled dates of installation to provide the required time for reviews, testing, color selections, securing necessary approvals, possible revision and resubmittal, placing orders, and securing delivery.

- C. The completion time of the Contract will not be extended for delays caused by tardiness of submittals. Costs of such delays shall not be borne by the Owner and may be back charged to the Contractor(s) as necessary.

- 1. Submit electronic files in PDF format to KE via e-mail.

- a. KE will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.

3.03 CONTRACTOR'S REVIEW

- A. Submittals: Review each submittal and check for coordination with other work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to the Engineer.
- B. Project Closeout and Maintenance/Material Submittals: Refer to requirements in Division 1 Section "Closeout Procedures".
- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.04 Engineer ACTION

- A. General: Engineer will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Submittals: Engineer will review each submittal, make marks to indicate corrections or modifications required, and return it. Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- C. Incomplete Submittals are not acceptable, will be considered non-responsive, and will be returned without review.

END OF SECTION

SECTION 01 35 23
SAFETY, HEALTH AND ENVIRONMENT

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Special Conditions and other Division 1 Specification Sections, apply to this Section.
- B. If hazardous materials are encountered or suspected the Contractor(s) shall immediately contact KE and the Owner. Per the Owner, all asbestos has been removed from the building.

1.2 SUMMARY

- A. References: In addition to publications referenced in the Construction Contract Clauses, following Code of Federal Regulations (CFR) publications designate and define hazardous materials and conditions, and establish procedures for handling these materials and conditions. Omission of any publication in this section does not remove any obligation or legal requirement on the part of the contractor(s) to comply with all legal requirements for the location of the work.
 - 1. 29 CFR, Part 1910: Occupational Safety and Health Administration (OSHA) General Industry and Health Standards
 - 2. 29 CFR, Part 1926: OSHA Construction Industry Standards.
 - 3. 40 CFR, Part 61: National Emission Standards for Hazardous Air Pollutants.
 - 4. 40 CFR, Part 261: Environmental Protection Agency (EPA) Characteristics of Hazardous Waste.
 - 5. 40 CFR, Part 761: EPA Polychlorinated Biphenyls (PCBs), Manufacturing, Processing, Distribution in Commerce and Use Prohibitions
 - 6. 40 CFR, Part 763: EPA Asbestos.
 - 7. Federal Standards 313A: Material Safety Data Sheets, Preparation and the Submission of.
 - 8. NIH DES Instruction 1340-7: Precautions and Procedures for Entering Manholes or Other Below Grade Confined Spaces.
 - 9. NIH DCAB publication "Standards for Temporary Construction," March 1988.
- B. Related Sections: This specification section is related to any and all specification sections with explicit or implicit reference to cutting and patching. Specific submittal requirements of these related specification sections are not included in this section. Related sections include but are not limited to the following specification sections:
 - 1. Division 1 Section "Summary of Work"
 - 2. Division 1 Section "Coordination Separate Prime Contracts"
 - 3. Division 1 Section "Cutting and Patching"
 - 4. Division 1 Section "Project Meetings"
 - 5. Division 1 Section "Temporary Facilities"
 - 6. Division 1 Section "Special Controls"
 - 7. Division 1 Section "Safety and Health"
 - 8. Division 1 Section "Asbestos Abatement"
 - 9. Division 1 Section "Selective Demolition"
- C. Hazardous Materials: Some hazardous and toxic materials and substances are included in 29 CFR Part 1910, subparts H and Z, and in 29 CFR Part 1926 and others additionally

defined in Federal Standard 313A. Commonly encountered hazardous materials include but are not limited to asbestos, PCBs, explosives and radioactive material.

1. Asbestos may be found in spray-on fireproofing, insulation, boiler lagging, pipe coverings and other materials.
 2. PCBs may be contained in ballasts, transformers, capacitors, voltage regulators, oil switches, mechanical insulation and other materials.
- D. Acquisition of Publications: Referenced CFR publications may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

1.3 SUBMITTALS

- A. Contractor's Safety and Health Program: The contractor shall submit a written copy of the Company Safety and Health Program as well as the site-specific safety and health plan for the project to KE within 14 calendar days of the Notice to Proceed or before work commences on the project site, whichever is earlier.
- B. Accident Reports: The Contractor must submit to KE a written report within three calendar days of any accident, fire, emergency, theft or incident in which any personal or property damage took place, regardless of any other notifications performed. Include a copy of each accident report that is submitted by the Contractor or Subcontractors to their insurance carriers, within seven calendar days after the date of the accident.
- C. Material Safety Data Sheets (MSDS): The contractor shall provide the Material Safety Data Sheets (MSDS's) for all products containing hazardous chemicals to KE within 14 calendar days of the Notice to Proceed or before work commences on the site. The MSDS's shall be maintained at the project site for workers, the Library Project Manager and government officials. MSDS's for new products shall similarly be submitted to the Library Project Manager and be retained at the project site until completion of the project.

1.4 PRECONSTRUCTION SAFETY MEETING

- A. Prior to commencing construction, representatives of the Contractor, including the general superintendent and one or more safety representatives, shall meet with KE and the Owner Representative for the purpose of reviewing Contract safety and health requirements.
1. The Contractor's Safety and Health Program and Site-Specific Safety and Health Plan shall be reviewed, and implementation of safety and health provisions pertinent to the Work shall be discussed.
 2. The Contractor shall be prepared to discuss, in detail, the Contractor's Site-Specific Safety and Health Plan including measures intended to control any unsafe or unhealthy conditions associated with the work to be performed under the contract.
 3. This meeting may be held in conjunction with the preconstruction conference, if so, directed by KE. The conduct of this meeting is not contingent upon a general preconstruction meeting.
 4. The level of detail for the safety meeting is dependent upon the nature of the work and the potential inherent hazards.

1.5 COMPLIANCE WITH REGULATIONS

- A. The work, including contact with or handling of hazardous materials, disturbance or dismantling of surfaces containing hazardous materials, and disposal of hazardous materials,

shall comply with the applicable requirements of 29 CFR Parts 1910 and 1926, and 40 CFR Parts 61, 261, 761 and 763.

- B. Work involving disturbance or dismantling of asbestos or asbestos containing materials, demolition of structures containing asbestos and removal of asbestos, shall comply with 40 CFR Part 61, Subparts A and M, and 40 CFR Part 763.
- C. Work shall additionally comply with all applicable state and local safety and health regulations.
- D. In case of a conflict between applicable regulations, the more stringent requirements shall apply.
- E. Contractor Responsibility: The Contractor shall assume full responsibility and liability for compliance with all applicable codes, standards and regulations pertaining to the health and safety of personnel during execution of the Work, and shall hold the Engineer and Owner harmless for any action on the Contractor's part, or that of the Contractor's employees or subcontractors, that result in illness, injury or death.
 - 1. The Contractor shall have written safety and health programs in compliance with 29 CFR Parts 1910 and 1926.
 - 2. Inspections, Tests, and Reports: The required inspections, tests and reports made by the Contractor, subcontractors, specially trained technicians, equipment manufacturers, and others as required, shall be at the Contractor's expense.

1.6 USE OF EXPLOSIVES AND EXPLOSIVE ACTUATED FASTENING TOOLS

- A. Use of explosives shall be prohibited.
- B. Explosive actuated fastening tools (ex. nail guns, etc.) shall not be used or brought to the project site without the permission of the Owner Representative, including a safety plan for the use of this equipment.

1.7 WORK UNDERGROUND OR IN CONFINED SPACES

- A. Work underground or in confined spaces shall comply with the NIH Division of Engineering Services Instruction Manual 1340-7, "Precautions and Procedures for Entering Manholes or Other Below Grade Confined Spaces" (DES INST 1340-7).
- B. Work shall also comply with appropriate MSHA and OSHA regulations including but not limited to 29 CFR 1910.146 and COMAR 09.12.32B.
- C. The Contractor shall properly vent manholes and remove water and debris before commencement and during execution of work in manholes.

1.8 ELECTRICAL

- A. Electrical arc welding equipment shall not be connected to the building power supply.

1.9 MATERIAL DELIVERIES

- A. Whenever practical, deliveries shall be made during regular working hours and only when the Contractors' representative is available to receive them. Deliver material in approved containers and with properly licensed vehicles and operators. Open delivery vehicles are not permitted. Deliver materials in fully closed vehicles or tarp-covered vehicles. All dump trucks shall be fully covered while in transport to and from the unloading site. All loads shall be securely fastened until unloading. Whenever possible, engines shall not be left running while vehicles are waiting or parked. Do not block roads, walks, building entrances/exits, fire hydrants and standpipes, exterior tanks or building gas connections.

1.10 HAZARDOUS MATERIAL

- A. The Contractor shall bring to the attention of KE and the Owner Representative, any material encountered during execution of the Work that the Contractor suspects is hazardous. Owner shall have tests performed to determine if the material is hazardous.
- B. If the tested material is found to be hazardous, and/or if additional protective measures are required, a change to the Contract price may be provided, subject to the applicable provisions of the Contract.

1.11 ADDITIONAL SAFETY REQUIREMENTS

- A. No work shall be performed in any area occupied by the public or OWNER employees unless approved by the Owner.
- B. The Contractor shall post emergency first aid information at a protected location at the work site.
- C. Lockout/Tagout and Confined Space Requirements
 - 1. No person, regardless of position or authority, shall operate any switch, valve, or equipment that has an official lockout/tag out tag attached to it, nor shall such tag be removed except as provided in this section.
 - 2. When work is to be performed on electrical circuits, the work shall be performed only by qualified personnel following the required safety procedures.
 - 3. Identification markings on building light and power distribution circuit breakers shall not be relied on for establishing safe work conditions.
 - 4. Before clearance will be given on any equipment other than electrical (generally referred to as mechanical apparatus), the apparatus, valves, or systems shall be secured in a passive condition with the appropriate vents, pins, and locks.
 - 5. Pressurized or vacuum systems shall be vented to relieve differential pressure completely.
 - 6. Vent valves shall be lockout/tag out tagged open during the course of the work.
 - 7. Where dangerous gas or fluid systems are involved, or in areas where the environment may be oxygen deficient, systems or areas shall be purged, ventilated, or otherwise made safe prior to entry.

1.12 PERSONNEL PROTECTIVE EQUIPMENT

- A. Special facilities, devices, equipment and similar items used by the Contractor in execution of the work shall comply with 29 CFR, Part 1910, Subpart 1 and other applicable regulations.

PART 2 – PRODUCTS

- 2.1 SAFETY AND HEALTH PROGRAMS:** The Contractor shall submit copies of the written site specific project safety and health plan and emergency action procedures, as applicable to the work scope, as required as a result of the safety meeting, or as required by OSHA 29 CFR, Part 1926 including but not necessarily limited to the procedures and programs that support the requirements of the following:
- A. Designation of Safety Competent Person
 - B. Occupational Noise Exposure
 - C. Fall Protection
 - D. Personnel Protective Equipment
 - E. Control of Hazardous Energy
 - F. Hazardous Materials Waste Management Plan (draft if final plan has not been accepted)
 - G. Electrical Safety Related Work Practices
 - H. Lead
 - I. Asbestos
 - J. Respirator Protection
 - K. Confined spaces
 - L. Emergency evacuation and reporting
 - M. Hot Work
 - N. Trenching and Excavation
- 2.2 CONTRACTORS' SAFETY AND HEALTH PLAN:** In addition to specific safety and health programs applicable to the project, Contractor shall submit to the Library Project Manager a copy of the firms' general Safety and Health Plan listing emergency procedures and contact persons with home addresses and telephone numbers.
- 2.3 PERMITS:** If hazardous materials are disposed of off-site, submit copies of shipping manifests and permits from applicable federal, state or local authorities and disposal facilities, and submit certificates that the material has been disposed of in accordance with regulations.

PART 3 – EXECUTION

3.1 EMERGENCY SUSPENSION OF WORK

- A. When the Contractor is notified by KE or the Owner Representative, of non-compliance with the safety or health provisions of the Contract, the Contractor shall immediately, unless otherwise instructed, correct the unsafe or unhealthy condition.
 - 1. If the Contractors fail to comply promptly, all or part of the work will be stopped by notice from KE.
 - 2. When, in the opinion of and by notice given by KE and/or the Owner Representative, satisfactory corrective action has been taken by the Contractors, work shall resume.
 - 3. The Contractors shall not be allowed any extension of time or compensation for damages in connection with a work stoppage for an unsafe or unhealthy condition.

3.2 PROTECTION OF PERSONNEL

- A. The Contractor shall take all necessary precautions to prevent injury to the public, occupants, or damage to property of others. The public and occupants includes all persons not employed by the Contractor or a subcontractor.

- B. Wherever practical, the work area shall be fenced, barricaded or otherwise blocked off from the public or occupants to prevent unauthorized entry into the work area.
 - 1. Provide traffic barricades and traffic control signage where construction activities occur in vehicular areas.
 - 2. Corridors, aisles, stairways, doors and exit ways shall not be obstructed or used in a manner to encroach upon routes of ingress or egress utilized by the public or occupants, or to present an unsafe or unhealthy condition to the public or occupants.
 - 3. Store, position and use equipment, tools, materials, scraps and trash in a manner that does not present a hazard to the public or occupants by accidental shifting, ignition or other hazardous activity.
 - 4. Store and transport refuse and debris in a manner to prevent unsafe and unhealthy conditions for the public and occupants. Cover refuse containers, and remove refuse on a frequent regular basis acceptable to the Owner Representative. Use tarpaulins or other means to prevent loose transported materials from dropping from trucks.
- C. Alternate Precautions: When the nature of the work prevents isolation of the work area and the public or building occupants may be in or pass through, under or over the work area, alternate precautions such as the posting of signs, the use of signal persons, the erection of barricades or similar protection around particularly hazardous operations shall be used as appropriate.
- D. Public Thoroughfare: When work is to be performed over a public thoroughfare such as a sidewalk, roadway or other site access way, the thoroughfare shall be closed, if possible, or other precautions taken such as the installation of screens or barricades. When the exposure to heavy falling objects exists, as during the erection of building walls or during demolition, special protection of the type detailed in 29 CFR, Parts 1910 and 1926 shall be provided.

3.3 ENVIRONMENTAL PROTECTION

- A. Dispose of solid, liquid and gaseous contaminants in accordance with local codes, laws, ordinances and regulations.
- B. Comply with applicable federal, state and local noise control laws, ordinances and regulations, including but not limited to 29 CFR, Part 1910.95 and 29 CFR, Part 1926.52.

END OF SECTION

SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Contractor(s) shall provide and maintain temporary facilities as specified herewith and as required for the progress and completion of the Work under this Contract. Contractors shall maintain and keep in clean working order any facilities provided by the Owner.
- B. Any Contractor requiring one of the temporary services before it can be provided as specified, or whose requirements with respect to a particular service differ from the service specified, shall provide such service at their own expense.

1.02 REQUIREMENTS OF REGULATORY AGENCIES

- A. Provide and maintain all temporary facilities in compliance with governing rules, regulations, codes, ordinances and laws of agencies and utility companies having jurisdiction over work involved in the Project.
- B. Be responsible for all temporary work provided.
- C. Do not interfere with normal use of thoroughfares in vicinity of project site except as indicated on Drawings and/or as absolutely necessary to execute required work, and then only after proper arrangements have been made with authorities having jurisdiction, including traffic control as applicable.

1.03 SPECIAL PRECAUTIONS AND REQUIREMENTS

- A. Do not interfere with normal use of existing and adjacent buildings and existing driveway access to existing and adjacent buildings, except as absolutely necessary to execute required work involving such facilities, and then only after proper arrangements have been made with the Users Project Manager and with persons in charge of existing facilities.
- B. Do not block existing required exits from any existing building.
- C. Any work required to be executed in existing buildings shall be confined to cause minimum interference and shall be isolated with suitable temporary barriers for protection of persons and existing construction from work operations.

1.04 TEMPORARY FIELD OFFICES

- A. The Contractor shall maintain a temporary office (desk) located in attic mechanical room. Each Contractor shall be responsible for their telephone service to the temporary office. The Contractors shall maintain a complete set of current Project Drawings and Specifications at this Office at all times. The Contractors shall also maintain a file with all approved Shop Drawings, permits and other data pertinent to the Work.

1.05 TEMPORARY ELECTRICAL ENERGY AND LIGHT

- A. EACH CONTRACTOR: Arrange for use of existing building electrical service for their work as designated by the Owner. Use will typically be from existing receptacles. All electrical current used shall be paid for by the Owner.
 - 1. Provide all temporary lights and wiring, including lamps, as required for adequate illumination to perform work and for safety of persons.
 - 2. Be responsible for a safe and satisfactory installation. Keep circuits properly fused at all times, and remove temporary provisions when permanent system(s) is (are) ready for use. No temporary wiring, devices, etc., shall be incorporated into permanent construction.
 - a. All temporary wiring and lighting shall comply with the requirements of state and local codes and with the National Electric Code.
 - 3. Replace damaged, lost or burned out lamps in permanent lighting fixtures used for temporary needs prior to Owner's acceptance of Work.
 - 4. All building and site life safety lighting (exit & emergency) in work or adjacent spaces shall be kept in operational mode at all times during and after work activities.
- B. EACH CONTRACTOR: Be responsible for extension of electrical power from the source and related outlets provided by the Owner, except as otherwise noted, and for current characteristics other than that provided. Do not overload circuits.

1.06 TEMPORARY SANITATION ARRANGEMENTS

- A. The Contractors may use the existing toilet facilities as directed by the Owner. Contractors shall be responsible for keeping the toilet facilities clean.

1.07 TEMPORARY STORAGE

- A. EACH CONTRACTOR: Contractor is to stage delivery so as not to have material/equipment stored outside, if possible. If required, contractor to have material delivered and stored off-site until required at site. Any deviation from this must be coordinated with Owner and protection of delivered materials is the responsibility of the Contractor.

1.08 VEHICLE ACCESS

- A. Contractor shall use existing access into the facility without interfering with the normal use of roadway by employees, visitors, etc.
- B. Each Contractor shall repair any damage to existing pavement, or landscaping when damage results from operations under their contract.

1.09 TEMPORARY PARKING

- A. The Owner will provide a parking area for contractors on site, parking permits are not required. There will be no parking at loading docks.

1.10 SCAFFOLDING, LADDERS AND HOISTING FACILITIES

- A. EACH CONTRACTOR: Provide all temporary cranes, scaffolding, ladders and hoists required during construction for Contractor's work, except as otherwise noted.

1.11 TEMPORARY BARRICADES AND ENCLOSURES

- A. EACH CONTRACTOR: Provide temporary safeguards as required to perform work, to provide safety of workers and the public, and to provide protection of work installed.

1.12 TEMPORARY SIGNS

- A. No signs will be permitted at the Project site, except those which are required for safety and protection of persons and property during construction.

1.13 RUBBISH REMOVAL

- A. Contractor is not to use Owner dumpsters. Rubbish items (lights, wiring, conduits, block, etc.) will need to be removed daily. The owner reserves the right of first refusal for any item they deem to be reusable to them. The contractor shall make arrangements with the owner for relocation of any item they wish to keep in their possession.

END OF SECTION

**SECTION 01 77 00
CLOSEOUT PROCEDURES**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provision of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this section.

1.02 SUMMARY

- A. This section includes administrative and procedural requirements for Project Record Documents, including the following:
 - 1. Record Drawings.
 - 2. Project Record Specifications.
 - 3. Record Product Data.
 - 4. Operations and Maintenance Manuals.

1.03 SUBMITTALS

- A. Record Drawings:
 - 1. Number of Copies: Submit one set of marked-up Record Prints including all modifications to the Contract Documents.
- B. Record Specifications:
 - 1. Number of Copies: Submit one set of marked-up Record Specifications including all modifications to the Contract Documents.
- C. Operations and Maintenance Manuals
 - 1. Number of Copies: Submit one set of Operations and Maintenance Manuals to the Engineer for review. Engineer will return this submittal upon review. Upon receipt of comments, Contractor shall make any necessary corrections and submit three sets of Operations and Maintenance Manuals for submission to the Owner.
- D. Record Product Data:
 - 1. Where Record Product Data is required as part of Operation and Maintenance Manuals, submit marked-up Product Data as an insert in the manual instead of submittal as Record Product Data.

PART 2 - PRODUCTS

2.01 RECORD DRAWINGS

- A. Record Prints: Maintain one set of blue or black line white prints of the Contract Documents and Shop Drawings.

1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown on the Contract Documents.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an understandable drawing technique.
 - c. Record Data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
 2. Content: Types of items requiring marking include, but are not limited too the following:
 - a. Dimensional changes to the drawings.
 - b. Revisions to details shown on the drawings.
 - c. Locations of all concealed construction.
 - d. Revisions to routing of piping and/or conduits.
 - e. Revisions to electrical circuitry.
 - f. Actual equipment locations.
 - g. Duct sizing and routing.
 - h. Changes made by addendum, bulletin, Engineer supplemental instructions, or change order.
 - i. Details not on the original Contract Documents.
 3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely or accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
 4. Neatly Mark Record Sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the work at the same location.
 5. Mark important additional information that was either shown schematically or omitted from the original Contract Documents.
 6. Note Change Order numbers, alternate numbers, and similar identification, where applicable.
- B. Format: Identify and date each Record Drawing. Include the designation "Project Record Drawing" in a prominent location.
1. Record Prints: Organize Record Prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 2. Identification: As follows:
 - a. Project Name.
 - b. Date.
 - c. Designation "Project Record Drawings".
 - d. Name of Engineer.
 - e. Name of Contractor.

2.02 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
 - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 - 3. Record the name of the manufacturer, supplier, installer, and other information necessary to provide a record of selections made.
 - 4. Note related Change Orders, Record Drawings, and Product Data where applicable.

2.03 OPERATIONS AND MAINTENANCE MANUALS

- A. Preparation: Assemble Operations and Maintenance Manuals in a hard back 3-ring binder.
- B. Format for Operations and Maintenance Manuals shall be as follows:
 - 1. First page of the Submittal shall include the following:
 - a. Project Title and Project Number where applicable.
 - b. Project Address.
 - c. Owner.
 - d. Name/Address/Phone Number of Contractor.
 - e. Name/Address/Phone Number of Engineer.
 - 2. Second page of the Submittal shall include a Table of Contents identifying each section.
 - 3. Include within the submittal a list of Subcontractors with their names, addresses, and phone numbers and materials or work they supplied.
 - 4. In a dedicated section, include all approved Shop Drawings as they were received from the Engineer. Include any necessary markups or clarifications.
 - 5. Include all product Operations and Maintenance instructions or manuals.
 - 6. Include any control diagrams, wiring diagrams, etc. as they apply to installed equipment.
 - 7. Include all air and balance reports.
 - 8. Create a separate section for the Contractor's warranty and any special manufacturer's warranties.
 - 9. Create a separate section for Affidavits and Certifications which must include the following:
 - a. Payment Release Affidavit.
 - b. Certification of Warranty Commencement.
 - c. Certification of Contract Completion.
 - d. Certificate of Equipment Demonstration if required.

10. Include any specials keys or tools.

2.04 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

PART 3 - EXECUTION

3.01 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur. Do not wait until the end of the project.
- B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Engineer reference during normal working hours.
- C. Submit the Project Record Documents as specified herein to KE. Final payment (last payment - not retainage) will not be made until Project Record Documents are submitted.

3.02 CLEANING UP

- A. At the completion of the work, remove all temporary facilities, trash and debris from construction operations. Leave the building and site clean, neat, and ready for the subsequent occupancy and related work by the Owner.

3.03 PUNCH LIST AND FINAL INSPECTION

- A. For additional provisions refer to the General Conditions.
- B. The Contractor and each subcontractor shall carefully and regularly check their work for contract conformance as the work is being done. Unsatisfactory work shall be corrected as the work progresses and not be permitted to remain and become a part of the Punch List.
- C. In accordance with requirements of the General Conditions, when the Contractor(s) considers the Work to be substantially complete, the Contractor(s) shall notify the Engineer in writing that the work will be ready for final inspection on a definite date which shall be stated in such notice. Such notice shall be given at least ten (10) days prior to the date stated for final inspection.
 1. Written notice shall also be given to the Owner through KE by the Contractors upon completion of any work which was determined, in the above-mentioned final inspection, to be incomplete, incorrect or unsatisfactory.
 2. On receipt of such notice from each Contractor, an additional inspection will be made to verify completion of all Contract requirements.

3. The Contractor(s) Punch List shall be included with the written notice for use by KE.
- D. It shall be noted here and emphasized that the Punch List is a function of each Contractor, and **NOT** the Engineers'! KE's role is that of an observer, to assure that the design intent is carried out, and as an Administrator of the Contract. Actual supervision is the responsibility of the Contractor.
- E. KE will review the Contractor's Punch Lists and verify substantial completion. The final inspection is intended to be a last review to determine that the work included in the Contract has indeed been executed in accordance with all of the Contract Documents. Requests to render a "Final Inspection" of an incomplete installation or to prepare the Contractors' Punch List will not be honored. Contractor(s) will be liable for additional cost incurred by Engineer to make inspection of incomplete work not executed in accordance to the Contract Documents.

3.04 CONTRACTOR'S ONE YEAR GUARANTEE

- A. Each Contractor shall provide written guarantee of all material and workmanship in a form acceptable to the Owner at the completion of the project as approved by the Engineer. This one-year guarantee shall default to one year post any repair work.

3.05 SUBMITTAL OF DOCUMENTS

- A. At the "Substantial Completion Stage" of the Contract, each Contractor shall submit the following items to the Engineer for transmission to the Owner:
 1. Validated warranties for all equipment & materials.
 2. All guarantees for equipment and materials as offered by the manufacturer(s) and as required by the Contract.
 3. The Prime Contractors' One Year Guarantee.
 4. Copy of approved shop drawings or installation drawings for all phases of the Work.
 5. List of subcontractors and major Material Suppliers. (Shall include address, telephone number and name of individual to contact regarding this Project.)
 6. Maintenance and operation brochures, manuals, etc., of equipment as offered by the manufacturer, or as specified for Contractor to submit.
 7. Maintenance manuals or instructions required per the Specifications.
- B. The above items must be bound in a binder considered the overall project O & M Manual, provide a cover sheet identifying project name and scope of work and a proper index clearly identifying subsections. Individual submittal of these items is not acceptable. Three copies of the overall O & M Manual shall be submitted.

3.06 DEMONSTRATION AND TRAINING

- A. Contractor shall provide instruction and training at no additional cost, as required and as outlined herein, in the proper use of all installed equipment to designated representative(s) of the Owner.

- B. Instruction of the Owner's Maintenance Supervisor in the proper methods of cleaning and maintaining all of the finished surfaces and the proper method of replacement of the consumable items shall be a part of this Work.
- C. Electrical: Provide to the Owner's representative(s) four hours of "training time" for the equipment and systems including lighting controls, LCD screen setup, programming, etc. At each site: Blackburn, Barack, Woodward. Provide 1 hour of instruction of the maintenance of all electrical equipment.

END OF SECTION

**SECTION 02 31 50
EXCAVATION AND BACKFILL**

PART 1- GENERAL

1.1 SUMMARY

A. Work includes excavating for the pad and sidewalks for the outdoor freezer.

B. REFERENCES

1. ASTM D698, Moisture-Density Relations of Soils and Soil Aggregate Mixtures, Using a 5.5-lb. (2.49-kg) Rammer and a 12-in. (304.8-mm) Drop.
2. ASTM D1556, Density of Soil In-Place by the Sand-Cone Method.
3. ASTM D2049, Relative Density of Cohesion less Soils.
4. ASTM D2167, Density of Soil in Place by the Rubber-Balloon Method.
5. ASTM D2922, Density of Soil and Soil Aggregate in Place by Nuclear Methods (Shallow Depth).
6. Local utility standards when working within 24 inches of utility lines.

PART 2- PRODUCTS

Not Applicable

PART 3- EXECUTION

3.1 PREPARATION

- A. Identify required lines, levels, contours, and datum locations.
- B. Locate, identify, and protect utilities indicated to remain from damage.
- C. Notify utility company to relocate utilities.
- D. Protect plant life, lawns, and other features remaining as portion of final landscaping.
- E. Protect bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

3.2 EXCAVATING

- A. In general, excavate areas of the site to a suitable level grade in order to install the above noted items. Remove top soil under walks, drives, pads, etc.
- B. Underpin adjacent structures which may be damaged by excavation work.
- C. Excavate subsoil to accommodate building foundation, slab-on-grade, paving, concrete equipment pads, and construction operations.

- D. Slope banks with machine to angle of repose or less until shored.
- E. Do not interfere with 45 degree bearing splay of foundations.
- F. Grade top perimeter of excavation to prevent surface water from draining into excavation.
- G. Hand trim excavation. Remove loose matter.
- H. Remove lumped subsoil, boulders, and rock up to 1/3 cubic yard measured by volume.
- I. Notify Associate of unexpected subsurface conditions and discontinue affected Work in area until notified to resume Work.
- J. Correct areas over excavated with backfill and compact replacement as specified for authorized excavation or replace with fill concrete as directed by A/E.
- K. Remove excavated material from site.
- L. Seed, mulch (straw) and water raw unfinished earth. Or spray prepared seed/mulch on areas and water.

3.3 FIELD QUALITY CONTROL

- A. Request visual inspection of bearing surfaces by Associate and inspection agency before installing subsequent work.

3.4 PROTECTION

- A. Prevent displacement or loose soil from falling into excavation; maintain soil stability.
- B. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.
- C. Protect structures, utilities and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth operations.

END OF SECTION

**SECTION 03 30 00
CAST-IN-PLACE CONCRETE**

PART 1 - GENERAL

1.01 SUMMARY

- A. Basic Specification: Perform work of this Section according to ACI 301-10, "Specifications for Structural Concrete," except as specifically modified herein. Numbers in parentheses (0.00) indicate a related paragraph of ACI 301.
- B. Section Includes: All cast-in-place concrete shown on the Drawings and required by these Specifications. Allow for the installation of cast-in-place items furnished under other Sections. Install anchor bolts for structural steel. Provide and install grout under steel column base plates and beam bearing areas.
- C. The Engineer has designed a project which will be safe after full completion. The Engineer has no expertise in, and takes no responsibility for, construction means and methods or job site safety during construction, which are exclusively the Contractor's responsibility. Processing and/or approving submittals made by the Contractor which may contain information related to construction methods or safety issues, or participation in meetings where such issues might be discussed, shall not be construed as voluntary assumption by the Engineer of any responsibility for safety procedures.
- D. Provide concrete pads, piers, curbs, and bases required for equipment of all trades. Coordinate dimensions and details with requirements of equipment being supplied, prior to placing concrete.
- E. Coordinate the work of other trades who will provide and install items (sleeves, piping, conduit, inserts, etc.) to be cast in the concrete. Place no concrete until all such items are in place.
- F. Inspection and testing services required by this Section are to be performed by an agency retained by the Contractor. This includes not only the services required to establish mix designs, but also includes all field sampling and testing required by the Field Quality Control Article of this Section (1.6.2 through 1.6.3).
- G. Inspection and testing services required to establish mix designs are to be performed by an agency retained by the Contractor (1.6.2 through 1.6.3). Other services required by this Section are to be performed by an agency retained by the Owner. Contractor shall provide facilities for storage and curing of specimens molded by the Owner's agency (1.6.2.2.d), and notify Owner's agency in advance of concrete placement to allow sufficient time for all required testing.
- H. Related Sections: Carefully examine all other Sections and all Drawings for related work, which includes but is not limited to:
 - 1. Section 05 12 00, "Structural Steel"
 - 2. Section 05 30 00, "Metal Decking"

1.02 QUALITY ASSURANCE

- A. Reference Standards:

1. ACI 117-14 Specifications for Tolerances for Concrete Construction and Materials.
2. ACI Detailing Manual, SP66(04).
3. CRSI "Code of Standard Practice," 2009, 28th edition.
4. WRI "Manual of Standard Practice" July 2010, 8th edition.

1.03 SUBMITTALS

- A. Submit for approval the name of the agency proposed for the required inspection and testing services. All of the required field testing and sampling is to be performed by personnel employed by the proposed agency.
- B. Submit a mix design for each class of concrete required (1.6.2.2.a). Submittals to comply with appropriate methods listed in ACI 301-10 (4.2.3). Indicate whether mixes have been designed for pumping.
- C. Submit shop drawings for all reinforcing. Indicate strength, size, and details of all bar reinforcing, and style and specification of all welded wire fabric (3.1.1). Notwithstanding any other requirements specified elsewhere in these specifications, one electronic copy of the shop drawings shall be submitted for approval. One electronic copy will be returned to the Contractor, who will make and distribute as many copies as needed. Only prints with the approval stamp printed on them shall be permitted on the site.
- D. Submit, on request only, product literature for admixtures and curing compounds proposed for use.
- E. Submit reports of all required testing and inspection.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Cementitious Material (4.2.1.1):
 1. Portland Cement: ASTM C150/C150M-18, Type I, II, or III.
 2. Ground Granulated Blast-Furnace Slag (GGBF): ASTM C989/C989M-18, Grade 100 or higher. GGBF can be substituted for Portland cement up to a maximum of 30% by mass.
 3. Fly Ash or Pozzolans: ASTM C618-17a, Class F. Maximum loss on ignition 3%.
- B. Water: Potable, conforming to C94/C94M-17a (4.2.1.3).
- C. Aggregates: ASTM C33/C33M-18. Use size No. 57 coarse aggregate, unless otherwise indicated (4.2.1.2).
- D. Admixtures (where required or permitted) (4.2.1.4):
 1. Water-Reducing: ASTM C494/C494M-17, Type A or D.
 2. Superplasticizer (High Range Water Reducer): ASTM C494/C494M-17, Type F or G. Acceptable products include, but are not limited to:
 - a. Eucon 37 by Euclid Chemical Company.
 - b. Sikament 686 by Sika Corporation.
 - c. Master Rheobuild 1000 by BASF.
 - d. Daracem 19 by GCP Applied Technologies.

3. Superplasticizer High Range Water Reducer (Polycarboxylates): ASTM C494/C494M-17, Type A and F. Acceptable products include, but are not limited to:
 - a. Plastol 5000 by Euclid Chemical Company.
 - b. ADVA 140M by GCP Applied Technologies.
 - c. ViscoCrete 4100 by Sika.
 - d. Master Glenium 3030 NS by BASF.
 4. Mid-range Water Reducer: ASTM C494/C494M-17, Type A or G. Acceptable products include, but are not limited to:
 - a. Sikaplast 200 or Sikaplast 300 GP by Sika.
 - b. Eucon MR by Euclid.
 - c. Master Polyheed 900 by BASF.
 - d. Mira 35 by GCP Applied Technologies.
 5. Air-Entraining: ASTM C260/C260M-10a(2016).
 6. Accelerating: ASTM C494/C494M-17, Type C or E, containing no more chlorides than are present in municipal drinking water. Acceptable products include, but are not limited to:
 - a. Accelguard 80 by Euclid.
 - b. MasterSet FP20 by BASF.
 - c. Plastocrete 161HE by Sika Corporation.
 - d. PolarSet by GCP Applied Technologies.
 7. Calcium Chloride is NOT permitted (4.2.1.4).
- E. Reinforcing Steel (3.2.1):
1. Deformed Bars: ASTM A615/A615M-18e1, A996/A996M-16 (bars from rail steel shall be Type R), or A706/A706M-16. Minimum yield strength to be 60 ksi. Bars to be welded are to be ASTM A706.
 2. Welded Wire Fabric: ASTM A1064/A1064M-18a. Provide in sheet form (not rolls) (3.2.1.6).
- F. Curing Compound: Comply with ASTM C309-11, Type 1, Class B (clear). Compound shall comply with EPA's VOC requirements. Must be compatible with adhesive specified for floor finishes.
- G. Non-shrink Grout under Bearing Elements: Conform to Corps of Engineers Specification CRD-C621-88 and ASTM C1107/C1107M-17. Acceptable products include, but are not limited to:
1. L&M Crystex by Laticrete.
 2. NS Grout by Euclid.
 3. Sikagrout 212 by Sika.
 4. 1107 Advantage Grout by Dayton Superior.
 5. SureGrout by Kaufman Products.
 6. Kemset Grout by ChemMasters.

2.02 MIXES

- A. The following classes of concrete are required (4.2.2.8):

1. Class I - footings, piers, drilled shafts, Minimum $f'_c=3000$ psi.
 2. Class II - fill on composite floor deck, fill over metal centering, walls, and all interior concrete not otherwise identified. Minimum $f'_c=3500$ psi; water-reducer required. Minimum cementitious content 517 lbs. per cubic yard. Maximum water-cementitious material ratio 0.45. All Class II concrete used for interior slabs on grade shall have synthetic fiber reinforcement. air content 6 ± 1 , -1.5% (4.2.2.4)
- B. Pozzolans are permitted in all Classes.
- C. Class IV concrete may be site mixed; all other concrete is to be ready-mixed (4.3.1). All admixtures are to be added at the batch plant, except that superplasticizer, where used, is to be added at the site. Superplasticizer retarder can be added at the batch plant.
- D. Concrete used for floors (Classes II,) is to have a minimum three (3) day compressive strength of 1800 psi.
- E. Slump:
1. Design concrete mixes for a maximum slump of 4 inches, unless a superplasticizer is to be used.
 2. If a superplasticizer is to be used, design mixes for a slump of 2 inches - 4 inches before its addition; maximum slump permitted after its addition is 8 inches.
- F. Synthetic fiber reinforcement shall be used in strict accordance with the manufacturer's recommendations. Dosage rate shall be as recommended by the manufacturer, but not less than 1 lb. per cubic yard.
- G. No air entraining admixture is required unless an air content is specified (4.2.2.4).
- H. Concrete mixes shall not contain any deleterious or other reactive aggregates or materials that can initiate and promote alkali silica reaction (ASR).

PART 3 - EXECUTION

3.01 ERECTION

- A. This structure is designed to be self-supporting and stable after the building is fully completed. It is solely the Contractor's responsibility to determine erection procedures and sequence, and to ensure the stability of the building and its component parts, and the adequacy of temporary or incomplete connections, during erection. This includes the addition of any shoring, sheeting, temporary guys, bracing or tie-downs that might be necessary. Such material is not shown on the Drawings. If applied, they shall be removed as conditions permit, and shall remain the Contractor's property.

3.02 SURFACE CONDITIONS

- A. Verify that excavations are free of water and ice, are of the required dimensions, and have been approved by the testing agency responsible for soils inspection, prior to placing concrete (5.3.1).
- B. Determine field conditions by actual measurement.

3.03 FORMWORK, METAL DECK AND REINFORCING

- A. Footings may be cast against earth cuts when soil conditions permit (2.2.2.3).
- B. At the Contractor's option, welded wire fabric can be substituted for deformed bars if the welded wire fabric is engineered per ACI 318-14 and approved by the Engineer.
- C. Removal of Forms and Shoring:
 - 1. Remove no forms within first 24 hours after placement for supported slabs and 12 hours for columns and walls.
 - 2. When structure is to be reshored, forms may be removed when the concrete attains 75% of its design strength.
 - 3. Shoring is to remain in place until concrete reaches its design strength.
 - 4. Remove all shoring prior to constructing masonry walls supported by the structure.
- D. Welding of reinforcing shall conform to AWS D1.4/1.4M:2018 (3.2.2.2).
- E. Metal deck is designed for a 20 psf construction load. If this load will be exceeded by bulk dumping or motorized finishing equipment, notify the metal deck supplier. Cost of increasing the deck gage shall be at the concrete placing contractor's expense.

3.04 EMBEDDED ITEMS

- A. Install embedded conduit, pipes, sleeves and anchor bolts subject to the following limitations:
 - 1. Do not embed aluminum without prior approval of coating material.
 - 2. Do not displace reinforcing steel.
 - 3. In slabs and walls, limit outside dimension of conduits and pipes to 1/3 member thickness. Where conduits cross, maintain same minimum concrete cover as required for reinforcing bars. For slabs over metal decks, thickness is measured from the top of the metal deck.
 - 4. In columns, limit total area of pipes and conduit to 4% of column area.
 - 5. Maintain a center-to-center spacing of at least 3 diameters of conduit, pipe or sleeve.
 - 6. Install anchor bolts for base plates of steel elements according to tolerances of AISC Code of Standard Practice for Steel Buildings and Bridges, April 14, 2010, Paragraph 7.5.

3.05 DELIVERY AND PLACEMENT

- A. Preparation Before Placement:
 - 1. Remove all debris from forms and deck. Clean steel deck of grease, oil, and other substances which would reduce bond to concrete.
 - 2. Do not use additives or salts to remove ice.
 - 3. In cold weather, maintain temperature of forms and reinforcing such that concrete temperature can be kept within the specified range.
- B. Delivery:
 - 1. Conform to ASTM C94/C94M-17a.
 - 2. ASTM C94 requires discharge within 1 1/2 hours or 300 revolutions, whichever occurs first, after the introduction of water to cement and aggregates, or the introduction of cement to the aggregates (4.3.2.2). The Architect may require an

earlier discharge during hot weather or when high-early strength cement is being used.

3. Place concrete at the maximum slump for which the mix was designed with a tolerance of up to 1 inch above the maximum for one (1) batch in any five (5) consecutive batches tested (4.3.2.1).

C. Placement:

1. Place within 6 feet of final position. Spreading with vibrators is prohibited.
2. In walls and columns, deposit concrete in uniform horizontal layers with a maximum depth of 5 feet.
3. Maximum free fall without chutes or elephant trunks to be 5 feet.

3.07 FINISHES

A. Schedule of finishes on flatwork is as follows:

1. Troweled finish: typical interior floor areas to receive adhesive-applied finish, or carpet, or to remain exposed (5.3.4.2.c).
2. Floated finish: interior floor areas to receive finish in cementitious setting bed (5.3.4.2.b).
3. Broom finish: exterior slabs (5.3.4.2.d).

3.09 CURING AND PROTECTION

A. Temperature:

1. When air temperature during placement is less than 40 degrees, or will be within 24 hours, temperature of concrete as placed is to be between 50 and 90 degrees F (55 and 90 degrees F for sections less than 12 inches thick). Maintain concrete temperature within these limits for the full curing period of seven days (or three (3) days for high-early-strength concrete) (4.2.2.6).
2. The temperature of concrete as delivered shall not exceed 90 degrees F (4.2.2.6).
3. Whichever curing method is used, it is to commence immediately after disappearance of water sheen, and continue for at least seven (7) days. Cure high-early-strength concrete for a minimum of three (3) days (5.3.6.1). Do not allow curing to be delayed overnight.
4. Prevent excessive moisture loss from formed surfaces (5.3.6.3). If forms are removed before seven (7) days have elapsed, cure the formed surfaces by moist-curing or application of curing compound for the remainder of the curing period.
5. All exterior slabs are to receive an application of sealer prior to completion of construction.
6. Interior slabs which remain exposed are to receive an application of sealer prior to the completion of construction.

3.10 GROUTING

- A. Grout below bearing plates, setting plates, and column base plates is to be installed only after the steel is plumbed. The use of leveling plates at column bases is prohibited.
- B. Install grout per the recommendations of the manufacturer.

3.11 FIELD QUALITY CONTROL

- A. Obtain concrete for required tests at point of placement (1.6.3.2).
- B. For each concrete class, perform one strength test for each 50 yards, or fraction thereof, placed in any one day (1.6.3.2.d and 1.6.3.2.e).
- C. Determine slump for each strength test (1.6.3.2.d).
- D. Determine air content for each strength test of air-entrained concrete (1.6.3.2.g).
- E. Determine concrete temperature for each strength test when air temperature is less than 40 degrees F or will be within 24 hours (1.6.3.2.d).
- F. Do not place concrete when slump, air content or temperature vary from allowable.
- G. Maintain records of all tests, indicating exact location of the structure represented by each test.

END OF SECTION

NOTES TO SPECIFIERS:

1. See Division 1 letter in front of this book. This letter is to be edited by the Project Manager and sent to the Architect.
2. If project is for OSU or SEM Partners, Inc., use long form of Section 03 30 00, not this short form.
3. This short form is intended for use in projects with foundations, slabs on grade, concrete walls, fill over centering, topping on precast, sidewalks, and beams, columns and slabs which do not require high strength concrete and have no special appearance requirements. It does not cover architectural concrete, post-tensioning, cleaning and patching, penetrating sealers, hardeners, silica fume, or abrasive aggregates.
4. Paragraph 1.01.C: Add this Paragraph to the Architect's Earthwork Section, 31 00 00, on all projects.
5. Paragraph 1.01.F: Choose appropriate version. Coordinate with Division 1 letter. Also, if second version is used, delete paragraph 1.03 A.
6. Paragraph 1.01.G: Coordinate with Architect which spec section numbering system will be used.
7. Paragraph 2.01.A.2: The use of ground granulated blast-furnace slag in architecturally exposed concrete should be reviewed. GGBF can cause a greenish hue which may be objectionable. This hue will dissipate if the concrete is not sealed. The spec as written requires all exposed slabs to be sealed.
8. If topping, fill over centering and fill in stair pans and treads are not required, delete 2.02.A.5, and modify 2.02.D.
9. Paragraph 2.01.E.1: For seismic special moment frames and special walls, use A706, or specify special requirements for A615 per latest ACI 318 requirements.
10. Paragraph 2.01.H: ASTM C1315 Type 1 Class A covers curing compounds which can also be used as sealers similar to the old TT-C-800A specification. C1315 calls for a moisture loss of 0.40 kg/sq. m. the cost of products meeting this standard can be as much as 4 times the cost of products meeting C309. Also edit paragraph 3.11.B to include the use of both types of curing compound. Note the VOC content is 700 grams/liter which is twice the EPA limit but is okay because it takes the place of two applications - curing agent and sealer.
11. Paragraph 2.01.J: The product listed for each manufacturer is non-metallic. In buildings with dynamic loads (i.e. Crane buildings) use metallic (non-catalyzed) grout, change products to:
 1. NS Metallic Grout by Euclid.
 2. Sure Grout Met by Kaufman Products.
 3. Met-Ox Grout by ChemMasters.Spec as written requires 5000 psi and positive expansion at 28 days, when grout is mixed to a FLOWABLE consistency. If conditions require that properties are achieved at a FLUID consistency, modify text, and specify only Crystex by L&M and Kemset Grout by ChemMasters.
12. Paragraph 2.01N: Sealer specified here is very minimal and is intended only as a dust proofer. If additional protection is required, refer to the manufacturer's catalogues and specify a curing compound and a sealer which are compatible and will meet the project requirements.
13. Paragraph 2.02.A: Delete any classes not required, and change items included in each class as the project demands. After changes to 2.02.A, also modify 2.02.B, C and D, and 2.01.C (if special coarse aggregate is required). Make sure Structural Notes on Drawings do not conflict with specs.

14. Paragraph 2.02.A.2 and 2.02.A.5: Synthetic Fiber Reinforcement in slabs on grade and topping slabs is generally intended as being a replacement for W.W.F. Therefore, when its usage is specified, all reference to W.W.F. on the drawings for slabs on grade and topping slabs should be deleted. If Synthetic Fiber Reinforcement is not to be used, delete paragraph 2.01.D.7, 2.02.F and 3.02.D and modify paragraphs 2.02.A.2 and 2.02.A.5.
15. References to W.W.F. include Paragraph 1.03.C, 2.01.E.2 and 3.03.B.
16. Paragraph 2.02.A.3: Note that W/C ratio and air content are as required by ACI 318 for concrete exposed to freezing and thawing in a moist condition or to deicing chemicals (Table 4.1.2). In parking garages or other critically exposed reinforced concrete structures, consider requiring a lower W/C ratio and a higher air content, but be prepared for associated additional cost (\$3.00 to \$5.00 per cubic yard).
17. Paragraph 3.03A: Verify with the Soils Engineer or delete this paragraph.
18. Paragraph 3.03.B: Allows the substitution of W.W.F. for deformed bar reinforcing. Note that W.W.F. is minimum yield strength of 70 ksi which means the steel areas will be less than a 60 ksi design. This will change the effective moment of inertia and cause increased deflections. Delete or modify if deflections are a concern.
19. Paragraph 3.06A.4: Delete if Plate Dowels are not used.
20. Paragraph 3.06.A.5: Delete if Load Plate Baskets are not used.
21. Article 3.07: No information is provided here about finish on formed surfaces. ACI 301 (5.3.3.5) requirements govern (rough form finish on all unexposed surfaces, smooth form finish on exposed surfaces). Modify if desired.
22. Paragraph 3.07.A.4: Delete any not required. If non-slip finish or surface hardener is required, add product description in PART 2 (see long form of Section 03 30 00).
23. Article 3.07: No information is provided here about tolerances for formed surfaces. ACI 117 governs these requirements unless you modify these specifications with more stringent requirements.
24. Paragraph 3.08.A.1: Flatness and levelness numbers listed in this paragraph are good numbers for projects such as offices, schools, hospitals, etc. For warehouses and similar facilities, these numbers should be higher. The best method for determining the appropriate flatness and levelness is to test an existing facility which the Owner has found acceptable and specify the new constructions accordingly. Some general guidelines are also given in ACI 302.1R. If the project is residential or non-residential and under 10,000 sq. ft. delete the f-numbers and specify tolerances per ACI 117 paragraph 4.5. 7 (5/16" per 10'-0", etc.) (Note: the old class A, B and C slab tolerances are no longer specified in ACI 301.
25. Paragraph 3.08.A.2: On unshored elevated slabs, including steel framed floors, levelness numbers should not be specified since slab deflections make this value variable.
26. Paragraph 3.08.C: This statement is duplicated under Field Quality Control, Paragraph 3.11.H. Ideally this statement belongs in the Field Quality Control Article, but since these Articles are frequently omitted from our specs for some architects (namely, NBBJ), and included with their Spec Section 01 40 00, Quality Control, we have included this statement in 3.08 to ensure its inclusion. Be sure that this statement occurs in one location only (preferably under Field Quality Control) in our Section 03 30 00.

27. Paragraph 3.09.B.1: Change use of paper curing membranes to all slabs if most will receive finishes involving adhesives.
28. Paragraph 3.09.B.6: Modify to seal other special floors as required.
29. If project includes concrete parking areas, very carefully specify floor finishes, and finishing tolerances, differentiating ramps and steps from main parking/driving areas (See Article 3.07 & 3.08).
30. Paragraph 3.11: Edit for the project. Also edit "Statement of Special Inspection," which should be sent to the Architect for inclusion in Section 01 40 00.
31. See ACI 301 page 4 for checklists of items beyond what is listed here.
32. For LEED add or change the following:
 - 1.03 G. Submit mill test reports for reinforcing steel. Submittals shall include documentation for the recycled content of the reinforcing steel and provide a breakdown of post-consumer and post-industrial recycled content.
 - 2.01 E. Reinforcing Steel (3.2.1): Reinforcing steel as specified herein or on the Drawings shall contain a minimum of 90% post-consumer recycled content
 1. Deformed Bars: ASTM A615/A615M-18e1, A996/A996M-16, or A706/A706M-16. Minimum yield strength to be 60 ksi. Bars to be welded are to be ASTM A706.
 2. Welded Wire Fabric: ASTM A1064/A1064M-18a. Provide in sheet form (not rolls) (3.2.1.6).
 - 2.02 B. Pozzolans and/or GGBF are required in all Classes. Minimum of 25% by mass.

ITEMS TO BE SHOWN ON DRAWINGS:

1. General notes to include summary of requirements for concrete classes.
2. Architectural drawings to show areas to receive carpet, hardener, exposed aggregate, non-slip, terrazzo, quarry tile, or ceramic tile finishes.
3. Architectural drawings to show extent of sidewalks and paving thickness, reinforcing, if any, and joint locations.

SECTION 05 12 00 STRUCTURAL STEEL

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: All labor and materials required to furnish and install the structural steel shown on the Drawings and required by these Specifications, including that shown on the Drawings for mounting HVAC unit support or required in their Specification Sections.
- B. The Engineer has designed a project which will be safe after full completion. The Engineer has no expertise in, and takes no responsibility for, construction means and methods or job site safety during construction, which are exclusively the Contractor's responsibility. Processing and/or approving submittals made by the Contractor which may contain information related to construction methods or safety issues, or participation in meetings where such issues might be discussed, shall not be construed as voluntary assumption by the Engineer of any responsibility for safety procedures.
- C. Related Sections: Carefully examine all other Sections and all Drawings for related work, which includes but is not limited to:
 - 1. Section 03 30 00, "Cast-in-Place Concrete"
- D. Work Furnished but Installed Under Other Sections: Anchor bolts, loose bearing and base plates, and loose lintels.
- E. Work Affected by Others: Framing, loads, openings, and structure in any way related to plumbing, HVAC, or electrical requirements is shown for bidding purposes only. Responsibility for coordinating the work of this Section with these requirements is solely that of the Contractor. Contractor's review of shop Drawings will be taken to indicate that this coordination has been accomplished.
- F. Inspection and testing required by this Section to be at the Contractor's expense.

1.02 QUALITY ASSURANCE

- A. Reference Standards:
 - 1. By the American Institute of Steel Construction (AISC):
 - a. Specification for Structural Steel Buildings (June 22, 2010).
 - b. Specification for Structural Joints using High-Strength Bolts (December 31, 2009).
 - c. Code of Standard Practice for Steel Buildings and Bridges (April 14, 2010).
 - 2. By the American Welding Society (AWS):
 - a. Structural Welding Code – Steel AWS D1.1/D1.1M:2015, Paragraph 6.6.5 specifically excluded.
 - b. Symbols for Welding and Non-Destructive Testing AWS A2.4:2012.
- B. Fabricator's Qualifications:

1. Minimum five (5) years' continuous experience in the fabrication of steel for projects of similar quality and scope.
 2. Certification Standard for Steel Building Structures (STD) in accordance with the American Institute of Steel Construction.
- C. Erector's Qualifications: Minimum five (5) years' continuous experience in similar steel erection.
- D. Welders' Qualifications: Personnel and procedures are to be qualified in accordance with AWS D1.1/D1.1M:2015.
- E. Inspection Agency's Qualifications: Minimum three (3) years' experience in similar steel inspection, and approval of the Architect.

1.03 SUBMITTALS

- A. Steel Fabricator's and Contractor's Certification: The following certifications shall be placed on the front cover of, or on the initial sheet of each steel fabrication shop Drawing and each certification be signed and dated by an official authorized by the company prior to beginning of fabrication:
- B. Certification of Experience: Submit, on request only, written summary of personnel, projects, and equipment which document the experience and qualifications required of the fabricator, inspection agency, erector, and welders.
- C. Shop Drawings:
1. Indicate all shop and erection details, including cuts, copes, connections, holes, threaded fasteners, and welds. Include layout plan of all items to be embedded into concrete.
 2. Indicate material specifications and finishes.
 3. Indicate shop and field welds with symbols per AWS A2.4:2012.
 4. Notwithstanding any other requirements specified elsewhere in these Specifications, one electronic copy of the shop Drawings shall be submitted for approval. One electronic copy will be returned to the Contractor, who will make and distribute as many copies as needed. Only prints with the approval stamp printed on them shall be permitted on the site.
- D. Proof of Compliance for Materials: Submit the following upon request only:
1. Mill reports for properly identified material for:
 - a. Structural steel shapes.
 - b. High strength threaded fasteners.
- E. Inspection Reports: Submit reports for the inspection specified.
- F. Submit erector's affidavit that frame has been erected plumb and level within the tolerances in the Code of Standard Practice.

1.04 PRODUCT DELIVERY AND STORAGE

- A. Delivery:
1. Comply with A6/A6M-17a. Non-compliance will be cause for rejection.

2. Deliver anchor bolts and other items to be embedded in cast-in-place concrete or masonry prior to the start of that work. Provide setting drawings, templates, or instructions required for the installation of such items.
- B. Storage:
1. Store steel at site above ground on platforms, skids or other supports.
 2. Protect steel from damage.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Structural Steel Wide Flange Shapes:
1. $F_y=50$ ksi Steel: ASTM A572/A572M-18 or ASTM A992/A992M-11(2015).
- B. Structural Steel Channels, Angles, Plates, Bars, Etc.:
1. $F_y=36$ ksi Steel: ASTM A36/A36M-14.
- C. Structural Steel Tubing:
1. $F_y=42$ ksi Round Tubing: ASTM A501/A501M-14.
 2. $F_y=46$ ksi Square and Rectangular Tubing: ASTM A500/A500M-18, Grade B.
- D. Structural Steel Pipe:
1. $F_y=35$ ksi Pipe: ASTM A53/A53M-18, Grade B.
- E. Anchor Bolts, Standard Bolts and Nuts: ASTM F1554-18. 36 KSI. Provide washers and heavy nuts for anchor bolts (both ends).
- F. High Strength Threaded Fasteners:
1. Bolts: ASTM A325-14, A325M-14, A490-14a or A490M-14a. All bolts are to be cold-forged with rolled threads.
 2. Nuts: ASTM A194/A194M-18, Type 2 or 2H, or ASTM A563-15 or A563M-07(2013), Type C, C3, D, DH, D3 or DH3. No other nuts are acceptable; nuts must show manufacturer's name and the 2H symbol.
 3. Washers: ASTM F436-18a or F436M-18a.
- G. Welding Electrodes:
1. For Carbon Steels: Conform to requirements of AWS D1.1/D1.1M:2015, using Series E70 electrodes, appropriate for the materials being welded.
 2. For Stainless Steel: Conform to requirements of AWS D1.6/D1.6M:2017 using Series E308 electrodes.
 3. For Stainless Steel to Carbon Steel Welding: Conform to the requirements of AWS D1.6/D1.6M:2007 using Series E309 electrodes.
- H. Shop Paint Primer:

1. For bare steel, use modified alkyd or alkyd-oil primers, equal in quality to 10-99 Tnemec Primer, 10-99W Tnemec Primer, or 4-55 Versare Primer by Tnemec Company, Inc.
 2. For galvanized steel to be painted, use epoxy primer, equal in quality to Series 27 F.C. Typoxy by Tnemec Company, Inc.
 3. Primer to be compatible with finish paint.
- I. Grating: All steel, 2 inches deep, with 3/16-inch bearing bars. All steel galvanized after fabrication. May be welded, pressure-locked or riveted. The following are acceptable:
1. Types GW or GAA by McNichols.
 2. Type W/B or B by Borden Metal Products Company
 3. Type W by Hansco Industrial IKG.
 - J. Attachment may be by tack welding or saddle clips.

2.02 FABRICATION

- A. Conform to applicable provisions of the reference standards listed in Part 1 of this Section, as modified herein.
- B. Connection Design:
1. Select connections per AISC standards for forces and moments given on the Drawings. (In particular, note Schedule on Drawings for composite beams.) Where none are given, select connection for the full uniform load capacity of the member.
 2. Connections of beams framing into a girder from one side only, such as at spandrel girders, shall be made with double angle connections. Unless indicated otherwise, all other connections may be double angle connections or single plate shear connections.
 2. Connections of HSS beams or girts to be end plates or double angles (oriented vertically) with bolts selected by the fabricator to develop the full uniform load capacity of the member for the member's strong axis or forces shown on plans. Connections of horizontal HSS members to HSS columns shall be field welded all around with AISC minimum fillet welds (or flare-bevel groove welds at HSS corners) with all welds ground smooth per AESS requirements.
 3. Connection details on the Drawings are to illustrate location, type, and general arrangement only, and to establish minimum requirements.
 4. Shop connections may be welded or bolted, unless shown otherwise.
 5. Field connections shall be bolted, unless shown otherwise.
 6. Standard bolts and nuts are permitted only for connections of secondary members, unless noted otherwise. High strength threaded fasteners are required for all other bolted connections.
- C. Bearing and Base Plates: Column base plates are to be shop attached. Beam bearing plates may be attached or loose.
- D. Holes: Drill or punch holes in members as required for passage of conduit and piping, and attachment of joists, nailers, etc. Burning such holes is not permitted. If opening is not shown on structural Drawings, obtain prior approval.
- E. Galvanizing:
1. All steel to be Galvanized is to conform to ASTM A123/A123M-17, Grade 100, or ASTM A153/A153M-16a, Class C. Follow all recommendations of the American Galvanizers Association.

2. Except for bolts, nuts, washers, and anchors, perform all galvanizing after fabrication.
3. Prior to galvanizing, clean steel of foreign substances per ASTM A385/A385M-17.
4. Do not treat galvanized finish with a stain-inhibiting chromate treatment.
5. After final erection, touch-up all abrasions with a cold galvanizing compound, Z.R.C. Cold Galvanizing Compound or Z.R.C Galviline Galvanizing Repair by Z.R.C Worldwide, or equal.
6. Galvanize all shelf angles, lintels in exterior walls, all exterior steel exposed to the elements, and all items indicated on the Drawings as "galvanized."

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

- A. Prior to beginning work of this Section, verify that the installed work of other trades is complete and correct to the extent necessary for the proper execution of the work of this Section. This includes locations of anchor bolts, and lines and grades of bearing areas.
- B. In the event of discrepancies, immediately notify the Architect. Do not proceed with work affected by the discrepancies until they have been resolved.

3.02 ERECTION

- A. Conform to the applicable provisions of the reference standards listed in Part 1 of this Section, as modified herein.
- B. This structure is designed to be self-supporting and stable after the building is fully completed. It is solely the Contractor's responsibility to determine erection procedures and sequence, and to ensure the stability of the building and its component parts, and the adequacy of temporary or incomplete connections, during erection. This includes the addition of any shoring, sheeting, temporary guys, bracing or tie-downs that might be necessary. Such material is not shown on the Drawings. If applied, they shall be removed as conditions permit, and shall remain the Contractor's property.
- C. Safety: It is solely the Contractor's responsibility to follow all applicable safety codes and regulations governing this work.
- D. Clean bearing surfaces and other surfaces in permanent contact, prior to assembly.
- E. Splices are permitted only where indicated.
- F. Tolerances: Per AISC Code of Standard Practice. Note special requirements therein for "Architecturally Exposed Structural Steel."
- G. Field corrections of fabrication errors by gas cutting is not permitted in structural members without prior approval of the Architect.
- H. The use of leveling plates or leveling nuts at column bases is prohibited. Grout below column base plates is to be installed only after the steel is plumbed.
- I. Welds which are subject to foot traffic or are exposed to view in the finished structure are to be ground smooth and flush with adjacent surfaces.

- J. Touch-up Painting: After erection, touch-up field connections and abrasions in the shop coat with same paint used for shop coat. Do not paint welds until they have been cleaned in accordance with AWS D1.1/D1.1M:2015.
- K. Remove galvanizing prior to welding. Touch-up with ZRC cold galvanizing compound by ZRC Products Company.

3.03 FIELD QUALITY CONTROL

- A. Inspection agency shall perform the following:
 - 1. Review qualifications of welders, operators, and welding procedures submitted by the Contractor.
 - 2. Review materials' proofs of compliance. Identify markings of structural steel shapes to conform to ASTM standards specified. Review structural steel shapes certificates of compliance.
 - 3. Inspect bolted connections, per the requirements of the AISC Specification for Structural Joints. Periodically identify markings of bolts to conform to ASTM standards specified. Periodically inspect bearing type bolts. Continuously inspect slip-critical connections. Review bolt manufacturer's certificates of compliance.
 - 4. Inspect welded connections per the requirements of AWS D1.1/D1.1M:2015, Chapter 6. Identify markings of weld filler materials to conform to AWS specifications specified. Review weld filler materials certificates of compliance. Continuously inspect and test complete and partial penetration groove welds by other than visual methods. Continuously inspect and test multipass fillet welds using other than visual methods. Periodically inspect and test single pass fillet welds by visual methods.
 - 5. Inspect installation of stud welding, per the requirements of AWS D1.1/D1.1M:2015, Articles 7.7 and 7.8.
 - 6. Periodically inspect bracing and stiffening details of the steel frame for compliance with the construction documents.
 - 7. Periodically inspect member locations of the steel frame.
 - 8. Inspect the application of joint details at each connection for compliance with the construction documents.
- B. Inspection agency shall be directly responsible to the Architect.

3.04 ADDITIONAL TESTING

- A. The Owner reserves the right to perform non-destructive testing other than visual on any shop or field weld. The Owner shall be responsible for all associated costs including handling, surface preparation and non-destructive testing if welds are found to be acceptable, per AWS D1.1, Section 6, Part C. If the welds are not found to be acceptable the Contractor shall be responsible for the repair of discontinuities and all associated costs including those listed above.

END OF SECTION

**SECTION 23 00 05
COMMON WORK RESULTS FOR HVAC**

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Refer to General Conditions, Special conditions and Division 1 General Requirements, for specific requirements, responsibilities and methods relating to the HVAC work.
- B. Refer to Division 26 for general electrical requirements.

1.02 QUALITY ASSURANCE

- A. Standards:
 - 1. Meet the requirements of the following:
 - a. Underwriters Laboratories (UL).
 - b. American National Standards Institute (ANSI).
 - c. American Society for Testing and Materials (ASTM).
 - d. American Society of Mechanical Engineers (ASME).
 - e. National Fire Protection Association (NFPA).
- B. Codes:
 - 1. Meet the requirements of the following:
 - a. Ohio Building Code.
 - b. Ohio Fire Code, Chapter 1301:7 of the Ohio Administrative Code.
 - c. Life Safety Code: NFPA 101-1976.
- C. Tests and certifications:
 - 1. Conduct tests and adjustments of equipment necessary to verify performance requirements. Submit test data to the A/E. Pay all fees involved in required testing of equipment.
 - 2. Provide necessary personnel and testing instruments required to perform test(s) of installation.
 - 3. Refer to individual Sections for additional requirements.
- D. Drawings:
 - 1. Drawings are schematic and show approximate locations of ducts, piping and equipment. Coordinate and field verify exact locations with other trades.
 - 2. Obtain A/E's approval for significant deviations from drawing locations and layout.
 - 3. The A/E reserves the right to make minor changes in the location of mechanical work or equipment prior to roughing-in without additional cost.
 - 4. Examine the Contract Documents and immediately report any error, discrepancy or omission. The A/E will determine which interpretation shall take precedence where two or more conflicting statements occur. Contractor is responsible for the more stringent interpretation.

E. Definitions:

1. "Furnish": To purchase and deliver products to the project site and prepare for installation.
2. "Install": To take furnished products, assemble, erect, secure, connect and place into operation.
3. "Provide": To furnish and install.
4. "Products": Includes materials, systems and equipment.
5. "Work": The providing of products for the entire Contract.
6. "Contractor": Means the Plumbing, Fire Protection or HVAC Contractor, individually or collectively.
7. "Concealed": Embedded in or installed behind walls, within partitions, above suspended ceilings, in trenches, in tunnels and crawl spaces.
8. "Exposed": Not installed underground or "concealed" as defined above.

F. Abbreviations:

1. The following abbreviations are used throughout the Mechanical drawings. Refer also to symbol list on drawings and Architectural abbreviations. Note that all abbreviations are not necessarily used.

AD	Access Door	CONN	Connection
AHU	Air Handling Unit	CUH	Cabinet Unit Heater
ALT	Alternate		
APPROX	Approximate	DCW	Domestic Cold Water
AUTO	Automatic	DHW	Domestic Hot Water
AW	Acid Waste	DF	Drinking Fountain
AFF	Above Finish Floor	DHW	Domestic Hot Water
AL	Aluminum	DIA	Diameter
AP	Access Panel	DIM	Dimension
ARCH	Architect	DN	Down
AV	Acid Vent	DWG	Drawing
AWT	Average Water Temperature	DWV	Drain, Waste and Vent
A	Compressed Air	DET	Detail
ADD	Backdraft Damper	DG	Door Grille
BOD	Bottom of Duct (elevation)	DHWR	Domestic Hot Water Return
		DIFF	Diffuser
BT	Blacktop	DL	Door Louver
BOP	Bottom of Pipe (elevation)	DS	Downspout
CB	Catch Basin	EA	Each
CFH	Cubic Feet per Hour	EF	Exhaust Fan
CI	Cast Iron	ELEC	Electric
CONC	Concrete	ET	Expansion Tank
CONTR	Contractor	EWC	Electric Water Cooler
CLG	Ceiling	EXH	Exhaust
CFM	Cubic Feet per Minute	EAT	Entering Air Temperature
CHWS	Chilled Water Supply	EL	Elevation
CHWR	Chilled Water Return	EQUIP	Equipment
CDWS	Condenser water supply	EW	Eye Wash
CDWR	Condenser water return	EWT	Entering Water Temperature
CO	Cleanout	EXIST	Existing

FD	Floor Drain, Fire Damper	MAN	Manual
FH	Fire Hydrant	MBH	Thousand BTU per Hour
FIN	Finish	MET	Metal
FLA	Full Load Amps	MFR	Manufacturer
FP	Fire Protection	MIN	Minimum
FVC	Fire Valve Cabinet	MOD	Motorized Damper
		MTD	Mounted
		MAX	Maximum
FEC	Fire Extinguisher Cabinet	MECH	Mechanical
FHC	Fire Hose Cabinet	MEZZ	Mezzanine
FL	Floor	MH	Manhole
FO	Fuel Oil	MISC	Miscellaneous
FT	Feet	MS	Motor Starter
		MPS	Medium Pressure Steam
GR	Grille	NIC	Not In Contract
GALV	Galvanized	NO	Normally Open
GI	Grease Interceptor	NC	Normally Closed
GA	Gauge	NTS	Not To Scale
GC	General Contractor		
GPM	Gallons Per Minute	OA	Outside Air
GWH	Gas Water Heater	OD	Outside Diameter
HB	Hose Bibb	PC	Plumbing Contractor
H.O.A.	Hand-Off-Automatic	PIV	Post Indicator Valve
HP	High Pressure, Horsepower	PLBG	Plumbing
HT	Height	PSIG	Pounds per Square Inch Gauge
HTR	Heater		
HVAC	Heating, Ventilating and Air Conditioning	PD	Pressure Drop
		PL	Property Line
HD	Head, Hub Drain	PNEU	Pneumatic
HWS	Hot water supply	PT	Plaster Trap
HWR	Hot water return		
HORIZ	Horizontal		
HS	Hair Strainer	RA	Return Air
HTG	Heating	RCP	Reinforced Concrete Pipe
HUH	Horizontal Unit Heater	RECIRC	Recirculating
HPS	High Pressure Steam	REINF	Reinforced
		RM	Room
		RAD	Radius
ID	Inside Diameter	RD	Roof Drain
IND	Indirect Drain	REG	Register
INV	Invert	REQ'D	Required
		RWC	Rainwater Conductor
LG	Length		
LAV	Lavatory	S	Sanitary Sewer
LAT	Leaving Air Temperature	SAN	Sanitary
LWT	Leaving Water Temperature	SD	Smoke Detector, Storm Drain
LPS	Low Pressure Steam		
		SPECS	Specifications
		ST	Sound Trap
		STM	Storm Sewer
		SA	Supply Air
		SB	Shampoo Bowl

SF	Square Feet	VERT	Vertical
SHT	Sheet	VTR	Vent Through Roof
SQ	Square		
STL	Steel		
		W	Width
TD	Temperature Difference	WC	Water Closet
TYP	Typical	WO	Waste Oil
TEMP	Temperature	WTR	Water
		W/	With
		WH	Wall Hydrant
UC	Undercut	W/O	Without
UR	Urinal		
UH	Unit Heater	YD	Yard
		YH	Yard Hydrant
VCP	Vitrified Clay Pipe		
VSP	Vitrified Sewer Pipe		
VUH	Vertical Unit Heater		

1.03 SUBMITTALS

A. Shop drawings and technical data:

1. Refer to Division 1 for submittal procedures and references.
2. Submittals are required for all items of mechanical equipment and products provided by this Contractor. Refer to each Section for additional requirements.
3. Submittals shall be referenced correctly to the Contract Documents.
4. Manufacturer's catalog cuts may be submitted for all standard catalogued equipment, provided that the item required to meet the project specifications is not modified in any way from the standard catalog version of said item. Cuts shall be clearly marked to indicate the version of said item. Cuts shall be clearly marked to indicate the exact size, type, rating, capacity, etc., of the item to be furnished.
5. Bind shop drawings/catalog cuts in folders with a title sheet and identification on front of the folder. Allow space for Contractor, Architect and Engineer review stamps.
6. All submittals must bear the handwritten signature of the Contractor and his stamp of approval before being considered for review.

B. Operating and maintenance manuals:

1. Submit three (3) bound copies, 8-1/2" x 11", in hard back 3-ring binders to the A/E for review and obtain receipt for delivery – **OR A SINGLE DIGITAL COPY.**
2. Format of the manual shall be as follows:
 - a. First page: Title of Project, Owner, Address, Date of Submittal, Name and Address of Contractor, Name of Architect, Name of Engineer.
 - b. Second page: Index of manual contents.
 - c. First section: A copy of each shop drawing and reviewed submittal with an index at the beginning of the section. Include operating and maintenance instructions, wiring/control diagrams, spare parts lists for each type of equipment.
 - d. Second section: A list of all equipment used on the job, together with supplier's name and address and servicing agency's name

- and address.
- e. Third section: Copies of Contractor and manufacturer warranties.
- f. Fourth section: Test and balance reports, construction test reports, start-up reports, water treatment reports, valve charts.
- g. Include special keys and wrenches.

C. Record Drawings:

1. Comply with Division 1 for record document procedures and requirements.
2. Maintain one copy of drawings on job site to record any deviations from Contract drawings.
3. Neatly and correctly enter in red pen any deviations on drawings and keep drawings available for inspection.
 - a. Record locations of concealed ducts, piping and valves.
 - b. Record Addendum and Change Order items.
4. Record deviations made necessary to incorporate equipment different from base equipment specified.
5. At completion of job and before final approval, make any final corrections to drawings, certify to the accuracy of each print by signature thereon and deliver same to A/E.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Arrange deliveries of products in accordance with construction schedules to avoid conflict with work and site conditions.
 1. Deliver products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
 2. Immediately on delivery, inspect shipments to assure compliance with the requirements of the Contract Documents and approved submittals, and that products are properly protected and undamaged.
 3. Provide equipment and personnel to handle products by methods to prevent soiling and damage to products or packaging.
- B. Store products in accordance with manufacturer's instructions with seals and labels intact and legible.
 1. Store fabricated products above the ground, on blocking or skids, prevent soiling or staining. Cover products which are subject to deterioration with impervious sheet coverings. Provide adequate ventilation to avoid condensation.
 2. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specific conditions, and free from damage or deterioration.
 3. Provide substantial coverings as necessary to protect installed products from damage. Remove when no longer needed.

1.05 PROJECT CONDITIONS

- A. Locate existing utilities prior to beginning work. Reroute or replace existing utilities where necessary to permit installation of the work. Provide adequate

means of protection during work operations. Repair existing utilities damaged during work operations to the satisfaction of the utility owner and at Contractor's expense.

- B. Should uncharted or incorrectly charted piping or other utilities be encountered during work operations, notify the A/E immediately for procedure directions. Cooperate with utility companies in maintaining active utilities in operation.

1.06 WARRANTY

- A. Refer to Division 1 for specific requirements.
- B. Refer to each Section of Divisions 22 for additional requirements.

PART 2 - PRODUCTS

2.01 STANDARD PRODUCTS, OPTIONS AND SUBSTITUTIONS

- A. Refer to Division 1.
- B. The first manufacturer listed for particular products or equipment is the basis of design.
- C. Where products other than the basis of design are considered or used, the contractor is fully responsible for all costs, installation changes, extra equipment, etc. associated with that product.

2.02 QUANTITIES

- A. Items may be referred to as singular or plural on drawings and specifications. Contractor is responsible for determining quantity of each item.

PART 3 - EXECUTION

3.01 TEMPORARY SERVICES

- A. Refer to Division 1 for specific requirements, responsibilities and methods for temporary water service, sanitation, heat and ventilation.

3.02 COORDINATION

- A. Coordinate layout or work with other trades. Make minor adjustments in location required for coordination. Location of structural systems and ceilings shall take preference over location of mechanical work where conflict occurs.

3.03 CONCRETE WORK

- A. Provide all concealed concrete work required for Division 23 including but not limited to pipe and duct anchors, foundations and encasements. Provide concrete work for inertia bases and concrete work associated with filling pipes.
- B. Concrete shall conform to Division 3 requirements.
- C. Equipment pads, slabs and bases exposed to view shall be provided by this

contractor. This Contractor shall locate, dimension and furnish & install sleeves and anchors as required.

3.04 PROTECTION

- A. Protect equipment and materials during construction from damage from water, dirt, welding and cutting, spatters, paint drippings, etc., by use of shield and drop cloths. Damaged equipment or materials shall be repaired or replaced by this Contractor.
- B. Products stored outside or in unheated spaces shall be covered with waterproof drop cloths or tarpaulins. Condensation shall be prevented by heating and ventilating. Method shall be acceptable to the A/E.
- C. During construction, maintain all materials and equipment in orderly manner.
- D. Protect floors from soiling and damages caused by chips and cutting oil.

3.05 CUTTING AND PATCHING

- A. Avoid cutting of concrete, masonry and other finished work by use of sleeves and inserts. This contractor shall furnish & install all sleeves & inserts required for their work.
- B. This contractor is to perform cutting and patching required for installation of the work. Methods and procedures shall be acceptable to the A/E. Finish painting shall be by this Contractor.
- C. Cut holes through concrete, brick, tile, etc., when necessary, by rotary core drilling.
- D. Damages, patches, or work in areas previously painted shall be repainted at the expense of this Contractor.

3.06 CLEANING

- A. Upon completion, ductwork, piping and equipment shall be thoroughly cleared of dirt, grease, rust and oil, primed where necessary, and left ready for painting. Vacuum clean the inside and outside of fan plenums, air handling units and equipment cabinets. Vacuum clean coils and comb out damaged fins.
- B. Clean galvanized piping and ductwork in exposed areas with diluted acetic acid.
- C. Clean copper piping in exposed areas with emery cloth and solvent.
- D. Clean gauges, thermometers, traps, strainers and fittings.
- E. Install new filters in throwaway and replaceable filter frames. Properly clean permanent filters.

3.07 PAINTING AND FINISHING

- A. Finish painting is by this Contractor.
- B. Factory finished equipment which has rusted or been damaged shall be cleaned, spot primed with zinc chromate, and entirely repainted the original color by this

Contractor.

- C. Insulation coverings shall be cleaned, sized if necessary, and left ready for service identification.
- D. Ferrous metal exposed to weather shall be cleaned and primed and left ready for painting.
- E. Uninsulated ferrous piping, supports and hangers exposed to view shall be painted with one coat of black asphaltum in areas not finished under Division 9.
- F. Wall mounted plumbing fixtures shall be caulked between fixture and wall with caulking compatible with finish paint or finishes.

3.08 INSTRUCTION OF OWNER

- A. Refer to Division 1 for procedures and references.
- B. After placing systems in operation, thoroughly instruct designated Owner's personnel on operation and maintenance of all equipment and systems.
- C. Provide a minimum of four (4) hours total instruction for general HVAC items. Instructions shall include the following:
 - 1. Location of equipment and explanation of function.
 - 2. Reference to operating instruction manual for record and clarify.
 - 3. Coordination of written and verbal instructions so that each is understood by personnel.
 - 4. Explanation of temperature control system and operation of systems, including explanation of control panel devices.
 - 5. Explanation of specific maintenance performed by Owner.
- D. See section 23 for specific DDC control instruction.

3.09 DEMOLITION AND REMODELING

- A. Provide demolition of existing mechanical work in remodeled areas of the existing building and as noted. Demolition includes, but is not limited to, the following:
 - 1. Removal of all abandoned piping, ducts, supports, equipment, controls, etc.
 - 2. Cap and plug piping and ducts where demolition begins.
- B. Items which are completely concealed in the existing structure and will not interfere with new work remain. Cap and plug at ends.
- C. Equipment removed from the building, unless otherwise noted, becomes the property of this Contractor.
- D. Refer to Division 1 for additional requirements.

3.10 CONSTRUCTION DIRT, DUST AND NOISE CONTROL

- A. All cutting or drilling of concrete shall be performed with absolute control of dirt and dust resulting from the cutting or drilling operation.

- B. All cleaning of existing spaces, necessitated by the Contractor's failure to adhere to these requirements or his failure to provide complete and rigid control of dust or dirt caused by the construction operations, will be performed by the Owner and back charged to the Contractor.
- C. The Contractor is required to minimize construction noise levels in all locations adjacent to or in occupied areas.
- D. The Owner reserves the right to prevent use of any tools which cause detrimental vibration or noise.

END OF SECTION 23 00 05

SECTION 23 05 13
ELECTRICAL REQUIREMENTS FOR HVAC WORK

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Provide all control wiring 24 volt or less, including thermistor wiring for Division 23 Work as noted on the drawings and temperature control diagrams.
- B. Provide all temperature control devices and equipment.
- C. Compensate Electrical Contractor for difference in cost of power wiring due to using equipment other than the specified standard.
- D. HVAC Contractor to provide all wiring diagrams and wiring, wire size and breaker sizes to Electrical Contractor required for electrical work.

1.02 RELATED WORK

- A. Work by Electrical Contractor:
 - 1. All power wiring and conduit.
 - 2. All control wiring and conduit above 24 volt as shown on drawings and specified.
 - 3. All control wiring and conduit less than 24 volts as noted on the temperature control diagrams.
 - 4. Electrical Contractor is responsible for minor variations in wiring required by actual equipment and controls used by this Contractor.
 - 5. Provide motor starters, contactors and disconnects for Division 23 equipment.

1.03 QUALITY ASSURANCE

- A. Wiring and conduit shall conform to the National Electrical Code, latest edition.
- B. Electrical equipment shall conform to NEMA standards and shall be UL listed.

1.04 SUBMITTALS

- A. Furnish to Electrical Contractor equipment shop drawings and all wiring diagrams that indicate power and interlock connections.
- B. Prepare complete terminal-to-terminal wiring diagrams that show terminal designation on control items and equipment. Diagrams may be part of temperature control submittals.

PART 2 - PRODUCTS

2.01 MOTORS

- A. Motors shall be furnished by the manufacturer or supplier of the specified equipment.
- B. General purpose motors shall be open drip-proof conforming to NEMA Design B, Class B insulation, continuous 40°C ambient, 60 Hz, 1.15 service factor, and 1800 RPM maximum speed unless specified otherwise. Voltage shall be as specified in individual Sections.

- C. Provide special motors where specified.
- D. Motors shall be single phase below 3/4 HP and three phase 3/4 HP and larger, unless specified otherwise.
 - 1. Single phase motors shall have built in overload protection.
 - 2. Single phase motors shall be capacitor start, capacitor run.
- E. Units shall comply with the made in America requirements of the 2009 American Recovery and Reinvestment Act (2009-ARRA).

PART 3- EXECUTION

3.01 CONTROL WIRING INSTALLATION

- A. Exposed control wiring shall be run in thin wall conduit.
- B. Coordinate with the Electrical Contractor.
- C. Check out system operation in all modes.

3.02 ADDITIONAL REQUIREMENTS

- A. Motor characteristics which change from that specified, due to the Contractor electing to use one of the optional manufacturers, or an updated model, etc., shall be coordinated with the Electrical Contractor.
 - 1. This Contractor is responsible for the cost and design of any revisions necessary to provide proper power and control connections in full accordance with the National Electric Code and state and local codes.

END OF SECTION

**SECTION 23 05 29
HANGERS AND SUPPORTS FOR HVAC
PIPING AND EQUIPMENT**

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Provide supports and hangers for all piping and piping system components.
- B. Provide supports and hangers for all equipment.
- C. Provide steel angles and channels between structural members as necessary to support piping and equipment.

1.02 RELATED WORK

- A. Referenced Sections:
 - 1. Section 23 21 13: Installation of Piping.

1.03 QUALITY ASSURANCE

- A. Manufacturer tests and certifications: Products specified in this Section which are used in fire protection systems shall be UL or FM listed for the usage.
- B. Meet the requirements of the following:
 - 1. MSS SP 58-1982 Pipe Hangers and Supports.
 - 2. ANSI Code for Pressure Piping.
 - 3. Hangers and supports shall have a stress safety factor of 5.

1.04 SUBMITTALS

- A. Submit manufacturer's product data for the following:
 - 1. Hangers.
 - 2. Supports.
 - 3. Inserts.

1.05 COORDINATION

- A. Obtain A/Es' approval before welding, drilling or cutting any structural members.
- B. Coordinate runs of piping and locate equipment to utilize structural members.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Optional Manufacturers: Grinnell, Elcen, F & S, Fee & Mason, or Michigan.

2.02 STRUCTURE ATTACHMENT DEVICES

- A. Riser clamp, steel: Grinnell Fig. 261. Provide masonry or concrete bearing.
- B. Riser clamp, copper: Grinnell Fig. CT-121, copper plated. Provide masonry or concrete bearing.
- C. Top beam clamp: Grinnell Fig. 227 with Fig. 157 extension.
- D. Bottom beam clamp: Grinnell Fig. 229. (Use only where top clamps are not possible. Obtain approval from Engineer.)
- E. Side beam bracket: Grinnell Fig. 202. (For wood construction only.)
- F. Horizontal traveler: Grinnell Fig. 170.
- G. Concrete inserts: Grinnell Fig. 282, galvanized.
- H. Concrete fasteners: Phillips "Red Head."
- I. Copper tube strap: Grinnell Fig. 9124.
- J. Pipe strap: Grinnell Fig. 262.
- K. Pipe hanger flange: Grinnell Fig. 153.
- L. Bottom channel clamp: Grinnell Fig. 226 with 157 extension. (Obtain approval from Engineer prior to use.)

2.03 HANGERS AND ACCESSORIES

- A. Adjustable copper tubing ring: Grinnell Fig. CT-99, copper plated.
- B. Adjustable swivel split ring: Grinnell Fig. 104, black finish.
- C. Adjustable pipe ring, plastic coated: Grinnell Fig. CT-99c, plastic coated.
- D. Heavy adjustable clevis: Grinnell Fig. 260, black finish.
- E. Lightweight adjustable clevis: Grinnell Fig. 65, black finish.
- F. Pipe roll stand (base supported): Grinnell Fig. 271, cast iron roll.
- G. Adjustable pipe roll: Grinnell Fig. 181.
- H. Pre-engineered spring hanger: Grinnell Figs. 8-268, 82, or 98.
- I. Insulated pipe saddle: Hot lines - high density precompressed fiberglass support segment with 18-gauge galvanized steel shield. Cold lines - provide "Foamglass" pipe insulation with jacket and 18-gauge galvanized steel shield. Insulation thickness shall be same as specified in 23 07 13.

2.04 HANGER RODS AND ACCESSORIES

- A. Provide plated steel threaded rods. Size according to 3.02 following.
- B. Provide all necessary couplings, turn buckles, nuts, washers, and accessories for a complete installation.

2.05 TRAPEZE COMPONENTS

- A. Horizontal trapeze member: Unistrut P-2700 series channel, standard or heavy duty according to load.
- B. Trapeze clamp: Unistrut two-piece bolted pipe clamp; steel for steel pipes, copper for copper pipes.

2.06 EQUIPMENT SUPPORTS

- A. Provide 3 x 3 x 1/4 angles or heavier, if required, spanning 3 structural joists to support hung equipment.
- B. Provide channels (strength as required) to span between beams. Weld to beams. Obtain approval of A/E before proceeding.

2.07 ROOF SUPPORTS

- A. If not furnished with the equipment or otherwise detailed, provide 8" high support curbs of proper length to support piping and equipment. Curbs shall span 3 joists when supporting equipment. Curbs shall be Pate ES-1A, galvanized steel with wood nailer.

PART 3 - EXECUTION

3.01 PIPE SUPPORT METHODS

CONDITION	SUPPORT METHOD
Uninsulated copper pipe, horizontal, hung.	Adjustable copper tubing ring and hanger rod.
Uninsulated copper pipe, horizontal, bottom support	Copper tube strap. Provide necessary angle braces.
Uninsulated copper pipe, vertical	Copper tube strap to walls with anchors. Riser clamp, copper at floors.
Uninsulated steel pipe, horizontal, hung	Adjustable swivel split ring, hanger rod (sizes to 8"), heavy adjustable clevis, hanger rod (sizes to 10" and larger).
Uninsulated steel pipe horizontal hung, with movement	Adjustable pipe roll hanger and rod.
Uninsulated steel pipe horizontal, bottom support.	Pipe roll stand.
Uninsulated steel pipe vertical.	Pipe strap to walls. Riser clamp at floors.
Uninsulated metal drain pipe horizontal, hung.	Heavy adjustable clevis, hanger rod.
Uninsulated metal drain pipe vertical.	One hole clamp (at walls). Riser clamp, steel (at floors).

Insulated pipe horizontal, hung.	Insulated pipe saddle, heavy adjustable clevis, hanger rod.
Insulated pipe horizontal, bottom support.	Insulated pipe saddle, pipe roll stand.
Insulated pipe horizontal, hung with movement.	Insulated pipe roll hanger and with rod.
Insulated pipe vertical.	Pipe strap to walls. Appropriate riser clamp, with sleeve at floors.
Bottom of storm and waste stacks at slab on grade floors.	Concrete pipe foundation, poured after pipe is in place.

Notes:

1. Install pipe saddles as pipe is installed.
2. Trapeze hangers may be used for multiple horizontal hung pipe runs. Trapeze consists of hanger rods, horizontal trapeze member, and trapeze clamps. Each pipe individually attached to trapeze.

3.02 SUPPORT SPACING AND HANGER ROD DIAMETERS

A. Cast iron, steel and copper pipes:

PIPE SIZE	MAXIMUM VERTICAL AND HORIZONTAL SUPPORT SPACING	ROD DIAMETER
1/2", 3/4"	5'	3/8"
1", 1-1/4"	6'	3/8"
1-1/2", 2"	9'	3/8"
2-1/2", 3"	11'	1/2"
4", 5"	12'	5/8"
6", 8"	12'	3/4"
10"	12'	7/8"
12" through 24"	12'	1"
30"	12'	1-1/8"

Notes:

1. Maximum support spacing for horizontal cast iron drain and vent lines is one support at each joint (i.e., 5' spacing for 5' lengths, 10' spacing for 10' lengths).
2. Provide additional supports at turns, valves, concentrated loads, connections to equipment and where necessary for proper alignment.

3.03 STRUCTURE ATTACHMENT METHODS

CONDITION	SUPPORT METHOD
Hanger rod to steel bar joist or truss	Top beam clamp
Hanger rod to steel beam (corrugated metal deck above)	Top beam clamp

Hanger rod to steel beam (concrete deck above, temporary form)	Bottom beam clamp
Hanger rod to precast or existing concrete deck	Concrete fasteners, pipe hanger flange
Hanger rod to new cast-in-place concrete deck	Concrete insert
Hanger rod to wood beam	Side beam bracket, lag bolt to beam (use bolt through entire beam when load exceeds manufacturer's recommended load for lag bolt application)
Hanger rod to any structure at elbows with significant lateral movement	Horizontal traveler

Notes:

1. Do not install hangers from metal roof deck.
2. Avoid drilling concrete by using inserts.
3. Weld to steel structural members. Consult with A/E and affected trades regarding procedure.

3.04 ADDITIONAL REQUIREMENTS

- A. Properly support pipe to maintain required alignment, slopes, and expansion capabilities.
- B. Piping and ductwork shall be supported independently from the building structure. Where interferences occur, provide trapeze type hangers or other suitable supports for each system. Locate hangers and supports where they will not interfere with access to air device boxes, fire dampers, valves, and other appurtenances requiring servicing.
 1. Ceiling grid systems shall not be supported from ductwork, conduits, heating or plumbing lines and vice versa.

END OF SECTION

SECTION 23 05 53
SERVICE IDENTIFICATION

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Provide pipe identification for all exposed piping in equipment rooms, mains above accessible ceilings, piping exposed to view, and accessible through access panels.
- B. Provide valve tags for all valves.
- C. Provide equipment identification for all major items of mechanical equipment.

1.02 QUALITY ASSURANCE

- A. Meet the requirements of:
 - 1. ANSI A13.1-1981: Scheme for the Identification of Piping Systems.

1.03 SUBMITTALS

- A. Submit manufacturer's product data for the following:
 - 1. Pressure sensitive banding tape.
 - 2. Pipe identification markers.
 - 3. Complete list of marker legend wording.
- B. Submit representative sample, complete with marker and banding, tags, and equipment identification.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Products: Seton, Brady, Certain-teed.

2.02 MATERIALS

- A. Color bands: 2" wide pressure sensitive vinyl tape.
- B. Marker: Pressure sensitive vinyl; with lettering, color, wording and size per ANSI A13.1.
- C. Valve Tags: 2" diameter, 19-gauge brass with chain and "S" hook. Lettering shall be black filled, minimum 1/2" high and shall correspond to building's existing tag system.
 - 1. Tags shall be stamped with service designation, numbered consecutively for each system.
- D. HVAC Equipment Labels: plastic engraved plates, screwed to equipment with stainless steel screws and unit labeled: rooftops, indoor VPR units, outdoor VPR units.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Pipe identification shall consist of service designation, service labeling and direction of flow indication.
1. For pipes less than 3/4" O.D., a permanently legible tag shall be used.
 2. Service designation for piping shall be as follows:
(Not all necessarily apply)

Hot Water Heating Supply	HWS
Hot Water Heating Return	HWR
Chilled Water Supply	CHWS
Chilled Water Return	CHWR
High Pressure Steam	HPS
Medium Pressure Steam	MPS
Low Pressure Steam	LPS
High Pressure Condensate Return	HP CR
Low Pressure Condensate Return	LP CR
Condenser Water Supply	CWS
Condenser Water Return	CWR
 3. Stencil the piping systems with the above designations. Stencil markings shall not be more than 20 feet between indications. Stencil markings shall be located where pipes enter rooms, and where connections are made to headers and equipment. Letters shall be plainly marked and shall be readable from the normal viewing position using one-inch or larger characters. Stencil lines at access panels for concealed piping. Plastic tape is not acceptable for designations. Flow directional arrows shall be stenciled next to the service designation at all water lines.
 4. Protect stencils with one clear coat of lacquer or varnish.
- B. Each new supply fan, exhaust fan, pump, etc., shall be identified by stenciling the number assigned the unit on the drawings with one-inch high black characters.
- C. Valve Tags, Equipment and Pipe Coding:
1. To each valve on the systems listed below, an approved brass tag shall be attached with a brass chain. Each tag shall be stamped with a serial number and the service designation of the valve as follows:

Hot Water Heating Return	HWR
Chilled Water Supply	CHWS
Chilled Water Return	CHWR
High Pressure Steam	HPS
Medium Pressure Steam	MPS
Low Pressure Steam	LPS
High Pressure Condensate Return	HP CR
Low Pressure Condensate Return	LP CR
Condenser Water Supply	CWS
Condenser Water Return	CWR
 2. Prepare typewritten charts of valves and valve locations, under glass and framed in wood, giving valve numbers and what they control. Install charts on walls of

equipment rooms, also record on as-built drawings and in operating instructions brochure. Follow sample valve chart heading:

Number	LOCATION	SERVICES
HWS-1 (example)	At boiler	Shuts off supply and isolates boiler

END OF SECTION

SECTION 23 05 93
TESTING ADJUSTING AND BALANCING

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Provide instruments, tools, and labor to balance all air and water systems to quantities shown on the drawings.

1.02 QUALITY CONTROL

- A. Contractor shall obtain the services of an independent test and balance agency certified by the Associated Air Balance Council (ABBC or NEBS). All reports shall be stamped and certified by the balancing engineer.
- B. All quantities listed on drawings are minimum. Quantities to +/-5% are acceptable. Balance contractor shall continue to adjust the equipment/item to get to the acceptable range as required.

1.03 SUBMITTALS

- A. Submit six (6) copies of complete balancing report as specified. **Or a single digital copy.**

PART 2 - PRODUCTS

2.01 INSTRUMENTS

- A. Instruments used for testing and balancing must have been calibrated within a period of six months, and checked for accuracy, before start of work.

2.02 REPORT FORMS

- A. Hood system with exhausts and makeup air system.

PART 3 - EXECUTION

3.01 GENERAL

- A. Perform pre-balance and final balancing.
- B. Air balancing should be performed with all doors closed.
- C. All final adjustments of the system shall be made under the direct supervision of a qualified representative of the balancing subcontractor who shall direct the work of a sheet metal mechanic, a steam fitter, a qualified representative of the temperature control manufacturer, who shall cooperate in adjusting pressures, chilled and hot water flows, air flow, control operation to obtain uniform temperatures, in balancing exhaust systems and in repair of any leaks, or making changes necessary to comply with specifications requirements. Furnish additional dampers wherever required for balancing.

- D. Contractor shall include (1) man-day for call back service to adjust problem areas for airflow and pattern adjustment after balance reports have been completed.
- E. Measure and confirm exhaust and supply air flow for the hood.

END OF SECTION

**SECTION 23 07 13
DUCT INSULATION**

PART 1 - GENERAL

1.01 WORK INCLUDES

- A. The work shall include all labor, materials and equipment necessary to insulate the ductwork as shown on the drawings and/or as specified herein.
1. Ductwork: Round, rectangular and oval.
- B. Insulation applies to ductwork, plenums, etc.

1.02 SUBMITTALS

- A. All submittals shall conform completely to the requirements of Contract Documents. Submit catalog cuts.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Urethane, fiberglass, and calcium silicate, where specified, shall have UL-rated vapor barrier jacket and a composite rating not to exceed 25 Flame Spread and 50 Smoke Developed.

2.02 INSULATION/JACKETS

<u>Service</u>	<u>Duct Size</u>	<u>Thickness</u>	<u>Insulation/ Jacket Type</u>
A. All Indoor SA and RA Ductwork.	All	1"	I-1
B. All Outside Air Intake Ductwork	All	2"	I-1

2.03 DUCT INSULATION/JACKET TYPE

- A. Insulation Types:
- I-1: Ductwrap with vapor barrier, 1 lb./cf density, 0.27/inch K value, FSK facing.
- I-2: Duct board with foil vapor barrier, 6lb./cf density, R-6..

2.04 ALTERNATE MANUFACTURERS

- A. Products: Johns Manville, Knauf, Owens Corning, Certain-teed.

PART 3 - EXECUTION

3.01 GENERAL

- A. Work shall be executed by skilled mechanics under the direction of a qualified supervisor

thoroughly knowledgeable and experienced in the basic principles required for application of insulation, protective coating and accessories to ductwork.

- B. Manufacturer's application instructions for all materials shall be followed.
- C. All surfaces must be clean and dry before applying pipe insulation. If covering is applied at the coverer's option prior to testing and defects in covered work appear at or before the time of inspection and tests, the covering must be removed and, after defects have been corrected, must be reinstalled without expense to Owner.
- D. Covering shall be dry when installed and before and during the application of any finish. Surfaces of covering shall be smooth, even and substantially flush with adjacent covering.
- E. Insulation shall not be applied over nameplates, inspection stamps, or identification tags, without Owner's approval.
- F. All gaps and joints which can allow air to enter between the insulation and ductwork to be securely tape sealed to prohibit penetration of ambient air.

END OF SECTION

**SECTION 23 07 50
ROOFTOP HVAC EQUIPMENT**

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Furnish and install, where indicated on the Drawings and as specified herein, the Rooftop HVAC equipment and accessories.
- B. Design is based on equipment of a specific manufacturer's model or equal as noted. Alternate manufacturers listed as add or deducts on substitution sheet. All equipment shall equal the performance as presented by the standard catalog data for the equipment makes and models specified.
- C. Refer to Drawings for specifications, schedules, etc.

1.1 SUBMITTALS

- A. Submit Shop Drawings for all items in accordance with the General Conditions.
- B. Submit three bound copies of manual containing catalog cuts, Shop Drawings, control diagrams, wiring diagrams, and operation and maintenance instructions for all equipment.

1.1 DELIVERY, STORAGE and HANDLING

- A. Comply with manufacturer's installation instructions for rigging, unloading, and transporting units.

1.1 WARRANTY

- A. Provide parts warranty (excluding refrigerant) for one year from start-up or 18 months from shipment, whichever occurs first.
- B. Provide five-year extended warranty for compressors, all labor, material, parts and travel.

1.1 REGULATORY REQUIREMENTS

- A. Unit shall conform to ANSI Z21.47/UL1995 for construction of packaged air conditioner.
 - 1. In the event the unit is not UL approved, the manufacturer must, at his expense, provide for a field inspection by a UL representative to verify conformance to UL standards. If necessary, contractor shall perform modifications to the unit to comply with UL, as directed by the UL representative, at no additional expense to the Owner.

1.1 REFERENCES

- A. Unit NFPA 90 A & B - Installation of Air Conditioning and Ventilation Systems and Installation of Warm Air Heating and Air Conditioning Systems.
- B. ANSI/ASHRAE 15 - Safety Code for Mechanical Refrigeration.
- C. AHRI 360 - Commercial and Industrial Unitary Air Conditioning Equipment testing and rating standard.

- D. AHRI 340 - Commercial and Industrial Unitary Heat pump Equipment.
- E. ANSI/ASHRAE 37 - Testing Unitary Air Conditioning and Heat Pump Equipment.
- F. ANSI/ASHRAE/IESNA 90.1-1999 - Energy Standard for New Buildings Except Low-Rise Residential Buildings.
- G. ANSI Z21.47/UL1995 - Unitary Air Conditioning Standard for safety requirements.
- H. California Energy Commission Administrative Code - Title 20/24 - Establishes the minimum efficiency requirements for HVAC equipment installed in new buildings in the State of California.
- I. AHRI 210/240 - Unitary Air-Conditioning Equipment and Air- Source Heat Pump Equipment.
- J. AHRI 270 - Sound Rating of Outdoor Unitary Equipment.
- K. AHRI 370 - Sound Rating of Large Outdoor Refrigerating and Air Conditioning Equipment.
- L. ANSI/NFPA 70-1995 - National Electric Code.

PART 2 - PRODUCTS – REFER TO DRAWINGS

2.1 SUMMARY

- A. Refer to drawings for specification s for hood systems and VRF system.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Contractor shall verify that roof is ready to receive work and opening dimensions.
- B. Contractor shall verify that proper power supply is available.

3.2 INSTALLATION

- A. Contractor shall install in accordance with manufacturer's instructions.
- B. Mount units on factory-built roof mounting frame providing watertight enclosure to protect ductwork and utility services. Install roof mounting curb level.

3.3 MANUFACTURER'S FIELD SERVICES

- A. Provide start-up of all units by a factory representative.
- B. The contractor shall furnish manufacturer complete submittal wiring diagrams of the package unit as applicable for field maintenance and service.
- C. Provide Owner (4) hours of instruction on operation and service.

END OF SECTION

SECTION 23 08 00
COMMISSIONING OF HVAC SYSTEM

PART 1 - GENERAL

1.01 SUMMARY OF WORK

- A. Provide products required for the complete installation and operation of all HVAC systems.
- B. Drawings having sheet numbers with the prefix "H" are part of this Work. Contractor is responsible for any heating, ventilating and air conditioning work required elsewhere in the Contract Documents.
- C. Summary of HVAC Work includes, but is not limited to, the following:
 - 1. Rooftop units.
 - 2. VRF units.
 - 3. Ductwork.
 - 4. Diffusers, registers and grilles.
 - 5. Controls and instrumentation.
 - 6. Balancing.
 - 7. Service identification.
 - 8. HVAC system insulation.
- D. Provide instruments, tools, and labor to balance all air and water systems to quantities shown on the drawings.

1.02 RELATED WORK

- A. Referenced Sections:
 - 1. Refer to Division 23 (as included) for general items applicable to HVAC Work.
 - 2. Division 23 (as included) cover HVAC Work.
- B. Work provided elsewhere:
 - 1. Motor starters and disconnects (not furnished with equipment).
 - 2. Access panels in walls.
 - 3. Electric power wiring and conduit.

1.03 QUALITY CONTROL

- A. Contractor shall obtain the services of an independent test and balance agency certified by the Associated Air Balance Council (ABBC). All reports shall be stamped and certified by the balancing engineer.
- B. All quantities listed on drawings are minimum. Quantities to +/-5% are acceptable.

1.04 COORDINATION

- A. Coordinate all piping, duct, fan, louver, return air and roof openings with other trades.

1.05 LUBRICATION AND PACKING

A. Work included:

1. Lubricate equipment with correct grade, type and quantity of lubrication before placing equipment into service.
2. Damages caused by not providing proper lubrication shall be repaired at the Contractor's expense.

1.06 ACCESS PANELS

A. Work included:

1. Furnish all ceiling and wall access panels necessary for access to mechanical equipment.
2. Provide access panels shown on drawings.

PART 2 - PRODUCTS

2.01 LUBRICANTS

A. Provide manufacturer's recommended specific lubricants.

2.02 INSTRUMENTS

A. Instruments used for testing and balancing must have been calibrated within a period of six months, and checked for accuracy, before start of work.

PART 3 - EXECUTION

3.01 LUBRICATION AND PACKING

A. Installation:

1. Each shaft of valve stem containing a packing gland shall be checked for condition and examined for proper packing.
2. Maintain all lubrication and packing seals during construction, and assure that all are operating properly at the time of final acceptance.
3. When filling systems initially for hydrostatic pressure tests, adjust valve packing glands to finger tight, and allow packing to absorb water for 5 minutes prior to tightening packing nuts.
4. All rotating pieces of equipment shall be properly lubricated prior to start-up. Damage to shafts, bearings, seals, etc., caused by lack of proper lubrication or over-lubrication shall be repaired by the Contractor to the satisfaction of the A/E and the Owner.
 - a. Items requiring factory start-up shall have their lubrication verified by the manufacturer's representative.

3.02 ACCESS PANELS

A. Installation:

1. Supplying and installation by this contractor.
2. Coordinate locations.
3. Fire rated access doors shall be installed with structural support and bolt in

accordance with the UL label test.

3.03 BALANCING ~ GENERAL

- A. Testing and balancing shall be performed in complete accordance with AABC National Standards for Field Measurement and Instrumentation.

END OF SECTION

**SECTION 23 30 00
HVAC AIR DISTRIBUTION**

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Provide complete and operating systems for air distribution. Work include, but is not limited to, the following:
 - 1. Ductwork.
 - 2. Dampers.
 - 3. Register, grilles, and diffusers.
- B. Duct sizes shown are free, inside clear duct dimensions.

1.02 QUALITY ASSURANCE

- A. Meet the requirements of:
 - 1. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) Low Pressure Duct Construction Standards (LPDS), 1976 edition.
 - 2. SMACNA Flexible Duct Installation Standards, 1979 edition.
 - 3. SMACNA Duct Liner Application Standards, 1971 edition.
 - 4. NFPA 90A Installation of Air Conditioning and Ventilating Systems, 1978.
 - 5. SMACNA High Pressure Duct Construction Standards, 1975 edition.
- B. Material standards:
 - 1. UL 181 Standards for Safety-Factory Made Air Duct Materials and Air Duct Connectors.

1.03 SUBMITTALS

- A. Submit manufacturer's product data for the following:
 - 1. Access doors.
 - 2. Balancing dampers.
 - 3. Grilles, registers and diffusers.
 - 4. VAV Boxes
- B. Submit duct shop drawings at $\frac{1}{4}" = 1'-0"$ scale. Shop drawings shall be complete with plan layouts, duct risers, and equipment sections.

PART 2 - PRODUCTS

2.01 RECTANGULAR LOW-PRESSURE DUCTWORK

- A. Construction: Galvanized steel per SMACNA LPDS Table 1-5 "2" W.G. Rectangular duct Reinforcement" and seal Class B per Table 1-2. Reinforcement per Tables 1-6 through 1-9. Joints, closures, and seams per Figs. 1-5 through 1-15.
- B. Fittings: Section II

1. Turning vanes: Tuttle & Bailey airfoil "Ductturns."
2. Extractors: Tuttle & Bailey "Vectrol" VLR. Provide access to operator.
3. Option manufacturers: Anemostat, Titus, Young.

C. Sealant: "Duct Sealer" by United Sheet Metal or Foster 30-02.

2.02 ROUND LOW PRESSURE DUCTWORK

- A. Construction: Galvanized steel per SMACNA LPDS Table 2-2 "Round Duct Construction Schedule, 2" W.G. positive or negative" and seal Class B per Table 1-2. Transverse joints per Fig. 2-16 and longitudinal seams per Fig. 2-19.
- B. Contractor options:
1. Ducts: Spiral "Unirib" by United Sheetmetal or Semco equivalent.
 2. Fittings: United Sheetmetal "Unirib" fittings, die stamped elbows or Semco equivalent.

2.03 FLEXIBLE UNIT CONNECTIONS

- A. Construction: Fig. 3-5 in Low Pressure Duct Construction Standards.
- B. Material: Ventfabrics "Ventglas" 20 oz. per square yard glass fabric double coated with neoprene. Conform to NFPA 90A, UL 181 Class 1.

2.04 ACCESS DOORS

- A. Low pressure systems:
1. Duct access doors shall be Ventlok 10" x 12" stamped insulated access door with two hinges and one latch. Options: Ruskin ADC-1, fabricated per Fig. 3-17, Prefco CAD-101, Cesco HAD, Safe-Air PG10.

2.05 DAMPERS

- A. Balancing dampers, low pressure systems:
1. Butterfly single blade, galvanized steel per Fig. 2-11 with locking quadrant handle. Maximum size is 12" high x 24" wide. Options: Prefco 5160, Arrow.
 2. Opposed blade with frame linkage and locking quadrant per Fig. 2-12. Maximum blade size is 10" high x 48" wide. Options: Ruskin CD-35, American W & V VC-10.
- B. Splitter dampers, low pressure systems:
1. Splitter damper may be used on trunk duct divisions where velocity does not exceed 1000 FPM.
 2. Construction per Fig. 2-5, 209a damper with 1/4" rod and continuous hinge.

2.06 FLEXIBLE DUCT

- A. CertainTeed Certaflex 7 with cinching band. Maximum Length, refer to Drawings

PART 3 - EXECUTION

3.01 COORDINATION

- A. Coordinate duct locations with other Contractors.
- B. Hang ducts above suspended ceilings with at least 7" clear from face of ceiling to bottom of uninsulated ducts and to bottom of external insulated ducts.
- C. Provide access to dampers, extractors, terminals.
- D. Furnish dimensions of roof, wall and floor openings to General Contractor.

3.02 DUCTWORK INSTALLATION

- A. Install in accordance with SMACNA standards.
- B. Provide turning vanes at changes in direction where center line radius is less than 1.5 times duct dimension.
- C. Provide extractors in all supply branches. Provide access to operators.
- D. Transitions:
 - 1. Converging transition included angles shall not exceed 30 degrees.
 - 2. Diverging transition included angles shall not exceed 20 degrees.
- E. Seal ducts as specified during installation.

END OF SECTION

SECTION 26 00 00
COMMON WORK RESULTS FOR ELECTRICAL

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. The General Conditions and other Contract Documents as set forth in the foregoing pages are hereby incorporated into and become a part of the Specifications for work under this title, insofar as they apply hereto.
- B. All Specifications under this Division Title are directed to and are the responsibility of the Electrical Contractor. Unless other trades or persons are specifically mentioned, "Electrical Contractor" is inferred and intended.

1.02 CONTRACT DRAWINGS

- A. The Drawings accompanying these Specifications are complementary each to the other and what is called for by one shall be as if called for by both.
- B. Consult all Contract Drawings, all trades, which may affect the location of equipment, conduit and wiring and make minor adjustments in location to secure coordination.
- C. Wiring layout is schematic and exact locations shall be determined by structural and other conditions. This shall not be construed to mean that the design of the system may be changed; it refers only to the exact locations of conduit and equipment to fit into the building as constructed and with the coordination of conduit and other equipment with piping and equipment included under other divisions of the Specifications. Maintain all required NEC service clearances.
- D. Coordinate layout of work with other trades. Make minor adjustments in location required for coordination. Locations of structural systems, heating work and plumbing lines shall take preference over locations of conduit lines where conflict occurs.
- E. Other than minor adjustments shall be submitted to KE for approval before proceeding with the work.

1.03 SUBMITTALS

- A. Refer to division 013300 "Submittal Procedures" for detailed instructions on submittal requirements.
- B. Submittals are required for all items of electrical equipment and products provided by this contractor. Refer to each section for additional requirements.
- C. Submittals shall be referenced correctly to the Contract Documents.
- D. Manufacturer's catalog cuts may be submitted for all standard catalogued equipment, provided that the item required to meet the project specifications is not modified in any way from the standard catalog version of said item. Cuts shall be clearly marked to indicate the exact size, type, rating, capacity, etc. of the item to be furnished.
- E. Thoroughly review each submittal and indicate the exact item to be furnished. Each submittal shall be stamped with the Contractor's approval before submitting to the Engineer.

- F. Submittals shall include all information as indicated on drawings and respective specification section.
- G. Engineer's review of Manufacturer's Drawings or Schedules shall not relieve the Contractor from responsibility for errors or omissions in Manufacturer's Drawing or Schedules and deviation from Engineer Drawings or Specifications.

1.04 RECORD DOCUMENTS AND SPECIFICATIONS

- A. Maintain at the site, one copy of all Drawings, Specifications, Addenda, approved Shop Drawings, Change Orders and other modifications in good order. The Drawing shall be marked to record all changes made during construction especially deviations made necessary to incorporate equipment different from base equipment specified. These shall be available to KE.
- B. The Drawings marked to record all changes made during construction shall be delivered to KE for the Owner upon completion of the work. An additional set of drawings will be furnished by KE for this purpose upon request by the contractor.
- C. See Division 1 section "Closeout Procedures" for information on preparation of Record Documents and Specifications.

1.05 OPERATION AND MAINTENANCE MANUALS

- A. Submit three (3) bound, 8-1/2" x 11", copies in hard back 3-ring binders to the Engineer for review and obtain receipt for delivery. **OR PROVIDE A SINGLE ELECTRONIC COPY**
- B. Format of the manual shall be as follows:
 - 1. First Page: Title of project, Project address, Owner, Date of Submittal, Name/Address/Phone Number of Contractor, Name/Address/Phone number of Engineer.
 - 2. Table of Contents.
 - 3. List of suppliers and subcontractors with name, addresser, phone numbers, and materials or work supplied.
 - 4. Shop drawings, wiring diagrams, etc.
 - 5. Operation and Maintenance instructions or manuals.
 - 6. Control diagrams and equipment.
 - 7. Contractor's warranty and special manufacturer's warranties.
 - 8. Special affidavits and Certifications
 - a. Payment Release Affidavit.
 - b. Certification of Warranty Commencement.
 - c. Certification of Contract Completion
 - d. Certification of Equipment Demonstration.
 - e. Cable Certifications as applicable.
 - 9. Include any keys and or wrenches for equipment access.
- C. See division 1 section "Closeout Procedures" for additional information on preparation of Operations and Maintenance Manuals.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. All materials shall be new and undeteriorated and of a quality not less than the minimum specified.
- B. Materials and equipment for which there are Underwriters' Laboratories Standard requirements, listing and labels, shall have listing of Underwriters' Laboratories and be so labeled.

2.02 GUARANTEES

- A. The Electrical Contractor shall be responsible for all defects, repairs and replacements in materials and workmanship for a period of one (1) year after final written acceptance by the Owner.
- B. Product guarantees greater than one (1) year shall be passed along to the Owner for full benefit of the manufacturer's warranty.

2.03 QUANTITIES

- A. Items may be referred to as singular or plural on the Drawings and in the Specifications. The Contractor is responsible for determining quantity of each item required.

2.04 PANELS

- A. If any panels are provided under this contract, all spare spaces shall be prepared type. No exceptions.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Furnish and install all necessary hangers, supports, straps, boxes, fittings and other similar appurtenances not indicated on the Drawings but which are required for a complete and properly installed system consistent with the Architectural treatment of the building.
- B. Contractor shall inform himself fully regarding peculiarities and limitations of space available for installation of materials and apparatus under this contract, and see that all equipment necessary to be reached from time to time for operation and maintenance are made easily accessible. Clearances, when possible, shall be greater than those required by code.
- C. Working Clearances: At least 6'-3" clear headroom must be maintained in front of all electrical equipment. Provide at least 5'-0" for 480/277 volt and 3'-0" for 208/120 volt clear space in front of all electrical equipment as wide as the equipment with a minimum of 2'-6" wide. The same clearance shall be required at the rear of rear access equipment.
- D. **All circuits shall have dedicated neutrals. No shared neutrals shall be permitted.**

3.02 WORKMANSHIP

- A. Electrical work shall meet or exceed the standards of installation and workmanship set forth in the latest edition of the National Electrical Contractors Association publication

entitled NECA Standard of Installation, except as otherwise modified in these specifications or shown on the Drawings.

- B. KE/Owner reserves the right to direct the removal and replacement of any item which, in his opinion, does not present an orderly, neat or workmanlike appearance, provided that such item can be properly installed in an orderly way by methods usual in such work, or which does not comply with the contract drawings or these specifications. Perform such removals or replacements when directed in wiring by KE and at the Contractor's expense.
- C. The Electrical Contractor, insofar as the work is concerned, shall at all times keep the premises in a neat and orderly condition, and at the completion of the work shall properly clean up and cart away debris and excess materials.

END OF SECTION

**SECTION 26 02 00
WORK INCLUDED**

PART 1 - GENERAL

1.01 SCOPE

- A. Furnish all materials, labor, tools, transportation, incidentals and appurtenances to complete in every detail and leave in working order all items of work called for herein and/or shown on the accompanying Drawings.
- B. It is the intent that the ensuing work shall be complete in every respect and that any material or work not specifically mentioned or shown on the Drawings, but necessary to fully complete the work, shall be furnished.
- C. For all hard-wired equipment, the electrical contractor shall provide wiring and make all final connections.

1.02 COORDINATION OF PLANS AND SPECIFICATIONS

- A. Contact KE immediately if there is any question regarding the meaning or intent of either Plans or Specifications, or upon noticing any discrepancies or omissions in either Plans or Specifications.

PART 2 - PRODUCTS

- A. Not Applicable.

PART 3 EXECUTION

3.01 SITE VISITATION

- A. It is suggested that the bidder visit the site and fully inform himself concerning all conditions affecting the scope of the work. Failure to visit the site shall not relieve him from any responsibility in the performance of this Contract.

3.02 SUPERVISION OF WORK

- A. The contractor shall have in charge of the work, at all times during construction, a competent superintendent with a large experience in the work to be done under this Specification.
- B. Refer to Specifications covering all branches of the work and keep fully informed of the progress of the general construction. Install all work that is concealed and built into the building in place in sufficient time to insure proper location without delays to the work of the trades. Properly attend the work during the process of building-in to prevent misalignment and damage.
- C. All workmanship shall be of the highest quality in accordance with the best practices of the trade by craftsmen skilled in this particular work.

3.03 EXISTING WORK AND DEMOLITION

- A. Locate existing utilities prior to beginning work. Reroute or replace existing utilities where necessary to permit installation of the work. Provide adequate means of protection

during work operations. Repair existing utilities damaged during work operations to the satisfaction of the utility the Owner and at Contractor's expense.

- B. Should uncharted or incorrectly charted piping or other utilities be encountered during work operations, notify KE immediately for procedure directions.
- C. Suitably and adequately protect the existing work within and immediately adjacent to, the new work areas from damage and injury during the process of installing the work under this Contract. Existing work that had been harmed, damaged or injured as a result of the Electrical Contractor's operations shall be repaired, restored or replaced at the Electrical Contractor's expense.
- D. Reuse existing concealed conduit and flush mounted boxes when possible. All unused boxes shall be blanked-off. All new conduit and wire in remodeled areas shall be run concealed where possible.

3.04 FIRESTOPPING

- A. Apply firestopping to cable and raceway penetrations of fire-rated floor and wall assemblies to achieve fire-resistance rating of the assembly.

3.05 CUTTING AND PATCHING

- A. Avoid cutting of concrete, masonry and other work by use of inserts and sleeves. When necessary shall be done by appropriate trade's people at this contractor's expense. Electrical Contractor is responsible for cutting and patching for his/her work.
- B. No cutting shall be done which will in any way reduce the structural strength of the building. Should such cutting be found necessary, the Engineer must first be fully informed of, and consent to, the proposed operation.
- C. All cutting through poured concrete slabs and walls shall be done with core drills. No jack hammers will be allowed.
- D. Patching shall match existing surfaces in kind and finish and shall be done by the Electrical Contractor. This includes patching existing ceilings and floors where required and patching holes left by removal of existing conduits, bus duct, equipment, etc. See GENERAL CONDITIONS.
- E. All conduits, equipment, etc., that penetrates walls or floors shall have openings, sleeves, etc., filled and closed off to prevent the possible spread of fire or products of combustion through the wall or floor.

3.06 CLEANING AND PAINTING

- A. All electrical equipment shall be kept dry and clean during the construction period. Electrical equipment shall be covered with fiberglass reinforced plastic sheeting as a minimum form of protection. Provide additional protection, if job conditions so require.
- B. Interiors of all enclosures shall be cleaned and all dirt and debris removed before installing trim or covers.
- C. All finished surfaces of equipment furnished under this Contract shall be thoroughly cleaned of dirt and all scratched or damaged surfaces shall be touched up with matching materials before final acceptance of the work. No exposed ferrous metal surfaces shall be left unpainted. Touch-up all galvanized, if scratched, with two coats of aluminum paint.

- D. Prime and paint all steel hangers, boxes, straps, rods, etc. which are not provided with rust-protective finish or the protective finish is damaged in installation. Paint to be zinc chromate primer and aluminum bronze finish. This includes unfinished and mechanical spaces as well as "exposed to view" locations.
- E. Prime and paint all wood mounting panels with two (2) coats gray flameproof paint, both sides and edges.
- F. When all work is completed and all work has been satisfactorily tested and accepted by KE/Owner, all fixtures, conduit and other exposed surfaces shall be thoroughly cleaned.
- G. Dust must be held to a minimum when work is performed inside of the existing building.

END OF SECTION

SECTION 26 02 50 CODES

PART 1 - GENERAL

1.01 CODES

- A. Codes and standards: Completed electrical installations shall comply with applicable Local, State of Ohio, and Federal laws, codes, standards, and ordinances, including the following:
 - 1. National Electrical Contractors Association (NECA):
 - a. NECA "Standard of Installation."
 - 2. National Fire Protection Association (NFPA):
 - a. NFPA No.70 "National Electrical Code."
 - 3. Ohio Department of Industrial Relations:
 - a. Ohio Building Code (OBC).
 - 4. Underwriters' Laboratories, Inc. (UL):
 - a. Materials requiring UL examination service shall bear UL labels or be UL listed.
 - 5. Work under jurisdiction of Local Fire Marshal shall comply with requirements set forth by the Fire Marshal's Office and NFPA.
 - 6. Nothing contained in the drawings and specifications shall be construed to conflict with these laws, codes, and ordinances and they are hereby made a part of these specifications. Comply with drawing and specification requirements which are in excess of minimum code requirements.

PART 2 - PRODUCTS

- A. The electrical contractor shall test the operation of all electrical work.

PART 3 - EXECUTION

- A. Refer to "Tests and Inspections" section 260300.

END OF SECTION

**SECTION 26 03 00
TESTS AND INSPECTIONS**

PART 1 - GENERAL

1.01 INSPECTIONS

- A. Permits to be obtained and paid by Owner.
- B. Obtain all inspections required by all laws, ordinances, rules, regulations or public authority having jurisdiction and obtain certificates of such inspections and submit same to the Engineer. Pay all fees, charges and other expenses in connection therein.
- C. Before any electrical work is covered, Engineer will review the electrical work completed at that time.
- D. Final Inspection - When the Contractor determines all work is completed and working properly per the Contract Documents, he shall request a "Final" punch list review by the Engineer in writing. If more than one inspection is required after this final inspection, the Contractor shall bear all additional costs, including compensation for the Engineer's additional services made necessary thereby.
- E. All work shall be inspected by the Local Authority. Any fees for inspections shall be the responsibility of this contractor.

1.02 TESTS

- A. When Engineer makes final inspection of all electrical work he will order tests performed as deemed necessary. These tests may include operation of lights and equipment, continuity of conduit system, grounding resistances and insulation resistances.
- B. Submit data taken during such test to KE. Pay all professional engineering fees involved in required testing of equipment.

1.03 UNACCEPTABLE WORK

- A. Work shall be unacceptable when found to be defective or contrary to the Plans, Specifications, Codes specified or accepted standards of good workmanship.
- B. The Contractor shall promptly correct all work found unacceptable by Engineer whether observed before or after substantial completion and whether or not fabricated, installed or completed. The Contractor shall bear all costs of correcting such unacceptable work, including compensation for the Engineer's additional services made necessary thereby.

1.04 GUARANTEE

- A. This Contractor is responsible for all defects, repairs and replacements in materials and workmanship, for a period of one (1) year after final payment is approved by the Engineer.

PART 2 - PRODUCTS

- A. Not Applicable

PART 3 - EXECUTION

3.01 PERFORMANCE

- A. Contractor, subcontractor, vendors, or manufacturer shall provide tests on the following equipment. Refer to the appropriate specification section for description of the tests.
 - 1. Grounding section 264510

3.02 PHASE ROTATION

- A. Prove that all electrical equipment is connected for clockwise rotation (A-B-C).

3.03 LOAD BALANCE

- A. Upon completion of electrical work balance all panelboards for this contract to within 15%. Any panel boards requiring circuit changes for balance shall reflect these changes in the panel directory and wire color identification. Color change can be made with colored tape at panel.
- B. Pay special attention to prevent reverse rotation of motors during load balance and adjustments.

3.04 NEUTRAL-GROUND SEPARATION

- A. Prove that the neutral and ground are separated, except as required by the National Electrical Code, at service entrance and transformer secondary.

3.05 RESISTANCE AND CONTINUITY

- A. Provide insulation resistance, grounding resistance, and ground continuity tests of feeders, branch circuits, lightning protection system, or equipment.

3.06 CONNECTIONS

- A. Prove that the mechanical connections are torqued to manufacturer's recommended UL and NEMA standards on demand.

3.07 CONTROL AND INTERLOCKING

- A. Prove that motors and equipment operate as indicated in control and wiring diagrams and sequence of operations.

3.08 EQUIPMENT

- A. Provide necessary electrical personnel and testing instruments as required to assist in testing of installation.

END OF SECTION

SECTION 26 11 10 CONDUITS

PART 1 - GENERAL

1.01 SCOPE

- A. Furnish and install all conduits, boxes, fittings, etc., for a complete raceway system.
- B. See Section 261300 "Boxes and Plates".

PART 2 - PRODUCTS

2.01 CONDUIT - RIGID

- A. All wiring running on the roof, exposed outdoors to the freezer, branch circuits and auxiliary wiring shall be run in rigid heavy wall galvanized steel conduit.
- B. All conduits running below grade shall be run in Schedule 40 PVC electrical conduits with 18" minimum earth cover.
- C. All steel conduits shall be galvanized and all conduits shall have the manufacturer's name and UL label attached to or stamped on each piece.
- D. Each section of conduit furnished shall be straight, free from blisters and other defects and in 10'-0" lengths. Galvanizing shall be of such nature and so applied that it will not crack or flake when conduit is bent.
- E. All conduit sizes stated herein or marked on the Drawings are minimum size and shall be no less than 3/4" unless otherwise noted.
- F. All conduit 2-1/2" and larger shall be rigid galvanized steel heavy weight conduit.

2.02 CONDUIT - ELECTRICAL METALLIC TUBING (EMT)

- A. Branch and feeder circuits run exposed within the building, in interior partitions and above suspended ceilings may be in thin-wall (EMT) conduit, at this Contractor's option. Minimum size shall be no less than 3/4".
- B. Exposed conduits in the kitchen shall have water tight compression fittings.

2.03 CONDUIT - FLEXIBLE

- A. Flexible neoprene-clad galvanized steel conduit shall be used for "makeup" connections to rotating machinery and heating elements.
- B. Minimum size shall be 3/4" trade size.

2.04 CONDUIT FITTINGS

- A. All thin wall connectors shall be of the compression type, similar to Thomas and Betts No. 5223-3/4". All fittings shall be steel and have insulated throat. No die cast fittings will be allowed. Contractor may use Thomas and Betts, Raco, Steel City or Midwest fittings. Set-screw type fittings are prohibited.

- B. Liquid tight flexible metallic fittings shall be Midwest LTB-50. Flexible metallic fittings shall be similar to Steel City XC-241.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. All rigid or EMT conduit entering cabinets, pull boxes, junction boxes or outlet boxes shall be secured with double lock nuts and ends bushed.
- B. No more than four (4) 90 degree bends will be allowed in any one conduit run. Where more bends are necessary in any single run, a pull box shall be installed; pull boxes shall also be installed in long runs at a maximum separation of 100'-0". All conduits except in concrete slab or earth shall be routed parallel or perpendicular to the lines of the building and no out of plumb or diagonal lines will be accepted.
- C. Unless otherwise noted, all conduits shall be run concealed within the building construction when installed in finished interior or exterior areas. Conduit in equipment rooms and on roof may be run exposed. Exposed wiring in finished areas shall be in surface mounted raceway.
- D. All conduit shall be substantially supported by pipe straps or suitable clamps or hangers attached to the elements of the building structure to provide rigid installation; in no case shall conduit be attached or supported from adjoining pipe or installed in such a manner as to prevent the ready removal of other pipe for repairs.
- E. Strap iron hangers and wire will not be approved for conduit support.
- F. No conduit shall rest on or be supported from acoustical tile ceilings or their suspension system.
- G. Exposed conduits rising from floor to surface panels, and/or boxes, shall have a 4" high concrete curb encasing the conduits at the floor line. Curb to have chamfered edges.
- H. No conduit shall be run in slab under boilers or similar heat producing equipment.
- I. Conduit in earth either inside or outside of building shall be encased in a concrete envelope not less than 3" thick. Note: IMC shall not be installed in earth or below concrete slabs.
- J. Where conduit runs across building expansion joints, or where necessary to compensate for thermal expansion or contraction, provide expansion unions.
- K. Seal conduit with suitable, pliable compound where conduit enters colder section (i.e. refrigerating or cold storage areas) to prevent circulation of air from warmer to colder section. Special sealing (hazardous) fittings are not necessary.
- L. Exercise necessary precaution to prevent accumulation of water, dirt, or concrete in conduits during execution of electrical work. Conduit in which water or foreign material has been permitted to accumulate shall be thoroughly cleaned or replaced where such accumulations cannot be removed.
- M. All conduits must be kept dry and free of water or debris with approved pipe plugs or caps. Care shall be given that plugs or caps be installed before pouring of concrete.
- N. Conduit sleeves through the floor shall project one inch above the finished floor.

- O. All connections to rotating machinery and heating elements shall be made with short lengths (minimum 12") of liquid-tight conduit. Where motors are mounted on sliding bases, the flexible connection shall be long enough to allow full travel of the motor on the base (maximum 36").
- P. Pull Wires
 - 1. A pull wire shall be installed in all empty conduits. In dry locations, pull wire shall be No. 16 gauge galvanized iron or nylon pull cord.
 - 2. Both ends of all pull wire shall be identified by means of labels or tags, reading "PULL WIRE" and shall be numbered to refer to the same pull wire.
- Q. On remodeling and addition project remove all conduit cut dead except in concrete and masonry. Patch all floors and walls at location of removed conduits.
- R. For conduits running up through roof deck, secure to the roof structure with U-bolts. Provide cross Unistrut as required from joist to joist for bracing conduit at correct location up through roof.

END OF SECTION

SECTION 26 12 00
WIRE AND CABLE (600V AND BELOW)

PART 1 - GENERAL

1.01 SCOPE

- A. Furnish and install all wiring required to connect all systems as indicated on drawings.

PART 2 - PRODUCTS

2.01 STANDARDS

- A. All conductors shall be stranded and of the AWG size and type shown on the Drawings. Where no size or type is shown, conductors shall not be less than #12 THWN. All conductors shall be copper and have 600 volt insulation, be UL labeled, and of American manufacture.
- B. All conductors shall be stranded unless otherwise noted and conform to the latest edition of the Underwriters' Laboratories, Inc., "Standard for Rubber Covered Wires and Cables" and the National Electrical Code.
- C. No wire used for power shall be smaller than #12 AWG.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. All conductors shall be continuous from box to box. No joints shall be permitted in the circuit other than in junction boxes or fixtures.
- B. Equipment grounding conductors shall be same insulation type as the associated circuit conductors.
- C. All conductors of a circuit shall follow the same path through any openings in metal partitions within enclosure.
- D. The ampacity of all conductors shall be at least as great as the rating of the fuse or circuit breaker on the line side of the conductors. Note the ampacity reduction required by Code when more than three conductors are placed in a raceway.
 - 1. All conductors for distribution and control equipment terminations shall be based on full 75 degrees C ampacity.
 - 2. All conductors for appliance and utilization equipment terminations rated 100 amperes or less shall be based on 60 degrees C ampacity.
- E. Provide cable supports for vertical raceways per NEC Table 300-19(a).
- F. Wiring install in separate conduits:
 - 1. Control wiring.
 - 2. Auxiliary systems wiring.
 - 3. All fire alarm circuits. Fire alarm stations and detector circuits shall not have any other wiring in the same conduit.

- G. Swab conduits free of moisture, dirt and grease before pulling wire. Care shall be exercised while installing wire in conduits so that conductor insulation will not be injured. No oils, grease or compounds other than Ideal "Wire Lube," "Yellow77," or equal UL approved wire pulling lubricants shall be used for pulling in any conductors.
- H. On remodeling and addition projects remove all wire cut dead to source.

3.02 CONNECTIONS

- A. All connections are to be made using pressure type terminals.
- B. Where connections are to be made to devices or equipment under screw heads only, install insulated, crimp type spade clips on the wire ends before the connections are made.
- C. Devices shall not be used as through connection points. Where through circuits are involved they shall be spliced in the box and a pigtail connected to the device.
- D. Connectors shall contain only one wire unless they are listed for multiple conductors.
- E. No shared neutral conductors shall be permitted for use on branch circuits or any other circuits.
- F. Joints in #10 and smaller wire shall be made using the following types of connectors: Minnesota Mining and Manufacturing "ScotchLok," Ideal Industries, Inc. "Wing Nut," or Thomas and Betts Co. Type "PT" Connectors shall be used only within their range. Other threaded-on types of insulated connectors shall not be used.
- G. Joints in #8 and larger wire or joints in any wires above the range of threaded-on connectors shall be made using pressure type mechanical connectors applied after wires are cleaned and then insulated using two (2) layers of "Scotchfil" brand electrical insulation putty and covered by two (2) half-lapped layers of "Scotch 88" or Plymouth Slipknot Gray vinyl plastic electrical tape.

3.03 WIRE COLOR CODE

- A. The following color code shall be used:

	<u>120/208 Volt</u>	<u>277/480 Volt</u>
Phase A	Black	Brown
Phase B	Red	Orange
Phase C	Blue	Yellow
Neutral	White/Gray	White/Gray
w/identifiable stripes		
Equipment Ground	Green	Green w/yellow stripe

All control circuits shall be pink.

- B. Solid and Stranded wire: No. 12 AWG and smaller may be solid. No. 10 and larger shall be stranded.
- C. Field installed cords to portable equipment shall be type ST or G and Field installed cords for normal Equipment shall be type SRDT containing an identified equipment.
- D. General use insulation: NEC, 600V type THHN/THWN or XHHW.
- E. Connections in No. 10 and smaller wire shall be made with threaded-on plastic or nylon insulated wire nuts. Crimp connectors, except butt connectors, are prohibited. Joints in

No. 8 and larger conductors shall be made with pressure type mechanical connectors insulated with plastic electrical tape.

F. Minimum size for power branch circuits: No. 12 AWG.

1. Use No. 14 AWG stranded for control wiring and auxiliary system circuits.

3.04 MARKING

- A. All branch circuits shall be marked in the panel board gutters. Markers shall indicate corresponding branch-circuit numbers.
- B. All signal and control wires shall be marked at all termination points, such as cabinets, terminal boxes, equipment racks, control panels, etc.
- C. The wire markers shall be Thomas and Betts vinyl tape Wm wrapped once around the wire and the adhesive sides placed together to form a flag.
- D. These wire markers shall be installed when wire is pulled.

END OF SECTION

**SECTION 26 13 00
BOXES AND PLATES**

PART 1 - GENERAL

1.01 SCOPE

- A. Furnish and install all outlet, junction, and pullboxes as indicated on the Drawings and/or as necessary to install the required conduit and wiring in a neat and workmanlike manner.
- B. Furnish and install all outlet and junction box covers and wiring device plates.
- C. On all switches and receptacle cover plates, install adhered blade plastic label indicating panel and circuit to which receptacle is wired.
- D. Contractor is responsible for all conduit, rings, and boxes for low voltage wiring as specified on drawings. See drawings for device wiring provider.

PART 2 - PRODUCTS

2.01 STANDARDS

- A. Pullboxes and junction boxes shall be in accordance with Code requirements and shall be Underwriters' Laboratories labeled.
- B. Products: Hubbell, Appleton, Crouse-Hinds, Steel City.

2.02 BOXES FOR FLUSH WORK

- A. Flush outlet, junction and pullboxes shall be pressed steel galvanized or sherardized and shall be a minimum of 4" square or octagonal similar to Appleton #40. Steel boxes cast in concrete shall be designed for concrete installation.
- B. Flush boxes in tile, marble, brick, or finished masonry walls shall be Steel City GW-135-C Series, or Raco 695 Series.

2.03 BOXES FOR EXPOSED WORK

- A. All boxes for exposed work in finished spaces shall be "Cast" type metal boxes with aluminum cover plates and threaded hubs with rigid conduit riser.
- B. All boxes for exterior work shall be "cast" waterproof boxes with gasketed cover plates, threaded hubs water proof covers.

2.04 PLATES AND COVERS

- A. Special or engraved plates, as indicated on the Drawings, shall be Sierra white plastic for the application required. Letters shall be 3/16", engraved with black enamel fill.
- B. All plates shall be stainless steel unless noted.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Close all open knockouts with plugs of the proper size.

END OF SECTION

**SECTION 26 15 00
MOTOR AND EQUIPMENT WIRING**

PART 1 - GENERAL

1.01 SCOPE

- A. Provide power and connect all motors and motor driven equipment shown on the Plans.
- B. Wire at starters all start/stop tie-ins or interlocks
- C. Furnish, install and connect all overcurrent and/or disconnect means as required by article 430 of the National Electrical Code.
- D. Motors and motor driven equipment shall be provided and installed by others. Motor starters, controllers and control devices; other than temperature control equipment and devices and starters for controllers, furnished as part of packaged equipment; shall be furnished and installed by the Electrical Contractor, except as otherwise noted.
- E. Provide the Electrical Contractor all wiring diagrams and equipment wiring requirements prior to the start of work.

PART 2 - PRODUCTS

2.01 NOT APPLICABLE

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install and wire all motor control equipment per wiring diagrams on the drawings including interlock wiring between equipment.
- B. Motor and equipment locations shown on the Drawings are approximate. Obtain exact locations from the Contractor concerned.
- C. Control diagrams indicate which contractor is responsible for wiring and conduit. Where a specific contractor is indicated, that contractor supplies and installs wires.
- D. Refer to Heating and Air Conditioning Specifications for description of electrical equipment and controls furnished by them.
- E. Provide 120 volt control power to all the temperature control cabinets. Final connections inside the cabinets to be made by the Temperature Control Contractor.
- F. Verify all control sequences, etc. in accordance with Section 26 03 00 TESTS AND INSPECTIONS.

END OF SECTION

SECTION 26 17 00 DISCONNECTS

PART 1 - GENERAL

1.01 SCOPE

- A. The Electrical Contractor shall furnish and install heavy duty fusible disconnect or non-fusible disconnect switches where shown on the Drawings, in conformance with NEC requirements for each unit of equipment.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Square D, Allen Bradley, Siemens

2.02 GENERAL REQUIREMENTS

- A. Switches shall be wall mounted in heavy duty, NEMA 1 enclosure unless otherwise noted and shall have the rating, capacity and number of poles for the service concerned.
- B. All switches have provisions for padlocking and shall be by the same manufacturer.
- C. Fusible disconnects shall be provided as indicated on the drawings. Fusible disconnects shall be provided with class "R" rejection type fuse clips.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Switches shall be installed to provide code required clearance and shall be generally wall mounted at 6'-0" to top.
- B. Disconnects mounted on equipment shall be field coordinated and located to clear any access openings or paths.
- C. Provide free standing unistrut support frame for switches that cannot be wall or equipment mounted. Frame shall be full height and attached at the floor and ceiling, or angle braced to floor or poured into concrete equipment pad in order to provide rigid structure.

END OF SECTION

SECTION 26 18 10 FUSES

PART 1 - GENERAL

1.01 SCOPE

- A. Provisions of this section shall apply to all fuses and fused equipment of 600 volts or less as shown on the Drawings.
- B. Furnish and install all fuses as described below.

PART 2 - PRODUCTS

2.01 STANDARDS

- A. All fuses shall be UL listed, current limiting, and have an ampere interrupting rating of 200,000 amperes.
- B. Furnish and install Bussman SFC-FUSE-CAB spare fuse cabinet as indicated on drawings. Provide 2 fuse pullers for each size group. Spare fuse cabinet shall be provided with hardware to accept BEST 7-pin interchangeable lock cores.
- C. All fuses 600 amperes and below for motor protection shall be Class RK1 time-delay:
 - 1. Little Fuse Type L/F LLNRK
 - 2. Bussmann Type LPN-RK/LPS-RK
 - 3. Gould Type A2D/A6D

PART 3 - EXECUTION

3.01 SPARE FUSES

- A. Furnish 10% spare fuses or a minimum of one set of three of each ampere size and type of fuse used. These spare fuses shall be installed in the spare fuse cabinet. Furnish 2 fuse pullers in the spare fuse cabinet.
- B. Furnish 2 fuse pullers in the spare fuse cabinet.

3.02 VOLTAGE RATING

- A. All fuses shall have proper voltage rating for the system voltage in which they are used.

3.03 MANUFACTURER

- A. All fuses shall be of the same manufacturer to retain selectivity.
- B. Submit time-current characteristic curves and peak let through charts for each device to prove protection and selectivity.
- C. No fuses shall be shipped installed in equipment. Fuses shall be installed when equipment is ready to be energized.

END OF SECTION

SECTION 26 19 50 IDENTIFICATION

PART 1 GENERAL

1.01 SCOPE

- A. Each piece of electrical equipment shall be identified on the front cover or trim with its name and/or designation number or letter as shown on the Drawings and with the voltage available within the panel.

PART 2 PRODUCTS

2.01 GENERAL

- A. Identification shall be in the form of laminated melamine plastic nameplates, black face, with the letters engraved into the white background, minimum 1/4" high. Plates shall be drilled on each end for sheet metal screw attachment. No "Dymo" or similar tape type labels will be allowed. Designations shall match those indicated on the drawings. Equipment designations shall be indicated on submittals.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Plastic nameplates shall be attached to face of electrical device by sheet metal screws. Locate plate so wording reads horizontally and plate does not obstruct other identification plates, latches or operators.
- B. Install nameplate at power receptacles where the nominal voltage between any pair of contacts is greater than 150 volt.
- C. Equipment, sub-panels, etc. shall be labeled where power is feed from and which panel circuit is connected.

END OF SECTION

SECTION 26 45 10 GROUNDING (WIRED SYSTEM)

PART 1 - GENERAL

1.01 SCOPE

- A. All feeders and branch circuits over 100 volts shall include a Grounding Conductor sized in accordance with NEC Table 250-95, except not be smaller than #12 for power and lighting circuits and #14 for control circuits. All ground conductors shall be Green, or as specified under Section 261200, "Wire and Cable."
- B. The Contractor shall, in the presence of the A/E, test all system neutrals to prove they are free of grounds except at the source. Ground resistance at the source shall not exceed 3 ohms.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Conduit grounding type bushing shall be T&B Series 3870 with appropriate size ground wire terminal.
- B. All panels shall be furnished with a copper ground bar similar to the neutral bar and having the same number, size and type of lugs. The ground bar shall be factory bonded to the panel tub above or below the neutral assembly, but shall not be in a gutter.
- C. Enclosures, junction and pull boxes shall utilize a "panel" type ground bar of UL listed grounding lugs or screws, as the number of ground conductors dictates.

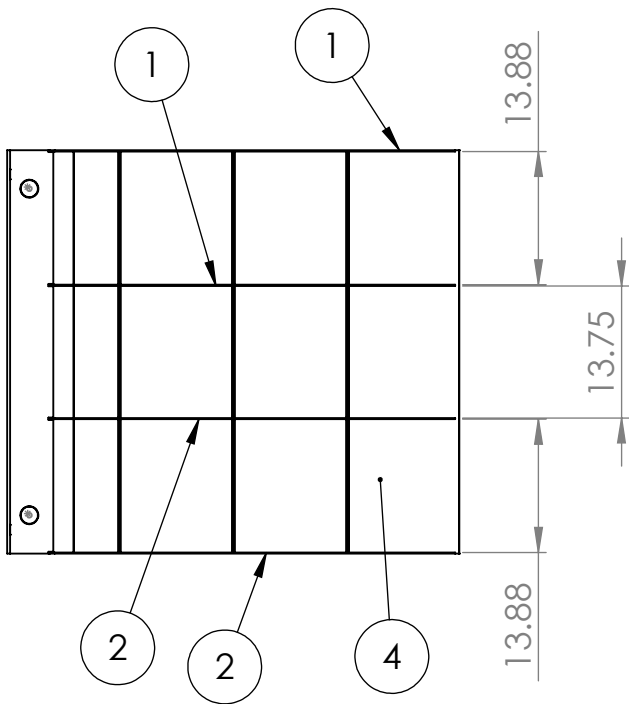
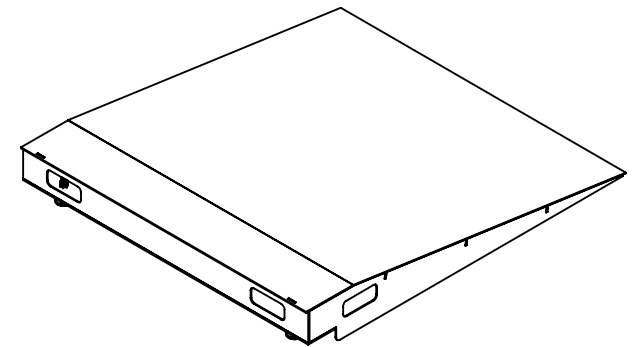
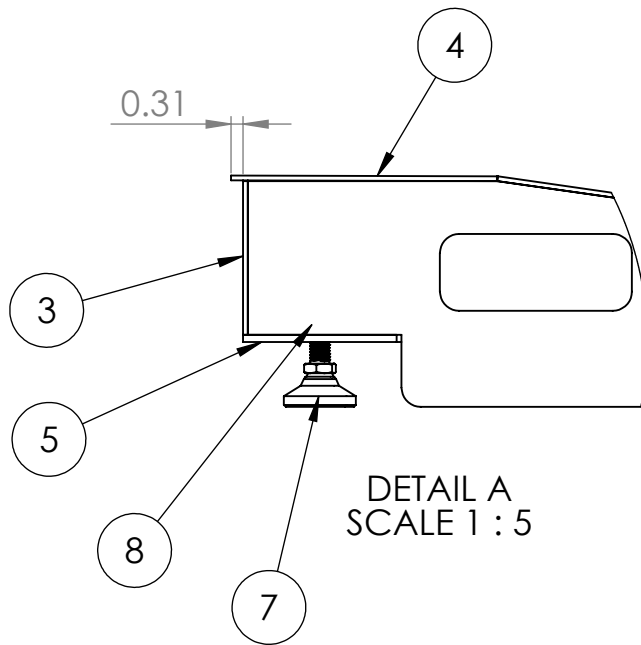
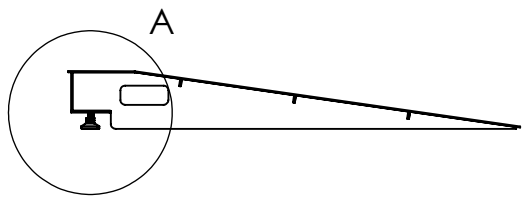
PART 3 - EXECUTION

3.01 INSTALLATION

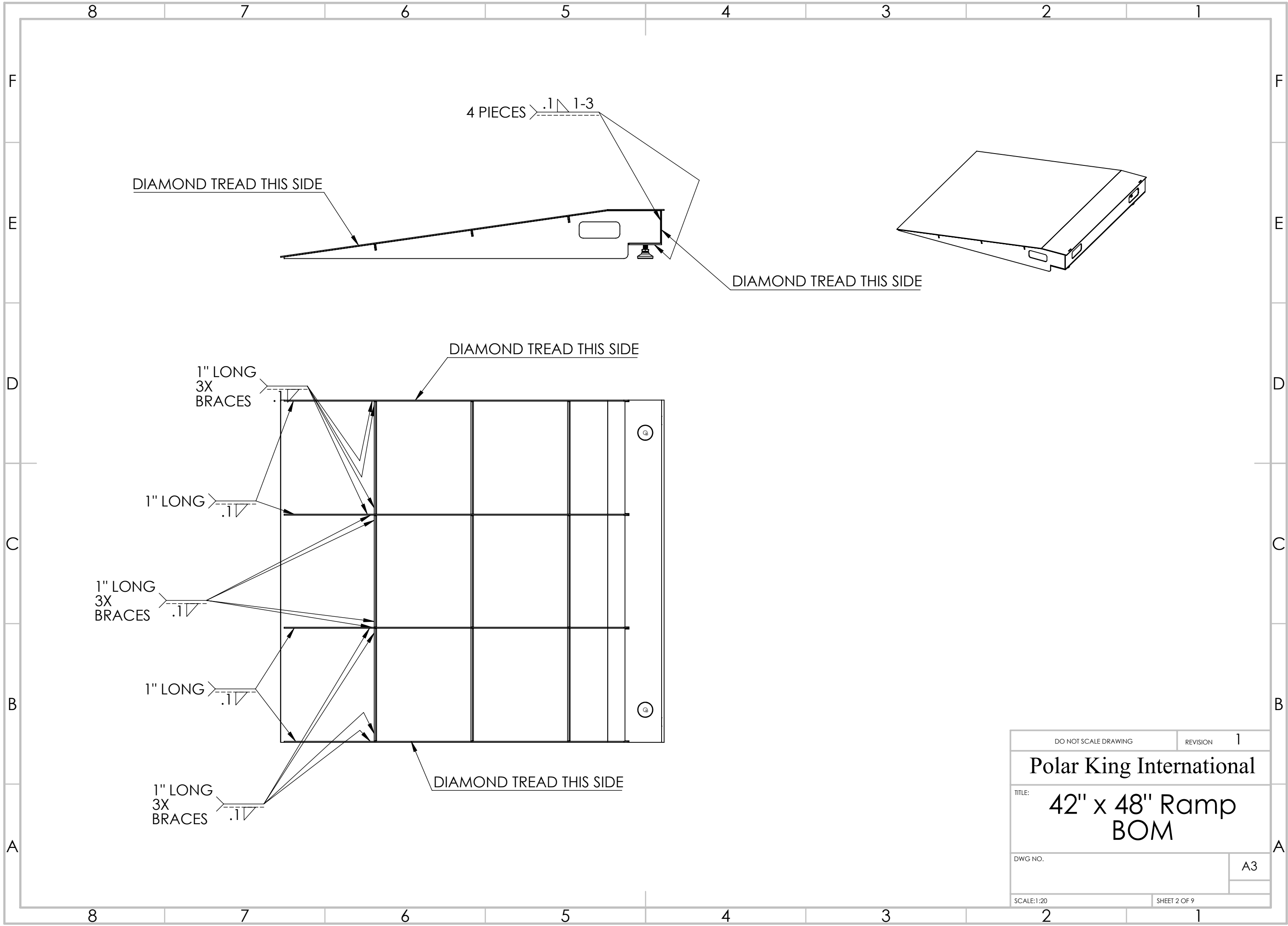
- A. All enclosures, and boxes, shall be grounded by being securely bonded to the grounding conductor. Boxes, conduit, etc., shall not be used as part of the grounding "conductor" system.
- B. Enclosures not requiring a ground bar shall have all ground conductors connected together and a pigtail the size of the largest conductor bonded to the enclosure with a single ground connector used for no other purpose.
- C. Motor terminal boxes shall be grounded by the use of manufacturer-supplied ground lug or by drilling and tapping a hole for a ground screw. Remove paint prior to making the connection.
- D. Conduit system shall be electrically continuous. All locknuts shall cut through enameled or painted surfaces on enclosures. Where enclosures and non-current carrying metals are isolated from the conduit system, use bonding jumpers with approved clamps. Where reducing washers are used and where concentric or eccentric knockouts are not completely removed, bonding bushings shall be required.

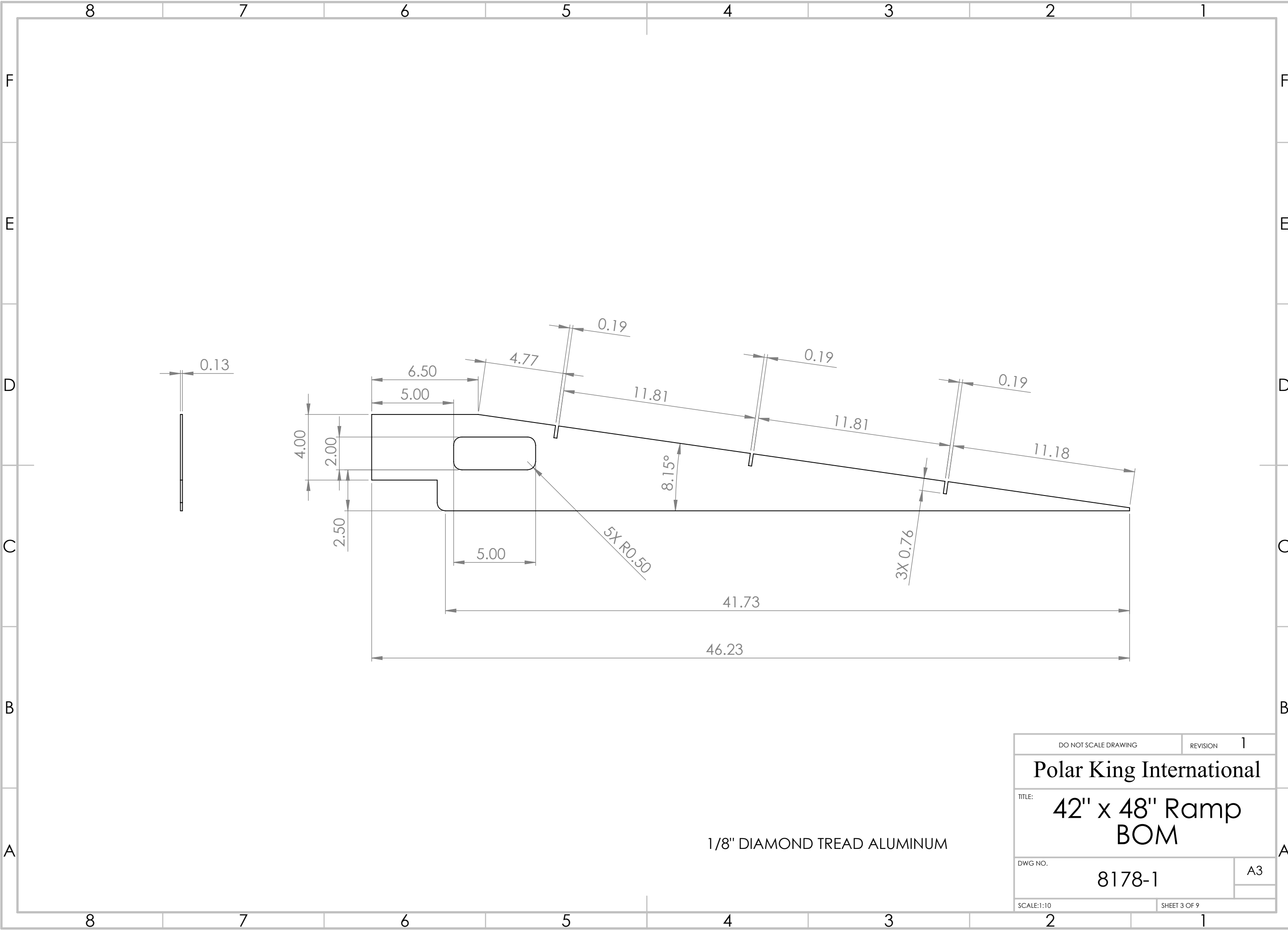
END OF SECTION

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Vertical Supports Al left	8178-1	2
2	Vertical Supports Al right	8178-2	2
3	back plate	8185-1	1
4	Ramp Top Sheet Al	8185-2	1
5	bottom foot	8185-3	1
6	brace	8185-4	3
7	6111K56	LEVELING FOOT 1/2-13 x 4"	2
8	95462A033	1/2-13 NUT	2

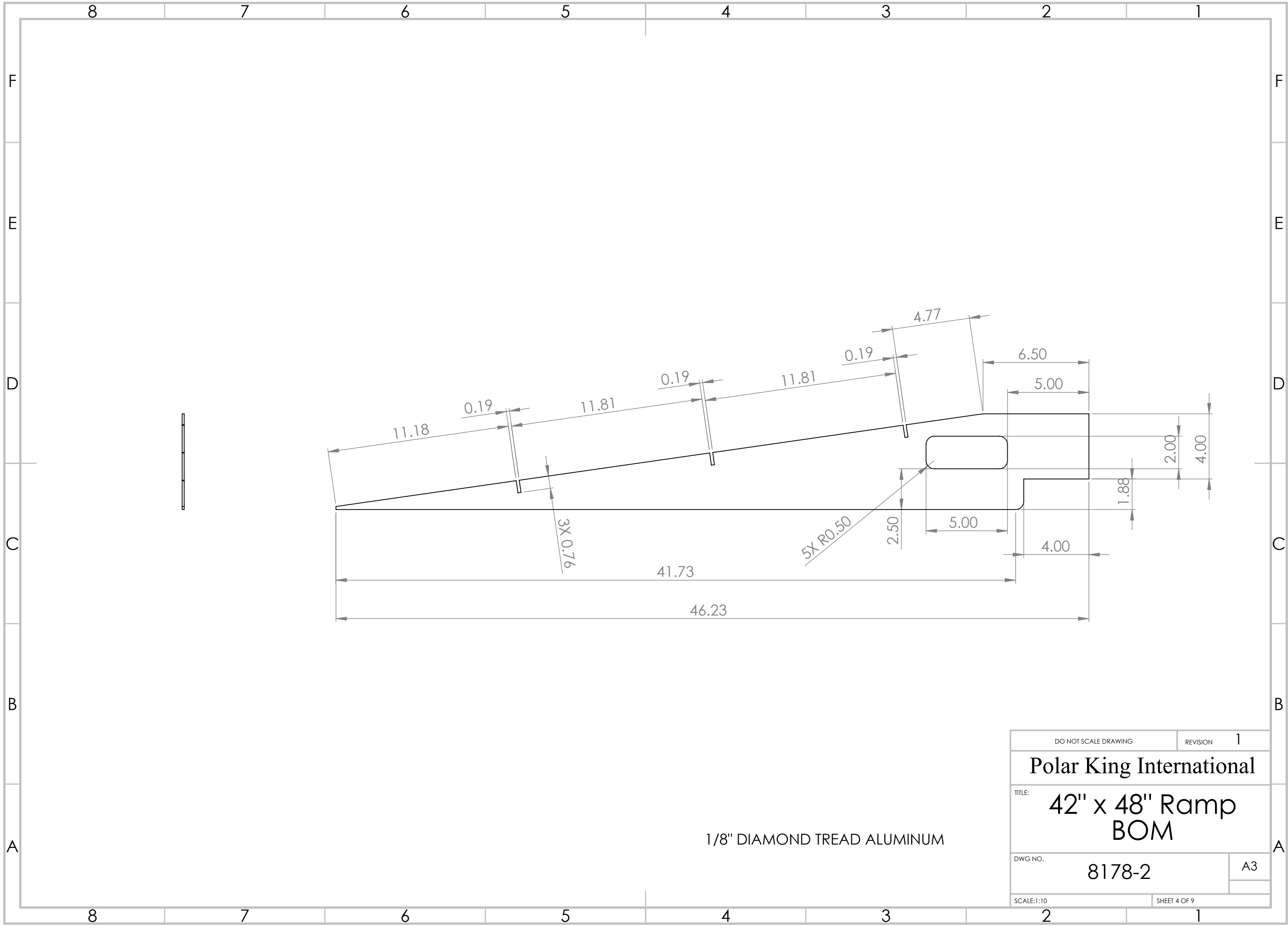


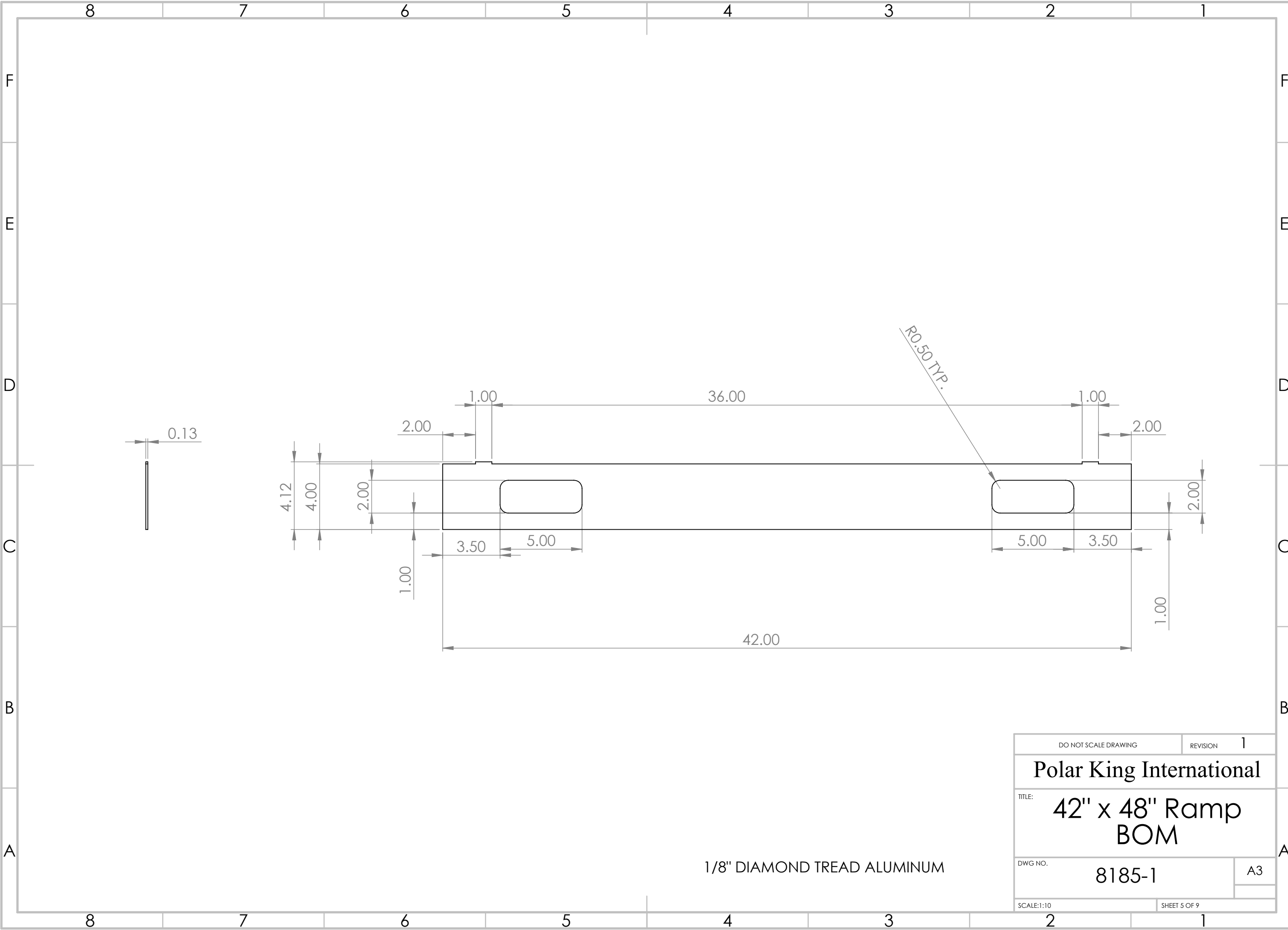
DO NOT SCALE DRAWING		REVISION	1
Polar King International			
TITLE:			
42" x 48" Ramp BOM			
DWG NO.			A3
8185			
SCALE:1:20		SHEET 1 OF 9	

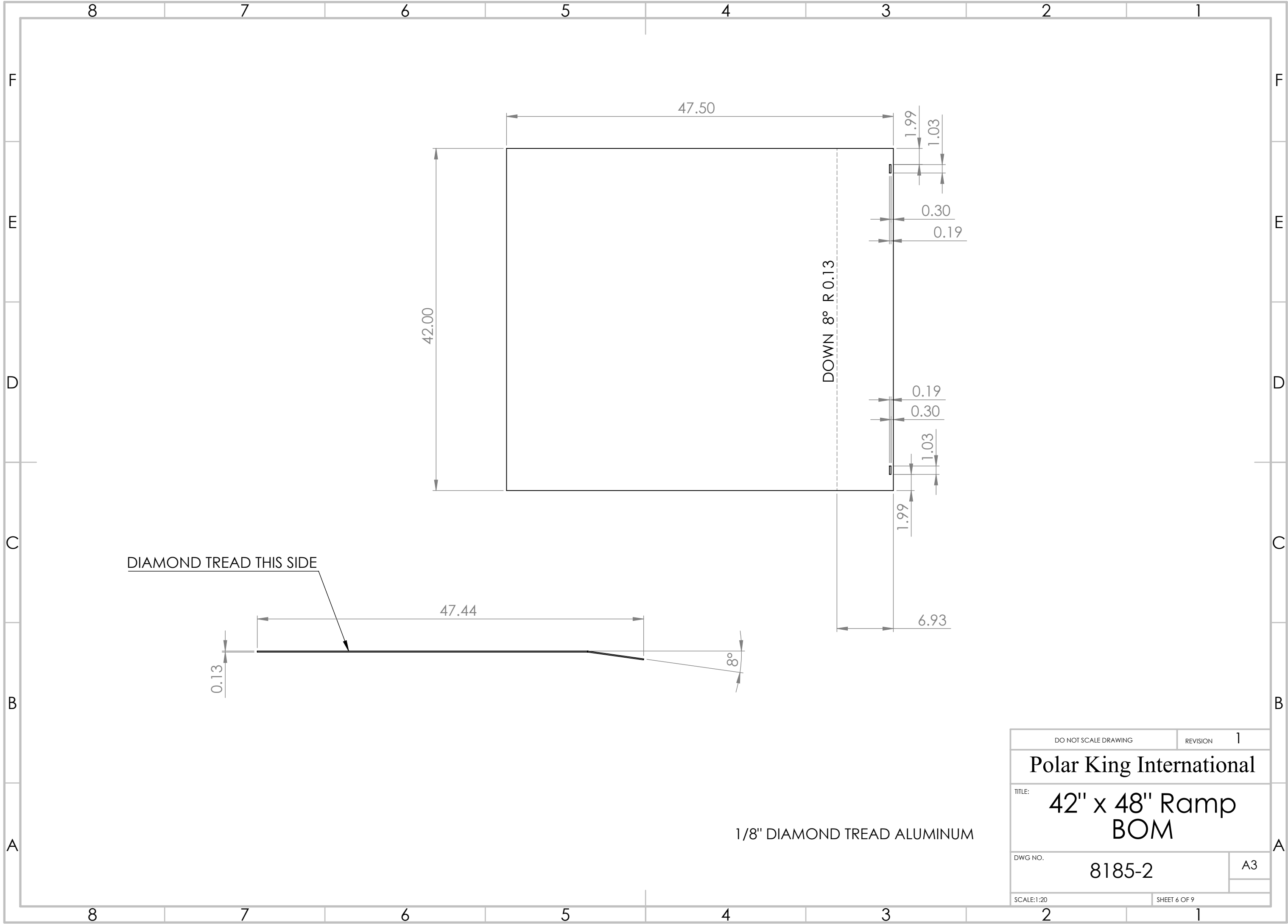


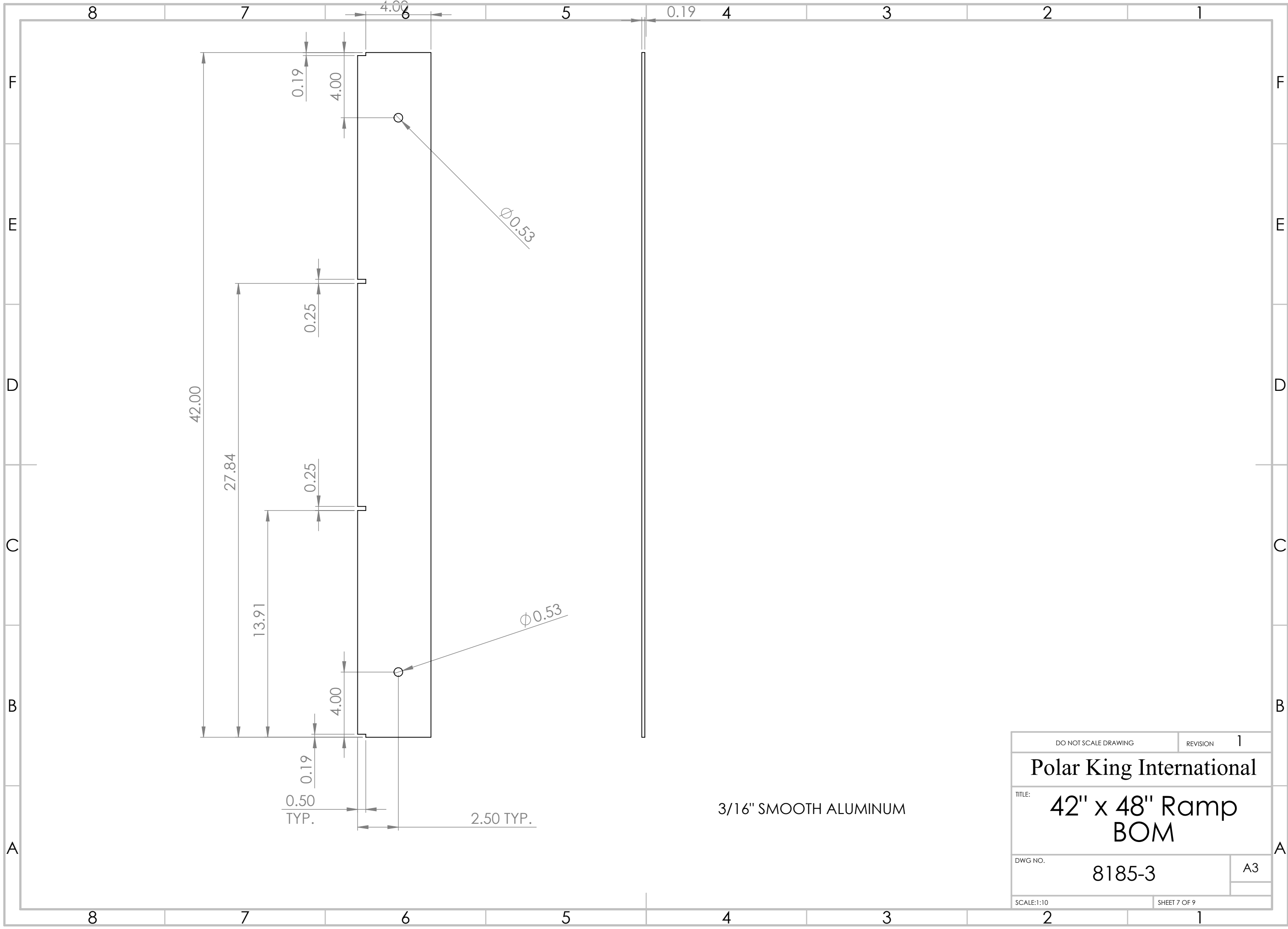


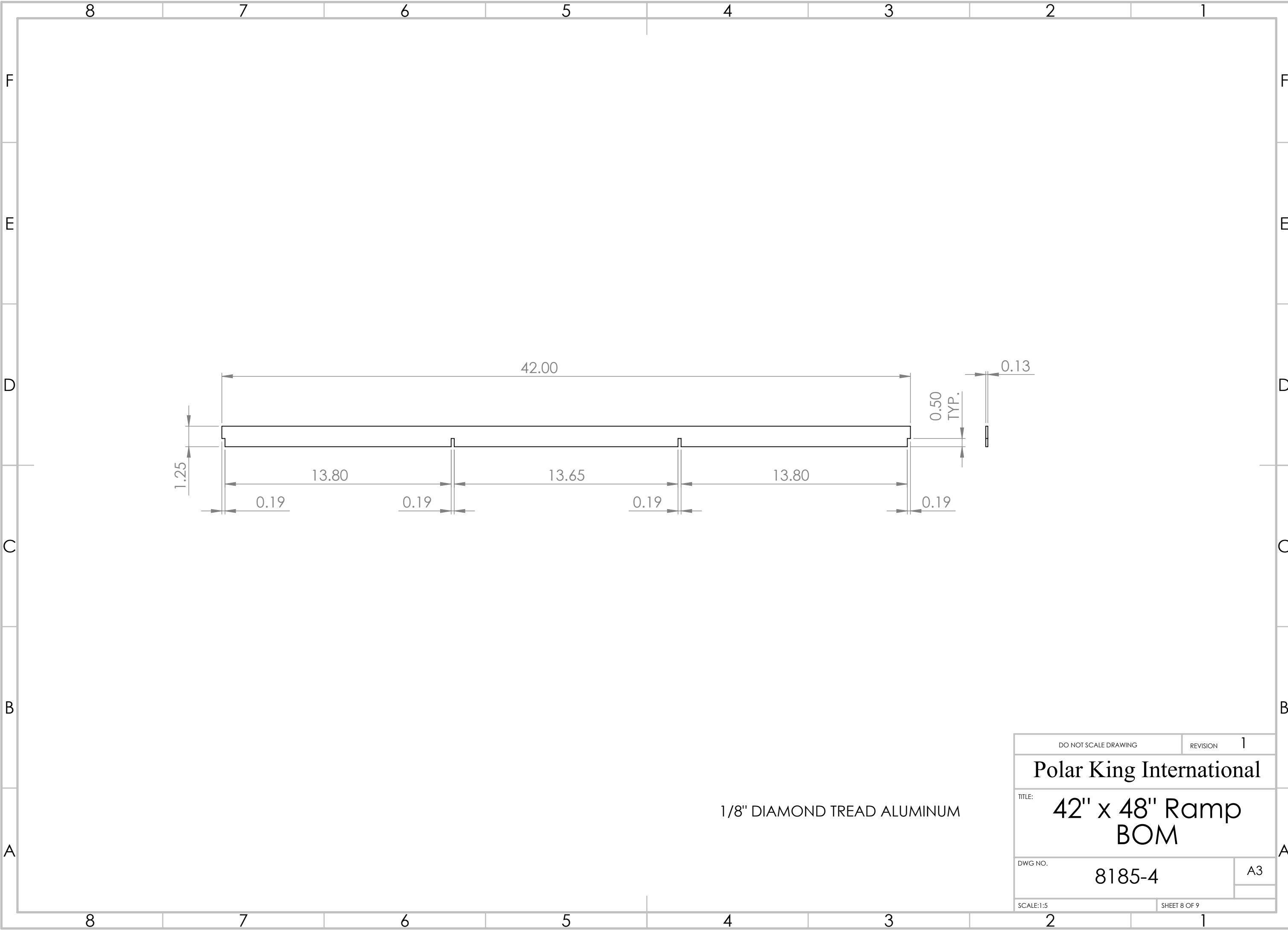
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Polar King International			
TITLE:		42" x 48" Ramp BOM	
DWG NO.		8178-1	A3
SCALE:1:10		SHEET 3 OF 9	

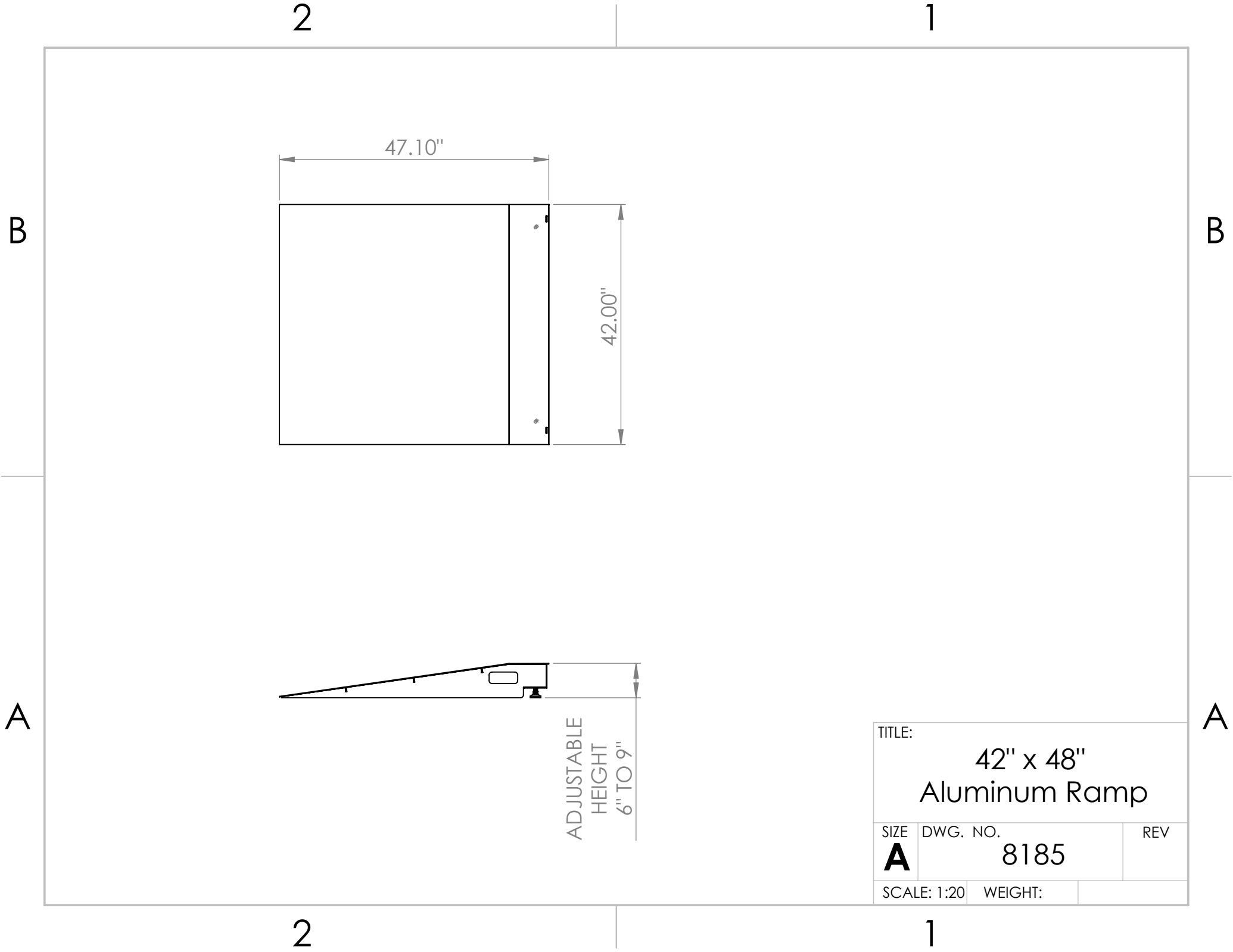




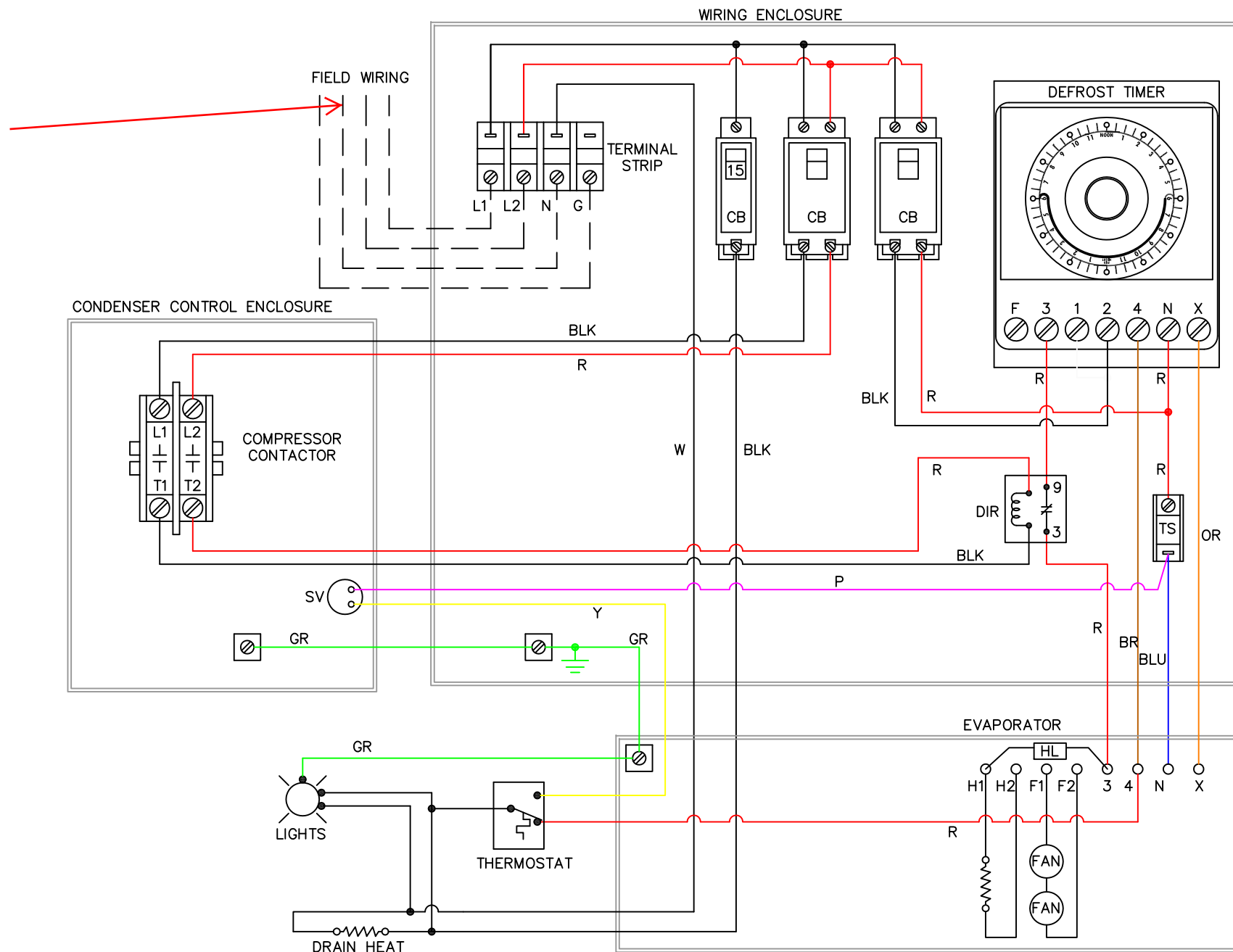








TITLE:				42" x 48"		
				Aluminum Ramp		
SIZE	DWG. NO.		REV			
A	8185					
SCALE: 1:20		WEIGHT:				



BLK - BLACK
 BLU - BLUE
 BR - BROWN
 GR - GREEN
 G - GROUND
 N - NEUTRAL
 LIGHTS
 OR - ORANGE
 P - PURPLE
 R - RED
 W - WHITE
 Y - YELLOW

CB - CIRCUIT BREAKER
 HL - HIGH LIMIT SWITCH
 SV - LIQUID LINE SOLENOID VALVE
 DIR - DEFROST INTERLOCK RELAY
 TS - TERMINAL STRIP

ALL WIRE TO BE #14
 EXCEPT WHERE NOTED

WALK-IN TYPE: Freezer		COMPRESSOR TYPE: Scroll	
VOLTAGE: 208/230	PHASE: Single	CYCLES: 60 Hz	HORSEPOWER: 1/2 - 3
DRAWN BY: BJS	MODEL NO.: H	SCALE: NTS	DATE: 12-10-13
DRAWING NAME: 208-230 1 Ph Freezer Typical Wiring			

INSTALLATION INSTRUCTIONS

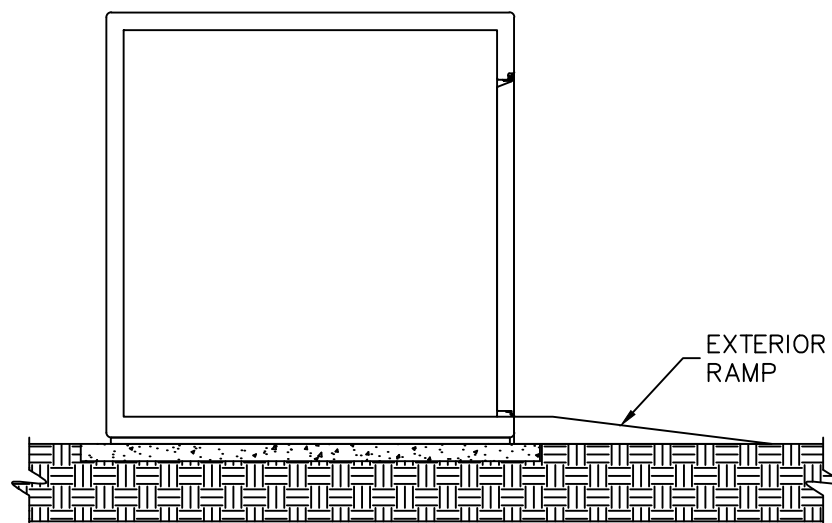
Polar King® walk-in coolers and/or freezers are delivered to our customers fully assembled and require only a few basic procedures prior to start-up.

DO'S

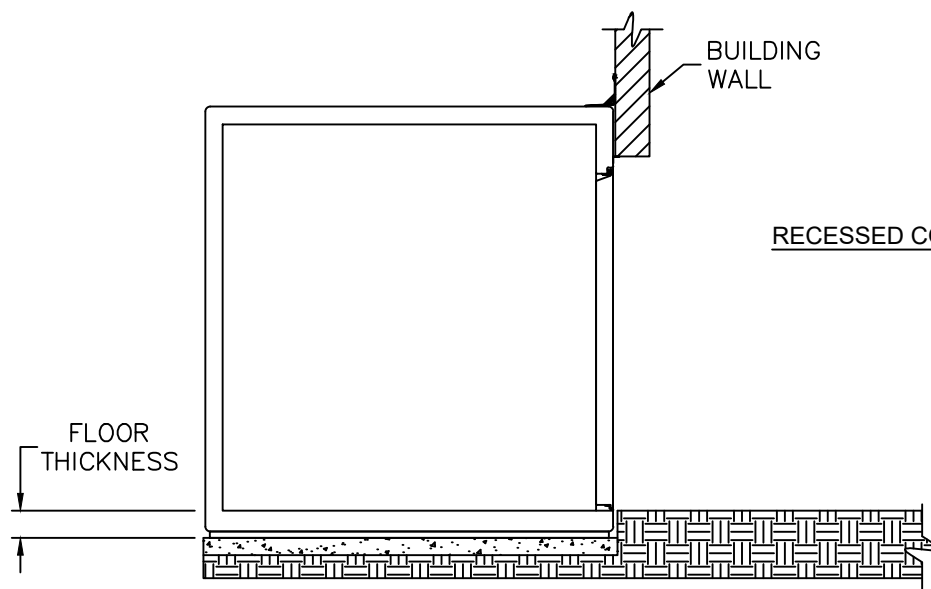
1. Provide a level slab as required by your local building code. It is very important that the surface is level for proper drainage and operation. See Section 3 "Technical Information" for walk-through applications where walk-in unit is to be attached to the building.
2. Condensing unit on the top (or back) of the walk-in should be a minimum of 6 feet from any building intake or exhaust ventilation fans.
3. Keep an open area of at least 3 feet around condensing unit to assure that sufficient air ventilates across the compressor.
4. Make sure you have adequate electrical service for your particular unit.
5. Once walk-in is in place, a qualified electrician in accordance with the NEC and/or local electrical codes may then wire it. A wiring diagram is located on the back of the electrical box panel on the condensing unit.
6. Loosen compressor-mounting bolts (if supplied).
7. Set the correct time of day on the defrost timer. This is necessary in order for the preset defrost to occur at the desired times.
8. If unit is delivered or sits idle in winter months, an external heat source should be applied to the compressor crankcase for 12 to 24 hours prior to start-up.
9. The unit is now ready for operation. (See sequence of operation.)
10. Units are preset at the factory to automatically include four defrost cycles for a duration of 30 minutes each. Preset defrost cycles may be changed to accommodate different applications.

DON'TS

1. Do not physically alter any controls, switches, wires or any device carrying an electrical current, without disconnecting power to the walk-in cooler and/or freezer.
2. The box temperature is preset at the factory to customer request. Temperature selection should not be adjusted up or down. If a different temperature is required, contact Polar King® for proper procedure on changing the preset temperature.
3. When cleaning the inside of the unit with any liquid substance, turn off electrical power.
IMPORTANT: DO NOT USE BLEACH OR AMMONIA TO CLEAN INSIDE OF UNIT AS IT MAY CAUSE DAMAGE TO COIL SURFACE.
4. **IMPORTANT: DO NOT DISCONNECT MAIN POWER SUPPLY WHILE COMPRESSOR IS RUNNING. DAMAGE MAY OCCUR IF COMPRESSOR IS NOT ALLOWED TO PUMP DOWN.**



CONCRETE PAD (FREESTANDING APPLICATION)

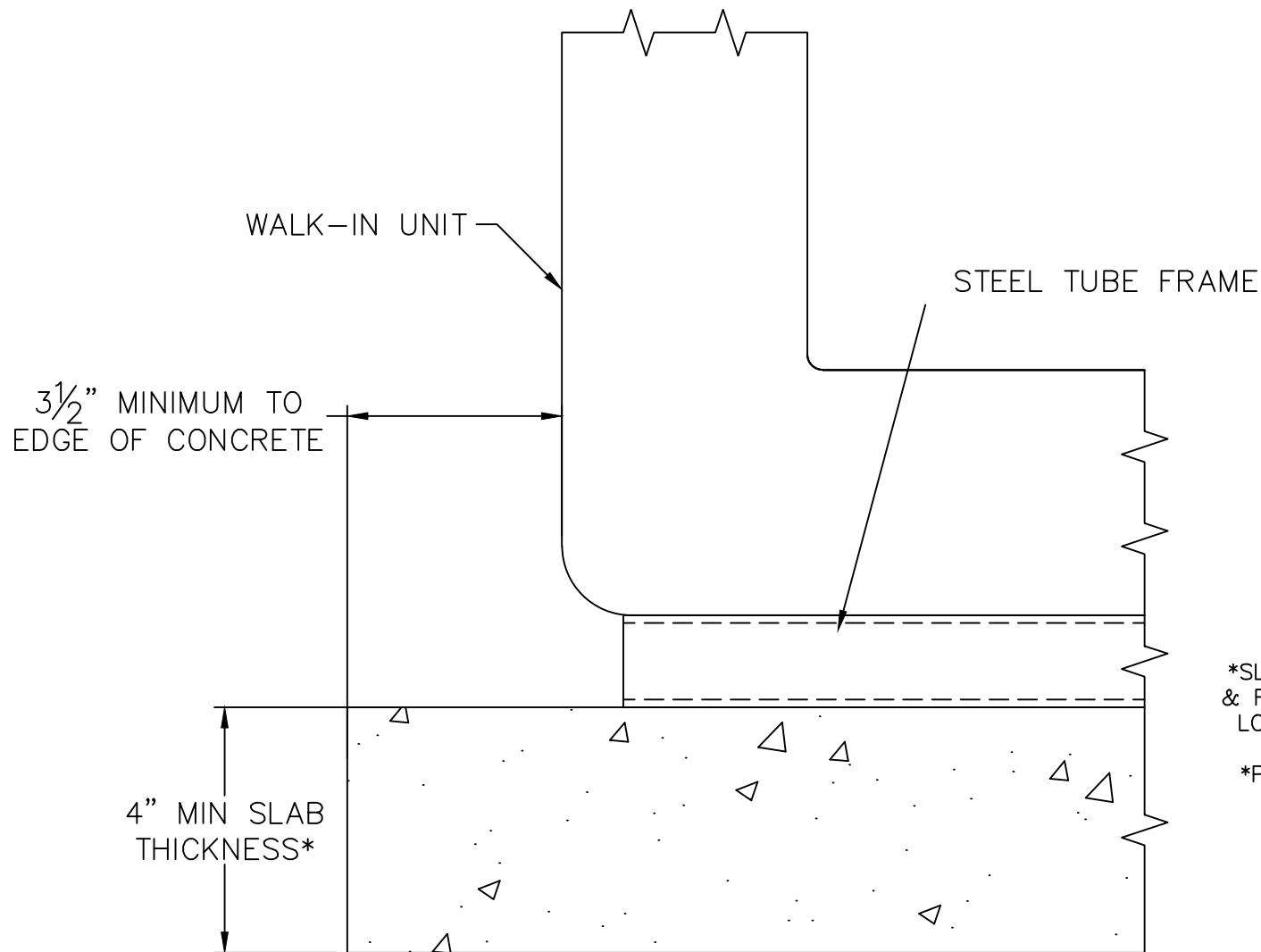


RECESSED CONCRETE PAD (THRU-WALL APPLICATION)

DRAWN BY: MJR/RLM	MODEL NO.:	SCALE: 1/4"=1'-0"	DATE: 2/28/22
DRAWING NAME:		Slab Options	



POLAR KING
INTERNATIONAL, INC.
FORT WAYNE, INDIANA 1-800-752-7178



CONCRETE FOUNDATION
 $f'_c = 4000 \text{ PSI}$

*SLAB THICKNESS TO BE ADJUSTED
 & FOOTINGS POURED ACCORDING TO
 LOCAL CODES & BEST PRACTICES

*PAD SHOULD BE LEVEL WITH NO
 CROWN OR SLOPE.

Concrete Layout (No Anchorage)

DRAWN BY: MJR/RLM	MODEL NO.:	SCALE: 4"=1'-0"	DATE: 2/16/22
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DRAWING NAME:

Concrete Layout Detail



Polar King®
 INTERNATIONAL INC.

FORT WAYNE, INDIANA 1-800-752-7178