

FRANKLIN COUNTY CONVENTION FACILITIES AUTHORITY

PROJECT MANUAL

for the

Greater Columbus Convention Center South Facility Fire Pump Replacement Bid Package 2024-3

Technical Specifications Prepared By:

Heapy

November 8, 2024

NOTICE TO BIDDERS
FRANKLIN COUNTY CONVENTION FACILITIES AUTHORITY
Greater Columbus Convention Center South Facility
Fire Pump Replacement

Sealed proposals will be received by the Franklin County Convention Facilities Authority, hereinafter referred to as the “Owner” of the Greater Columbus Convention Center (“GCCC”), 400 N. High St., Columbus, Ohio 43215 until **November 25, 2024, at 3:00 PM** local time and will be publicly opened and read aloud immediately thereafter, for the furnishing of materials and performing the labor for the execution and construction of:

GCCC South Facility Fire Pump Replacement

Owner’s Estimate: \$325,000

in accordance with specifications prepared by Heapy. All information for bidders, including the Project Manual, Form of Proposal, Plans, Technical Specifications, Contract Bond and other Contract Documents (collectively, “Bid Documents”) may be examined at:

Franklin County Convention Facilities Authority
400 N. High Street, 4th Floor
Columbus, Ohio 43215

Requests for copies of Bid Documents as well as questions regarding plans and specifications should be addressed to Scott Reed, Capital Projects Director, Franklin County Convention Facilities Authority, email: sreed@fccfa.org. Bid Documents will also be available on the Authority’s website: www.meetusincolumbus.com.

No bidder may withdraw their bid within 60 days after the actual date of the bid opening, except as provided for in the Bid Documents.

Each bid must be accompanied by a Bid Guaranty and Contract Bond in the exact form included in the Bid Documents and meeting the requirements of Section 153.54 of the Ohio Revised Code.

State of Ohio prevailing wage rates and Equal Employment Opportunity requirements are applicable to this bid invitation for all work performed pursuant to this contract.

The Franklin County Convention Facilities Authority reserves the right to waive any informalities or in its sole discretion, to reject any or all bids.

Bids shall be sealed and delivered on or before November 25, 2024, at 3:00 PM EST to:

Franklin County Convention Facilities Authority
400 North High Street, 4th Floor
Columbus, Ohio 43215

INSTRUCTIONS TO BIDDERS

GENERAL REQUIREMENTS & INFORMATION

- a) Bidder shall inspect all plans and specifications and visit the site of the work to verify existing conditions and to become familiar with the conditions under which the work will be performed.
- b) The Form of Proposal, Bid Guaranty, Responsibility Analysis Form, Project Schedule, and all other required submittals, each fully executed, are to be submitted in sealed form and addressed to the Franklin County Convention Facilities Authority as provided for in the Notice to Bidders. **Interested bidders must provide one original and three hard copies of all required submittals.**
- c) Owner & Architect:
 - 1) The Owner is:

Franklin County Convention Facilities Authority (FCCFA)
400 North High Street, 4th Floor
Columbus, Ohio 43215-2096
Phone: 614-827-2800
 - 2) The Architect is:

Heapy
1800 Watermark Drive
Columbus, Ohio 43215
Phone: 614-457-2696
- d) The existing fire pump system serving the Greater Columbus Convention Center's South Facility is in need of replacement. The fire pump room is located in the lower level of the South Parking Garage, accessed via the garage ramps. The project will provide for installation of a new 1000 GMP (99 HP) diesel fire pump, jockey pump, 119-gallon fuel oil system, and associated system controllers. The existing pumps, fuel oil system, controllers, piping, and associated appurtenances will be demolished once the new system is operational, and switchover has occurred. In addition, the abandoned water storage tanks located in the fire pump room will be removed to create space for staging the new fire pump system. The project includes, but is not limited to, demolition and new piping, equipment, fuel oil system, electrical power, and alarms all as defined in the Project Manual, drawings, and technical specifications.

The Project consists of providing all labor, materials, equipment, and services necessary for the timely and proper completion of construction for the replacement of the diesel fire pump servicing the GCCC's South Facility as described within the Project Manual, drawings, and technical specifications.

Bidders are responsible for visiting the site to determine existing conditions. No plea of ignorance of conditions that exist, or of conditions or difficulties that may be encountered in the execution of the work, as a result of the failure to make such examination and investigation, will be accepted as an excuse for any failure or omission on the part of the bidders to fulfill in every respect all the requirements of the contract, nor will the same be accepted as a basis for any claim whatsoever for extra compensation or for an extension of time.

ARTICLE 1. PROPOSALS

- a) For lump sum bids, separate bids will be received for any or all divisions of work shown on the Form of Proposal. If not bidding a given contract on the Form of Proposal mark it "N/A".
- b) In the case of unit price bids, the Bidder shall submit bids on all items listed, unless other instructions are noted in the Form of Proposal.

Unless otherwise expressly provided in the Project Manual and related bid documents, such unit prices shall be fully-loaded rates that include, but are not limited to, all overhead, profit, labor, materials, equipment, services, insurance and bonding costs necessary for the timely and proper installation of the item for which the unit prices are requested. The unit prices quoted in the proposal shall be the basis for any change orders entered into under the contract, unless the Owner determines that the use of such unit prices will cause substantial inequity to either the bidder or the Owner.

- c) **The Proposal shall contain the following documents:**
 - 1) The Form of Proposal (bid)
 - 2) The Bid Guaranty
 - 3) EEO Certification Clause
 - 4) Non-Discrimination Policy Compliance
 - 5) Contractor's Review Certificate
 - 6) Manufacturer's Declaration and Subcontractor Declaration
 - 7) Declaration of Insurance
 - 8) Project Schedule
 - 9) Responsibility Analysis Form
- d) The wording of the Form of Proposal shall be used without change, alteration, or addition (except as provided for in the Project Manual). Any other change in the wording may cause the bid to be rejected; however, the Owner reserves the right to waive any informalities not affecting the substance of the bid.
- e) The forms used in submitting the bid shall be those furnished by the Owner in the Project Manual.

f) The bid shall contain the Bid Guaranty meeting the requirements of Section 153.54 of the Ohio Revised Code.

g) Bidders shall take the following precautions in preparing bids:

1) Sign the bid. Failure to do so shall result in rejection of the bid. Bids shall be signed with the name typed below the signature. A bidder that is a corporation shall sign its bid with the legal name of the corporation followed by the name of the state of incorporation and the legal signature, including title, of an officer authorized to bind the corporation to a contract.

2) Alternates:

The Owner may request bids on alternates. If the Owner requests bids on alternates, the bidder should include the cost of the alternates requested on its Form of Proposal.

Where the Form of Proposal provides for quoting either an addition or deduction for an "Alternate," indicate whether the sum named is an addition or deduction by ruling out the words not applicable. Any alteration or erasure must be initiated by the bidder.

All requested alternates, if any, shall be bid by all bidders. If no change in the base bid is required enter "no change". Do not mark with any notation other than the cost change or "no change" (e.g., "N/A" or "No Bid", shall be taken as meaning "No Change" and a cost of \$0.00 shall be used in determining the lowest and best bidder and preparation of the contract). If a bidder does not accept a value of \$0.00 for any incorrectly marked alternates accepted by the Owner, the bid shall be considered non-responsive and be grounds for the rejection of the bid. At the time of awarding the contract, the Owner will select or reject alternates as it determines is in its best interest.

If, during the progress of the work, the Owner desires to reinstate any alternate not included in the contract, the Owner reserves the right to reinstate the alternate at the price bid by the bidder provided that such action is taken in sufficient time so as not to delay the progress of the work or cause the bidder additional expense.

3) Complete and sign the Equal Employment Opportunity Certification attached to the Form of Proposal.

4) Bidders shall acknowledge and note receipt of addenda on the Form of Proposal.

5) Bids shall not be submitted by facsimile transmission.

- 6) Bids shall be enclosed in a sealed opaque envelope with the bidder's name and the title of the project printed in the upper left-hand corner and addressed as follows: Offices of the Franklin County Convention Facilities Authority, 400 N. High St., Fourth Floor, Columbus, Ohio 43215.
- h) All bids are valid for a period of sixty (60) days after the date of opening bids. A bidder for a contract with the Owner may withdraw their bid from consideration if the price bid was substantially lower than the other bids, providing the bid was submitted in good faith and the reason for the price bid being substantially lower was a clerical mistake as opposed to a judgment mistake and was actually due to an unintentional and substantial quantity of work, labor, or material made directly in the compilation of the bid. Request to withdraw such bid must be made in writing and filed with the Owner within two (2) business days after the opening of bids.

ARTICLE 2. METHOD OF AWARD

- a) The Owner will receive bids for the contract as set forth on the Form of Proposal and as defined in the Project Manual.

Subject to the right of the Owner to reject any and all bids and as provided below, the Owner will award a single contract for each of the contracts/bid packages listed in the Project Manual or one or more combined contracts for combination(s) of the bid packages. Bidders must furnish all information requested on or accompanying the Form of Proposal. Failure to do so may result in disqualification of the bid.

- b) Determination of Lowest and Best Bid (see Instructions to Bidder's Responsibility Analysis Form):

Subject to the right of the Owner to reject any or all bids, the Owner will award the contract for the work to the bidder submitting the lowest and best bid, taking into consideration accepted alternates. In determining which bid is the lowest and best bid, the Owner may take into consideration not only the amount of the bid but such of the following criteria as it, in its sole discretion, deems appropriate and may give such weight thereto as it deems appropriate:

- 1) The bidder's financial ability to complete the contract successfully and on time without resort to its Surety;
- 2) The bidder's prior experience with similar work on comparable or more complex projects;
- 3) The bidder's prior history of the successful and timely completion of similar projects;
- 4) The bidder's equipment and facilities;

- 5) The adequacy, in numbers and experience, of the bidder's work force to complete the contract successfully and on time;
- 6) The bidder's prior experience on other projects of the Owner, including the bidder's demonstrated ability to complete its work on these projects in accordance with the contract documents and on time, and its ability to work with the Owner.
- 7) The bidder's compliance with federal, state, and local laws, rules, and regulations, including but not limited to, the prevailing wage law and Occupational Safety and Health Act.
- 8) All of the foregoing with respect to each of the subcontractors which the bidder intends to use on the Project; and
- 9) Depending upon the type of work, other essential factors, as the Owner may determine.

Absent special circumstances, no bidder shall be deemed responsible unless the bidder has been in existence at least thirty-six months.

- c) Acceptance of the contract within the 60-day period following the opening of bids automatically assumes that if materials, labor or subcontract cost increases, they shall be absorbed by the successful bidder. Award of contracts beyond the 60-day period shall be reviewed for increased costs after award of the contract only if the cause for delay is no fault of the successful bidder.
- d) If, in the opinion of the Owner, the acceptance of the lowest bid is not in the best interest of the Owner, the Owner may accept at its discretion, another bid so opened, or reject all bids and advertise for other bids. Such advertisement will be for such time, in such form and in such newspapers as may be directed by the Owner.
- e) No contract shall be awarded if the low bidder is more than 20% below the median of all others bids received for projects where the estimate is \$100,000 or more, and no contract shall be awarded if the low bidder is more than 25% below the median of all other bids received for projects where the estimate is less than \$100,000, unless the following occurs and/or are reviewed.
 - 1) An interview with the bidder, the purpose of which is to determine what, if anything, has been overlooked in the bid in question, and to analyze the process envisioned by the bidder to complete the work in question.
 - 2) The financial status of the bidder and its Surety based upon certified financial statements submitted by each.

- 3) Receipt of written confirmation by the Surety that it has reviewed the bid in question.
- 4) The record of the bidder in performing other public works projects in the past.

If after review and consideration, the acceptance of the lowest and best bid is not in the best interest of the Owner, the Owner may accept another proposal so opened or reject all proposals and advertise for other bids.

- f) In accordance with Ohio Revised Code 153.12, no contract will be awarded if the price of the contract exceeds the published estimate by more than 20%.
- g) If individual and combined contract bids are included on the Form of Proposal and a bidder opts to submit multiple bids, a bidder shall not be permitted to be determined to be the low bidder for any individual contract bid if that bidder withdraws a lower combination contract bid for any reason (including omission of any work item or math/clerical errors).
- h) The Owner reserves the right to disqualify bids, before or after opening, upon evidence of collusion with intent to defraud or other illegal practices on the part of the bidder.
- i) After determination of the lowest and best bid, the selected contractor shall receive a Recommendation of Award, a copy of the full unexecuted contract and an unexecuted copy of the Notice of Authority to Proceed (“NTP”) with construction. The successful bidder (“Contractor”) shall then provide the required items for formal execution of the contract and NTP by the Owner all in accordance with Article 8. If the Project Schedule requires that the Contractor commence work (or make commitments and preparations to commence the work) prior to receipt of the fully executed contract and NTP, the Contractor, in order to meet the requirements of the Project Schedule, shall be solely responsible to notify the Owner in writing 10 business days before the date that such NTP is required. The Owner may direct the Contractor to proceed with the work with an executed NTP before the formal execution of the contract. If the Contractor has met all of the requirements for executing a contract and the Owner chooses not to execute the contract, the Contractor shall be reimbursed for all reasonable costs incurred as a result of starting work under the NTP and prior to receipt of a fully executed contract.
- j) No contract shall be entered into until:
 - 1) The Industrial Commission has certified that the corporation, partnership, or person so awarded the contract has complied with Sections 4123.01 to 4123.99 (Workers’ Compensation), inclusive of the Ohio Revised Code;
 - 2) If the bidder so awarded the contract is a foreign corporation, the Secretary of State has certified that such corporation is authorized to do business in this state; and, if the bidder so awarded the contract is a non-Ohio person or partnership, then until the bidder has filed with the Secretary of State a Power of Attorney

designating the Secretary of State as its agent for the purpose of accepting service of summons in any action brought under Section 153.05 of the Revised Code or under Sections 4123.02 to 4123.99 inclusive, of the Ohio Revised Code.

- 3) The successful bidder shall notify the Owner, within 3 calendar days after receipt of the Recommendation of Award, the provisions the bidder has made or reasonably can be expected to make in order to meet the provisions of the Owner's Disadvantaged Business Participation Plan. Notification shall include a statement of the bidder's present intention concerning which portions of the contract will be awarded to disadvantaged business subcontractors and materialmen and the identity of the intended subcontractor or materialman, if any. Within such five (5) calendar day period, the successful bidder may request in writing a longer period of time to meet the provisions of the plan. Such request shall set forth the reasons additional time is required. The Owner shall notify the successful bidder in writing of its approval or disapproval of the request. If additional time is approved by the Owner or if formal execution of the contract is delayed due to any failure of the bidder to meet the requirements of the Owner's Disadvantaged Business Participation Plan, the bidder shall remain responsible for all the requirements and timelines of the Project.
- 4) The required certificates of insurance coverage (as set forth in the contract) and bond are submitted to the Owner.
- 5) A copy of the contract is forwarded to the successful bidder by the Owner, signed by the successful bidder and returned to the Owner.
- 6) All requirements of Article 8 herein have been satisfied.

The contract cannot be fully executed until this information is provided. If the bidder fails to provide the documents within the required time, the bidder is solely responsible to meet all Project Schedule requirements regardless of the date of the formal execution of the contract.

ARTICLE 3. BID GUARANTY

- a) All Bid Guaranties and Contract Bonds must be satisfactory to the Owner.
- b) The Bid Guaranty and Contract Bond meeting the requirements of Section 153.54(B) of the Ohio Revised Code, as furnished by the Owner, shall be used without change of wording.
- c) If the amount is left blank, the penal sum of the Bid Guaranty and Contract Bond will be the full amount of the bidder's base bid plus add alternates; alternatively, if completed, the amount must not be less than the full amount of the base bid plus add alternates, stated in dollars and cents. A percentage is not acceptable.

- d) The Bid Guaranty and Contract Bond must be signed by an Authorized Agent of an acceptable Surety Bonding Company and by the bidder. The bond must be issued by a surety company authorized by the Ohio Department of Insurance to transact business in the State of Ohio. It is essential that the bond be issued by a surety company which can adequately demonstrate a record of competent underwriting, efficient management, adequate reserves, and soundness of investments.
- e) Bid Guaranties and Contract Bonds must be supported by credentials showing the Power of Attorney of the Agent.
- f) In lieu of the Bid Guaranty referred to in Article 2(b) above, the bidder may submit the Bid Guaranty provided in Division (C) of Section 153.54 of the Ohio Revised Code, in the form of a Certified Check, Cashier's Check, or Letter of Credit pursuant to Chapter 1305 of the Ohio Revised Code. A Bid Bond is not acceptable for use as a Bid Guaranty.
- g) The amount of the Certified Check, Cashier's Check or Letter of Credit shall be equal to 10% of the base bid plus add alternates.
- h) The Bid Guaranty shall be payable to the Franklin County Convention Facilities Authority.
- i) Bid Guaranties shall be returned to all unsuccessful bidders immediately after the contract is executed.
- j) The Certified Check, Cashier's Check or Letter of Credit shall be returned to the successful bidder upon filing of the Bond required in Division (C), Section 153.54 of the Ohio Revised Code. The Performance Bond shall not be deemed "filed" until the Contract is fully executed.

ARTICLE 4. STANDARDS – SUBSTITUTIONS

- a) Those articles, devices, materials, forms of construction, fixtures, etc., named in the specifications to denote the kind and quality required shall be known as "Standards" and all bids shall be based on the same.
- b) Where two or more "Standards" are named together, the Contractor may furnish any one of the "Standards" named, but the Contractor shall make their selection known to the Owner within thirty (30) days following the award of the contract. Failure to comply with this requirement will automatically hold up payment requests from the Contractor in view of possible improper materials being used on the project. The first "Standard" listed shall be considered as the basis of design. If the Contractor opts to use a named "Standard" other than the basis of design and this results in any necessary modifications to any other element of the contract documents, the Contractor shall be responsible for all associated additional costs.

- c) Bidders desiring consideration for the use of material, equipment, etc., not named in the specifications may submit proposals for the substitution of same for “Standards” as specified, using the “Substitution Sheet” attached to the proposal form and listing, for each proposed change: (1) the “Standard” specified, (2) the substitution, and (3) the change in bid price, (or “no change”). Proposed substitutions must be included on the “Substitution Sheet” to be considered. Complete specifications and descriptions of any proposed substitutions being considered for acceptance shall be furnished to the Owner promptly upon request. Acceptance of substitutes shall be at the sole discretion of the Owner.
- d) Any substitution accepted must be incorporated in the formal contract.
- e) Substitution shall not affect the determining of lowest and best bid.
- f) No substitution will be considered prior to receipt of bids unless written request for approval has been received by the Owner at least **10 days prior to the date for receipt of bids**. A statement setting forth changes in other materials, equipment, or other portions of the work, including changes in the work of other contractors that incorporation of the proposed substitution would require, shall be included. The burden of proof of the merit of the proposed substitution is upon the proposer. The Owner’s decision of approval or disapproval of a proposed substitution shall be final. If the brand or product is acceptable, the Owner will approve it prior to bidding in an addendum issued by the Owner to all bidders on record.
- g) In proposing a substitution, the bidder represents and warrants that each proposed substitution will not result in any changes to the project, including changes to the work of other contractors, or any decrease in the performance of any equipment or systems to be installed in the project and agrees to pay any additional costs incurred by the Owner as a result of a substitution which is accepted.
- h) **Following the award of the contract, there shall be no substitutions**, except pursuant to a change order. The Owner in its sole discretion may decline to consider a substitution for a change order.
- i) If the specified materials and/or manufacturers are no longer available, it is the bidder’s responsibility to notify the Owner during the bidding period. Substitutions made during the construction period resulting from these conditions (i.e., failure of the bidder to notify Owner) will be made solely at the Owner’s discretion.

ARTICLE 5. EXAMINATION OF DOCUMENTS

- a) Each bidder shall examine all bid documents, including, but not limited to, the Project Manual, Project Schedule, Notice to Bidders, Form of Proposal, addenda, plans, specifications, form contract. etc., for all other divisions of the work as well as its own, noting particularly all requirements which will affect its work in any way. These Bid Documents shall become the Contract Documents, as defined in the contract that

governs the relationship between the Contractor and the Owner when the contract is executed. Failure of a bidder to become fully acquainted with the amount and nature of work required to complete its division of the work in conformity with all requirements for the project as a whole will not be considered subsequently as a basis for extra compensation.

- b) Should any requirements in the plans and/or specifications for the project, as a whole, appear to a bidder to be in disagreement with those for the part of the work on which the bidder proposes to bid or in the case of a discrepancy in the plans and specifications, a request for clarification, in writing should be addressed to the Owner at least 5 calendar days prior to the date set for opening bids. The Owner will reply to all such inquiries through an addendum. Verbal interpretations will not be honored and are not legally binding. The Owner will forward a copy of same to all individuals holding plans and specifications. If, in examining the contract documents, the bidder discovers an apparent violation of the Ohio Basic Building Code, or other applicable statute or regulation, the bidder shall report such apparent violation to the Owner promptly. However, this provision shall not be construed as imposing responsibility on the bidder to ensure conformity of the plans and specifications to the Ohio Basic Building Code and other applicable regulations.
- c) No allowance will be made subsequently for any omission, error, or negligence of the bidder.
- d) Unless specifically assigned to one contract for all aspects of the project, each bidder is responsible to include all requirements for all sections contained in the Project Manual, and Project Schedule, in the base bid amount. (Contract is not limited to only those specifications sections listed in the contract summary of work).

ARTICLE 6. OPENING OF BIDS

Bids shall be opened and read publicly at the time and place named in the Notice to Bidders. The time for opening bids shall be extended at the discretion of the Owner with no further advertising when an addendum to the plans or specifications is issued within 72 hours of the scheduled bid opening, excluding Saturdays, Sundays and Legal Holidays.

ARTICLE 7. ADDENDA

- a) Any explanation, interpretation, correction, or modification of the Project Manual or Bid Documents will be issued in the form of an addendum, which shall be the only means considered legally binding; explanations, interpretations, etc., made by any other means shall not be legally binding. All addenda shall become a part of the contract documents.
- b) Bidders shall submit questions to the Owner no later than close of business on November 18, 2024, to allow sufficient time for the Owner to respond. All addenda will be issued except as hereafter provided and mailed or otherwise furnished to persons who have obtained Bid Documents for the project on or before close of business on

November 20, 2024. If any addendum is issued within 72-hours prior to the bid date, then the time for opening of bids shall be extended one week with no further advertising of bids required.

- c) Copies of each addendum will be sent only to the bidders to whom Bid Documents have been issued. Receipt of addenda shall be indicated by bidders in the space provided on the Form of Proposal.
- d) Each bidder shall carefully read and review the Bid Documents and immediately bring to the attention of the Owner any error, omission, inconsistency, or ambiguity therein.
- e) If a bidder fails to indicate receipt of all addenda through the last addendum issued by the Owner on its Form of Proposal, the bid of such bidder will be deemed to be responsive only if:
 - 1) The bid received clearly indicates that the bidder received the addendum, such as where the addendum added another item to be bid upon and the bidder submitted a bid on that item; or
 - 2) The addendum involves only a matter of form or is one which has either no effect or has merely a trivial or negligible effect on price, quantity, quality, or delivery of the item bid upon.

ARTICLE 8. ADDITIONAL SUBMITTAL REQUIREMENTS

- a) Upon receipt of the Notification of Recommendation of Award (NOA), the successful bidder will submit the following to the Owner:
 - 1) One copy of the Executed Contract;
 - 2) Contract Bond;
 - a) Including Certificate of Compliance issued by the Department of Insurance, showing the Bonding Company is Licensed to do business in the State of Ohio.
 - b) Including a Financial Statement of the Bonding Company.
 - 3) Certificate of Insurance;
 - 4) Completed W-9 Form;
 - 5) Workers' Compensation Certificate (Industrial Commission certification of O.R.C. requirements).

If the bidder fails to provide the documents within the required time, the bidder is solely responsible to meet all Project Schedule requirements regardless of the date of the formal execution of the contract. Failure of the bidder to provide these documents within 15 days of receipt of the NOA may result in rejection of the bid.

- b) The successful bidder shall notify the Owner, within three calendar days of receipt of the NOA, of the provisions the bidder has made or reasonably can be expected to make in order to meet the provisions of the Owner's Disadvantaged Business Participation Plan.

- c) Within fifteen calendar days of receipt of the NOA or such longer time as may be permitted in writing by the Owner, the apparent low bidder will submit the following to Owner:
- 1) The list of all proposed subcontractors, suppliers, manufacturers, and vendors.

After approval by the Owner of the list submitted by the successful bidder, the list shall not be changed unless written approval of the change is authorized by the Owner.
 - 2) Schedule of Values including a breakdown of labor and material for the project, and the sum thereof.
 - 3) A current name of the person or persons proposed to represent the bidder as project manager(s) or superintendent(s).
 - 4) A shop drawing and submittal schedule (includes every submittal requirement in the specifications).
- d) Within 15 calendar days of receipt of the NOA, the successful bidder is required to submit a Project Schedule to the Owner which shall, at a minimum, show detailed work operations and durations. The intent of this requirement is to allow the Owner an opportunity to more fully understand how the Contractor intends to complete the detail of the project. This detailed working schedule shall identify workforce requirements and be thoroughly coordinated with the Owner and all other subcontractors. The Contractor shall prosecute its work, at the direction of the Owner, furnishing at all times sufficient skilled workers, materials, and equipment to perform its work to meet the line-item progress required by the Project Schedule, so as not to delay the completion of the whole or any part of the work. The Owner anticipates that work on the project will commence on March 1, 2025, and be completed by May 1, 2025.

ARTICLE 9. TAXES

Materials purchased for use or consumption in connection with the proposed work will be exempt from the State of Ohio Sales Tax as provided for in Section 5739.02 of the Ohio Revised Code and also from the State of Ohio Use Tax, Section 5741.01.

ARTICLE 10. LIQUIDATED DAMAGES

Liquidated damages shall apply to the terms of the contract.

ARTICLE 11. PROJECT SCHEDULE

Each bidder is required to submit a proposed schedule with the bid which shall at a minimum, show work operations and duration.

ARTICLE 12. OWNER'S RIGHT TO WAIVE DEFECTS AND IRREGULARITIES

- a) The Owner reserves the right to waive any and all irregularities provided that the defects and irregularities do not affect the amount of the bid in any material respect or otherwise give the bidder a competitive advantage.
- b) By submitting a bid, the bidder agrees that (i) the Owner's determination of whether a defect or irregularity affects the amount of the bid in any material respect or otherwise gives the bidder a competitive advantage will be final and conclusive, and (ii) the bidder will pay the Owner's attorneys' and consultants' fees related to any challenge to the bid procedure or process, brought directly or indirectly by the bidder and/or any of its affiliates, which is unsuccessful.

ARTICLE 13. PRE-BID MEETING

A pre-bid meeting and site tour will be held on Wednesday November 13, 2024, at 9:00 AM EST. Potential bidders should plan to meet in the CFA Board Room located on the fourth floor of the Greater Columbus Convention Center's South Facility at 400 N. High St., Columbus, OH 43215.

ARTICLE 14. CONTINUITY OF CONVENTION CENTER OPERATIONS

The Contractor shall plan and perform all work without creating any interruption or disruption to normal Greater Columbus Convention Center operations and functions. All necessary interruptions and disruptions must be minimized, planned, scheduled, and approved by the Owner. In preparation of the bid, bidders may not assume the use of any activity or operation that will result in the disruption of convention center activities without the prior approval of the Owner.

ARTICLE 15. PREVAILING OR MINIMUM WAGE RATES

- a) Each laborer, worker or mechanic employed by the bidder for the work herein specified or by the subcontractor or by other persons performing work for the project shall be paid not less than the prevailing wage rates as determined by the Department of Industrial Relations of the State of Ohio in accordance with Chapter 4115 of the Ohio Revised Code.
- b) In the event the wage rate for any labor classification is changed between the time the rates are published herein and the time the work required by the contract is performed, or in the event any class of labor employed is not included in the published schedule of prevailing wages, then the rate prevailing at the time the work is actually performed, as ascertained and determined by the Department of Industrial Relations of the State of Ohio or the US Department of Labor, shall govern the work under the contract. No increase in the contract sum will be allowed for any later increase in the prevailing rates or wages as they may apply to this work.

ARTICLE 16. PAYROLL SUBMITTAL

- a) All contractors and subcontractors shall keep full and accurate payroll records covering all disbursements of wages to their employees to whom they are required to pay not

less than the prevailing rate of wages, as set forth in the contract documents. Such records shall be preserved for a period of three years from the date of completion of the contract.

- b) The Contractor and each subcontractor shall deliver to the Owner a certified copy of their payroll, with each month's payment application for the previous month's weekly payrolls which shall show for each employee paid any wages, their name, current address, social security number, number of hours worked each day during the pay period and the total hours worked for each week, their hourly rate of pay, their job classification, fringe payments, and deductions from their wages. In addition, the Contractor, at the beginning of the performance under the contract, shall give to the Owner a schedule of the dates during the life of the contract with the Owner on which the Contractor is required to pay wages to employees and a complete list of all subcontractors. Upon completion of the contract and prior to final payment, the Contractor and each subcontractor shall file with the Owner an affidavit stating full compliance with Chapter 4115 of the Ohio Revised Code. The Owner will withhold payment of any monthly/partial and/or final payment until all requirements have been met in accordance with the terms of the contract.

ARTICLE 17. INSURANCE

Insurance requirements shall be defined in the contract.

DIVERSITY, EQUITY, AND INCLUSION (Non-Discrimination) POLICY

Through the adoption of this Diversity, Equity, and Inclusion Policy (“DEI Policy”) the Franklin County Convention Facilities Authority (“FCCFA”) affirms its commitment to equal opportunity and non-discrimination in all aspects of its operations including, but not limited to, contracting and procurement, employee recruitment and selection, compensation and benefits, professional development and training, promotions, transfers, layoffs, and terminations. Pursuant to this DEI Policy the FCCFA will not participate in either active or passive unlawful discrimination of any type and will strive to maintain an open, diverse, and inclusive workplace for all employees, officers, contractors, and subcontractors.

It is the position of the FCCFA that discrimination of any kind based upon age, sex, race, color, religion, disability, national origin, genetic information, ethnicity, ancestry, sexual orientation, gender identity or expression, family or marital status, military or veteran status, or any other basis prohibited by the laws of the United States, the State of Ohio, or the City of Columbus (“Protected Status”) is prohibited. No person shall be unlawfully denied the benefit of, or otherwise be discriminated against in connection with their employment, the award or performance of any contract, or the modification of any contract or award.

The fundamental tenets of this DEI Policy are as follows:

- All Contractors shall have an equal opportunity to compete with respect to contracting and procurement activities of the FCCFA, regardless of age, sex, race, color, religion, disability, national origin, genetic information, ethnicity, ancestry, sexual orientation, gender identity or expression, family or marital status, military or veteran status, or any other Protected Status;
- No Contractor or FCCFA employee shall have engaged or shall engage in any kind of unlawful discrimination involving age, sex, race, color, religion, disability, national origin, ethnicity, ancestry, genetic information, sexual orientation, gender identity or expression, family or marital status, or any other Protected Status, whether or not such unlawful discrimination is related to the FCCFA or any contract with the FCCFA;
- The FCCFA and any Contractor seeking to do business with the FCCFA shall, whenever possible, craft bid specifications which enable MBE/WBE participation that is consistent with demographics for the City of Columbus;
- The FCCFA through its staff, facility management companies and other contractors will (i) monitor and provide periodic reports to the FCCFA Board of Directors regarding compliance by the FCCFA and its Contractors with this DEI Policy; (ii) collect and record information on the inclusion of minorities and women in their contracting, procurement, and workforce activities; and (iii) analyze data to evaluate the inclusion of minorities and women in the FCCFA’s contracting, procurement, and workforce activities. Specific reporting requirements shall include:

- Semi-annual diversity profile updates from all key service partners and facility management companies;
 - Documentation of contractor compliance with this DEI Policy in any recommendation of award presented to the FCCFA Board of Directors;
 - Monthly board reports describing MWBE participation rates for all ongoing construction projects.
- The FCCFA shall review this DEI Policy periodically to ensure that it effectively promotes and achieves diversity, equity, inclusion, non-discrimination and equal opportunity in connection with the FCCFA's operations, and all contracting and procurement activities; and
 - All Contractors and employees shall comply with this DEI Policy. A Contractor's success or failure to comply with this DEI Policy will be a factor in any award of a contract to such Contractor. An employee's success or failure to comply with this DEI Policy will be a factor considered in connection with any disciplinary measures or continued employment with FCCFA.

The FCCFA through its staff, facility management companies and other contractors shall be responsible for implementing, monitoring and evaluating this DEI Policy.

If the FCCFA determines that the objectives of this DEI Policy are not being achieved, the FCCFA Board of Directors may, in their discretion, direct the Executive Director to conduct further investigations into the reasons for not achieving such objectives.

This DEI Policy applies to all contracting and procurement activities of the FCCFA, including contracting for construction, professional and non-professional services and procurement of goods and supplies.

This DEI Policy shall be referenced in each bid and Request for Proposal or Qualifications document issued by the FCCFA. A Contractor's failure to comply with this DEI Policy may result in (a) debarment from participation in future FCCFA contracting opportunities, (b) liability for breach of contract and (c) the enforcement of any other remedies available under the related contract or applicable law.

FORM OF PROPOSAL

Submitted By: _____

on: _____, 2024

To: Franklin County Convention Facilities Authority
400 North High Street, 4th Floor
Columbus, Ohio 43215-2096

having read the Project Manual, Specifications and examined the Drawings entitled:

Greater Columbus Convention Center South Facility Fire Pump Replacement

as prepared by the Franklin County Convention Facilities Authority for the construction of said project and having also received, read and included their provisions in the bid all addenda thereto as follows:

Addendum No: _____ Dated: _____ Addendum No: _____ Dated: _____

Addendum No: _____ Dated: _____ Addendum No: _____ Dated: _____

and having also inspected the site of and the conditions affecting and governing the construction of said project, the undersigned proposes to furnish all materials and perform all labor as specified, described, shown, and required in the Project Manual, Specifications and Drawings for the Work, for the indicated sum:

(NOTE: Fill in all spaces of items being bid and quote the sum in both words and figures.)

ESTIMATE FOR PROJECT
(\$325,000)

Total material, labor and services for the project – **Greater Columbus Convention Center South Facility Fire Pump Replacement** - for the lump sum amount of:

Dollars (\$ _____)

FORM OF PROPOSAL (continued)

EXECUTION OF PROPOSAL

NOTE A: TIME OF COMPLETION

- a) It is understood and agreed that the work embodied in this contract shall be completed no later than the completion date stated within the contract, unless an extension of time is granted by the Owner.
- b) Upon failure to have all work completed within the period of time above mentioned, the Contractor shall forfeit and pay, or cause to be paid, to the Owner for and as liquidated damages to be deducted from any payment due or to become due to the said contractor, the sum set forth in the following table for the size of contract, for each and every day thereafter that the said work remains in an unfinished condition.

DOLLAR AMOUNT OF CONTRACT DOLLARS PER DAY

\$0 to \$100,000.00	\$250.00
\$100,000.01 to \$500,000.00	\$500.00
\$500,000.01 to \$1,000,000.00	\$1,000.00
\$1,000,000.01 to \$10,000,000.00	\$2,500.00
\$10,000,000.01 and up	\$5,000.00

NOTE B: Failure to sign proposal may result in rejection of the Bid.

THIS PROPOSAL SUBMITTED BY: _____

Name of Contractor

BY: _____
Signature of Contractor or Authorized Representative

DATE: _____

Contact Person for contract processing: _____

Mailing Address if different from above: _____

FRANKLIN COUNTY CONVENTION FACILITIES AUTHORITY

Diversity, Equity & Inclusion Policy

_____ (name of Contractor) hereby has reviewed the FCCFA's Diversity, Equity & Inclusion Policy.

The contractor agrees to comply with all policy requirements and, directly or indirectly, (1) has not engaged, is not engaged, and will not engage in any kind of unlawful discrimination involving race, color, sex, sexual orientation or gender identity, disability, age, religion, veteran status or national origin, whether or not such discrimination is related to a contract or procurement activity with or for the FCCFA and (2) will not, for any purpose related to its engagement by the FCCFA, employ or contract with persons or businesses which the Contractor knows or has reason to know have engaged, are engaged, or will engage in any kind of unlawful discrimination involving race, color, sex, sexual orientation or gender identity, disability, age, religion, veteran status or national origin, whether or not such unlawful discrimination is related to a contract or procurement activity with or for the FCCFA. The contractor further agrees to incorporate these requirements in all subcontracts on this project regardless of tier.

Date: _____

Signature of Contractor or Authorized Representative

- () Submitted own Affirmative Action Plan.
- () Contractor has been certified as a minority and/or female owned business.
(Submit copy of certification as received from the federal government and/or any Ohio government unit or public authority).

Note: This certification must be filled and signed. Failure to comply may invalidate your bid.

DECLARATION OF INSURANCE TO THE FRANKLIN COUNTY CONVENTION FACILITIES AUTHORITY

THIS IS TO CERTIFY THAT THE FOLLOWING DESCRIBED POLICIES OF INSURANCE HAVE BEEN ISSUED AND ARE IN FULL FORCE AND EFFECT AT THIS TIME:

1. Name of Insured (Contractor):
2. Address:
3. Title and Location: Franklin County Convention Facilities Authority -
(Contract Job Site) Greater Columbus Convention Center
4. Project: GCCC South Facility Fire Pump Replacement
5. Policy Number(s), Carriers and Expiration Dates:

LIMITS OF LIABILITY IN \$1,000 AMOUNTS

TYPE OF INSURANCE		Each Occurrence	Aggregate
GENERAL LIABILITY			
Comprehensive Form Premises-Operations	Bodily Injury	\$	\$
Explosion and Collapse Hazard Underground Hazard	Property Damage`	\$	\$
Products/Completed Operations Hazard	Combined	\$	\$
Contractual Hazard	Single Limit	\$	\$
Broad Form Property Damage			
Independent Contractors Personal Injury	Personal Injury	\$	\$
AUTOMOBILE LIABILITY			
Comprehensive Form	Bodily Injury Each Person	\$	
Owned	Bodily Injury Each Accident	\$	

Hired

Non-Owned

Property Damage \$

EXCESS LIABILITY

Combined \$
Single Limit

Umbrella Form

Combined \$ \$
Single Limit

Following Form

Self-Insured \$

List any manuscript or unusual exclusions for forms and attach copies.

Check those of the following operations which are excluded:

_____ Asbestos removal or abatement _____ PCP Removal _____ Demolition

It is agreed that sixty (60) days written notice of cancellation or material change in the described policy(s) will be given to the holder of this certificate, known as the Franklin County Convention Facilities Authority, 400 North High Street, Columbus, OH 43215.

Insurance Agency:

Address:

Telephone:

Contractor's Signature:

Agent's Signature:

Date: _____

Date: _____

ADDITIONAL INSURED WITH RESPECT TO THIS JOB ONLY; AS THEIR INTEREST MAY APPEAR:

1. Franklin County Convention Facilities Authority, its other contractors and own forces, if any, and the subcontractors, sub-subcontractors, consultants, agents, and employees of any of them, in their individual capacities as such;
2. The Franklin County Convention Facilities Authority Board, its members, consultants, agents, and employees of any of them, in their individual capacities as such;
3. The Architect/Engineer its consultants, agents, and employees of any of them, in their individual capacities as such;
4. The Construction Manager, its consultants, agents, and employees of any of them, in their individual capacities as such.
5. ASM Global, its consultants, agents, and employees of any of them, in their individual capacities as such.

**FRANKLIN COUNTY CONVENTION FACILITIES AUTHORITY
MANUFACTURER'S DECLARATION**

Part A

Contractor's Name and Address:

Project Title and Location: GCCC South Facility Fire Pump Replacement

Part B (Complete for all suppliers but do not include subcontractors.)

Name:	Type/Brand Name of Supplies:
Address:	Phone:
	Minority/Female Business: <input type="checkbox"/> Yes
	<input type="checkbox"/> No

Name:	Type/Brand Name of Supplies:
Address:	Phone:
	Minority/Female Business: <input type="checkbox"/> Yes
	<input type="checkbox"/> No

Name:	Type/Brand Name of Supplies:
Address:	Phone:
	Minority/Female Business: <input type="checkbox"/> Yes
	<input type="checkbox"/> No

Name:	Type/Brand Name of Supplies:
Address:	Phone:
	Minority/Female Business: <input type="checkbox"/> Yes
	<input type="checkbox"/> No

(attach additional pages as needed)

**FRANKLIN COUNTY CONVENTION FACILITIES AUTHORITY
CONTRACTOR'S REVIEW CERTIFICATE**

The undersigned acknowledges that:

- (1) the contractor's authorized agent has carefully read and understood all of the Bid Documents submitted for the GREATER COLUMBUS CONVENTION CENTER SOUTH FACILITY FIRE PUMP REPLACEMENT, including, but not limited to, the Notice to Bidders, Instructions to Bidders, Form of Proposal, Substitution Sheet, Prevailing Wage Determination, Form of Bid Guaranty and Contract Bond, this Contractor's Review Certificate, Project Manuals, Specifications and Drawings; and
- (2) the Bid Documents are sufficient and adequate for the undersigned to perform the Work; and
- (3) the contractor's authorized agent has carefully reviewed the site and conditions under which the Work will be performed, or has been given ample opportunity to do so, and fully assumes the risk for any condition at the site that could have been discovered by a careful and diligent review of the site; and
- (4) the contractor's authorized agent has confirmed that the contractor's surety is authorized to do business in the State of Ohio.

Dated: _____

CONTRACTOR: _____

By: _____
SIGNATURE

TYPED OR PRINTED NAME

Its: _____

NOTE: The Bidder should review the Bid Documents and the site and conditions under which the Work will be performed so that the Bidder can give the acknowledgments contained in this Certificate.

BID GUARANTY AND CONTRACT BOND

KNOW ALL MEN BY THESE PRESENT, that we, the undersigned

(Name and Address)

as Principal and

(Name of Surety)

as Surety, are hereby held and firmly bound unto the Franklin County Convention Facilities Authority as Obligees in the penal sum of the dollar amount of the bid submitted by the Principal to the Obligees on this _____ day of _____, 2024 to undertake the project known as the Greater Columbus Convention Center South Facility Fire Pump Replacement. The penal sum referred to herein shall be the dollar amount of the Principal's bid to the Obligees, incorporating any additive or deductive alternative proposals made by the Principal on the date referred to above to the Obligees, which are accepted by the Obligees. In no case shall the penal sum exceed the amount of _____ dollars (\$_____).

(If the above 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 must not be less than the full amount of the bid, including add 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 on the above referred to Project;

NOW, THEREFORE, if the Obligees accept the bid of the Principal and the Principal fails to enter into a proper contract in accordance with the bid, plans, details, specifications, and bills of material; and in the event the Principal pays to the Obligees the difference, not to exceed ten percent of the penalty hereof, between the amount specified in the bid and such larger amount for which the Obligees may in good faith contract with the next lowest bidder to perform the Work covered by the bid; or in the event the Obligees do not award the Contract to the next lowest bidder and resubmits the Project for bidding, the Principal will pay the Obligees the difference, not to exceed ten percent of the penalty hereof, between the amount specified in the bid, or the costs, in connection with the resubmission, or 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 Obligees accept the bid of the Principal and the Principal, within ten days after the awarding of the Contract, enters into a proper contract in accordance with the bid, plans, details, specifications, and bills of material, which said Contract is made a part of this Bond the same as though set forth herein; and

IF THE SAID Principal shall well and faithfully perform each and every condition of such Contract; and indemnify the Obligees against all damage suffered by failure to perform such Contract according to the provisions thereof and in accordance with the plans, details,

specifications, and bills of material therefor; and shall pay all lawful claims of subcontractors, materialmen, 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 materialman, subcontractor or laborer having a just claim, as well as for the Obligee 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 or in or to the plans and specifications therefor 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 to the terms of the Contract or to the Work or to the specifications.

SIGNED AND SEALED This _____ day of _____, 2024.

PRINCIPAL:

BY:

TITLE:

SURETY

SURETY COMPANY ADDRESS:

Street

City

State

Zip

Telephone:

BY:

Attorney-in-Fact

If the requirements of Section 3905.41 of the Ohio Revised Code are applicable or if Surety Agent's Address is other than Ohio, and the Ohio Department of Insurance's Certificate of Compliance is not attached, please complete Ohio Resident Agent Information as follows:

SURETY AGENT'S ADDRESS:

Agency Name:

Agency Name:

Street

Street

City

State

Zip

City

State

Zip

Telephone

Telephone

NOTE Failure by any party to sign this Bid Guaranty and Contract Bond shall result in rejection of bid.

INSTRUCTIONS TO BIDDERS

RESPONSIBILITY ANALYSIS FORM

FRANKLIN COUNTY CONVENTION FACILITIES AUTHORITY

DETERMINATION OF LOWEST AND BEST BID

This form must be completed in its entirety and submitted with the Bid Form. Attach additional sheets if necessary to provide complete answers to the questions below. Do not include any misleading statements and make sure to include all facts necessary to make the statements made not misleading. The term “Project” means the project for which the attached bid is submitted. All references to “**Bidder**” should be answered with respect to the **actual legal entity** submitting the bid.

Subject to the right of the Owner to reject any or all bids, the Owner will award the Contract for the Work to the Bidder submitting the lowest and best bid, taking into consideration accepted alternates. In determining which bid is the lowest and best bid, the Owner may take into consideration not only the amount of the bid but such of the following criteria as the Owner, in its sole discretion, deems appropriate, and may give such weight thereto as it deems appropriate:

Bidder Name _____

Bid Package No.: 2024-3 _____

Trade/Service _____

Product (s) Supplied _____

1. Bidder shall provide all information listed below with its bid, unless otherwise noted. Failure to do so may, at the Owner’s discretion, result in rejection of the bid.
2. The Owner reserves the right to reject all bids.
3. Will the Bidder employ supervisory personnel on this Project that have three (3) or more years in the specific trade and/or maintain the appropriate state license?

_____ Yes _____ No

4. On a separate sheet, provide information to demonstrate the following:
 - Bidder’s previous performance to complete its work on projects of similar size and scope.
 - Bidder’s previous ability to complete these same projects on time.
 - Bidder’s previous ability to work with this Owner, Architect, Engineer and/or Construction Manager.
5. Bidder shall not have an EMR (Workers’ Compensation Interstate/Intrastate Experience Modification Rate) greater than 1.5. If Bidder’s EMR is above 1.0, Bidder shall provide a letter from Insurance Broker providing EMR for the most recent five (5) years, reasoning for EMR being above 1.0 and incident rates for that time period.

6. Has the Bidder been in existence at least 36 months?

_____ Yes _____ No

7. Has the Bidder, or any principal, owner, officer, stockholder, affiliate or any person involved in the bidding, contracting or leasing process been cited in the last five (5) years for violations of or failure to comply with any laws including without limitation:

a. Workers' compensation laws _____ Yes _____ No

b. Wage and hour laws _____ Yes _____ No
(including the Davis-Bacon Act and the Ohio
Prevailing Wage Act)

c. Unemployment laws _____ Yes _____ No

d. Tax laws _____ Yes _____ No

e. Fair Labor Standards Act _____ Yes _____ No

f. Immigration laws _____ Yes _____ No

g. Licensing requirements _____ Yes _____ No

h. OSHA _____ Yes _____ No

i. EPA _____ Yes _____ No

j. Any items below: _____ Yes _____ No

1. A judgment or conviction for any business-related conduct constituting a crime under federal, state or local government law including, but not limited to, fraud, extortion, bribery, racketeering, price-fixing or bid collusion or any crime related to truthfulness and/or business conduct.
2. A criminal investigation or indictment for any business-related conduct constituting a crime under federal, state or local government law including, but not limited to, fraud, extortion, bribery, racketeering, price-fixing or bid collusion or any crime related to truthfulness and/or business conduct.
3. An unsatisfied judgment, injunction or lien for any business-related conduct obtained by any federal, state or local government agency including, but not limited to, judgments based on taxes owed and fines and penalties assessed by any federal, state, or local government agency.
4. An investigation for a civil or criminal violation for any business-related conduct by any federal, state or local agency.
5. A grant of immunity for any business-related conduct constituting a crime under federal, state or local governmental law including, but not limited to, fraud,

extortion, bribery, racketeering, price-fixing, bid collusion or any crime related to truthfulness and/or business conduct.

6. An administrative proceeding or civil action seeking specific performance or restitution in connection with any federal, state or local contract or lease.
7. A sanction imposed as a result of judicial or administrative proceedings relative to any business or professional license.
8. A consent order with the Ohio Environmental Protection Agency, or a federal, state or local government enforcement determination involving a violation of federal, state, or local environmental laws.

If yes, on a separate sheet, provide complete details including the date of each citation or violation; the nature of each violation; and the sanction for each violation. If the Bidder was fined, include the dollar amount.

For purposes of 7.a. above, a violation of the Workers' compensation laws is a determination by the Ohio Bureau of Workers Compensation that the contractor is not in compliance with Ohio Workers' Compensation laws and regulations.

For purposes of 7.b. above, a violation of the Ohio Prevailing Wage Act is a determination by the Ohio Department of Commerce, Division of Labor and Worker Safety, Wage and Hour Division, or successor that the contractor is not in compliance with the provisions, duties, obligations and is subject to the remedies and penalties of Chapter 4115 of the Ohio Revised Code.

8. Does Bidder have any outstanding liens? If yes, on a separate sheet identify each circumstance and Bidder's response.

_____ Yes _____ No

9. Has Bidder been party to litigation or arbitration proceedings in connection with any work performed, services rendered, or products supplied in the last five years? If yes, on a separate sheet, provide complete details, including dates, parties, whether Bidder was a plaintiff/claimant or defendant/respondent, the nature of the dispute and the ultimate determination or other resolution (i.e. settlement).

_____ Yes _____ No

10. In the last five years, has Bidder had work rejected as defective (other than minor re-work accomplished without formal notice)? If yes, on a separate sheet identify each circumstance and Bidder's response.

_____ Yes _____ No

11. In the last five years, has Bidder's contract or employment been terminated prior to completion of a project for any reason other than convenience of the Owner? If yes, on a separate sheet identify each such circumstance and provide full details.

_____ Yes _____ No

12. Bidder shall secure any required bonds from a surety licensed to do business in the State of Ohio with an A.M. Best Company rating of at least A. Has Bidder met this requirement?

_____ Yes _____ No

13. Has Bidder's construction license ever been revoked in any state?

_____ Yes _____ No

14. In the last five years, has Bidder had its own forces supplemented by an Owner, contractor or construction manager or had a claim made against it for defective, delayed or non-compliant work? If yes, on a separate sheet identify each such circumstance and provide full details.

_____ Yes _____ No

15. Bidder for a skilled contract (i.e. plumbing, electrical, HVAC, or fire safety) shall certify that Bidder will not subcontract greater than 50% of its awarded contract.

16. Does Bidder provide a minimum healthcare medical plan for those employees working on the project? If yes, list the healthcare plan provider below.

_____ Yes _____ No

Healthcare Medical Plan Provider: _____

17. Does Bidder contribute to an employee pension or retirement plan for those employees working on the project? If yes, list the pension or retirement plan provider below.

_____ Yes _____ No

Pension Plan or Retirement Plan Provider: _____

The contractor may be asked to provide ERISA form 5500 for the retirement plan.

18. Has Bidder implemented an OSHA compliant Safety Program?

_____ Yes _____ No

19. Does Bidder maintain a substance abuse policy that meets or exceeds requirements of the Ohio BWC and that its personnel are subject to on this Project?

_____ Yes _____ No

20. Is the bidder a foreign corporation (i.e. not incorporated under the laws of Ohio) or an individual or partnership?

_____ Yes _____ No

21. If yes to Item 20 above, provide proof of a Certificate of Good Standing from the Secretary of State showing the right of the Bidder to do business in the State and/or proof of filing with the Secretary of State a Power of Attorney designating the Secretary of State as Bidder's agent.

22. Bidder shall certify that the Bidder's subcontractors / vendors shall meet all requirements contained herein.

23. The Owner reserves the right to request the following information within 48 hours of the bid date:

- a. On a separate sheet, list all projects greater than \$1,000,000 completed by Bidder in the preceding five years and for each, provide Bidder's original contract amount, final contract amount and a reference name and phone number.
- b. For the three largest projects listed from Item 3 above list your average manpower and peak manpower along with the original duration of the project and final duration of the project.
- c. On a separate sheet, provide Bidder's current work load under contract. List each current project and its respective contract amount and scheduled duration.
- d. On a separate sheet, provide information on Bidder's equipment and facilities.
- e. Bidder shall provide sufficient financial information to demonstrate fiscal capability to perform the project. All financial information identified by the Bidder as a trade secret and contained herein shall be treated as a trade secret and exempt from Ohio's Public Records laws, but the Owner's sole duty shall be to notify Bidder of any requests for that information so that Bidder is afforded the opportunity, at Bidder's expense, to contest in court the disclosure of any such information. The Owner may, but shall not be obligated to, contest any request for the disclosure of such information.
- f. On a separate sheet, identify, in numbers and experience, the Bidder's work force. Differentiate between hourly and salaried staff. Describe Bidder's workforce, focusing on worker experience and continuity.
- g. Bidder for a skilled trade contract or fire safety contract shall certify and upon request, provide evidence that Bidder is a state licensed heating, ventilating, and air conditioning contractor, refrigeration contractor, electrical contractor, plumbing contractor, or hydronics contractor or licensed by the State Fire Marshall and uses skilled, trained personnel.
- h. Identify the number of man hours and associated wages for each trade classification included in the Contractor's and Subtiers' Base Bid. Separately list the subtier's information. Provide additional sheet if more room is needed. DO NOT include payroll taxes, assessments or fringe benefits of any kind in the Wage amounts.

Trade	Man Hours	Wages (No fringes or OH&P)
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

The Undersigned certifies under oath that the information provided herein and on all supplemental pages of explanation is true, complete and correct.

Company

By _____

Title _____
(Signature must be notarized)

Sworn to and subscribed in my presence this _____ day of _____,

By _____, the _____ of
_____, a _____ on
behalf of the _____.

Notary Public

My Commission Expires: _____

Franklin County Convention Facilities Authority
Bid Evaluation Process:

In determining the lowest and best bid for construction contracts, the Franklin County Convention Facilities Authority will take the following steps and consider the following items in making this determination. The Authority reserves its discretion to evaluate the price and quality of bids to ensure that the lowest and best bid is selected. The Authority reserves its discretion to modify this process at any time and for any reason without notice.

1. Select which alternates will be accepted.
2. Identify the apparent low bidder based on the accepted alternates.
 - 2.1 Is the apparent low bid responsive? Are all required bid submissions included?
 - 2.2 Has the bidder qualified their bid in a way that would disqualify the bid?
3. Meet with the bidder to determine that all project scope is clearly understood and included. Discuss project schedule, safety and all project requirements. Identify key project staff. Identify subcontractors. Identify long lead time equipment. Discuss submission, review and approval process. Identify and discuss other items pertinent to the job.
4. Is the bidder well qualified?
 - 4.1 Background Check:
 - Check Dun and Bradstreet.
 - Run Lexus/Nexus check.
 - Check for prevailing wage and workers compensation compliance.
 - 4.2 Is the bidder qualified for a job of this scope? (Questions 4, 6, 15, 23.a, b,c,d,e)
 - 4.3 Has the bidder demonstrated that they will provide qualified, well trained staff? (Questions 3, 23.f, g)
 - 4.4 Does the bidder provide a minimum healthcare medical plan for those employees working on the project? (Question 16)
 - Does the bidder contribute to an employee pension or retirement plan for those employees working on the project? (Question 17)
 - 4.5 Does the bidder have a history of providing quality construction services? (Questions 6, 9, 10, 11, 13, 14)
 - 4.6 Does the bidder maintain a safe workplace? (Questions 5, 18, 19)
 - 4.7 Does the bidder follow all applicable laws? (Question 7)
 - 4.8 Is the bidder financially stable? (Questions 7.j.3, 8, 12, 23.e)
5. If it is determined that the apparent low bid is responsive, valid and the bidder is well qualified:

- 5.1 Assemble all necessary documentation and paperwork required in the bid documents.
- 5.2 Submit a resolution for board approval to enter into the contract.
- 5.3 Issue a notice to proceed.
- 5.4 Sign a contract with the successful bidder.

DIVISION 21 – FIRE SUPPRESSION

GREATER COLUMBUS CONVENTION CENTER
SOUTH BUILDING FIRE PUMP REPLACEMENT

HEAPY
MEP Engineer
Project No. 2024-07029

Section

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FIRE SUPPRESSION PIPING AND PUMPS

21 13 12	-	FIRE SUPPRESSION PIPING
21 31 16	-	DIESEL DRIVEN CENTRIFUGAL FIRE PUMP

November, 2024

21 05 01 BASIC FIRE SUPPRESSION REQUIREMENTS

PART 1 - GENERAL

1.1 Special Note

- A. All provisions of the Bidding Requirements, General Conditions, and Supplementary Conditions, including Divisions 00 and 01, apply to work specified in this Division.
- B. The scope of the Division 21 work includes furnishing, installing, testing and warranty of all work and complete Fire Suppression systems as shown on the F series drawings, and as specified in Division 21 and elsewhere in the project documents.
- C. Understanding that the contractors for various Divisions are sub-contractors to the Prime Contractor, assignments of work by division are not intended to restrict the Prime Contractor in assignment of work among the contractors to accommodate trade agreements and practices or the normal conduct of the construction work. If there is a conflict of assigned work between Divisions 02 thru 33 and Divisions 00 and 01, Divisions 00 and 01 shall take precedence.

1.2 Permits and Regulations

- A. Include payment of all permit and inspection fees applicable to the work in Division 21. Furnish for the Owner certificates of approval from the governing inspection agencies, as a condition for final payment.
- B. Work must conform to applicable local, state and federal laws, ordinances and regulations. Where drawings or specifications exceed code requirements, the drawings and specifications shall govern. Install no work contrary to minimum legal standards.

1.3 Inspection of Site

- A. Each bidder shall inspect the premises of the existing building. Conditions shall be compared with information shown on the drawings. Report immediately to the Engineer any significant discrepancies which may be discovered. After the contract is signed, no allowance will be made for failure to have made a thorough inspection.

1.4 Drawings and Specifications

- A. The drawings indicate the general arrangement of the work and are to be followed insofar as possible. The word "provide", as used, shall mean "furnish and install". If significant deviations from the layout are necessitated by field conditions, detailed layouts of the proposed departures shall be submitted to the Engineer for approval before proceeding with the work.
- B. Make all necessary field measurements to ensure correct fitting. Coordinate work with all other trades in such a manner as to cause a minimum of conflict or delay.
- C. The drawings and specifications shall be carefully studied during the course of bidding and construction. Any errors, omissions or discrepancies encountered shall be referred immediately to the Engineer for interpretation or correction, so that misunderstandings at a later date may be avoided. The contract drawings are not intended to show every vertical or horizontal offset which may be necessary to complete the systems. Having pipe and fittings fabricated and delivered in advance of making actual measurements shall not be sufficient cause to avoid making offsets and minor changes as may be necessary to install piping and equipment.

- D. The Engineer shall reserve the right to make minor adjustment in locations of system runs and components where considered desirable in the interest of concealing work or presenting a better appearance where exposed. Any such changes shall be anticipated and requested sufficiently in advance as to not cause extra work, or unduly delay the work. Coordinate work in advance with all other trades and report immediately any difficulties which can be anticipated.
- E. Equipment or piping shall not be installed in the dedicated electrical space above or in the working space required around electrical switchgear, motor control centers or panelboards as identified by the National Electric Code (NEC).
- F. Where any system runs and components are so placed as to cause or contribute to a conflict, it shall be readjusted at the expense of the contractor causing such conflict. The Engineer's decision shall be final in regard to the arrangement of equipment, piping, etc., where conflict arises.
- G. Provide offsets in system runs, additional fittings and necessary drains required to complete the installation, or for the proper operation of the system. Exercise due and particular caution to determine that all parts of the work are made quickly and easily accessible.
- H. Should overlap of work among the trades become evident, this shall be called to the attention of the Engineer. In such event, none of the trades or their suppliers shall assume that they are relieved of the work which is specified under their branch until instructions in writing are received from the Engineer.

1.5 Asbestos Materials

- A. Abatement, removal or encapsulation of existing materials containing asbestos is not included in the Division 21 Contract. Necessary work of this nature will be arranged by the Owner to be done outside of this construction and remodeling project by a company regularly engaged in asbestos abatement. Such work will be scheduled and performed in advance of work in the construction and remodeling project.
- B. If, in the performance of the work, materials are observed which are suspected to contain asbestos, the Contractor shall immediately inform the Engineer who in turn will notify the Owner. Work that would expose workers to the inhalation of asbestos particles shall be terminated. Work may be resumed only after a determination has been made and unsafe materials have been removed or encapsulated and the area declared safe.

1.6 Inspection

- A. All work shall be subject to inspection of Federal, State and local agencies as may be appropriate, and of the Architect and Engineer.
- B. Obtain final inspection certificates and turn over to the Owner.

1.7 Record Drawings

- A. Maintain a separate set of field prints of the contract documents and hand mark all changes or variations, in a manner to be clearly discernible, which are made during construction and the coordination process. Upon completion of the work, and within 90 days of system acceptance, these drawings shall be turned over to the Engineer. This shall apply particularly to underground and concealed work, and to other systems where the installation varies to a degree which would justify recording the change.

1.8 Operating and Maintenance Manuals

- A. Assemble two copies of operating and maintenance manuals for the Fire Suppression work.

- B. All "approved" shop drawings and installation, maintenance and operating instruction pamphlets or brochures, wiring diagrams, parts list and other information, along with warranties, shall be obtained from each manufacturer of the principal items of equipment. In addition, prepare and include a chart listing all items of equipment which are furnished under this contract, indicating the nature of maintenance required, the recommended frequency of checking these points and the type of lubricating media or replacement material required. Name and address of a qualified service agency. A complete narrative of how each system is intended to operate.
- C. Pipe pressure test reports shall also be included.
- D. These shall be assembled into three-ring loose leaf binders or other appropriate binding. An index and tabbed sheets to separate the sections shall be included. These shall be submitted to the Engineer for review. Upon approval, manuals shall be turned over to the Owner.

1.9 Final Inspection and Punch List

- A. As the time of work completion approaches, survey and inspect the work and develop their own punch list to confirm that it is complete and finished. Then notify the Engineer and request that a final inspection be made. It shall not be considered the Architect's or Engineer's obligation to perform a final inspection until the Contractor has inspected the work and so states at the time of the request for the final inspection.
- B. Requests to the Engineer for final inspection may be accompanied by a limited list of known deficiencies in completion, with appropriate explanation and schedule for completing these; this is in the interest of expediting acceptance for beneficial occupancy.
- C. The Engineer will inspect the work and prepare a punch list of items requiring correction, completion or verification. Corrective action shall be taken by the Contractor to the satisfaction of and Engineer within 30 days of receipt of the Engineer's punch list.

1.10 Warranty

- A. Warrant all workmanship, equipment and material entering into this contract for a period of one (1) year from date of final acceptance or date of beneficial use, as agreed to between Contractor and Engineer. Any materials or equipment proving to be defective during this warranty period shall be made good by this Contractor without expense to the Owner. Use of equipment for temporary system use is not the start of the warranty period.
 - 1. Certain items of equipment are specified to have multi-year parts and/or labor warranties. Refer to individual equipment specifications.
- B. This provision is intended specifically to cover deficiencies in contract completion or performance which are not immediately discovered after systems are placed in operation. Also included shall be supplementary assistance in balancing, adjusting or providing operating instructions as the need develops, and replacing overload heater elements in starters where necessary to keep systems in operation. Heater element sizes shall not exceed the motor manufacturer's recommendations.
- C. This provision shall not be construed to include maintenance items such as re-tightening or repacking glands, greasing, oiling and cleaning strainers after these have been done for final close-out.
- D. Provisions of this warranty shall be considered supplementary to warranty provisions under Division 01 - General Conditions.

PART 2 - PRODUCTS

2.1 Materials and Equipment

- A. Materials and equipment furnished under this contract shall be in strict accordance with the specifications and drawings and shall be new and of best grade and quality. When two or more articles of the same material or equipment are required, they shall be of the same manufacturer.

2.2 Listing and Labeling

- A. All equipment and appliances shall be listed and labeled in accordance with the Building and Fire Codes. Testing shall be performed by an Approved Agency, with the seal or mark of the Agency affixed to each piece of equipment or appliance.

2.3 Reference Standards

- A. Where standards (NFPA, NEC, ASTM, UL, etc.) are referenced in the specifications or on the drawings, the latest edition is to be used except, however, where the authority having jurisdiction has not yet adopted the latest edition, the edition so recognized shall be used.

2.4 Equipment Selection

- A. The selection of materials and equipment to be furnished shall be governed by the following:
 - 1. Where trade names, brands, or manufacturers of equipment or materials are listed in the specification, the exact equipment listed shall be furnished. Where more than one name is used, the Contractor shall have the option of selecting between any one of the several specified. All products shall be first quality line of manufacturers listed.
 - 2. Where the words "or approved equal" appear after a manufacturer's name, specific approval must be obtained from the Architect during the bidding period in sufficient time to be included in an addendum. The same shall apply for equipment and materials not named in the specifications, where approval is sought.
 - 3. Where the words "equal to" appear, followed by a manufacturer's name and sometimes a model or series designation, such designation is intended to establish quality level and standard features. Equal equipment by other manufacturers will be acceptable, subject to the Engineer's approval.
- B. Substitute equipment of equal quality and capacity will be considered when the listing of such is included as a separate item of the bid. State the deduction or addition in cost to that of the specified product.
- C. Before bidding equipment, and again in the preparation of shop drawings, verify that adequate space is available for entry and installation of the item of equipment, including associated piping and accessories. Also verify that adequate space is available for servicing of the equipment.
- D. If extensive changes in pipe or equipment layout, or electrical wiring and equipment are brought about by the use of equipment which is not compatible with the layout shown on the drawings, necessary changes shall be deemed to be included.

2.5 Shop Drawings

- A. Electronic copies of shop drawings and descriptive information of equipment and materials shall be furnished. Submit to the Architect and/or Engineer for review as stated in the General Conditions and Supplementary Conditions. These shall be submitted as soon as practicable and before equipment is installed and before special equipment is manufactured. Submittal information shall clearly identify the manufacturer, specific model number, approval labels, performance data, pump curves, electrical characteristics, features, specified options and additional information sufficient to evidence compliance with the contract documents. Product

catalogs, brochures, etc. submitted without project specific items marked as being submitted for review will be rejected and returned without review. Shop drawings for equipment, fixtures, devices and materials shall be labeled and identified same as on the Contract Documents. If compliance with the above criteria is not provided shop drawings will be subject to rejection and returned without review. Samples shall be submitted when requested or as specified here with-in.

- B. The review of shop drawings by the Architect or Engineer shall not relieve the Contractor from responsibility for errors in the shop drawings. Deviations from specifications and drawing requirements shall be called to the Engineer's attention in a separate clearly stated notification at the time of submittal for the Engineer's review.
- C. Shop drawings of the following Fire Suppression equipment and materials shall be submitted:
 - 1. Pipe, fittings and joining methods.
 - 2. Firestopping systems for pipe penetrations.
 - 3. Pipe hangers.
 - 4. Valves.
 - 5. Gauges.
 - 6. Fire pump, jockey pump and controllers and accessories.
 - 7. Sprinkler system installation drawings per NFPA 13, calculations and water supply flow curve.
 - 8. Welder performance qualification record from the American Welding Society (AWS).

PART 3 - EXECUTION

3.1 Pipe Testing

- A. Pipe testing for fire suppression piping shall be as described below.
- B. Ensure that air is vented from piping when piping is hydrostatically tested.
- C. Tests shall be witnessed by field representatives of the Architect or Engineer or shall be monitored by a recorder. Furnish a written record of each piping system test indicating date, system, pressure, duration and results of tests. Copies of test reports shall be included in the O&M manuals.
- D. Leaks discovered during testing shall not be patched. Threaded connections shall be either tightened or replaced. Small leaks in welded pipe may be chipped and rewelded.

3.2 Pipe Cleaning

- A. Before placing each piping system in operation, the piping system shall be thoroughly flushed out with clean water.
- B. Refer to appropriate Sections for cleaning of other piping for normal operation.

3.3 Operation and Adjustment of Equipment

- A. As each piping system is put into operation, all items of equipment included therein shall be adjusted to proper working order. This shall include tightening packing glands, and adjusting all operating equipment.
- B. Caution: Verify that all bearings are lubricated, all motors are operating in the right direction, and correct drive settings and overload heater elements are provided on all motors. Do not depend wholly on the electrician's judgment in these matters. Follow specific instructions in

regard to lubrication. Do not oil or grease presealed ball bearings unless upon manufacturer's specific instructions.

- C. Test relief valves, air vents and regulating valves to ensure proper operation.

3.4 Operating Demonstration and Instructions

- A. Set the various systems into operation and demonstrate to the Owner and Engineer that the systems function properly and that the requirements of the Contract are fulfilled.
- B. Provide the Owner's representatives with detailed explanations of operation and maintenance of equipment and systems. For each piece of fire suppression equipment and for systems, where designated in other sections of Division 21, the respective equipment manufacturer shall provide a qualified representative to demonstrate the operation, maintenance and service requirements of the equipment and/or system. A thorough review of the operating and maintenance manuals shall be included in these instructional meetings. At the completion of the demonstration present a demonstration certificate to the Owner for signature. A copy of the certificate shall be sent to Engineer.
- C. O&M manuals shall be submitted, reviewed and approved prior to scheduling of demonstrations.

END OF SECTION

PART 1 - GENERAL

- 1.1 The Engineer, at their sole discretion and without obligation, makes graphic portions of the contract documents available for use by the contractor in electronic format. These electronic files are proprietary, and remain the Engineer's Instruments of Service and shall be for use solely with respect to this project, as provided in the Standard Form of Agreement between Owner and Engineer.
- 1.2 Electronic files shall be released only after bids have been received for the project and contracts have been signed with the contractors.
- 1.3 The contractor shall acknowledge receipt of electronic files in the requested format for this project. The electronic files are provided as a convenience to the User, for use in preparing shop drawings and/or coordination drawings related to the construction of only the project identified in the Agreement. The electronic files and the information contained within are the property of the Engineer and/or the Architect and/or the Owner, and may not be reproduced or used in any format except in conjunction with the project identified in the Agreement.
- 1.4 The User acknowledges that the information provided in the electronic files is not a substitution or replacement for the Contract Documents and does not become a Contract Document. The User acknowledges that neither the Engineer, the Architect, the Consultants, the Client or the Owner make any warrant or representation that the information contained in the electronic files reflect the Contract Documents in their entirety. The User assumes full responsibility in the use of the electronic files, including the responsibility to see that all manual modifications, addenda, bulletins, clarifications and Change Orders to the drawings executed as a part of the Contract Documents have been incorporated.
- 1.5 The User acknowledges that the receipt of electronic files in no way relieves the User from the responsibility for the preparation of shop drawings or other schedules as set forth in the Contract between the Contractor and the Owner.
- 1.6 Electronic files are available in a .DWG or .RVT format as indicated in the Agreement and Waiver Form. A sample of the format will be provided by the Engineer upon request by the contractor, for the purpose of testing the compatibility of the format to the contractor's systems.
- 1.7 All drawings will be in an AutoCAD file format, when requested to be .DWG format.
- 1.8 All project models will be furnished without views.
- 1.9 All electronic files shall be stripped of the Project's name and address, the Engineer's and any consultant's name and address, and any professional licenses indicated on the contract documents, (and all dimensions, verbiage, and statistical information). Use of these electronic files is solely at the contractor's risk, and shall in no way alter the contractor's Contract for Construction.
- 1.10 The User agrees to indemnify, hold harmless and defend the Engineer, the Architect, the Consultants, the Owner, the Client and any of their agents from any litigation resulting from the use of (by any means of reproduction or electronic media) these files. The Engineer makes no representation regarding fitness for any particular purpose, or suitability for use with any software or hardware, and shall not be responsible or liable for errors, defects, inexactitudes, or anomalies in the data, information, or documents (including drawings and specifications) caused by the Engineer's or its consultant's computer software or hardware defects or errors; the Engineer's or its consultant's electronic or disk transmittal of data, information or documents; or the Engineer's or its consultant's reformatting or automated conversion of data, information or documents electronically or disk transmitted from the Engineer's consultants to the Engineer.
- 1.11 The contractor waives all claims against the Engineer, its employees, officers and consultants for any and all damages, losses, or expenses the contractor incurs from such defects or errors in the

electronic files. Furthermore, the contractor shall indemnify, defend, and hold harmless the Engineer, and its consultants together with their respective employees and officers, harmless from and against any claims, suits, demands, causes of action, losses, damages or expenses (including all attorney's fees and litigation expenses) attributed to errors or defects in data, information or documents, including drawings and specifications, resulting from the contractor's distribution of electronic files to other contractors, persons, or entities.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION

- 3.1 Attached "Agreement" shall be submitted with accompanying payment to the Engineer prior to delivery of electronic files.

END OF SECTION



21 05 02A

ELECTRONIC FILES HEAPY RELEASE FORM TO CONTRACTORS

Project: Greater Columbus Convention Center
South Building Fire Pump Replacement
52-36 E. Nationwide Blvd
Columbus, OH

Owner: Greater Columbus Convention Center

Heapy Engineering Project Number: 2024-07029

Heapy Engineering Project Manager: Kurt Fansler

The Provider, named below, will furnish the Recipient, named below, certain documents prepared by the Provider or its sub consultants in an electronic format. These documents are hereinafter collectively referred to as "Electronic Files". The Electronic Files are instruments of the Provider services performed solely for the Owner's benefit and to be used solely for this Project. The Provider does not represent that the information contained in the Electronic Files are suitable for use on any other project or for any other purpose. If the Electronic Files are used for any other project or purpose without the Provider's specific written permission, the risk of such use shall be assumed solely by the Recipient or other user.

Prior to the use of the Electronic Files the Provider and the Recipient agree to the following terms and conditions:

1. The Provider and Recipient fully understand that the data contained in these electronic files are part of the Provider's Instruments of Service. The Provider shall be deemed the author of the drawings and data, and shall retain all common law, statutory law and other rights, including copyrights.
2. The Recipient confirms their request to the Provider for Electronic Files for the Project listed above, which the Recipient understands are to be provided only in accordance with, and conditioned upon, the terms and conditions of the Agreement and Waiver for Use of Electronic Files).
3. The Provider agrees that the Recipient may use the Electronic Files for the sole purpose of preparing shop drawings and/or coordination drawings for the above Project only. Any Electronic Files provided are strictly for the use of the Recipient in regard to the Project named above, and shall not be utilized for any other purpose or provided by the Recipient to any entity other than its subcontractors for the Project named above.
4. The Recipient acknowledges that the furnishing of Electronic Files in no way relieves the Recipient from the responsibility of shop drawings or other schedules as set forth in the Contract between the Contractor and the Owner.
5. The Recipient acknowledges:
 - a. That the Electronic Files do not contain all of the information of the Bid Documents or Contract Documents for the construction of the Project above.

- b. That information in the Bid Documents or Contract Documents may be revised or modified in the future.
 - c. The Provider does not have, and will not have, any duty or obligation to advise or give notice to the Recipient of any such revisions or modifications.
 - d. That the Recipient agrees that its use of the Electronic Files is at the Recipient's sole risk of liability, and that the Recipient shall make no claim or demand of any kind against the Provider arising out of Recipient's receipt or use of the Electronic Files.
- 6. The Provider makes no representation or warranty of any kind, express or implied, with respect to the Electronic Files and specifically makes no warranty that the Electronic Files shall be merchantable or fit for any particular purpose, or accurate or complete. Furthermore, any description of said Electronic Files shall not be deemed to create an implied or express warranty that such Electronic Files shall conform to said description.
- 7. Due to the unsecured nature of the Electronic Files and the inability of the Provider or the Recipient to establish controls over their use, the Provider assumes no responsibility for any consequences arising out of the use of the data. It is the sole responsibility of the Recipient to check the validity of all information contained within the Electronic Files. The Recipient shall at all times refer to the Construction Documents of the project during all phases of the project. The Recipient shall assume all risks and liabilities resulting from the use of this data, and the Recipient agree(s) to waive any and all claims and liability against the Provider and its sub consultants resulting in any way from the use of the Electronic Files.
- 8. Electronic Files are provided strictly as a courtesy by the Provider solely for the convenience of the Recipient, and are not part of the Bid Documents or Contract Documents for the Project. The Electronic Files do not replace or supplement the paper copies of any drawings, specifications, or other documents included in the Contract Documents for use on the project.
 - a. The Recipient assumes full responsibility in the use of Electronic Files, including the responsibility to see that all manual modifications, addenda, bulletins, clarifications and Change Orders to the drawings executed as a part of the Contract Documents have been incorporated.
- 9. As stated herein, the possibility exists that the Electronic Files provided may differ from the Bid Documents or Contract Documents for construction of the Project. The Provider shall not be responsible, nor be held responsible, for differences between Electronic Files, the Bid Documents, and Contract Documents. The Bid Documents or Contract Documents for the Project may be modified by the Provider at any time, either before or after construction begins. The Provider has no responsibility, either before or after any such modification, to determine or to advise the Recipient whether any such modification causes Electronic Files provided to the Recipient to be out of date, inconsistent with the Bid Documents or Contract Documents, or otherwise unsuitable or unfit for use in any way.
- 10. The Recipient assumes all risk and liability for any losses, damages, claims, or expenses (including defense and attorney fees) resulting from its receipt, use, or possession of Electronic Files furnished by the Provider. The Provider makes no representation, warranty or guarantee that the Electronic Files:
 - a. Are suitable for any other usage or purpose.
 - b. Have any particular durability.
 - c. Will not damage or impair the Recipient's computer or software.
 - d. Contain no errors or mechanical flaws or other discrepancies that may render them unsuitable for the purpose intended by the Recipient.

11. Recipient agrees to indemnify, defend and hold harmless the Provider, agents, employees, and the Owner from, and against, any and all claims, suits, losses, damages or costs, of any kind or nature, including attorney's fees, arising from or by reason of the Recipient's use of Electronic Files provided by the Provider, and such defense and indemnification obligation duties shall survive any use under this Agreement and Waiver for Use of Electronic Files.
12. The Recipient agrees that the Provider shall have no responsibility whatsoever for problems of any nature arising from transmitting and storing electronic files at a Recipient requested FTP or project management site or the conversion of the Electronic Files by the Recipient or others for use in non-native applications. The Provider will not provide Electronic Files in compressed formats. Recipient agrees to accept the files in the format provided by the Provider, and that Recipient's conversion or electronic file storage at the Recipient's requested site, shall be at Recipient's sole risk.
13. Recipient acknowledges:
- a. That the Electronic Files provided by the Provider are a graphical representation of the building in order to generate two-dimensional industry standard drawings.
 - b. That the data contained in the Electronic Files may not be 100% accurate and should not be used for dimensional control, building layout, shop drawings, or any other similar purpose
 - c. That any schedule of materials produced directly from the Electronic Files has not been checked for accuracy.
 - d. That the information in the Electronic Files should be used only for comparative purposes and shall not be relied upon for accurate quantity estimates or used in establishing pricing.
14. Electronic Files provided by the Provider will only contain elements and content that the Provider deems necessary and appropriate to share. No specific Level of Development (LOD) is implied or expected. The Recipient agrees that no proprietary content, MvParts or Revit Families or any other AutoCAD MEP or Revit MEP content shall be removed from the model and/or used for any other purpose but to support this specific project.
15. The Provider, at its sole discretion, may modify the Electronic files before they are provided to the Recipient. Such modifications may include, but are not necessarily limited to, removal of certain information. The Provider, at its sole discretion, may refuse to provide some or all Electronic Files requested by Recipient.
16. The availability of Electronic Files that were not prepared by the Provider is subject to the consent of the Owner or consultant that prepared those Electronic Files. The Provider will not negotiate with the Owner or consultant or repeatedly solicit the Owner or consultant to obtain such consent. Neither this Agreement and Waiver for Use of Electronic Files nor any such separate Consultant's consent may be assigned or transferred by Recipient to any other person or entity.

Provider (Name of Company): _____

Recipient (Name of Company): _____

Name of authorized Recipient Representative: _____

Title of authorized Recipient Representative: _____

E-mail address of authorized Recipient Representative: _____

Signature of authorized Recipient Representative: _____

Date: _____

NOTE: Select requested Electronic File Format, File Transfer Medium and complete applicable Summary.

A. Electronic File Format (select one):

1. ☐ .DWG Format - List of Drawings Requested: _____

2. ☐ Revit Project Model Requested (Model only, no Views included)

B. File Transfer Medium (select one):

☐ Heapy FTP ☐ User's FTP site

C. Delivery of Electronic Files Summary:

Available Electronic .DWG file format:

☐ 2024 DWG

If a different file version is required than the indicated available version state the requested version:

_____ .DWG

Available electronic Revit file format:

☐ 2024 .RVT

PART 1 - GENERAL

1.1 Construction Water

- A. Refer to Division 01 - General Requirements, for information regarding construction water.
- B. Each Contractor requiring water for construction purposes shall connect to wall hydrants or other connection points within the existing building.

1.2 Continuity of Services

- A. Work shall be so planned and executed as to provide reasonably continuous service of existing systems throughout the construction period. Where necessary to disrupt services for short periods of time for connection, alteration or switch-over, the Owner Engineer shall be notified in advance and outages scheduled at the Owner's reasonable convenience.
- B. Submit, on request, a written step-by-step sequence of operations proposed to accomplish the work. The outline must include tentative dates, times of day for disruption, downtime and restoration of services. Submit the outline sufficiently in advance of the proposed work to allow the Architect or Engineer and Engineer to review the information with the Owner. Upon approval, final planning and the work shall be done in close coordination with the Owner..
- C. Shutdown of systems and work undertaken during shutdown shall be bid as being done outside of normal working hours.

PART 2 - EXECUTION

3.1 Workmanship

- A. Materials and equipment shall be installed and supported in a first-class and workmanlike manner by mechanics skilled in their particular trades. Workmanship shall be first-class in all respects, and the Architect and Engineer shall have the right to stop the work if highest quality workmanship is not maintained.
- B. Fire Suppression work shall be performed by Contractors that are fully certified by the State or Authority Having Jurisdiction.

3.2 Protection

- A. Each Contractor shall be entirely responsible for all material and equipment furnished in connection with their work. Special care shall be taken to properly protect all parts thereof from theft, damage or deterioration during the entire construction period in such a manner as may be necessary, or as directed by the Owner / Engineer. All piping shall be elevated from grade for on-site storage, and all open ends shall be covered. Plastic piping shall be protected from direct and indirect sunlight.
- B. The Owner's property and the property of other contractors shall be scrupulously respected at all times. Provide drop cloths and visqueen or similar barriers where dust and debris is generated, to protect adjacent areas.

3.3 Cutting and Patching

- A. Refer to Division 01 - General Requirements for information regarding cutting and patching.

- B. Plan the work well ahead of the general construction. Where pipes are to pass thru new walls, partitions, floors, roof or ceilings, place sleeves in these elements or arrange for the provision of openings where sleeves are not practical. Where sleeves or openings have not been installed, cut holes and patch as required for the installation of this work. Any damage caused to the building shall be repaired or rectified.
- C. Where pipes are to pass thru, above or behind existing walls, partitions, floors, roof or ceiling, cutting, patching and refinishing of same shall be provided. Core drilling and saw cutting shall be utilized where practical. Contractor to examine where floors and walls, etc. are to be cut for presence of existing utilities.
- D. When cutting or core-drilling floor verify location of existing electrical, plumbing or steel reinforcement. Use X-ray method to verify existence of obstructions. Either re-route existing system brace floor or alter location of new work to maintain existing system.
- E. All sleeves and openings not used or partially used shall be closed to prevent passage of smoke and fire.
- F. All materials, methods and procedures used in patching and refinishing shall be in accordance with applicable provisions of specifications governing the various trades, and shall be completed by skilled workmen normally engaged in these trades. The final appearance and integrity of the patched and refinished areas must meet the approval of the Engineer. Wall, floor and ceiling refinishing must extend to logical termination lines (entire ceiling of the room repainted, for instance), if an acceptable appearance cannot be attained by finishing a partial area.

3.4 Removals, Alterations and Reuse

- A. Refer to the project documents for the scope of remodeling in the existing building.
- B. Cooperate with the Owner and Engineer regarding all removal and remodeling work. Unless otherwise noted, remove all existing work which is associated with Division 21 and which will be superfluous when the new work is installed and made operational.
- C. Extraneous piping which is or becomes accessible shall be removed and stubs shall be capped at the first active pipe encountered. Piping that is and remains inaccessible shall be disconnected from active systems and abandoned. Ends of abandoned pipe shall be capped so as to be concealed by finished surfaces. Upon completion of the work no abandoned pipe, valve or stub shall extend thru finished floors, walls or ceilings.
- D. When it is necessary to reroute a section of active piping the rerouted section shall be installed before removing the existing in order to minimize system down time.
- E. Materials and equipment which are removed shall not be reused within the scope of this project unless specifically noted to be relocated or reused. Turn over to the Owner and place where directed on the premises all removed material and equipment so designated by the Owner. All material and equipment not claimed by the Owner shall become the property of the Contractor responsible for removal and shall be removed from the premises.
- F. Remove, store and reinstall lay-in ceiling tile and grid as needed to perform work in areas where such removal and re-installation is not to be done by the General Contractor. Damaged tile and/or grid shall be replaced with new matching tile and/or grid.
- G. In areas of minor work where the space is not completely vacated, temporarily move portable equipment and furnishings within the space as required to complete the work. Coordinate this activity with the Owner / Engineer. Protect the Owner's property by providing dust covers and temporary plastic film barriers to contain dust. Remove barriers and return equipment and furniture upon completion of the work.

- H. Refinish any surface disturbed under this work to match existing, except where refinishing of that surface is included under the General Contract.

3.5 Painting

- A. In addition to any painting specified for various individual items of equipment, provide the following painting:
 - 1. Ferrous metal which is not factory or shop painted or galvanized and which remains exposed to view in the building including finished areas, mechanical rooms, storage rooms, and other unfinished areas shall be given a prime coat of paint and two finish coats of paint.
 - 2. Ferrous metal installed outside the building which is not factory or shop painted or galvanized shall be given a prime coat of paint and two finish coats of paint.
 - 3. Equipment and materials, except sprinklers, which have been factory or shop coated (prime or finished painted or galvanized), on which the finish has been damaged or has deteriorated, shall be cleaned and refinished equal to its original condition. The entire surface shall be repainted if a uniform appearance cannot be accomplished by touch up. Sprinklers and sprinkler assemblies shall be replaced with new.
 - 4. Apply Z.R.C. Galviline cold galvanizing compound, or approved equal, for touch-up and repair of previously galvanized surfaces.
- B. Paint, surface preparation and application shall conform to the paint manufacturer's instructions. All rust must be removed before application of paint.

END OF SECTION

PART 1 - GENERAL

- 1.1 Firestopping assemblies shall be provided at penetrations of piping thru fire rated floors, fire rated floor-ceiling and roof ceiling assemblies, fire rated walls and partitions and fire rated shaft walls and partitions. In addition, firestopping assemblies shall be provided at penetrations thru 0-hour rated floors. Refer to the drawings for fire rated building elements and pipe layouts.
- 1.2 Firestopping assemblies shall be tested and rated in accordance with ASTM E814, E119 and listed in accordance with UL 1479, as published in the UL Fire Resistance Directory. Firestopping shall provide a fire rating equal to that of the construction being penetrated.
- 1.3 Firestopping materials, assemblies and installation shall conform to requirements of the OBC Chapter 1, and Chapter 7, and the Authority Having Jurisdiction.
- 1.4 For those firestopping applications that exist for which no UL tested system is available through any manufacturer, a manufacturer's engineering judgment derived from similar UL system designs or other tests will be submitted to local authorities having jurisdiction for their review and approval prior to installation. Engineer judgment drawings must follow requirements set forth by the International Firestop Council.
- 1.5 Shop drawings shall be prepared and submitted for review and approval. Submittals shall include manufacturer's specifications and technical data of each material, documentation of UL firestopping assemblies and installation instructions. Submittals shall include all information required in the OBC Chapter 1 and Chapter 7.

PART 2 - PRODUCTS

- 2.1 Firestopping materials shall be manufactured and/or supplied by Hilti, 3M, Tremco, or Specified Technologies Inc (STI).
- 2.2 Materials shall be in the form of caulk, putty, sealant, intumescent material, wrap strip, fire blocking, ceramic wool and other materials required for the UL listed assemblies. These shall be installed in conjunction with sleeves and materials for fill and damming.
- 2.3 Combination pre-set floor sleeve and firestopping assemblies shall be equal to Hilti CP 680.

PART 3 - EXECUTION

- 3.1 Installation of all materials and assemblies shall be in accordance with UL assembly drawings and the manufacturer's instructions.
- 3.2 Installation shall be done by an experienced installer who is certified, licensed or otherwise qualified by the firestopping manufacturer as having the necessary training and experience.
- 3.3 Refer to 21 05 07 Piping Materials and Methods for Fire Suppression for pipe sleeve requirements and treatment of penetrations not requiring firestopping.

END OF SECTION

PART 1 - GENERAL

- 1.1 Piping materials and methods for piping common to Division 21 – Fire Suppression shall be as specified herein and as shown on the drawings.
- 1.2 Included in this section are:
 - A. Pipe, fittings and joining methods.
 - B. Unions and flanges.
 - C. Pipe sleeves, openings, curbing and escutcheons.
 - D. Installation methods of piping.
- 1.3 Refer to other Sections in Division 21 for selection of piping materials for the various services. Piping materials and installation methods peculiar to certain individual systems are specified in Sections related to those systems.
- 1.4 Refer to Section 21 05 05 Firestopping for firestopping requirements.
- 1.5 Welders shall be qualified and fully certified in accordance with ASME Boiler and Pressure Vessel Code, Section IX, Welding and Brazing Qualifications.
- 1.6 Welding procedures, testing and welder performance shall comply with The American Welding Society Welding Handbook, AWS B2.1, Specification for Welding Procedure and Performance Qualification and National Welding Institute.
- 1.7 Pipe threads shall be cut to ASME B1.20.1, Pipe Threads, General Purpose.
- 1.8 Pipe sleeves, floor and wall openings, water protective curbing and escutcheon plates shall be provided as described below. Pipe sleeves shall be placed in all floor slabs, poured concrete roof decks, walls and partitions, except as noted below, to allow new piping to pass thru and to allow for expansion, contraction and normal movement of the pipe.
- 1.9 Sleeves are not required:
 - A. For above grade uninsulated pipe passing thru masonry walls and partitions and stud and gypsum board or plaster walls and partitions.
 - B. In core drilled openings in solid concrete not requiring water protection. Sleeves are required, however, at core drilling thru hollow pre-cast slabs and concrete block walls, to facilitate containment of required firestopping material.
 - C. In large floor openings for multiple pipe risers which are within a fire rated shaft, unless the opening is to be closed off with concrete or other material after pipes are set.
- 1.10 Where pipes penetrate walls and floors other than those required to be fire rated, the annular space between the sleeve, core drilling or opening and the pipe or pipe insulation shall be closed to retard the passage of smoke.

PART 2 - PRODUCTS

- 2.1 For detail of pipe and fitting products see Section 21 13 12 Fire Suppression Piping.

2.2 Unions and flanges shall be:

- A. Unions on copper tubing, all bronze construction 150 lb., solder ends.
- B. Unions on steel pipe 2 inches and smaller, malleable iron with ground seat, bronze to steel, 300 lbs., screwed ends.
- C. Flanges on steel pipe with welded or screwed joints, 2.5 inches and larger. Gaskets shall be 0.0625 inches thickness, ASME B16.21, full face compressed sheet suitable for temperature and pressure ranges of the application.
- D. Mechanical joints associated with grooved end pipe are acceptable in lieu of unions and flanges.

2.3 Pipe sleeves shall be:

- A. 26 gauge galvanized sheet steel or Schedule 40 black steel pipe in other than poured concrete.

PART 3 - EXECUTION

- 3.1 Pipe and tubing shall be cut and fabricated to field measurements and run parallel to normal building lines. Pipe ends shall be cut square and ends reamed to remove burrs. The pipe interior shall be cleaned of foreign matter before erection of the pipe.
- 3.2 Piping shall be installed consistent with good piping practice, run concealed wherever possible and located as to be protected from damage by freezing. Coordinate with other trades to attain a workmanlike installation.
- 3.3 Piping shall be supported as specified in Section 21 05 29 Hangers and Supports for Fire Suppression Piping. Piping with mechanical joints for grooved end steel pipe shall be supported in accordance with the manufacturer's recommendations. Pipe alignment in both the horizontal and vertical must be tightly maintained. Misalignment must be corrected to the satisfaction of the Engineer before the system is accepted.
- 3.4 Close open ends of piping during installation to keep interior of the pipe clean.
- 3.5 Piping shall not be run above electrical switchgear or panelboards, nor above the access space in the immediate vicinity of the equipment, in accordance with the N.E.C..
- 3.6 Unions and flanges shall be installed at pipe connections to equipment and as required for erection purposes.
- 3.7 Length of wall sleeves shall be such that the sleeve ends are substantially flush with both sides of the wall or partition.
- 3.8 Refer to 21 05 05 Firestopping. Pipe sleeves which are a part of firestopping assemblies shall conform to the requirements of the assembly with particular emphasis regarding size, annular space, length, passage or non-passage of insulation and the installation of the sleeves.
- 3.9 In lieu of firestopping and where permitted by the OBC, uninsulated metallic pipes requiring no pipe sleeves in passing thru concrete floors or concrete or masonry walls or partitions, the annular space shall be closed full depth of the penetration with materials and methods compatible with the floor, wall or partition material (concrete, grout or mortar) in compliance with ASTM E119 test requirements.

- 3.10 Where firestopping is not required, the annular space between the sleeve, core drilling or opening and the pipe shall be closed with sealant or caulking to retard the passage of noise or smoke. Sealant or caulking shall be applied per the manufacturer's requirements, including opening width limitations, backing materials, sealant or caulking thickness, etc. Sealants and caulking shall be compatible with the materials they are in contact with.

END OF SECTION

PART 1 - GENERAL

- 1.1 Motors, starters, disconnects, devices, fuses, wiring and other electrical work included in Division 21 shall be factory installed or furnished and field installed as specified in the various specification sections and as shown on the drawings.
- 1.2 Equipment and devices shall comply with applicable standards of NEMA and shall be UL listed. All work shall comply with the National Electrical Code (NEC).
- 1.3 Electrical equipment, devices, fuses, wire, conduit and methods shall comply with applicable provisions of Division 26 – Electrical, Division 27 – Communications, and Division 28 - Electronic Safety and Security.
- 1.4 Refer to the project documents and verify adequacy of feeder size, sets of conductors and size, disconnecting means and other electrical requirements. Compare these to the requirements of the equipment to be furnished and report deficiencies and / or discrepancies to the Engineer in the bid period for resolution by addendum.
- 1.5 Equipment control panels containing power control components shall be marked with the minimum SCCR rating. The rating shall not be less than the available fault current. Refer to the Electrical drawings for the calculated available fault at the distribution panel, MCC or panelboard serving the equipment. Include confirmation of being protected from the fault current in the equipment shop drawing submittals.

PART 2 - PRODUCTS

- 2.1 Motors
 - A. General purpose motors shall be induction type NEMA Design "B" with copper windings, Class B or F insulation, and motor enclosure to suit the application. Service factor shall be 1.15 minimum.
 - B. Two-speed motors shall be two-winding type with six leads unless otherwise specified.
 - C. Motors for other than general duty application shall be furnished to suit the application and operating environment.
 - D. Premium efficiency motors shall be equal to Century "E + 3", General Electric "Energy Saver Premium Efficiency", Baldor "Super E Premium Efficient" or Reliance "Premium Energy Efficient" series. Motor efficiencies shall be tested and conform to NEMA Standard Publication MG-1 and IEEE 112 Test Method B.
 - E. Motor sizes shown on the drawings are to be considered minimum. Motors furnished shall be sized so as to not operate in the service factor range. Motors for direct driven pumps shall be selected so as to not operate in the service factor range at any point on the curve.
 - F. Compare, with the equipment suppliers, the electrical power requirements of the intended equipment with power feeders to the equipment shown on the project documents. Verify adequacy and compatibility of voltage, phase, wiring capacity, number and size of conductors (versus equipment connection points), fusing and other information on the project documents to that required for the equipment.
- 2.2 Magnetic starters shall comply with provisions of Division 26 - Electrical specifications and shall be NEMA construction (IEC rated not acceptable) with thermal overload element on each phase, 115 volt control voltage and hand-off-automatic switch, where appropriate. An integral control

transformer shall be incorporated in the starter for each motor of 200 volt and greater. A single control transformer is acceptable for multiple motor packaged equipment, however, when such is the manufacturer's standard. Duplex type units (pumps, compressors, etc.) are not included in this exception. A control transformer shall be provided in each starter to ensure standby operating capability.

- 2.3 Wire and conduit shall comply with applicable provisions of Division 26 - Electrical specifications and Division 28 Electronic Safety and Security. Control wiring lighter than No. 12 AWG is acceptable where lesser ampacity will permit. All power and control wiring shall be overcurrent protected per NEC.

PART 3 - EXECUTION

- 3.1 Motor connections of factory assembled equipment shall be made with flexible conduit except for plug-in electric cord connections.
- 3.2 All power wiring shall be run in conduit. Control wiring shall be run in conduit except where open wiring is specified in the various sections.
- 3.3 Fuses shall be furnished and installed in fuse clips of equipment and switches.

END OF SECTION

PART 1 - GENERAL

- 1.1 All interior and exterior piping shall be supported from the building structure.
- 1.2 All products and assemblies installed within a plenum shall not exceed a maximum flame spread of 25 and a smoke development of 50 as established by UL 723 or ASTM E84 test methods. However, "discrete" combustible components as defined by the mechanical code may be UL 2043 listed in lieu of UL 723 or ASTM E84.

PART 2 - PRODUCTS

- 2.1 Manufacturers listed below are basis of design. Other approved equal manufacturers are B-line, Erico, Mason, PHD and TOLCO.
- 2.2 Hangers and supports for horizontal piping shall be UL listed and/or FM Global approved, and equal to:
 - A. General service – clevis type Anvil Fig. 260.
 - B. Pear shaped band hangers with adjustable swivel ring, lock nut and rod attachment - Anvil Fig. 69.
- 2.3 Hanger rods shall be solid steel, threaded end or all thread rod, of diameter listed below. A hanger attachment device (beam clamps, concrete inserts, etc.) and locking nuts at the hanger attachment shall be provided on each hanger. Locking nuts shall be provided at each clevis, trapeze and swivel ring type hanger.

Pipe Sizes	Min. Rod Dia.
4" and smaller	0.375"
5" to 8"	0.50"

- 2.4 Hanger rod attachment devices for attachment to the structure shall be:
 - A. After-set steel expansion type concrete inserts.
 - B. Beam clamps for steel construction equal to Anvil Fig. 92, 93, 94 or 14.
 - C. Multi-purpose rod hanger for structural purlins equal to Erico Caddy Model #PH, Fig. #2 for pipe sizes up to 3 inches.
- 2.5 Steel spring and neoprene isolators in hanger rods, as required in Part 3, shall be equal to Mason Series 30N except in pipe sizes 6 inches and larger shall be Series PC30N.
- 2.6 Base mounted pipe supports shall be factory or shop prime coat painted or hot-dipped galvanized, equal to Anvil catalog numbers as follows:
 - A. Adjustable pipe saddle support with cast iron saddle, locknut nipple and cast iron reducer. Fig. 264. Provide pipe stanchion and base plate.
 - B. Adjustable pipe saddle support with cast iron saddle, steel yoke and nuts, steel locknut nipple and cast iron reducer – Fig. 265. Provide pipe stanchion and base plate.
- 2.7 Pipe riser supports shall be as follows:

- A. Riser clamps on piping – Anvil Fig. 261 except, epoxy coated on copper tubing.

PART 3 - EXECUTION

- 3.1 Spacing of hangers and supports shall be as specified herein and, in addition, spacing and hanging methods in conformance with NFPA Standards when more stringent.
 - A. Steel pipe (vertical) – at the base, at each floor level, and 15 ft. maximum spacing.
 - B. Steel pipe (horizontal) – 12 ft. intervals for piping 1.25 inch size and smaller, 15 ft. spacing for piping 1.5 inches and larger pipe.
- 3.2 In piping systems with rolled or cut groove end pipe and mechanical joint couplings, pipe hangers shall be provided on horizontal piping at normal specified intervals and, in addition, so that no pipe shall be left unsupported between any two couplings nor left unsupported whenever a change in direction takes place. Vertical piping shall be supported at normal specified intervals or every other pipe length, whichever is more frequent. The base of the riser or base fitting shall be supported.
- 3.3 Attachment of pipe hangers to the structure shall be with:
 - A. After-set concrete inserts, in 4 inch minimum depth concrete, set in drilled holes. Powder actuated driven fasteners are not permitted.
 - B. Beam clamps in steel construction. Provide anchoring where clamps are attached to sloping surfaces of beam flanges and where otherwise required to ensure permanent attachment. Attachment to the bar type joists shall be at joist panel points only.
 - C. Attachment to manufactured trusses and other engineered structural members and supports shall be done in strict accordance with the structural manufacturers recommendations. Refer to the architectural and structural drawings for type of engineered structural systems being used. Connections to these structural members shall be made with connection devices and methods approved by the structural manufacturer. Provide additional supports with supplemental steel shapes when spacing between structural members exceeds specified distances.
- 3.4 The first two hangers on piping connecting to both the suction and discharge of motor driven equipment shall be fitted with steel spring and neoprene isolators.
- 3.5 Pipe hangers shall be adjusted to proper elevation, hanger rods set in a vertical position and locking nuts secured before pipe insulation is installed.
- 3.6 Extended legs of pipe riser clamps shall be shortened as needed to maintain concealment of the clamp within the pipe chase. Ensure that adequate support is still maintained.
- 3.7 Hanger and support assemblies which are not factory plated (galvanized or copper) and will remain exposed on completion of the project shall be painted before installation.
- 3.8 Do not bend hanger rod to set in vertical position. Use manufactured hanger rod attachments that swivel to allow the hanger rods to hang vertically, or provide supplemental steel attached to the building structure and standard hanger rod attachments to allow the hanger rods to hang vertically. Refer to the following Manufacturers Standardization Society (MSS) Standard practices on pipe hangers and supports:
 - A. MSS SP-58 on Materials, Design and Manufacturer

END OF SECTION

PART 1 - GENERAL

- 1.1 Equipment shall be supported on concrete bases, roof curbs and structural steel supports as shown on drawings or as specified. All bases, curbs and supports shall be included in the Fire Suppression contracts except as otherwise noted.
- 1.2 All products and assemblies installed within a plenum shall not exceed a maximum flame spread of 25 and a smoke development of 50 as established by UL 723 or ASTM E84 test methods. However, "discrete" combustible components as defined by the mechanical code may be UL 2043 listed in lieu of UL 723 or ASTM D84.

PART 2 - PRODUCTS

- 2.1 Support for equipment shall be by one or more of the following methods:
 - A. Concrete bases and pads with anchor bolts cast in place. Bases shall be formed on all sides and hand troweled to a smooth, dense finish with neatly chamfered corners. Large concrete pads on grade shall be constructed with reinforcing steel or reinforcing roadway mesh.
 - B. Structural steel angles, beams or channels, unistrut type channels or pipe. Supports shall be fabricated into a rigid framework with welded or bolted connections and cross bracing or sway bracing. Supports shall be set on slab with base plates, or attached to the building structure as required. Brackets for relatively lightweight equipment may be attached to the wall. Equipment shall be set on and attached to the framework.
 - C. Concrete inertia bases as specified in 21 05 49 Vibration Control for Fire Suppression
- 2.2 Provide exact dimensions, locations and other detail for the specific equipment installed on concrete bases. Set anchor bolts as required for the equipment.

PART 3 - EXECUTION

- 3.1 Concrete bases shall be in conformance with the requirements of Division 03 – Concrete.

END OF SECTION

PART 1 - GENERAL

- 1.1 Vibration isolators shall be provided at equipment as shown on the drawings and as herein specified.
- 1.2 The supplier of isolation equipment shall study the application, the equipment to be isolated and the structure. The supplier shall assume responsibility to determine optimum deflection characteristics accounting for dynamic and static forces.

PART 2 - PRODUCTS

- 2.1 Following is a description of the various types of isolators, bases and rails required. Catalog designations are those of Mason Industries.

Type C1

Open spring mount with base and mounting plates and neoprene base pad. Series SLFH.

- 2.2 Springs shall have a minimum additional travel to solid equal to 30 percent of the rated deflection.
- 2.3 Vibration isolators installed outside shall be furnished weather-protected with springs PVC coated and other ferrous parts hot dip galvanized or cadmium plated.
- 2.4 Isolators shall be as manufactured by Mason Industries, Kinetics, Amber Booth, Vibration Mounting, Korfund or Vibration Eliminator. All isolators shall be of one manufacturer.

PART 3 - EXECUTION

- 3.1 Manufacturers instructions shall be followed carefully in setting and adjusting vibration isolators. Ensure that no direct hard surface to surface contact exists. Fasten to the building structure as recommended by the isolation supplier.
- 3.2 Where electrical connections are made to equipment mounted on isolators, connections shall be thru flexible conduits.
- 3.3 Refer to Section 21 05 29 Hangers and Supports for Fire Suppression Piping for spring isolator sections in pipe hanger rods.

END OF SECTION

PART 1 - GENERAL

- 1.1 Identification of fire suppression equipment shall consist of equipment labeling, pipe marking and valve tagging as specified hereinafter.
- 1.2 Each item of major equipment shall be labeled. This shall include fire pumps, tanks and other similar equipment.
- 1.3 Pipe markings shall be applied to all piping.
- 1.4 Each shutoff valve, other than at equipment, shall be identified with a stamped tag. Valves and tagging shall be scheduled typewritten on 8.50 inch x 11 inch paper, tabulating valve number, piping system, system abbreviation, location of valve (room or area) and service (e.g. - South wing Zone 1).
- 1.5 Labels, tags and markers shall comply with ANSI A13.1 for lettering size, colors and length of color field.
- 1.6 Equipment and device identification specified in other sections shall be provided as a part of those requirements.
- 1.7 Coordinate pipe markings and valve tags to ensure similar markings.

PART 2 - PRODUCTS

- 2.1 Equipment labeling shall be either, or a mix, of the following:
 - A. Permanently attached engraved brass or plastic laminated signs with 1 inch high lettering. Signs on exterior equipment shall be brass.
 - B. Stencil painted identification, 2 inch high letters, with standard fiberboard stencils and standard black (or other appropriate color) exterior stencil enamel.
- 2.2 Pipe markings shall be:
 - A. Plastic semi-rigid snap-on type, manufacturer's standard pre-printed color coded pipe markers extending fully around the pipe or pressure-sensitive vinyl markers similar to the above.
 - B. On piping 6 inches and greater diameter, full band as specified above or strip-type markers fastened to the pipe with laminated or bonded application or by color-coded plastic tape not less than 1.50 inches wide, full circle at both ends of the marker.
 - C. Arrows for direction of flow provided integral with the pipe marker or separate at each marker.
- 2.3 Valve tags shall be polished brass or plastic laminate with solid brass S hook. Tags shall be engraved with "F" (for fire suppression) and the designated number.
- 2.4 Labels, markings and tags shall be manufactured by W.H. Brady, Seton, Allen, Kolbi, MSI or Industrial Safety Supply.

PART 3 - EXECUTION

- 3.1 Identification labeling, marking and tagging shall be applied after painting has been completed.

- 3.2 Coordinate names, abbreviations and other designations used in Division 21 identification work, with corresponding designations shown, specified or scheduled on drawings.
- 3.3 Equipment labeling shall consist of unit designation as shown on the drawings.
- 3.4 Pipe markers shall be placed:
 - A. At each piece of equipment.
 - B. At 25 ft. centers in mechanical rooms and concealed spaces.
 - C. At 50 ft. centers in other exposed locations.
 - D. On mains at each branch take-off.
 - E. At least once in each room.
- 3.5 Refer to appropriate sections of this specification for installation of underground line marker tape.
- 3.6 Valve tags shall be placed on each valve except those intended for isolation of individual items of equipment. Valve tag schedules shall be prepared as specified above. Copies of one set of schedules shall be framed under glass or plastic / laminated in clear plastic and placed where directed by the Owner. Other sets shall be included in the Operating and Maintenance Manuals.

END OF SECTION

PART 1 - GENERAL

- 1.1 Piping, valves and devices for the fire suppression system shall be provided as shown on the drawings, as specified and as required for a complete system.
- 1.2 Piping and associated devices and materials shall conform to provisions of Section 21 05 07 Piping Materials and Methods for Fire Suppression, Section 21 05 29 Hangers and Supports for Fire Suppression Piping and as specified in this and other Fire Suppression sections.
- 1.3 Pipe, fittings and joints shall conform to specifications and standards references of NFPA 13 Standard for the Installation of Sprinkler Systems and NFPA 14 Standard for the Installation of Standpipe and Hose Systems.
- 1.4 Fire suppression system materials and components shall be UL listed for fire suppression service. Piping, fittings, valves and system components shall be rated at not less than 175 psi or greater so that system pressures do not exceed working pressure ratings.
- 1.5 Welding in place will be permitted only if written approval is obtained from the authority having jurisdiction. Welders and welding procedures in both the shop and in the field shall conform to AWS B2.1, Specification for Qualification of Welding Procedures and Welders for Piping and Tubing. Welding of galvanized piping is prohibited.

PART 2 - PRODUCTS

- 2.1 Pipe, fittings and joining methods shall be:
 - A. TYPE F1 - Wet Pipe System
Pipe - Schedule 40 black steel, ASTM A53, Type E or F, or ASTM A135. Fittings and joints - malleable or cast iron screwed type or flanged.
 - B. TYPE F2 - Wet Pipe System
Pipe - Schedule 40 black steel, ASTM A53, Type E or F, or ASTM A135, with mechanically rolled or cut groove ends.
Fittings and joints – grooved-end joint with malleable or ductile iron body, ASTM A-536 or A-47 and nitrile or EPDM gaskets. Victaulic "Firelock" Style 005 or 009 rigid, Victaulic IGS or equal by AnvilStar "Gruvlok", Tyco/Grinnell or Shurjoint; Aalberts - IPS. All fittings and couplings shall be of the same manufacturer.
- 2.2 Grooved-end coupling specialty fittings and accessories such as ANSI class flange adaptors, reducing couplings and combination outlet-couplings that utilize grooved-end joining with torsion nuts and bolts shall be permitted. Other couplings and accessories, such as boltless couplings, and hole-cut mechanical – t outlets, strapless outlets and similar fittings using pipe-surface seals shall not be permitted unless specifically approved by the Engineer.
- 2.3 Valves on the interior piping of the fire suppression systems shall be UL listed or/and FM approved for fire suppression application. Valves shall be manufactured by Nibco, whose catalog numbers are listed below, or equal by Kennedy, Hammond, Watts.
 - A. Butterfly Valves.

Type A4. 2 inches and larger.
Nibco LD3510-8, 250 psi w.w.p.(dead-end service), ductile or cast iron tapped lug body, nickel plated ductile iron disc, molded in EPDM seat, 416 S.S. stem, worm-gear operator with handwheel and indicator. Valves with integral supervisory switches are acceptable if supervisory mechanism is UL listed.

B. Ball Valves.

Type B7. 2 inches and smaller.

Nibco KT-505-W-8, 300 psi w.w.p. two-piece bronze body, screwed ends, chrome plated brass ball, bronze stem, full port, TFE seat and seal. Gear box operator with handwheel and indicator. Valves with integral supervisory switches are acceptable if supervisory mechanism is UL listed.

Type B8. 1" and smaller, for trim and drain use only.

Nibco KT-580-70-UL, 300 psi w.w.p., two-piece bronze body, screwed ends, chrome plated brass ball, bronze stem, full port, TFE seat and seal, handle.

Type B9. 1.25" to 2", for trim and drain use only.

Nibco KT-580-70-UL, 300 psi w.w.p., two piece bronze body, screwed ends, chrome plated brass base, bronze stem, standard port, TFE seat and seal, handle.

C. Check Valves.

Type C10. 2 inches and smaller.

Nibco KT-403-W, 200 psi w.w.p., swing check, bronze body, threaded bonnet, Buna-N faced disc.

Type C11. 2.50 inches and larger.

Nibco F-908-W, 175 psi w.w.p., swing check, cast iron body and bonnet, bronze mounted, renewable seat and disc, flanged ends, rubber faced disc, drilled and tapped ball drip boss with plug.

Type C12. 2.50 inches and larger.

Nibco KW-900-W, 250 psi w.w.p., ductile iron body, wafer style, bronze disc, molded Buna-N resilient seat, stainless steel spring and pins.

D. Gate Valves.

Type D8. 2 inches and smaller.

Nibco T-104-0, 175 psi, w.w.p., bronze body, bronze trim, O.S.&Y. pattern, threaded ends, solid wedge disc, hand wheel.

Type D9. 2.50 inches and larger.

Nibco F-607-OTS, 175 psi w.w.p., cast iron body, bronze seat and rings, O.S.&Y. pattern, flanged ends, solid wedge, hand wheel.

Type D10. 2.50 inches and larger.

Nibco F-697-0, 300 psi w.w.p, cast iron body, bronze seat and rings. O.S.&Y. pattern, Class 250 flanged ends, solid wedge, wheel handle.

E. Angle Valve

Type G1. 1.25 inches to 2 inches, for trim and drain only.

NIBCO T-301-W, 175 psi w.w.p., bronze body, bronze stem and seat, renewable nitrile seat, screw-in bonnet, hand-wheel.

2.4 Valves of equal construction and features as those listed above, and with ends compatible with grooved-end pipe mechanical joint couplings are acceptable on such systems, and shall be manufactured by the coupling system manufacturer used on this project.

2.5 Valves where designated as supervised type shall be suitable for mounting of an electrical supervisory switch to monitor the valve position, open or closed.

- 2.6 Unions, flanges, pipe sleeves and firestopping shall be as described in Section 21 05 07 Piping Materials and Methods for Fire Suppression and Section 21 05 05 Firestopping.
- 2.7 Pipe hangers and supports shall be UL listed or FM approved and shall be as described in Section 21 05 29 Hangers and Supports for Fire Suppression Piping.
- 2.8 Supervisory attachments shall be UL listed and approved for fire alarm signaling use. Devices shall contain one Form "C" signal contact having 120 VAC, 7.5 amps minimum rating and shall be compatible with the type valve on which it is to be installed.

PART 3 - EXECUTION

- 3.1 Installation of piping, valves, hangers, sleeves and other components shall conform to NFPA 13 for sprinkler systems, NFPA 14 for standpipe and hose systems, Section 21 05 07 Piping Materials and Methods for Fire Suppression, and Section 21 05 29 Hangers and Supports for Fire Suppression Piping.
- 3.2 Supervisory switches for valves shall be furnished and installed. Make all final adjustments.
- 3.3 Grooved-end joint type couplings shall be installed in strict conformance with manufacturer's recommendations, including torquing of coupling bolts to recommended levels. Include only if acceptable, or acceptable as an alternate, in Sections 21 13 13A and 21 13 13B.

END OF SECTION

PART 1 - GENERAL

- 1.1 The contractor shall provide and install a packaged fire pump system. The fire pump shall be listed by Underwriters Laboratories and/or approved by Factory Mutual for fire pump service at the specified rating. The fire pump manufacturer will assume unit responsibility for the proper operation of the entire packaged system as specified herein.
- 1.2 The entire fire pump assembly and the installation shall conform to applicable standards set forth in NFPA 20 and local and state requirements. All components shall be UL listed and/or FM approved and must be acceptable to the authority having jurisdiction and the Owner's insurer.
- 1.3 Control wiring shall conform to the applicable portions of Division 26, 27 and 28. All control wiring shall be the responsibility of the Fire Suppression Contractor.

PART 2 - PRODUCTS

2.1 Fire Pump

- A. The fire pump shall be of the (double suction) design and shall be UL listed and/or FM approved. The pump will be designed to operate at a maximum of 1750 RPM and will provide a rated capacity of 1000 GPM at a differential pressure of 100 psi. At 150 percent of the rated capacity it shall develop at least 65 percent of its rated head and shall not exceed 120 percent of the rated head at zero capacity. The pump shall be manufactured by Peerless or equal by Patterson or Aurora.
- B. Fire pump fittings shall include automatic air release valve, suction and discharge gauges, a main relief valve with enclosed waste cone.

2.2 Diesel Engine

- A. The fire pump will be driven by diesel engine that is specifically listed by Underwriters Laboratories and approved by Factory Mutual for fire pump service. Engine horsepower shall be derated for elevation and temperature as required by NFPA 20. The engine shall have sufficient horsepower to operate the fire pump under any condition of pump load. Engine to be manufactured by Clark or equal.
- B. A UL and FM approved automatic diesel engine controller shall be provided. Controller shall provide automatic starting and manual shutdown. The controller will be completely assembled, wired and tested prior to shipment from the factory. Controller shall be by Firetrol, Cutler-Hammer, Metron, Joslyn-Clark, Master, or Torna Tech.equal. The following alarms shall be provided:
 - 1. Critically low oil pressure.
 - 2. Failure of engine to start automatically.
 - 3. High and low engine jacket coolant temperature.
 - 4. Shutdown from overspeed.
 - 5. Low water flow.
 - 6. High water temperature
 - 7. Battery failure.
 - 8. Battery charger failure.
 - 9. Low coolant level.
 - 10. Low oil level.
 - 11. Pump room temperature low.
 - 12. Low fuel.

- C. Engine fittings shall include a 119 gallon fuel tank, dual lead acid type starting batteries, flexible exhaust connectors with a high grade (residential) muffler for remote installation.

2.3 Jockey Pump

- A. The jockey pump shall be a rear pull-out horizontal centrifugal type, close coupled to an ODP motor. Refer to drawings for motor characteristics. Jockey pump shall be as manufactured by Grundfos, Peerless, Aurora, ITT-AC Allis-Chalmers, Armstrong or approved equal.
- B. The jockey pump controller will be furnished with a fusible disconnect, prepiped mercoird pressure switch, front mounted HAND-OFF-AUTO selector switch, run timer, control transforms and overload relays, all mounted in a rugged NEMA #1 enclosure. The jockey pump controller shall be as manufactured by Firetrol, Cutler-Hammer, Metron, Joslyn-Clark, Master, or Torna Tech.

2.4 Accessories

- A. Necessary piping including but not limited to:
 - 1. System connection.
 - 2. FM Global approved low suction pressure sustaining valve, with sensing line to suction side of pump.
 - 3. Pump by-pass line.
 - 4. Pump test connection piping.
 - 5. Jockey pump piping.
 - 6. Check valves as required for system and by-pass.
 - 7. Supervised OS&Y suction control valve.
 - 8. Butterfly valves for by-pass and system regulation.
 - 9. Pressure sensing lines to each pump controller and low suction pressure sustaining valve.
 - 10. Fuel oil piping.
 - 11. Pressure relief valve line with waste cone.
 - 12. Drain piping for stuffing boxes and casing relief valve.
- B. Piping and valves shall comply with applicable provisions of 21 13 12 Fire Suppression Piping. All piping shall be hydrostatically tested by pump manufacturer prior to shipment.
- C. Provide a 115V. power distribution system to accept the incoming feeder and distribute power to:
 - 1. Engine Controller
 - 2. Engine Jacket Water Heater
- D. Valves shall be supervised. Supervisory attachments shall be UL listed and approved for fire alarm signaling use. Devices shall contain one Form "C" signal contact having 120 VAC, 7.5 amps minimum rating and shall be compatible with valve type it is being installed on.
- E. Provide dry contacts for remote alarming of the following:
 - 1. Pump / Engine running.
 - 2. Controller main switch in off or manual position.
 - 3. Trouble on the controller or engine.
 - 4. Low pump room temperature.
 - 5. Low fuel level.
- F. Warranty

The manufacturer of the pump house must be I.S.O. 9001 certified and construction must meet local seismic requirements. The complete fire pump and house assembly shall be manufactured at the fire pump manufacturer's factory and completely warranted in writing. Warranty time shall be (1) one-year from start-up or 18 months from date of shipment. Warranty shall extend to material and workmanship of the complete system. To ensure complete single unit responsibility, the package system shall not be manufactured by any other than one of the listed fire pump manufacturers.

- G. All of the above equipment, except the hose valves and muffler, shall be mounted on a fabricated structural steel base. All piping, pressure sensing lines, bypass with check valve, and shut-off valves, as well as approved suction and discharge valves shall be firmly anchored to the house base by means of structural steel supports. All electrical wiring shall be completed and tested at the factory. The entire package shall require one power connection by the Electrical Contractor.

PART 3 - EXECUTION

3.1 Factory Test

- A. All equipment shall be factory tested in accordance with the requirements of NFPA UL and FM. Additionally, the entire package system shall be hydrostatically tested at the factory prior to shipment.

3.2 Start-Up

- A. The fire pump manufacturer shall provide a factory engineer, engine technician and control panel technician to provide one (1) day start-up of the complete system, to ensure ample time to make corrections and/or repairs. The start-up must be performed at least (10) ten working days before the acceptance test. Start-up will consist of but not limited to the following:
 - 1. Start-up and run of fire pump,
 - 2. Flow the fire pump at 100 percent and 150 percent capacity,
 - 3. Check all electrical devices,
 - 4. Provide a start-up report to the contractor, within 48 hours from start-up date for review and corrections if needed.

3.3 Acceptance Test

- A. The fire pump manufacturer shall provide the same factory engineer, engine technician and control panel technician along with the fire pump representative to conduct the fire pump acceptance flow test. The flow test will be conducted as per NFPA #20; and as directed by the Underwriters, State and Local Authorities. The fire pump representative must be state certified. The fire pump representative shall provide all the necessary test equipment including hoses and play pipes. Six (6) sets of test reports shall be submitted to the Contractor no later than 24 hours from start-up date.

The Engineer shall be notified at least 72 hours in advance of the scheduled start-up and scheduled pump test so that test may be observed by the Owner or their representative. A copy of the test record shall be provided to the Owner and the Engineer.

END OF SECTION

DIVISION 26 - ELECTRICAL INDEX
GCCC FIRE PUMP REPLACEMENT

HEAPY
MEP Engineer
Dayton, Ohio Project No. 2024-07029

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NOVEMBER, 2024

26 05 01 BASIC ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.1 Special Note

- A. All provisions of the Bidding Requirements, General Conditions and Supplementary Conditions, including Division 00 and Division 01, apply to work specified in this Division.
- B. The scope of the Division 26 work includes furnishing, installing, testing and warranty of all Division 26, 28 work and complete systems as shown on the Division 26, 28 drawings and as specified in Division 26, 28 and elsewhere in the project documents.
- C. Understanding that the contractors for various Divisions are sub-contractors to the Prime Contractor assignments of work by division are not intended to restrict the Prime Contractor in assignment of work among the contractors to accommodate trade agreements and practices or the normal conduct of the construction work. If there is a conflict of assigned work between Divisions 02 thru 33 and Divisions 00 and 01, Divisions 00 and 01 shall take precedence.

1.2 Permits and Regulations

- A. Include payment of all permit and inspection fees applicable to the work in this Division. Furnish for the Owner certificates of approval from the governing inspection agencies, as a condition for final payment.
- B. Work must conform to the National Electrical Code, National Electrical Safety Code and other applicable local, state and federal laws, ordinances and regulations. Where drawings or specifications exceed code requirements, the drawings and specifications shall govern. Install no work contrary to minimum legal standards.
- C. All electrical work shall be inspected and approved by the local jurisdictional authority.

1.3 Inspection of Site

- A. Inspect the project site and the premises of the existing building. Conditions shall be compared with information shown on the drawings. Report immediately to the Engineer Prime Contractor any significant discrepancies which may be discovered. After the contract is signed, no allowance will be made for failure to have made a thorough inspection.

1.4 Drawings and Specifications

- A. The drawings indicate the general arrangement of the work and are to be followed insofar as possible. The word "provide", as used, shall mean "furnish and install". If significant deviations from the layout are necessitated by field conditions, detailed layouts of the proposed departures shall be submitted to the Engineer for approval before proceeding with the work.
- B. Make all necessary field measurements to ensure correct fitting. Coordinate work with all other trades in such a manner as to cause a minimum of conflict or delay.
- C. The drawings and specifications shall be carefully studied during the course of bidding and construction. Any errors, omissions or discrepancies encountered shall be referred immediately to the Engineer for interpretation or correction, so that misunderstandings at a later date may be avoided. The contract drawings are not intended to show every vertical or horizontal offset which may be necessary to complete the systems. Having bus duct, wireways and fittings fabricated and delivered in advance of making actual measurements

shall not be sufficient cause to avoid making offsets and minor changes as may be necessary to install bus duct, wireways, fittings and equipment.

- D. The Engineer shall reserve the right to make minor adjustment in locations of system runs and components where they consider such adjustments desirable in the interest of protecting and concealing work or presenting a better appearance where exposed. Any such changes shall be anticipated and requested sufficiently in advance as to not cause extra work, or unduly delay the work. Coordinate work in advance with all other trades and report immediately any difficulties which can be anticipated.
- E. Equipment, ductwork and piping shall not be installed in the dedicated electrical space above or in the working space required around electrical switchgear, motor control centers or panelboards as identified by NEC 110.26 Spaces about Electrical Equipment – 600 Volts Nominal or Less. For equipment rated over 600 volts nominal – 110.32 Work Space About Equipment – 110.33 Entrance to Enclosures and Access to Work Space – 110.34 Work Space and Guarding. Caution other trades to comply with this stipulation.
- F. Where any system runs and components are so placed as to cause or contribute to a conflict, it shall be readjusted at the expense of the contractor causing such conflict. The Engineers decision shall be final in regard to the arrangement of bus duct, conduit, etc., where conflict arises.
- G. Provide offsets in system runs, additional fittings, necessary conduit, pull boxes, conductors, switches and devices required to complete the installation, or for the proper operation of the system. Exercise due and particular caution to determine that all parts of the work are made quickly and easily accessible.
- H. Should overlap of work among the trades become evident, this shall be called to the attention of the Engineer. In such event, none of the trades or their suppliers shall assume that they are relieved of the work which is specified under their branch until instructions in writing are received from the Engineer.

1.5 Coordination Drawings

- A. Refer to Divisions 00 and 01 for requirements.

1.6 Inspection

- A. All work shall be subject to inspection of Federal, State and local agencies as may be appropriate, and of the Engineer.
- B. Obtain final inspection certificates and turn over to the Owner.

1.7 Record Drawings

- A. Maintain a separate set of field prints of the contract documents and hand mark all changes or variations, in a manner to be clearly discernible, which are made during construction. Upon completion of the work and within 90 days of system acceptance, these hand marked drawings shall be turned over to the Engineer. This shall apply particularly to underground and concealed work, and to other systems where the installation varies to a degree which would justify recording the change.

1.8 Final Inspection and Punch List

- A. As the time of work completion approaches, survey and inspect Division 26 work and develop a punch list to confirm that it is complete and finished. Then notify the Engineer and request that a final inspection be made. It shall not be considered the Architect's or Engineer's

obligation to perform a final inspection until the Contractor has inspected the work and so states at the time of the request for the final inspection.

- B. Requests to the Engineer for final inspection may be accompanied by a limited list of known deficiencies in completion, with appropriate explanation and schedule for completing these; this is in the interest of expediting acceptance for beneficial occupancy.
- C. The Engineer will inspect the work and prepare a punch list of items requiring correction, completion or verification. Corrective action shall be taken by the Contractor to the satisfaction of Engineer within 30 days of receipt of the Engineer's punch list.

1.9 Warranty

- A. Warrant all workmanship, equipment and material entering into this contract for a period of one (1) year from date of final acceptance or date of beneficial use, as agreed to between Contractor and Engineer. Any materials or equipment proving to be defective during the warranty period shall be made good without expense to the Owner. Use of equipment for temporary electric is not the start of the warranty period.
- B. This provision is intended specifically to cover deficiencies in contract completion or performance which are not immediately discovered after systems are placed in operation. These items include, but are not limited to, motor controller malfunction, heater element changes required for motor controller, fuse replacement where fuses blow due to abnormal shorts, adjustments and/or replacement of malfunctioning equipment and adjusting special equipment and communication systems to obtain optimum performance.
- C. This provision shall not be construed to include maintenance items such as making normally anticipated adjustments or correcting adjustment errors on the part of the Owner's personnel.
- D. Provisions of this warranty shall be considered supplementary to warranty provisions under Division 01 General Conditions.

PART 2 - PRODUCTS

2.1 Materials and Equipment

- A. Materials and equipment furnished shall be in strict accordance with the specifications and drawings and shall be new and of best grade and quality. When two or more articles of the same material or equipment are required, they shall be of the same manufacturer.
- B. All electrical equipment and wiring shall bear the Underwriters Laboratories, Inc. label where UL labeled items are available, and shall comply with NEC (NFPA-70) and NFPA requirements.

2.2 Reference Standards

- A. Where standards (NFPA, NEC, ASTM, UL, etc.) are referenced in the specifications or on the drawings, the latest edition is to be used except, however, where the Authority Having Jurisdiction has not yet adopted the latest edition, the edition so recognized shall be used.

2.3 Equipment Selection

- A. The selection of materials and equipment to be furnished shall be governed by the following:
 - 1. Where trade names, brands, or manufacturers of equipment or materials are listed in the specification, the exact equipment listed shall be furnished. Where more than one name

- is used, the Contractor shall have the option of selecting between any one of the several specified. All products shall be first quality line of manufacturers listed.
2. Where the words "or approved equal" appear after a manufacturer's name, specific approval must be obtained from the Engineer during the bidding period in sufficient time to be included in an addendum. The same shall apply for equipment and materials not named in the specifications, where approval is sought.
 3. Where the words "equal to" appear, followed by a manufacturer's name and sometimes a model or series designation, such designation is intended to establish quality level and standard features. Equal equipment by other manufacturers will be acceptable, subject to the Engineer's approval.
- B. Substitute equipment of equal quality and capacity will only be considered when the listing of such is included as a separate item of the bid. State the deduction or addition in cost to that of the specified product.
- C. Before bidding equipment, and again in the preparation of shop drawings, verify that adequate space is available for entry and installation of the item of equipment, including associated accessories. Also verify that adequate space is available for servicing of the equipment and that required NEC clearances are met.
- D. If extensive changes in conduit, equipment layout or electrical wiring and equipment are brought about by the use of equipment which is not compatible with the layout shown on the drawings, necessary changes shall be deemed to be included in this contract.

2.4 Shop Drawings

- A. Electronic copies of shop drawings and descriptive information of equipment and materials shall be furnished. Submit to the Architect and/or Engineer for review as stated in the General Conditions and Supplementary Conditions. These shall be submitted as soon as practicable and before equipment is installed and before special equipment is manufactured. Submittal information shall clearly identify the manufacturer, specific model number, approval labels, performance data, electrical characteristics, features, specified options and additional information sufficient to evidence compliance with the contract documents. Product catalogs, brochures, etc. submitted without project specific items marked as being submitted for review will be rejected and returned without review. Shop drawings for equipment, fixtures, devices and materials shall be labeled and identified same as on the Contract Documents. If compliance with the above criteria is not provided shop drawings will be subject to rejection and returned without review. Samples shall be submitted when requested or as specified here with-in.
- B. The review of shop drawings by the Engineer shall not relieve the Contractor from responsibility for errors in the shop drawings. Deviations from specifications and drawing requirements shall be called to the Engineer's attention in a separate clearly stated notification at the time of submittal for the Engineer's review.
- C. Shop drawings of the following equipment and materials shall be submitted:
1. Wireway.
 2. Firestopping.
 3. Wiring devices and cover plates.
 4. Cabinets and enclosures.
 5. Fuses.
 6. Motor controllers and disconnects.
 7. Fire alarm system.

PART 3 - EXECUTION

3.1 Testing

- A. As each wiring system is completed, it shall be tested for continuity and freedom from grounds.
- B. As each electrically operated system is energized, it shall be tested for function.
- C. On all electric services including change-outs, backfeeds, etc. the Contractor shall verify phase rotation and voltage readings to ensure the final installation is proper. Submit to the Engineer in writing a record of voltage readings and current readings taken at no-load and fully loaded conditions.
- D. The Contractor shall perform megger and resistance tests and special tests on any circuits or equipment when an authorized inspection agency suspects the system's integrity or when requested by the Architect or Engineer.
- E. All signaling and communications systems shall be inspected and tested by a qualified representative of the manufacturer or equipment vendor. Submit four (4) copies of reports indicating results.
- F. Tests shall be witnessed by field representatives of the Engineer or shall be monitored by a recorder. Furnish a written record of each system test indicating date, system, test conditions, duration and results of tests. Copies of all test reports shall be included in the O&M manuals.
- G. Instruments required for tests shall be furnished by the Contractor.

3.2 Equipment Cleaning

- A. Before placing each system in operation, the equipment shall be thoroughly cleaned; cleaning shall be performed in accordance with equipment manufacturer's recommendations.
- B. Refer to appropriate Sections for cleaning of other equipment and systems for normal operation.

3.3 Operation and Adjustment of Equipment

- A. As each system is put into operation, all items of equipment included therein shall be adjusted to proper working order. This shall include balancing and adjusting voltages and currents; verifying phase rotation; setting breakers, ground fault and other relays, controllers, meters and timers; and adjusting all operating equipment.
- B. Caution: Verify that all bearings of equipment furnished are lubricated, all motors are operating in the right direction, and correct drive settings and overload heater elements are provided on all motors. Do not depend wholly on the other trades judgment in these matters. Follow specific instructions in regard to lubrication of equipment furnished under this Contract.

3.4 Operating Demonstration and Instructions

- A. Set the various systems into operation and demonstrate to the Owner and Engineer that the systems function properly and that the requirements of the Contract are fulfilled.
- B. Provide the Owner's representatives with detailed explanations of operation and maintenance of equipment and systems. A thorough review of the operating and maintenance manuals shall be included in these instructional meetings.
- C. A minimum of 48 hours continuous trouble-free operating time shall be acceptable to prove that the systems function properly.

END OF SECTION

PART 1 - GENERAL

1.1 Temporary Electric Services

- A. The temporary service and temporary lighting for construction is provided by the Contractor. Refer to Division 01 - General Requirements.
- B. The use of the permanent electrical system for temporary services during the stages of construction shall be allowed. Expedite completion of system as practicable to this end. Maintain the system during this period.
- C. Warranty periods on equipment, materials and systems shall commence upon Owner acceptance of the building or systems. Temporary use shall not jeopardize or alter warranty requirements.
- D. The complete temporary service shall comply with Power Company, OSHA, and all Code requirements.

1.2 Continuity of Service

- A. Work shall be so planned and executed as to provide reasonable continuous service of existing systems throughout the construction period. Where necessary to disrupt services for short periods of time for connection, alteration or switch over, the Owner and Engineer shall be notified in advance and outages scheduled at the Owner's reasonable convenience.
- B. Submit, on request, a written step-by-step sequence of operations proposed to accomplish the work. The outline must include tentative dates, times of day for disruption, downtime and restoration of services. Submit the outline sufficiently in advance of the proposed work to allow the Engineer and Prime Contractor to review the information with the Owner. Upon approval, final planning and the work shall be done in close coordination with the Owner.
- C. Shutdown of systems and work undertaken during shutdown shall be bid as being done outside of normal working hours.

PART 2 - EXECUTION

3.1 Workmanship

- A. Materials and equipment shall be installed and supported in a first-class and workmanlike manner by mechanics skilled in their particular trades. Workmanship shall be first-class in all respects, and the Engineer shall have the right to stop the work if highest quality workmanship is not maintained.
- B. Electrical work shall be performed by a licensed Contractor in accordance with requirements of the jurisdiction.

3.2 Protection

- A. The Contractor shall be entirely responsible for all material and equipment furnished in connection with their work. Special care shall be taken to properly protect all parts thereof from theft, damage or deterioration during the entire construction period in such a manner as may be necessary, or as directed by the Engineer, or Prime Contractor.

- B. The Owner's property and the property of other contractors shall be scrupulously respected at all times. Provide drop cloths and visqueen or similar barriers where dust and debris is generated, to protect adjacent areas.

3.3 Cutting and Patching

Projects with Remodeling

- A. Refer to Division 01 - General Requirements for information regarding cutting and patching.
- B. Plan the work well ahead of the general construction. Where conduits, and wireways are to pass thru new walls, partitions, floors, roof or ceilings, place sleeves in these elements. Where sleeves or openings have not been installed, cut holes and patch as required for the installation of this work, or pay other trades for doing this work when so directed by the Engineer or Prime Contractor. Any damage caused to the building shall be repaired or rectified.
- C. Where conduits, cable trays, bus ducts and wireways are to pass thru, above or behind existing walls, partitions, floors, roof or ceiling, cutting, patching, refinishing and painting of same shall be included in this contract. Core drilling and saw cutting shall be utilized where practical. Contractor to examine where floors and walls etc. are to be cut for presence of existing utilities.
- D. When cutting or core-drilling floor verify location of existing electrical, plumbing or steel reinforcement. Use X-ray method to verify existence of obstructions. Either re-route existing system brace floor or alter location of new work to maintain existing system.
- E. All sleeves and openings not used or partially used shall be closed to prevent passage of fire or smoke.
- F. All materials, methods and procedures used in patching and refinishing shall be in accordance with applicable provisions of specifications governing the various trades, and shall be completed by skilled workmen normally engaged in these trades. The final appearance and integrity of the patched and refinished areas must meet the approval of the Engineer. Wall, floor and ceiling refinishing must extend to logical termination lines (entire ceiling of the room repainted, for instance), if an acceptable appearance cannot be attained by finishing a partial area.
- G. Provide steel angle or channel lintels to span openings which are cut in existing jointed masonry walls where the opening span exceeds 16 inches.

3.4 Removals, Alterations and Reuse

- A. Refer to the drawings for the scope of remodeling in the existing building.
- B. Cooperate with the Prime Contractor regarding all removal and remodeling work. The Contractor shall remove existing work which is associated with their trade, and which will be superfluous when the new system is installed and made operational. Void unused conduit behind walls or below floors as necessary or as directed. No wire or conduit shall be removed which will impair the functioning of the remaining work unless first replaced with a rerouted section of wire or conduit to ensure continuity. Remove inactive wiring back to the last active junction box, panelboard or piece of equipment.
- C. Upon completion, no unused conduit or stub shall extend thru floors, walls or ceilings in finished areas. Abandoned conduit where remaining in place shall have any unused wiring removed. All accessible unused conduit shall be removed.
- D. When it is necessary to reroute a section of an active circuit, the rerouted section shall be installed before removing the existing in order to minimize system down time. Rerouted sections shall be installed as required for new work.

- E. Materials and equipment which are removed shall not be reused within the scope of this project unless specifically noted to be relocated or reused. Turn over to the Owner and place where directed on the premises all removed material and equipment so designated by the Owner. All material and equipment not claimed by the Owner after a reasonable time frame shall become the property of the Contractor responsible for removal and shall be removed from the premises.
- F. In areas of minor work where the space is not completely vacated, temporarily move portable equipment and furnishings within the space as required to complete the work. Coordinate this activity with Owner. Protect the Owner's property by providing dust covers and temporary plastic film barriers to contain dust. Remove barriers and return equipment and furniture upon completion of the work.
- G. Refinish any surface disturbed under this work to match existing, except where refinishing of that surface is included under the General Contract.

3.5 Painting

- A. In addition to any painting specified for various individual items of equipment, the following painting shall be included in Division 26:
 - 1. Ferrous metal which is not factory or shop painted or galvanized and which remains exposed to view in the building including finished areas, mechanical rooms, storage rooms, and other unfinished areas shall be given a prime coat of paint and two finish coats of paint.
 - 2. Ferrous metal installed outside the building which is not factory or shop painted or galvanized shall be given a prime coat of paint and two finish coats of paint.
 - 3. Equipment and materials which have been factory or shop coated (prime or finished painted or galvanized), on which the finish has been damaged or has deteriorated, shall be cleaned and refinished equal to its original condition. The entire surface shall be repainted if a uniform appearance cannot be accomplished by touch up.
 - 4. Apply Z.R.C. Galvilite cold galvanizing compound, or approved equal, for touch-up and repair of previously galvanized surfaces.
 - 5. Each backboard shall be painted with a minimum of two coats of flame retardant paint, all sides; gray enamel primer with gray matte enamel finish.
- B. All rust must be removed before application of paint.

3.6 Backboards

- A. Where shown on the drawings, backboards shall be provided for wall mounting of disconnect switches, devices and communications equipment. The Contractor may opt to mount additional groups of disconnect switches on backboards.
- B. General
 - 1. Backboard shall be 0.75 inch thick waterproof flame retardant plywood secured to structure.
 - 2. Each board shall be painted.

END OF SECTION

PART 1 - GENERAL

- 1.1 Firestopping assemblies shall be provided at penetrations of conduits, cables, and other electrical items thru fire rated floors, fire rated floor-ceiling and roof ceiling assemblies, fire rated walls and partitions and fire rated shaft walls and partitions and smoke barriers. In addition, firestopping assemblies shall be provided at penetrations thru 0-hour rated floors. Refer to the drawings for fire rated building elements.
- 1.2 Firestopping assemblies shall be tested and rated in accordance with ASTM E814, E119 and listed in accordance with ANSI / UL 1479, as published in the UL Fire Resistance Directory. Firestopping shall provide a fire rating equal to that of the construction being penetrated.
- 1.3 Firestopping materials, assemblies and installation shall conform to requirements of the OBC / Chapter 1, Section 106 and Chapter 7, Section 714 and the Authority Having Jurisdiction.
- 1.4 For those firestopping applications that exist for which no UL tested system is available through any manufacturer, a manufacturer's engineering judgment derived from similar UL system designs or other tests shall be submitted to local authorities having jurisdiction for their review and approval prior to installation. Engineering judgment drawings must follow requirements set forth by the International Firestop Council.
- 1.5 Shop drawings shall be prepared and submitted for review and approval. Submittals shall include manufacturer's specifications and technical data of each material, documentation of U.L. firestopping assemblies and installation instructions. Submittals shall include all information required in OBC Chapter 1, Section 106 and Chapter 7, Section 714 .

PART 2 - PRODUCTS

- 2.1 Firestopping materials shall be manufactured and/or supplied by Hilti, 3M, Tremco, or Specified Technologies Inc (STI).
- 2.2 Materials shall be in the form of caulk, putty, sealant, intumescent material, wrap strip, fire blocking, ceramic wool and other materials required for the UL listed assemblies. These shall be installed in conjunction with sleeves and materials for fill and damming.
- 2.3 Combination pre-set floor sleeve and firestopping assemblies shall be equal to Hilti CP 680.

PART 3 - EXECUTION

- 3.1 Installation of all materials and assemblies shall be in accordance with UL assembly drawings and the manufacturer's instructions.
- 3.2 Installation shall be done by an experienced installer who is certified, licensed or otherwise qualified by the firestopping manufacturer as having the necessary training and experience.
- 3.3 Refer to 26 05 33 Raceway and Boxes for Electrical Systems for sleeve requirements and treatment of penetrations not requiring firestopping.

END OF SECTION

PART 1 - GENERAL

- 1.1 This section pertains to the use of copper conductors, 600V insulation class.

PART 2 - PRODUCTS

- 2.1 All conductors shall be copper: conductors shall be insulated for 600 volts.
- 2.2 Insulation types referenced are those of NEC. All conductors shall be UL labeled and shall be marked for size and type at regular intervals on its length. Conductors #8 and larger shall be stranded; #10 and smaller may be stranded provided approved terminations are used.
- 2.3 Types of conductor insulation for general use may be any of the following, subject to limitations listed, in addition to those in the NEC:
- A. Type THHN - restrictions - do not use for conductors in slab. Do not use in wet locations.
 - B. Type THWN - no restrictions.
 - C. Type XHHW - no restrictions.
- 2.4 Use shielded VFD cables for feeds from VFD to motor where conductor length is longer than 25 feet. VFD cable shall be 3 conductor XHHW low capacitance copper, full size insulated copper ground, 1.5 mil AL foil and 85 percent tinned copper woven braid shield with PVC oil and sunlight resistant jacket. UL TC-ER, 90 degrees C., 600V wet/dry. Manufactured by Belden, AWC, Lutz or equal.
- 2.5 Use only Type XHHW for isolated ungrounded branch circuit wiring such as monitored wiring in hospital operating and special procedures and X ray rooms. Refer to Section "Hospital Specialty Equipment".
- 2.6 Use Type THHN or XHHW, (90 degrees C. rated) types for connecting luminaires and for running thru fixture housings.
- 2.7 Use conductors such as type FEP with high temperature insulation as identified in the NEC for connections to resistance heating elements or in other areas subject to temperature exceeding the rating of THWN, XHHW or THHN.
- 2.8 Color Coding – The use of colored commercial building wire is encouraged.
- A. On 208/120 volt, three phase and 240/120 volt, single phase grounded systems, wires colored black, red and blue shall be used for phase conductors. Neutral wires on these systems shall be white. If conductors No. 4 AWG or larger are not available in white or white stripes, the neutral may be a black wire identified with white tape, minimum size 0.50 inch wrapped twice around at the following points:
 - 1. At each terminal.
 - 2. At each conduit entrance.
 - 3. At intervals not more than 12 inches apart in all accessible enclosures.
 - B. On 480/277 volt, three phase system, wires colored brown, orange and yellow shall be used for phase conductors. Neutral wires on these systems shall be gray or other NEC acceptable means for distinguishing each system grounded conductor from another. If conductors No. 4 AWG or larger are not available in the proper colors, black wire may be used with 0.50 inch tape bands of the proper color at the following points:

1. At each terminal.
 2. At each conduit entrance.
 3. At intervals not more than 12 inches apart in all accessible enclosures.
- C. Equipment grounding conductors shall be green, or for 4 AWG and larger may be completely taped green, at all accessible points.
- D. All control circuits shall be red with individual wire identification on each conductor.
- E. Where existing wiring systems (remodel work or building additions) have different color coding, consult the Engineer concerning matching existing wire color coding and phasing.
- 2.9 Wire size ampacity shall equal or exceed its overload protective device. Where wire sizes shown on the drawings are greater than the apparent ampacity requirements, the size shown shall prevail to compensate for voltage drop. In no instance shall conductors be installed that are less than required by N.E.C. Minimum conductor size shall be No. 12 AWG except No. 14 AWG may be used only for control wiring or where otherwise specifically shown.
- 2.10 When necessary to use a lubricant for pulling wires, lubricant must be listed by Underwriters' Laboratories, Inc. Only cable lubricants approved for the type of jacket material or insulation shall be used, and must be of such consistency that it will dry completely when exposed to air. Lubricant must leave no obstruction or tackiness that will prevent pulling out old wires or pulling in new wires or additional wires, and, after drying, must leave a film of lubrication which will promote easy movement of the wires. The lubricant shall contain no waxes, greases, silicones, or polyalkylene glycol oils or waxes. Lubricant shall be Ideal "Yellow 190", 3M "WL" Wire Pulling Lubricant, or approved equal.
- 2.11 Splices No. 10 AWG and smaller shall be made using the following:
- A. Preinsulated spring pressure connectors as follows: ITT Holub "Freespring", with metal grip threads 3M "Scotch-Lok", Ideal "Wingnut", Thomas and Betts Type "PT", or Buchanan "B Cap". Other hard insulated wire connectors which have bakelite or ceramic insulation are prohibited. (Non-metallic thread connectors shall not be used.)
- 2.12 Splices No. 8 AWG and larger shall be made using the following:
- A. Approved crimp type connectors with special crimping tool; T&B, Burndy, Buchanan or approved equal. Joints and free ends shall be covered with tape or approved moistureproof insulating kits. Applied insulation shall exceed 150 percent of conductor insulation voltage rating.
 - B. For two or more taps use Power Distribution Blocks by Square D, Gould, Taylor, IlSCO or Connectron.
- 2.13 Wiring in vertical raceways shall be supported with strain relief devices; Kellem's grips or approved equal.
- 2.14 Connections to equipment shall be made with pressure type terminals. On stranded wire, use spade type terminals or terminals approved for use with stranded wire. Connections shall contain only single conductors unless approved for multiples.
- A. For conductors No. 10 AWG and smaller, applied crimp type terminals shall be T&B "Sta Kon" or approved equal.
 - B. For No. 8 AWG and larger conductors, applied crimp type terminals shall be Burndy, T&B or approved equal.

- 2.15 Where tape is applied over wires and connectors on 600 volt or lower voltage applications, it shall consist of a minimum of two (2) half lapped layers of Scotch "88" or Plymouth No. 4240 for both indoor and outdoor applications, except Scotch 33 Plus or Plymouth No. 4453 is acceptable for use indoors.
- 2.16 Where fireproofing of cables is noted on the drawings or required by Code, each cable shall be arc and fireproofed with one (1) half lapped layer of Scotch Brand 77 Electric Arc and Fireproofing Tape. Tape shall be secured with a 2 layer band of Scotch Brand 69 Glass Electrical Tape over the last wrap. Installation shall comply with manufacturer's recommendation.
- 2.17 Where installed underground, splices and terminations shall be listed and approved for waterproof application. Utilize kits approved for the application.

PART 3 - EXECUTION

- 3.1 Branch circuit conductor identification means shall be permanently posted at each panelboard and switchboard. This identification shall be installed on the inside of the door and shall identify conductor colors for each voltage system in the building. Provide identification at all new panelboards and existing panelboards utilized within this project.
- 3.2 Conduit systems shall be clear and clean before pulling wire. Branch circuit conductors shall be pulled without resorting to levers or heavy pulling devices.
- 3.3 Cable pulling tensions shall not exceed recommended values.
- 3.4 Group ungrounded and grounded circuit conductors for each multiwire branch circuit by cable ties in panelboards and tap boxes.
- 3.5 Each branch circuit or multiwire branch circuit shall have its own dedicated neutral. Group neutral conductors with phase conductors by wire ties in each enclosure where multiple neutrals provided.
- 3.6 Shielded VFD cables shall be provided for VFD to motor conductors length longer than 25 feet. VFD motor feed cables shall be terminated per VFD manufacturer's direction.
- 3.7 Control conductors shall not be run in same raceway with branch circuit or motor circuit conductors.
- 3.8 Unless noted otherwise on the drawings, a maximum of 8 conductors shall be installed in a branch circuit conduit. This maximum is a count of all phase and neutral conductors only, ground conductors are not counted when determining maximum fill for this purpose.
- 3.9 Wire tags shall be provided on all main and feeder conductors in all pull boxes, wireways and panelboard and switchboard wiring gutters. Tags shall identify wire or cable number and/or equipment served. Tags shall be of flame resisting adhesive material, T&B Type WSL or approved equal.
- 3.10 Perform meggar tests on all feeders and motor branch circuit conductors prior to energization of circuits. Provide documentation in standard NETA format to the Engineer for review. Do not run meggar check on solid state equipment.

END OF SECTION

PART 1 - GENERAL

- 1.1 Work includes grounding and bonding of system neutral, equipment and conduit systems to conform to requirements of NEC and as detailed on the plans and in the specifications.

PART 2 - PRODUCTS

- 2.1 Ground conductors shall be insulated, identified by green insulation or by painting or taping green at all accessible locations and shall be connected with approved connectors and terminators to boxes, devices, equipment, etc. and to ground bars in panels.

PART 3 - EXECUTION

- 3.1 Wiring devices shall be connected with grounding jumper from ground pole on device to grounding screw in the outlet box. Branch circuit to be connected to grounding screw in the outlet box.
- 3.2 The complete metal conduit system shall be used for the equipment grounding system. Conduit systems and associated fittings and terminations shall be made mechanically tight to provide a continuous electrical path to ground and shall be safely grounded at all equipment by bonding all metallic conduit to the equipment enclosures with locknuts cutting thru paint or enclosures. Bond all conduits entering main breaker panel, and secondary service entrance switchboard / switchgear / panelboard with a ground wire connecting the grounding type bushings to the equipment ground bar. Conductors shall be sized per NEC Tables 250.66, 250.102 and 250.122. Bond all communications conduit systems to ground.
- 3.3 Motor frames shall be bonded to the equipment grounding system by an independent green insulated copper wire, sized to match equipment grounding conductor. Motors with VFD shall be bonded with flat braided tinned copper straps in lieu of wire.
- 3.4 Cord connected appliance frames shall be grounded to the equipment grounding system thru a green wire in the cord.
- 3.5 Equipment mounted on vibration isolation hanger and supports shall be bonded so bond does not transmit vibration. Size bond to match equipment ground conductor.
- 3.6 A green grounding conductor shall be installed in each non-metallic conduit and all flexible conduits, including exterior underground conduits.
- 3.7 The building neutral shall be identified throughout with white conductors. Where there are neutral conductors from a separately derived system (such as 120/208 volt, 3 phase, 4 wire where the main building service is 277/480 volt, 3 phase, 4 wire) the neutrals of the two systems shall be separately identifiable per NEC Article 200.
- 3.8 Where metal covers on pull boxes and junction boxes are used, they shall comply with the grounding and bonding requirements of NEC.

END OF SECTION

PART 1 - GENERAL

- 1.1 This specification section covers common conduit systems, boxes, firestopping and sleeves. Where other methods are specified under separate sections for specific applications, the specific application requirements shall govern.
- 1.2 Refer to Section 26 05 05 Firestopping for firestopping requirements.

PART 2 - PRODUCTS

- 2.1 Conduit Type - Application (Use only conduit types listed)
- A. Conduit - Rigid or Intermediate Grade Galvanized Threaded.
Application - restrictions - (Not to be used in):
 - 1. Direct buried in corrosive soils.
 - 2. Corrosive atmospheres.
 - B. Conduit - Thinwall EMT.
Application - restrictions - (Not to be used in):
 - 1. Poured concrete.
 - 2. Exposed to weather.
 - 3. Underground.
 - 4. Exposed in mechanical equipment or other equipment/process rooms below 48 inches.
 - 5. Hazardous or corrosive atmospheres.
 - 6. Not to be used for medium voltage (2001 volts or higher) cable.
 - 7. Not to be used in utility tunnels.
 - C. Conduit - PVC Type 40 (Schedule 40) rigid, conforming to ANSI, NEMA specifications and each length UL labeled.
Application - use limited to:
 - 1. In or under concrete slabs on grade where permitted by electric legend on the drawings.
 - 2. Exterior use when encased in 3 inch concrete.
 - 3. Direct buried, underground when indicated on drawings.
 - D. Conduit - Flexible Metal (Greenfield type), galvanized steel or aluminum.
Application - use limited to:
 - 1. Connections to transformers, dynamic equipment and for motors only when in air streams or plenums.
 - 2. In existing walls for remodel projects, vertical drops to outlets and switches; no more than 3 ft. out the top of the wall.
 - E. Conduit - Liquidtight Flexible Metal.
Application - use and limitations:
 - 1. Connections to all motors, except in air stream or plenum.
 - 2. Connections to controls on dynamic equipment, transformers, etc., outdoors and indoors in wet locations.
 - 3. Use not permitted underground or where subject to physical damage.
 - F. Conduit Reinforced Thermosetting Resin RTRC shall meet UL 1684 for extinguishing flame and shall not contain any compounds that release halogens.

Application use limited to:

1. In or under concrete slabs on grade where permitted by electric legend on drawings.
2. Exterior uses when encased in 3" concrete.
3. Direct buried, underground when indicated on drawings.
4. Exposed corrosive atmospheres including pool equipment rooms, chlorine storage areas, etc. and other areas as noted on drawings.
5. Where subject to physical damage shall be identified for use i.e., types RTRC-X W.

2.2 Conduit sizes

- G. Conduits shall be 0.75 inch minimum size except 0.50 inch size may be used for switch legs and flexible connections to lighting fixtures.

2.3 Conduit Fittings

- A. Fittings and workmanship shall ensure electrical continuity. All conduit systems in poured concrete shall be concrete tight.
- B. Application of bushings, locknuts and insulated fittings shall comply with NEC requirements.
- C. Use conduit fittings as manufactured by Efcor, Steel City, Raco, Midwest, Appleton, ETP / O-Z / Gedney, American Fitting Corporation or T&B, equal to the following catalog numbers:
 1. Rigid and intermediate conduit
 - all fittings, couplings and connectors shall be threaded type.
 - grounding bushings, malleable iron; insulated; Steel City BG-801; Midwest Series GLL.
 2. EMT
 - fittings shall be all steel, set screw or compression type, concrete tight.
 - set-screw type couplings; Midwest Series 460; Steel City TK 121; Appleton TW 50S.
 - compression type couplings; Midwest series 660S; Steel City TK111; Appleton TWC50CS.
 - set-screw type connectors; Midwest Series 450; Steel City TC 121; Appleton TWC 50S.
 - compression type connectors; Midwest Series 650; Steel City TC111; Appleton TW50CS.
 3. Flexible metal conduit
 - malleable iron, "squeeze" type, non-insulated; Midwest series 1708; Steel City XC 901; Appleton 7481V. (For lighting fixture whips only - all steel or die cast screw in connector; Midwest 771; Steel City XC 241; Appleton SGC 50DC).
 4. Liquid tight conduit
 - steel or malleable iron; Midwest Series LT; Steel City LT 100; Appleton ST.
 5. PVC Type 40 and Type TC-6
 - couplings and fittings socket type solvent weld, coupling and solvent by same manufacturer as conduit.
 6. RTRC
 - Coupling and fittings socket type adhesive jointing. Coupling and adhesive by same manufacturer as conduit. Gasketed jointing system may be used underground where encased in conduit.

2.4 Boxes

- A. Junction boxes and pull boxes shall be code gauge galvanized steel with multiple screw fasteners and galvanized steel covers.
- B. Outlet boxes all steel construction with galvanized or plated finish or otherwise all metal, by Steel City, Appleton, Crouse Hinds, R&S or Raco.
 - 1. Lighting fixture outlet boxes 4 inches square or octagonal, 2.125 inches deep, with 0.375 inch fixture studs. Equal to Steel City Series 54171; Series 52171 with FE 421 stud. Fixtures weighing more than 50 lbs. shall be supported independently of the outlet box.
 - 2. Flush mounted device outlet boxes shall be minimum 4 inches square. Provide extension rings as required. Use Erico Caddy No. H2-3 mounting support plate where metal studs are used.
 - 3. Device rings in finished masonry or tile walls shall be square corner masonry type with no extended ears, to allow flush mounting of plates.
 - 4. Surface mounted device boxes shall be cast "FS" type or special surface mounted boxes for use with surface raceway systems.
- C. Floor boxes shall be UL listed for its application as manufactured by Hubbell, Steel City, Walker, Raco or Wiremold. Drawings identify material type.
- D. Provide water tight boxes, slip expansions and bonding jumpers where dictated by construction conditions.
- E. Terminations at boxes shall be secured by locknuts or approved bushings.

2.5 Surface Metal Raceways

- A. Snap on cover types by Mono-Systems, Panduit or Wiremold / Walkermold with prime gray finish (enamel finish coat to match room finishes in remodel areas). Application - permitted only when specifically shown on the drawings.
 - 1. Fittings, boxes and extension rings: Furnish manufacturer's standard accessories; match finish of raceway.

2.6 Sleeves and Openings

- A. Sleeves and formed openings shall be placed in walls, and poured concrete roof decks for the passage of conduit, cable, wireway. Sleeves and formed openings are not required:
 - 1. Openings are cut for conduit passage and patched with equal or comparable material to close the space around the conduit.
 - 2. In stud and gypsum board or plaster walls and partitions which are not fire rated.
 - 3. For conduit passing thru masonry walls and partitions and stud and gypsum board or plaster walls and partitions. Sleeves are required however, for which expansion, contraction and other movement can be expected.
 - 4. In core drilled openings in solid concrete not requiring water protection. Sleeves are required, however, at core drilling thru hollow pre-cast slabs and concrete block walls, to facilitate containment of required firestopping material.
 - 5. In large floor openings for multiple pipe and duct risers which are within a fire rated shaft, unless the opening is to be closed off with concrete or other material after conduits are set.
 - 6. Sleeves for passage of conduit and cables shall be schedule 40 black steel pipe or galvanized rigid conduit. Rectangular sleeves for cables, wireway, cable tray and bus duct shall be 18 gauge galvanized steel in poured concrete floors, walls and roof decks; 26 gauge galvanized sheet steel in other than poured concrete.
 - 7. Sleeves shall be sized to afford 0.25 inch to 0.75 inch clearance space.

- 2.7 Escutcheon plates shall be split-ring chromium plated pressed steel. Plates shall be sized to cover the surface penetration and sleeve. Plates shall be installed on exposed piping in finished rooms and areas where conduits penetrate walls, floors, ceilings or overhead structure.
- 2.8 Anchors and Fasteners
- A. Anchors and fasteners shall be of a type designed and intended for use in the base material to which the material support is to be attached and shall be capable of supporting the intended load and withstanding any associated stresses and vibrations.
 - B. In general, screws shall be used in wood, masonry anchors on concrete or brick, toggle bolts in hollow walls, and machine screws, bolts or welded studs on steel.
 - C. Nails shall not be used except for temporary support or for light loads in wood frame construction.
 - D. In outdoor locations or other corrosive atmospheres, the anchors and fasteners shall be non-corrosive or have suitable corrosion resisting coatings.

PART 3 - EXECUTION

- 3.1 Conduit shall be run concealed in all finished areas of new construction and elsewhere unless specifically indicated or upon specific permission by the Architect. All conduit shall parallel building lines.
- 3.2 Conduit shall be run overhead and shall not be run in or below concrete slabs unless specifically indicated on the drawings and in the legend on the drawings.
- 3.3 Conduit crossing building expansion joints shall have expansion provisions with grounding continuity; use special expansion fittings or other NEC approved method. Refer to the Architectural and Structural floor plans and details for locations of expansion joints.
- 3.4 Work shall be so planned as to:
- A. Minimize the number of offsets and junction boxes. For feeder conduits, use all long radius conduit bends or accessibly located large junction boxes with screw covers.
 - B. Generally run conduit and conductors as high as practicable against underside of floor slab in concrete construction or immediately below the top chord of bar joist construction unless otherwise shown. This high level zone shall be used for running electrical raceways. Running conduits promiscuously at various levels and directions will not be acceptable. Runs at bottom chord level or ceiling grid level will not be acceptable.
 - C. Where spray on fireproofing is used, coordinate with the General Contractor about installing supports, panel feeders and larger conduits before fireproofing is applied. Branch circuit conduits and smaller size conduits may be run as high as possible on stud walls that go all the way up to the structure; this will minimize damage to spray on fireproofing. Patch and repair damaged spray on fireproofing caused by electrical installation; conduits shall not be fully covered with fireproofing.
 - D. Coordinate activity in advance to avoid interference with other trades.
 - E. Provide access to all junction and pull boxes.
 - F. Maintain 6 inches from conduit to paralleled hot water piping and 4 inches from cross piping and 12 inches from generator exhaust piping.

- 3.5 Secure feeder conduit to basic structural elements with galvanized strap hangers and clamps; use of trapeze type hangers is encouraged for multiple conduits where space will permit. Galvanized metal clamps and screws may be used for attaching and supporting branch circuit conduit. Non-metallic fasteners shall not be used except plastic inserts may be used in concrete for small conduits. Vertical conduits shall be supported at each floor by clamps.
- 3.6 Surface mounted horizontal and vertical conduit supports on walls up to a height of 7 feet-0 inches above the floor shall be one or two hole sheet metal pipe straps. Pinch type hangers similar to Minerallac type may only be used at heights greater than 8 feet-0 inches. The use of pinch type hangers similar to Minerallac type are expressly prohibited on ductwork, air handling units and other mechanical equipment below 8 feet-0 inches.
- 3.7 During construction temporarily cap open ends of conduit. Caution trades to take special care of runs in concrete slabs during pouring.
- 3.8 Empty conduit installed for communications use or for future systems shall have an insulated pull wire or heavy nylon cord inserted for use in pulling wires.
- 3.9 Pull mandrel or large swab thru conduit to ensure freedom from debris before pulling wires. Use pulling lubricants sparingly.
- 3.10 Sleeves for passage of conduit, cables, wireway shall be placed in the initial stages of construction before concrete, masonry and other general construction activity. Means shall be taken to ensure that the sleeve will not move during or after construction. Beams, columns and other structural members shall not be sleeved except upon approval of the Architect.
- 3.11 Length of wall sleeves shall be such that the sleeve ends are substantially flush with both sides of the wall or partition. Floor sleeves shall be flush with the bottom and top of the floor slab except, in mechanical rooms and other areas which might have water on the floor, sleeves shall project a minimum of 1 inch above finished floor.
- 3.12 Refer to 26 05 05 Firestopping. Sleeves which are a part of firestopping assemblies shall conform to the requirements of the assembly with particular emphasis regarding size, annular space, length, passage or non-passage of insulation and the installation of the sleeves.
- 3.13 Where firestopping is not required, the annular space between the sleeve, core drilling or opening and the conduit, cable, cable tray, bus duct and raceway shall be closed with caulking to retard the passage of smoke.
- 3.14 Where permitted by OBC Section 712 Penetrations, metallic conduits requiring no pipe sleeves in passing thru concrete floors or concrete or masonry walls and partitions, the annular space shall be closed full depth of the penetration with materials and methods compatible with the floor, wall or partition material (concrete, grout or mortar).
- 3.15 Openings for multiple conduits extending through floors where water protection is required (mechanical rooms, kitchens, other potentially wet areas) may be protected with a 4 inch high by 4 inch wide concrete curb with chamfered corners in lieu of individual sleeves. These concrete curbs may be used in lieu of the Josam 26420 riser sleeve and clamping ring provided the floor membrane and curbing are arranged to maintain the integrity of the membrane.
- 3.16 Conduits, wire and cables entering from outside the building shall be sealed water and moisture tight. Seal between conduit and sleeves, conduits and core drilled holes and around conductors inside conduits. Provide cast iron pipe or schedule 40 galvanized steel conduit sleeves in exterior walls below grade, with intermediate wall stop and anchor collar set in place before concrete pouring. Sleeve shall be a part of the sealing assembly. When the wall opening is core drilled the wall sleeve may be omitted. A mechanically compressed rubber sealing assembly equal to Thunderline Corp. "Link-Seal" shall be placed in the annular space between conduit and sleeve or core drilling.

- 3.17 Conduit, wire and cable, where exposed to different temperatures, shall have raceway or sleeve filled with approved material to prevent circulation of warm air to cold.
- 3.18 Power actuated fasteners of any type are prohibited in occupied buildings. This includes anchors which are driven into place by any device which produces an impact force by use of a powder charge, compressed air, gas or any other propellant.
- 3.19 All conduit that serves the fire pump in the room containing the fire pump, including the fire pump power circuits and control circuits, shall be rigid, intermediate or liquid tight flexible metal conduit (NFPA-20 and NEC Article 695).
- 3.20 All conduit terminations to be equipped with locknuts and bushings. Conduits 1-1/2 inches and larger shall have insulating bushings, grounding lug and shall have locknuts inside and outside the enclosure.
- 3.21 Outlet Box Installation
- A. Set box square and true with finished building surfaces and trim.
 - B. Secure boxes firmly to building structure.
 - C. Verify location of outlets and switches in finished rooms with Architectural Drawings of interior details and finish. In centering outlets and locating boxes, allow for overhead pipes, ducts and mechanical equipment, variations in fireproofing and plastering, window and like, and correct any inaccuracy from failure to do so without expense to the Owner.
 - D. Maintain symmetry of all outlets as closely as possible contained within Architectural Elevation. For example, the Contractor shall center light fixture over doorway or receptacle in section of masonry wall, if shown in that approximate position. If receptacle is shown in same location as counter or bench, determine countertop height and set receptacle to clear top and trim of counter and render outlet easily accessible.
 - E. In the event of conflict between locations of electrical outlets as shown on the Electrical Drawings and on the Architectural Drawings, outlets shall be installed in accordance with the latter.
 - F. Locate light switches on latch side of door and verify door hinge location in field prior to switch outlet installation.
 - G. The Owner reserves the right to relocate any device as much as 10 feet-0 inches (measured horizontally) from its indicated location at no additional cost, provided the contractor is notified prior to roughing that device in.
- 3.22 Contractor shall record carefully on a set of "as built" prints the exact location of all feeder conduits.
- 3.23 Unless noted otherwise on the drawings, a maximum of 8 conductors shall be installed in a branch circuit conduit. This maximum is a count of all phase and neutral conductors only - ground conductors are not counted when determining maximum fill for this purpose.

END OF SECTION

PART 1 - GENERAL

1.1 Equipment Identification

- A. Identify all the following items with laminated plates:
 - 1. Every motor, and equipment controller and disconnect switch.
 - 2.
- B. Nameplate on motor controllers, disconnect switches, automatic transfer switches, switchgear, switchboards, panelboards and transformers shall indicate source, voltage, disconnect location, and load served.
- C. Equipment on the emergency systems shall be identified with nameplates having a red background.
- D. Branch circuit panelboards:
 - 1. Identify panel designation on directory card within the panel.
 - 2. Fill out branch circuit directory indicating circuit number and area served, rooms, group of rooms, lighting, convenience outlets, motors, etc. Card index shall be neatly typed. Provide electronic file for card using Excel.
 - 3. Update or replace branch circuit directory in existing panelboards in areas of alteration.
 - 4. Branch circuit phase conductor color format shall be permanently identified inside each panelboard.
- E. For disconnecting means where power can be backfed (like tie breaker) provide permanent sign at disconnecting means saying: 'DANGER – CONTACTS ON EITHER SIDE OF THIS DEVICE MAY BE ENERGIZED BY BACKFEED.' Also, provide a single-line showing local switching arrangement on permanent sign.

PART 2 - PRODUCTS

2.1 Nameplates

- A. Nameplates shall be laminated phenolic with black surface (red surface for emergency) and white core. Use 0.0625 inch thick material for plates up to 2 inches x 4 inches and 0.125 inch thick for larger sizes. The lettering shall be Condensed Gothic with space between the lines equal to the width of the letters. Use 0.25 inch minimum height letters on the small plates increasing the size proportionately to plate size.
- B. The lettering on the plate shall indicate the name of equipment, the specific unit number, voltage, phases, which panel, switchboard or motor control center the equipment is served from, and any other reference data pertinent to the operation. Names and numbers shall coincide with those listed on the drawings. Sample: Panel 3A; 277/480 V, 3 phase, 4 wire, served from unit substation USI.

PART 3 - EXECUTION

- 3.1 Nameplates shall be secured with screws, one on each end.

END OF SECTION

26 28 13 FUSES

PART 1 - GENERAL

- 1.1 Safety switches and other fusible protective devices provided under this contract shall be complete with fuses properly sized to protect the feeders and equipment served.
- 1.2 Fuses shall not be shipped installed in switches in electrical equipment nor shall they be shipped to the job site until the equipment is ready to be energized. Fuses shall be of the same manufacturer to retain selectivity as designed.

PART 2 - PRODUCTS

- 2.1 Manufacturers shall be Bussmann, Mersen, Littelfuse or Edison.
- 2.2 Fuses shall be current limiting with 200,000 amperes interrupting capacity, all shall be UL labeled.
- 2.3 Fuses, 601 ampere to 6,000 ampere (bolt type dimensions) shall be UL Class "L" fuses. The size and type is indicated on drawings; Bussmann HI CAP time delay fuse KRP C shall be used.
- 2.4 Fuses with ampere ratings 1 ampere to 600 ampere (standard dimensions) shall be UL Class RK 1. The size and type is indicated on drawings. Bussmann LOW PEAK Time Delay fuse LPN RK (250 volts) or LPS RK (600 volts).
- 2.5 Where Bussmann specific fuse types are indicated above or on the drawings, acceptable fuses by cross reference of manufacturers are:

Voltage UL Class	Ratings	Bussmann	Mersen	Littelfuse	Edison
L	600 V	HI CAP KRP C	AMP TRAP A4BQ()	POWR-PRO KLPC	LCL
RK 1	250V	Low Peak LPN RK	AMP TRAP II A2D () R	POWR-PRO LLN-RK	LEN-RK
	600V	LPS RK	A6D () R	LLS-RK	LES-RK
J (Time Delay)	600V	LPJ ()	AJT ()	JTD ()	JDL ()

PART 3 - EXECUTION

- 3.1 Place a fuse identification label showing type and size inside door of each switch. Use fuse reducers where fuse gaps are larger than fuse dimension.
- 3.2 Verify fuse types before installation for proper application by voltage and ampere ratings; fuses protecting motors shall not exceed 150 percent of motor nameplate amps. (Applies to fuses in sizes 600 amps and below.)
- 3.3 Furnish the Owner with a minimum of 25 percent of quantity of each size installed, but not less than one complete set of three spare fuses for each size of fuse furnished.

END OF SECTION

PART 1 - GENERAL

- 1.1 Provide disconnect switches, fused and non-fused, where indicated on the drawings and in the specifications, and where required by the NEC.

PART 2 - PRODUCTS

- 2.1 Disconnect switches shall be listed by Underwriter's Laboratories and shall be manufactured by Square D, Siemens, G.E. or Eaton. All starters and disconnect switches shall be of the same manufacturer unless otherwise approved.
- 2.2 Switches shall be Heavy-Duty Type, NEMA 1 enclosures, non-fused except where fuses are specified or required to protect wiring from overload; provide raintight NEMA 3R type enclosures for outdoor applications unless otherwise noted.
- 2.3 Disconnect switches shall be quick-make, quick-break, externally operated with door interlocked with operating handle. Provide solid neutral and ground bars where indicated or where required by the application.
- 2.4 Disconnect switches shall have multiple padlock provisions in the off position.
- 2.5 The fuse holders shall be designed for Class "R" rejection type fuses.
- 2.6 Refer to "Identification for Electrical Systems" Section for nameplate requirements.

PART 3 - EXECUTION

- 3.1 Mount top of wall mounted disconnect switch 6 ft.-0 inches above floor where space permits.
- 3.2 Coordinate location of disconnect switches to avoid interference with other equipment and trades and allow access for safe operation.

END OF SECTION

PART 1 - GENERAL

- 1.1 Schedules on the drawings list motors with disconnect and starter requirements and associated controls. Motor starters and disconnects shall be furnished under this Contract except where specifically shown or specified to be furnished by other trades. Motor starters and disconnects shall be manufactured and rated in accordance with NEMA, UL and IEEE standards. IEC RATED CONTACTORS AND OVERLOADS ARE NOT ACCEPTABLE.
- 1.2 Refer to "Disconnect Switches" Section for switch requirements.
- 1.3 All motor starters shall be rated for the available fault current at the point of application.

PART 2 - PRODUCTS

- 2.1 Manufacturer Allen Bradley, whose catalog numbers are used herein as a standard, or equivalent by Square D Type S (Class 8536), G.E. Series CR306, Eaton Class AN16 or Siemens "U.S. Series". All starters and disconnect switches shall be of the same manufacturer unless otherwise approved.
- 2.2 Where new motor starters and disconnect switches are to be installed in existing motor control centers they shall match existing units.
- 2.3 Magnetic starters shall be line voltage suitable for the service listed on the drawings. Each starter shall have one extra auxiliary contact for future control purposes, a 3-leg melting alloy thermal overload relay on a single block, a manual reset mechanism, a 120-volt control coil, Bulletin 509. Contractor shall have the option of installing Bulletin 512 combination starters in place of separately mounted switches and starters. Disconnects shall be fused type unless otherwise specifically indicated or required by NEC.
- 2.4 A HAND-OFF-AUTO selector switch shall be mounted in the face of each starter enclosure. The selector switch shall be so wired that when it is in the HAND or AUTO position, all SAFETY controls are wired in series with the selector switch; all CONTROL DEVICES shall be wired in the AUTO position only.
- 2.5 Each starter enclosure shall have a suitable 120-volt secondary control transformer fused separately on each phase of the primary and secondary, and grounded on the secondary.
- 2.6 Each starter shall have a red LED pilot light mounted in the face of the starter enclosure. The LED shall be wired so it will be on when the motor is energized.
- 2.7 Magnetic starters shall be furnished for motors, one horsepower and greater or any 3-phase motor, unless indicated otherwise on plan.
- 2.8 Manual starters with thermal overload protection shall be furnished for fractional horsepower, single phase motors unless otherwise noted and shall be Bulletin 600 with a pilot light, flush mounted in finished areas.
- 2.9 Two speed starters shall be separate winding (two winding); Bulletin 715 with adjustable time delay on high to low speed. Contractor shall verify that starter being provided is proper for motor being furnished.
- 2.10 Unless otherwise noted or required by Code, safety switches shall be Heavy Duty Type, NEMA 1 enclosures, fused except where fuses are specified or required to protect wiring from overload. Switches shall be quick make, quick break, externally operated with door interlocked with operating

handle and padlock provisions in OFF position. Provide solid neutral and ground bars where required. Switches located outside shall be raintight NEMA 3R, unless otherwise noted.

PART 3 - EXECUTION

- 3.1 Check full load ampere and service factor rating of each motor after installed and furnish the proper size overload heater elements to protect the motor.
- 3.2 Those portions of interlock and control wiring which are required but not prewired, shall be done in the field.
- 3.3 Motor starters and disconnect switches shall be conveniently accessible; all NEC minimum clearances from walls, pipes, ducts, equipment, etc., shall be maintained. Locate as inconspicuously as possible in finished spaces.
- 3.4 Refer to "Identification for Electrical Systems" section for nameplate requirements.
- 3.5 Provide 120-volt power for exterior diesel fuel spill box controls and tank mounted fuel level float interlocks at the new diesel tank located in fire pump room. Provide all raceways and wiring for a complete and operable system.

END OF SECTION

DIVISION 28 - ELECTRICAL INDEX

GCCC FIRE PUMP REPLACEMENT

HEAPY
MEP Engineer
Dayton, Ohio Project No. 2024-07029

Section	INDEX
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COMMON WORK RESULTS FOR ELECTRICAL

28 31 00	-	FIRE DETECTION AND ALARM (ADDRESSABLE)
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NOVEMBER, 2024

PART 1 - GENERAL

- 1.1 System is an existing microprocessor based Simplex 4100U. The system shall be modified to monitor the new diesel fire pump (replacement of old pump) and all associated flow and tamper switches.
- 1.2 Supervised Monitoring
- A. Operation of the supervisory service of the fire alarm system shall provide for the central monitoring and programmed control of various pieces of equipment and/or systems. These pieces of equipment shall be interfaced with the fire alarm system via dry contacts and supervised circuitry utilizing individual addressable modules (Monitor IAM) and programmable relay control module (Relay IAM) that are connected to the fire alarm systems data wiring.
 - B. The fire alarm supplier shall provide individual programming for each monitor point and control point for customized response. As a minimum, programmed response shall include the ability to sound the system trouble alarm at any or all operator control panels and annunciators, display unique alpha-numeric messages, re-initiate a silenced alarm that has not been corrected after a programmed time and initiate a higher alarm status for designated alarms that have not been acknowledged in a programmed time.
 - C. Supervisory subfunctions shall include:
 - 1. Fire Pump Alarms – The new diesel fire pump control panel contains contacts for monitoring and supervision. Provide monitoring of the following in accordance with NFPA 20:
 - a. Pump or motor running.
 - b. All associated flow and tamper switches required for the new diesel fire pump.
- 1.3 In the event of operating power failure or an open or a grounded circuit in the system, a trouble signal and trouble LED shall be activated until the system is restored to normal. The trouble event shall be recorded within the control panel historical trouble log, and printed on the system printer (when applicable). The trouble signal may be silenced by means of a button located on the control panel operator's interface. Upon restoration of the system to normal condition, the trouble indicators shall automatically extinguish.

PART 2 - PRODUCTS

- 2.1 Equipment shall be manufactured by Simplex Grinnell whose catalog numbers are used herein for establishing equipment criteria. Equipment supplier shall have a service organization within 50 miles of the project site and be a U.L. certified company. All material and/or equipment necessary for proper operation of the system not specified or described herein shall be deemed part of these specifications.
- A. Remote system components as manufactured by Wheelock, Gentex or System Sensor are acceptable if UL listed and warranted as part of the total fire alarm system, provided by the fire alarm equipment supplier.
- 2.2 Control Unit
- B. The control panel is existing and located in the security office.
- 2.3 Remote System Components

- C. Surface mounted fire alarm devices mounted on walls - such as manual stations, bells, horns, chimes, fire signal lights, etc. shall utilize finished backboxes. These backboxes shall be red metal and shall be field punched for conduit entrance and shall not employ stamped K-O construction.
 - D. Individual addressable monitor module shall be an addressable module used for monitoring N.O. contact devices such as water flow, tamper switches, the kitchen hood fire extinguishing system, etc. Simplex IAM #4090-9001
 - E. Waterflow switches shall indicate the continuous flow of water in sprinkler pipes. Switches shall be furnished and installed by the Fire Suppression Contractor. Wiring and connection shall be by this Electrical Contractor. Unit shall be equipped with retard mechanism, adjustable up to two minutes, to minimize false alarms due to pressure changes. Coordinate pipe size with Fire Suppression Contractor. Units are to be turned over to Fire Suppression Contractor for installation. Each waterflow switch shall be connected to the fire alarm system through a dedicated address via a monitor module. Simplex #2097-9047 thru 9054 depending on pipe size .
 - F. Gate valve switches (OS&Y) shall monitor the status of sprinkler valves where indicated on drawings and shall signal a trouble alarm when respective valve is closed. Switches shall be furnished and installed by the Fire Suppression Contractor. Wiring and connection shall be by this Electrical Contractor. Each gate valve switch shall be connected to the fire alarm system through a dedicated address via a monitor module. Simplex #2097-9032
 - G. A digital communicator is existing.
- 2.4 The fire alarm supplier shall submit for approval with shop drawings, floor plans, schematic and point to point wiring diagrams showing all manual and automatic devices, control panels, sounding devices, conduit sizes, number and size of wires, etc. Shop drawings shall include calculations for sizing of signal power supplies, voltage drop calculations for audible and visual signal circuits speaker amplifiers and standby batteries. Voltage drop calculations will be based on each strobe drawing 110 percent of operating current and each audible device drawing 120 percent of operating current to allow for future devices. Submittal shall include copies of personnel certification as required in 3.1. SHOP DRAWINGS WILL BE REJECTED UNLESS THE SUBMITTAL INCLUDES ALL THIS REQUIRED INFORMATION.
- 2.5 At completion of the project, the wiring diagrams shall be revised "as built" and included as part of the maintenance manuals. The fire alarm supplier shall also furnish a hard copy printout of each detector's address, operating routines, etc. as part of the as-built drawings. Additionally, the supplier shall include an electronic copy (in a digital media format acceptable to the Owner) of the system's operating program with the as-builts for the Owner's records.
- 2.6 The Contractor or his fire alarm supplier/installer shall submit shop drawings, after the Architect's and Engineer's review, to the State Fire Marshal's Office where applicable for their review and approval. Where buildings are not under the jurisdiction of the State Fire Marshal, the shop drawings shall be submitted to the local fire official for review and approval. The fire alarm supplier / installer shall provide sealed documents for submittal to the inspection authority.

PART 3 - EXECUTION

- 3.1 Follow NFPA 72 and manufacturer's instructions regarding mounting, wiring and testing system. Installer(s) shall meet project's respective State and local Municipality requirements for certification and as a minimum, have one installer certified as a NICET Level 2. In addition, the fire alarm system supplier shall have on staff, one NICET Level 3 certified individual and be an U.L. certified company.
- 3.2 Wiring, #14 AWG minimum, shall be installed in accordance with manufacturer's wiring diagrams, recommendations and in compliance with practices set forth by local, state and national fire codes.

Color code and tag all wires at all junction points. #18 AWG conductors may be utilized when installed as a multi-conductor cable with an overall protective jacket when approved by manufacturer. All fire alarm system wiring shall comply with NEC Article 760.

- 3.3 All wiring shall be installed in conduit; conduit system shall be independent of all other systems.
- 3.4 Provide protection, such as wire guards, which are listed for the specific use on all fire alarm devices within gyms, locker rooms, multi-purpose rooms and other areas subject to mechanical damage.
- 3.5 The following wiring and conduit shall be included in the fire alarm system work in addition to that indicated above:
 - A. Wiring to supervisory monitor and control points such as fire pump alarm wiring.
 - B. Provide surge suppressors on all wiring which extends outside the building by either underground or overhead wiring to other buildings or remote device locations. The fire alarm supplier shall provide suppressors that are compatible with their system.
- 3.6 Upon completion and before acceptance, system performance shall be demonstrated in the presence of the Engineer / Prime Contractor that all specified functions are accomplished and that response is accomplished from all initiating and indicating devices. Provide step-by-step user instructions with graphics identifying operator controls for normal user operations such as silencing of alarms, resetting of system, locking and unlocking controlled doors, etc. Each normal operation shall be on a separate page and all pages shall be laminated for durability and assembled in a three ring "operators manual". This manual is in addition to shop drawings and maintenance manuals.
- 3.7 System shall be tested by and a certificate of inspection shall be furnished by a qualified manufacturer's representative or equipment vendor; submit report indicating results to the Engineer/ Prime Contractor. This testing shall be done with the building HVAC systems in operation and the manufacturer's representative shall field check the dBA readings in accordance with levels established by NFPA. During this checkout period, adjust audible device output levels as needed.
- 3.8 Warranty
 - A. Warrant all workmanship, equipment, material and software entering into this contract for a period of three (3) years from date of final acceptance or date of beneficial use, as agreed to between Contractor and Engineer or Prime Contractor. Any materials or equipment proving to be defective during the warranty period shall be made good without expense to the Owner. Provide a statement of this warranty with the O & M manuals.
 - B. During the warranted operation, provide an annual inspection (for a total of 3). This work is inclusive with the warranty and shall be performed during regular working hours, Monday through Friday, excluding legal holidays, as coordinated with the Owner. Provide an inspection report to the Owner.
 - C. Provide service during normal working hours on a normal business day within (4) hours after notification by the Owner for normal service or within (2) hours for emergency service. Emergency service is defined as the loss of 25 percent or more of system components operation or the loss of the head-end equipment which renders the system un-usable. Provide an on-site authorized factory technician within 24 hours if required.
 - D. If equipment components cannot be repaired within 24 hours of service visit, provide "loaner" equipment components to the Owner at no charge.

- 3.9 Base bid includes two(2) additional combination audible/visual alarm signals complete with installation, power supplies and fifty (50) feet of conduit with circuitry per device. These additional base bid devices shall also include any related submissions to the AHJ, revised "as-builts", related system programming and revised Owner electronic copy.

END OF SECTION

GENERAL NOTES

[illegible]

	<p>DETAIL: B = DETAIL DESIGNATION E2 = SHEET WHERE DETAIL IS LOCATED</p>
	<p>SECTION: 1 = SECTION DESIGNATION E2 = SHEET WHERE SECTION IS LOCATED</p>
	<p>ELEVATION: 1 = ELEVATION DESIGNATION T2 = SHEET WHERE ELEVATION IS LOCATED</p>
	<p>PLAN NOTE: APPLIES ONLY TO THE SHEET WHICH IT IS SHOWN.</p>
	<p>DETAIL NOTE: APPLIES ONLY TO THE ASSOCIATED DETAIL.</p>
	<p>LIGHTING CONTROL: DETAIL NOTE: APPLIES TO THE LIGHTING CONTROL SEQUENCE OF OPERATIONS SCHEDULE FOR ROOM CONTROL.</p>
	<p>DEVICE QUANTITY - POWER NOTE: REFER TO DEVICES QUANTITY - POWER SCHEDULE.</p>
	<p>LADDER TRAY: 12" x 4" DEEP UNLESS NOTED OTHERWISE.</p>
	<p>CABLE TRAY: 12" x 4" DEEP UNLESS NOTED OTHERWISE.</p>
	<p>WIRE & CONDUIT IN WALL OR ABOVE CEILING.</p>
	<p>WIRE & CONDUIT IN OR BELOW SLAB OR GRADE.</p>
	<p>CONDUIT TO BE REMOVED.</p>
	<p>EXISTING WIRE & CONDUIT TO REMAIN.</p>
	<p>CONDUIT FOR DATA CIRCUITRY.</p>
	<p>WIRE & CONDUIT FOR EMERGENCY CIRCUITRY.</p>
	<p>WIRE & CONDUIT FOR FIRE ALARM CIRCUITRY.</p>
	<p>WIRE & CONDUIT FOR INTERCOM SYSTEM CIRCUITRY.</p>
	<p>WIRE & CONDUIT FOR NURSE CALL CIRCUITRY.</p>
	<p>WIRE & CONDUIT FOR NIGHT LIGHT CIRCUITRY.</p>
	<p>CONDUIT FOR PHONE CIRCUITRY.</p>
	<p>WIRE & CONDUIT FOR SOUND SYSTEM CIRCUITRY.</p>
	<p>WIRE & CONDUIT FOR SECURITY SYSTEM CIRCUITRY.</p>
	<p>WIRE & CONDUIT FOR TELEVISION SYSTEM CIRCUITRY.</p>
	<p>WIRE RUN IN SURFACE SYMBOL.</p>
	<p>CABLE MANAGEMENT SYSTEM PATHWAY.</p>
	<p>EACH ARROWHEAD REPRESENTS ONE COMPLETE CIRCUIT. "X" DENOTES PANEL NAME; NUMBER(S) DENOTES CIRCUIT(S).</p>

**ALL SYMBOLS OR ABBREVIATIONS MIGHT NOT
NECESSARILY BE USED ON THIS PROJECT.**

2	11/08/24	RD DOCUMENTS
	09/01/24	100% CONSTRUCTION DOCUMENTS
MARK	DATE	DESCRIPTION
PROJECT NO: 2024-07020		
REVIT FILE: C:\BIM\A000\2024-07020-MEP-Civil\revit_09000.rvt		
DRAWN BY: JJT		
CHKD BY: EH		
PROJECT STATUS: 100% CONSTRUCTION DOCUMENTS		
ISSUE DATE: 08/15/2024		
COPYRIGHT:		
SHEET TITLE		
LEGEND, GENERAL NOTES AND INDEX		
E001		



P: 937-224-0861 www.heapy.com
PROJECT NO. 2024-07029

SOUTH BUILDING FIRE PUMP REPLACEMENT

WINNER

GREATER COLUMBUS
CONVENTION CENTER
2-36 E NATIONWIDE BLVD
COLUMBUS, OH 43215



SOUTH BUILDING FIRE PUMP REPLACEMENT

OWNER
GREATER COLUMBUS
CONVENTION CENTER
52-36 E NATIONWIDE BLVD
COLUMBUS, OH 43215

Panel: LV-EMPGP1 EXISTING

Location: LE PLEEC RESUR CLOSET P-6

Supply From: HEMP-I100KVA TRANS

Voltage: 208Y/120/3PH-4W

Mounting: Surface

Enclosure: Type 1

A.I.C. Rating: EXISTING

Main's Type: MLO

Main's Rating: 225 A

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trips	Circuit Description	CKT
1	EX PARKING GARAGE	.0A	1	1000... 1000..				1	EX EMETER PIT	4
3	EX PARKING GARAGE	.0A	1		1000... 1000..			1	EX POWER TO OFFICE	4
5	EX POWER TO OFFICE	.0A	1			500 VA	0 VA	1	EX TURNED OFF NO.	6
7	EX HONEYWELL PL-107	.0A	1	1000... 600 VA				1	FP CONTROLLER R	8
9	EX HONELWELL PL-208	.0A	1	1000... 1000..				1	EX ELEVATOR RS CONT	10
11	EX ELEV WITLTS	.0A	1			1000... 1000..		1	EX ELEVATOR RS CONT	12
13	EX LTHSHEAT STAIR #2	.0A	1	1000... 0 VA				1	EX TURNED OFF NO.	14
15	TURNED OFF NO.	.0A	1		1000... 500 VA			1	EX ELEV LTS	16
17	EX LTS -204	.0A	1			1000... 500 VA		1	EX REC	18
19	EX MOTOR PUMP RM	.0A	1	1200V... 0 VA				1	EX TURNED OFF NO.	20
21	EX FIRE PUMP BLOC.	.0A	1	0 VA	600 VA			1	BATTERY CHARGER	22
23	FUSE BL ALARM	.0A	1			600 VA	1000..	1	EX ON-NO LABEL	24
25	TURNED OFF NO.	.0A	1	0 VA	0 VA			1	EX TURNED OFF NO.	26
27	TURNED OFF NO.	.0A	1	0 VA	0 VA	0 VA	0 VA	1	EX TURNED OFF NO.	28
29	TURNED OFF NO.	.0A	1	0 VA	0 VA	0 VA	0 VA	1	EX TURNED OFF NO.	30
31	ON-NO LABEL	.0A	1	1000... 0 VA				1	EX TURNED OFF NO.	32
33	TURNED OFF NO.	.0A	1	0 VA	0 VA	0 VA	0 VA	1	EX TURNED OFF NO.	34
35	TURNED OFF NO.	.0A	1					1	EX TURNED OFF NO.	36
37	TURNED OFF NO.	.0A	2	0 VA	0 VA			2	EX TURNED OFF NO.	38
39	--	--	--	0 VA	5800..	0 VA	5800..	2	ON-NO LABEL	40
41	TURNED OFF NO.	.0A	1			0 VA	5800..	--	--	42
Total Load:				6.80 KVA	11.90 KVA	11.40 KVA				
Load Classification				Connected...	Demand Factor	Estimated...	Panel Totals			
Power				1800 VA	100.00%	1800 VA	Total Conn. Load: 30.1 kVA			
Spare				28300 VA	100.00%	28300 VA	Total Est. Demand: 30.1 kVA			
							Total Conn.: 84 A			
							Total Est. Demand: 84 A			

Notes: 1) EXISTING PANELBOARD.
2) "X" IN SCHEDULE DESIGNATES EXISTING BREAKER AND CIRCUIT.

TOTAL CONNECTED	ESTIMATED DEMAND
30.1 kVA	30.1 kVA (84 A)

Panel: LEVMP-61 EXISTING

Location: Level PELEO RISER GLOSET P4

Supply From: MS-1

Voltage: 480V/277V-3PH-4W

Mounting: Surface

Enclosure: Type 1

A.I.C. Rating: EXISTING

Maine Type: MLO

Maine Rating: 2.5A

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT		
1	SPACE	--	1	--	--	--	1	--	SPACE	2		
2	SPACE	--	1	--	--	--	1	--	SPACE	3		
3	EX LVS LWS	20 A	1	--	--	500 VA	1	20 A	EX LVS 746	6		
7	EX EX LMS P1 STAIR D	20 A	1	1000.	1000.	--	1	20 A	EX N-DRIVE P2 STAIRS	8		
9	EX EX LMS P1	20 A	1	--	1000.	1000.	1	20 A	EX N-DRIVE P2	10		
11	NO LABEL	20 A	1	--	--	0 VA	1000.	1	20 A	EX C-DRIVE P2	12	
13	NO LABEL	20 A	1	0 VA	0 VA	--	--	1	20 A	EX W-DRIVE P2	14	
15	EX LVS LTS 204	20 A	1	--	1000.	1000.	1	20 A	EX E-DRIVE P2	16		
17	EX LVS LTS PMS #4	20 A	1	--	--	1000.	1000.	1	20 A	EX COMP IN ROOM	18	
19	NO LABEL	20 A	1	0 VA	1000.	--	--	3	20 A	EX COMP IN ROOM	20	
21	SPACE	--	1	--	--	0 VA	--	--	--	--	22	
23	EX COMP IN ROOM	--	3	4400.	942 VA	--	0 VA	--	--	--	24	
25	--	--	--	--	4400.	942 VA	3	20 A	FP JOCKEY PUMP	--	26	
27	--	--	--	--	--	--	4400.	942 VA	3	20 A	EX COMP IN ROOM	28
29	--	--	--	--	--	--	--	--	--	--	30	
31	EX SUMP PUMP 102	20 A	3	4400.	4400.	--	3	20 A	EX COMP IN ROOM	--	32	
33	--	--	--	--	4400.	4400.	--	--	--	--	34	
35	--	--	--	--	--	--	4400.	4400.	--	--	36	
37	EX SUMP PUMP 103	20 A	3	4400.	4400.	--	3	20 A	EX COMP IN ROOM	--	38	
39	--	--	--	--	4400.	4400.	--	--	--	--	40	
41	--	--	--	--	--	--	4400.	4400.	--	--	42	
				Total Load:	25.94 kVA	26.94 kVA	26.94 kVA					
Load Classification		Connected--		Demand Factor		Estimated--		Panel Totals				
Motor		2827 VA		125.00%		3633 VA		Total Conn. Load: 79.93 kVA				
Spares		77000 VA		100.00%		77000 VA		Total Est. Demand: 93.93 kVA				
								Total Conn. Demand: 96 A				
								Total Est. Demand: 97 A				

Notes: 1) EXISTING PANEL BOARD.

2) "X" IN SCHEDULE DESIGNATES EXISTING BREAKER AND CIRCUIT.

TOTAL CONNECTED

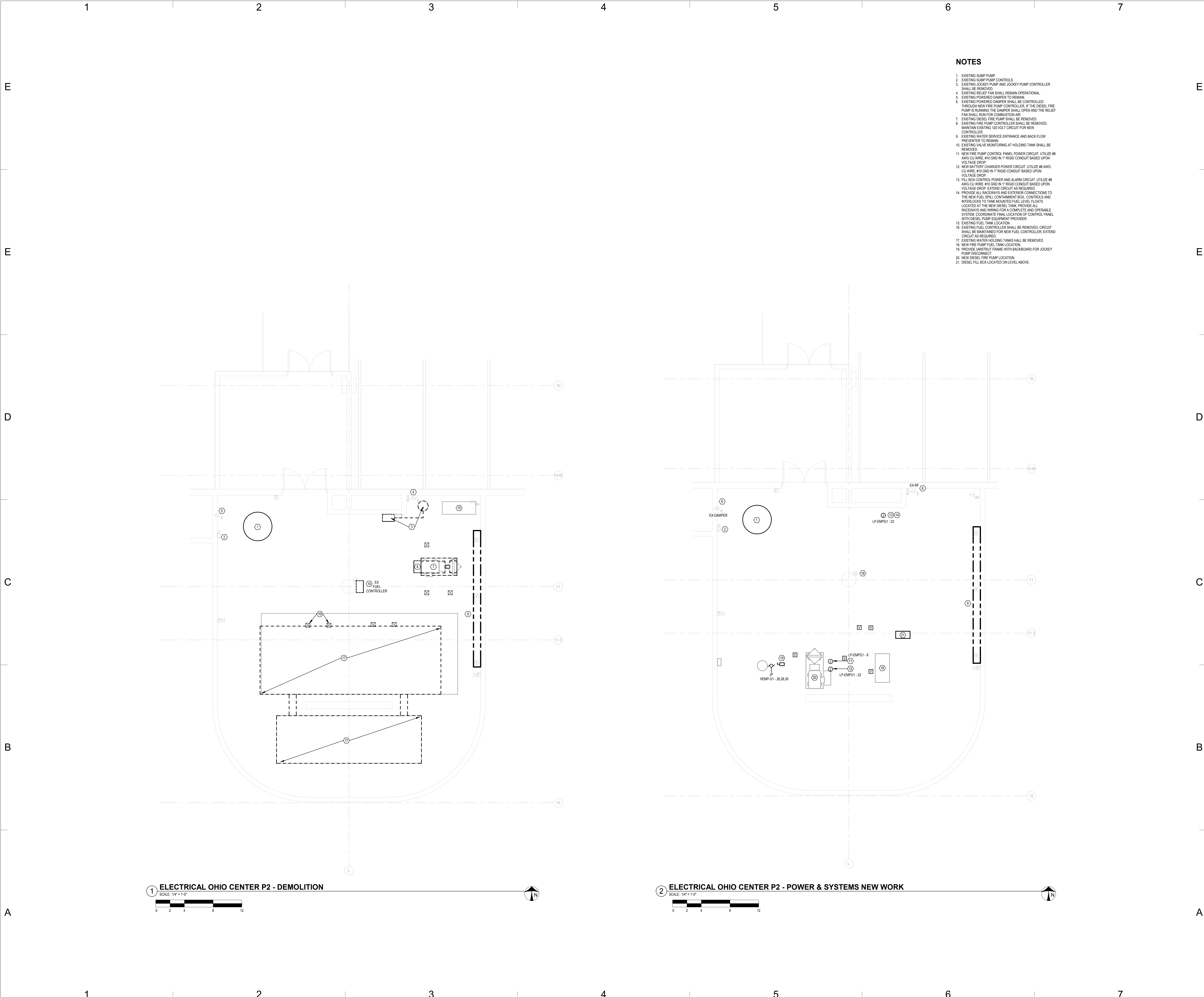
79.93 kVA

ESTIMATED DEMAND

79.93 kVA (97 A)

[illegible]

2	11/08/24	RD DOCUMENTS
1	08/01/24	100% CONSTRUCTION DOCUMENTS
MARK	DATE	DESCRIPTION
PROJECT NO: 2024-07029		
REVIT FILE: C:\BIMMarket\2024-07029 MEP_Central_explorer.rvt		
DRAWN BY: JTT		
CHKD BY: EH		
PROJECT STATUS: 100% CONSTRUCTION DOCUMENTS		
ISSUE DATE: 08/15/2024		
COPYRIGHT:		
SHEET TITLE		
SINGLE-LINE, SCHEDULES AND DETAILS		
E002		



NOTES

1. EXISTING SUMP PUMP.
2. EXISTING SUMP PUMP CONTROLS.
3. EXISTING JOCKEY PUMP AND JOCKEY PUMP CONTROLLER SHALL BE REMOVED.
4. EXISTING RELIEF FAN SHALL REMAIN OPERATIONAL.
5. EXISTING POWERED DAMPER TO REMAIN.
6. EXISTING POWERED DAMPER SHALL BE CONTROLLED THROUGH NEW FIRE PUMP CONTROLLER. IF THE DIESEL FIRE PUMP IS RUNNING THE DAMPER SHALL OPEN AND THE RELIEF FAN SHALL RUN FOR COMBUSTION AIR.
7. EXISTING DIESEL FIRE PUMP SHALL BE REMOVED.
8. EXISTING FIRE PUMP CONTROLLER SHALL BE REMOVED. MAINTAIN EXISTING 120 VOLT CIRCUIT FOR NEW CONTROLLER.
9. EXISTING WATER SERVICE ENTRANCE AND BACK FLOW PREVENTER TO REMAIN.
10. EXISTING VALVE MONITORING AT HOLDING TANK SHALL BE REMOVED.
11. NEW FIRE PUMP CONTROL PANEL POWER CIRCUIT. UTILIZE #8 AWG CU WIRE, #10 GND IN 1" RIGID CONDUIT BASED UPON VOLTAGE DROP.
12. NEW BATTERY CHARGER POWER CIRCUIT. UTILIZE #8 AWG CU WIRE, #10 GND IN 1" RIGID CONDUIT BASED UPON VOLTAGE DROP.
13. FUEL BOX CONTROL POWER AND ALARM CIRCUIT. UTILIZE #8 AWG CU WIRE, #10 GND IN 1" RIGID CONDUIT BASED UPON VOLTAGE DROP. EXTEND CIRCUIT AS REQUIRED.
14. PROVIDE ALL RACEWAYS AND EXTERIOR CONNECTIONS TO THE NEW FUEL SPILL CONTAINMENT BOX. CONTROLS AND INTERLOCKS TO TANK MOUNTED FUEL LEVEL FLOATS LOCATED AT THE NEW DIESEL TANK. PROVIDE ALL RACEWAYS AND WIRING FOR A COMPLETE AND OPERABLE SYSTEM. COORDINATE FINAL LOCATION OF CONTROL PANEL WITH DIESEL PUMP EQUIPMENT PROVIDER.
15. EXISTING FUEL TANK LOCATION.
16. EXISTING FUEL CONTROLLER SHALL BE REMOVED. CIRCUIT SHALL BE MAINTAINED FOR NEW FUEL CONTROLLER. EXTEND CIRCUIT AS REQUIRED.
17. EXISTING WATER HOLDING TANKS SHALL BE REMOVED.
18. NEW FIRE PUMP FUEL TANK LOCATION.
19. PROVIDE UNISTRUT FRAME WITH BACKSBOARD FOR JOCKEY PUMP DISCONNECT.
20. NEW DIESEL FIRE PUMP LOCATION.
21. DIESEL FILL BOX LOCATED ON LEVEL ABOVE.



SOUTH BUILDING FIRE PUMP REPLACEMENT

OWNER
GREATER COLUMBUS
CONVENTION CENTER
52-36 E NATIONWIDE BLVD
COLUMBUS, OH 43215

MARK	DATE	DESCRIPTION
2	11/08/24	BD DOCUMENTS
1	08/15/24	100% CONSTRUCTION DOCUMENTS
PROJECT NO: 2024-07029		
REVIT FILE: C:\BIM\2024\2024-07029 MEP Central_ghorman.rvt		
DRAWN BY: JTT		
CHK'D BY: EH		
PROJECT STATUS: 100% CONSTRUCTION DOCUMENTS		
ISSUE DATE: 08/15/2024		
COPYRIGHT:		

SHEET TITLE
LEVEL P2 LAYOUT
ELECTRICAL

FIRE SUPPRESSION PIPING DESIGNATIONS

	EXISTING PIPE TO REMAIN
	EXISTING PIPE TO BE REMOVED
	COMPRESSED AIR PIPE
	COMBINATION FIRE SUPPRESSION AND DOMESTIC WATER SERVICE
	SPRINKLER PIPE (DRY)
	FIRE SUPPRESSION (STANDPIPE / SPRINKLER MAIN)
	FIRE SERVICE
	PRE-ACTION / DELUGE SPRINKLER PIPE
	SPRINKLER PIPE (WET)
	SPRINKLER DRAIN PIPE
	WATER SERVICE

FIRE SUPPRESSION SYMBOLS

	CONCEALED PENDENT SPRINKLER
	FIRE DEPARTMENT VALVE
	FIRE HYDRANT
	FLOW SWITCH
	GATE VALVE (OS&Y)
	INSTITUTIONAL PENDENT SPRINKLER
	PENDENT SPRINKLER
	POST INDICATOR VALVE
	RECESSED PENDENT SPRINKLER
	SIDE WALL SPRINKLER
	SUPERVISED VALVE
	UPRIGHT SPRINKLER

PIPING SYMBOLS

	BOTTOM CONNECTION (45°)
	BOTTOM CONNECTION (90°)
	BRANCH TEE CONNECTION (NOTE: BALLHEAD TEES ARE NOT PERMITTED)
	DIRECTION OF PITCH
	DROP
	ELBOW DOWN
	ELBOW UP
	FLOW DIRECTION DESIGNATION
	PIPE RISER
	PUMP
	RISE
	TOP CONNECTION (45°)
	TOP CONNECTION (90°)

VALVES AND FITTINGS

	CHECK VALVE
	SHUTOFF VALVE (REFER TO SPECIFICATIONS FOR REQUIRED TYPE BASED ON APPLICATIONS)
	COMBINATION SHUTOFF AND BALANCING VALVE (REFER TO SPECIFICATIONS FOR REQUIRED TYPE BASED ON APPLICATIONS)
	CONCENTRIC PIPE REDUCER
	ECCENTRIC PIPE REDUCER
	PRESSURE GAUGE
	TEMPERATURE GAUGE OR THERMOMETER
	UNION
	CLEANOUT
	STRAINER
	STRAINER WITH A BLOW DOWN VALVE AND HOSE CONNECTION
	DRAIN VALVE WITH HOSE END CONNECTION
	AUTOMATIC FLOW CONTROLLER WITH PTT PLUG IN AND OUT
	EXPANSION JOINT
	PRESSURE REGULATING VALVE
	SAFETY RELIEF VALVE - PIPE DISCHARGE AIR GAPPED TO FLOOR DRAIN UNLESS NOTED OTHERWISE
	PRESSURE AND TEMPERATURE SAFETY RELIEF VALVE - PIPE DISCHARGE AIR GAPPED TO FLOOR DRAIN UNLESS NOTED OTHERWISE
	PRESSURE AND TEMPERATURE TEST PLUG
	VACUUM GAUGE WITH STOP
	END CAP
	PLUG
	PLUG VALVE
	SHUTOFF VALVE AND BOX
	SHUTOFF VALVE ON RISER
	SOLENOID VALVE
	WATER METER

GENERAL FLOOR PLAN NOTES

	APPROXIMATE DIMENSION ABOVE FINISHED FLOOR TO CENTERLINE OF PIPE, UNLESS NOTED OTHERWISE
	APPROXIMATE DIMENSION ABOVE FINISHED FLOOR TO TOE, 3'-0" TO TOP OR BOTTOM OF EQUIPMENT, UNLESS NOTED OTHERWISE
	DETAIL B - DETAIL DESIGNATION P2 = SHEET WHERE DETAIL IS LOCATED
	SECTION 1 - SECTION DESIGNATION P2 = SHEET WHERE DETAIL IS LOCATED
	FIRE SUPPRESSION HAZARD CLASSIFICATION AND HAZARD CLASSIFICATION GROUP
	EQUIPMENT REFERENCE LETTER DESIGNATION VARIES. REFER TO SCHEDULES.
	EQUIPMENT, DEVICE, OR PLUMBING FIXTURE MARK LETTER DESIGNATIONS REFER TO SCHEDULES.
	CONNECT TO EXISTING
	DEMOLISH TO POINT INDICATED
	PLAN NOTE - APPLIES ONLY TO THE SHEET WHICH IT IS SHOWN UNLESS NOTED OTHERWISE.
	DETAIL NOTE - APPLIES ONLY TO THE ASSOCIATED DETAIL.

ABBREVIATIONS

AAP	- AREA ALARM PANEL (MEDICAL GAS)	FOF	- FUEL OIL FLOW	P	- PROPANE GAS
AC	- AIR COMPRESSOR OR AIR CONDITIONER	FOG	- FUEL OIL GAUGE	PC	- PLUMBING CONTRACTOR (DIVISION 22)
ACC	- ACCESS	FOR	- FUEL OIL RETURN	PD	- OR PUMPED CONDENSATE RETURN
ACCU	- AIR COOLED CONDENSING UNIT	FOS	- FUEL OIL SUPPLY	PD	- PUMP DISCHARGE OR PARAPET DRAIN
AD	- ACCESS DOOR OR AREA DRAIN	FOT	- FLAT ON TOP	PV	- POST INDICATOR VALVE
ADS	- ACID DILUTION BATH	FPM	- FEET PER MINUTE	PLUG	- PLUMBING
ADJ	- ADJUSTABLE	FR	- FIRE RISER	PS	- PRE-ACTION/DELUGE SPRINKLER
AF	- ABOVE FINISHED FLOOR	FS	- FLOOR SINK OR FIRE SERVICE	PRES	- PRESSURE
AFG	- ABOVE FINISHED GRADE	FSC	- FIRE SUPPRESSION CONTRACTOR (DIVISION 21)	PRV	- PRESSURE REGULATING VALVE
ALT	- ALTERNATE	FT	- FEET	PSF	- POUNDS PER SQUARE FOOT
AP	- ACCESS PANEL	FTG	- FOOTING	PSI	- POUNDS PER SQUARE INCH
APPROX	- APPROXIMATE	G	- GAS OR NATURAL GAS	PSV	- PRESSURE SUSTAINING VALVE
ARCH	- ARCHITECT OR ARCHITECTURAL	GA	- GAUGE	PSD	- POUNDS PER SQUARE INCH GAUGE
ASBY	- ASSEMBLY	GAL	- GALLON	PW	- PURE WATER
AV	- ACID VENT	GALV	- GALVANIZED		
AW	- ACID WASTE	GC	- GENERAL TRADES CONTRACTOR	RA	- RETURN AIR
		GD	- GARAGE DRAINAGE	RAD	- RADIUS
BDD	- BACK DRAFT DAMPER	GS	- GAS SERVICE	RC	- REINFORCED CONCRETE PIPE
BEP	- BACKFLOW PREVENTER	GW	- GREASE WASTE	RD	- ROOF DRAIN
BLOG	- BUILDING	H	- HYDROGEN	RSC	- RECESSED
BOB	- BOTTOM OF BEAM	H2	- HYDROGEN	REQD	- REQUIRED
BOB	- BOTTOM OF DUCT	HE	- HOSE BIBB	RL	- REFRIGERANT LIQUID
BOE	- BOTTOM OF EQUIPMENT	HC	- HVAC CONTRACTOR (DIVISION 23)	ROR	- REVERSE OSMOSIS WATER SUPPLY
BOF	- BOTTOM OF FOOTING	HD	- HUB DRAIN	ROR	- REVERSE OSMOSIS WATER RETURN
BOG	- BOTTOM OF GRILLE	HE	- HELIUM	RM	- REVOLUTIONS PER MINUTE
BOP	- BOTTOM OF PIPE	HG	- REFRIGERANT HOT GAS	RS	- REFRIGERANT SUCTON
BOT	- BOTTOM	HP	- HORSEPOWER OR HIGH POINT	RV	- RELIEF VALVE
BT	- BATHTUB	HPC	- HIGH PRESSURE CONDENSATE RETURN	S	- SPRINKLER (WET)
BTU	- BRITISH THERMAL UNIT	HPS	- HIGH PRESSURE STEAM SUPPLY	SA	- SHOCK ARRESTOR OR SUPPLY AIR
BTWH	- BRITISH THERMAL UNIT PER HOUR	HPW	- HIGH PURITY WATER	SAN	- SANITARY OR SANITARY DRAIN
		HR	- HOSE REEL	SCH	- SCHEDULE
CA	- COMPRESSED AIR	HT	- HEAT TRACE	SCW	- SOFT COLD WATER
CB	- CATCH BASIN	HTR	- HEATER	SD	- SPRINKLER DRAIN OR SUBSOL DRAIN
CBD	- COUNTER BALANCED BACKDRAFT DAMPER	HVAC	- HEATING, VENTILATING, AND AIR CONDITIONING	SH	- SHOWER
CFCI	- CONTRACTOR FURNISHED CONTRACTOR	HW	- HOT WATER	SHT	- SHEET
		IN	- INSTALLED	SK	- SINK
CFM	- CUBIC FEET PER MINUTE	IA	- MEDICAL INSTRUMENT AIR	SPEC	- SPECIFICATIONS
CHR	- CHILLED WATER RETURN	ID	- INSIDE DIAMETER	SQ	- SQUARE
CI	- CAST IRON	INV	- INVERT ELEVATION	SR	- SUPPLY RISER
CK	- CLINICAL SINK	N	- INCHES	SS	- SANITARY STACK (SOL OR WASTE) OR STAINLESS STEEL
CLG	- CEILING	IV	- INDIRECT VENT	STD	- STANDARD
CML	- CONCRETE MASONRY UNIT	W	- INDIRECT WASTE	STM	- STORM OR STORM DRAINAGE
CO	- CLEAN OUT	JS	- JANITOR SINK	STRUC	- STRUCTURAL OR STRUCTURE
CO2	- MEDICAL CARBON DIOXIDE			SUC	- SITE UTILITY CONTRACTOR
CONN	- CONNECT OR CONNECTION				
CONTR	- CONTRACTOR				
CORR	- CORRIDOR	K	- KITCHEN WASTE	T	- FUEL TANK VENT
CS	- CLINICAL SINK OR COLD SOFT WATER	KEC	- KITCHEN EQUIPMENT CONTRACTOR	TD	- TRENCH DRAIN
CTR	- CENTER			TEMP	- TEMPERATURE
CU	- COPPER	L	- LENGTH	TOB	- TOP OF BEAM
CWS	- COMBINATION WATER SERVICE OR CONDENSER WATER SUPPLY	LA	- LABORATORY COMPRESSED AIR	TOD	- TOP OF DUCT
		LAV	- LAVATORY	TOE	- TOP OF EQUIPMENT
D	- DEPTH OR DRAIN LINE	LBS	- POUNDS	TOP	- TOP OF FOOTING
DCW	- DOMESTIC COLD WATER	LOW	- LABORATORY COLD WATER	TOJ	- TOP OF JOIST
DE	- DIESEL EXHAUST	LEC	- LABORATORY EQUIPMENT CONTRACTOR	TOP	- TOP OF PIPE
DET	- DETAIL	LHW	- LABORATORY HOT WATER	TOS	- TOP OF SLAB OR TOP OF STEEL
DFU	- DRAINAGE FIXTURE UNIT	LHWR	- LABORATORY HOT WATER RETURN	TF	- TRAP FILLER
DHW	- DOMESTIC HOT WATER	LPC	- LOW PRESSURE CONDENSATE RETURN	TP	- TRAP PRIMER OR TRAP PRIMER DISCHARGE
DHWR	- DOMESTIC HOT WATER RETURN	DETAL	- DETAIL	TW	- TEMPERED WATER
DI	- DIAMETER	LV	- LABORATORY VACUUM OR LABORATORY VENT	TYP	- TYPICAL
DN	- DOWN	LW	- LABORATORY WASTE		
DS	- DOWN SPOUT OR SPRINKLER (DRY)	MA	- MEDICAL COMPRESSED AIR	UR	- URINAL
DT	- PERFORATED DRAIN TILE	MAP	- MASTER ALARM PANEL (MEDICAL GAS)	UNO	- UNLESS NOTED OTHERWISE
DWG	- DRAWING	MAX	- MAXIMUM	V	- VENT OR SANITARY SEWER VENT
		MB	- MOP BASH	V	- VACUUM
EA	- EACH	MC	- MECHANICAL CONTRACTOR (DIVISION 23)	VC	- VACUUM CLEANING
EC	- ELECTRICAL CONTRACTOR (DIVISION 26)	MEZZ	- MEZZANINE	VDV	- VACUUM CLEANING VALVE
EFW	- EMERGENCY FIRE WASH	MFR	- MANUFACTURER	VE	- VACUUM EXHAUST
EJ	- EXPANSION JOINT	MH	- MINUTE	VEL	- VELOCITY
ELEC	- ELECTRICAL	MN	- MINIMUM OR MINUTE	VB	- VALVE IN BOX
ELEV	- ELEVATOR	MSC	- MISCELLANEOUS	VOL	- VOLUME
EQU	- EQUIPMENT	MTD	- MOUNTED	VP	- VACUUM PUMP
ET	- EXPANSION TANK	MTG	- MOUNTING	VS	- VENT STACK
ETR	- EXISTING TO REMAIN	MPC	- MEDIUM PRESSURE CONDENSATE RETURN	VTR	- VENT THROUGH ROOF
ES	- EMERGENCY SHOWER	MPS	- MEDIUM PRESSURE STEAM SUPPLY	VR	- VENT RISER
ECS	- EQUIPMENT SUPPLY	MU	- WATER MAKE UP		
EWC	- ELECTRICAL WATER COOLER	MV	- MEDICAL SURGICAL VACUUM		
EXP	- EXHAUST AIR	N2	- MEDICAL NITROGEN		
EXP	- EXPANSION	NC	- NORMALLY CLOSED		
EXT	- EXTERIOR	NC	- EXISTING TO REMAIN		
EX	- EXISTING	NIC	- NOT IN CONTRACT		
		NOD	- NORMALLY OPEN		
F	- FIRE SUPPRESSION (STANDPIPE/SPRINKLER MAIN)	NO	- MEDICAL NITROUS OXIDE		
FCE	- FIRE CONTROL EQUIPMENT	NPW	- NON-POTABLE WATER		
FCO	- FLOOR CLEANOUT	NPT	- NATIONAL PIPE THREAD		
FD	- FLOOR DRAIN	NTS	- NOT TO SCALE		
FDC	- FIRE DEPARTMENT CONNECTION				
FDV	- FIRE DEPARTMENT VALVE	O2	- MEDICAL OXYGEN		
FF	- FINISHED FLOOR ELEVATION	OD	- OUTDOOR AIR		
FLR	- FLOOR	OFI	- OWNER FURNISHED CONTRACTOR		
FM	- FORCE MAIN				
FOB	- FLAT ON BOTTOM				

FIRE SUPPRESSION DESIGN NOTES

- A. ALL PIPING IS ABOVE THE CEILING (AT THE UNDERSIDE OF STRUCTURE IN EXPOSED STRUCTURAL AREAS) UNLESS OTHERWISE INDICATED.
- B. CONTRACTOR SHALL MAKE REQUIRED FLOW TESTS, LAY OUT SYSTEMS, OBTAIN APPROVALS FROM THE AUTHORITY HAVING JURISDICTION AND THE OWNER'S INSURER PRIOR TO BEGINNING ANY FABRICATION OR INSTALLATION WORK.
- C. ALL PIPING SHOWN (WITH SIZES) SHALL BE INSTALLED AS SIZED UNLESS HYDRAULIC CALCULATIONS INDICATED A LARGER SIZE IS NECESSARY. FOR PIPING NOT SHOWN OR SIZED ON THE DRAWINGS, PIPE SIZES SHALL BE BASED ON FIRE SUPPRESSION CONTRACTORS HYDRAULIC CALCULATIONS.
- D. EXERCISE SPECIAL CARE TO COORDINATE PIPING AND EQUIPMENT LOCATIONS WITH ALL OTHER TRADES.



CONSULTANTS



SOUTH BUILDING FIRE PUMP REPLACEMENT

OWNER

GREATER COLUMBUS CONVENTION CENTER
52-36 E NATIONWIDE BLVD
COLUMBUS, OH 43215

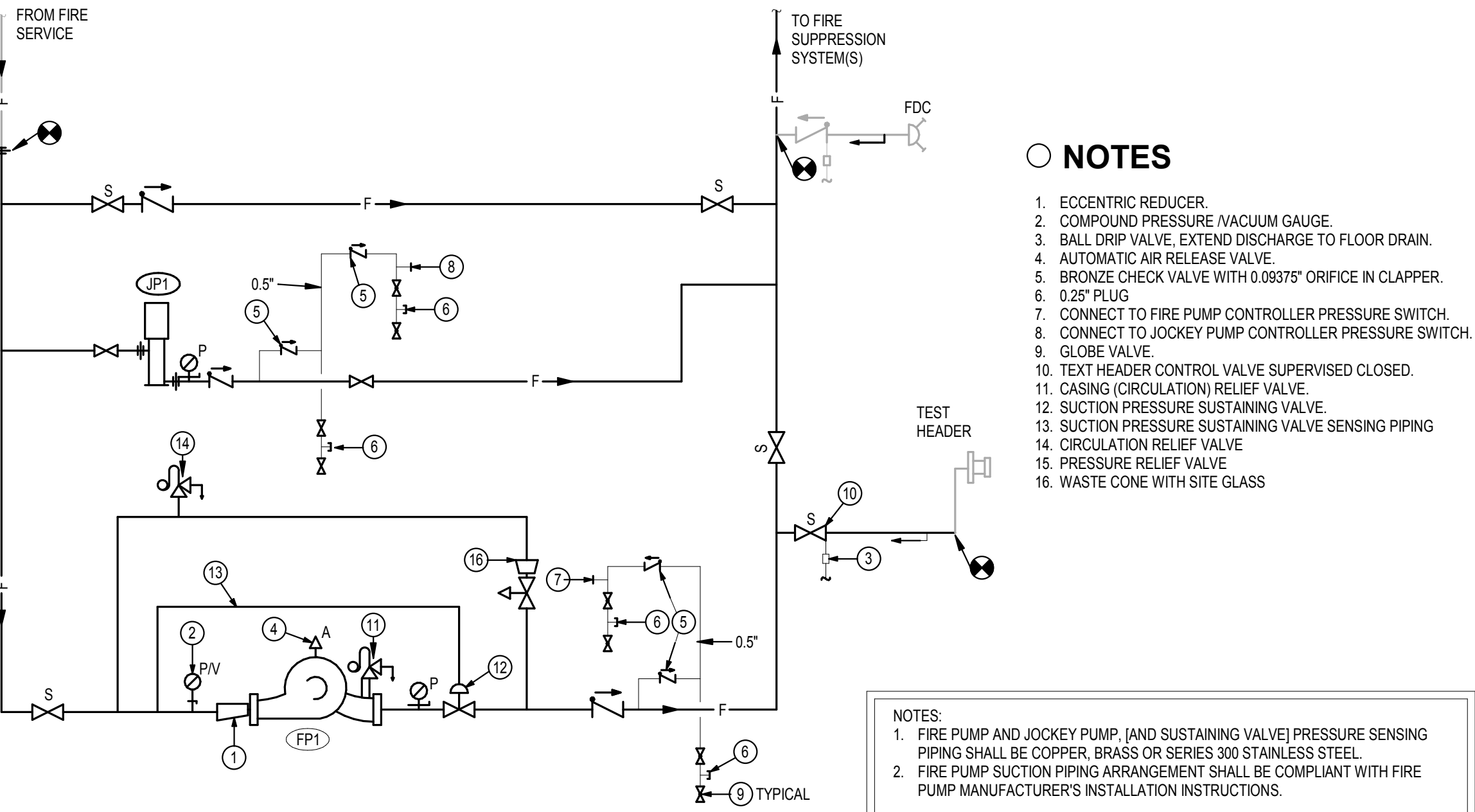
SHEET LIST		
SHEET NUMBER	SHEET NAME	
F001	LEGEND, GENERAL NOTES AND INDEX	
F101	PARTIAL P2 LAYOUT	

2	11/08/24	BD DOCUMENTS
1	08/01/24	100% CONSTRUCTION DOCUMENTS
MARK	DATE	DESCRIPTION
PROJECT NO: 2024-07029		
REVIT FILE: C:\BIM\AutoCAD\2024-07029-MEP-Central_bjorman.rvt		
DRAWN BY: JAG		
CHKD BY: ABN		
PROJECT STATUS: 100% CONSTRUCTION DOCUMENTS		
ISSUE DATE: 08/15/2024		
COPYRIGHT:		
SHEET TITLE		
LEGEND, GENERAL NOTES AND INDEX		
F001		

E

FIRE SUPPRESSION EQUIPMENT											
GENERAL NOTES: A. INSTALL ALL "LOOSE" COMPONENTS. B. WATER CONNECTIONS SHALL BE AS LISTED. C. TERMINAL OUTLETS AND INLETS ON EQUIPMENT MAY BE SMALLER AND INCREASE/REDUCER FITTINGS REQUIRED. D. NOTES: 1.											
MARK	DESCRIPTION	CAPACITY	PRESSURE HEAD	HP	ELECTRICAL (VOLTAGE - PHASE)	WATER CONNECTIONS	APPROX. DIMENSIONS	SEISMIC RESTRAINTS	IMPORTANCE FACTOR	SEE NOTE	
						IN	OUT				
FO11	FUEL OIL TANK	119 GAL									
FP1	DIESEL FIRE PUMP - BASIS OF DESIGN PEERLESS PUMP MODEL #BAEF14A	1000 GPM	90 PSI	99	120V - SINGLE PHASE						
JP1	JOCKEY PUMP - BASIS OF DESIGN: GRUNDFOS CR 3-11	13 GPM	118 PSI	2	480V - 3 PHASE						

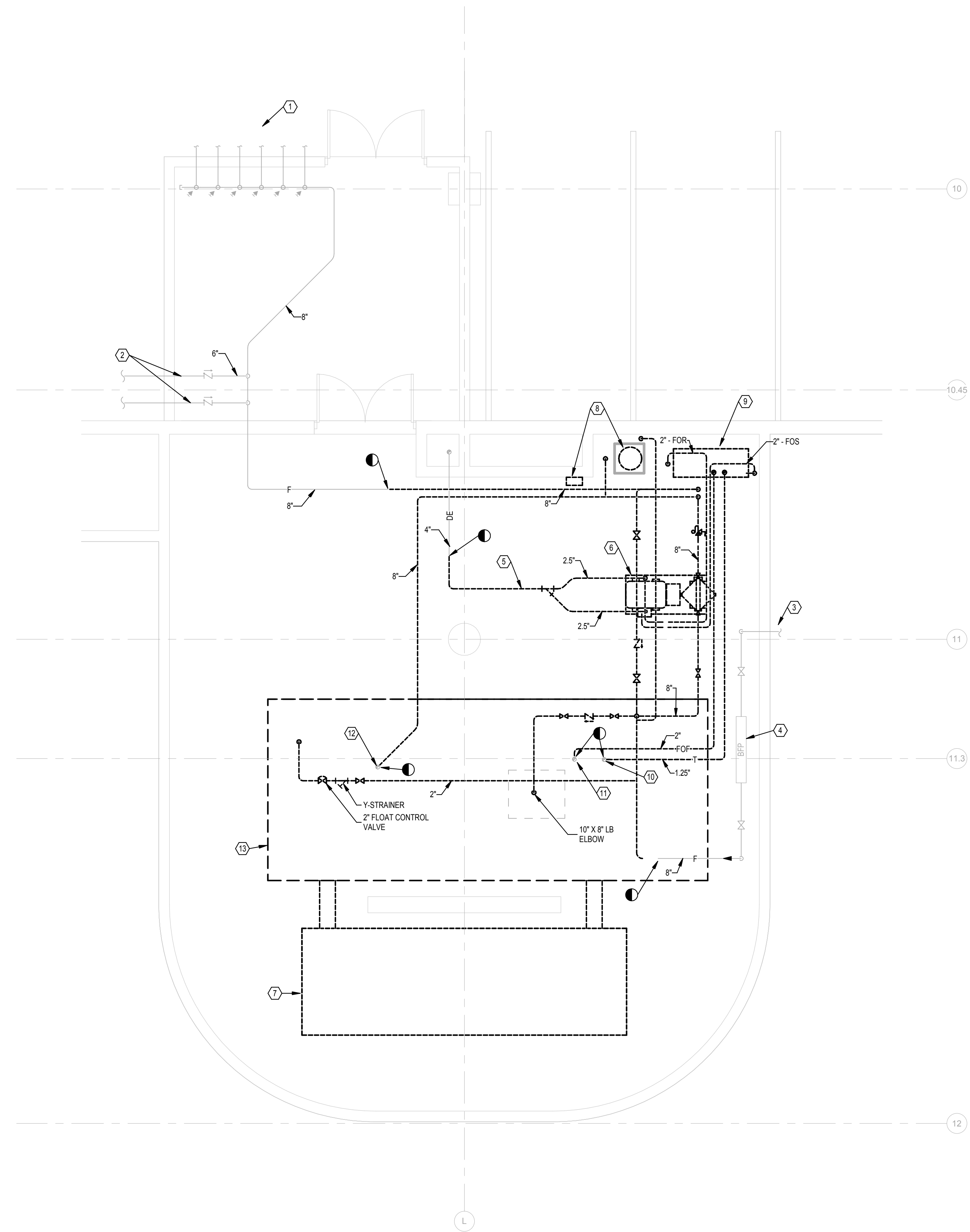
E



2 FIELD ASSEMBLED FIRE AND JOCKEY PUMP PIPING
SCALE: NONE

1 DOUBLE WALL DIESEL FUEL STORAGE TANK DETAIL
SCALE: NONE

D



DRAFT AIA® Document A104™ – 2017

Standard Abbreviated Form of Agreement Between Owner and Contractor

AGREEMENT made as of the « » day of «December» in the year «2024»
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

«Franklin County Convention Facilities Authority»
«400 North High Street, 4th Floor»
«Columbus, Ohio 43215»
«↔»

and the Contractor:
(Name, legal status, address and other information)

«-»
«-»
«-»
«↔»

for the following Project:
(Name, location and detailed description)

«Greater Columbus Convention Center South Facility Fire Pump Replacement»
«Franklin County Convention Facilities Authority»
«400 North High Street»
«Columbus, Ohio 43215»

The Architect:
(Name, legal status, address and other information)

«Heapy»
«1800 Watermark Drive»
«Columbus, Ohio 43215»
«↔»

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An Additions and Deletions Report that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

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TABLE OF ARTICLES

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- 2 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
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- 16 PROTECTION OF PERSONS AND PROPERTY
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- 19 MISCELLANEOUS PROVISIONS
- 20 TERMINATION OF THE CONTRACT
- 21 CLAIMS AND DISPUTES

EXHIBIT A DETERMINATION OF THE COST OF THE WORK

ARTICLE 1 THE WORK OF THIS CONTRACT

The Contractor shall execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 2 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 2.1 The date of commencement of the Work shall be:

(Check one of the following boxes.)

[☐] The date of this Agreement.

[☒] A date set forth in a notice to proceed issued by the Owner.

[☐] Established as follows:
(Insert a date or a means to determine the date of commencement of the Work.)

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

The Contractor shall not commence any Work until after receipt of the Notice to Proceed.

§ 2.2 The Contract Time shall be measured from the date of commencement.

§ 2.3 Substantial Completion

§ 2.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:
(Check the appropriate box and complete the necessary information.)

[☐] Not later than () calendar days from the date of commencement of the Work.

[☒] By the following date:

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§ 2.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work	Substantial Completion Date
<input type="text"/>	<input type="text"/>

§ 2.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 2.3, liquidated damages, if any, shall be assessed as set forth in Section 3.5.

ARTICLE 3 CONTRACT SUM

§ 3.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be one of the following:
(Check the appropriate box.)

[☒] Stipulated Sum, in accordance with Section 3.2 below

[☐] Cost of the Work plus the Contractor's Fee, in accordance with Section 3.3 below

[☐] Cost of the Work plus the Contractor's Fee with a Guaranteed Maximum Price, in accordance with Section 3.4 below

(Based on the selection above, complete Section 3.2, 3.3 or 3.4 below.)

§ 3.2 The Stipulated Sum shall be (\$), subject to additions and deductions as provided in the Contract Documents.

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§ 3.2.1 The Stipulated Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:
(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

§ 3.2.2 Unit prices, if any:

(Identify the item and state the unit price and the quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit (\$0.00)
« »		

§ 3.2.3 Allowances, if any, included in the stipulated sum:

(Identify each allowance.)

Item	Price
« »	

§ 3.3 Cost of the Work Plus Contractor's Fee

§ 3.3.1 The Cost of the Work is as defined in Exhibit A, Determination of the Cost of the Work.

§ 3.3.2 The Contractor's Fee:

(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee and the method of adjustment to the Fee for changes in the Work.)

« »

§ 3.4 Cost of the Work Plus Contractor's Fee With a Guaranteed Maximum Price

§ 3.4.1 The Cost of the Work is as defined in Exhibit A, Determination of the Cost of the Work.

§ 3.4.2 The Contractor's Fee:

(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee and the method of adjustment to the Fee for changes in the Work.)

« »

§ 3.4.3 Guaranteed Maximum Price

§ 3.4.3.1 The sum of the Cost of the Work and the Contractor's Fee is guaranteed by the Contractor not to exceed « » (\$ « »), subject to additions and deductions by changes in the Work as provided in the Contract Documents. This maximum sum is referred to in the Contract Documents as the Guaranteed Maximum Price. Costs which would cause the Guaranteed Maximum Price to be exceeded shall be paid by the Contractor without reimbursement or additional compensation by the Owner. The Contractor shall include in the Guaranteed Maximum Price all sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted, whether or not yet effective. Further, Contractor shall provide Owner with a detailed line item breakdown of the costs comprising the Guaranteed Maximum Price and denote which line items Contractor intends to self-perform, if any. Contractor's proposed Guaranteed Maximum Price as well as verification of costs incurred during construction shall be subject to be an open book pricing method.
(Insert specific provisions if the Contractor is to participate in any savings.)

« »

§ 3.4.3.2 The Guaranteed Maximum Price is based on the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

« »

§ 3.4.3.3 Unit Prices, if any:

(Identify the item and state the unit price and the quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit (\$0.00)
« »		

§ 3.4.3.4 Allowances, if any, included in the Guaranteed Maximum Price:
(Identify each allowance.)

Item	Price
« »	

§ 3.4.3.5 Assumptions, if any, on which the Guaranteed Maximum Price is based:

« »

§ 3.4.3.6 To the extent that the Contract Documents are anticipated to require further development, the Guaranteed Maximum Price includes the costs attributable to such further development consistent with the Contract Documents and reasonably inferable therefrom. Such further development does not include changes in scope, systems, kinds and quality of materials, finishes or equipment, all of which, if required, shall be incorporated by Change Order.

§ 3.4.3.7 The Owner shall authorize preparation of revisions to the Contract Documents that incorporate the agreed-upon assumptions contained in Section 3.4.3.5. The Owner shall promptly furnish such revised Contract Documents to the Contractor. The Contractor shall notify the Owner and Architect of any inconsistencies between the agreed-upon assumptions contained in Section 3.4.3.5 and the revised Contract Documents.

§ 3.5 Liquidated damages, if any:
(Insert terms and conditions for liquidated damages, if any.)

« [Sec § 21.11.2 Liquidated Damages](#) »

ARTICLE 4 PAYMENT

§ 4.1 Progress Payments

§ 4.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 4.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

« »

§ 4.1.3 Provided that an Application for Payment is received by the Architect not later than the « 1st » day of a month, the Owner shall make payment of the certified amount to the Contractor not later than the « 15th » day of the « following » month. If an Application for Payment is received by the Architect after the date fixed above, payment of the certified amount shall be made by the Owner not later than « forty-fiveThirty » (« 4530 ») days after the Architect receives the Application for Payment.

(Federal, state or local laws may require payment within a certain period of time.)

§ 4.1.4 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold retainage from the payment otherwise due as follows:
(Insert a percentage or amount to be withheld as retainage from each Application for Payment and any terms for reduction of retainage during the course of the Work. The amount of retainage may be limited by governing law.)

« Retainage shall be withheld from each payment in the amount of 8% of the Application for Payment until the Work is 50% complete, after which no further retainage will be withheld. — »

§ 4.1.5 Payments due and unpaid (except disputed payments) under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.
(Insert rate of interest agreed upon, if any.)

« 4 » % « per annum »

§ 4.2 Final Payment

§ 4.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 18.2, and to satisfy other requirements, if any, which extend beyond final payment;
- .2 the Contractor has submitted a final accounting for the Cost of the Work, where payment is on the basis of the Cost of the Work with or without a Guaranteed Maximum Price; and
- .3 a final Certificate for Payment has been issued by the Architect in accordance with Section 15.7.1.

§ 4.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

« »

ARTICLE 5 DISPUTE RESOLUTION

§ 5.1 Binding Dispute Resolution

For any claim subject to, but not resolved by, mediation pursuant to Section 21.5, the method of binding dispute resolution shall be as follows:
(Check the appropriate box.)

[« »] Arbitration pursuant to Section 21.6 of this Agreement

[« X »] Litigation in a court of competent jurisdiction

[« »] Other (Specify)

« »

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, claims will be resolved in a court of competent jurisdiction.

ARTICLE 6 ENUMERATION OF CONTRACT DOCUMENTS

§ 6.1 The Contract Documents are defined in Article 7 and, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 6.1.1 The Agreement is this executed AIA Document A104™-2017, Standard Abbreviated Form of Agreement Between Owner and Contractor.

§ 6.1.2 AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:
(Insert the date of the E203-2013 incorporated into this Agreement.)

« »

§ 6.1.3 The Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
« »			

§ 6.1.4 The Specifications:
(Either list the Specifications here or refer to an exhibit attached to this Agreement.)

« »			
Section	Title	Date	Pages
« »			

§ 6.1.5 The Drawings:
(Either list the Drawings here or refer to an exhibit attached to this Agreement.)

« »		
Number	Title	Date
« »		

§ 6.1.6 The Addenda, if any:

Number	Date	Pages
« »		

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are enumerated in this Article 6.

§ 6.1.7 Additional documents, if any, forming part of the Contract Documents:

.1 Other Exhibits:

(Check all boxes that apply.)

[« »] Exhibit A, Determination of the Cost of the Work.

[« »] AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:
(Insert the date of the E204-2017 incorporated into this Agreement.)

« »

[« »] The Sustainability Plan:

Title	Date	Pages
« »		

[« »] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
« »			

.2 Other documents, if any, listed below:

(List here any additional documents that are intended to form part of the Contract Documents.)

« .3 Written orders for changes in the Work, pursuant to Article 13, issued after execution of this Agreement;
and
.4 The Request for Bids issued by the Owner on November 8, 2024 »

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ARTICLE 7 GENERAL PROVISIONS

§ 7.1 The Contract Documents

The Contract Documents are enumerated in Article 6 and consist of this Agreement (including, if applicable, Supplementary and other Conditions of the Contract), Drawings, Specifications, Addenda issued prior to the execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Owner or Architect. The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results. If inconsistencies exist within or between parts of the Contract Documents, or between the Contract Documents and applicable standards, codes, or ordinances, the Contractor shall, in accordance with the Architect's interpretation, either (i) provide the better quality or greater quantity of Work, or (ii) comply with the more stringent requirement. This section 7.1, however, does not relieve the Contractor of any of the obligations set forth in Section 9.1 and 9.6.

§ 7.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind between any persons or entities other than the Owner and the Contractor.

§ 7.3 The Work

The term “Work” means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor’s obligations. The Work may constitute the whole or a part of the Project.

§ 7.4 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect’s consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 7.5 Ownership and use of Drawings, Specifications and Other Instruments of Service

§ 7.5.1 The Architect and the Architect’s consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect’s or Architect’s consultants’ reserved rights.

§ 7.5.2 The Contractor, Subcontractors, Sub-subcontractors and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to the protocols established pursuant to Sections 7.6 and 7.7, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect’s consultants. This Section 7.5.2 is subject to any different terms concerning ownership of Instruments of Service that may be set forth in the Owner-Architect Agreement.

§ 7.6 Digital Data Use and Transmission

The Architect may furnish the Contractor and Subcontractors portions of the Architect’s Instruments of Service in digital data format for their convenience and use solely for their Work on the Project. Due to the nature of digital data files, the Architect does not warrant the accuracy of data contained in those files, nor the compatibility of digital data files with the hardware or software utilized by the Contractor or Subcontractors. Also, differences between documents in digital data format and those in hard-copy may occur, in which case the sealed hard-copy Instruments of Service shall always govern. Because the Architect and Owner have no control over and no involvement in how the digital data files will be used nor how they may be modified, the Contractor agrees that use of digital data files by the Contractor or its Subcontractors will be at the Contractor’s sole risk without liability to the Architect or Owner. The Contractor further agrees to defend, indemnify and hold the Architect and Owner harmless from all claims, liabilities, damages, and costs, including reasonable attorney’s fees and defense costs, arising from any reuse or modification of the digital data files by the Contractor or its Subcontractors and authorized recipients. The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™ 2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 7.7 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™ 2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™ 2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party’s sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees and shall be subject to the requirements and obligations set forth in Section 7.6 of this Agreement.

§ 7.7.8 Severability

The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and

enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 7.89 Notice

§ 7.89.1 Except as otherwise provided in Section 7.89.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission in accordance with AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, if completed, by email to the addresses provided in this Agreement, or as otherwise set forth below:

(If other than in accordance with AIA Document E203–2013, insert requirements for delivering Notice in electronic format such as name, title and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

« »

§ 7.89.2 Notice of Claims shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 7.910 Relationship of the Parties

Where the Contract is based on the Cost of the Work plus the Contractor's Fee, with or without a Guaranteed Maximum Price, the Contractor accepts the relationship of trust and confidence established by this Agreement and covenants with the Owner to cooperate with the Architect and exercise the Contractor's skill and judgment in furthering the interests of the Owner; to furnish efficient business administration and supervision; to furnish at all times an adequate supply of workers and materials; and to perform the Work in an expeditious and economical manner consistent with the Owner's interests. The Owner agrees to furnish and approve, in a timely manner, information required by the Contractor and to make payments to the Contractor in accordance with the requirements of the Contract Documents.

ARTICLE 8 OWNER

§ 8.1 Information and Services Required of the Owner

§ 8.1.1 ~~The Owner shall prepare and provide to the Construction Manager a Notice of Commencement pursuant to Ohio Revised Code Section 1311.252. Prior to commencement of the Work, at the written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 8.1.1, the Contract Time shall be extended appropriately.~~

§ 8.1.2 ~~If requested in writing by the Contractor,~~ The Owner shall furnish all necessary surveys and a legal description of the site.

§ 8.1.3 The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 8.1.4 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 9.6.1, the Owner shall secure and pay for other necessary approvals, easements, assessments, and charges required for the construction, use, or occupancy of permanent structures or for permanent changes in existing facilities.

§ 8.2 Owner's Right to Stop the Work

If the Contractor fails to correct Work which is not in accordance with the requirements of the Contract Documents, or repeatedly fails to carry out the Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order is eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity. If the Owner's exercise of its rights pursuant to this Section 8.2 is determined to have been unjustified, such exercise shall be deemed to have been a suspension of the Work pursuant to Section 20.4.

§ 8.3 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents, and fails within a ten-day period (or a one-day period in the case of a threat to the safety of persons or property, as determined by the Owner) after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to any other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and in that event, the Architect may, pursuant to Section 15.4.3, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including the Owner's expenses and compensation for the Architect's additional services, as well as charges of engineers, attorneys, and other professionals, made necessary by such default, neglect, or failure. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 21.

ARTICLE 9 CONTRACTOR

§ 9.1 Review of Contract Documents and Field Conditions by Contractor

§ 9.1.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents. Before executing the Agreement, the Contractor and each Subcontractor and Sub-subcontractor have evaluated and satisfied themselves as to the conditions and limitations under which the Work is to be performed, including, without limitation, (i) the location, condition, layout, and nature of the Project site and surrounding areas, (ii) generally prevailing climatic conditions, (iii) anticipated labor supply and costs, (iv) availability and cost of materials, tools, and equipment, and (v) other similar issues. The Owner assumes no responsibility or liability for the physical condition or safety of the Project site or any improvements located on the Project site, except as set forth in Section 16.2. Except as set forth in Section 16.2, the Contractor shall be solely responsible for providing a safe place for the performance of the Work. The Owner shall not be required to make any adjustment in either the Contract Sum or the Contract Time in connection with any failure by the Contractor or any Subcontractor or Sub-subcontractor to have complied with the requirements of this Section 9.1.1.

§ 9.1.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 8.1.2, shall take field measurements of any existing conditions related to that portion of the Work and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the design information contained in the Contract Documents; however, the Contractor shall promptly report to the Owner and Architect any errors, inconsistencies, or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional unless otherwise specifically provided in the Contract Documents.

§ 9.1.2.1 The exactness of grades, elevations, dimensions, and/or locations given on any Drawings issued by the Architect, or the work installed by other contractors, is not guaranteed by the Architect or the Owner. The Contractor shall, therefore, satisfy itself as to the accuracy of all grades, elevations, dimensions, and/or locations. In all cases of interconnection of its Work with existing or other work, it shall verify at the site all dimensions relating to such existing or other work prior to undertaking its Work and promptly notify Owner and Architect of all discrepancies. Any errors due to the Contractor's failure to so verify all such grades, elevations, dimensions, and/or locations shall be promptly rectified by the Contractor without any additional cost to the Owner.

§ 9.1.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Owner and Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 9.2 Supervision and Construction Procedures

§ 9.2.1 The Contractor shall supervise and direct the Work consistent with the standard of care exercised by other professional contractors in the Contractor's trade and in the region where the Project is located, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over

construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters.

§ 9.2.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for or on behalf of the Contractor or any of its Subcontractors.

§ 9.2.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 9.3 Labor and Materials

§ 9.3.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 9.3.2 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.

§ 9.3.3 Except in the case of minor changes in the Work, authorized by the Owner or Architect, the Contractor may make a substitution only with the written consent of the Owner, after evaluation by the Architect and in accordance with a Modification/Change Order.

§ 9.3.4 If the Project is a public improvement and it shall be subject to "prevailing wage" requirements. The Contractor shall pay the required prevailing wages applicable to the Project and shall comply with all restrictions, requirements, and agreements with respect to the laborers and mechanics employed by it for the performance of the Work. The Contractor shall require all of its Subcontractors to (1) pay prevailing wages, (2) comply with all restrictions, requirements, and agreements with respect to their laborers and mechanics employed for the performance of their work, and (3) include in any sub-subcontract the same requirements set forth in this Section 9.3.4.

§ 9.3.5 NONDISCRIMINATION AND INTIMIDATION

§ 9.3.5.1 In the hiring of employees for the performance of the Work, including without limitation Work to be performed by a Subcontractor, no Contractor or Subcontractor, and no person acting on behalf of a Contractor or Subcontractor, shall discriminate against or intimidate any person by reason of race, color, creed, age, religion, national origin, ancestry, sex, gender identity or expression, disability, sexual orientation, familial status, military status, or any other basis prohibited by law. Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity or expression, familial status, or national origin. Contractor or any Subcontractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, sex, sexual orientation, gender identity or expression, color, religion, ancestry, national origin, age, disability, familial status, or military status. Such action shall include, but not be limited to, the following: employment up-grading, demotion, or termination; rates of pay or other forms of compensation; and selection for training. Contractor shall post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

§ 9.3.5.2 Neither the Contractor nor any of its Subcontractors, nor any person acting on behalf of the Contractor or any of its Subcontractors, shall, in any manner, discriminate against or intimidate any employee hired for the performance of the Work on account of race, color, creed, age, religion, national origin, ancestry, sex, gender identity or expression, disability, sexual orientation, familial status, military status, or any other basis prohibited by law, race, color, creed, religion, national origin, ancestry, sex, disability, sexual orientation, military status, or any other basis prohibited by law.

§ 9.3.5.3 The Contractor and its Subcontractors shall, throughout the Project, comply with Ohio Revised Code Sections 153.59 and 153.591, and with the Owner's Non-Discrimination Diversity, Equity and Inclusion Policy. For any violation of this Section 9.3.5 or Ohio law, the Contractor shall suffer such penalties as provided for in Ohio

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Revised Code Section 153.60 and the Owner's ~~Non-Discrimination~~Diversity, Equity and Inclusion Policy. In addition to any remedies the Owner has under Ohio law for a violation of this Section 9.3.5, the Owner may also exercise any of the remedies set forth in the Contract Documents.

§ 9.3.5.4 The Contractor and its Subcontractors shall fully cooperate with any official or agency of the Owner, the city, state, or federal government seeking to eliminate unlawful employment discrimination, and with all other Owner, city, state, and federal efforts to assure equal employment practices under this Contract.

§ 9.3.5.5 The Contractor shall comply with the State of Ohio's Equal Employment Opportunity in the Construction Industry rules set forth in Ohio Administrative Code Chapters 123:2-3 through 123:2-9 and Columbus City Code Section 3906.02. The Contractor also shall provide monthly reporting of its workforce by the tenth day of each month for the preceding month to the Equal Opportunity Division of the Department of Administrative Services, using Input Form 29 (available at <http://das.ohio.gov/Divisions/EqualOpportunity/InputForm29.aspx>).

§ 9.3.5.6 Contractor shall comply with all requirements of 41 CFR Part 60-1.4, including the equal opportunity clause, which is hereby incorporated by reference.

§ 9.3.6 MINORITY, FEMALE, AND DISADVANTAGED BUSINESS PARTICIPATION

§ 9.3.6.1 The Owner ~~to~~ intends to have minority, female, and disadvantaged businesses used throughout the Project. To this end, the Contractor is encouraged to include participation in the Project by certified minority, female, and disadvantaged business enterprise Subcontractors that have received appropriate certification from the federal or Ohio government.

§ 9.4 Warranty

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation or normal wear and tear under normal usage. All other warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 15.6.3.

§ 9.5 Taxes

§ 9.5.1 The Contractor shall pay sales, consumer, use, and other similar taxes that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect. The Contractor shall withhold and pay, and require its Subcontractors and Sub-subcontractors to withhold and pay, all federal, state, and local taxes due or payable with respect to wages, salaries, commissions, and any other income subject to provisions of federal, state, and local law.

§ 9.5.2 Materials purchased for use or consumption in connection with the Work may be exempt from the State of Ohio Sales Tax as provided in Ohio Revised Code Section 5739.02, and from the State of Ohio Use Tax as provided in Ohio Revised Code Section 5741.01. Purchases by the Contractor of expendable items such as form, lumber, tools, oils, greases, fuel, and equipment rentals are subject to the application of the Ohio Sales or Use Tax.

§ 9.6 Permits, Fees, Notices, and Compliance with Laws

§ 9.6.1 Except as set forth in Section 8.1.3, Unless otherwise provided in the Contract Documents, the Contractor shall secure, and pay, and as soon as practicable, furnish the Owner with copies or certificates of all permits, fees, licenses and inspections for the building permit as well as other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work including, without limitation, all building permits, unless otherwise provided in the Contract Documents. All connection charges, assessments, and inspection fees imposed by any governmental agency or utility company are included in the Contract Sum and shall be the Contractor's responsibility that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 9.6.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders and all other requirements of public authorities applicable to performance of

the Work. If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 9.7 Allowances

The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. The Owner shall select materials and equipment under allowances with reasonable promptness. Allowance amounts shall include the costs to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts. Contractor's costs for unloading and handling at the site, labor, installation, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowance.

§ 9.8 Contractor's Construction Schedules

§ 9.8.1 The Contractor, promptly after being awarded the Contract and throughout the Work, shall prepare, keep current, and submit each time it is updated for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

§ 9.8.2 The construction schedule shall be in a detailed precedence-style critical path management ("CPM") or primavera-type format satisfactory to the Owner that shall also (i) provide a graphic representation of all activities and events that will occur during performance of the Work; (ii) identify each phase of construction and occupancy; and (iii) set forth dates (the "Milestone Dates") that are critical in ensuring the timely and orderly completion of the Work in accordance with the requirements of the Contract Documents. Upon review and acceptance by the Owner of the Milestone Dates, the construction schedule shall be deemed part of the Contract Documents. If not accepted, the Contractor shall promptly revise the construction schedule in accordance with the recommendations of the Owner and resubmit it for acceptance. The Contractor shall monitor the progress of the Work for conformance with the requirements of the construction schedule and shall promptly advise the Owner of any delays or potential delays. The accepted construction schedule shall be updated in progress reports to reflect actual conditions as set forth in Section 9.8.1 or if requested by the Owner. If any progress report indicates any delays, the Contractor shall propose an affirmative plan to correct the delay, including overtime, additional labor, or both, if necessary. In no event shall any progress report constitute an adjustment in the Contract Time, any Milestone Date, or the Contract Sum unless any such adjustment is agreed to by the Owner and authorized pursuant to a Change Order. Contractor agrees that Owner shall have the right to access, review, utilize and share native format construction schedules related to the Project.

§ 9.8.3 If the Owner determines that the performance of the Work, as of a Milestone Date, has not progressed or reached the level of completion required by the Contract Documents, the Owner may order the Contractor to take corrective measures necessary to expedite the progress of construction, including, without limitation, (i) working additional shifts or overtime, (ii) supplying additional manpower, equipment, and facilities, and (iii) other similar measures (collectively, "Extraordinary Measures"). Such Extraordinary Measures shall continue until the progress of the Work complies with the stage of completion required by the Contract Documents. The Owner's right to require Extraordinary Measures is solely for the purpose of ensuring the Contractor's compliance with the construction schedule.

- .1 The Contractor shall not be entitled to an adjustment in the Contract Sum in connection with Extraordinary Measures required by the Owner under this Section.
- .2 The Owner may exercise the rights furnished the Owner in this Section as frequently as the Owner deems necessary to ensure that the Contractor's performance of the Work will comply with any Milestone Date or completion date set forth in the Contract Documents.

§ 9.8.4 In no event shall the Owner's review or approval of any schedule (1) impose on the Owner any responsibility for the progress, scheduling, sequencing, or timing of the Work, or (2) relieve the Contractor from full responsibility therefor, as the Contractor is solely responsible for the preparation, accuracy, revision, and maintenance of its schedules.

§ 9.8.2.5 The Contractor shall perform the Work in general accordance with the most recent schedule submitted to the Owner and Architect.

§ 9.8.6 In developing the construction schedule for the Work, Contractor shall take into consideration the schedule of events and daily operations of the Greater Columbus Convention Center. Contractor shall schedule work at the Project site so as to minimize the impact of the Work on the daily operations of the Greater Columbus Convention Center.

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§ 9.9 Submittals

§ 9.9.1 The Contractor shall review for compliance with the Contract Documents and submit to the Architect Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents in coordination with the Contractor's construction schedule and in such sequence as to allow the Architect reasonable time for review. By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them; (2) determined and verified materials, field measurements, and field construction criteria related thereto, or will do so; and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents. The Work shall be in accordance with approved submittals.

§ 9.9.2 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents.

§ 9.9.3 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents or unless the Contractor needs to provide such services in order to carry out the Contractor's own responsibilities. If professional design services or certifications by a design professional are specifically required, the Owner and the Architect will specify the performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional. If no criteria are specified, the design shall comply with applicable codes and ordinances. Except as otherwise provided for in this Agreement, Each Party shall be entitled to rely upon the information provided by the other Party. The Architect will review and approve or take other appropriate action on submittals for the limited purpose of checking for conformance with information provided and the design concept expressed in the Contract Documents. The Architect's review of Shop Drawings, Product Data, Samples, and similar submittals shall be for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. In performing such review, the Architect will approve, or take other appropriate action upon, the Contractor's Shop Drawings, Product Data, Samples, and similar submittals. Any such review or approval by the Architect or Owner shall not relieve the Contractor of its responsibility for the preparation, completeness, and accuracy of such documents or information.

§ 9.10 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 9.10.1 Only materials and equipment that are to be used directly in the Work shall be brought to and stored on the Project site by the Contractor. After equipment is no longer required for the Work, it shall be promptly removed from the Project site. Protection of construction materials and equipment stored at the Project site from weather, theft, damage, and all other adversity is solely the responsibility of the Contractor. The Contractor shall ensure that the Work, at all times, is performed in a manner that affords reasonable access, both vehicular and pedestrian, to the site of the Work and all adjacent areas. The Work shall be performed, to the fullest extent reasonably possible, in such a manner that public areas adjacent to the site of the Work shall be free from all debris, building materials, and equipment likely to cause hazardous conditions.

§ 9.10.2 The Contractor shall use best efforts to minimize any interference with the occupancy or beneficial use of (i) any areas and buildings adjacent to the site of the Work and (ii) the building in which the Work is being performed. Without prior approval of the Owner, the Contractor shall not permit any workers to use any existing facilities at the Project site, including, without limitation, lavatories, toilets, entrances, and parking areas other than those designated by the Owner.

.1 The Contractor shall use its best efforts to comply with all rules and regulations promulgated by the Owner in connection with the use and occupancy of the Project site and the building in which the Work is being performed, as amended from time to time. The Contractor shall immediately notify the Owner in writing if during the performance of the Work, the Contractor finds compliance of any portion of such rules and regulations to be impracticable, setting forth the problems of such compliance and suggesting alternatives through which the same results intended by such portions of the rules and regulations can be achieved. The Owner may, in the Owner's sole discretion, adopt such suggestions, develop new alternatives, or require compliance with the existing requirements of the rules and regulations.

.2 The Contractor also shall comply with all insurance requirements and collective bargaining agreements applicable to the use and occupancy of the Project site and the Building.

§ 9.11 Cutting and Patching

The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly.

§ 9.12 Cleaning Up

The Contractor shall keep the ~~premises~~ Project site and surrounding areas free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus material from and about the Project site.

§ 9.13 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

§ 9.14 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 9.15 Indemnification

§ 9.15.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and ~~officers, trustees, agents, lawyers,~~ and employees of any of them from and against claims, ~~liability, actions, causes of actions, complaints, costs,~~ damages, losses and expenses, including but not limited to ~~prejudgment interest and attorneys' fees, and demands whatsoever, in law or in equity,~~ arising out of, ~~or alleged to arise out of,~~ or resulting from, ~~or alleged to be the result of the~~ performance of the Work, ~~provided that such claim, damage, loss, or expense is including, but not limited to those~~ attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent, ~~intentional or other wrongful~~ acts or omissions of the Contractor, a Subcontractor, ~~Sub-subcontractor,~~ anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section 9.15.1. Owner shall have the undeniable right to participate in the defense of any claims asserted against it, approve the selection of counsel and approve the terms of any settlements made in its name or on its behalf. Such right cannot be waived by any contractual agreement, affirmative action, or lack of affirmative action and may be exercised at any time and at the sole discretion of Owner.

§ 9.15.2 The Project is located in close proximity of other buildings and property, and the Contractor must use all care and diligence to avoid damage to any such buildings and property. As a result and consistent with that obligation, in addition to the indemnification required by Section 9.15.1, the Contractor shall indemnify and hold harmless the Owner and the Owner's agents and employees from and against claims, damages, losses and expenses,

including but not limited to attorney's fees, arising out of or resulting from performance of the Work that impacts, injures or destroys any building or property beyond the Project's physical limits.

§ 9.15.2 In claims against any person or entity indemnified under this Section 9.15 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 9.15.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts. The Contractor hereby specifically and expressly waives any immunity afforded it by virtue of any applicable state constitutional or statutory protections, including but not limited to Section 35, Article II of the Ohio Constitution and Ohio Revised Code Section 4123.73, but only to the extent required to honor the indemnity obligations set forth in this Section 9.15.

§ 9.15.3 The Contractor shall indemnify and hold harmless all of the parties indemnified under this Section 9.15 from and against any costs and expenses (including reasonable attorneys' fees) they incur in enforcing any of the Contractor's defenses, indemnity, and hold harmless obligations under this Contract.

ARTICLE 10 ARCHITECT

§ 10.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction, until the date the Architect issues the final Certificate for Payment (or for such longer period of time if so provided in the Owner's agreement with the Architect). The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified in writing in accordance with other provisions of the Contract.

§ 10.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, ~~Contractor,~~ and Architect. Consent shall not be unreasonably withheld.

§ 10.3 The Architect will visit the site at intervals appropriate to the stage of the construction to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general, if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 10.4 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, Sub-subcontractors or their agents or employees, or any other persons or entities performing portions of the Work.

§ 10.5 Based on the Architect's evaluations of the Work and of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 10.6 The Architect and the Owner ~~has~~ have the authority to reject Work that does not conform to the Contract Documents and to require inspection or testing of the Work.

§ 10.7 The Architect will review and approve or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 10.8 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect will make initial decisions

on all claims, disputes, and other matters in question between the Owner and Contractor but will not be liable for results of any interpretations or decisions rendered in good faith.

§ 10.9 The Architect's decisions on matters relating to aesthetic effect in connection with the administration of the Contract will be final if consistent with the intent expressed in the Contract Documents.

ARTICLE 11 SUBCONTRACTORS

§ 11.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site.

§ 11.2 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the Subcontractors or suppliers proposed for each of the principal portions of the Work. The Contractor shall not contract with any Subcontractor or supplier to whom the Owner or Architect has made reasonable written objection within ten days after receipt of the Contractor's list of Subcontractors and suppliers. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 11.3 Contracts between the Contractor and Subcontractors shall (1) require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by the terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by the Contract Documents, assumes toward the Owner and Architect, and (2) allow the Subcontractor the benefit of all rights, remedies and redress against the Contractor that the Contractor, by these Contract Documents, has against the Owner.

§ 11.4 Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. The Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 11.5 All subcontracts and sub-subcontracts shall be in writing and shall specifically provide that the Owner is an intended third-party beneficiary of such subcontract and sub-subcontract.

§ 11.6 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

§ 11.6.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

1. assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and
2. assignment is subject to the prior rights of the surety, if any, obligated under the bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 11.6.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension in excess of those costs incurred during the initial 30 days of the suspension.

§ 11.6.3 Upon such assignment to the Owner under this Section 11.6.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

§ 11.6.4 Each subcontract shall specifically provide that the Owner shall be responsible to the Subcontractor only for those obligations that accrue after the Owner's exercise of any rights under this conditional assignment.

ARTICLE 12 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 12.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 12.2 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's activities with theirs as required by the Contract Documents.

§ 12.3 The Owner shall be reimbursed by the Contractor for costs incurred by the Owner which are payable to a Separate Contractor because of delays, improperly timed activities, or defective construction of the Contractor. The Owner shall be responsible to the Contractor for costs incurred by the Contractor because of delays, improperly timed activities, damage to the Work, or defective construction of a Separate Contractor.

ARTICLE 13 CHANGES IN THE WORK

§ 13.1 By appropriate Modification, changes in the Work may be accomplished after execution of the Contract. The Owner, without invalidating the Contract, may order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, with the Contract Sum ~~and or~~ Contract Time ~~or both~~ being adjusted accordingly. Such changes in the Work shall be authorized by written Change Order signed by the Owner, Contractor, and Architect, or by written Construction Change Directive signed by the Owner and Architect. Upon issuance of the executed Change Order or Construction Change Directive, the Contractor shall proceed promptly with such changes in the Work, unless otherwise provided in the Change Order or Construction Change Directive.

§ 13.2 Adjustments in the Contract Sum ~~or and~~ Contract Time ~~or both~~ resulting from a change in the Work shall be determined by mutual agreement of the parties or, in the case of a Construction Change Directive signed only by the Owner and Architect, by the Contractor's cost of labor, material, equipment, and reasonable overhead and profit, unless the parties agree on another method for determining the cost or credit. The Contractor shall not be entitled to an increase in the Contract Sum or to an extension of the Contract Time, or both on account of any change in the Work that is not the subject of a fully executed Change Order or Construction Change Directive prior to the commencement of such Work. Pending final determination of the total cost of a Construction Change Directive, the Contractor may request payment for Work completed pursuant to the Construction Change Directive. The Architect will make an interim determination of the amount of payment due for purposes of certifying the Contractor's monthly Application for Payment. When the Owner and Contractor agree on adjustments to the Contract Sum and Contract Time arising from a Construction Change Directive, the Architect will prepare a Change Order. No course of conduct or dealings between the parties, nor express or implied acceptance of alterations or additions to the Work, and no claim that the Owner has been unjustly enriched by any alteration of or addition to the Work, whether or not there is, in fact, any unjust enrichment to the Work, shall be the basis of any claim to an increase in any amounts due under the Contract Documents or a change in any time period provided for in the Contract Documents.

§ 13.3 The ~~Owner and~~ Architect ~~will~~ have the authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be effected by written order and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work.

§ 13.4 If concealed or unknown physical conditions are encountered at the site that differ materially from those indicated in the Contract Documents or from those conditions ordinarily found to exist, the Contract Sum and

Contract Time ~~shall~~ may be equitably adjusted as mutually agreed between the Owner and Contractor; provided that the Contractor provides notice to the Owner and Architect promptly and before conditions are disturbed.

ARTICLE 14 TIME

§ 14.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing this Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 14.2 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 14.3 The term “day” as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 14.4 The date of Substantial Completion is the date certified by the Architect in accordance with Section 15.6.3.

§ 14.5 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) changes ordered in the Work; (2) by labor disputes, fire, unusual delay in deliveries, abnormal adverse weather conditions not reasonably anticipatable, unavoidable casualties, or any other causes beyond the Contractor's control; or (3) by other causes that the Contractor asserts, and the Architect determines, may justify delay, then the Contract Time may ~~shall~~ be extended by Change Order to the extent such delay will prevent the Contractor from achieving Substantial Completion within the Contract Time and if the performance of the Work is not, was not, or would not have been delayed by any other cause for which the Contractor is not entitled to an extension in the Contract Time under the Contract Documents. for such reasonable time as the Architect may determine and the Owner may agree, subject to the provisions of Article 21. The Contractor, however, will not be entitled to an extension of the Contract Time to the extent that such delay occurs concurrently with a delay or delays attributable to the Contractor.

ARTICLE 15 PAYMENTS AND COMPLETION

§ 15.1 Schedule of Values

§ 15.1.1 Where the Contract is based on a Stipulated Sum or the Cost of the Work with a Guaranteed Maximum Price pursuant to Section 3.2 or 3.4, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Stipulated Sum or Guaranteed Maximum Price to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy as required by the Architect. This schedule of values, unless objected to by the Architect or Owner, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 15.1.2 The allocation of the Stipulated Sum or Guaranteed Maximum Price under this Section 15.1 shall not constitute a separate stipulated sum or guaranteed maximum price for each individual line item in the schedule of values.

§ 15.2 Control Estimate

~~§ 15.2.1 Where the Contract Sum is the Cost of the Work, plus the Contractor's Fee without a Guaranteed Maximum Price pursuant to Section 3.3, the Contractor shall prepare and submit to the Owner a Control Estimate within 14 days of executing this Agreement. The Control Estimate shall include the estimated Cost of the Work plus the Contractor's Fee.~~

§ 15.2.2 The Control Estimate shall include:

- ~~1—the documents enumerated in Article 6, including all Modifications thereto;~~
- ~~2—a list of the assumptions made by the Contractor in the preparation of the Control Estimate to supplement the information provided by the Owner and contained in the Contract Documents;~~
- ~~3—a statement of the estimated Cost of the Work organized by trade categories or systems and the Contractor's Fee;~~
- ~~4—a project schedule upon which the Control Estimate is based, indicating proposed Subcontractors, activity sequences and durations, milestone dates for receipt and approval of pertinent information, schedule of shop drawings and samples, procurement and delivery of materials or equipment—the Owner's occupancy requirements, and the date of Substantial Completion; and~~
- ~~5—a list of any contingency amounts included in the Control Estimate for further development of design and construction.~~

~~§ 15.2.3 When the Control Estimate is acceptable to the Owner and Architect, the Owner shall acknowledge it in writing. The Owner's acceptance of the Control Estimate does not imply that the Control Estimate constitutes a Guaranteed Maximum Price.~~

~~§ 15.2.4 The Contractor shall develop and implement a detailed system of cost control that will provide the Owner and Architect with timely information as to the anticipated total Cost of the Work. The cost control system shall compare the Control Estimate with the actual cost for activities in progress and estimates for uncompleted tasks and proposed changes. This information shall be reported to the Owner, in writing, no later than the Contractor's first Application for Payment and shall be revised and submitted with each Application for Payment.~~

~~§ 15.2.5 The Owner shall may authorize preparation of revisions to the Contract Documents that incorporate the agreed-upon assumptions contained in the Control Estimate. Where assumptions in the Control Estimate are not agreed to by the Owner, Contractor shall modify its Control Estimate accordingly. If revisions to the Contract Documents are authorized by the Owner, the Owner shall promptly furnish such revised Contract Documents to the Contractor. The Contractor shall notify the Owner and Architect of any inconsistencies between the Control Estimate and the revised Contract Documents.~~

§ 15.3 Applications for Payment

§ 15.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 15.1, for completed portions of the Work. The application shall be notarized, if required; be supported by all data substantiating the Contractor's right to payment that the Owner or Architect require; shall reflect retainage if provided for in the Contract Documents; and include any revised cost control information required by Section 15.2.4. Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

~~§ 15.3.2 With each Application for Payment where the Contract Sum is based upon the Cost of the Work, or the Cost of the Work with a Guaranteed Maximum Price, the Contractor shall submit payrolls, petty cash accounts, receipted invoices or invoices with check vouchers attached, and any other evidence required by the Owner to demonstrate that cash disbursements already made by the Contractor on account of the Cost of the Work equal or exceed progress payments already received by the Contractor plus payrolls for the period covered by the present Application for Payment, less that portion of the progress payments attributable to the Contractor's Fee.~~

§ 15.3.3 Payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment stored, and protected from damage, off the site at a location agreed upon in writing.

§ 15.3.4 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or other encumbrances adverse to the Owner's interests.

§ 15.3.5. As a condition precedent to the Contractor's entitlement to payment on account of an Application for Payment, the Contractor shall submit with each Application for Payment:

- .1 a partial conditional lien waiver from the Contractor for the total payment requested in the Application for Payment;
- .2 a partial conditional lien waiver from all Subcontractors and Sub-subcontractors on whose account the Contractor is seeking payment in the Application for Payment for the total amount of such payment requested;
- .3 a partial unconditional lien waiver from the Contractor for the sum of all previously paid progress payments (not applicable to the Contractor's first Application for Payment) and not applicable to retainage;

- .4 unless previously provided, a partial or final unconditional lien waiver from each Subcontractor and Sub-subcontractor on whose account the Contractor previously sought and received payment for the sum of all such previously paid payments;
- .5 a notarized statement from the Contractor certifying that: (1) the Application for Payment is correct; (2) the Contractor is entitled to payment of the amounts requested; and (3) all due and payable bills with respect to the Work have been paid in full or will be paid in full from the proceeds of the Application for Payment;
- .6 an application for payment on AIA Document G702/G703 to the Contractor from every Subcontractor on whose account the Contractor is seeking payment in the Application for Payment;
- .7 any other information required by the Contract Documents to be submitted with an Application for Payment; and
- .8 such other information substantiating the Contractor's right to payment as the Owner, Architect or Owner's lender may reasonably require.

§ 15.4 Certificates for Payment

§ 15.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner of the Architect's reasons for withholding certification in whole or in part as provided in Section 15.4.3.

§ 15.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluations of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 15.4.3 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 15.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 15.4.1. If the Contractor and the Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 9.2.2, because of

- .1 defective Work not remedied;
- .2 liens or third-party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents; or

.8 representations made by the Contractor that are not true.

§ 15.4.4 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 15.4.3, in whole or in part, that party may submit a Claim in accordance with Article 21.

§ 15.5 Progress Payments

§ 15.5.1 After the Architect has issued a Certificate for Payment, but subject to the Owner's decision to approve payment in whole or in part, or if the Owner approves payment in the absence of a Certificate for Payment, the Owner shall make payments in the manner and within the time provided in the Contract Documents, and shall so notify the Architect. The Owner may decline to approve payments in whole or in part to such extent as may be necessary in the Owner's opinion to protect the Owner from loss for which the Contractor is or may be liable. The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to sub-subcontractors in a similar manner.

§ 15.5.2 Neither the Owner nor Architect shall have an obligation to pay or see to the payment of money to a Subcontractor or supplier except as may otherwise be required by law.

§ 15.5.3 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 15.5.4 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 15.5.4 Notwithstanding any other provision of the Contract Documents to the contrary, if any claim or lien for which the Contractor is responsible is filed or asserted or there is any reason to believe that such a claim or lien may be filed or asserted at any time during the performance of the Work or the duration of the Contract, the Owner may withhold from any payment otherwise due to the Contractor a sum sufficient, in the Owner's reasonable opinion or as required by law, to pay all obligations and expenses necessary to satisfy such claim or lien until the Contractor furnishes such evidence satisfactory to the Owner that the indebtedness and the claim or lien in respect thereof, if any, has been satisfied, discharged, and released of record if and as provided by law pending the resolution of any such dispute between the Contractor and the entity asserting the claim or lien. The Owner may withhold final payment from the Contractor until the Work and the site are free and clear of any and all claims, liens, or rights thereto arising out of Work performed or materials furnished in furtherance of the Work. In the event that the unpaid balance of the Contract Sum is insufficient to cover such losses, costs, damages, and fees, or if the lien claim arises from Contractor's failure to properly pass through any payment received from the Owner, the Contractor shall immediately pay the difference to the Owner. The Contractor shall have no responsibility under this Section for any lien or claim caused by Owner's failure to make payment to Contractor when due.

§ 15.6 Substantial Completion

§ 15.6.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents and when all government inspections have been successfully completed and all required permits and authorizations have been issued (unless inability to obtain any such permits is due to design errors by the Architect or other causes not the fault of the Contractor) so that the Owner can occupy or utilize the Work for its intended use.

§ 15.6.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 15.6.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. When the Architect determines that the Work or designated

portion thereof is substantially complete, the Architect will issue a Certificate of Substantial Completion which shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 15.6.4 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 15.6.5 A Certificate of Substantial Completion may be withdrawn by the Architect or Owner based on subsequently discovered information that would have otherwise permitted the Architect or Owner to determine that the Work was not Substantially Complete if known at the time of the issuance of the Certificate of Substantial Completion.

§ 15.7 Final Completion and Final Payment

§ 15.7.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions stated in Section 15.7.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 15.7.2 Final payment shall not become due until the Contractor has delivered to the Owner a complete release of all liens arising out of this Contract or receipts in full covering all labor, materials and equipment for which a lien could be filed, or a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including costs and reasonable attorneys' fees.

§ 15.7.3 The making of final payment shall constitute a waiver of claims by the Owner except those arising from

- .1 liens, claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 15.7.4 Acceptance of final payment by the Contractor, a Subcontractor, Sub-subcontractor or supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of the final Application for Payment.

§ 15.7.5 Notwithstanding any other provision of the Contract Documents to the contrary, the date of final completion of the Work is the date determined by the Owner when all Work is complete, accessible, operable, and usable by the Owner and all parts and systems are 100% complete and cleaned for the Owner's full use and all drawings, certificates, bonds, guarantees, and documents required by the Contract Documents have been provided to the Owner by the Contractor.

§ 15.7.6 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect and Owner (1) an affidavit in form and substance reasonably acceptable to the Owner that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied and that all Work is complete in accordance with the requirements of the Contract Documents, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the

insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) a final lien waiver from the Contractor and each Subcontractor; (6) all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, record documents, and other documents required by the Contract Documents; (7) all warranties, guarantees, and other documents required by the Contract Documents, (8) "as built" drawings for utilities and the Project in such format as the Owner specifies, and (9) all of the documents and information required under Article 15 to be included with Applications for Payment. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor shall furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall immediately refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

§15.5.7 The Contractor shall assign to the Owner at the time of final completion of the Work all manufacturers' warranties relating to materials and labor used in the Work, and shall perform the Work in such manner as to preserve all such manufacturers' warranties.

ARTICLE 16 PROTECTION OF PERSONS AND PROPERTY

§ 16.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation, or replacement in the course of construction.

The Contractor shall comply with, and give notices required by, applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons and property and their protection from damage, injury, or loss. The Contractor shall promptly remedy damage and loss to property caused in whole or in part by the Contractor, a Subcontractor, a sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 16.1.2 and 16.1.3. The Contractor may make a claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 9.15. The Contractor also shall be responsible, at the Contractor's sole cost and expense, for all measures necessary to protect property adjacent to the Project and improvements within that adjacent property. The Contractor shall promptly repair any damage to such property or improvements.

§ 16.2 Hazardous Materials and Substances

§ 16.2.1 The Contractor is responsible for compliance with the requirements of the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents, and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 16.2.2 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Sub-subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area, if in fact, the material or substance presents the risk of bodily injury or death as described in Section 16.2.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of

tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 16.2.3 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

ARTICLE 17 INSURANCE AND BONDS

§ 17.1 Contractor's Insurance

§ 17.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in this Section 17.1 or elsewhere in the Contract Documents for protection from claims under workers' compensation acts and other employee benefit acts which are applicable, claims for damages because of bodily injury, including death, and claims for damages, other than to the Work itself, to property which may arise out of or result from the Contractor's operations and completed operations under the Contract, whether such operations be by the Contractor or by a Subcontractor or anyone directly or indirectly employed by any of them. This insurance shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater, and shall include contractual liability insurance applicable to the Contractor's obligations under Section 9.15. The Contractor shall purchase and maintain the insurance required by this Agreement from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. If Contractor fails to obtain and keep in full force and effect any of the insurance required of it under the Contract, Owner may purchase the coverage and Contractor shall repay any sums so advanced by Owner upon demand. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 18.4, unless a different duration is stated below:

« »

§ 17.1.2 Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than «One Million» (\$ «1,000,000») each occurrence, «Two Million» (\$ «2,000,000») general aggregate, and «Two Million» (\$ «2,000,000») aggregate for products-completed operations hazard, providing coverage for claims including

- .1 damages because of bodily injury, sickness or disease, including occupational sickness or disease, and death of any person;
- .2 personal and advertising injury;
- .3 damages because of physical damage to or destruction of tangible property, including the loss of use of such property;
- .4 bodily injury or property damage arising out of completed operations; and
- .5 the Contractor's indemnity obligations under Section 9.15.

§ 17.1.3 Automobile Liability covering vehicles owned by the Contractor and non-owned vehicles used by the Contractor, with policy limits of not less than «One Million» (\$ «1,000,000») per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance, and use of those motor vehicles along with any other statutorily required automobile coverage.

§ 17.1.4 The Contractor may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided such primary and excess or umbrella insurance policies result in the same or greater coverage as those required under Section 17.1.2 and 17.1.3, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers.

§ 17.1.5 Workers' Compensation at statutory limits.

§ 17.1.6 Employers' Liability with policy limits not less than «One Million» (\$ «1,000,000») each accident, «One Million» (\$ «1,000,000») each employee, and «Two Million» (\$ «2,000,000») policy limit.

~~§ 17.1.7 If the Contractor is required to furnish professional services as part of the Work, the Contractor shall procure Professional Liability insurance covering performance of the professional services, with policy limits of not less than «Five Million» (\$ «5,000,000») per claim and «Five Million» (\$ «5,000,000») in the aggregate.~~

~~§ 17.1.8 If the Work involves the transport, dissemination, use, or release of pollutants, the Contractor shall procure Pollution Liability insurance, with policy limits of not less than Five Million» (\$ «5,000,000») per claim and «Five Million» (\$ «5,000,000») in the aggregate« » (\$ « ») per claim and « » (\$ « ») in the aggregate.~~

~~§ 17.1.9 Coverage under Sections 17.1.7 and 17.1.8 may be procured through a Combined Professional Liability and Pollution Liability insurance policy, with combined policy limits of not less than « » (\$ « ») per claim and « » (\$ « ») in the aggregate.~~

~~§ 17.1.740~~ The Contractor shall provide certificates of insurance acceptable to the Owner evidencing compliance with the requirements in this Section 17.1 at the following times: (1) prior to commencement of the Work; (2) upon renewal or replacement of each required policy of insurance; and (3) upon the Owner's written request. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment and thereafter upon renewal or replacement of such coverage until the expiration of the period required by Section 17.1.1. The certificates ~~for will show the Owner as an additional insured on the Contractor's Commercial General Liability and excess or umbrella liability policy shall show:~~ (1) the Owner, Architect and the Architect's Consultants as additional ~~named insureds for claims arising during the Contractor's operations;~~ and (2) the Owner as an additional ~~named insured for claims arising during the Contractor's completed operations.~~

~~§ 17.1.844~~ The Contractor shall disclose to the Owner any deductible or self- insured retentions applicable to any insurance required to be provided by the Contractor.

~~§ 17.1.942~~ To the fullest extent permitted by law, the Contractor shall cause the commercial liability coverage required by this Section 17.1 to include (1) the Owner, the Architect, and the Architect's Consultants as additional ~~named insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions arising during the Contractor's operations;~~ and (2) the Owner as an additional ~~named insured for claims caused in whole or in part by the Contractor's negligent acts or omissions for which loss occurs arising during completed operations.~~ The additional insured coverage shall be primary and non-contributory to any of the Owner's general liability insurance policies and shall apply to both ongoing and completed operations. To the extent commercially available, the additional insured coverage shall be no less than that provided by Insurance Services Office, Inc. (ISO) forms CG 20 10 07 04, CG 20 37 07 04, and, with respect to the Architect and the Architect's Consultants, CG 20 32 07 04.

~~§ 17.1.103~~ Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by this Section 17.1, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. ~~Contractor shall indemnify and defend the Owner, pursuant to its obligations in Section 9.15, for any stop to the Work due to the Contractor's lapse in coverage.~~ The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

~~§ 17.1.114~~ Other Insurance Provided by the Contractor

~~(List below any other insurance coverage to be provided by the Contractor and any applicable limits.)~~

Coverage	Limits
« »	

§ 17.2 Owner's Insurance

§ 17.2.1 Owner's Liability Insurance

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

§ 17.2.2 Property Insurance

~~§ 17.2.2.1~~ The Owner shall purchase and maintain, from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located, property insurance written on a

builder's risk "all-risks" completed value or equivalent policy form and sufficient to cover the total value of the entire Project on a replacement cost basis. The Owner's property insurance coverage shall be no less than the amount of the initial Contract Sum, plus the value of subsequent Modifications and labor performed or materials or equipment supplied by others. The property insurance shall be maintained until Substantial Completion and thereafter as provided in Section 17.2.2.2, unless otherwise provided in the Contract Documents or otherwise agreed in writing by the parties to this Agreement. This insurance shall include the interests of the Owner, Contractor, Subcontractors, and Sub-subcontractors in the Project as insureds. This insurance shall include the interests of mortgagees as loss payees.

§ 17.2.2.2 Unless the parties agree otherwise, upon Substantial Completion, the Owner shall continue the insurance required by Section 17.2.2.1 or, if necessary, replace the insurance policy required under Section 17.2.2.1 with property insurance written for the total value of the Project that shall remain in effect until expiration of the period for correction of the Work set forth in Section 18.4.

§ 17.2.2.3 If the insurance required by this Section 17.2.2 is subject to deductibles or self-insured retentions, the Owner shall be responsible for all loss not covered because of such deductibles or retentions.

§ 17.2.2.4 If the Work involves remodeling an existing structure or constructing an addition to an existing structure, the Owner shall purchase and maintain, until the expiration of the period for correction of Work as set forth in Section 18.4, "all-risks" property insurance, on a replacement cost basis, protecting the existing structure against direct physical loss or damage, notwithstanding the undertaking of the Work. The Owner shall be responsible for all co-insurance penalties.

§ 17.2.2.5 Prior to commencement of the Work, the Owner shall secure the insurance, and provide evidence of the coverage, required under this Section 17.2.2 and, upon the Contractor's request, provide a copy of the property insurance policy or policies required by this Section 17.2.2. The copy of the policy or policies provided shall contain all applicable conditions, definitions, exclusions, and endorsements.

§ 17.2.2.6 Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any insurance required by this Section 17.2.2, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 17.2.2.7 Waiver of Subrogation

§ 17.2.2.7.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by this Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, Subcontractors, and Sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this Section 17.2.2.7 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 17.2.2.7.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those

insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 17.2.2.7.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 17.2.2.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements, written where legally required for validity, the Architect and Contractor shall make payments to their consultants and Subcontractors and Sub-subcontractors in similar manner.

§ 17.2.3 Other Insurance Provided by the Owner

(List below any other insurance coverage to be provided by the Owner and any applicable limits.)

Coverage	Limits
« »	

§ 17.3 Performance Bond and Payment Bond

§ 17.3.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in the Contract Documents on the date of execution of the Contract.

§ 17.3.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

ARTICLE 18 CORRECTION OF WORK

§ 18.1 The Contractor shall promptly correct Work rejected by the Owner or Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed, or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense, unless compensable under Section A.1.7.3 in Exhibit A, Determination of the Cost of the Work.

§ 18.2 In addition to the Contractor's obligations under Section 9.4, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 15.6.3, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition.

~~During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty.~~

§ 18.3 If the Contractor fails to correct nonconforming Work within a reasonable time, the Owner may correct it in accordance with Section 8.3.

§ 18.4 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 18.5 Upon completion of any work under this Article 18, the one-year correction period in connection with the Work requiring correction shall be renewed and recommence. The obligations under Article 18 shall cover any repairs and replacement to any part of the Work or other property that is damaged by the defective Work. The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Article 18.

§ 18.6 Nothing contained in this Article 18 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period ~~for~~ correction of the Work as described in Article 18 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

ARTICLE 19 MISCELLANEOUS PROVISIONS

§ 19.1 Assignment of Contract

Neither party to the Contract shall assign the Contract without written consent of the other, ~~except that the Owner may, without consent of the Contractor, assign the Contract to a lender or other entity providing construction financing or credit enhancement for the Project if the lender assumes the Owner's rights and obligations under the Contract Documents.~~ The Contractor shall execute all consents reasonably required to facilitate such assignment.

§ 19.2 Governing Law

The Contract shall be governed by the law of the place where the Project is located, ~~excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 21-6.~~

§ 19.3 Tests and Inspections

Tests, inspections, and approvals of portions of the Work required by the Contract Documents or by applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities shall be made at an appropriate time. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 19.4 The Owner's representative:

(Name, address, email address and other information)

«~~Kenneth Paul, Executive Director—~~
«~~Franklin County Convention Facilities Authority—~~
«~~400 N. High Street, 4th Floor—~~
«~~Columbus, Ohio 43215—~~
«~~kpaul@fccfa.org—~~
«~~(614)827-2807—~~

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§ 19.5 The Contractor's representative:

(Name, address, email address and other information)

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§ 19.6 Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.

ARTICLE 20 TERMINATION OF THE CONTRACT

§ 20.1 Termination by the Contractor

If the Architect fails to certify payment as provided in Section 15.4.1 for a period of ~~30-60~~ days through no fault of the Contractor, or if the Owner fails to make payment as provided in Section 4.1.3 for a period of 30 days, the

Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, ~~costs incurred by reason of such termination, and damages.~~

§ 20.2 Termination by the Owner for Cause

§ 20.2.1 The Owner may terminate the Contract if the Contractor

- .1 ~~repeatedly~~ refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 ~~repeatedly~~ disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise ~~is guilty of substantial breach or fails to perform any of its duties or obligations under a~~ provision of the Contract Documents.

§ 20.2.2 When any of the reasons described in Section 20.2.1 exists, the Owner, ~~upon certification by the Architect that sufficient cause exists to justify such action,~~ may, without prejudice to any other remedy the Owner may have and after giving the Contractor seven days' notice, terminate the Contract and take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor and may finish the Work by whatever reasonable method the Owner may deem expedient. Upon request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 20.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 20.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 20.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Architect, upon application, and this obligation for payment shall survive termination of the Contract.

§ 20.2.5 ~~After termination pursuant to this Section 20.2, the Contractor shall, unless the notice of termination directs otherwise, (1) immediately discontinue the Work on that date, place no further orders or Subcontracts for materials, equipment, services, facilities, or otherwise, except as may be necessary for completion of such portion of the Work as is not discontinued; (2) promptly make every effort to procure cancellation upon terms satisfactory to the Owner of all orders and Subcontracts to the extent they relate to the performance of a discontinued portion of the Work; and (3) thereafter do only such Work as may be necessary to protect the Work already in progress and to protect materials and equipment on the Project site or in transit thereto.~~

§ 20.2.6 ~~If the Owner's termination for cause pursuant to this Section 20.2 is determined by binding dispute resolution to have been unjustified, such termination shall be deemed to have been a termination pursuant to Section 20.3.~~

§ 20.3 Termination by the Owner for Convenience

The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause. The Owner shall pay the Contractor for Work ~~executed properly performed prior to the termination date; and for items properly and timely fabricated offsite that have been delivered and stored in accordance with the Owner's instructions.~~ However, if the Owner terminates the Contract pursuant to this Section 20.3, but the Contractor is in default, the Contractor will be entitled to receive only such sums as it would be entitled to receive following the occurrence of an event of default as provided in Section 20.2. ~~costs incurred by reason of such termination, including costs attributable to termination of Subcontracts; and a termination fee, if any, as follows:~~
(Insert the amount of or method for determining the fee payable to the Contractor by the Owner following a termination for the Owner's convenience, if any.)

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§ 20.4 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 20.4.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine. The Contract Sum or Contract Time, or both, may be adjusted for increases in the cost and time caused by suspension, delay, or interruption, but no such adjustment will be made to the extent:

- .1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

ARTICLE 21 CLAIMS AND DISPUTES

§ 21.1 Claims, disputes, and other matters in question arising out of or relating to this Contract, including those alleging an error or omission by the Architect but excluding those arising under Section 16.2, shall be referred initially to the Architect for decision. Such matters, except those waived as provided for in Section 21.11 and Sections 15.7.3 and 15.7.4, shall, after initial decision by the Architect or 30 days after submission of the matter to the Architect, be subject to mediation as a condition precedent to binding dispute resolution.

§ 21.1.1 DEFINITION

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

§ 21.2 Notice of Claims

§ 21.2.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 18.2, shall be initiated by notice to the Architect within 24-10 days after occurrence of the event giving rise to such Claim or within 24-10 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. The Contractor's failure to initiate and substantiate a Claim shall constitute an irrevocable waiver of the Claim.

§ 21.2.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 18.2, shall be initiated by notice to the other party.

§ 21.2.3 Unless otherwise agreed in writing by the Owner, within 45 days after the initiation of a Claim, the Contractor shall submit in writing to the Owner and Architect all information that the Contractor believes substantiates the Claim and all information and statements required to substantiate a Claim as provided in this Section 21.2. The failure to comply with the requirements of this Section 21.2.3 shall constitute an irrevocable waiver of any related Claim.

§ 21.3 Time Limits on Claims

The Owner and Contractor shall commence all claims and causes of action against the other and arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in this Agreement whether in contract, tort, breach of warranty, or otherwise, within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 21.3.

§ 21.4 If a claim, dispute or other matter in question relates to or is the subject of a mechanic's lien, the party asserting such matter may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 21.5 The parties shall endeavor to resolve their disputes by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with their Construction Industry Mediation Procedures in effect on the date of this Agreement. A request for mediation shall be made in writing, delivered to the other party to this Agreement, and filed with the person or entity administering the mediation. The request may be made concurrently with the binding dispute resolution but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 21.6 If the parties have selected arbitration as the method for binding dispute resolution in this Agreement, any claim, subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association, in accordance with the Construction Industry Arbitration Rules in effect on the date of this Agreement. Demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 21.7 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation; (2) the arbitrations to be consolidated substantially involve common questions of law or fact; and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 21.8 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, any party to an arbitration may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of a Claim not described in the written Consent.

§ 21.9 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to this Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 21.10 Continuing Contract Performance

Pending final resolution of a Claim, except as otherwise agreed in writing, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 21.11.1 Waiver of Claims for Consequential Damages

~~The Contractor and Owner waive claims except to the extent covered by the valid and collectible insurance carried by the Contractor or Owner under Article 17, the Contractor and Owner waive all claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver, however, does not preclude (i) an award of liquidated damages recoverable under the Agreement; or (ii) the obligation of the Contractor to reimburse the Owner for any fines from governmental entities or additional costs and expenses for the Architect or other consultants, or separate contractors, arising out of any act or omission of the Contractor.~~

- ~~1—damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and~~
- ~~2—damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.~~

~~This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 20. Nothing contained in this Section 21.11 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.~~

§ 21.11.2 Liquidated Damages.

~~If the~~~~The parties have agreed to the payment of liquidated damages on account of the Contractor's delay, and if the Contractor fails to achieve Substantial Completion within the Contract Time or fails to complete the punch-list work within 30 days of the Contract Time, the Owner and Contractor acknowledge that it would be difficult, if not impossible, to determine the actual damages to the Owner. Consequently, the Owner and the Contractor agree that as liquidated damages, and not as a penalty, the Contractor shall, at the Owner's option, pay to or credit the Owner the associated liquidated-damages per-diem sums set forth in the Agreement of \$600.00 for each day that the Contractor fails to achieve Substantial Completion or complete the punch-list work in a timely manner and in accordance with the requirements of the Contract Documents.~~

- .1 Notwithstanding any other provision of the Contract Documents to the contrary, if an arbitration panel or a court determines that the liquidated-damages per-diem sums or their application are void and unenforceable, the Owner may recover the actual damages (even if excluded in Section 21.11.1) that it incurs on account of the Contractor's failure to achieve Substantial Completion within the Contract Time, but not in excess of the amount per day that the parties attempted to specify as liquidated damages.
- 2 Nothing contained in this Section 21.11.2 shall be deemed to preclude the Owner's recovery from the Contractor of actual damages on account of delay-based claims attributable to the Contractor that are brought by separate contractors.
- .3 In addition to other rights that the Owner may have relative to liquidated damages, the Owner may deduct liquidated damages from the Contract Sum as such damages accrue. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall immediately pay the difference to the Owner.

§ 21.12 CLAIMS FOR ADDITIONAL COST

§ 21.12.1 Except in the event of a Claim relating to an emergency endangering life or property, the Contractor shall obtain the Owner's specific written authorization prior to proceeding with any change in the Work that may entitle the Contractor to an increase in the Contract Sum. The Contractor's failure to obtain such prior written authorization shall constitute an irrevocable waiver of any related Claim. If the Contractor wishes to make a Claim for an increase in the Contract Sum for any reason other than a change in the Work ordered by the Owner, written notice as provided in this Article shall be given before proceeding to execute the affected Work.

§ 21.12.2 The Contractor shall substantiate each Claim for an increase in the Contract Sum with (1) written documentation of the actual additional direct costs to the Contractor due to the event giving rise to the Claim; and (2) a written statement from the Contractor that the increase requested is the entire increase in the Contract Sum associated with the Claim.

§ 21.13 CLAIMS FOR ADDITIONAL TIME

§21.13.1 Except in the event of a Claim relating to an emergency endangering life or property, the Contractor shall obtain the Owner's specific written authorization prior to proceeding with any change in the Work that may entitle the Contractor to an increase in the Contract Time. The Contractor's failure to obtain such prior written authorization shall constitute an irrevocable waiver of any related Claim. If the Contractor wishes to make a Claim for an increase in the Contract Time for any reason other than a change in the Work ordered by the Owner, written notice as provided in this Article shall be given before proceeding to execute the affected Work.

§ 21.13.2 The Contractor shall substantiate each Claim for an extension of the Contract Time with (1) a written description of the effect of the delay on the progress of the Work; (2) a detailed schedule which identifies the critical portions of the Work impacted by the delaying event and the dates of such impact; (3) a detailed written proposal for an increase in the Contract Sum which would fully compensate the Contractor for all costs of acceleration of the Work needed to completely overcome the associated delay together with a statement consistent with Section 21.12.2; and (4) a written statement from the Contractor that the extension requested is the entire extension of the Contract Time associated with the Claim.

- .1 In the case of a continuing delay occurring on consecutive days, only one Claim is necessary. However, within ten days after the cessation of the cause of the continuing delay, the Contractor shall notify the Owner and Architect in writing that the cause of the delay has ceased. The failure to give timely notice of the cessation of the cause of the continuing delay will constitute an irrevocable waiver of any Claim based on the continuing delay.

§ 21.13.2 In addition to the requirements of Section 21.13.1, if adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on a critical element of the scheduled construction. Notwithstanding any other provision of the Contract Documents to the contrary, the Contract Time will not be adjusted on account of the impact of any normal adverse weather on any of the Work or on account of the impact of any abnormal adverse weather on non-critical elements of the Work. The support for

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and evaluation of all adverse-weather Claims shall be based upon average weather conditions during the 10 years immediately preceding the dates at issue in the Claim as such weather conditions were recorded at the government-controlled weather-recording facility nearest to the site.

§ 21.13.43 Notwithstanding any other provision of the Contract Documents to the contrary, an extension of the Contract Time will be the Contractor's exclusive remedy in the event of any delay not the proximate result of the act or failure to act of the Owner or anyone for whom the Owner is directly responsible. The Contractor specifically waives any right it may otherwise have to an increase in the Contract Sum or to any type of damages because of such delay or disruption to all or any part of the Work, whether such delay was foreseen or unforeseen and whether caused by the active interference of any party for whom the Owner is not directly responsible.

.1 Notwithstanding the provisions of Section 21.13.3 to the contrary, the Contractor will not be entitled to an extension of the Contract Time to the extent that such delay occurs concurrently with a delay attributable to the Contractor.

§ 21.13.54 Notwithstanding any other provision of the Contract Documents to the contrary, in no event shall the Contractor be entitled to an increase in the Contract Time on account of any delaying impact on a non-critical element of the Work.

This Agreement entered into as of the day and year first written above.

« »

OWNER (Signature)

«Kenneth C. Paul» «Executive Director»

(Printed name and title)

« »

CONTRACTOR (Signature)

« »« »

(Printed name and title)