



**GREATER NEW HAVEN WATER POLLUTION CONTROL AUTHORITY
PROCESS AIR COMPRESSOR SYSTEM FOR LOW LEVEL NITROGEN REDUCTION**

Project CWF 2019-04

ADDENDUM #2

August 25, 2023

BIDDERS MUST ACKNOWLEDGE RECEIPT OF THIS ADDENDUM #2 AND ALL PREVIOUS ADDENDA IN THEIR PROPOSAL

Bidders are hereby informed that plans and specifications for the above-mentioned project are modified, corrected, and or supplemented as follows and that Addendum #2, complete with the enclosures, becomes part of the Contract Documents.

A. QUESTIONS AND RESPONSES CONCERNING BID DOCUMENTS:

1. Attachment A, consisting of four pages, contains bidder questions and responses to the questions concerning the bid documents.

B. UPDATED PROPOSAL AND SCHEDULE FOR PRE-SELECTED EQUIPMENT

1. Attachment B, Updated Proposal dated August 9, 2023, from APG - Neuros, contains updated cost and schedule information for use in preparing bids. Attachment B is to be added to Volume 3 of the Bid Documents.

C. REVISED BID FORM:

1. Attachment C, The Bid Form, consisting of six pages, has been revised to reflect updated costs of pre-selected equipment.

D. REVISED SAMPLE AGREEMENT:

1. Attachment D, consisting of ten pages, has been revised in Section 5.2 to match the unit price items in the bid form and the updated costs for pre-selected equipment.

E. REVISED VOLUME 4 DRAWINGS

1. Attachment E, consisting of four drawings, labeled Revision 1, dated 8-25-2023, Addendum No. 2, have been revised to require an HVAC Control Panel communicating with the existing HVAC control and SCADA systems. Replace the original drawings in Volume 4 with the respective attached revised drawings.

END OF ADDENDUM 2



ENCLOSURES:

- Attachment A – Questions and Responses (4 pages)
- Attachment B – Updated Proposal and Schedule for Pre-Selected Equipment (1 page)
- Attachment C – Revised Bid Forms (6 pages)
- Attachment D – Revised Sample Agreement (10 pages)
- Attachment E – Revised Drawings, Revised Dated 8-25-2023, Addendum No. 2 (4 pages)
 - DWG # 55-H-001
 - DWG # 55-H-201
 - DWG # 55-E-202
 - DWG # 55-E-602

No.	Question	Response
1	On the above project, we would greatly appreciate it if you could consider naming EDGENG as an approved Manufacturer in the specification OR approve us Equal Status on this Project per the specification sections of section 08 16 13- FRP Doors & Frames in order for us to forward our proposal for the FRP scope of work, which has developed cost-effective and durable alternatives for Stainless Steel Products.	Please see article 7.04 of the General Conditions to review the process of submitting an "or equal" product during construction. "The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers..."
2	We are the local representative for DeZURIK valves and in reference to this project, we had a question in reference to the Aeration Basin electric motor operated valve specification section 40 27 02, 2.05, B, 2 for the V510 lug style butterfly valves. Spec calls out for FKM seat and 316SS shaft. Based on this project requiring AIS compliant valves, DeZURIK BOS-US series valves are not available in FKM seats but do offer EPDM, which are good for temperatures to 250 degrees F. Since these are located out in the aeration basin, a distance away from the blower, we would expect the temperature would never even come close to exceeding the EPDM material temperature rating and asking if EPDM would be an acceptable seat material. Also, based on standardizing materials due to AIS, the shaft material we can offer is 410SS vs. 316SS and asking if this would be an acceptable shaft material.	Please see article 7.04 of the General Conditions to review the process of submitting an "or equal" product during construction. "The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers..."
3	Drawing 55-A-01 – There is a note to tuck point the existing brick, reinstall loose bricks, and replace damaged bricks on Substation No. 2. Please provide the floor plan and elevations for the existing building to quantify the tuck pointing. For bidding purposes, please provide a quantity of damaged brick to be replaced.	Floor plan of Substation No. 2 is shown on Drawings 50-X-102 and 55-A-200. There is a partial east elevation of Substation No. 2 shown on Drawing 55-A-200. Photos of Substation No. 2 are shown on Drawing 50-X-104. Field verify actual quantities of tuck pointing and brick replacement.
4	Drawing 50-S-201 – There are 5 supports called out down the center walkway. Should these supports have HSS8x8x1/4 columns, W12x40, and bracing per Section A on 50-S-301 or W10x33, W12x40 beam with bracing per Section C on 50-S-01?	For the 5 supports on the center walkway, see Section A/50-S-301. For the easternmost support, see Section C/50-S-301.
5	Section 02 41 00 – Paragraph 3.01.G states roof material to be treated as asbestos-containing. Please confirm if the gravel on the existing roof is also to be disposed of as asbestos contains or if only the membrane, insulation, and flashing should be treated as asbestos-containing.	All roof material is to be treated as asbestos-containing.
6	Drawing 50-X-102 – Please clarify what the material type of the existing structure on Substation No. 2 (metal deck or concrete).	Concrete
7	Bid Form – The unit price bid schedule on the bid form has two items, mob/demob with F&I of piles and a load test. The agreement also has a unit price bid schedule but with four items, F&I of piles, mob/demob, load test, and handling and disposal of regulated materials. Please clarify which unit price bid schedule is correct. The agreement states 3400 LF of micropiles and the Bid Form states 3501 LF, please clarify which length is correct.	The table in specification section 00 52 13 shall be updated to match specification section 00 41 13, see attachment B. The table in specification section 00 41 13 (Bid Form) has not been changed.
8	Section 02 61 00 – 1.01 B refers to a Haley & Aldrich Geotechnical and Environmental Report. Is that report part of the contract documents? If so where is it? If not, can it be provided?	See the Jacobs Geotechnical Memorandum in attachment A, for informational purposes only, which includes the Haley & Aldrich Geotechnical and Environmental Report.
9	Drawing 55-A-601 – Interior finish schedule, note 6 states see section 03 30 00 for sealer. Section 03 30 00 is not part of the documents and Section 03 30 10 does not specify a sealer. Please provide a spec for the concrete sealer.	See 03 30 10 paragraph 2.04.G, Curing Compound. All the specified products are a curing compound plus sealer.
10	Please confirm if building department fees are waived on the project.	Building department fees will NOT be waived on this project. GNHWPCA is not an entity of the City of New Haven and therefore is subject to the payment of all fees related to projects.
11	Section 02 61 00-part 1.01 F states that there is a soil allowance for differing site conditions on the bid form if the soil is not able to be disposed of at a MADEP Disposal Facility. Upon review of the bid form there is no allowance, please confirm.	References to an allowance in specification section 02 61 00B are removed.

No.	Question	Response
12	Drawing 55-S-201 – There is a call out for brick ledge TOC EL. 10.63. Drawing 55-S-301 shows the brick ledge at EL 13.71. Please clarify the elevation for the brick ledge.	The brick ledge elevation is 13.71.
13	There is a Bid Bond in Volume 1 which says 3 pages and page 2 is blank. Please confirm if there is a page 2 and if so, provide a complete Bid Bond package with all 3 pages.	Page 2 of the bid bond included in the documents was intentionally left blank, but not intentionally not included.
14	The Neuros proposal indicates they are providing two (2) 16" discharge flexible connectors w/retainer rings and control rods. Please confirm that these are the same as the 18" Discharge expansion joint and the 14" expansion joint located on the top of the Compressor as shown on drawing 55-D-301.	Contractor shall bid pipe and expansion joint sizes as shown on the Drawings. Neuros is providing the inlet and discharge expansion joints as shown on 55-D-301. The Contractor shall provide all other expansion joints shown on the Drawings.
15	The Neuros Proposal indicates they are providing a 16" motor actuated discharge valve. Please confirm if this is FV-55-1-3 as shown on drawing 55-D-301. Please confirm the size of the valve is 16" or should it be 18" as this line is shown as 18" on drawing 55-D-301.	Per Note 1 on 55-D-301, Neuros is providing FV 55-1-3. Dimensions will be as shown on the Contract Drawings.
16	The Neuros Proposal indicates they are providing a 16" Wafer Check Valve. Please confirm if this valve should be 18" as this line is 18" on drawing 55-D-301.	Valve will be 18" per the Drawings.
17	Due to Neuros supplying all other flexible couplings off of the Compressors, would it make sense for them to supply the 8" expansion joint for the blow-off line?	Neuros is only providing the inlet and discharge expansion joints as shown on 55-D-301. The Contractor shall provide all other expansion joints shown on the Drawings.
18	The Neuros Proposal referenced a Blow-off Bypass Valve, no size indicated, to blow off airflow during the start/shutdown sequence. Please confirm if this valve is the V-510 shown off the 14" heat rejection line leaving the building towards the Basin as shown on drawing 55-D-201. If this is not that valve, please indicate the branch size coming off that 14" line so we can size the valve.	Contractor is to provide the V-510 valve as shown on 55-D-201. The blow-off bypass valve is provided by Neuros and is located inside their enclosure.
19	On drawing 50-D-202, a note states to provide a grooved flange adaptor, TYP, and points to the flange on the FCV. Please confirm if this is to be provided at both flanges of the FCV or only one.	Grooved flange adaptor is only required on one side of the valve as shown on the drawing.
20	The General Arrangement Drawings provided with the Neuros proposal indicate that the discharge diameter is 14" and calls for a 16" x 14" reducer. The piping as detailed in the contract drawings only shows 18" diameter piping with no reducer, please clarify.	Valve will be 18" per the Drawings.
21	Please confirm that the Neuros Compressor units come with the enclosure prefabricated around it and no additional installation is required.	Correct.
22	Section 40 27 02 Part 2.01.1 and 2.05 B.1. a.10 indicates that the valves need to be NSF/ANSI 61 which is usually a requirement for drinking water. Please confirm that NSF/ANSI 61 is required.	NSF/ANSI 61 is not required for valves on this project.
23	Section 03 30 10 – Questions on the Cast in Place Concrete design: a. Sheet 9 of 18 – Structural notes – Note 1 – Should 5,000PSI concrete be used for below slab pipe encasements and duct bank that is located within the lightweight cellular concrete? Note 4 – There are no Construction Joints identified on the drawings. Section 03 30 10, paragraph 3.04.F.3.c notes "vertical" construction joints at a maximum spacing of 40' with no mention of slab or horizontal joints. Should the slabs at elevations 13.79' and 18.38' have construction joints and if so, what spacing? Additionally, should these joints have water stop? b. There is water stop specified, but none is shown on the drawings. Confirm water stop is not required.	Duct banks: Use 4000psi concrete. Construction joints: submit layout of construction joints in accordance with 03 30 10 during construction. Waterstops are not required. For further information see 1.01.A; Work shall conform to requirements of ACI 301-20, Specifications for Structural Concrete, unless otherwise specified.
24	Upon contacting one of the named butterfly valve manufacturers, they have indicated that they utilize the following: a. 416 SS vs cast iron for the valve body b. 316 SS vs aluminum bronze for the disc Please confirm that these exceptions will be acceptable.	a. 416 SS shafts or 316 SS shafts allowed on Type V510 Butterfly Valves and 416 SS or 304 SS shafts are allowed on Type 511 Butterfly Valves. b. Aluminum bronze or 316 SS discs are acceptable.
25	Please confirm that the contractor will be able to mobilize on-site during the initial 90-day "submittal period" to perform test pits and in-situ soil sampling.	The Contractor may mobilize strictly for investigative purposes as approved by the Engineer. No equipment, materials, etc. shall remain on site when not in use until the end of Milestone 1.

No.	Question	Response
26	<p>Under Section 01.31.13-Project Coordination, part 1.03.B.3 – Milestone 3 - Aeration System Piping, indicates that there are 125 days allowed to complete the work outlined in part 1.04.3. The 125 days allowed is not attainable as outlined. Considering that under part 1.04.3 that we must install a 30" cross and valving, perform a 15-day PAC system functional test, install the connection piping from the new header to all the drop locations, and work sequentially on each of the 4 tanks (which includes a 1 week draining and 1-week stabilizing period for each tank). We would request one of the following modifications to the scope of work:</p> <ul style="list-style-type: none"> a. Allow two biological tanks to be taken down at a time, combining work within 1.04.3.d.1.a & d.1.b into one stage and 1.04.3.d.1.c & d.1.d into another. This would allow the most cost-effective way to perform the work and would allow the work to be completed within 125 days. b. Extend the 125 days allowed to 215 and add 3 months to the contract to extend the substantial completion to 27 months. c. Make the first tank offline prior to beginning the 125-day clock and allow the scope of work outlined in 1.04.3.a, b, c, and d.1.a to begin before milestone 3. This would allow us to perform the 15 Day PAC functional test on this first tank prior to beginning work on the remaining 3. 	<p>The scope of work outlined in 1.04.3.a, b, and c will be moved to milestone 2. This will allow the Contractor to perform the cross over valve installation and 15 Day PAC functional test prior to beginning the work on Milestone 3.</p> <p>Note only basin's 1 and 4 will be dewatered for Contractor access at separate times, basins will be drained of process water and refilled with non-potable water (if deemed necessary). Contractor shall not put any lifts, scaffolding or tohter equipment on the floor of the aeration basins. Basins 2 and 3 will remain operational through out the duration of the project.</p>
27	<p>Under section 01.31.13-Project Coordination, part 1.04.3.d.a.1, it indicates that the basins will be drained. At the pre-bid, it was noted that the basins will only be taken down to a level to perform the connection of the drop pipes. Please confirm which will be done.</p>	<p>The intent during the Basin Piping Installation is to take basins 1 and 4 down at separate times, drained of process water and refilled with non-potable water (if deemed necessary) while the work is to be performed. Contractor shall not put any lifts, scaffolding or tohter equipment on the floor of the aeration basins. Basins 2 and 3 will remain operational through out the duration of the project.</p>
28	<p>Drawing 55-A-301 – Aluminum insulated panels are called out with detail 0751-106. This detail shows the head detail, there is no detail for the jambs of the insulated panels. Please provide detail to determine if galvanized steel framing is required.</p>	<p>The galvanized angle shown in Detail 0751-106 is to support the wood blocking above. The aluminum insulated panels span between the brick above the wall openings as shown on the Elevations on Drawing 55-A-301. The aluminum insulated panels are attached to horizontal furring channels as shown on details 0811-101 and 0833-101 on Drawing SD-A-503, 0845-101 on Drawing SD-A-504, and 0890-101 on Drawing SD-A-505. Coordinated aluminum insulated panel installation details with panel manufacturer.</p>
29	<p>The D series drawings in the PACB and for the Biological Reactor Aeration Basins have a note referencing a rigid grooved coupling and a grooved flange adapter. Please reference where these are specified and if not, please provide a specification for them.</p>	<p>Rigid grooved couplings shall be per Section 40 27 00.20. Provide Victaulic Style 489 or approved equal for piping less than 14" and Victaulic Style W89 or approved equal for piping 14"-24". Per Section 40 27 00 Paragraph 2.02 A.3., furnish grooved type flange adaptors from same manufacturer as couplings.</p>
30	<p>For flange adaptors up to 12", material shall match piping. Provide Style 441 Vic-Flange, Victaulic No. 445 F/R or approved equal. For flange adaptors 14" to 24" provide Victaulic Style 741 with standard black coating or approved equal. Gaskets shall be the same as for couplings specified under Section 40 27 00.20.</p>	<p>The contractor is to fill out a subcontractor verification form found in section 00 44 27. No list of self-performance scope is needed.</p>
31	<p>Specification section 00 73 00-Supplementary Conditions part SC-7.06, you state the General Contractors are to provide a minimum of 25% of on-site labor with its own employees (self-perform). Typically, the bid documents would require the bidders to identify their intended self-performing scope so the Engineers can review it prior to the notice of award being issued. Please clarify if the Contractors should provide a list of intended self-performance scope with their bid proposal. Supplementary Conditions, section 15.01 defines the payment terms to be 75 days after receipt of the Engineers' approval for work in place. Considering some of the work could be in place up to a month before the initial pencil copy is submitted to the Engineer, this is effectively a 120-day payment for work in place period, which is excessive. Can the payment terms be modified to "30 days after receipt of approval by Engineer"? This would be a 45-day pay period, which is more aligned with standard practice.</p>	<p>There will be no change to the language found in section 15.01.</p>



No.	Question	Response
32	Specification section 00 73 00-Supplementary Conditions part SC-14.02 referencing 14-02B, appears to indicate that there is a cash allowance for independent testing laboratory or agency. In the review of the bid form, it does not appear there is a cash allowance, please confirm.	There is no allowance, the table in the bid form is correct.
33	Per item C in Addendum no. 1, the revised cut-off date for questions is Noon, August 30, 2023. Per State of CT DEEP Regulations (22a-439-4, see attached) it notes addenda must be received before 5 working days of the bid date. Considering that there is a holiday on Monday, September 4th, the question cut off on August 30th, and then an addendum issued sometime after that, the bid date will need to be pushed out or the question deadline changed to comply with the above-referenced regulation. We bring this up as we have experienced issues with this when on other projects the DEEP requested a rebid of the job due to an addendum being issued in less than 5 days.	Should an addenda be required with in the 5-working days of the scheduled bid opening, the bid opening date will be revised.
34	Per section 40 27 02 Process Valves and Operators, under section 2.03 B. Butterfly Valves, Bray is a named valve supplier. They have provided pricing to us for the control valves with their valves, as specified, and a Bray motor operator, series 70 (see attached). Part 2.06-Operators and Actuators Item B-Electric Operators-120 Volts, names only Rotork and Limitorque with no or equal shown. Please confirm that the Series 70 Bray actuators will be considered an or equal.	Please see article 7.04 of the General Conditions to review the process of submitting an "or equal" product during construction. "The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers..."
35	There is a Geotechnical Memo by Jacobs dated July 22, 2022 on Drawing 01-G-009 is called out. However I am unable to find it in the files. Please confirm this file is available and where I can download it.	The Geotechnical Memorandum by Jacobs has been included in addenda 2.

August 9th 2023

Greater New Haven Water Pollution Control Authority
Gabriel Varca
Director of Finance and Administration
260 East Street
New Haven, CT 06511

Subject: Updated Proposal from February 2022 for Greater New Haven WPCA - Project CWF 2019-04 Process Air Compressor Improvements

Dear Mr. Varca,

As discussed with the Engineering Department at Greater New Haven WPCA and the design engineer at Jacobs, we are pleased to confirm the following:

- Proposal Validity: We are confirming extending our proposal pricing validity to June 30th ,2024.
- Pricing: The updated pricing is \$1,559,795.00 USD.
- Schedule: The updated schedule for the proposed scope is as follow:
 - o Two (2) weeks for shop drawing submittals from approval of Purchase Order
 - o Sixteen (16) to Twenty (20) weeks for delivery from approval of shop drawings
- Remaining Terms: All other terms in the submitted proposal of February 2022 remain the same.

Please don't hesitate to reach out with any questions.

Wishing you luck with the upcoming bid.

Yours truly,

APG-Neuros

NOTE TO BIDDER: Use typewriter or BLACK ink for completing this Bid Form.

**BID FORM
(STIPULATED PRICE BASIS)**

1. BID RECIPIENT

1.1 This Bid is submitted to:

Owner: Greater New Haven Water Pollution Control Authority

Address: 260 East Street, New Haven, Connecticut 06511

Project Identification: Project CWF 2019-04 Process Air Compressor System for Low-Level Nitrogen Removal

Contract No.: CWF 2019-04

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

2. BIDDER'S ACKNOWLEDGEMENTS

2.1 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 120 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

3. BIDDER'S REPRESENTATIONS

3.1 In submitting this Bid, Bidder represents that:

3.1.1 Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged.

Addendum No.	Addendum Date
_____	_____
_____	_____
_____	_____

(Bidder shall insert number of each Addendum received.)

3.1.2 Bidder has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

3.1.3 Bidder is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

3.1.4 Bidder has carefully studied: i) reports of explorations and tests of subsurface conditions at or contiguous to the Site and drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) which have been identified in Paragraph 5.03 of the Supplementary Conditions as containing reliable “technical data,”; and ii) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified in Paragraph 5.06 of the Supplementary Conditions as containing reliable “technical data.”

3.1.5 Bidder has considered the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder’s safety precautions and programs.

3.1.6 Based on information and observations referred to in paragraph above, Bidder does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) Bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.

3.1.7 Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.

3.1.8 Bidder has given Engineer written notice of conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.

3.1.9 The Bidding Documents are generally sufficient to indicate and convey understanding of terms and conditions for the performance of the Work for which this Bid is submitted.

3.1.10 Bidder acknowledges and accepts provisions of the preselected equipment. Cost of preselected equipment is included in the Bid and Contractor has included installation cost in the Bid.

4. BIDDER’S CERTIFICATION

4.1 Bidder certifies:

4.1.1 This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.

4.1.2 Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.

4.1.3 Bidder has not solicited or induced any individual or entity to refrain from bidding.

4.1.4 Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this paragraph:

4.1.4.1 “corrupt practice” means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;

4.1.4.2 “fraudulent practice” means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish Bid prices at artificial noncompetitive levels, or (c) to deprive Owner of the benefits of free and open competition;

4.1.4.3 “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, noncompetitive levels; and

4.1.4.4 “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

4.1.5 Required sales and use taxes are included in the stated Bid prices for the Work unless provision is made herein for the Bidder to separately itemize the estimated amount of sales tax or if Instructions to Bidders state Owner is tax exempt.

5. BASIS OF BIDS

5.1 Bidder shall complete the Work in accordance with the Contract Documents for the following price(s):

5.2 Lump Sum Bid Price: \$ _____

5.3 Unit Price Bid Schedule:

5.3.1 Unit prices have been computed in accordance with Paragraph 13.03.C of the General Conditions.

5.3.2 Bidder acknowledges that estimated quantities are not guaranteed and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

Unit Price Bid Schedule					
Item No.	Description	Estimated Quantity	Unit	Bid Unit Price	Extended Bid Unit Price
1.	Mobilization/Demobilization, furnish, and install 46 10.75-inch micropiles in accordance with Specification 31 43 00, Micropiles	3,501	LF	\$	\$
2.	10.75-inch Micropile Static Load Test	1	EACH	\$	\$
Total of Extended Bid Unit Prices					\$

5.4 Preselected Equipment from APG-Neuros **\$1,559,795 (Addendum 2)**

5.5 **Base Bid (Total of Above):** \$ _____

5.5.1 Total of Lump Sum Bid Price, Extended Bid Unit Price, Extended Allowances, and Preselected Equipment from APG-Neuros.

6. TIME OF COMPLETION

6.1 Bidder agrees the Work, and any Milestones specified in Section 01 31 13, Project Coordination, will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates, or within the number of calendar days, indicated in the Agreement.

6.2 Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work, and any specified Milestones, within the Contract Times.

7. ATTACHMENTS TO THIS BID

7.1 The following documents are submitted with and made a condition of this Bid:

7.1.1 Required Bid security in the form of Bid bond. (10% of Bid)

7.1.2 Bidder's Experience and Qualification.

7.1.3 List of Subcontractors.

7.1.4 State of Connecticut DAS Update (Bid) Statement.

7.1.5 State of Connecticut DAS Contractor Prequalification Certificate (no form provided; Contractor to provide).

7.1.6 Clean Water Fund Memorandum 2019-003 dated June 19, 2019. (DBE Subcontractor Verification Form Due 14 days after Bid).

7.1.7 American Iron and Steel Act Certification Form.

8. DEFINED TERMS

8.1 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

9. BID SUBMITTAL

9.1 This Bid submitted by:

If Bidder is:

An Individual

Name (typed or printed): _____

By (signature): _____

Doing business as: _____

A Partnership

Partnership Name: _____ (SEAL)

By: _____
(Signature of general partner – attach evidence of authority to sign)

Name (typed or printed): _____

A Corporation

Corporation Name: _____ (SEAL)

State of Incorporation: _____

Type (General Business, Professional, Service, Limited Liability): _

By: _____
(Signature – attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____ (CORPORATE SEAL)

Attest: _____
(Signature of Corporate Secretary)

Date of Qualification to do business in the State of Connecticut is:

_____.

A Joint Venture

Joint Venturer Name: _____ (SEAL)

By: _____
(Signature of joint venture partner – attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

Bidder's Business Address: _____

Phone No.: _____ FAX No.: _____

E-mail: _____

SUBMITTED on _____, 20_____

Connecticut Contractor's License No.: _____

Contractor's License Class (where applicable): _____

END OF SECTION

AGREEMENT

This Agreement is by and between The Greater New Haven Water Pollution Control Authority (Owner) and [TO BE DETERMINED] _____ (Contractor) (the “Agreement”).

Owner and Contractor, in consideration of the mutual covenants set forth herein, agree as follows:

1. WORK

1.1. Contractor shall complete the Work as specified or indicated in the Contract Documents.

2. THE PROJECT

2.1. The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

Project CWF 2019-04 – Process Air Compressor System for Low Level Nitrogen Removal

3. ENGINEER

3.1. The part of the Project that pertains to the Work has been designed by: Jacobs, 100 Great Meadow Road, Suite 707, Wethersfield, CT 06109.

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

4. CONTRACT TIMES

4.1. Time of the Essence: All time limits for Substantial Completion, and completion and readiness for Final Payment as stated in the Contract Documents are of the essence of the Contract.

4.2. Days to Achieve Substantial Completion and Final Payment:

4.2.1. The Work shall be substantially completed within 670 days from the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions and completed and ready for Final Payment in accordance with Paragraph 15.06 of the General Conditions within 750 days after the date when the Contract Times commence to run.

4.3. Liquidated Damages:

4.3.1. Contractor and Owner recognize that time is of the essence in the performance of the Work under this Agreement, and agree that it would be impractical and extremely difficult to determine the actual damages which the Owner would sustain in the event the Contractor does not achieve Substantial Completion of the Work within the times specified in Paragraph 4.2.1 above, plus any extensions thereof allowed in accordance with Article 11 of the General Conditions. Accordingly, in the event of the Contractor's failure to achieve Substantial Completion as set forth above, the Owner and Contractor agree that Contractor shall be liable for and shall pay the Owner liquidated damages in the sum of **Two Thousand Dollars (\$ 2,000.00)** per day for every calendar day that expires after the time specified herein for Substantial Completion until the Work is substantially complete. Such liquidated damages, although inadequate to compensate the Owner, are intended to constitute compensatory damages and do not constitute a penalty of any kind. The Owner and Contractor understand and agree that, by including provisions for liquidated damages in this Agreement, or in pursuing any relief pursuant to such provisions: (i) the parties do not intend to set a price for the privilege not to perform; (ii) the availability of liquidated damages may not be relied upon as a basis for argument that the Owner has an exclusive remedy at law; and (iii) the remedies available to the Owner under the Contract Documents are cumulative and not exclusive.

4.3.2. After Substantial Completion, if Contractor neglects, refuses, or fails to complete remaining Work for Final Completion and readiness for Final Payment within the Contract Time or any proper extension thereof granted by Owner, Contractor shall pay Owner **Five Hundred Dollars (\$500.00)** per day for every calendar day that expires after the time specified herein for Final Completion and readiness for Final Payment until Final Completion.

4.3.3. Liquidated damages for failing to timely attain Substantial Completion and Final Completion are not additive and will not be imposed concurrently.

4.3.4. The Owner may, in its sole discretion, deduct liquidated damages provided for pursuant to this Section 4.3 from any monies which may then be due or subsequently become due to Contractor under this Agreement. Any liquidated damages not so deducted shall be payable by the Contractor to the Owner immediately upon the Owner's written demand, together with interest which shall begin to accrue at the rate stated in Section 7.01 of this Agreement, from the date of such demand.

5. CONTRACT PRICE

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

5.2. Owner will pay Contractor for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined pursuant to the following or as stated in the Contractor’s Bid, attached hereto as an exhibit, subject to adjustments under the Contract Documents:

5.2.1. Lump Sum: For Work other than Unit Price Work, a lump sum of \$ [TO BE DETERMINED].

5.2.2. Unit Prices:

5.2.2.1. As provided in Paragraph 13.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer as provided in Paragraph 10.06 of the General Conditions, and to the extent modified by the Supplemental Conditions. Unit prices have been computed as provided in Paragraph 13.03 of the General Conditions.

5.2.2.2. For Unit Price Work, an amount equal to the sum of established unit price for each separately identified item of Unit Price Work times the estimated quantity of that item as indicated in this paragraph:

Unit Price Bid Schedule					
Item No.	Description	Estimated Quantity	Unit	Bid Unit Price	Extended Bid Unit Price
1.	Mobilization/Demobilization, furnish, and install 46 10.75 inch micropiles in accordance with Specification 31 43 00, Micropiles	3,501	LF	\$	\$
2.	10.75-inch Micropile Static Load Test	1	EACH	\$	\$

(Addendum 2)

5.2.2.3. TOTAL OF EXTENDED UNIT PRICES: \$ _____

5.2.3. Preselected Equipment from APG-Neuros:

As an express condition of this Agreement, Contractor agrees and warrants that it shall accept the proposal from APG-Neuros for procurement of goods and special services for Process Air Compressors set forth in Section 8.1.1.8 of this Agreement.

\$ 1,559,975
(Addendum 2)

5.2.4. TOTAL BASE BID (Numeric): \$ _____

TOTAL BASE BID (Words): _____ **Dollars**

6. PAYMENT PROCEDURES

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

6.2. Progress Payments and Retainage: Owner will make progress payments on account of the Contract Price on the basis of processed Contractor's Application for Payment on the date of each month as established in the preconstruction conference during performance of the Work as provided herein. All such payments will be measured by the Schedule of Values established as provided in Paragraph 2.05 of the General Conditions (and in the case of Unit Price Work based on the number of units completed).

6.2.1. Prior to Substantial Completion, progress payments due and owing will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Engineer may determine or Owner may withhold, including but not limited to liquidated damages pursuant to Section 4.3 of this Agreement, indemnity obligations or any other obligations of the Contractor owed to or to become owing to the Owner under the Contract Documents, in accordance with Paragraph 15.01 of the General Conditions:

6.2.1.1. Ninety-five percent (95%) of Work completed (with the balance being retainage). If the Work has been fifty percent (50%) completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, Owner, on recommendation of Engineer, may determine that retainage will be reduced to two percent (2%) of the dollar value of all work satisfactory progress as determined by the Engineer, and there is no specific cause for greater withholding. At any time at its sole discretion, Owner may reinstate retainage withholding up to five percent (5%) of the Work completed if the Contractor is not making satisfactory progress or there is other specific cause for such withholdings.

6.2.1.2. Ninety-five percent (95%) of cost of materials and equipment, stored onsite and not yet incorporated in the Work (with the balance being retainage).

6.2.2. Upon Substantial Completion, Owner will pay an amount sufficient to increase total payments to Contractor to one hundred percent (100%) of the Work completed, less such amounts as Engineer will determine in accordance with Paragraph 15.01.C.6 of the General Conditions and less two hundred percent (200%) of Engineer's estimate of the value of Work to be completed or corrected as shown on the preliminary list of items to be completed or corrected

prepared by the Engineer and attached to the certificate of Substantial Completion, less any monies withheld from the Contractor for liquidated damages pursuant to Section 4.3 of this Agreement, and any indemnity or other obligations of the Contractor owed or to become owing to the Owner pursuant to the Contract Documents.

6.3. Process Air Compressor Equipment Payments:

6.3.1. Payments due and owing to APG-Neuros for Preselected Process Air Compressor Equipment shall be as follows:

6.3.1.1. Ten percent (10%) of total price for Preselected Equipment upon the approval of the Engineer of all shop drawing submittals submitted through the Contractor.

6.3.1.2. Five percent (5%) of the total price for Preselected Equipment upon Acceptance of the Owner and Engineer of the Operation and Maintenance manuals.

6.3.1.3. Seventy percent (70%) of total price for Preselected Equipment upon the Contractor's delivery of equipment to the Project site specified in Section 44 42 19.06, Process Air Compressor System, and the acceptance of the Owner and Engineer of such equipment.

6.3.1.4. Five percent (5%) of total price for Preselected Equipment upon the Contractor's completion of installation to the satisfaction of the Engineer, O&M training, startup assistance and testing to the satisfaction of the Owner, and successful demonstration testing to the satisfaction of the Owner.

6.3.1.5. Ten percent (10%) of total price for Preselected Equipment upon completion of all services described in Section 44 42 19.06, Process Air Compressor System, including acceptance of the installation by the Owner.

6.4. Final Payment:

6.4.1. Upon Final Completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner will pay the remainder of the Contract Price as recommended by Engineer as provided in Paragraph 15.06.

7. CONTRACTOR'S REPRESENTATIONS

7.1. In order to induce Owner to enter into this Agreement, Contractor makes the following representations:

7.1.1. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.

7.1.2. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

7.1.3. Contractor is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.

7.1.4. Contractor has considered the information known to Contractor; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on 1) the cost, progress, and performance of the Work; 2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Contract Documents; and 3) Contractor's safety precautions and programs.

7.1.5. Based on the information and observations referred to above, Contractor does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.

7.1.6. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as specified or indicated in the Contract Documents.

7.1.7. Contractor has given Engineer written notice of conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

7.1.8. The Contract Documents are generally sufficient to indicate and convey understanding of terms and conditions for performance and furnishing of the Work.

7.1.9. Contractor's entry of this Agreement constitutes an incontrovertible representation by Contractor that without exception all prices in this Agreement are premised upon performing and furnishing the Work as specified or as indicated in the Contract Documents and as required by the Contract Documents.

8. CONTRACT DOCUMENTS

8.1. Contents:

8.1.1. The Contract Documents consist of the following:

8.1.1.1. This Agreement (pages 1 to ____, inclusive).

8.1.1.2. Performance bond (pages ____ to ____, inclusive).

8.1.1.3. Payment bond (pages ____ to ____, inclusive).

8.1.1.4. General Conditions (pages ____ to ____, inclusive).

8.1.1.5 Supplemental Conditions (pages ____ to ____, inclusive).

8.1.1.6. Special Conditions (pages ____ to ____, inclusive).

8.1.1.7. Specifications as listed in the table of contents of the Project Manual; said specifications are incorporated into and made part of the Contract Documents as if fully set forth herein.

8.1.1.8. APG-Neuros High Efficiency Turbo Blower Proposal, dated _____, in the amount of \$1,356,343.00.

8.1.1.9. Drawings consisting of 96 sheets as listed in the table of contents of the Project Manual with each sheet bearing the following general title: "Process Air Compressor System for Low Level Nitrogen Removal"; said drawings are incorporated into and made part of the Contract Documents as if fully set forth herein.

8.1.1.10. Addenda (numbers ____ to ____, inclusive).

8.1.2. Exhibits to this Agreement (enumerated as follows):

8.1.2.1. Contractor's Executed Bid Form (pages ____ to ____, inclusive).

8.1.2.2. Contractor's List of Subcontractors (pages ____ to ____, inclusive).

8.1.2.3. Contractor's DAS Contractor Prequalification Certificate (page ____).

8.1.2.4. Connecticut DEEP Clean Water Fund Memorandum (2019-003) (pages ____ to _____, inclusive).

8.1.2.5. Contractor's Disadvantaged Business Enterprise (DBE) Subcontractor Verification Form (page ____).

8.1.3. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:

8.1.3.1. Notice to Proceed (pages ____ to _____, inclusive).

8.1.3.2. Work Change Directives.

8.1.3.3. Change Order(s).

8.2. There are no Contract Documents other than those listed above in this Article 8.

8.3. The Contract Documents may only be amended, modified, or supplemented as provided in Paragraph 11.01 of the General Conditions.

9. MISCELLANEOUS

9.1. Terms used in this Agreement will have the meanings stated in the General Conditions, the Supplemental Conditions, and the Special Conditions.

9.2. Successors and Assigns: Owner and Contractor each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

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

9.4. Assignment:

9.4.1. The proposal from APG-Nueros for procurement of goods and special services for Process Air Compressors will be assigned to Contractor upon execution of this Agreement, and Contractor shall accept such assignment and shall enter into an agreement with APG-Nueros in accordance with such proposal for the procurement of goods and special services as more specifically described in such proposal which is incorporated into and made a part of the Contract Documents under Section 8.1.1.8 of this Agreement.

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

9.5. Contractor's Certifications:

9.5.1. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this paragraph:

9.5.1.1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the execution of this Agreement;

9.5.1.2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of this Agreement to the detriment of Owner, (b) to establish Bid or Contract Price at artificial noncompetitive levels, or (c) to deprive Owner of the benefits of free and open competition;

9.5.1.3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, noncompetitive levels; and

9.5.1.4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of this Agreement.

[END OF SECTION. SIGNATURE PAGE FOLLOWS.]

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement in triplicate. One counterpart each has been delivered to Owner, Contractor, and Engineer. All portions of the Contract Documents have been signed or identified by Owner and Contractor or on their behalf.

This Agreement will be effective on ____ 20, ____ (which is the Effective Date of the Agreement).

OWNER: _____ CONTRACTOR: _____

By: _____ By: _____

Title: _____ Title: _____

[CORPORATE SEAL]

[CORPORATE SEAL]

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for giving notices:

Address for giving notices:

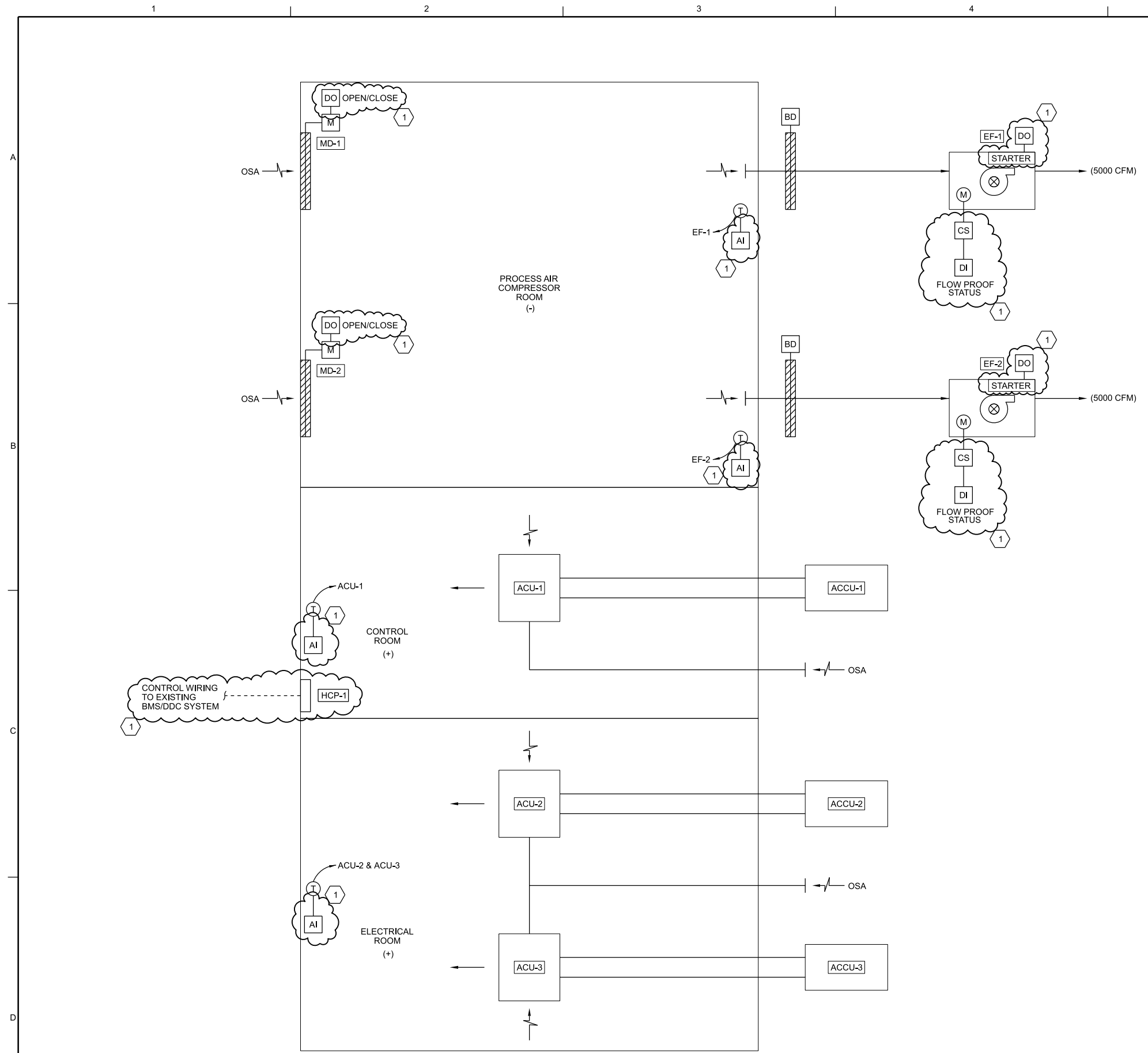
(If Owner is a corporation, attach evidence of authority to sign. If Owner is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)

License No.: _____
(Where applicable)

Agent for service or process: _____

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

END OF AGREEMENT



AIR FLOW SCHEMATIC

PROCESS AIR FACILITY SEQUENCE OF OPERATION:

CONTROL ROOM

SYSTEM CONTROL SHALL BE VIA DDC HVAC CONTROL PANEL HCP-1 LOCATED IN THE CONTROL ROOM.

OPERATING SETPOINTS:

SPACE HEATING TEMPERATURE: INITIALLY 68 DEGREES F +/- 2 DEGREES F (ADJUSTABLE)
 SPACE COOLING TEMPERATURE: INITIALLY 72 DEGREES F +/- 2 DEGREES F (ADJUSTABLE)

COOLING DEMAND:

WHENEVER THE ROOM TEMPERATURE IS ABOVE 72 DEGREES F THE WALL MOUNTED THERMOSTAT/CONTROLLER WILL LOAD OR UNLOAD THE OUTDOOR CONDENSING UNIT ACCU-1 AND TURN ON INDOOR UNIT ACU-1 TO MAINTAIN SPACE COOLING SETPOINT.

HEATING DEMAND:

WHENEVER THE ROOM TEMPERATURE IS BELOW 68 DEGREES F THE WALL MOUNTED THERMOSTAT/CONTROLLER WILL LOAD OR UNLOAD THE HEAT PUMP OUTDOOR CONDENSING UNIT ACCU-1 AND TURN ON INDOOR UNIT ACU-1 TO MAINTAIN SPACE HEATING SETPOINT.

SYSTEM ALARMS:
 COMPRESSOR FAILURE: IF THE COMPRESSOR OF THE ACCU FAIL, INITIATE AN ALARM SIGNAL TO HCP

ELECTRICAL ROOM

SYSTEM CONTROL SHALL BE VIA DDC HVAC CONTROL PANEL HCP-1 LOCATED IN THE CONTROL ROOM.

OPERATING SETPOINTS:

SPACE HEATING TEMPERATURE: INITIALLY 55 DEGREES F +/- 2 DEGREES F (ADJUSTABLE)
 SPACE COOLING TEMPERATURE: INITIALLY 80 DEGREES F +/- 2 DEGREES F (ADJUSTABLE)

COOLING DEMAND:

WHENEVER THE ROOM TEMPERATURE IS ABOVE 80 DEGREES F THE WALL MOUNTED THERMOSTAT/CONTROLLER WILL LOAD OR UNLOAD THE OUTDOOR CONDENSING UNIT ACCU-2 AND TURN ON INDOOR UNIT ACU-2 TO MAINTAIN SPACE COOLING SETPOINT. IF THE ROOM TEMPERATURE IS ABOVE 82 DEGREES F THE THERMOSTAT/CONTROLLER WILL LOAD OR UNLOAD THE OUTDOOR CONDENSING UNIT ACCU-3 AND TURN ON INDOOR UNIT ACU-3 TO MAINTAIN SPACE COOLING SETPOINT. PROVIDE LEAD/LAG SEQUENCING OF ACU-2, ACCU-2 AND ACCU-3, ACCU-3 ON SEVEN-DAY INTERVALS.

HEATING DEMAND:

WHENEVER THE ROOM TEMPERATURE IS BELOW 55 DEGREES F, THE WALL MOUNTED THERMOSTAT/CONTROLLER WILL LOAD OR UNLOAD THE HEAT PUMP OUTDOOR CONDENSING UNIT ACCU-2 OR ACCU-3 AND TURN ON INDOOR UNIT ACU-2 OR ACU-3 TO MAINTAIN SPACE HEATING SETPOINT.

SYSTEM ALARMS:
 COMPRESSOR FAILURE. IF THE COMPRESSOR OF THE ACCU FAIL, INITIATE AN ALARM SIGNAL TO HCP

COMPRESSOR ROOM

SYSTEM CONTROL SHALL BE VIA DDC HVAC CONTROL PANEL HCP-1 LOCATED IN THE CONTROL ROOM.

OPERATING SETPOINTS:

SPACE HEATING TEMPERATURE: INITIALLY 55 DEGREES F +/- 2 DEGREES F (ADJUSTABLE)
 SPACE VENTILATION TEMPERATURE: INITIALLY 80 DEGREES F +/- 2 DEGREES F (ADJUSTABLE)

GENERAL:

WHEN THE SPACE TEMPERATURE IS ABOVE 80 DEGREES F (ADJ) AS SENSED BY THE SPACE MOUNTED THERMOSTAT, THE EXHAUST FAN EF-1 SHALL BE ENERGIZED AND RUN CONTINUOUSLY AFTER CONFIRMATION THAT THE MOTORIZED DAMPER MD-1 IS FULLY OPEN. IF THE SPACE TEMPERATURE CONTINUES TO RISE ABOVE 83 DEGREES F (ADJ), THE EXHAUST FAN EF-2 SHALL BE ENERGIZED AND RUN CONTINUOUSLY AFTER CONFIRMATION THAT THE MOTORIZED DAMPER MD-2 IS FULLY OPEN. AS THE SPACE TEMPERATURE SETPOINT IS SATISFIED, THE EXHAUST FAN EF-1 AND EF-2 SHALL BE DE-ENERGIZED IN A SIMILAR SEQUENCE AND MOTORIZED DAMPERS MD-1 AND MD-2 SHALL BE CLOSED. LEAD/LAG SEQUENCING OF EF-1 AND EF-2 SHALL BE ESTABLISHED VIA THERMOSTAT SETTINGS ON A MONTHLY INTERVAL.

WHEN THE SPACE AIR TEMPERATURE FALLS BELOW 55 DEGREES F(ADJ) AS SENSED BY UNIT'S INTEGRAL THERMOSTAT, THE UNIT HEATER'S FACTORY CONTROLS SHALL ENABLE THE UNIT HEATER UH-1 AND UH-2 TO MAINTAIN SPACE SETPOINT.

SYSTEM ALARMS:
 FAN FAILURE: WHENEVER THE EXHAUST FANS ARE COMMANDED TO START AND THE CURRENT SENSOR DOES NOT CONFIRM THE STATUS, INITIATE AN ALARM SIGNAL TO HCP.

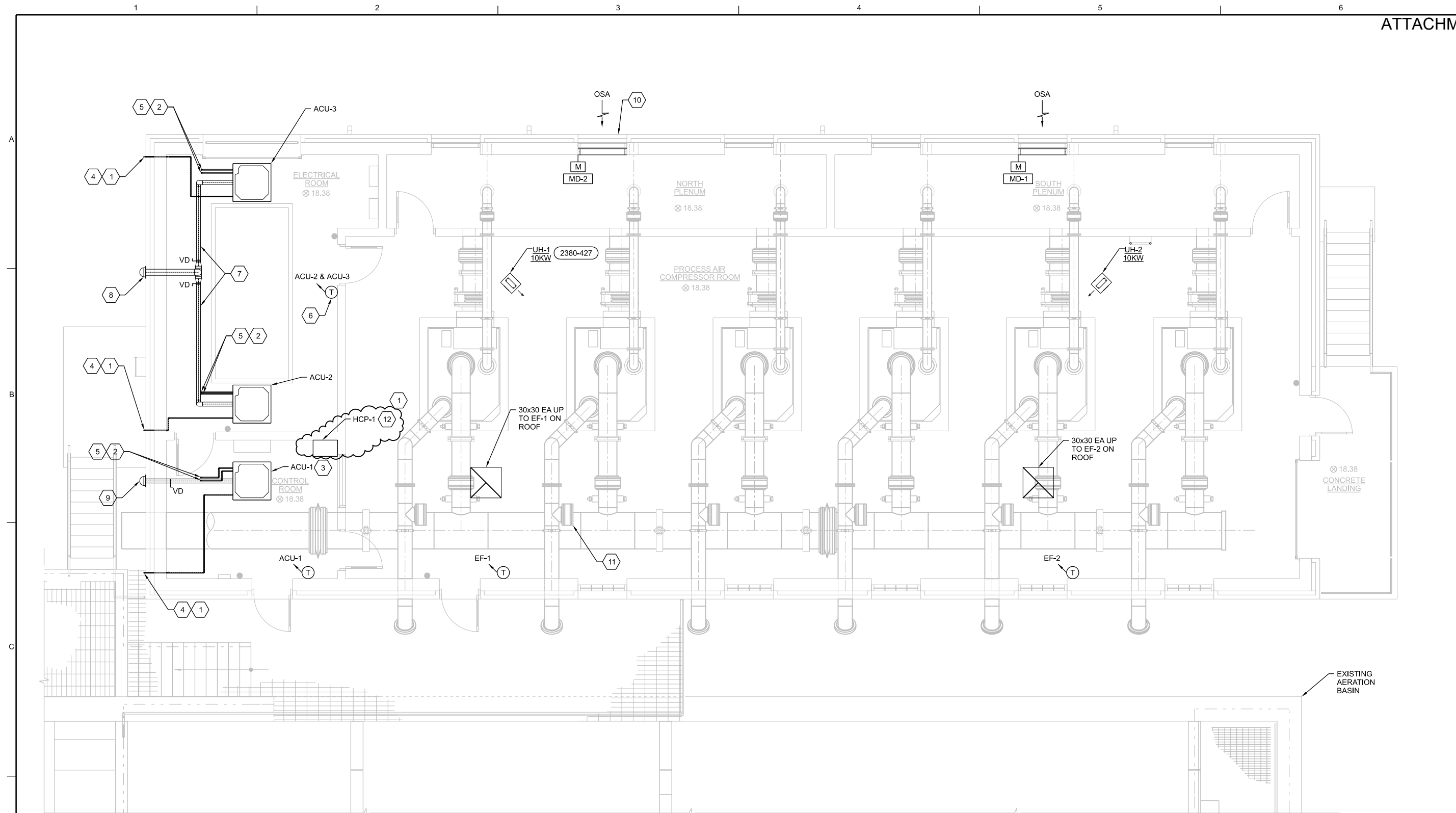
NO.	DATE	REVISION	CHK	APVD
1	8/25/23	ADDENDUM NO. 2	SA KORCSMAROS	M LUDWIG
DSGN	M SHAFIQUZZAMAN	DR	SA KORCSMAROS	M LUDWIG
			CHK	APVD
			DR	APVD
			MS	DL
			BY	APVD
			DL	LYNCH

PROCESS AIR COMPRESSOR SYSTEM FOR LOW LEVEL NITROGEN REMOVAL
 EAST SHORE WATER POLLUTION ABATEMENT FACILITY
 Greater New Haven Water Pollution Control Authority
 New Haven, CT

Jacobs

PROCESS AIR FACILITY HVAC AIR FLOW SCHEMATIC AND SEQUENCE OF OPERATIONS

VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	JULY 2023
PROJ	E2X90000
DWG	55-H-001
SHEET	69 of 96



FLOOR PLAN
1/4"=1'-0"

SHEET KEYNOTES

12. CONNECT NEW HCP-1 TO EXISTING PLANTWIDE BUILDING MANAGEMENT SYSTEMS (BMS). CONTRACTOR SHALL BE RESPONSIBLE TO ROUTE CONTROL WIRING TO EXISTING CONTROL SYSTEM AS REQUIRED. COORDINATE WITH OWNER.

- SHEET KEYNOTES**
- ROUTE COOLING COIL CONDENSATE TO OUTDOOR AND TERMINATE 18 INCH ABOVE GRADE. PROVIDE INSULATION AND HEAT TRACE, SIZE AND INSTALL IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS, TYP.
 - NUMBER OF REFRIGERANT PIPE AND PIPING SIZE SHALL BE ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS AND BASED ON FIELD CONDITION.
 - PROVIDE SUPPORT FROM ROOF DECK PER MANUFACTURER'S RECOMMENDATIONS, TYP.
 - SEAL WALL PIPING PENETRATION AIR AND WATER TIGHT, TYP.
 - RSL AND RLL UP THROUGH ROOF SLAB AND TO AIR COOLED CONDENSING UNIT, TYP.
 - WALL MOUNTED THERMOSTAT/CONTROLLER, TYP.
 - 4 INCH DIA FRESH AIR INTAKE DUCT, TYP.
 - TERMINATE 6-INCH DIA DUCT WITH 45 DEGREE ELBOW 1/4"x1/4" SST WIREMESH SCREEN/WALL CAP.
 - TERMINATE 4-INCH DIA DUCT WITH 45 DEGREE ELBOW 1/4"x1/4" SST WIREMESH SCREEN/WALL CAP.
 - REFER TO ARCH DRAWING FOR EXACT LOCATION OF THE LOUVER, TYP.
 - MANUAL DAMPERS TO ALLOW WASTE HEAT FROM THE BLOWERS INTO THE ROOM FOR WINTER HEATING, TYP OF 4. REFER TO PROCESS MECHANICAL DRAWINGS.

PROCESS AIR COMPRESSOR SYSTEM FOR LOW LEVEL NITROGEN REMOVAL		ADDENDUM NO. 2		REVISION		APVD		DL LYNCH	
EAST SHORE WATER POLLUTION ABATEMENT FACILITY		NO. DATE		CHK		BY		MS	
Greater New Haven Water Pollution Control Authority New Haven, CT		1 8/25/23		Z HASEMY		M LUDWIG		DL LYNCH	
DESIGN		DR		CHK		APVD		APVD	
PROCESS AIR FACILITY HVAC FLOOR PLAN		1/4"=1'-0"		VERIFY SCALE		BAR IS ONE INCH ON ORIGINAL DRAWING.		DATE	
DATE		JULY 2023		PROJ		E2X90000		DWG	
SHEET		70 of 96		DWG		55-H-201		PLOT DATE: 8/25/2023	
PLOT TIME: 10:02:25 AM		PLOT DATE: 8/25/2023		FILENAME: 55-H-201_E2X90000.dgn		SPWURL		\\USLAS0-APP385\ICS_workdir\167773\1186746_27\55-H-201_E2X90000.dgn	

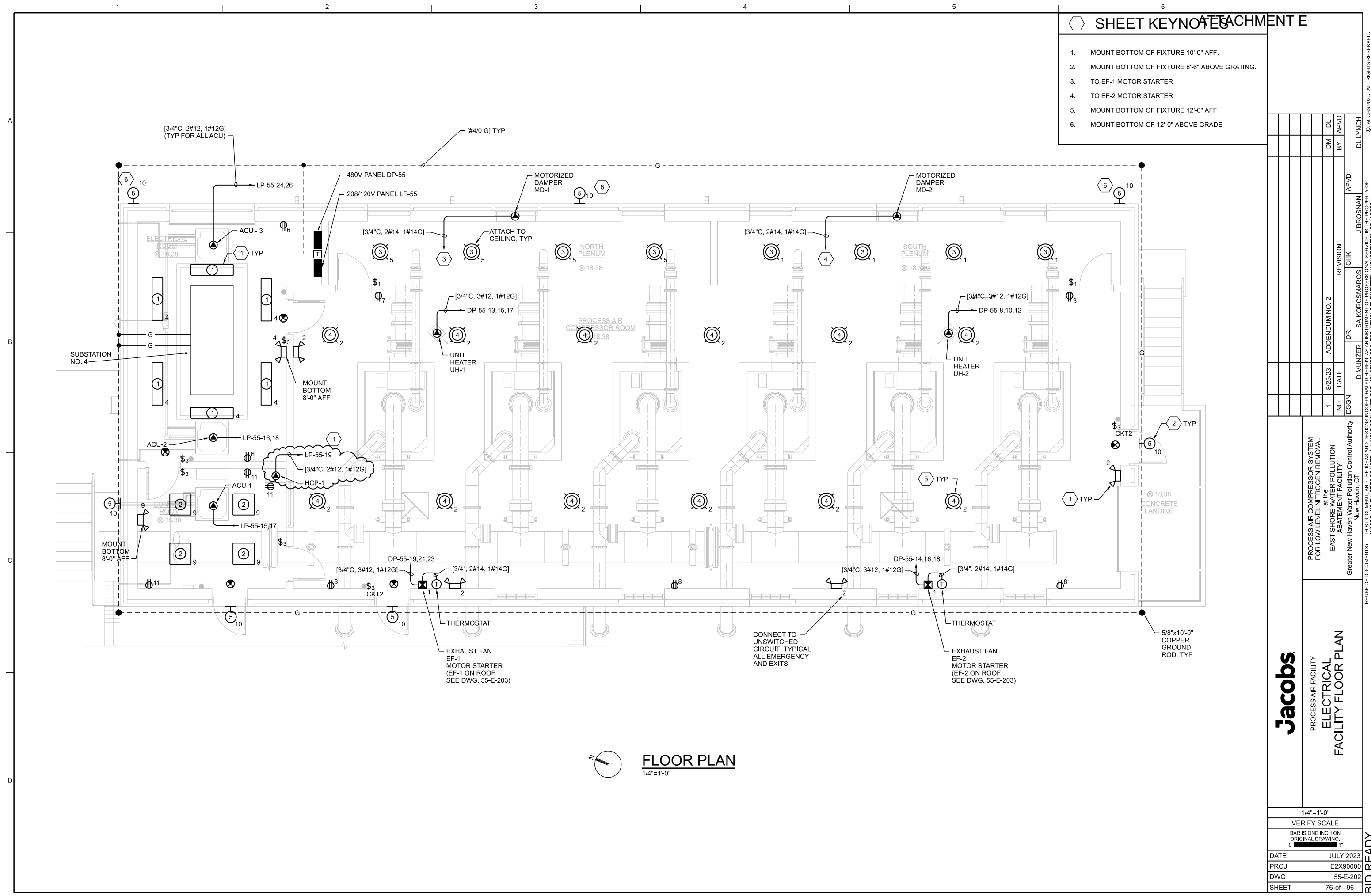
Jacobs
PROCESS AIR FACILITY
HVAC
FLOOR PLAN

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BID READY

SHEET KEYNOTES ATTACHMENT E

1. MOUNT BOTTOM OF FIXTURE 10'-0" AFF.
2. MOUNT BOTTOM OF FIXTURE 8'-6" ABOVE GRATING.
3. TO EF-1 MOTOR STARTER
4. TO EF-2 MOTOR STARTER
5. MOUNT BOTTOM OF FIXTURE 12'-0" AFF
6. MOUNT BOTTOM OF FIXTURE 12'-0" ABOVE GRADE



FLOOR PLAN
1/4"=1'-0"

Jacobs
PROCESS AIR FACILITY
ELECTRICAL
FACILITY FLOOR PLAN

PROCESS AIR COMPRESSOR SYSTEM
FOR LOW LEVEL NITROGEN REMOVAL
EAST SHORE WATER POLLUTION
ABATEMENT FACILITY
Greater New Haven Water Pollution Control Authority
New Haven, CT

NO.	DATE	DR	CHK	APVD
1	8/25/23	D MUNZER	SA KORCSMAROS	J BROSNAN
ADDENDUM NO. 2				
DL	BY	APVD	DL LYNCH	

1/4"=1'-0"	
VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JULY 2023
PROJ	E2X90000
DWG	55-E-202
SHEET	76 of 96

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ATTACHMENT E
SHEET KEYNOTES

- OVERHEAD CONDUIT RACK, DO NOT LOCATE DIRECTLY OVER PROCESS AIR COMPRESSORS.
- PROVIDE MINIMUM 3 FEET FLEXIBLE METAL CONDUIT AT M-51-1-1 TO ALLOW FUTURE REMOVAL, TYP OF 6.
- EMPTY CONDUITS PROVIDED FOR FUTURE INSTALLATION.
- INSTALL CONDUIT RACK BETWEEN PROCESS AIR COMPRESSOR BUILDING AND SUBSTATION 2. BOTTOM OF RACK SHALL NOT BE LESS THAN 12'-0" ABOVE WALKWAY.
- [1"C, MFR RECOMMENDED WIRING]

CONDUCTOR AND CONDUIT IDENTIFICATION

- [CAT1] = [3/4"C, 1 - CAT6 CABLE]
- [CAT2] = [2"C, 2 - CAT6 CABLE]
- [CAT3] = [1"C, 3 - CAT6 CABLE]
- [CAT4] = [1 1/4"C, 4 - CAT6 CABLE]
- [CAT5] = [1 1/4"C, 5 - CAT6 CABLE]
- [CAT6] = [1 1/4"C, 6 - CAT6 CABLE]

SEE DWG 01-G-015 FOR ADDITIONAL CALLOUTS

NO.	DATE	REVISION	CHK	APVD
1	8/25/23	ADDENDUM NO. 2	D MICHALEK	J BROSNAN
			DR	DL LYNCH

PROCESS AIR COMPRESSOR SYSTEM FOR LOW LEVEL NITROGEN REMOVAL
EAST SHORE WATER POLLUTION ABATEMENT FACILITY
Greater New Haven Water Pollution Control Authority
New Haven, CT

Jacobs
PROCESS AIR FACILITY
CABLE BLOCK DIAGRAMS

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JULY 2023
PROJ	E2X90000
DWG	55-E-602
SHEET	79 of 96

BID READY

