

# ADDENDUM No. 1

ITB No. 4576

## Larcom Chiller Replacement Project

**Due Date: April 16, 2019 at 10:00 a.m. (Local Time)**

The following changes, additions, and/or deletions shall be made to the Invitation to Bid for the Larcom Chiller Replacement Project, ITB No. 4576, on which proposals will be received on, or before, April 16, 2019 by 10:00 a.m. (Local Time.)

The information contained herein shall take precedence over the original documents and all previous addenda (if any), and is appended thereto. This Addendum includes fourteen (14) pages.

**Bidder is to acknowledge receipt of this Addendum No. 1, including all attachments (if any) in its Bid by so indicating on page ITB-1 of the Invitation to Bid Form. Bids submitted without acknowledgement of receipt of this addendum may be considered non-conforming.**

**The following forms provided within the ITB Document and this Addendum 1 must be included in submitted bids at bid opening.**

- City of Ann Arbor Prevailing Wage Declaration of Compliance
- City of Ann Arbor Living Wage Ordinance Declaration of Compliance
- Vendor Conflict of Interest Disclosure Form
- City of Ann Arbor Non-Discrimination Ordinance Declaration of Compliance

**Bids that fail to provide these completed forms listed above upon bid opening will be rejected as non-responsive and will not be considered for award.**

## I. CORRECTIONS/ADDITIONS/DELETIONS

Changes to the Bid documents which are outlined below are referenced to a page or Section in which they appear conspicuously. The Bidder is to take note in its review of the documents and include these changes as they may affect work or details in other areas not specifically referenced here.

### **Section/Page(s) Change**

Drawing E-3 is revised as part of this Addendum

#### ELECTRICAL

1. Refer to Drawing Sheet E-3 (Re-Issued):

a. Added New Work Key Note 7 as follows:

- “(7) Furnish, Install, and Connect 3% (1.2 mH, 480V, 3Ø) input line reactors for Chilled Water Pumps CP-3 and CP-4 Yaskawa Model CIMR-ZU4A0021FFA-166 Variable Speed Drives. Reactors shall have NEMA 1

enclosures and shall be Yaskawa or MTE RL-02512 with Cab-13V enclosure.”

## II. QUESTIONS AND ANSWERS

The following Questions were received by the City via email. Responses are being provided in accordance with the terms of the ITB. Respondents are directed to take note in its review of the documents of the following questions and City responses as they affect work or details in other areas not specifically referenced here.

**Question #1:** Will the City be providing the sign-in sheet for the mandatory pre-bid meeting?

**Answer #1:** See attached sheets.

**Question #2:** Is the existing membrane roof under warranty?

**Answer #2:** The roof is under warranty and will be inspected before the contractor mobilizes and after demobilization to confirm that there are not damages caused by construction activities of the contractor. The contractor is responsible for the protection of the roof during their construction activities and must supply, at a minimum, rigid foam board covered by ¾” plywood to protect the roof where work is to occur. Contractor to arrange both the pre and post work inspections. Contact for any roofing penetrations or repairs is CEI of Michigan, Howell, MI (517.548.0039) or any authorized Firestone Roofing System contractor. The roof is a product of Firestone Roofing Systems (800.830.5612).

**Question #3:** Removal of exhaust for chiller: Is removal of line complete, all the way back through roof, or will it be cut and capped somewhere in the interior of the penthouse?

**Answer #3:** The exhaust piping should be completely removed through the exterior wall (there is no roof penetration), including the muffler on the exterior of the building. The exterior wall penetration should be appropriately capped and made weather tight.

**Question #4:** Can you confirm if the Chiller is lead painted and that there is no asbestos containing materials (ACM) coating on any of the pipes that are being removed/modified?

**Answer #4:** The City’s Safety Unit has examined the work area and components being removed through demolition. Samples of various products were taken and tested. The test results for asbestos and lead are both attached. There was no ACM visible and no samples taken on products within the scope of work contained asbestos. The blue paint on the TECOchill chiller contains lead and must be handled consistent with the attached Lead Specification.

The City’s Safety Unit offered the following clarification with their expectations regarding the lead paint: “attached is a lead spec, which covers a lot of different types of lead work, but to make it simple, we are not concerned with any intact demo (unbolt and remove). The only work of concern that would require submittals and controls would be an abrasive work and/or torch cutting. Since the chiller may need to be cut up, the contractor will need to remove lead paint a few inches on either side of the cut to avoid creating lead fumes. This could be achieved with either hand scraping removal or more likely a chemical paint remover. People doing the work do need to be trained and have some PPE/control in place, so we would want them to submit training certs and a description of their procedure in advance for approval. Ideally they would hire a lead remediation contractor for this work.”

**Question #5:** Is it the City's intention to have the crane work completed over a weekend (i.e. Saturday or Sunday) due to accessibility of the building entry being restricted by street shut down for crane usage?

**Answer #5:** As the likely crane lift locations will be from either Ann Street or Huron Street, the lift(s) should be planned for a Saturday or Sunday when the public or staff are not accessing the building. The use of Ann Street will likely require a complete street closure. If Huron Street is selected, it will require a multiple lane closure and, as a state trunkline, will likely require an MDOT permit as well. Either location will require sidewalk closures. Since the work will occur in the fall, Saturday's with a home University of Michigan football game will not be allowed. While permits are still required for this work, the appropriate City department has agreed to waive their permit fees for the sidewalk and lane closure permits.

**Question #6:** During the pre-bid walkthrough, it was said that the tank on the catwalk (mezzanine) will be removed to allow spacing for the new steps that are to be installed, but is not listed in the drawings, is it being removed?

**Answer #6:** The water tank on the mezzanine will not need relocation or removal to allow for the installation of the stairs, which is consistent with the drawings. If this was conveyed during the pre-bid walkthrough, it was a miscommunication or misinterpretation.

### **III. ATTACHMENTS**

- 1) Sign-In Sheets from Mandatory Pre-Bid Meeting (2 pages)
- 2) Asbestos Survey (1 page)
- 3) Lead Survey (1 page)
- 4) Lead Specification (6 pages)

Bidders are responsible for any conclusions that they may draw from the information contained in the Addendum.

# Sign In Sheet

## ITB 4576- Larcom Chiller Replacement Project

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Jim Winterberger	METCO Controls	586-295-3532	JWINTERBERGER@METCOCONTROLS.COM
VAUGHN BRATTEN	R.W. MEARDSON'S INC.	586-296-3050	VBRATTEN@R.W.MEARDSON.COM
DAVIDA A. CHARLTON	Mechanical Design & INSTALL.	248-669-1010	David, Charlton@ainsworth.com
Marie Best	YORK Equipment (JCI)	734-707-5211	maria.louise.best@jci.com
Brad Reedy	Tech Mechanical	248 574 1936	Brad@Techmechanical.com
MATT KULHANEK	CITY OF ANN ARBOR	734, 794. 6312	MFKULHANEK@A260V.ORG







## **PART 1 - GENERAL**

### **1.1 SUMMARY**

- A. This Section specifies requirements for working with lead-containing materials (LCM), during any of the following operations:
  - 1. Demolition of Lead-Containing Materials (LCM): Includes razing a building or any portion of a building or piece of equipment with LCM.
  - 2. Incidental Removal or Disturbance of Lead-Based Paint (LBP): This includes activities such as sanding and scraping for paint preparation activities.
- B. Extent of known LCM is as follows:
  - 1. All existing paints and coatings.

### **1.2 DEFINITIONS**

- A. The term "Lead-Based Paint" (LBP) is identified as paint or other surface coating such as varnish, sealer or stain containing lead in any detectable amount.
- B. The term "Incidental Removal or Disturbance of Lead-Based Paint" indicates one or more of the following operations:
  - 1. Scraping, hand sanding, or otherwise removing loose LBP from existing surfaces scheduled to remain in place.
- C. The term "Demolition of LCM" refers to cutting, drilling, abrading, demolishing, or otherwise disturbing building elements coated with LBP or containing lead.
- D. The term "Lead-Containing Materials" (LCM) is identified as construction debris coated with lead-based paint or other materials containing lead, such as x-ray shielding.
- E. The term "Critical Barrier" indicates the perimeter of the enclosure within which lead disruption/removal work takes place. Critical Barriers may include existing floor, wall, and ceiling structures, as well as constructed partitions, closures and seals.
- F. The term "Project Site" indicates the limits of the Project Site as indicated on drawings or by provisions of this specification.
- G. The term "Work Area" indicates the area within the Critical Barrier.
- H. The term "Action Level" means exposure to an airborne concentration of lead of 30 micrograms per cubic meter of air calculated as an 8-hour time-weighted average (TWA).
- I. The term "Exposure Assessment" means a determination of employee exposures for a given task measured by air monitoring. The Assessment must meet the criteria for objective data as outlined in the MIOSHA/OSHA Lead in Construction Standard (MIOSHA Part 603, R325.51992 and 29 CFR 1926.62).
- J. The term "OSHA PEL" stands for the Permissible Exposure Limit established by the Occupational Safety and Health Administration for lead exposure. The OSHA PEL refers to an airborne concentration of lead of 50 micrograms per cubic meter of air calculated as an 8-hour time-weighted average (TWA).



- K. The abbreviation "TCLP" stands for Toxicity Characteristic Leaching Procedure and refers to one of the tests to determine if waste is considered a Hazardous Waste or non-hazardous solid waste.
- L. The term "Hazardous Waste" refers to a listed waste or any solid or liquid waste with one or more of the following characteristics: toxic, corrosive, flammable, explosive, combustible, oxidizer, pyrophoric, unstable (reactive) or water - reactive.
- M. The term "Non-Hazardous Waste" refers to any solid or liquid waste not exhibiting characteristics of Hazardous Waste.

### **1.3 SUBMITTALS**

- A. Exposure Assessment Documentation: Submit to all information used to document previous employee exposure assessments, if available. If not available, conduct an initial exposure assessment at the start of the project.
- B. Written Compliance Plan: Submit a Written Compliance Plan incorporating all requirements in the MIOSHA Lead in Construction Standard. Also indicate type of containment and method of liquid waste capture to be established if water is utilized for removal.

### **1.4 QUALITY ASSURANCE**

- A. Personnel involved in the disturbance of LCM shall be trained in accordance with the requirements of the MIOSHA Lead in Construction Standard, including:
  - 1. The content of the MIOSHA Lead in Construction Standard and its appendices;
  - 2. The specific nature of the operations which could result in exposure to lead above the action level;
  - 3. The purpose, proper selection, fitting, use, and limitations of respirators;
  - 4. The purpose and a description of the medical surveillance program, and the medical removal protection program including information concerning the adverse health effects associated with excessive exposure to lead (with particular attention to the adverse reproductive effects on both males and females and hazards to the fetus and additional precautions for employees who are pregnant);
  - 5. The engineering controls and work practices associated with the employee's job assignment including training of employees to follow relevant good work practices;
  - 6. The contents of any compliance plan in effect;
  - 7. Instructions to employees that chelating agents should not routinely be used to remove lead from their bodies and should not be used at all except under the direction of a licensed physician; and
  - 8. The employee's right of access to records under 29 CFR 1910.20.

## **PART 2 - PRODUCTS (NOT APPLICABLE)**

## **PART 3 - EXECUTION**

### **3.1 HEALTH AND SAFETY REQUIREMENTS**

- A. General: Determine employee exposure to lead in air as required in MIOSHA Lead in Construction Standard.
- B. Exposure Assessment: If the Contractor has made a previous Exposure Assessment that is representative of the task to be performed on-site, the Contractor may rely on this data and determine the need for personal protective equipment and work practice controls based upon this data, if approved by the City of Ann Arbor project manager.
- C. Job requirements: When the Contractor does not have an Exposure Assessment or the Assessment is determined to be insufficient, the Contractor must conduct personal air monitoring in accordance with the MIOSHA Lead in Construction Standard and follow the requirements below which are outlined by job task until monitoring determines otherwise:
  - 1. Manual demolition, scraping, sanding, heat gun application, power tool cleaning with HEPA dust collection system, spray painting with LCM:
    - a. Use of 1/2 mask respirator with HEPA filters.
    - b. PPE.
    - c. Medical surveillance.
    - d. Use of changing room.
    - e. Use of handwashing facilities.
    - f. Provision of lead awareness training.
  - 2. Using lead mortar, lead burning, rivet busting, power tool cleaning without HEPA collection, cleaning up with dry expendable abrasives, removing or relocating enclosure:
    - a. Loose fitting PAPR with HEPA or supplied air respirator.
    - b. PPE.
    - c. Medical surveillance.
    - d. Use of changing room.
    - e. Use of handwashing facilities.
    - f. Provision of lead awareness training.
  - 3. Abrasive blasting, welding, using cutting torch, burning
    - a. Supplied air respirator or SCBA.
    - b. PPE
    - c. Medical surveillance.
    - d. Use of changing room.
    - e. Use of handwashing facilities.
    - f. Provision of lead awareness training.

### **3.2 PREPARATION**

- A. General: Prepare Work Areas in a manner that will protect Owner's personnel and property, and the visiting public, from contact with LCM. Prior to beginning work, confirm starting date and time with Owner. Do not begin work that will disturb LCM without Owner's approval.

- B. Preparing Building Exteriors: Ensure adequate measures are in place to limit airborne lead content below the Action Level of 30 ug/m<sup>3</sup> (micrograms per cubic meter) adjacent to the Work Area.
  - 1. Erect barricades and install warning tape or signs as necessary to prevent inadvertent exposure of passersby to LCM in all forms, including, but not necessarily limited to dust, particles, and fumes.
  - 2. Completely cover grounds and vegetation with minimum 8-mil thick polyethylene sheets with joints between sheets lapped and taped; with one edge taped to adjacent building surfaces below area of work; and with free ends secured in position with stakes, tie-down lines or weights. Cover sufficient ground area to capture wind-blown chips, dust and particles.
  
- C. Preparing Building Interiors: Ensure adequate measures are in place to protect building occupants from exposure to airborne lead dust, particles, fumes or other LCM exceeding the Action Level of 30 ug/m<sup>3</sup> (micrograms per cubic meter) lead content in air. Adequate measures shall include, but are not necessarily limited to, construction of Critical Barriers and/or establishment of negative pressure within Work Area.
  - 1. Seal off openings and penetrations into the Work Area. Provide temporary dust barriers consisting of at least polyethylene plastic sheet on wood studs. Lap and tape joints of plastic sheeting to prevent dust, particles, fumes, and other forms of lead debris from leaving the enclosed area.
  - 2. Discontinue building ventilation within the Work Area and seal off ventilation supply and return or exhaust diffusers, grilles or openings.
  - 3. Post warning signs at all entrances to the Work Area that state the following, as required in MIOSHA Lead in Construction Standard:
    - WARNING
    - LEAD WORK AREA
    - POISON
    - NO SMOKING OR EATING

**3.3 WORK PRACTICES**

- A. General: Perform any removal, demolition or disturbance of LCM in compliance with the following requirements:
  - 1. Restrict access to Work Area to essential personnel.
  - 2. Use moist-removal methods and/or HEPA vacuuming where applicable. Do not over-saturate the Work Area.
  - 3. Any debris generated must be cleaned up immediately before it can be tracked into other areas.
  - 4. Remove contaminated clothing and personal protective equipment before leaving the Work Area, or Work Area enclosure, as applicable.
  - 5. If the Action Level is exceeded outside the Work Area, discontinue work and modify Critical Barrier, or perform other modifications of methods or materials as required to reduce the lead contamination below the Action Level.
  - 6. Prohibit eating, drinking, and smoking in the Work Area.

- B. Incidental Removal of LBP: Remove paint from building surfaces by hand scraping and sanding; or through the use of fluid-applied chemical strippers designed to dry into a solid polymeric sheet and peel off with paint encapsulated. Hand-scraping and sanding must be used in conjunction with moist-removal methods using misted water. Leave moist paint dust and chips in place to air dry before collection.
1. Wet methods (including power-washing) that use amounts of water that can drip, spill, or leak onto the ground, or onto or into other adjacent surfaces are prohibited unless approved by the City of Ann Arbor project manager.
  2. Dry removal methods (including sand blasting, power sanding, and other methods relying on high velocity mechanical abrasion) that create airborne fine particulate waste materials are prohibited unless specifically reviewed and approved by City of Ann Arbor project manager.
  3. Prior to torch-cutting building elements containing LBP, remove paint within four inches of centerline of cut in accordance with requirements of this Section.

### 3.4 DISPOSAL

### 3.5 DISPOSAL

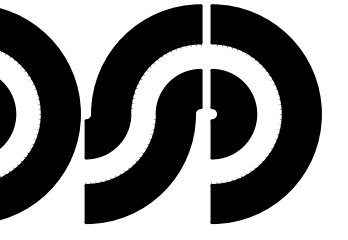
- A. Lead Painted Demolition Debris and Lead Paint Chips: In order to determine proper disposal of waste removed from the site, perform Toxicity Characteristic Leaching Procedure (TCLP) testing of LCM waste. If TCLP testing shows the waste to be nonhazardous, the waste can be disposed of as normal construction demolition debris. If waste is classified as Hazardous dispose of material as hazardous waste at an accepting landfill.
1. When storing waste containers on-site, ensure that soil, ground water, and drains or sewers within the storage area are protected from possible contamination. Keep containers secure and tightly closed at all times, except when adding waste.
  2. Keep lead waste segregated from other waste. Do not co-mingle waste. **DO NOT MIX LIQUID AND SOLID WASTE.**
  3. Place appropriate labels on all containers. Provide all information required on the label; mark labels using indelible ink.

### 3.6 CLEAN UP

- A. Upon completion of LCM or LBP removal and disposal operations, clean all surfaces within the Work Area before it can be tracked into other areas, including, but not necessarily limited to the following:
1. Siding.
  2. Steel support structures.
  3. Floors and ground.
  4. Walls.
  5. Window sills.
  6. Trim.
  7. Ledges and projections.
- B. For projects within building interior spaces, use a HEPA filtered vacuum for removal/elimination of dust, particulates, and debris.

1. Brushing, brooming and other dry methods that generate airborne dust are prohibited.
- C. Remove and dispose of wash water and HEPA filters as Hazardous Waste.
- D. Remove and dispose of all solid waste used for protection and clean-up as Non-Hazardous Waste as indicated in Section 3.4, "Disposal of Non-Hazardous LCM from Demolition/Renovation Activities".
- E. Field Testing: The Owner may visually inspect and/or test the Project Site for evidence of remaining lead contamination. Return to Project Site and, at no additional cost to Owner, re-clean areas found to be contaminated.

**END OF SECTION**



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CITY OF ANN ARBOR  
LARCOM CHILLER  
REPLACEMENT PROJECT  
ANN ARBOR, MI

ELECTRICAL  
PENTHOUSE FLOOR  
& ROOF NEW WORK  
PLANS  
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These documents are traditional plan and specification documents that are not intended to be used by the contractor as shop drawings. Final dimensions, equipment access, routing, miscellaneous fittings, final installation and coordination is the contractor's responsibility.

ISSUED FOR	DATE
OWNER REVIEW	02/08/19
BIDS	03/20/19
ADDENDUM No. 1	04/09/19

DESIGNER:	JCO
DRAWN:	JMW
PM / PIC:	JSR/BJR
CHECKED:	SM
ACADFILE:	18-1304-E-3
PROJECT No.	18-1304

E-3

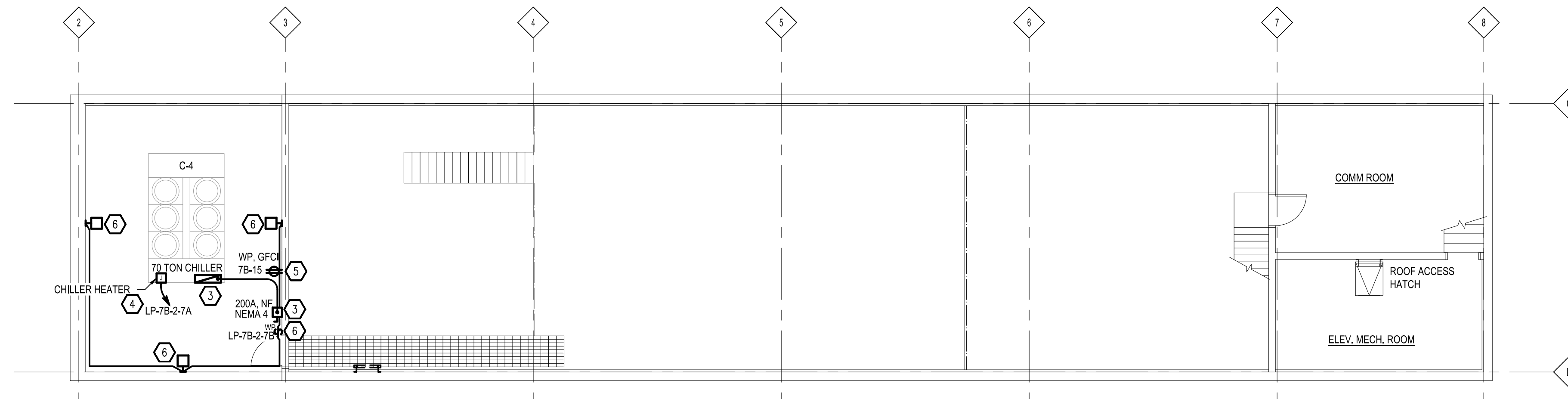
**ELECTRICAL GENERAL NOTES**

- THESE DRAWINGS ARE DIAGRAMMATIC & INDICATE THE GENERAL EXTENT OF THE WORK. PROVIDE PIPING SYSTEMS COMPLETE AND PER SPECIFICATIONS, AND PER APPLICABLE CODES INCLUDING ALL NECESSARY OFFSETS, AND FITTINGS WHICH ARE REQUIRED DUE TO SPACE CONSTRAINTS OR OTHER CONDITIONS.
- CONTRACTOR SHALL COORDINATE HIS WORK WITH THE WORK OF ALL OTHER TRADES. VERIFY ALL CLEARANCES PRIOR TO THE FABRICATION OF ANY WORK.
- ALL WORK TO BE DONE IN ACCORDANCE WITH THE 2017 NATIONAL ELECTRICAL CODE.

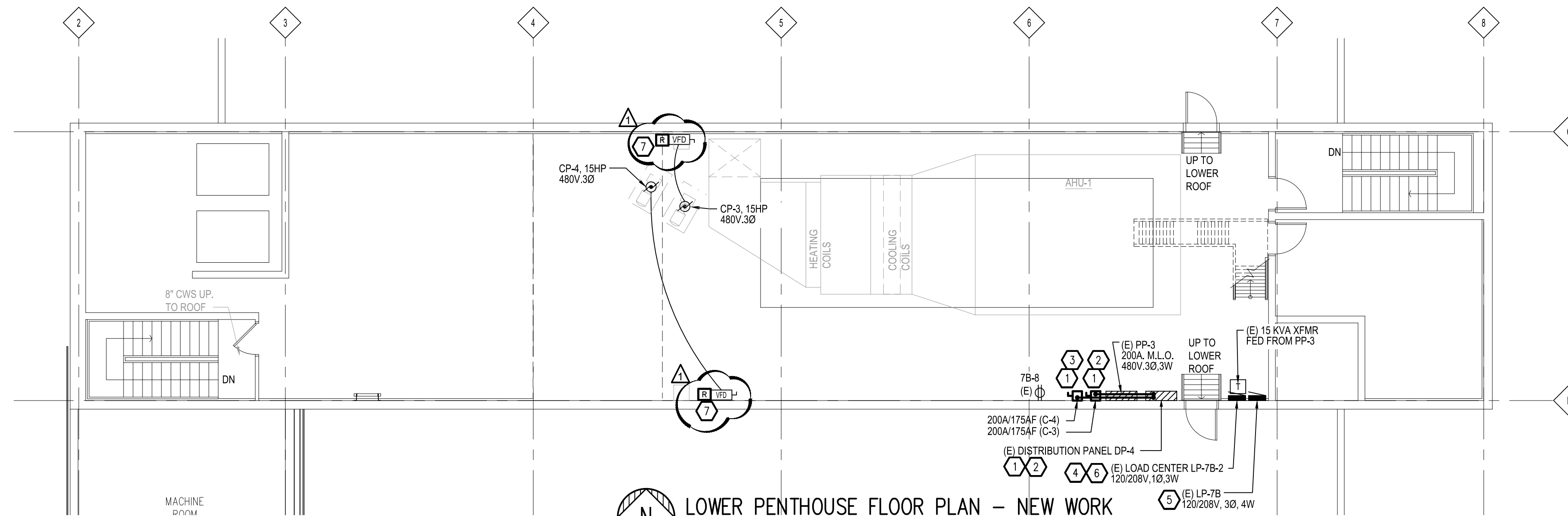
**NEW WORK KEY NOTES:**

(APPLICABLE THIS SHEET ONLY)

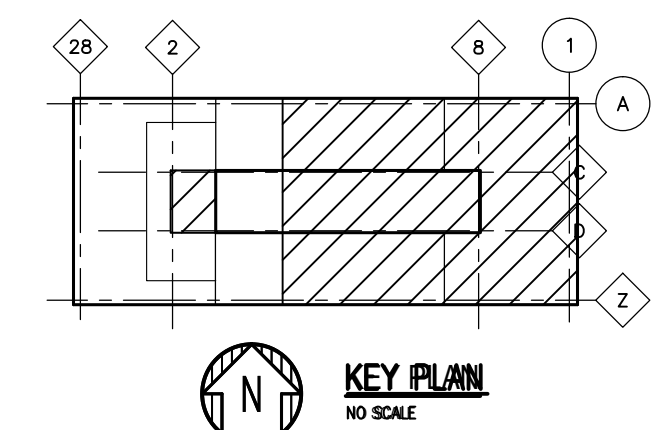
- PROVIDE TWO 200A, 3-POLE FUSIBLE NEMA 1 SWITCHES FOR SERVICE TO EXISTING AIR-COOLED CHILLER C-3 AND NEW AIR-COOLED CHILLER C-4. FEED SWITCHES FROM EXISTING 400A SWITCH IN DISTRIBUTION PANEL DP-4. PROVIDE 200A FEEDERS FROM DP-4 TO EACH 200A SWITCH, 3-#3/0 & #6 GND, 2" C. (10-FOOT TAP RULE). FUSE 400A SWITCH AT 400A. FUSE 200A SWITCHES AT 175A.
- REWORK EXISTING C-3 FEEDER FROM DP-4 TO NEW 200A SWITCH ADJACENT TO DP-4.
- PROVIDE NEW SERVICE TO AIR-COOLED CHILLER C-4 FROM NEW 200A SWITCH ADJACENT TO POWER PANEL PP-3. PROVIDE BRANCH CIRCUIT, 3#3/0 & #6 GND, 2" C.
- PROVIDE 120V, 20A BRANCH CIRCUIT FOR AIR-COOLED CHILLER C-4 HEATING CIRCUIT, 2#12 & #12 GND, 3/4" C. FROM LOAD CENTER LP-7B-2. PROVIDE 2020A SQUARE D TYPE QO TANDEM BREAKER IN EXISTING SPACE NO. 7.
- PROVIDE 120V, 20A GFCI DUPLEX OUTLET WITH WEATHER-PROOF WHILE-IN-USE COVER AND ASSOCIATED BRANCH CIRCUIT, 2#12 & #12 GND, 3/4" C. BACK TO LIGHTING PANEL LP-7B, CIRCUIT 15.
- LED WALL PACK WITH ADJUSTABLE LIGHT OUTPUT, 5000°K COLOR TEMPERATURE, TYPE III LIGHT DISTRIBUTION, 120V, PHOTOCELL RECEPTACLE, SINGLE FUSE, SURGE PROTECTIVE DEVICE AND DARK BRONZE FINISH: LITHONIA NO. TWM LED ALO 50K T3M 120 PER SF SPD DBXD WITH DLL127F1,5JU PHOTOCELL, OR EQUAL. PROVIDE WP LOCAL WALL MOUNTED SWITCH AND BRANCH CIRCUIT TO LOAD CENTER LP-7B-2.
- FURNISH, INSTALL, AND CONNECT 3" (1.2 MM, 480V, 3Ø) INPUT LINE REACTORS FOR CHILLED WATER PUMPS CP-3 AND CP-4 YASKAWA MODEL CIMR-ZU40021FFA-166 VARIABLE SPEED DRIVES. REACTORS SHALL HAVE NEMA 1 ENCLOSURES AND SHALL BE YASKAWA OR MTE RL-02512 WITH CAB-13V ENCLOSURES.



**UPPER PENTHOUSE FLOOR PLAN - NEW WORK**  
SCALE: 1/8" = 1'-0"  
0 4 8 16 32



**LOWER PENTHOUSE FLOOR PLAN - NEW WORK**  
SCALE: 1/8" = 1'-0"  
0 4 8 16 32



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