

**ADDENDUM  
NO. 2**

**March 27, 2026**

Perry Township Schools Phase 2:  
Perry Meridian High School Central Plant and Southport High School Electrical Infrastructure  
SPHS: 971 E. Banta Road  
Indianapolis, IN 46227  
PMHS:401 W. Meridian School Rd.  
Indianapolis, IN 46217

**TO: ALL BIDDERS OF RECORD**

This Addendum forms a part of and modifies the Bidding Requirements, Contract Forms, Contract Conditions, the Specifications, and the Drawings dated February 16, 2026 and February 20, 2026, by Lancer Associates Architecture. Acknowledge receipt of the Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

This Addendum consists of Pages ADD 2-1, and Lancer Associates Architecture Addendum No. 2, dated March 26, 2026, consisting of 37 pages & 2 pages, Specification Section (PMHS) 22 1316-Sanitary Waste and Vent Piping, 221319-Sanitary Waste Piping Specialties, 22 1319.13 Sanitary Drains, 23 6426.13-Air-Cooled, Rotary-Screw Water Chillers, and Addendum Drawings: (PMHS) P-401, P-402, P-403, M-601, ED-101, DP-101, E-601, (SPHS) ED101, EP101, E-605, E-607, E-701, and E-703.

A. **SPECIFICATION SECTION 01 12 00 MULTIPLE CONTRACT SUMMARY**

1. Paragraph 3.03 Bid Categories

A. **Bid Category No. 2 – Electrical**

Replace the following Clarification:

6. AES contact is Jeffrey Bonds-Johnson. [Jeffrey.bonds@aes.com](mailto:Jeffrey.bonds@aes.com).

**ADDENDUM NO. ONE**

**PROJECT:** Southport High School – Electrical Improvement Package

**PROJECT NUMBER:** 24173

**DATE OF ADDENDUM:** March 26, 2026



**THIS ADDENDUM FORMS A PART OF THE CONTRACT DOCUMENTS AND IS ISSUED IN ACCORDANCE WITH THE INSTRUCTIONS TO BIDDERS. ACKNOWLEDGE RECEIPT OF THIS ADDENDUM BY SIGNING THE ADDENDUM ACKNOWLEDGMENT SECTION OF THE BID FORM.**

**SPECIFICATIONS:**

No Modifications.

**DRAWINGS:**

1. Drawing Sheet Number: ED101  
Drawing Sheet Title: ELECTRICAL DEMOLITION FIRST FLOOR PLAN  
  
Change: Added panelboard 'X'.  
Change: Removed demolition of panelboard 1LN19.

2. Drawing Sheet Number: EP101  
Drawing Sheet Title: ELECTRICAL POWER FIRST FLOOR PLAN  
  
Change: Added panelboard 'X'.  
Change: Removed demolition of panelboard 1LN19.
3. Drawing Sheet Number: E-605  
Drawing Sheet Title: ELECTRICAL PANELBOARD SCHEDULES  
  
Change: Removed schedule for panelboard 1LN19.
4. Drawing Sheet Number: E-607  
Drawing Sheet Title: ELECTRICAL PANELBOARD SCHEDULES  
  
Change: Added schedule for panelboard 'X'.
5. Drawing Sheet Number: E-701  
Drawing Sheet Title: ELECTRICAL DEMOLITION ONE-LINE DIAGRAM  
  
Change: Added feeder and panel demolition for panelboard 'X'.  
Change: Removed demolition of feeder and panel 1LN19.
6. Drawing Sheet Number: E-703  
Drawing Sheet Title: ELECTRICAL ONE-LINE DIAGRAM  
  
Change: Added new feeder and new panel for panelboard 'X'.  
Change: Removed new panel and feeder for panel 1LN19.

**Attachments:**

ED101  
EP101  
E-605  
E-607  
E-701  
E-703

END OF ADDENDUM NO. TWO

**ADDENDUM NO. TWO**

**PROJECT: PERRY MERIDIAN HS MEP PACKAGE**

**PROJECT NUMBER: 24173P**

**DATE OF ADDENDUM: March 26, 2026**



**THIS ADDENDUM FORMS A PART OF THE CONTRACT DOCUMENTS AND IS ISSUED IN ACCORDANCE WITH THE INSTRUCTIONS TO BIDDERS. ACKNOWLEDGE RECEIPT OF THIS ADDENDUM BY SIGNING THE ADDENDUM ACKNOWLEDGMENT SECTION OF THE BID FORM.**

**QUESTIONS & ANSWERS:**

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**ADDITIONAL APPROVED MANUFACTURERS:**

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**DRAWINGS:**

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**Attachments:**

(Narrative)

**CES ADDENDUM NO.02 NARRATIVE**

(Specs)

**22 1316 - SANITARY WASTE AND VENT PIPING**

**22 1319 - SANITARY WASTE PIPING SPECIALTIES**

**22 1319.13 - SANITARY DRAINS**

**23 6426.13 - AIR-COOLED, ROTARY-SCREW WATER CHILLERS**

(Drawings)

**P-401 - PLUMBING FOUNDATION MECHANICAL ROOM PLANS**

**P-402 - PLUMBING DEMOLITION ENLARGED MECHANICAL ROOM PLAN**

**P-403 - PLUMBING ENLARGED MECHANICAL ROOM PLAN**

**M-601 - MECHANICAL SCHEDULES**

**ED101 - ELECTRICAL DEMOLITION FIRST FLOOR PLAN**

**EP101 - ELECTRICAL POWER FIRST FLOOR PLAN**

**E-601 - ELECTRICAL SCHEDULES**

END OF ADDENDUM NO. TWO



**PROJECT NAME: PERRY MERIDIAN HS MEP PACKAGE**  
**OWNER NAME: PERRY TOWNSHIP SCHOOLS**  
**PROJECT NO. 24173P**  
**ADDENDUM NO. 2**  
**DATED: 3/26/26**

## **PART 1 - CHANGES TO THE PROJECT MANUAL**

Modifications described herein shall be incorporated in the Project Manual. All other Work shall remain unchanged.

### **1.1 DIVISION 22 – PLUMBING**

#### **A. Section 221319.13 ‘SANITARY DRAINS’**

1. Add Document in its entirety.

#### **B. Section 221319 “SANITARY WASTE PIPING SPECIALITES”**

1. Add Document in its entirety.

#### **C. Section 221316 “SANITARY WASTE AND VENT PIPING”**

1. Add Document in its entirety.

### **1.2 DIVISION 23 - HEATING, VENTILATING, AND AIR-CONDITIONING(HVAC)**

#### **A. Section 235216 “CONDENSING BOILERS”**

1. MODIFY Text as follows:  
“PART 1 – GENERAL” to remove “(Alternate Bid).” Boilers are not an alternate bid.
2. MODIFY Subparagraph 2.2.A. as follows:  
“A. Manufacturers:
  1. Lochinvar (Basis of Design).
  2. Hydrotherm K/N Series.
  3. Cleaver Brooks.”

#### **B. Section 236426.13 “AIR-COOLED, ROTARY-SCREW WATER CHILLERS”**

DELETE AND REPLACE Document in its entirety.

### **1.3 DIVISION 26 – ELECTRICAL**

- A. **Section 260573.13 “SHORT CIRCUIT STUDIES”**
  - 1. DELETE Document in its entirety.
- B. **Section 260573.16 “COORDINATION STUDIES”**
  - 1. DELETE Document in its entirety.
- C. **Section 260573.19 “ARC FLASH HAZARD ANALYSIS”**
  - 1. DELETE Document in its entirety.

### **PART 2 - CHANGES TO THE DRAWINGS**

Modifications described herein shall be incorporated in the Drawings. All other Work shall remain unchanged.

#### **2.1 M-SERIES DRAWINGS**

- A. **Drawing Number M-601**
  - 1. DELETE AND REPLACE Drawing M-601 in its entirety

#### **2.2 P-SERIES DRAWINGS**

- A. **Drawing Number P-401**
  - 1. DELETE AND REPLACE Drawing P-401 in its entirety.
- B. **Drawing Number P-402**
  - 1. DELETE AND REPLACE Drawing P-402 in its entirety.
- C. **Drawing Number P-403**
  - 1. DELETE AND REPLACE Drawing P-403 in its entirety.

#### **2.3 E-SERIES DRAWINGS**

- A. **Drawing Number ED101**
  - 1. DELETE AND REPLACE Drawing ED101 in its entirety.

**B. Drawing Number EP101**

1. DELETE AND REPLACE Drawing EP101 in its entirety.

**C. Drawing Number E-601**

1. DELETE AND REPLACE Drawing E-601 in its entirety.

**PART 3 - BIDDER QUESTIONS AND CLARIFICATIONS**

Modifications described herein shall be incorporated in the Drawings. All other Work shall remain unchanged.

**3.1 DIV. 23 QUESTION**

**A. Please clarify acceptable materials for boiler venting and combustion air piping:**

1. Question: Section 23 51 23 – Gas Vents lists polypropylene and listed metal vent systems for Category IV venting. - Please confirm that CPVC venting is not acceptable unless submitted as an approved substitution, even if permitted by the boiler manufacturer. Per the boiler Installation & Operation Manual for the Lochinvar FBN5001, combustion air inlet piping materials may include ABS, PVC, or CPVC. -Please confirm that PVC Schedule 40 is acceptable for combustion air piping for these boilers, following manufacturer’s installation instructions, provided it is not used for flue gas venting.
2. Answer: The materials requested are not acceptable. Provide and install either the listed polypropylene vents or double wall stainless as specified for the flues. Provide and install polypropylene materials for the combustion air intake as specified in the intake detail on M-501. PVC is not acceptable for combustion air intake.

**END OF ADDENDUM NO. 2**

SECTION 22 13 16 - SANITARY WASTE PIPING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
  - 1. Hubless, cast-iron soil pipe and fittings.
  - 2. PVC pipe and fittings.
  - 3. Specialty pipe fittings.

1.2 ACTION SUBMITTALS

- A. Product data.

1.3 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.

1.4 WARRANTY

- A. Listed manufacturers to provide labeling and warranty of their respective products.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Components and installation are capable of withstanding the following minimum working pressure unless otherwise indicated:
  - 1. Soil, and Waste Piping: 10 ft. head of water.

2.2 PIPING MATERIALS

- A. Piping materials to bear label, stamp, or other markings of specified testing agency.
- B. Comply with requirements in "Piping Schedule" Article for applications of pipe, tube, fitting materials, and joining methods for specific services, service locations, and pipe sizes.

## 2.3 HUBLESS, CAST-IRON SOIL PIPE AND FITTINGS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Charlotte Pipe and Foundry Company.
2. Tyler Pipe; a part of McWane family of companies.

B. Pipe and Fittings:

1. Marked with CISPI collective trademark.
2. ASTM A888 or CISPI 301.

C. CISPI, Hubless-Piping Couplings:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. ANACO-Husky.
- b. Charlotte Pipe and Foundry Company.
- c. Mission Rubber Company, LLC; a division of MCP Industries.
- d. Tyler Pipe; a subsidiary of McWane Inc.
- e. MIFAB.

2. Standards: ASTM C1277 and CISPI 310.

3. Description: Stainless steel corrugated shield with stainless steel bands and tightening devices; and ASTM C564, rubber sleeve with integral, center pipe stop.

D. Heavy-Duty, Hubless-Piping Couplings:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. ANACO-Husky.
- b. Charlotte Pipe and Foundry Company.
- c. Mission Rubber Company, LLC; a division of MCP Industries.
- d. Tyler Pipe; a subsidiary of McWane Inc.
- e. MIFAB.

2. Standards: ASTM C1277 and ASTM C1540..

3. Description: Stainless steel shield with stainless steel bands and tightening devices; and ASTM C564, rubber sleeve with integral, center pipe stop.

## 2.4 PVC PIPE AND FITTINGS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Charlotte Pipe and Foundry Company.
2. National Pipe and Plastic, Inc.
3. North America Pipe Corporation.

- B. Comply with NSF 14 for plastic piping components. Include "NSF-dwv" marking for plastic drain, waste, and "NSF-sewer" marking for plastic sewer piping.
- C. Solid-Wall PVC Pipe: ASTM D2665 drain and vent.
- D. PVC Socket Fittings: ASTM D2665, made in accordance with ASTM D3311, drain, waste patterns and to fit Schedule 40 pipe.
- E. Adhesive Primer: ASTM F656.
- F. Solvent Cement: ASTM D2564.

## 2.5 SPECIALTY PIPE FITTINGS

### A. Transition Couplings:

- 1. General Requirements: Fitting or device for joining piping with small differences in ODs or of different materials. Include end connections of same size as and compatible with pipes to be joined.
- 2. Fitting-Type Transition Couplings: Manufactured piping coupling or specified piping system fitting.
- 3. Unshielded, Nonpressure Transition Couplings:
  - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - 1) Fernco Inc.
    - 2) Mission Rubber Company, LLC; a division of MCP Industries.
  - b. Standard: ASTM C1173.
  - c. Description: Elastomeric, sleeve-type, reducing or transition pattern. Include shear ring and corrosion-resistant-metal tension band and tightening mechanism on each end.
  - d. End Connections: Same size as and compatible with pipes to be joined.
  - e. Sleeve Materials:
    - 1) For Cast-Iron Soil Pipes: ASTM C564, rubber.
    - 2) For Plastic Pipes: ASTM F477, elastomeric seal or ASTM D5926 PVC.
- 4. For Dissimilar Pipes: ASTM D5926 Shielded, Nonpressure Transition Couplings:
  - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - 1) Cascade Waterworks Mfg. Co.
    - 2) Mission Rubber Company, LLC; a division of MCP Industries.
  - b. Standard: ASTM C1460.
  - c. Description: Elastomeric or rubber sleeve with full-length, corrosion-resistant outer shield and corrosion-resistant-metal tension band and tightening mechanism on each end.

- d. End Connections: Same size as and compatible with pipes to be joined.

### PART 3 - EXECUTION

#### 3.1 EARTH MOVING

- A. Comply with requirements for excavating, trenching, and backfilling specified in Section 31 2000 "Earth Moving."

#### 3.2 PIPING INSTALLATION

- A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems.
  - 1. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations.
  - 2. Install piping as indicated unless deviations to layout are approved on coordination drawings.
- B. Install piping in concealed locations unless otherwise indicated and except in equipment rooms and service areas.
- C. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.
- D. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.
- E. Install piping to permit valve servicing.
- F. Install piping at indicated slopes.
- G. Install piping free of sags and bends.
- H. Install fittings for changes in direction and branch connections.
- I. Make changes in direction for soil and waste drainage and vent piping using appropriate branches, bends, and long-sweep bends.
  - 1. Sanitary tees and short-sweep 1/4 bends may be used on vertical stacks if change in direction of flow is from horizontal to vertical.
  - 2. Use long-turn, double Y-branch, and 1/8-bend fittings if two fixtures are installed back to back or side by side with common drain pipe.
  - 3. Do not change direction of flow more than 90 degrees.
  - 4. Use proper size of standard increasers and reducers if pipes of different sizes are connected.

- a. Reducing size of waste piping in direction of flow is prohibited.
- J. Lay buried building waste piping beginning at low point of each system.
- 1. Install true to grades and alignment indicated, with unbroken continuity of invert. Place hub ends of piping upstream.
  - 2. Install required gaskets according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements.
  - 3. Maintain swab in piping and pull past each joint as completed.
- K. Install soil and waste piping at the following minimum slopes unless otherwise indicated:
- 1. Building Sanitary Waste: Two percent downward in direction of flow for piping NPS 3 and smaller; 1 percent downward in direction of flow for piping NPS 4 and larger.
- L. Install cast-iron soil piping in accordance with CISPI's "Cast Iron Soil Pipe and Fittings Handbook," Chapter IV, "Installation of Cast Iron Soil Pipe and Fittings."
- M. Install underground PVC piping in accordance with ASTM D2321.
- N. Plumbing Specialties:
- 1. Install cleanouts at grade and extend to where building sanitary drains connect to building sanitary sewers in sanitary waste gravity-flow piping.
    - a. Comply with requirements for cleanouts specified in Section 22 1319 "Sanitary Waste Piping Specialties."
  - 2. Install drains in sanitary waste gravity-flow piping.
    - a. Comply with requirements for drains specified in Section 22 1319 "Sanitary Waste Piping Specialties."
- O. Do not enclose, cover, or put piping into operation until it is inspected and approved by authorities having jurisdiction.
- P. Install sleeves for piping penetrations of walls, ceilings, and floors.
- 1. Comply with requirements for sleeves specified in Section 22 0517 "Sleeves and Sleeve Seals for Plumbing Piping."
- Q. Install sleeve seals for piping penetrations of concrete walls and slabs.
- 1. Comply with requirements for sleeve seals specified in Section 22 0517 "Sleeves and Sleeve Seals for Plumbing Piping."
- R. Install escutcheons for piping penetrations of walls, ceilings, and floors.
- 1. Comply with requirements for escutcheons specified in Section 22 0518 "Escutcheons for Plumbing Piping."

### 3.3 JOINT CONSTRUCTION

- A. Hubless, Cast-Iron Soil Piping Coupled Joints:
  - 1. Join hubless, cast-iron soil piping in accordance with CISPI 310 and CISPI's "Cast Iron Soil Pipe and Fittings Handbook" for hubless-piping coupling joints.
- B. Plastic, Nonpressure-Piping, Solvent-Cement Joints: Clean and dry joining surfaces. Join pipe and fittings in accordance with the following:
  - 1. Comply with ASTM F402 for safe-handling practice of cleaners, primers, and solvent cements.
  - 2. PVC Piping: Join in accordance with ASTM D2855 and ASTM D2665 appendixes.
- C. Joint Restraints and Sway Bracing:
  - 1. Provide joint restraints and sway bracing for storm drainage piping joints to comply with the following conditions:
    - a. Provide axial restraint for pipe and fittings 5 inches and larger, upstream and downstream of all changes in direction, branches, and changes in diameter greater than two pipe sizes.
    - b. Provide rigid sway bracing for pipe and fittings 4 inches and larger, upstream and downstream of all changes in direction 45 degrees and greater.
    - c. Provide rigid sway bracing for pipe and fittings 5 inches and larger, upstream and downstream of all changes in direction and branch openings.

### 3.4 SPECIALTY PIPE FITTING INSTALLATION

- A. Transition Couplings:
  - 1. Install transition couplings at joints of piping with small differences in ODs.
  - 2. In Waste Drainage Piping: Shielded, nonpressure transition couplings.

### 3.5 CONNECTIONS

- A. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Connect soil and waste piping to exterior sanitary sewerage piping. Use transition fitting to join dissimilar piping materials.
- C. Connect waste piping to the following:
  - 1. Plumbing Fixtures: Connect waste piping in sizes indicated, but not smaller than required by plumbing code.
  - 2. Plumbing Fixtures and Equipment: Connect atmospheric vent piping in sizes indicated, but not smaller than required by authorities having jurisdiction.

3. Plumbing Specialties: Connect waste piping in sizes indicated, but not smaller than required by plumbing code.
  4. Install test tees (wall cleanouts) in conductors near floor and floor cleanouts with cover flush with floor.
- D. Where installing piping adjacent to equipment, allow space for service and maintenance of equipment.
- E. Make connections in accordance with the following unless otherwise indicated:
1. Install unions, in piping NPS 2 and smaller, at final connection to each piece of equipment.
  2. Install flanges, in piping NPS 2-1/2 and larger, adjacent to flanged valves and at final connection to each piece of equipment.

### 3.6 IDENTIFICATION

- A. Identify exposed sanitary waste piping.
- B. Comply with requirements for identification specified in Section 22 0553 "Identification for Plumbing Piping and Equipment."

### 3.7 FIELD QUALITY CONTROL

- A. During installation, notify authorities having jurisdiction at least 24 hours before inspection must be made. Perform tests specified below in presence of authorities having jurisdiction.
1. Roughing-in Inspection: Arrange for inspection of piping before concealing or closing-in after roughing-in and before setting fixtures.
  2. Final Inspection: Arrange for final inspection by authorities having jurisdiction to observe tests specified below and to ensure compliance with requirements.
- B. Reinspection: If authorities having jurisdiction find that piping will not pass test or inspection, make required corrections and arrange for reinspection.
- C. Reports: Prepare inspection reports and have them signed by authorities having jurisdiction.
- D. Test sanitary and waste piping in accordance with procedures of authorities having jurisdiction or, in absence of published procedures, as follows:
1. Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired.
    - a. If testing is performed in segments, submit separate report for each test, complete with diagram of portion of piping tested.

2. Leave uncovered and unconcealed new, altered, extended, or replaced waste piping until it has been tested and approved.
  - a. Expose work that was covered or concealed before it was tested.
3. Roughing-in Plumbing Test Procedure: Test waste piping except outside leaders on completion of roughing-in.
  - a. Close openings in piping system and fill with water to point of overflow, but not less than 10 ft. head of water.
  - b. From 15 minutes before inspection starts to completion of inspection, water level must not drop.
  - c. Inspect joints for leaks.
4. Finished Plumbing Test Procedure: After plumbing fixtures have been set and traps filled with water, test connections and prove they are gastight and watertight.
  - a. Plug vent-stack openings on roof and building drains where they leave building. Introduce air into piping system equal to pressure of 1 inch wg.
  - b. Use U-tube or manometer inserted in trap of water closet to measure this pressure.
  - c. Air pressure must remain constant without introducing additional air throughout period of inspection.
  - d. Inspect plumbing fixture connections for gas and water leaks.
5. Repair leaks and defects with new materials and retest piping, or portion thereof, until satisfactory results are obtained.
6. Prepare reports for tests and required corrective action.

### 3.8 CLEANING AND PROTECTION

- A. Clean interior of piping. Remove dirt and debris as work progresses.
- B. Protect sanitary waste piping during remainder of construction period to avoid clogging with dirt and debris and to prevent damage from traffic and construction work.
- C. Place plugs in ends of uncompleted piping at end of day and when work stops.
- D. Repair damage to adjacent materials caused by waste piping installation.

### 3.9 PIPING SCHEDULE

- A. Underground, soil, and wastepiping NPS 4 and smaller are to be the following:
  1. Hubless, cast-iron soil pipe and fittings; heavy-duty hubless-piping couplings; and coupled joints.
  2. Dissimilar Pipe-Material Couplings: Shielded, nonpressure transition couplings.
- B. Underground, soil and waste piping NPS 5 and larger are to be the following:

1. Hubless, cast-iron soil pipe and fittings; heavy-duty hubless-piping couplings; coupled joints.
2. Dissimilar Pipe-Material Couplings: Shielded, nonpressure transition couplings.

END OF SECTION 22 1316

## SECTION 22 1319 - SANITARY WASTE PIPING SPECIALTIES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Cleanouts.
  - 2. Miscellaneous sanitary drainage piping specialties.

#### 1.3 DEFINITIONS

- A. ABS: Acrylonitrile butadiene styrene.
- B. PVC: Polyvinyl chloride.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.

#### 1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For sanitary waste piping specialties to include in emergency, operation, and maintenance manuals.

### PART 2 - PRODUCTS

#### 2.1 ASSEMBLY DESCRIPTIONS

- A. Sanitary waste piping specialties shall bear label, stamp, or other markings of specified testing agency.

- B. Comply with NSF 14 for plastic sanitary waste piping specialty components.

## 2.2 CLEANOUTS

### A. Cast-Iron Exposed Cleanouts:

1. Standard: ASME A112.36.2M.
2. Size: Same as connected drainage piping
3. Body Material: Hubless, cast-iron soil pipe test tee as required to match connected piping.
4. Closure: Raised-head, plastic plug.
5. Closure Plug Size: Same as or not more than one size smaller than cleanout size.

### B. Cast-Iron Exposed Floor Cleanouts:

1. Manufacturers:
  - a. Zurn.
  - b. J.R. Smith
  - c. Wade.
  - d. Sioux Chief.
  - e. Mifab.
2. Standard: ASME A112.36.2M for adjustable housing cleanout.
3. Size: Same as connected branch.
4. Type: Adjustable housing
5. Body or Ferrule: Cast iron.
6. Outlet Connection: Spigot.
7. Closure: Plastic plug.
8. Adjustable Housing Material: Cast iron withset screws..
9. Frame and Cover Material and Finish: Nickel-bronze, copper alloy.
10. Frame and Cover Shape: Round.
11. Top-Loading Classification: Heavy Duty.
12. Riser: ASTM A74, Service Class, cast-iron drainage pipe fitting and riser to cleanout.

### C. Cast-Iron Wall Cleanouts :

1. Manufacturers:
  - a. Zurn.
  - b. J.R. Smith
  - c. Sioux Chief.
  - d. Mifab.
2. Standard: ASME A112.36.2M. Include wall access.
3. Size: Same as connected drainage piping.
4. Body: Hubless, cast-iron soil pipe test tee as required to match connected piping.
5. Closure Plug:
  - a. Plastic.
  - b. raised head.
  - c. Drilled and threaded for cover attachment screw.

- d. Size: Same as or not more than one size smaller than cleanout size.
- 6. Wall Access, Cover Plate: Round, flat, chrome-plated brass or stainless steel cover plate with screw.
- 7. Wall Access, Frame and Cover: Round, wall-installation frame and cover.

## 2.3 MISCELLANEOUS SANITARY DRAINAGE PIPING SPECIALTIES

### A. Deep-Seal Traps:

- 1. Description: Cast-iron or bronze casting, with inlet and outlet matching connected piping and cleanout trap-seal primer valve connection.
- 2. Size: Same as connected waste piping.
  - a. NPS 2): 4-inch-minimum water seal.
  - b. NPS 2-1/2 and Larger: 5-inch-minimum water seal.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Install cleanouts in aboveground piping and building drain piping according to the following, unless otherwise indicated:
  - 1. Size same as drainage piping up to NPS 4. Use NPS 4 for larger drainage piping unless larger cleanout is indicated
  - 2. Locate at each change in direction of piping greater than 45 degrees.
  - 3. Locate at minimum intervals of 50 feet for piping NPS 4 and smaller and 100 feet for larger piping. Locate at base of each vertical soil and waste stack.
- B. For floor cleanouts for piping below floors, install cleanout deck plates with top flush with finished floor.
- C. For cleanouts located in concealed piping, install cleanout wall access covers, of types indicated, with frame and cover flush with finished wall.
- D. Install deep-seal traps on floor drains and other waste outlets, if indicated.
- E. Install air-gap fittings on draining-type backflow preventers and on indirect-waste piping discharge into sanitary drainage system.
- F. Install wood-blocking reinforcement for wall-mounting-type specialties.
- G. Install traps on plumbing specialty drain outlets. Omit traps on indirect wastes unless trap is indicated.

### 3.2 PIPING CONNECTIONS

- A. Comply with requirements in Section 22 1316 "Sanitary Waste and Vent Piping" for piping installation requirements. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Install piping adjacent to equipment, to allow service and maintenance.

### 3.3 LABELING AND IDENTIFYING

- A. Distinguish among multiple units, inform operator of operational requirements, indicate safety and emergency precautions, and warn of hazards and improper operations, in addition to identifying unit.
  - 1. Nameplates and signs are specified in Section 22 0553 "Identification for Plumbing Piping and Equipment."

### 3.4 PROTECTION

- A. Protect drains during remainder of construction period to avoid clogging with dirt or debris and to prevent damage from traffic or construction work.
- B. Place plugs in ends of uncompleted piping at end of each day or when work stops.

END OF SECTION 22 1319

SECTION 22 1319.13 - SANITARY DRAINS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Floor drains.

1.2 DEFINITIONS

- A. ABS: Acrylonitrile-butadiene styrene.
- B. FRP: Fiberglass-reinforced plastic.
- C. HDPE: High-density polyethylene.
- D. PE: Polyethylene.
- E. PP: Polypropylene.
- F. PVC: Polyvinyl chloride.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 DRAIN ASSEMBLIES

- A. Sanitary drains shall bear label, stamp, or other markings of specified testing agency.
- B. Comply with NSF 14 for plastic sanitary piping specialty components.

2.2 FLOOR DRAINS

- A. Cast-Iron Floor Drains:
  1. Manufacturers:
    - a. Zurn.
    - b. J.R. Smith.
    - c. Wade.

- d. Sioux Chief.
- e. Mifab.
2. Standard: ASME A112.6.3.
3. Pattern: Floor drain. Body Material: Gray iron.
4. Seepage Flange: Required.
5. Outlet: Bottom.
6. Coating on Interior and Exposed Exterior Surfaces: Acid-resistant enamel.
7. Top or Strainer Material: Bronze.
8. Top of Body and Strainer Finish: Nickel-bronze.
9. Top Shape: Round
10. Trap Pattern: Deep-seal P-trap.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Install floor drains at low points of surface areas to be drained. Set grates of drains flush with finished floor, unless otherwise indicated.
  1. Position floor drains for easy access and maintenance.
  2. Set floor drains below elevation of surrounding finished floor to allow floor drainage.
  3. Set with grates depressed according to the following drainage area radii:
    - a. Radius, 30 Inches or Less: Equivalent to 1 percent slope, but not less than 1/4-inch total depression.
  4. Install floor-drain flashing collar or flange, so no leakage occurs between drain and adjoining flooring.
    - a. Maintain integrity of waterproof membranes where penetrated.
  5. Install individual traps for floor drains connected to sanitary building drain, unless otherwise indicated.
- B. CONNECTIONS
- C. Comply with requirements in Section 22 1316 "Sanitary Waste and Vent Piping" for piping installation requirements. Drawings indicate general arrangement of piping, fittings, and specialties.
- D. Install piping adjacent to equipment to allow service and maintenance.

3.2 PROTECTION

- A. Protect drains during remainder of construction period to avoid clogging with dirt or debris and to prevent damage from traffic or construction work.
- B. Place plugs in ends of uncompleted piping at end of each day or when work stops.

END OF SECTION

## SECTION 23 6426.21 - AIR-COOLED, ROTARY-SCREW WATER CHILLERS

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

## 1.2 SUMMARY

- A. Section Includes:
  - 1. Packaged, air-cooled chillers.

## 1.3 DEFINITIONS

- A. COP: Coefficient of performance. The ratio of the rate of heat removal to the rate of energy input using consistent units for any given set of rating conditions.
- B. DDC: Direct digital control.
- C. EER: Energy-efficiency ratio. The ratio of the cooling capacity given in terms of Btu/h to the total power input given in terms of watts at any given set of rating conditions.
- D. IPLV: Integrated part-load value. A single-number part-load efficiency figure of merit calculated per the method defined by AHRI 550/590 and referenced to AHRI standard rating conditions.
- E. kW/Ton: The ratio of total power input of the chiller in kilowatts to the net refrigerating capacity in tons at any given set of rating conditions.
- F. NPLV: Nonstandard part-load value. A single-number part-load efficiency figure of merit calculated per the method defined by AHRI 550/590 and intended for operating conditions other than AHRI standard rating conditions.

## 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include refrigerant, rated capacities, operating characteristics, furnished specialties, and accessories.
  - 2. Performance at AHRI standard conditions and at conditions indicated.
  - 3. Performance at AHRI standard unloading conditions.
  - 4. Minimum evaporator flow rate.
  - 5. Refrigerant capacity of chiller.

6. Oil capacity of chiller.
7. Fluid capacity of evaporator.
8. Characteristics of safety relief valves.
9. Minimum entering condenser-air temperature.
10. Maximum entering condenser-air temperature.
11. Performance at varying capacities with constant-design, entering condenser-air temperature. Repeat performance at varying capacities for different entering condenser-air temperatures from design to minimum in 10 deg F increments.

B. Shop Drawings:

1. Include plans, elevations, sections, and attachment details.
2. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
3. Include diagrams for power, signal, and control wiring.

1.5 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For certification required in "Quality Assurance" Article.
- B. Source quality-control reports.
- C. Field Test Reports: Include startup service reports.
- D. Sample Warranty: For AHRI special warranty.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For each chiller to include in emergency, operation, and maintenance manuals.

1.7 QUALITY ASSURANCE

- A. AHRI Certification: Certify chiller according to AHRI 590 certification program(s).
- B. AHRI Rating: Rate chiller performance according to requirements in AHRI 550/590.
- C. ASHRAE Compliance:
  1. ASHRAE 15 for safety code for mechanical refrigeration.
  2. ASHRAE 147 for refrigerant leaks, recovery, and handling and storage requirements.
- D. ASHRAE/IES Compliance: Applicable requirements in ASHRAE/IES 90.1.
- E. ASME Compliance: Fabricate and label chiller to comply with ASME Boiler and Pressure Vessel Code: Section VIII, Division 1, and include an ASME U-stamp and nameplate certifying compliance.

- F. Comply with NFPA 70.
- G. Comply with requirements of UL and UL Canada and include label by a qualified testing agency showing compliance.

## 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Ship chillers from the factory fully charged with refrigerant.
- B. Ship each oil-lubricated chiller with a full charge of oil.

## 1.9 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of chillers that fail in materials or workmanship within specified warranty period.
  - 1. Extended warranties include, but are not limited to, the following:
    - a. Complete chiller including refrigerant and oil charge.
    - b. Complete compressor and drive assembly including refrigerant and oil charge.
    - c. Refrigerant and oil charge.
    - d. Parts and labor.
    - e. Loss of refrigerant charge for any reason.
  - 2. Warranty Period: Five years from date of Startup.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Site Altitude: Chiller shall be suitable for altitude in which installed without affecting performance indicated. Make adjustments to affected chiller components to account for site altitude.

### 2.2 PACKAGED, AIR-COOLED CHILLERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Carrier Corporation.
  - 2. York International Corporation.
  - 3. Quantech.
- B. Description: Factory-assembled and run-tested chiller complete with base and frame, condenser casing, compressors, compressor motors and motor controllers, evaporator, condenser coils, condenser fans and motors, electrical power, controls, and accessories.

- C. Fabricate base, frame, and attachment to chiller components strong enough to resist chiller movement during a seismic event when chiller base is anchored to field support structure.
- D. Cabinet:
  - 1. Base: Galvanized-steel base extending the perimeter of chiller. Secure frame, compressors, and evaporator to base to provide a single-piece unit.
  - 2. Frame: Rigid galvanized-steel frame secured to base and designed to support cabinet, condenser, control panel, and other chiller components not directly supported by base.
  - 3. Casing: Galvanized steel.
- E. Compressors:
  - 1. Description: Positive displacement, hermetically sealed.
  - 2. Casing: Cast iron, precision machined for minimum clearance about periphery of rotors.
  - 3. Rotors: Manufacturer's standard one- or two-rotor design.
  - 4. Each compressor provided with suction and discharge shutoff valves, crankcase oil heater, and suction strainer.
- F. Service: Easily accessible for inspection and service.
- G. Capacity Control: On-off compressor cycling and variable frequency drive speed control with hot-gas bypass, if necessary, to achieve performance indicated.
  - 1. Maintain stable operation throughout range of operation. Configure to achieve most energy-efficient operation possible.
  - 2. Operating Range: From 100 to 20 percent of design capacity.
  - 3. For units equipped with a variable-frequency controller, capacity control shall be both "valveless" and "stepless," requiring no slide valve or capacity-control valve(s) to operate at reduced capacity.
- H. Oil Lubrication System: Consisting of pump if required, filtration, heater, cooler, factory-wired power connection, and controls.
  - 1. Provide lubrication to bearings, gears, and other rotating surfaces at all operating, startup, shutdown, and standby conditions including power failure.
  - 2. Thermostatically controlled oil heater properly sized to remove refrigerant from oil.
  - 3. Factory-installed and pressure-tested piping with isolation valves and accessories.
  - 4. Oil compatible with refrigerant and chiller components.
  - 5. Positive visual indication of oil level.
- I. Vibration Control:
  - 1. Vibration Balance: Balance chiller compressors and drive assemblies to provide a precision balance that is free of noticeable vibration over the entire operating range.
    - a. Overspeed Test: 25 percent above design operating speed.
  - 2. Isolation: Mount individual compressors on vibration isolators.
- J. Compressor Motors:

1. Hermetically sealed and cooled by refrigerant suction gas.
2. High-torque, induction type with inherent thermal-overload protection on each phase.

K. Compressor Motor Controllers:

1. Variable-Frequency Controller:
  - a. Motor controller shall be factory mounted and wired on the chiller to provide a single-point, field-power termination to the chiller and its auxiliaries.
  - b. Description: NEMA ICS 2; listed and labeled as a complete unit and arranged to provide variable speed by adjusting output voltage and frequency.
  - c. Enclosure: Unit mounted, NEMA 250, Type 3R, with hinged full-front access door with lock and key.
  - d. Integral Disconnecting Means: Door-interlocked, UL 489, instantaneous-trip circuit breaker with lockable handle. Minimum withstand rating shall be as required by electrical power distribution system, but not less than 42,000 A.
  - e. Technology: Pulse-width-modulated output suitable for constant or variable torque loads.
  - f. Motor current at start shall not exceed the rated load amperes, providing no electrical inrush.

L. Refrigerant Circuits:

1. Refrigerant: R-513A.
2. Refrigerant Compatibility: Chiller parts exposed to refrigerants shall be fully compatible with refrigerants, and pressure components shall be rated for refrigerant pressures.
3. Refrigerant Circuit: Each shall include a thermal- or electronic-expansion valve, refrigerant charging connections, a hot-gas muffler, compressor suction and discharge shutoff valves, a liquid-line shutoff valve, a replaceable-core filter-dryer, a sight glass with moisture indicator, a liquid-line solenoid valve, and an insulated suction line.
4. Pressure Relief Device:
  - a. Comply with requirements in ASHRAE 15 and in applicable portions of ASME Boiler and Pressure Vessel Code: Section VIII, Division 1.
  - b. ASME-rated, spring-loaded pressure relief valve; single- or multiple-reseating type.

M. Evaporator:

1. Description: Shell-and-tube design.

Retain one of first two subparagraphs below, or both. Indicate evaporator type on Drawings if Project requirements for multiple chillers differ. Evaporator types vary among chiller manufacturers and models. Retaining a specific type may exclude some listed manufacturers. Verify availability of type with manufacturer.

- a. Direct-expansion type with fluid flowing through the shell, and refrigerant flowing through the tubes within the shell.
- b. Flooded type with fluid flowing through tubes and refrigerant flowing around tubes within the shell.

2. Code Compliance: Tested and stamped according to ASME Boiler and Pressure Vessel Code: Section VIII, Division 1.
3. Shell Material: Carbon steel.
4. Shell Heads: Removable carbon-steel heads located at each end of the tube bundle.
5. Fluid Nozzles: Terminated with mechanical-coupling end connections for connection to field piping.
6. Tube Construction: Individually replaceable copper tubes with enhanced fin design, expanded into tube sheets.
7. Heater: Factory-installed and -wired electric heater with integral controls designed to protect the evaporator to minus 20 deg F.

N. Air-Cooled Condenser:

1. Plate-fin coil with integral subcooling on each circuit, rated at 450 psig.
  - a. Construct coil casing of galvanized steel.
  - b. Construct coils of copper tubes mechanically bonded to aluminum or copper fins.
  - c. Provide baked-epoxy, corrosion resistant coating after fabrication.
  - d. Hail Protection: Provide condenser coils with louvers, baffles, or hoods to protect against hail damage.
2. Fans: Direct-drive propeller type with statically and dynamically balanced fan blades, arranged for vertical air discharge.
3. Fan Motors: Totally enclosed nonventilating or totally enclosed air over enclosure, with permanently lubricated bearings. Equip each motor with overload protection integral to either the motor or chiller controls.
4. Fan Guards: Steel safety guards with corrosion-resistant coating.

O. Electrical Power:

1. Factory-installed and -wired switches, motor controllers, transformers, and other electrical devices necessary shall provide a single-point, field-power connection to chiller.
2. House in a unit-mounted, NEMA 250, Type 3R enclosure with hinged access door.
3. Wiring shall be numbered to match wiring diagram.
4. Install factory wiring outside of an enclosure in a raceway.
5. Field-power interface shall be to NEMA KS 1, heavy-duty, nonfused disconnect switch.
  - a. Disconnect means shall be interlocked with door operation.
  - b. Minimum withstand rating shall be as required by electrical power distribution system, but not less than 42,000 A.
6. Provide branch power circuit to each motor and to controls with one of the following disconnecting means:
  - a. NEMA KS 1, heavy-duty, fusible switch with rejection-type fuse clips rated for fuses. Select and size fuses to provide Type 2 protection according to IEC 60947-4-1.
  - b. UL 489, motor-circuit protector (circuit breaker) with field-adjustable, short-circuit-trip set point.

7. Provide each motor with overcurrent protection.
8. Overload relay sized according to UL 1995 or an integral component of chiller control microprocessor.
9. Phase-Failure and Undervoltage Relays: Solid-state sensing with adjustable settings.
10. Provide power factor correction capacitors to correct power factor to 0.90 at full load.
11. Control Transformer: Unit-mounted transformer with primary and secondary fuses and sized with enough capacity to operate electrical load plus spare capacity.
  - a. Power unit-mounted controls where indicated.
  - b. Power unit-mounted, ground fault interrupt duplex receptacle.
12. Convenience receptacle:
  - a. Provide unit mounted, 15A, 120V, GFCI convenience receptacle powered by factory provided control transformer at each chiller.
  - b. Provide field installed, unit mounted, 15A, 120V, GFCI convenience receptacle on chiller frame with separate 120V circuit routed from spare breaker from a suitable panelboard in the mechanical/electrical room to each chiller. Field verify and coordinate acceptable panelboard and spare circuit breakers. Responsibility for complete and operable convenience receptacle lies with chiller manufacturer and MC – coordinate requirements and include all labor and materials required for subcontractors as necessary to meet this requirement.
13. Control Relays: Auxiliary and adjustable time-delay relays.
14. For chiller electrical power supply, indicate the following:
  - a. Current and phase to phase for all three phases.
  - b. Voltage, phase to phase, and phase to neutral for all three phases.
  - c. Three-phase real power (kilowatts).
  - d. Three-phase reactive power (kilovolt amperes reactive).
  - e. Power factor.
  - f. Running log of total power versus time (kilowatt-hours).
  - g. Fault log, with time and date of each.

P. Controls:

1. Standalone and microprocessor based.
2. Enclosure: Share enclosure with electrical power devices or provide a separate enclosure for remote mounting in the field.
3. Operator Interface: Multiple-character digital or graphic display with dynamic update of information and with keypad or touch-sensitive display located on front of control enclosure. In either imperial or metric units, display the following information:
  - a. Date and time.
  - b. Operating or alarm status.
  - c. Operating hours.
  - d. Outdoor-air temperature if required for chilled-water reset.
  - e. Temperature and pressure of operating set points.
  - f. Entering and leaving temperatures of chilled water.
  - g. Refrigerant pressures in evaporator and condenser.
  - h. Saturation temperature in evaporator and condenser.

- i. No cooling load condition.
  - j. Elapsed time meter (compressor run status).
  - k. Pump status.
  - l. Antirecycling timer status.
  - m. Percent of maximum motor amperage.
  - n. Current-limit set point.
  - o. Number of compressor starts.
4. Control Functions:
  - a. Manual or automatic startup and shutdown time schedule.
  - b. Entering and leaving chilled-water temperatures, control set points, and motor load limits.
  - c. Current limit and demand limit.
  - d. External chiller emergency stop.
  - e. Antirecycling timer.
  - f. Automatic lead-lag switching.
5. Manually Reset Safety Controls: The following conditions shall shut down chiller and require manual reset:
  - a. Low evaporator pressure or high condenser pressure.
  - b. Low chilled-water temperature.
  - c. Refrigerant high pressure.
  - d. High or low oil pressure.
  - e. High oil temperature.
  - f. Loss of chilled-water flow.
  - g. Control device failure.
6. Trending: Capability to trend analog data of up to five parameters simultaneously over an adjustable period and frequency of polling.
7. Security Access: Provide electronic security access to controls through identification and password with at least three levels of access: view only; view and operate; and view, operate, and service.
8. Control Authority: At least four conditions: Off, local manual control at chiller, local automatic control at chiller, and automatic control through a remote source.
9. Interface with DDC System for HVAC: Factory-installed hardware and software to enable the DDC system for HVAC to monitor, control, and display chiller status and alarms.
  - a. Hardwired Points:
    - 1) Monitoring: On-off status, common trouble alarm.
    - 2) Control: On-off operation, chilled-water, discharge temperature set-point adjustment.
  - b. ASHRAE 135 (BACnet) communication interface with the DDC system for HVAC shall enable the DDC system for HVAC operator to remotely control and monitor the chiller from an operator workstation. Control features and monitoring points displayed locally at chiller control panel shall be available through the DDC system for HVAC.

## Q. Insulation:

1. Material: Closed-cell, flexible elastomeric, thermal insulation complying with ASTM C534, Type I for tubular materials and Type II for sheet materials.
2. Thickness: 3/4 inch.
3. Factory-applied insulation over cold surfaces of chiller components.
  - a. Adhesive: As recommended by insulation manufacturer and applied to 100 percent of insulation contact surface. Seal seams and joints.
4. Apply protective coating to exposed surfaces of insulation to protect insulation from weather.

## R. Accessories:

1. Factory-furnished, chilled-water flow switches for field installation.
2. Individual compressor suction and discharge pressure gages with shutoff valves for each refrigerant circuit.
3. Factory-furnished neoprene or spring isolators for field installation.
4. Tool Kit: Chiller manufacturer shall assemble a tool kit specially designed for use in serving the chiller(s) furnished. Include special tools required to service chiller components not readily available to Owner service personnel in performing routine maintenance. Place tools in a lockable case with hinged cover. Provide a list of each tool furnished and attach the list to underside of case cover.

## S. Capacities and Characteristics:

1. Full-Load Efficiency (EER): Must meet or exceed basis of design shown on schedule.
2. Full-Load Efficiency (Power Input/Cooling Output): Must meet or exceed basis of design shown on schedule.
3. Part-Load Efficiency (IPLV): Must meet or exceed basis of design shown on schedule.
4. Part-Load Efficiency (NPLV): Must meet or exceed basis of design shown on schedule.
5. Low Ambient Operation: Chiller designed for operation to 32 deg F.
6. High Ambient Operation: Chiller designed for operation to 105 deg F.
7. Evaporator:
  - a. Configuration: Integral to chiller.
  - b. Pressure Rating: 150 psig.
  - c. Fluid Type: Water.
8. Control Electrical Requirements:
  - a. Power Connection: Fed through integral transformer.
9. Noise Rating: Sound pressure and power level ratings must be no higher than scheduled basis of design values. Refer to schedule on drawings.

## 2.3 SOURCE QUALITY CONTROL

- A. Perform functional tests of chillers before shipping.

- B. Factory run test each air-cooled chiller with water flowing through evaporator.
- C. Factory test and inspect evaporator and condenser according to ASME Boiler and Pressure Vessel Code: Section VIII, Division 1.
- D. For chillers located outdoors, rate sound power level according to AHRI 370.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine chillers before installation. Reject chillers that are damaged.
- B. Examine roughing-in for equipment support, anchor-bolt sizes and locations, piping, and electrical connections to verify actual locations, sizes, and other conditions affecting chiller performance, maintenance, and operations before equipment installation.
  - 1. Final chiller locations indicated on Drawings are approximate. Determine exact locations before roughing-in for piping and electrical connections.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 CHILLER INSTALLATION

- A. Coordinate sizes and locations of concrete bases with actual equipment provided. Cast anchor-bolt inserts into bases.
- B. Install chillers on concrete equipment pad. Refer to site/civil drawings..
- C. Maintain manufacturer's recommended clearances for service and maintenance.
- D. Install separate devices furnished by manufacturer and not factory installed.

#### 3.3 CONNECTIONS

- A. Comply with requirements for piping specified in Section 23 2113 "Hydronic Piping," Section 23 2116 Hydronic Piping Specialties," Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Install piping adjacent to chiller to allow service and maintenance.
- C. Evaporator Fluid Connections: Connect to evaporator inlet with shutoff valve, flexible connector, thermometer, and plugged tee with pressure gage. Connect to evaporator outlet with shutoff valve, balancing valve, flexible connector, flow switch, thermometer, plugged tee with shutoff valve and pressure gage, and drain connection with valve. Make connections to chiller with a mechanical coupling. Refer to details on drawings. Install fluid pressure relief valve per ASME requirements.

- D. Connect each chiller drain connection with a union and drain pipe, and extend pipe, full size of connection, to exterior of unit cabinet or frame. Provide a shutoff valve and hose-end connection at each connection.

### 3.4 STARTUP SERVICE

- A. Engage a factory-authorized service representative to perform startup service.
  - 1. Complete installation and startup checks according to manufacturer's written instructions.
  - 2. Verify that refrigerant charge is sufficient and chiller has been leak tested.
  - 3. Verify that pumps are installed and functional.
  - 4. Verify that thermometers and gages are installed.
  - 5. Operate chiller for run-in period.
  - 6. Check bearing lubrication and oil levels.
  - 7. For chillers installed indoors, verify that refrigerant pressure relief device is vented outdoors.
  - 8. Verify proper motor rotation.
  - 9. Verify static deflection of vibration isolators, including deflection during chiller startup and shutdown.
  - 10. Verify and record performance of fluid flow and low-temperature interlocks for evaporator and condenser.
  - 11. Verify and record performance of chiller protection devices.
  - 12. Test and adjust controls and safeties. Replace damaged or malfunctioning controls and equipment.
- B. Inspect field-assembled components, equipment installation, and piping and electrical connections for proper assembly, installation, and connection.
- C. Prepare test and inspection startup reports.

### 3.5 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain chillers. Video record the training sessions. Provide written instructions and training and demonstration of draining and winterization of each chiller.

END OF SECTION 23 6426.13

**DEMOLITION FOUNDATION PLAN NOTES**

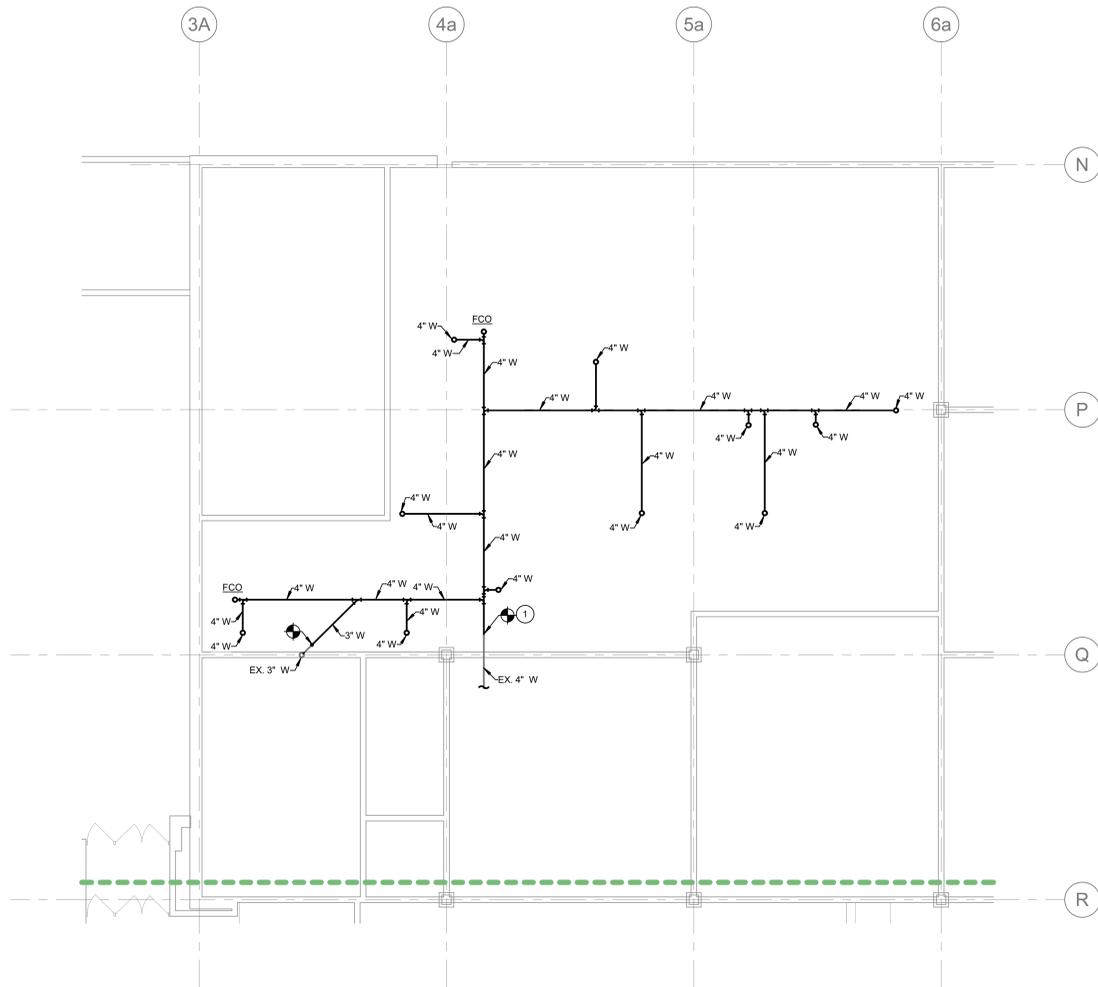
1 REMOVE EXISTING SUMP PIT, PUMPS, AND ASSOCIATED PIPING COMPLETE.

**PLUMBING PLAN NOTES**

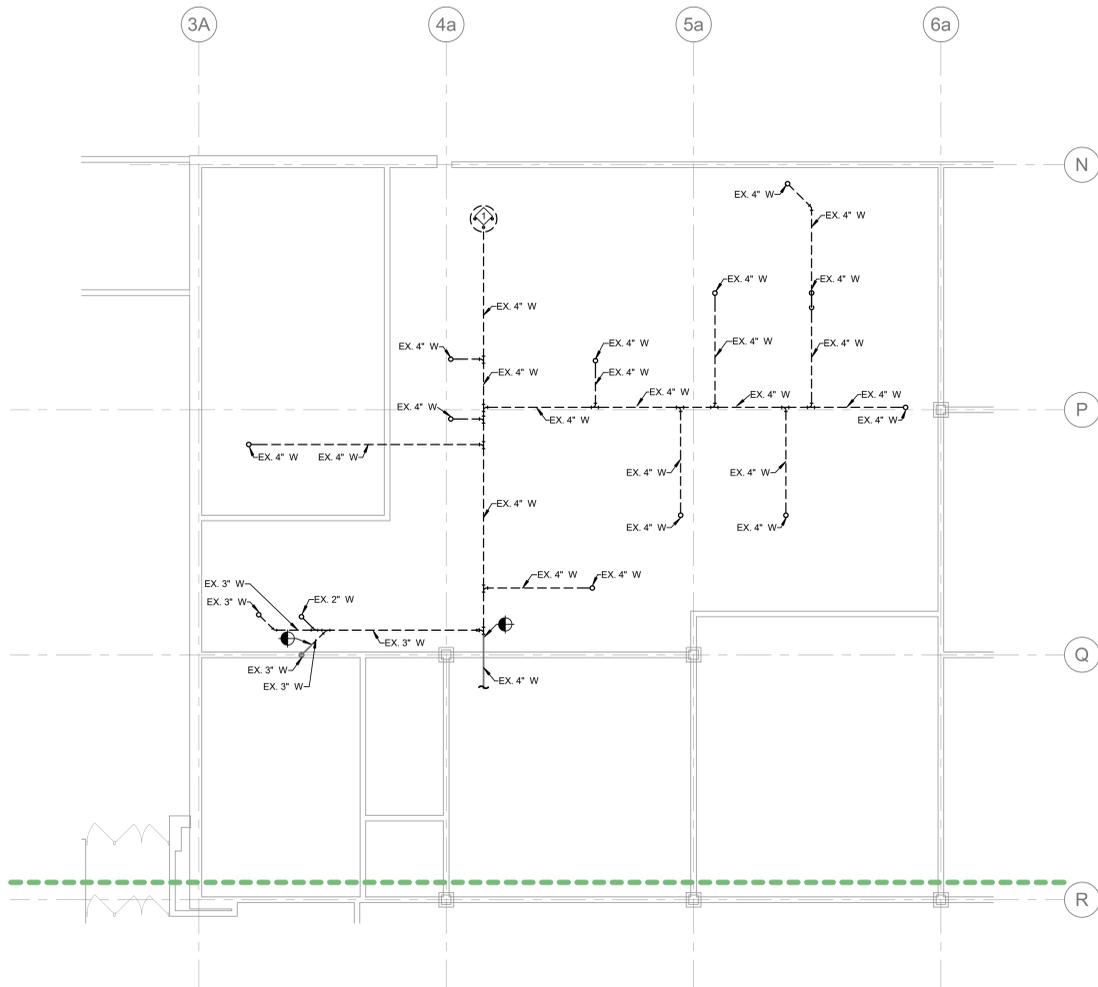
1 VERIFY WASTE PIPING IS CLEAR AND IN GOOD CONDITION AT THIS POINT. VERIFY INVERT ELEVATION IS ADEQUATE PRIOR TO START OF ANY WORK.

**PLUMBING DEMOLITION GENERAL NOTES**

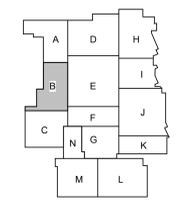
1. REMOVE EXISTING WASTE PIPING AS NEEDED TO INSTALL NEW WASTE PIPING. ABANDON ALL OTHER EXISTING PIPING IN PLACE AND FILL WITH FLOWABLE FILL.



**2 PLUMBING FOUNDATION MECHANICAL ROOM PLAN**  
1/8" = 1'-0"



**1 PLUMBING DEMOLITION FOUNDATION MECHANICAL ROOM PLAN**  
1/8" = 1'-0"



PERRY TOWNSHIP SCHOOLS  
PERRY MERIDIAN HS MEP PACKAGE  
401 W MERIDIAN SCHOOL RD,  
INDIANAPOLIS, IN 46217



REVISIONS:	#	Date	Desc:
	1	03-26-2026	Addressed #2

100% CONSTRUCTION DOCUMENTS  
PROJECT: #24173P  
DATE: 03-16-2026  
DRAWN BY: JOP

**PLUMBING FOUNDATION MECHANICAL ROOM PLANS**

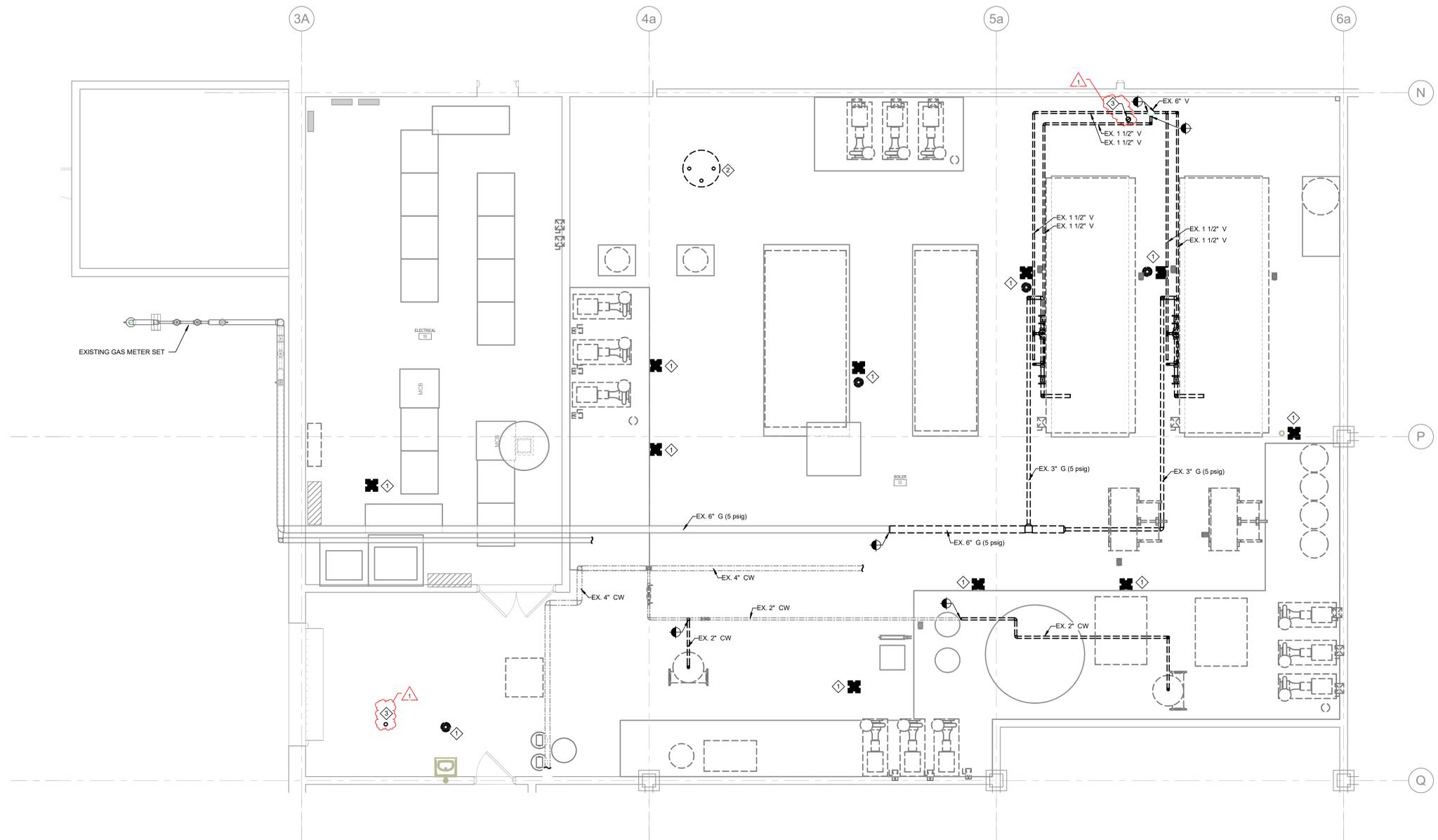
**P-401**

**LANCER ASSOCIATES ARCHITECTURE**  
145 N EAST ST.  
INDIANAPOLIS, IN 46204

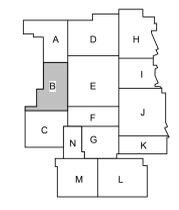


**DEMOLITION ENLARGED PLAN NOTES**

- 1 REMOVE EXISTING FLOOR DRAIN COMPLETE. FILL UNDERGROUND PIPING WITH FLOWABLE FILL, CAP, AND ABANDON PIPING IN PLACE. PATCH FLOOR TO MATCH EXISTING.
- 2 REMOVE EXISTING SUMP, PIT, PUMPS, AND ASSOCIATED PIPING COMPLETE.
- 3 REMOVE EXISTING FLOOR CLEANOUT COMPLETE. FILL UNDERGROUND PIPING WITH FLOWABLE FILL, CAP, AND ABANDON PIPING IN PLACE. PATCH FLOOR TO MATCH EXISTING.



**1 PLUMBING DEMOLITION ENLARGED MECHANICAL ROOM PLAN**  
1/4" = 1'-0"



PERRY TOWNSHIP SCHOOLS  
PERRY MERIDIAN HS MEP PACKAGE  
401 W MERIDIAN SCHOOL RD,  
INDIANAPOLIS, IN 46217



REVISIONS:

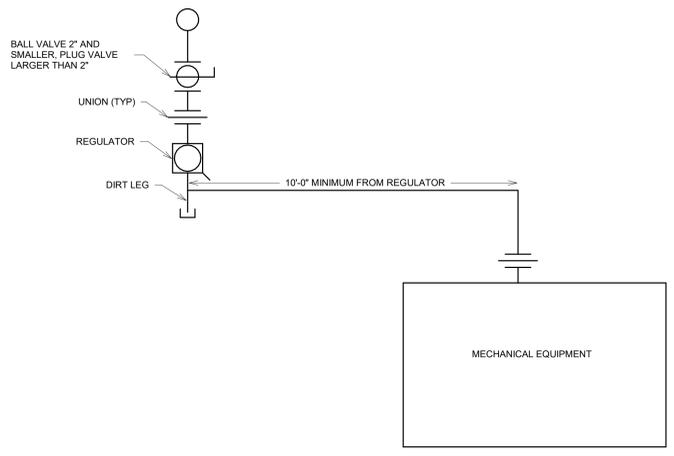
#	Date	Desc.
1	03-16-2026	Addendum #2

100% CONSTRUCTION DOCUMENTS  
PROJECT: #24173P  
DATE: 03-16-2026  
DRAWN BY: JOP

PLUMBING DEMOLITION ENLARGED MECHANICAL ROOM PLAN

P-402

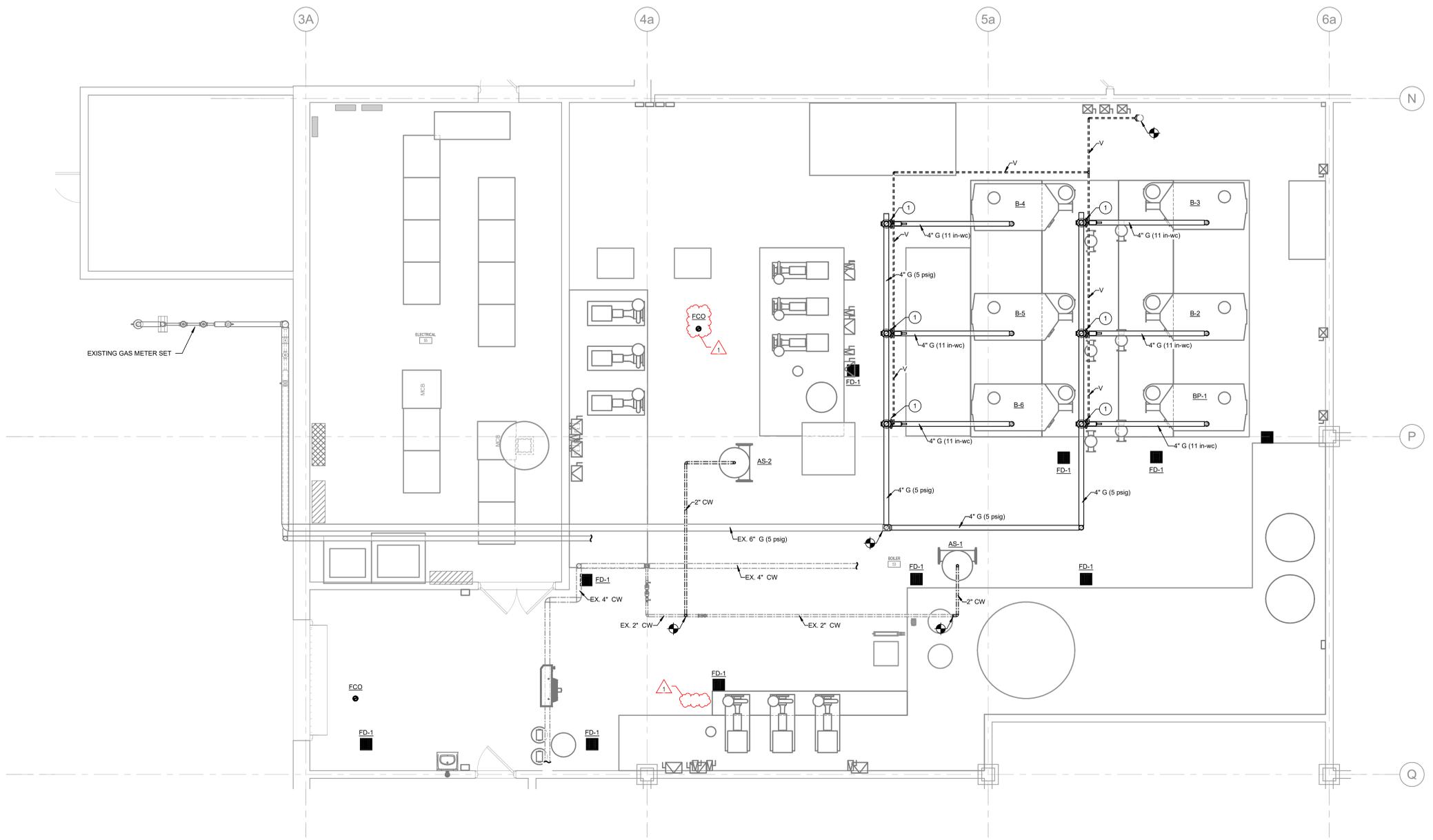




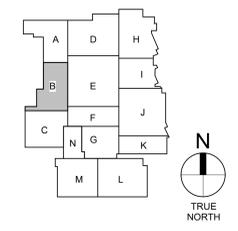
**2 GAS CONNECTION TO MECHANICAL EQUIPMENT DETAIL**  
NOT TO SCALE

**ENLARGED PLUMBING PLAN NOTES**  
1 GAS REGULATOR - 5 PSIG TO 11" W.C. @ 5,000 CFH. SEE DETAIL 2/P-402 FOR MORE INFORMATION. SIZE VENT PIPING ACCORDING TO MANUFACTURERS RECOMMENDATIONS.

SANITARY WASTE PIPING SPECIALTIES SCHEDULE (221319)						
IDENTITY DATA						
MARK	MANUFACTURER	MODEL	DESCRIPTION	W CONNECTION	NOTES	
FD-1	ZURN	#2662-DG	DUOCO CAST IRON BODY WITH FLASHING COLLAR AND CAST IRON GRATE, SQUARE GRATE AND SEDIMENT BUCKET	4"		



**1 PLUMBING ENLARGED MECHANICAL ROOM PLAN**  
1/4" = 1'-0"



PERRY TOWNSHIP SCHOOLS  
PERRY MERIDIAN HS MEP PACKAGE  
401 W MERIDIAN SCHOOL RD,  
INDIANAPOLIS, IN 46217



REVISIONS:

#	Date	Desc.
1	03-26-2026	Addressum #2

100% CONSTRUCTION DOCUMENTS  
PROJECT: #24173P  
DATE: 02-16-2026  
DRAWN BY: JOP

PLUMBING ENLARGED MECHANICAL ROOM PLAN

P-403

LANCER ASSOCIATES ARCHITECTURE  
145 N EAST ST.  
INDIANAPOLIS, IN 46204



AIR COOLED CHILLER SCHEDULE - 23 64 23																																
IDENTITY DATA			MAX. UNIT DIMENSIONS			MAX. WEIGHT (LBS)	FLUID TYPE	CAPACITY		EVAPORATOR DATA				COMPRESSOR DATA				REFRIGERANT DATA		CONDENSER FAN DATA		SOUND DATA		PERFORMANCE			ELECTRICAL DATA					
MARK	MANUFACTURER	MODEL	L	W	H			NOMINAL (TONS)	EFFECTIVE (TONS)	FLOW (GPM)	MIN. FLOW (GPM)	EWT / LWT (°F)	AMB. (°F)	WPD (FT-WG)	FOULING FACTOR	TYPE	QTY	# OF CIRCUITS	VFD	TYPE	CHARGE (LB)	QTY	FAN RLA EA.	POWER/PRESSURE (DBA)	EER	IPLV	COP	VOLTS / PH / HZ	UNIT POWER (KW)	MCA (A)	MOC (A)	NOTES
CH-1	CARRIER	30XV400	453"	88"	99"	24,595	WATER	400	400	962	600	54 / 44	95	22.8	0.0001	SCREW	1	2	YES	R-513A	583	18	2.40		9.7	18.4	2.9	460 / 3 / 60	493.0	740.4	1000	1-6
CH-2	CARRIER	30XV400	453"	88"	99"	24,595	WATER	400	400	962	600	54 / 44	95	22.8	0.0001	SCREW	1	2	YES	R-513A	583	18	2.40		9.7	18.4	2.9	460 / 3 / 60	493.0	740.4	1000	1-6
CH-3	CARRIER	30XV400	453"	88"	99"	24,595	WATER	400	400	962	600	54 / 44	95	22.8	0.0001	SCREW	1	2	YES	R-513A	583	18	2.40		9.7	18.4	2.9	460 / 3 / 60	493.0	740.4	1000	1-6

- AIR COOLED CHILLER SCHEDULE NOTES:**
1. MANUFACTURER PROVIDED OVERCURRENT PROTECTED DISCONNECT.
  2. SINGLE POINT POWER.
  3. HIGH-FAULT 65 KA SCOR.
  4. STARTER TYPE: ACROSS-THE-LINE. PROVIDE 120V/1PH HEATER FOR FREEZE PROTECTION OF BUNDLE.
  5. HAIL GUARDS.
  6. PIPE COVER PANELS / END PANELS.

BOILER SCHEDULE - 23 52 16																						
IDENTITY DATA			HEATING DATA			GAS PRESSURE DATA				WATER DATA				ELECTRICAL DATA								
MARK	MANUFACTURER	MODEL	TYPE	WEIGHT (LBS)	INPUT (MBH)	OUTPUT (MBH)	EFF (%)	TYPE	MINIMUM (PSI)	MAXIMUM (PSI)	FLOW (GPM)	WPD (FT-WG)	EWT /LWT (°F)	FLUID TYPE	V/PH/HZ	FLA (A)	MOC (A)	NOTES				
B-1	LOCHINVAR	FBN5001	CONDENSING	4,100	4,999,000	4,800,000	96.0	NG	4	14	480	13.9	120 / 140	WATER	480 / 3 / 60	5	15	1-5				
B-2	LOCHINVAR	FBN5001	CONDENSING	4,100	4,999,000	4,800,000	96.0	NG	4	14	480	13.9	120 / 140	WATER	480 / 3 / 60	5	15	1-5				
B-3	LOCHINVAR	FBN5001	CONDENSING	4,100	4,999,000	4,800,000	96.0	NG	4	14	480	13.9	120 / 140	WATER	480 / 3 / 60	5	15	1-5				
B-4	LOCHINVAR	FBN5001	CONDENSING	4,100	4,999,000	4,800,000	96.0	NG	4	14	480	13.9	120 / 140	WATER	480 / 3 / 60	5	15	1-5				
B-5	LOCHINVAR	FBN5001	CONDENSING	4,100	4,999,000	4,800,000	96.0	NG	4	14	480	13.9	120 / 140	WATER	480 / 3 / 60	5	15	1-5				
B-6	LOCHINVAR	FBN5001	CONDENSING	4,100	4,999,000	4,800,000	96.0	NG	4	14	480	13.9	120 / 140	WATER	480 / 3 / 60	5	15	1-5				

- BOILER SCHEDULE NOTES:**
1. SEE BOILER PIPING INSTALLATION DETAIL 4M-501.
  2. MANUFACTURER SHALL PROVIDE A FACTORY OR FIELD INSTALLED RELAY FOR PRIMARY PUMP CONTROL FOR EACH BOILER.
  3. MANUFACTURER SHALL PROVIDE A BACNET COMMUNICATING MASTER BOILER CONTROLLER FOR CONTROL OF ALL BOILER IN EACH LOCATION.
  4. MANUFACTURER SHALL PROVIDE A BOILER SUPPLY HEADER TEMPERATURE SENSOR FOR FIELD MOUNTING.
  5. ACID NEUTRALIZATION KIT.

HYDRONIC CABINET UNIT HEATER SCHEDULE - 23 82 39.13																						
IDENTITY DATA			HEATING DATA				FAN DATA				ELECTRICAL DATA											
MARK	MANUFACTURER	MODEL	WEIGHT (LBS)	CAPACITY (BTUH)	FLOW (GPM)	EWT/LWT (°F)	WPD (FT-WG)	EAT/LAT (°F)	FLUID TYPE	AIRFLOW (CFM)	ESP (IN-WG)	FAN TYPE	DRIVE	RPM	HP	# SPEED	VOLT/PH/HZ	FLA (A)	MOC (A)	NOTES		
PUH-1	REZNOR	UWS	142	150,000	18.0	140 / 120	5.0	50 / 90	WATER	3,800	0.25	AXIAL FAN	DIRECT	1,050	0.50	LOW	120/1/60	7.3	15.0	1-2		

- HYDRONIC CABINET UNIT HEATER SCHEDULE NOTES:**
1. DISCONNECT SWITCH BY MANUFACTURER. DISCONNECT SWITCH AND ALL INTERLOCK RELAYS TO BE INSTALLED WITHIN HEATER ENCLOSURE.
  2. MOUNT THERMOSTAT ON UNIT.

PUMP SCHEDULE - 23 21 23																						
IDENTITY DATA				IMPELLER DATA				SYSTEM DATA				FLUID DATA				MOTOR DATA			ELECTRICAL DATA			
MARK	MANUFACTURER	SERIES	MODEL	FRAME	IMPELLER SIZE (IN)	SYSTEM SERVED	WEIGHT (LBS)	TYPE	FLUID TYPE	FLOW (GPM)	HEAD (FT-WG)	TEMP (°F)	EFF (%)	SPEED (RPM)	HP	BHP	VOLTS / PH / HZ	NOTES				
BP-1	BELL & GOSSETT	e-80	5X5X9.5B	215JM	8.00	HW	375	CLOSE COUPLED IN-LINE CENTRIFUGAL	WATER	480	45.0	140	75.9	1,630	10	6.9	480 / 3 / 60	3				
BP-2	BELL & GOSSETT	e-80	5X5X9.5B	215JM	8.00	HW	375	CLOSE COUPLED IN-LINE CENTRIFUGAL	WATER	480	45.0	140	75.9	1,630	10	6.9	480 / 3 / 60	3				
BP-3	BELL & GOSSETT	e-80	5X5X9.5B	215JM	8.00	HW	375	CLOSE COUPLED IN-LINE CENTRIFUGAL	WATER	480	45.0	140	75.9	1,630	10	6.9	480 / 3 / 60	3				
BP-4	BELL & GOSSETT	e-80	5X5X9.5B	215JM	8.00	HW	375	CLOSE COUPLED IN-LINE CENTRIFUGAL	WATER	480	45.0	140	75.9	1,630	10	6.9	480 / 3 / 60	3				
BP-5	BELL & GOSSETT	e-80	5X5X9.5B	215JM	8.00	HW	375	CLOSE COUPLED IN-LINE CENTRIFUGAL	WATER	480	45.0	140	75.9	1,630	10	6.9	480 / 3 / 60	3				
BP-6	BELL & GOSSETT	e-80	5X5X9.5B	215JM	8.00	HW	375	CLOSE COUPLED IN-LINE CENTRIFUGAL	WATER	480	45.0	140	75.9	1,630	10	6.9	480 / 3 / 60	3				
HWP-1	BELL & GOSSETT	e-1510	5GB	364T	13.5	HW	790	BASE MOUNTED END SUCTION PUMP	WATER	1200	130	140	83.4	1,670	60	46.3	480 / 3 / 60	1-2				
HWP-2	BELL & GOSSETT	e-1510	5GB	364T	13.5	HW	790	BASE MOUNTED END SUCTION PUMP	WATER	1200	130	140	83.4	1,670	60	46.3	480 / 3 / 60	1-2				
HWP-3	BELL & GOSSETT	e-1510	5GB	364T	13.5	HW	790	BASE MOUNTED END SUCTION PUMP	WATER	1200	130	140	83.4	1,670	60	46.3	480 / 3 / 60	1-2				
CHP-1	BELL & GOSSETT	e-1510	5BD	284T	9.5	CW	450	BASE MOUNTED END SUCTION PUMP	WATER	1000	75	44	87.4	1,756	25	21.6	480 / 3 / 60	1-2				
CHP-2	BELL & GOSSETT	e-1510	5BD	284T	9.5	CW	450	BASE MOUNTED END SUCTION PUMP	WATER	1000	75	44	87.4	1,756	25	21.6	480 / 3 / 60	1-2				
CHP-3	BELL & GOSSETT	e-1510	5BD	284T	9.5	CW	450	BASE MOUNTED END SUCTION PUMP	WATER	1000	75	44	87.4	1,756	25	21.6	480 / 3 / 60	1-2				
CHP-4	BELL & GOSSETT	e-1610	4GC	326T	13.5	CW	520	BASE MOUNTED END SUCTION PUMP	WATER	1000	130	44	80.4	1,685	50	41	480 / 3 / 60	1-2				
CHP-5	BELL & GOSSETT	e-1510	4GC	326T	13.5	CW	520	BASE MOUNTED END SUCTION PUMP	WATER	1000	130	44	80.4	1,685	50	41	480 / 3 / 60	1-2				
CHP-6	BELL & GOSSETT	e-1510	4GC	326T	13.5	CW	520	BASE MOUNTED END SUCTION PUMP	WATER	1000	130	44	80.4	1,685	50	41	480 / 3 / 60	1-2				

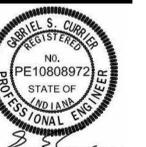
- PUMP SCHEDULE NOTES:**
1. PROVIDE ACCESSORIES PER DETAIL 3M-501.
  2. PROVIDE FULL SIZE IMPELLER. LIMIT OVERLOAD WITH VFD.
  3. HOA STARTER BY EC. BOILER CONTROLLER SHALL CONTROL PUMP START.

EXPANSION TANK SCHEDULE - 23 21 16											
IDENTITY DATA				ACC. VOL.		OPER. TEMP.		PRECHARGE PRESSURE		MAX OPER. PRESS.	
MARK	MANUFACTURER	MODEL	SYSTEM SERVED	WEIGHT (LBS)	ACC. VOL. (GAL)	MIN (°F)	MAX (°F)	PRECHARGE PRESSURE (PSI)	VALVE (PSI)	TANK (PSI)	NOTES
ET-1	AMTROL	800L	HW	4,560	422	55	180	12	75	125	
ET-2	AMTROL	800L	HW	4,560	422	55	180	12	75	125	
ET-3	AMTROL	B400	CHW	1200	106	45	55	12	75	125	

- AIR SEPARATOR SCHEDULE NOTES:**
1. AUTOMATIC AIR VENT.
  2. DESIGNED AND CONSTRUCTED PER ASME CODE SECTION VIII DIV. 1.

AIR SEPARATOR SCHEDULE										
IDENTITY DATA			CONN. SIZE (IN)		SYSTEM SERVED		FLOW (GPM)		WPD (FT-WG)	
MARK	MANUFACTURER	MODEL	WEIGHT (LBS)	CONN. SIZE (IN)	SYSTEM SERVED	FLOW (GPM)	WPD (FT-WG)	FLUID TYPE	STRAINER	NOTES
AS-1	BELL & GOSSETT	RL-10F	2,052	10	HW	2,000	1.7	WATER	NO	1-2
AS-2	BELL & GOSSETT	RL-12F	2,052	12	CHW	3,000	3.8	WATER	NO	1-2

PERRY TOWNSHIP SCHOOLS  
PERRY MERIDIAN HS MEP PACKAGE  
401 W MERIDIAN SCHOOL RD,  
INDIANAPOLIS, IN 46217



REVISIONS:	Date	Desc.
#	Date	Address
1	03-16-2028	Address #2

100% CONSTRUCTION DOCUMENTS

PROJECT: #24173P  
DATE: 03-16-2028  
DRAWN BY: AM / JR

MECHANICAL SCHEDULES

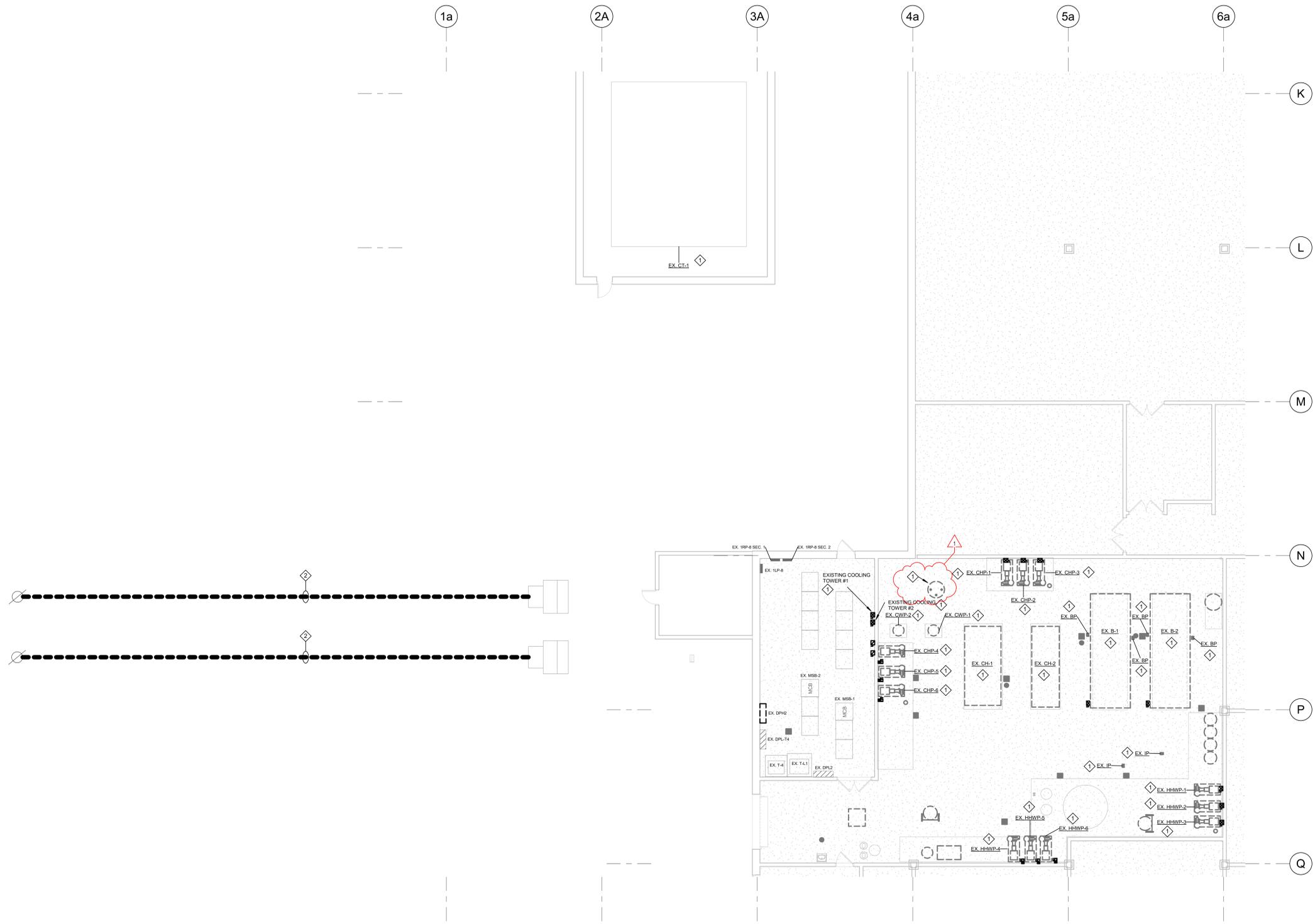
M-601

LANCER ASSOCIATES ARCHITECTURE  
145 N EAST ST.  
INDIANAPOLIS, IN 46204

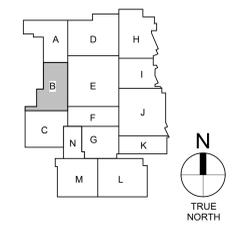


- GENERAL DEMOLITION NOTES**
- A REFER TO ELECTRICAL SYMBOLS AND ABBREVIATIONS SHEET E-001 FOR ADDITIONAL INFORMATION.
  - B THIS DRAWING REPRESENTS INFORMATION OBTAINED FROM ORIGINAL CONTRACT DRAWINGS AND FIELD SURVEY. VERIFY BY ON-SITE OBSERVATION THE EXTENT OF WORK PRIOR TO SUBMISSION OF BID.
  - C CONTRACT DOCUMENTS CONSIST OF BOTH PROJECT MANUAL AND DRAWINGS AND ARE MEANT TO BE COMPLEMENTARY. ANYTHING APPEARING ON EITHER MUST BE EXECUTED THE SAME AS IF SHOWN ON BOTH.
  - D THOROUGHLY EXAMINE THE WORK OF OTHER CONTRACTORS AND PROPERLY DEMOLISH ALL WORK REQUIRED FOR THE PROJECT.
  - E THE OWNER HOLDS RIGHT OF FIRST REFUSAL FOR ALL DEMOLISHED ELECTRICAL EQUIPMENT.
  - F ALL ELECTRICAL ITEMS SHOWN WITH LIGHT LINEWORK ARE EXISTING TO REMAIN.
  - G REMOVE ALL ELECTRICAL ITEMS SHOWN WITH BOLD/DASHED LINEWORK COMPLETE.
  - H COORDINATE AND DISCONNECT ALL ARCHITECTURAL, MECHANICAL, AND PLUMBING EQUIPMENT AS NOTED FOR REMOVAL BY OTHERS. REMOVE ALL ASSOCIATED ELECTRICAL EQUIPMENT, RACEWAYS, CONDUCTORS, ETC. SERVING THE EQUIPMENT.
  - I PROVIDE ALL CUTTING AND PATCHING AS REQUIRED FOR THE REMOVAL OF EXISTING ELECTRICAL EQUIPMENT. REFER TO SPECIFICATIONS.
  - J PROVIDE A BLANK COVERPLATE FOR ALL EXISTING WALL OPENINGS WHERE ELECTRICAL EQUIPMENT HAS BEEN REMOVED AND NOT REPLACED. IN AREAS RECEIVING NEW WALL TREATMENTS, PATCH THE EXISTING OPENING.
  - K REFER TO A, M, AND P-SERIES DRAWINGS FOR AREAS WITH ABOVE CEILING WORK AND/OR CEILING REMOVAL. TEMPORARILY SUPPORT ALL ELECTRICAL DEVICES, FIXTURES, ETC. AS REQUIRED. RE-INSTALL ELECTRICAL ITEMS FOLLOWING THE COMPLETION OF WORK IN THE NEW OR EXISTING CEILINGS.
  - L PROVIDE A COMPLETE FIRE ALARM SYSTEM TEST PRIOR TO DEMOLITION.
- DEMOLITION PLAN NOTES**
- 1 DISCONNECT MECHANICAL EQUIPMENT TO BE REMOVED. DISCONNECT AND REMOVE ALL ASSOCIATED CONTROLS, STARTERS/DRIVES, AND DISCONNECTS. REMOVE CONDUIT AND WIRE BACK TO SOURCE.
  - 2 REMOVE EXISTING UTILITY PRIMARIES FROM RISER POLES TO UTILITY TRANSFORMERS THAT CONFLICTS WITH NEW CHILLER LOCATIONS. COORDINATE WORK WITH AES.

**LANCER ASSOCIATES ARCHITECTURE**  
 145 N EAST ST.  
 INDIANAPOLIS, IN 46204



**1 ELECTRICAL DEMOLITION FIRST FLOOR PLAN**  
 1/8" = 1'-0"



PERRY TOWNSHIP SCHOOLS  
 PERRY MERIDIAN HS MEP PACKAGE  
 401 W MERIDIAN SCHOOL RD,  
 INDIANAPOLIS, IN 46217



REVISIONS:	#	Date	Desc.
	1	03/28/2026	Addendum 2

100% CONSTRUCTION DOCUMENTS  
 PROJECT: #24173P  
 DATE: 02-16-2026  
 DRAWN BY: AMN

ELECTRICAL DEMOLITION FIRST FLOOR PLAN

ED101

**GENERAL POWER NOTES**

- A REFER TO ELECTRICAL SYMBOLS AND ABBREVIATIONS SHEET E-001 FOR ADDITIONAL INFORMATION.
- B PROVIDE A GEAR SUBMITTAL FOR GENERAL APPROVAL PRIOR TO CONDUCTING STUDIES. IMPLEMENT RECOMMENDATIONS TO ELECTRICAL GEAR FOR FINAL APPROVAL AFTER STUDIES ARE COMPLETED AND APPROVED.
- C COORDINATE ALL DEVICE LOCATIONS WITH ARCHITECT AND INTERIOR DESIGNER.
- D PROVIDE LABELS ON ALL EQUIPMENT MODIFIED BY THIS PROJECT. PROVIDE LABELS ON ALL JUNCTION BOXES AND CONDUITS MODIFIED OR PROVIDED BY THIS PROJECT. PROVIDE UPDATED PANELBOARD DIRECTORIES ON ALL PANELBOARDS MODIFIED BY THIS PROJECT.

**POWER PLAN NOTES**

- 1 PROVIDE NEW UTILITY PRIMARY CONDUITS WITH PULL STRINGS PER AES REQUIREMENTS FROM EXISTING RISER POLES TO UTILITY TRANSFORMERS. COORDINATE WORK WITH AES.
- 2 MOUNT VFD ON STRUT.
- 3 HEAT TRACE CONTROLLER(S) LOCATION. HEAT TRACE CONTROLLER(S) PROVIDED BY DIVISION 23. PROVIDE (4) 20A BREAKERS AT THE CIRCUITS INDICATED AND CONNECT TO THE CONTROLLER(S) AS REQUIRED.



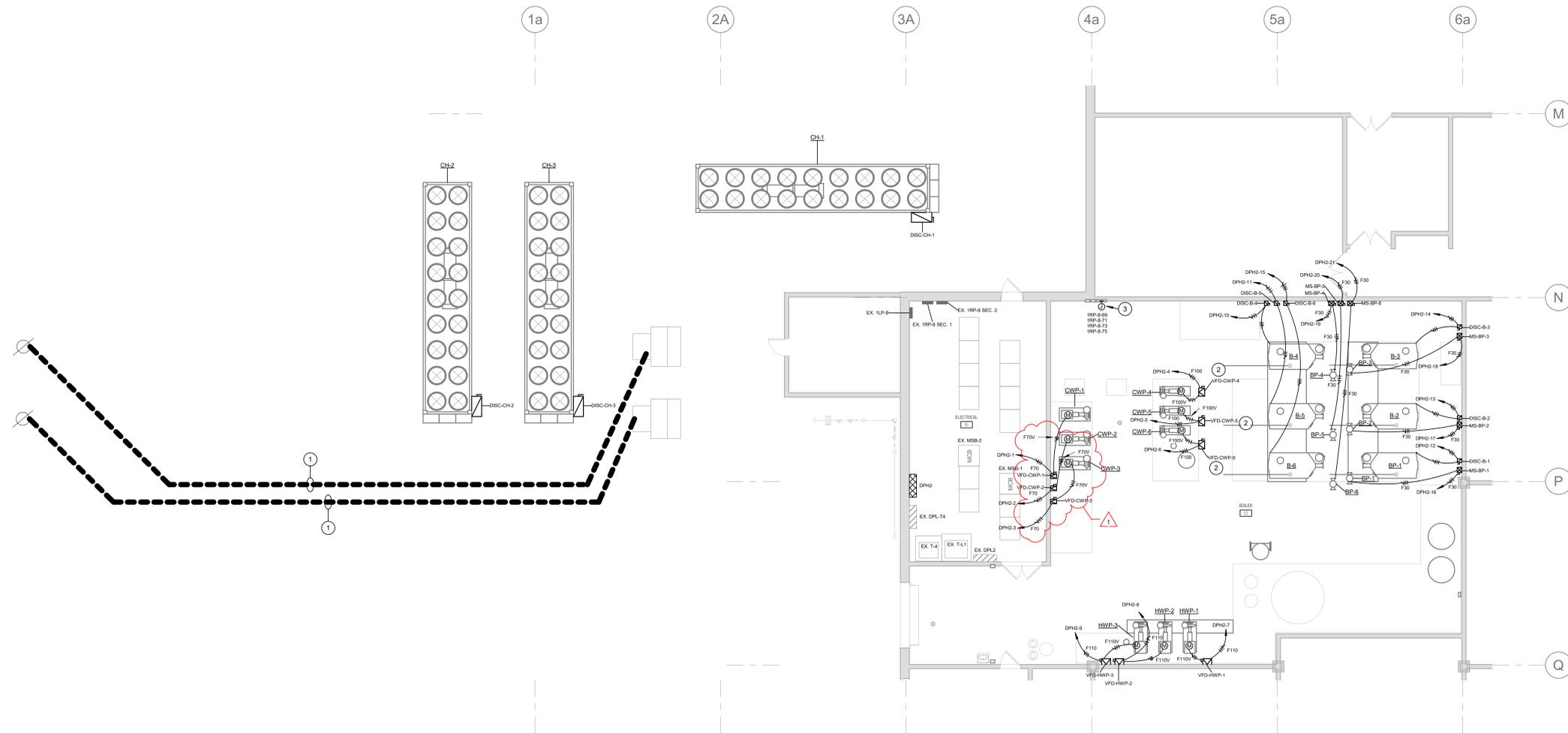
REVISONS:	#	Date	Desc.
	1	03/28/2026	Addendum 2

100% CONSTRUCTION DOCUMENTS

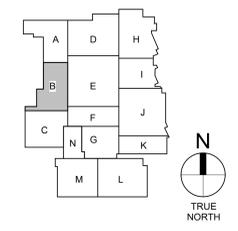
PROJECT: #24173P  
DATE: 02-16-2026  
DRAWN BY: AMN

ELECTRICAL  
POWER FIRST  
FLOOR PLAN

EP101



**1 ELECTRICAL POWER FIRST FLOOR PLAN**  
1/8" = 1'-0"



ENCLOSED SWITCHES & CIRCUIT BREAKERS SCHEDULE									
LABEL	EQUIPMENT SERVED	EQUIPMENT RATINGS				ACCESSORIES			REMARKS
		VOLTAGE	POLES	AMPERAGE	FUSED	FUSE SIZE	NEMA ENCL.	AUX. CONTACTS	
DISC-B-1	B-1	600 V	3	30 A	Yes	15A	1	(1) N.O. / N.C.	No
DISC-B-2	B-2	600 V	3	30 A	Yes	15A	1	(1) N.O. / N.C.	No
DISC-B-3	B-3	600 V	3	30 A	Yes	15A	1	(1) N.O. / N.C.	No
DISC-B-4	B-4	600 V	3	30 A	Yes	15A	1	(1) N.O. / N.C.	No
DISC-B-5	B-5	600 V	3	30 A	Yes	15A	1	(1) N.O. / N.C.	No
DISC-B-6	B-6	600 V	3	30 A	Yes	15A	1	(1) N.O. / N.C.	No
DISC-CH-1	CH-1	600 V	3	1200 A	Yes	1000A	3R	(1) N.O. / N.C.	No
DISC-CH-2	CH-2	600 V	3	1200 A	Yes	1000A	3R	(1) N.O. / N.C.	No
DISC-CH-3	CH-3	600 V	3	1200 A	Yes	1000A	3R	(1) N.O. / N.C.	No

ENCLOSED & VARIABLE-FREQUENCY MOTOR CONTROLLERS SCHEDULE											
LABEL	EQUIPMENT SERVED	EQUIPMENT RATINGS				STARTER		DISCONNECT SWITCH		REMOTE CAPACITOR	REMARKS
		VOLTAGE	PHASE	HP	FLA	NEMA ENCL.	TYPE	NEMA SIZE	TYPE		
MS-BP-1	BP-1	480 V	3	10	14.0 A	1	FVNR	1	FUSIBLE	20	3
MS-BP-2	BP-2	480 V	3	10	14.0 A	1	FVNR	1	FUSIBLE	20	3
MS-BP-3	BP-3	480 V	3	10	14.0 A	1	FVNR	1	FUSIBLE	20	3
MS-BP-4	BP-4	480 V	3	10	14.0 A	1	FVNR	1	FUSIBLE	20	3
MS-BP-5	BP-5	480 V	3	10	14.0 A	1	FVNR	1	FUSIBLE	20	3
MS-BP-6	BP-6	480 V	3	10	14.0 A	1	FVNR	1	FUSIBLE	20	3
VFD-CWP-1	CWP-1	480 V	3	25	34.0 A	-	VFD	-	-	-	-
VFD-CWP-2	CWP-2	480 V	3	25	34.0 A	-	VFD	-	-	-	-
VFD-CWP-3	CWP-3	480 V	3	25	34.0 A	-	VFD	-	-	-	-
VFD-CWP-4	CWP-4	480 V	3	30	65.0 A	-	VFD	-	-	-	-
VFD-CWP-5	CWP-5	480 V	3	50	65.0 A	-	VFD	-	-	-	-
VFD-CWP-6	CWP-6	480 V	3	50	65.0 A	-	VFD	-	-	-	-
VFD-HWP-1	HWP-1	480 V	3	60	77.0 A	1	VFD	-	-	-	-
VFD-HWP-2	HWP-2	480 V	3	60	77.0 A	1	VFD	-	-	-	-
VFD-HWP-3	HWP-3	480 V	3	60	77.0 A	1	VFD	-	-	-	-

SWITCHBOARD SCHEDULE									
SWITCHBOARD: DPH2			VOLTS: 480Y/277 V			MAINS RATING: 800 A			
LOCATION: ELECTRICAL 55			PHASES: 3			MAINS TYPE: MLO			
MOUNTING: SURFACE			WIRES: 4						
SUPPLY FROM: MSB-2			AIC RATING: 42 kA						
CKT NO.	CIRCUIT DESCRIPTION	P	FRAME SIZE	TRIP RATING	A	B	C	Load	REMARKS
1	CWP-1	3	100 A	70 A	9.42	9.42	9.42	28.27	
2	CWP-2	3	100 A	70 A	9.42	9.42	9.42	28.27	
3	CWP-3	3	100 A	70 A	9.42	9.42	9.42	28.27	
4	CWP-4	3	100 A	100 A	18.01	18.01	18.01	54.04	
5	CWP-5	3	100 A	100 A	18.01	18.01	18.01	54.04	
6	CWP-6	3	100 A	100 A	18.01	18.01	18.01	54.04	
7	HWP-1	3	200 A	110 A	21.34	21.34	21.34	64.02	
8	HWP-2	3	200 A	110 A	21.34	21.34	21.34	64.02	
9	HWP-3	3	200 A	110 A	21.34	21.34	21.34	64.02	
10	BOILER B-1	3	20 A	15 A	1.39	1.39	1.39	4.16	
11	BOILER B-2	3	20 A	15 A	1.39	1.39	1.39	4.16	
12	BOILER B-3	3	20 A	15 A	1.39	1.39	1.39	4.16	
13	BOILER B-4	3	20 A	15 A	1.39	1.39	1.39	4.16	
14	BOILER B-5	3	20 A	15 A	1.39	1.39	1.39	4.16	
15	BOILER B-6	3	20 A	15 A	1.39	1.39	1.39	4.16	
16	BOILER PUMP - BP-1	3	60 A	25 A	3.88	3.88	3.88	11.64	
17	BOILER PUMP - BP-2	3	60 A	25 A	3.88	3.88	3.88	11.64	
18	BOILER PUMP - BP-3	3	60 A	25 A	3.88	3.88	3.88	11.64	
19	BOILER PUMP - BP-4	3	60 A	25 A	3.88	3.88	3.88	11.64	
20	BOILER PUMP - BP-5	3	60 A	25 A	3.88	3.88	3.88	11.64	
21	BOILER PUMP - BP-6	3	60 A	25 A	3.88	3.88	3.88	11.64	
--	22 EXISTING AIR COMPRESSOR	3	20 A	20 A	--	--	--	0.00	
--	23 EXISTING TCAC-B118	3	20 A	20 A	--	--	--	0.00	
--	24 SPACE	1	--	--	--	--	--	--	
<b>TOTAL LOAD:</b>					177.92 kVA	177.92 kVA	177.92 kVA		
<b>TOTAL AMPS:</b>					642 A	642 A	642 A		
<b>TOTAL CONNECTED LOAD:</b>					533.76 kVA				
<b>TOTAL CONNECTED AMPS:</b>					642 A				
<b>TOTAL DEMAND LOAD:</b>					362.91 kVA				
<b>TOTAL DEMAND AMPS:</b>					437 A				
SWITCHBOARD & CIRCUIT BREAKER OPTIONS ("O" COLUMN / MCB OPTIONS ABBREVIATIONS)		LOAD CLASSIFICATION	CONNECTED LOAD (VA)	DEMAND FACTOR	ESTIMATE DEMAND (VA)				
C	CONTACTOR CONTROLLED	Mechanical - Motor	533760 VA	67.99%	362910 VA				
G	GFCI PROTECTED								
P	HANDLE LOCKING DEVICE								
S	SHUNT TRIP								
X	80% RATED MAIN CIRCUIT BREAKER WITH LSI								
Y	100% RATED MAIN CIRCUIT BREAKER WITH LSI								
Z	100% RATED MAIN CIRCUIT BREAKER WITH LSI								
<b>Notes:</b>									

LANCER ASSOCIATES ARCHITECTURE  
145 N EAST ST.  
INDIANAPOLIS, IN 46204



PERRY TOWNSHIP SCHOOLS  
PERRY MERIDIAN HS MEP PACKAGE  
401 W MERIDIAN SCHOOL RD,  
INDIANAPOLIS, IN 46217



REVISIONS:	#	Date	Desc.
	1	03/26/2026	Addendum 2

100% CONSTRUCTION DOCUMENTS  
PROJECT: #24173P  
DATE: 02-16-2026  
DRAWN BY: AMN

ELECTRICAL SCHEDULES



REVISIONS:	#	Date	Desc:
	1	03/12/2026	Adendum #01
	2	03/26/2026	Adendum #02

100% CONSTRUCTION DOCUMENTS  
PROJECT: #24173S  
DATE: 02-16-2026  
DRAWN BY: AMN

ELECTRICAL DEMOLITION FIRST FLOOR PLAN

ED101

**GENERAL DEMOLITION NOTES**

- A REFER TO ELECTRICAL SYMBOLS AND ABBREVIATIONS SHEET E-001 FOR ADDITIONAL INFORMATION.
- B THIS DRAWING REPRESENTS INFORMATION OBTAINED FROM ORIGINAL CONTRACT DRAWINGS AND FIELD SURVEY. VERIFY BY ON-SITE OBSERVATION THE EXTENT OF WORK PRIOR TO SUBMISSION OF BID.
- C CONTRACT DOCUMENTS CONSIST OF BOTH PROJECT MANUAL AND DRAWINGS AND ARE MEANT TO BE COMPLEMENTARY. ANYTHING APPEARING ON EITHER MUST BE EXECUTED THE SAME AS IF SHOWN ON BOTH.
- D THOROUGHLY EXAMINE THE WORK OF OTHER CONTRACTORS AND PROPERLY DEMOLISH ALL WORK REQUIRED FOR THE PROJECT.
- E THE OWNER HOLDS RIGHT OF FIRST REFUSAL FOR ALL DEMOLISHED ELECTRICAL EQUIPMENT.
- F ALL ELECTRICAL ITEMS SHOWN WITH LIGHT LINEWORK ARE EXISTING TO REMAIN.
- G REMOVE ALL ELECTRICAL ITEMS SHOWN WITH BOLD/DASHED LINEWORK COMPLETE.
- H COORDINATE AND DISCONNECT ALL ARCHITECTURAL, MECHANICAL, AND PLUMBING EQUIPMENT AS NOTED FOR REMOVAL BY OTHERS. REMOVE ALL ASSOCIATED ELECTRICAL EQUIPMENT, RACEWAYS, CONDUCTORS, ETC. SERVING THE EQUIPMENT.
- I PROVIDE ALL CUTTING AND PATCHING AS REQUIRED FOR THE REMOVAL OF EXISTING ELECTRICAL EQUIPMENT. REFER TO SPECIFICATIONS.
- J PROVIDE A BLANK COVERPLATE FOR ALL EXISTING WALL OPENINGS WHERE ELECTRICAL EQUIPMENT HAS BEEN REMOVED AND NOT REPLACED. IN AREAS RECEIVING NEW WALL TREATMENTS, PATCH THE EXISTING OPENING.
- K REFER TO A, M, AND P-SERIES DRAWINGS FOR AREAS WITH ABOVE CEILING WORK AND/OR CEILING REMOVAL. TEMPORARILY SUPPORT ALL ELECTRICAL DEVICES, FIXTURES, ETC. AS REQUIRED. RE-INSTALL ELECTRICAL ITEMS FOLLOWING THE COMPLETION OF WORK IN THE NEW OR EXISTING CEILINGS.
- L PROVIDE A COMPLETE FIRE ALARM SYSTEM TEST PRIOR TO DEMOLITION.
- M COORDINATE REPLACEMENT OF EQUIPMENT PER THE DEMOLITION ONE-LINE DIAGRAM, TEMPORARY ONE-LINE DIAGRAM, AND ONE-LINE DIAGRAM WITH THE OWNER TO MINIMIZE DISRUPTIONS TO SERVICE.

**DEMOLITION PLAN NOTES**

- 1 REMOVE PANELBOARDS/SWITCHBOARD INDICATED. MAINTAIN EXISTING BRANCH CIRCUITS FOR RECONNECTION TO NEW PANELBOARD AT SAME LOCATION. SEE DEMOLITION RISER DIAGRAM FOR ADDITIONAL INFORMATION.



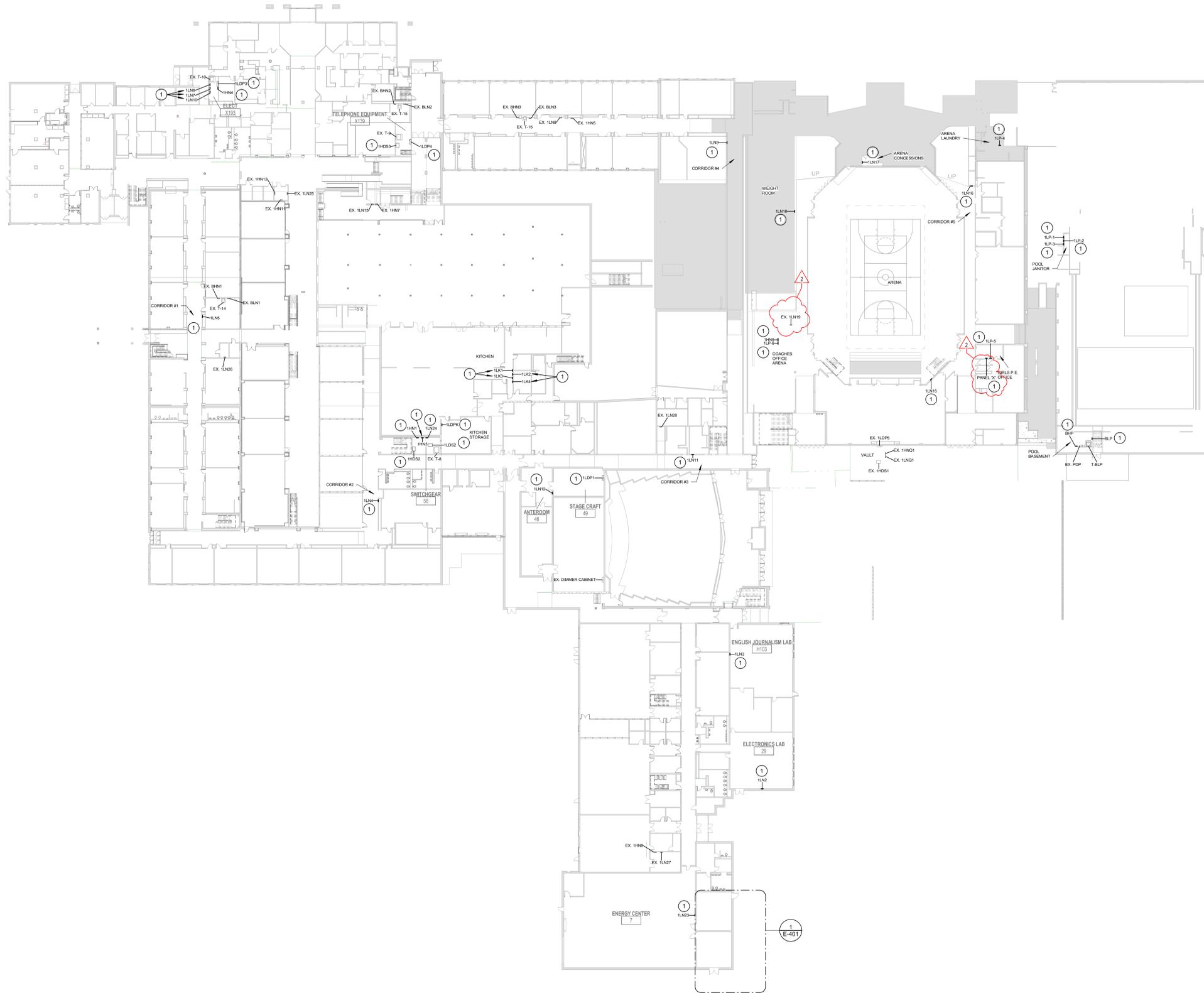
**1 ELECTRICAL DEMOLITION FIRST FLOOR PLAN**  
1/32" = 1'-0"

**GENERAL POWER NOTES**

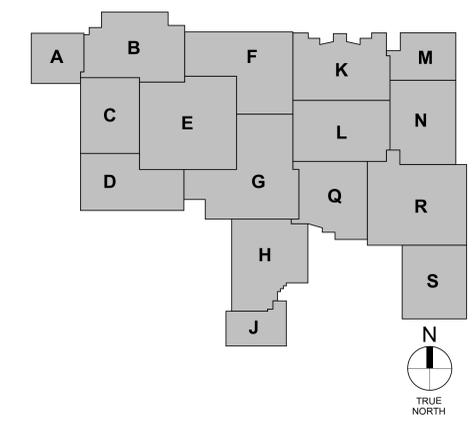
- A REFER TO ELECTRICAL SYMBOLS AND ABBREVIATIONS SHEET E-001 FOR ADDITIONAL INFORMATION.
- B PROVIDE A GEAR SUBMITTAL FOR GENERAL APPROVAL PRIOR TO CONDUCTING STUDIES. IMPLEMENT RECOMMENDATIONS TO ELECTRICAL GEAR FOR FINAL APPROVAL AFTER STUDIES ARE COMPLETED AND APPROVED.
- C COORDINATE ALL DEVICE LOCATIONS WITH ARCHITECT AND INTERIOR DESIGNER.
- D PROVIDE LABELS ON ALL EQUIPMENT MODIFIED BY THIS PROJECT. PROVIDE LABELS ON ALL JUNCTION BOXES AND CONDUITS MODIFIED OR PROVIDED BY THIS PROJECT. PROVIDE UPDATED PANELBOARD DIRECTORIES ON ALL PANELBOARDS MODIFIED BY THIS PROJECT.
- E COORDINATE REPLACEMENT OF EQUIPMENT PER THE DEMOLITION ONE-LINE DIAGRAM, TEMPORARY ONE-LINE DIAGRAM AND ONE-LINE DIAGRAM WITH THE OWNER TO MINIMIZE DISRUPTIONS TO SERVICE.

**POWER PLAN NOTES**

- 1 CONNECT BRANCH CIRCUITS THAT WERE MAINTAINED DURING DEMOLITION. REWORK CONDUIT AND WIRING AS REQUIRED. TRACE ALL CIRCUITS AND UPDATE PANELBOARD SCHEDULE. REWORK CMU FOR FLUSH MOUNTED PANELBOARDS AS REQUIRED.
- 2 LOCATE POWER SUPPLY CIRCUIT FOR FACILITY ANTENNAE AT THIS LOCATION. COORDINATE POWER INTERRUPTIONS TO THE ANTENNAE WITH THE OWNER.



**1 ELECTRICAL POWER FIRST FLOOR PLAN**  
1/32" = 1'-0"



REVISIONS:	#	Date	Desc.
	1	03/12/2026	Adendum #01
	2	03/26/2026	Adendum #02

100% CONSTRUCTION DOCUMENTS  
PROJECT: #241735  
DATE: 02-16-2026  
DRAWN BY: AMN

**ELECTRICAL POWER FIRST FLOOR PLAN**

**EP101**



**BRANCH PANELBOARD SCHEDULE**  
DESIGNATION: 1LN15  
LOCATION: ARENA  
MOUNTING: FLUSH  
SUPPLY FROM: 1LDP5

VOLTS: 208Y/120 V  
PHASES: 3  
WIRES: 4  
AIC RATING: 10 kA

MAINS RATING: 200 A  
MAINS TYPE: MLO

CKT NO.	DESCRIPTION	ROOM #	TRIP	P	A	B	C	P	TRIP	ROOM #	DESCRIPTION	CKT NO.	
1	EXISTING CIRCUIT	20 A	1	0.00	0.00			1	20 A		EXISTING CIRCUIT	2	
3	EXISTING CIRCUIT	20 A	1		0.00	0.00		1	20 A		EXISTING CIRCUIT	4	
5	EXISTING CIRCUIT	20 A	1				0.00	0.00	1	20 A	EXISTING CIRCUIT	6	
7	EXISTING CIRCUIT	20 A	1	0.00	0.00				1	20 A	EXISTING CIRCUIT	8	
9	EXISTING CIRCUIT	20 A	1		0.00	0.00			1	20 A	EXISTING CIRCUIT	10	
11	EXISTING CIRCUIT	20 A	1				0.00	0.00	1	20 A	EXISTING CIRCUIT	12	
13	EXISTING CIRCUIT	20 A	1					0.00	0.00	1	20 A	EXISTING CIRCUIT	14
15	EXISTING CIRCUIT	20 A	3	0.00	0.00			0.00	0.00	1	20 A	EXISTING CIRCUIT	16
17	EXISTING CIRCUIT	20 A	1		0.00	0.00			1	20 A	EXISTING CIRCUIT	18	
19	EXISTING CIRCUIT	20 A	1	0.00	0.00				1	20 A	EXISTING CIRCUIT	20	
21	EXISTING CIRCUIT	20 A	1		0.00	0.00			1	20 A	EXISTING CIRCUIT	22	
23	EXISTING CIRCUIT	20 A	1				0.00	0.00	1	20 A	EXISTING CIRCUIT	24	
25	EXISTING CIRCUIT	20 A	1	0.00	0.00				1	20 A	EXISTING CIRCUIT	26	
27	EXISTING CIRCUIT	20 A	1		0.00	0.00			1	20 A	EXISTING CIRCUIT	28	
29	EXISTING CIRCUIT	20 A	1				0.00	0.00	1	20 A	EXISTING CIRCUIT	30	
31	SPARE	20 A	1	0.00	0.00				1	20 A	SPARE	32	
33	SPARE	20 A	1		0.00	0.00			1	20 A	SPARE	34	
35	SPARE	20 A	1				0.00	0.00	1	20 A	SPARE	36	
37	SPARE	20 A	1	0.00	0.00				1	20 A	SPARE	38	
39	SPARE	20 A	1		0.00	0.00			1	20 A	SPARE	40	
41	SPARE	20 A	1				0.00	0.00	1	20 A	SPARE	42	
TOTAL LOAD:					0.00 kVA	0.00 kVA	0.00 kVA						
TOTAL AMPS:					0 A	0 A	0 A						
TOTAL CONNECTED LOAD:					0.00 kVA			0.00 kVA					
TOTAL CONNECTED AMPS:					0 A			0 A					
TOTAL DEMAND LOAD:													
TOTAL DEMAND AMPS:													

**PANELBOARD & CIRCUIT BREAKER OPTIONS**  
C CONTACTOR CONTROLLED  
G GFCI PROTECTED  
P HANDLE LOCKING DEVICE  
S SHUNT TRIP  
X 80% RATED MAIN CIRCUIT BREAKER WITH LSI  
Y 100% RATED MAIN CIRCUIT BREAKER WITH LSI  
Z 100% RATED MAIN CIRCUIT BREAKER WITH LSI  
FEED THROUGH LUGS (FTL)  
SUB FEED LUGS (SFL)

NOTES:

**BRANCH PANELBOARD SCHEDULE**  
DESIGNATION: 1LN16  
LOCATION: CORRIDOR #5  
MOUNTING: FLUSH  
SUPPLY FROM: 1LDP5

VOLTS: 208Y/120 V  
PHASES: 3  
WIRES: 4  
AIC RATING: 10 kA

MAINS RATING: 200 A  
MAINS TYPE: MLO

CKT NO.	DESCRIPTION	ROOM #	TRIP	P	A	B	C	P	TRIP	ROOM #	DESCRIPTION	CKT NO.	
1	EXISTING CIRCUIT	20 A	1	0.00	0.00			1	20 A		EXISTING CIRCUIT	2	
3	EXISTING CIRCUIT	20 A	1			0.00	0.00		1	20 A	EXISTING CIRCUIT	4	
5	EXISTING CIRCUIT	20 A	1					0.00	0.00	1	20 A	EXISTING CIRCUIT	6
7	EXISTING CIRCUIT	20 A	1	0.00	0.00				1	20 A	EXISTING CIRCUIT	8	
9	EXISTING CIRCUIT	20 A	1		0.00	0.00			1	20 A	EXISTING CIRCUIT	10	
11	EXISTING CIRCUIT	40 A	1				0.00	0.00	1	20 A	EXISTING CIRCUIT	12	
13	EXISTING CIRCUIT	20 A	1					0.00	0.00	1	20 A	EXISTING CIRCUIT	14
15	EXISTING CIRCUIT	20 A	1	0.00	0.00				1	20 A	EXISTING CIRCUIT	16	
17	EXISTING CIRCUIT	20 A	1		0.00	0.00			1	20 A	EXISTING CIRCUIT	18	
19	EXISTING CIRCUIT	20 A	1	0.00	0.00				1	20 A	EXISTING CIRCUIT	20	
21	EXISTING CIRCUIT	20 A	1		0.00	0.00			1	20 A	EXISTING CIRCUIT	22	
23	EXISTING CIRCUIT	20 A	1				0.00	0.00	1	20 A	EXISTING CIRCUIT	24	
25	EXISTING CIRCUIT	20 A	3	0.00	0.00			0.00	0.00	3	20 A	EXISTING CIRCUIT	26
27	EXISTING CIRCUIT	20 A	1		0.00	0.00			1	20 A	EXISTING CIRCUIT	28	
29	SPARE	20 A	1				0.00	0.00	1	20 A	SPARE	30	
31	SPARE	20 A	1	0.00	0.00				1	20 A	SPARE	32	
33	SPARE	20 A	1		0.00	0.00			1	20 A	SPARE	34	
35	SPARE	20 A	1				0.00	0.00	1	20 A	SPARE	36	
37	SPARE	20 A	1	0.00	0.00				1	20 A	SPARE	38	
39	SPARE	20 A	1		0.00	0.00			1	20 A	SPARE	40	
41	SPARE	20 A	1				0.00	0.00	1	20 A	SPARE	42	
TOTAL LOAD:					0.00 kVA	0.00 kVA	0.00 kVA						
TOTAL AMPS:					0 A	0 A	0 A						
TOTAL CONNECTED LOAD:					0.00 kVA			0.00 kVA					
TOTAL CONNECTED AMPS:					0 A			0 A					
TOTAL DEMAND LOAD:													
TOTAL DEMAND AMPS:													

**PANELBOARD & CIRCUIT BREAKER OPTIONS**  
C CONTACTOR CONTROLLED  
G GFCI PROTECTED  
P HANDLE LOCKING DEVICE  
S SHUNT TRIP  
X 80% RATED MAIN CIRCUIT BREAKER WITH LSI  
Y 100% RATED MAIN CIRCUIT BREAKER WITH LSI  
Z 100% RATED MAIN CIRCUIT BREAKER WITH LSI  
FEED THROUGH LUGS (FTL)  
SUB FEED LUGS (SFL)

NOTES:

**PANELBOARD ABBREVIATIONS**

FTL FEED THROUGH LUGS  
MCB MAIN CIRCUIT BREAKER  
MFS MAIN FEEDER SWITCH  
MLO MAIN LUGS ONLY  
SFL SUB-FEED LUGS  
SPD SURGE PROTECTION DEVICE

**SWITCHBOARD/PANELBOARD NOTES**

A REFER TO ELECTRICAL SYMBOLS AND ABBREVIATIONS SHEET E-001 FOR ADDITIONAL INFORMATION  
B VERIFY PANEL LUG SIZE REQUIRED FOR FEEDERS INDICATED ON ONE-LINE DIAGRAM. MODIFY AS REQUIRED FOR LARGER FEEDERS.  
C VERIFY CONDUIT ENTRY LOCATION ON EACH PANEL  
D CONFIRM FINAL ROOM NAMES AND NUMBERS WITH OWNER PRIOR TO CREATING FINAL PANELBOARD DIRECTORIES.  
E MODIFY AIC RATINGS INDICATED ON SCHEDULES, AS REQUIRED, PER SPECIFICATION SECTION 260574.99.

**BRANCH PANELBOARD SCHEDULE**  
DESIGNATION: 1LN18  
LOCATION: WEIGHT ROOM  
MOUNTING: SURFACE  
SUPPLY FROM: 1LDP5

VOLTS: 208Y/120 V  
PHASES: 3  
WIRES: 4  
AIC RATING: 10 kA

MAINS RATING: 200 A  
MAINS TYPE: MLO

CKT NO.	DESCRIPTION	ROOM #	TRIP	P	A	B	C	P	TRIP	ROOM #	DESCRIPTION	CKT NO.	
1	EXISTING CIRCUIT	20 A	1	0.00	0.00			1	20 A		EXISTING CIRCUIT	2	
3	EXISTING CIRCUIT	20 A	1		0.00	0.00			1	20 A	EXISTING CIRCUIT	4	
5	EXISTING CIRCUIT	20 A	1				0.00	0.00	1	20 A	EXISTING CIRCUIT	6	
7	EXISTING CIRCUIT	20 A	1	0.00	0.00				1	20 A	EXISTING CIRCUIT	8	
9	EXISTING CIRCUIT	40 A	1		0.00	0.00			1	20 A	EXISTING CIRCUIT	10	
11	EXISTING CIRCUIT	20 A	1				0.00	0.00	1	20 A	EXISTING CIRCUIT	12	
13	EXISTING CIRCUIT	20 A	1	0.00	0.00				1	20 A	EXISTING CIRCUIT	14	
15	EXISTING CIRCUIT	20 A	1		0.00	0.00			1	20 A	EXISTING CIRCUIT	16	
17	EXISTING CIRCUIT	20 A	1				0.00	0.00	1	20 A	EXISTING CIRCUIT	18	
19	EXISTING CIRCUIT	20 A	1	0.00	0.00				1	20 A	EXISTING CIRCUIT	20	
21	EXISTING CIRCUIT	20 A	3		0.00	0.00		0.00	0.00	3	20 A	EXISTING CIRCUIT	22
23	EXISTING CIRCUIT	20 A	1	0.00	0.00				1	20 A	EXISTING CIRCUIT	24	
25	SPARE	20 A	1		0.00	0.00			1	20 A	SPARE	26	
27	SPARE	20 A	1		0.00	0.00			1	20 A	SPARE	28	
29	SPARE	20 A	1	0.00	0.00				1	20 A	SPARE	30	
31	SPARE	20 A	1		0.00	0.00			1	20 A	SPARE	32	
33	SPARE	20 A	1				0.00	0.00	1	20 A	SPARE	34	
35	SPARE	20 A	1				0.00	0.00	1	20 A	SPARE	36	
37	SPARE	20 A	1	0.00	0.00				1	20 A	SPARE	38	
39	SPARE	20 A	1		0.00	0.00			1	20 A	SPARE	40	
41	SPARE	20 A	1				0.00	0.00	1	20 A	SPARE	42	
TOTAL LOAD:					0.00 kVA	0.00 kVA	0.00 kVA						
TOTAL AMPS:					0 A	0 A	0 A						
TOTAL CONNECTED LOAD:					0.00 kVA			0.00 kVA					
TOTAL CONNECTED AMPS:					0 A			0 A					
TOTAL DEMAND LOAD:													
TOTAL DEMAND AMPS:													

**PANELBOARD & CIRCUIT BREAKER OPTIONS**  
C CONTACTOR CONTROLLED  
G GFCI PROTECTED  
P HANDLE LOCKING DEVICE  
S SHUNT TRIP  
X 80% RATED MAIN CIRCUIT BREAKER WITH LSI  
Y 100% RATED MAIN CIRCUIT BREAKER WITH LSI  
Z 100% RATED MAIN CIRCUIT BREAKER WITH LSI  
FEED THROUGH LUGS (FTL)  
SUB FEED LUGS (SFL)

NOTES:

**BRANCH PANELBOARD SCHEDULE**  
DESIGNATION: 1LN23  
LOCATION: ENERGY CENTER 7  
MOUNTING: SURFACE  
SUPPLY FROM: 1LDS1

VOLTS: 208Y/120 V  
PHASES: 3  
WIRES: 4  
AIC RATING: 42 kA

MAINS RATING: 200 A  
MAINS TYPE: MLO

CKT NO.	DESCRIPTION	ROOM #	TRIP	P	A	B	C	P	TRIP	ROOM #	DESCRIPTION	CKT NO.	
1	EXISTING CIRCUIT	20 A	1	0.00	0.00			1	20 A		EXISTING CIRCUIT	2	
3	EXISTING CIRCUIT	20 A	1			0.00	0.00		1	20 A	EXISTING CIRCUIT	4	
5	EXISTING CIRCUIT	20 A	1					0.00	0.00	1	20 A	EXISTING CIRCUIT	6
7	EXISTING CIRCUIT	20 A	1	0.00	0.00				1	20 A	EXISTING CIRCUIT	8	
9	EXISTING CIRCUIT	20 A	1		0.00	0.00			1	20 A	EXISTING CIRCUIT	10	
11	EXISTING CIRCUIT	20 A	1				0.00	0.00	1	20 A	EXISTING CIRCUIT	12	
13	EXISTING CIRCUIT	20 A	1	0.00	0.00				1	20 A	EXISTING CIRCUIT	14	
15	EXISTING CIRCUIT	20 A	1		0.00	0.00			1	20 A	EXISTING CIRCUIT	16	
17	EXISTING CIRCUIT	20 A	1				0.00	0.00	1	20 A	EXISTING CIRCUIT	18	
19	EXISTING CIRCUIT	20 A	1	0.00	0.00				1	20 A	EXISTING CIRCUIT	20	
21	EXISTING CIRCUIT	20 A	1		0.00	0.00			1	20 A	EXISTING CIRCUIT	22	
23	EXISTING CIRCUIT	20 A	1				0.00	0.00	1	20 A	EXISTING CIRCUIT	24	
25	EXISTING CIRCUIT	20 A	1	0.00	0.00				1	20 A	EXISTING CIRCUIT	26	
27	EXISTING CIRCUIT	20 A	1		0.00	0.00			1	20 A	EXISTING CIRCUIT	28	
29	EXISTING CIRCUIT	20 A	1				0.00	0.00	1	20 A	EXISTING CIRCUIT	30	
31	EXISTING CIRCUIT	20 A	1	0.00	0.00				1	20 A	EXISTING CIRCUIT	32	
33	EXISTING CIRCUIT	20 A	1		0.00	0.00			1	20 A	EXISTING CIRCUIT	34	
35	EXISTING CIRCUIT	20 A	1				0.00	0.00	2	100 A	EXISTING CIRCUIT	36	
37	EXISTING CIRCUIT	20 A	1	0.00	0.00				2	30 A	EXISTING CIRCUIT	38	
39	EXISTING CIRCUIT	20 A	1		0.00	0.00			1	20 A	EXISTING CIRCUIT	40	
41	EXISTING CIRCUIT	20 A	1				0.00	0.00	1	20 A	SPARE	42	
TOTAL LOAD:					0.00 kVA	0.00 kVA	0.00 kVA						
TOTAL AMPS:					0 A	0 A	0 A						
TOTAL CONNECTED LOAD:					0.00 kVA			0.00 kVA					
TOTAL CONNECTED AMPS:					0 A			0 A					
TOTAL DEMAND LOAD:													
TOTAL DEMAND AMPS:													

**PANELBOARD & CIRCUIT BREAKER OPTIONS**  
C CONTACTOR CONTROLLED  
G GFCI PROTECTED  
P HANDLE LOCKING DEVICE  
S SHUNT TRIP  
X 80% RATED MAIN CIRCUIT BREAKER WITH LSI  
Y 100% RATED MAIN CIRCUIT BREAKER WITH LSI  
Z 100% RATED MAIN CIRCUIT BREAKER WITH LSI  
FEED THROUGH LUGS (FTL)  
SUB FEED LUGS (SFL)

NOTES:

**BRANCH PANELBOARD SCHEDULE**  
DESIGNATION: 1LN24  
LOCATION: SWITCHGEAR 5B  
MOUNTING: SURFACE  
SUPPLY FROM: 1LDS2

VOLTS: 208Y/120 V  
PHASES: 3  
WIRES: 4  
AIC RATING: 22 kA

MAINS RATING: 200 A  
MAINS TYPE: MLO

CKT NO.	DESCRIPTION	ROOM #	TRIP	P	A	B	C	P	TRIP	ROOM #	DESCRIPTION	CKT NO.
1	EXISTING CIRCUIT	20 A	1	0.00	0.00			3	30 A		EXISTING CIRCUIT	4
3	EXISTING CIRCUIT	20 A	1		0.00	0.00			3	30 A	EXISTING CIRCUIT	6
5	EXISTING CIRCUIT	20 A	1	0.00	0.00							



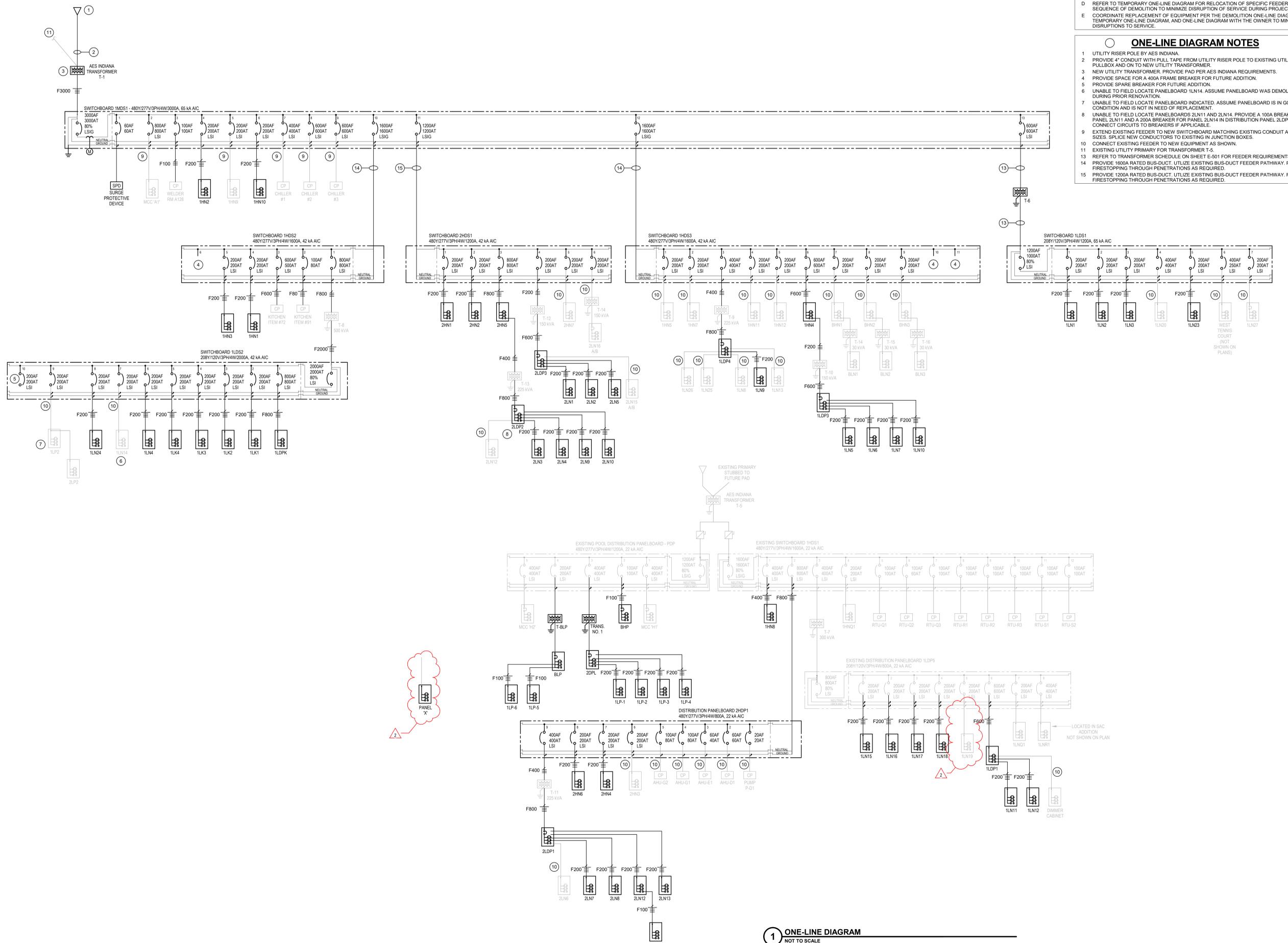


**GENERAL ONE-LINE DIAGRAM NOTES**

- A REFER TO ELECTRICAL SYMBOLS AND ABBREVIATIONS SHEET E-001 FOR ADDITIONAL INFORMATION.
- B PROVIDE LABELS ON ALL EQUIPMENT MODIFIED BY THIS PROJECT. PROVIDE LABELS ON ALL JUNCTION BOXES AND CONDUITS MODIFIED OR PROVIDED BY THIS PROJECT. PROVIDE UPDATED PANELBOARD DIRECTORIES ON ALL PANELBOARDS MODIFIED BY THIS PROJECT.
- C CONDUITS APPEAR IN GOOD CONDITION. FOR FEEDERS SHOWN DEMOLISHED ON DEMOLITION ONE-LINE DIAGRAM AND REPLACED ON THE ONE-LINE DIAGRAM, PROVIDE NEW CONDUCTORS IN THE EXISTING CONDUITS.
- D REFER TO TEMPORARY ONE-LINE DIAGRAM FOR RELOCATION OF SPECIFIC FEEDERS AND SEQUENCE OF DEMOLITION TO MINIMIZE DISRUPTION OF SERVICE DURING PROJECT.
- E COORDINATE REPLACEMENT OF EQUIPMENT PER THE DEMOLITION ONE-LINE DIAGRAM, TEMPORARY ONE-LINE DIAGRAM, AND ONE-LINE DIAGRAM WITH THE OWNER TO MINIMIZE DISRUPTIONS TO SERVICE.

**ONE-LINE DIAGRAM NOTES**

- 1 UTILITY RISER POLE BY AES INDIANA.
- 2 PROVIDE 4" CONDUIT WITH PULL TAPE FROM UTILITY RISER POLE TO EXISTING UTILITY PULLBOX AND ON TO NEW UTILITY TRANSFORMER.
- 3 NEW UTILITY TRANSFORMER. PROVIDE PAD PER AES INDIANA REQUIREMENTS.
- 4 PROVIDE SPACE FOR A 400A FRAME BREAKER FOR FUTURE ADDITION.
- 5 PROVIDE SPARE BREAKER FOR FUTURE ADDITION.
- 6 UNABLE TO FIELD LOCATE PANELBOARD 1LN14. ASSUME PANELBOARD WAS DEMOLISHED DURING PRIOR RENOVATION.
- 7 UNABLE TO FIELD LOCATE PANELBOARD INDICATED. ASSUME PANELBOARD IS IN GOOD CONDITION AND IS NOT IN NEED OF REPLACEMENT.
- 8 UNABLE TO FIELD LOCATE PANELBOARDS 2LN11 AND 2LN14. PROVIDE A 100A BREAKER FOR PANEL 2LN11 AND A 200A BREAKER FOR PANEL 2LN14 IN DISTRIBUTION PANEL 2LDP2.
- 9 EXTEND EXISTING FEEDER TO NEW SWITCHBOARD MATCHING EXISTING CONDUIT AND WIRE SIZES. SPLICE NEW CONDUCTORS TO EXISTING IN JUNCTION BOXES.
- 10 CONNECT EXISTING FEEDER TO NEW EQUIPMENT AS SHOWN.
- 11 EXISTING UTILITY PRIMARY FOR TRANSFORMER T-5.
- 12 REFER TO TRANSFORMER SCHEDULE ON SHEET E-501 FOR FEEDER REQUIREMENTS.
- 13 PROVIDE 1600A RATED BUS-DUCT. UTILIZE EXISTING BUS-DUCT FEEDER PATHWAY. PROVIDE FIRESTOPPING THROUGH PENETRATIONS AS REQUIRED.
- 14 PROVIDE 1200A RATED BUS-DUCT. UTILIZE EXISTING BUS-DUCT FEEDER PATHWAY. PROVIDE FIRESTOPPING THROUGH PENETRATIONS AS REQUIRED.
- 15



**1 ONE-LINE DIAGRAM**  
NOT TO SCALE



REVISIONS:	#	Date	Desc:
	1	03/12/2026	Addendum #01
	2	03/26/2026	Addendum #02

**100% CONSTRUCTION DOCUMENTS**  
PROJECT: #241735  
DATE: 02-16-2026  
DRAWN BY: AMN

**ELECTRICAL ONE-LINE DIAGRAM**

PLT DATE/TIME: 03/26/2026 11:53:07 AM