

RICHMOND COMMUNITY SCHOOL
Richmond High School: Mechanical Modernization Project
LWC Commission No. 20104.02

ADDENDUM #03
October 3, 2021

LWC, Inc.
712 EAST MAIN ST
RICHMOND, IN 47374

To Prospective Bidders:

This addendum is a modification of the Contract Documents for the above referenced project and is hereby incorporated into and becomes a part of said Contract Documents. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification. It is to be considered in the Proposals and covers additions to or changes in the Contract Documents as indicated below.

This addendum consists of (3) pages.

Attachments:

- Bidder Questions to Date.
- Drawings: A105, E002, E103, E103A, E203, E204, E205, E301, E301A, E501, E502, P101 M303, M607
- Specifications: Section 220300

GENERAL NOTES

- **Bid Date and time is October 8, 2021, at 3:00 pm** at the School Administration Building, 300 Hub Etchison Parkway.
- The last Addendum will be issued Tuesday, October 5, 2021.
- The last day for Bidder Questions is Friday, October 1, 2021. Any questions after that date will not be answered.

DRAWINGS

ITEM NO.1 Drawing A105

- A. Revised Sheet Note #27.

ITEM NO.2 Drawing P101

- A. Added more information to tagged note D46.

ITEM NO.3 Drawing M303

- A. Revisions to Natatorium supply diffusers.

ITEM NO.4 Drawing M607

- A. Added HVLS control sequences

ITEM NO.5 Drawing M701

- A. Cooling Tower Schedule – CT-1A/1B/1C
 - Each tower flow rate shall be 1130 GPM

- Each tower shall have 2 fans.
- Remark 5 shall read "Provide with oversized depressed outlet connection."

ITEM NO.6 Drawing M703

- A. Exhaust Fan Schedule – Add Pennbarry as an acceptable manufacturer.
- B. High Volume Low Speed Fan Schedule – Add Skyblade as an acceptable manufacturer.

ITEM NO.7 Drawing E002

- A. Added fixture type T3 to fixture schedule.

ITEM NO.8 Drawing E103

- A. Added demolition of existing lighting and lighting controls in natatorium offices T173A and T176A.

ITEM NO.9 Drawing E103A

- A. Added demolition of existing lighting and lighting controls in natatorium offices T173A and T176A.

ITEM NO.10 Drawing E203

- A. Added power for new BAS panel in mechanical room.

ITEM NO.11 Drawing E204

- A. HVLS fan VFD to be mounted near ceiling.
- B. Added power for new BAS panel in each mechanical room.

ITEM NO.12 Drawing E205

- A. Edited note E23.

ITEM NO.13 Drawing E301

- A. Added lighting and lighting controls to natatorium offices T173A and T176A.

ITEM NO.14 Drawing E301A

- A. Added lighting and lighting controls to natatorium offices T173A and T176A.

ITEM NO.15 Drawing E501

- A. Edited panel schedules for switchboards DPH, DPH-4, and panelboard MH-1.
- B. Edited cooling tower load information in equipment connection schedule.

ITEM NO.16 Drawing E502

- A. Edited panel schedule for panelboard TPDP.

SPECIFICATIONS

ITEM NO. 1 202100 – Valves

- A. Bray is an acceptable manufacturer. Manufacturer shall still meet all requirements in specifications and drawings.

ITEM NO. 2 220300 – Plumbing Equipment

- A. Intellihot is an acceptable manufacturer for instantaneous water heater. Manufacturer shall still meet all requirements in specifications and drawings.

ITEM NO. 3 230200 – HVAC Equipment

A. PART 4

- Add Fulton (Endura+), Aerco (Benchmark), and Reillo (RTC) as acceptable manufacturers. Manufacturer shall still meet all requirements in specifications and drawings.
- Burner shall be capable of 10 to 1 turndown

B. PART 5

- Metalaire is an acceptable manufacturer. Manufacturer shall still meet all requirements in specifications and drawings.

C. PART 6

- Section shall be labeled as POOL DEHUMIDIFICATION UNITS

D. PART 7

- Add Smardt as an acceptable manufacturer. Manufacturer shall still meet all requirements in specifications and drawings.

E. PART 8

- Crossflow Cooling Towers shall be PART 8
- Remove Louver face external platform requirements

ITEM NO. 4 231100 – GRDs

A. PART 2

- Metalaire is an acceptable manufacturer. Manufacturer shall still meet all requirements in specifications and drawings.

B. PART 3

- Pottorff is an acceptable manufacturer. Manufacturer shall still meet all requirements in specifications and drawings.

ITEM NO. 5 231200 – Sheet Metal

- A. Greenheck is an acceptable manufacturer for volume and fire dampers. Manufacturer shall still meet all requirements in specifications and drawings.

ITEM NO. 6 250400 – Controls

A. Part 3

- All controls graphics and from previous 2nd/3rd floor project shall be tied into BAS front end system installed on this project.

B. Part 16

- Eaton is an acceptable manufacturer. Manufacturer shall still meet all requirements in specifications and drawings.

END OF ADDENDUM #03



Addendum 003 RFI Log

Commission Number: 20104.02

Project Name: Richmond High School: Mechanical Modernization Project

RFI Number	Date IN	Date OUT	Due Date	Description/Response	Sheet/Spec Reference	PCO Number	CO Number
Colby Equipment 001	9/30/21	10/3/21		<p>Colby Equipment is preparing to bid Richmond HS Mechanical Modernization, but the following manufacturers that we represent are not listed as acceptable manufacturers in this project's specifications. Colby respectfully requests the approval of these manufacturers so that we may provide a complete equipment package to our contractors. We understand that approved manufacturer's must meet or exceed the project's specifications and schedule of equipment.</p> <p><SPEC SECTION><EQUIPMENT TYPE><MANUFACTURER> 2.22 Volume Dampers (Rectangular) Greenheck 2.24 Fire Dampers Greenheck</p> <p>If you are unfamiliar with the above manufacturers, or require additional information, please do not hesitate to contact Tom Hall at Colby Equipment. We appreciate your time and consideration.</p>			
				ANSWER: Greenheck has been added as an acceptable manufacturer per Addendum #03, and must be compliant with all project requirements.			
Eagle Mechanical 001	10/1/21	10/3/21		<p>Would like to request that Riello high efficiency condensing boilers be accepted as an approved alternate to Lochinvar and Clever Brooks. I have attached the specs on the RTC-80 stainless steel condensing boiler for review.</p>			
				ANSWER: Riello has been added as an acceptable manufacturer per Addendum #03, and must be compliant with all project requirements.			

DIVISION 22 - PLUMBINGSECTION 220300 - PLUMBING EQUIPMENTPART 1 – GENERAL:

- 1.1 The Contractor's attention is directed to the General and Special Conditions, GENERAL PROVISIONS - MECHANICAL and to all other Contract Documents as they apply to this branch of the work. Attention is also directed to all other sections of the Contract Documents which affect the work of this section and which are hereby made a part of the work specified in this section.
- 1.2 All Contractors and Vendors providing a bid for this project shall review the Plans and Specifications and determine any modifications and/or adjustments necessary relative to the proposed equipment and materials with specific manufacturer's installation requirements. Include in the bid any necessary installation methods, features, options, accessories, etc. necessary to install the proposed equipment and materials, regardless of whether used as basis of design or being offered as a substitution in accordance with the specific manufacturer's installation requirements whether specifically detailed or not within the Plans and Specifications.
- 1.3 The Contractor shall provide in complete working order the following plumbing equipment located as indicated and installed, connected and placed in operation in strict accordance with the manufacturer's recommendations. All equipment shall be factory painted and, where applicable, factory insulated and shall, where such standards exist, bear the label of the Underwriters Laboratory.
- 1.4 All equipment, material and labor warranties shall be furnished by the equipment supplier/vendor. All warranties begin on the date of Substantial Completion. Refer to Specification Section GENERAL PROVISIONS – MECHANICAL for special warranty requirements.
- 1.5 Review the Specification Section – REQUIRED SHOP DRAWINGS, ETC., and provide all documentations called for therein.
- 1.6 All plumbing equipment shall comply with the latest provisions of ASHRAE Standard 90.1 and all provisions of the International Energy Conservation Code.
- 1.7 Ensure that the equipment that is proposed to be furnish may be installed, connected, placed in operation and easily maintained at the location and in the space allocated for it.
- 1.8 Determine from the Bid Documents the date of completion of this project and insure that equipment delivery schedules can be met so as to allow this completion date to be met.
- 1.9 Through coordination with other Contractors, Vendors and Suppliers associated with this Project, this Contractor shall insure a complete, 100% functional, tested, inspected and approved systems. Claims for additional cost or change orders will immediately be rejected. Refer to Specification Section - ELECTRIC MOTORS, ETC. for additional requirements. All equipment shall be furnished for a single point electrical connection unless specifically excluded as a requirement.
- 1.10 Review the Specification Section - CONTROLS to determine automatic controls requirements through the Building Automation System.
- 1.11 Review the Specification Section – TESTING, BALANCING, LUBRICATION AND ADJUSTMENTS.

PART 2 - GAS FIRED INSTANTANEOUS WATER HEATERS:

- 2.1 APPROVED MANUFACTURERS: Rheem, A.O. Smith, Intellihot and Nortec.

- 2.2 **CONSTRUCTION:** Water heater(s) shall be internally mounted, on-demand, multiple point of use, gas fired, direct vent, water heaters designed certified to ANSI Z21.10.3 standard for gas-fired water heaters. Water heaters shall have copper heat exchanger, stainless steel burners, cast aluminum gas control valve/gas connection, and solid brass inlet and outlet water connections. Units shall have a stainless-steel secondary heat exchanger. Units shall be equipped with a factory installed, pre-charged condensate neutralizer.
- 2.3 **PERFORMANCE:** Water Units shall have BTU input range of 11,000 BTU/hr to 199,900 BTU/hr, a minimum recovery efficiency rating of 94%, a minimum water outlet capacity of 9.5 gallons per minute and minimum activation flow rate of 0.40 gpm and an operational minimum flow rate of 0.26 gpm.
- 2.4 **CONTROL:** Water heaters shall be microprocessor controlled and utilize a direct electronic ignition system with no standing pilot, fully modulating gas control valve, turbine water flow meter, automatic electro-mechanical water flow control valve, and water temperature thermistors to maintain outlet water temperature between +/- 2 degree Fahrenheit of setpoint temperature. Water heaters shall be provided with remote temperature thermostat with adjustable setpoint range of 100 degrees F -140 degrees F. A Commercial upgrade kit shall be provided and installed for 140 degrees F -185 degrees F applications. Units shall have diagnostic functions for servicing the equipment.
- 2.5 **MANIFOLD:** Water heaters shall be suitable for multiple unit electronic manifold installations. Units shall have the ability to be manifold electronically in configurations from 2-10 units. Temperature control and diagnostic functions for all water heaters in the manifold shall be controlled via a single remote temperature thermostat.
- 2.6 **SAFETIES:** Units shall incorporate the following safety devices: incomplete combustion sensing burner technology, film-type thermal overheat protection covering entire heat exchanger, flame failure lockout, internal freeze protection for ambient temperatures as low as -30 degrees F, and lockout protection in the event of a blocked flue.
- 2.7 **START-UP:** Manufacturer shall provide the services of a factory representative to aid in installing and starting the equipment. Two perfect bound Owner's manuals shall be furnished.
- 2.8 **WARRANTY:** Provide 3 year parts and labor warranty with, 5 year warranty on copper heat exchanger, 10 year warranty on pre-charged condensate neutralizer.

PART 3 – DOMESTIC WATER SOFTENER:

- 3.1 **ACCEPTABLE MANUFACTURERS:** Bruner, Culligan, Marlo, Permutit.
- 3.2 The water softening system shall reduce the hardness to less than 5 mg/La. The system shall be equal to a Marlo Twin Model MR-300-0 designed to handle a continuous flow rate of 165 gallons per minute at a pressure loss not exceeding 15 psi. The system will have a softening capacity of not less than grains of softening capacity per regeneration when a salt dosage of 60-150 pounds per tank is used.
- 3.3 Each softener resin tank will be 30 inches in diameter. The side shell height shall be sufficient to allow a minimum freeboard space of 50 percent of the resin bed depth for adequate expansion of the resin during backwashing. Tanks shall be designed for an operating pressure up to 120 psi and shall be manufactured of fiberglass reinforced polyester. The exterior side shell shall be reinforced by a continuous roving glass filament overwrap. The tanks shall be supported by a molded polypropylene structural base.
- 3.4 Each softener tank shall be equipped with a soft water collector and backwash water distributor consisting of 3 inches of underbed sand to ensure even distribution of water. Each softener tank shall be equipped with an upper distributor that distributes water laterally to ensure maximum water softening capacity.

- 3.5 Each softener tank shall be provided with 10 cubic feet of resin having a minimum exchange capacity of 200,000 grains per cubic foot when regenerated with 60 pounds of salt. The media shall be solid and not more than 4% through 40 mesh U.S. standard wet screen screening. The media shall contain no agglomerates, shells, plates, or other shapes that might interfere with the normal function of the water softener. The resin shall be manufactured to comply with the food additive regulations of the Food and Drug Administration.
- 3.6 A combination salt storage and brine tank, measuring 24 inches in diameter by 60 inches tall, with cover, shall be provided. The tank shall be molded of corrosion-proof, high-density polyethylene.
- 3.7 The tank shall be equipped with an elevated plate for brine collection and a chamber to house a brine valve assembly. The brine valve shall automatically open to admit brine to the resin tank during eduction and close automatically to prevent introduction of air into the resin tank. During refill, the brine valve shall regulate the flow of soft water into the brine tank, working with the timed refill feature of the softener control valve. Together these components shall admit the correct volume of water to the brine tank in accordance with the salt dosage settings on the control valve. The brine valve shall include a flat-operated safety shut-off valve, as a back-up to the time refill valve on the control, to prevent brine tank overflow.
- 3.8 The control valve shall be of all-brass construction and have 1 inch NPT inlet and outlet. It shall be motor driven, mechanically-activated design with six positions to accomplish the regeneration steps of backwash, brine draw-slow rinse, fast-rinse, refill and standby in addition to the service position. The control shall be fitted with a fixed orifice eductor nozzle and a self-adjusting backwash flow control.
- 3.9 Provide sampling cocks on piping for obtaining effluent water samples. Furnish complete testing kit for soap test method.
- 3.10 WARRANTY: The water softening equipment shall be warranted against failure due to faulty materials, workmanship, or corrosion for a period of one year from substantial completion. In addition, the fiberglass reinforced plastic tank shall be warranted for a period of five years.
- 3.11 EQUIPMENT START-UP: Prior to utilization of equipment, start-up service shall be performed by factory authorized representative. Utilize startup sheets provided by the manufacturer. Refer to Specification Section GENERAL PROVISIONS – MECHANICAL for additional requirements.
- 3.12 Provide four (4) hours of onsite training for this system. All training to occur after building completion. System shall function properly and O&M staff shall be able to operate the system prior to turnover.

PART 4 – SHELL & TUBE HEAT EXCHANGERS:

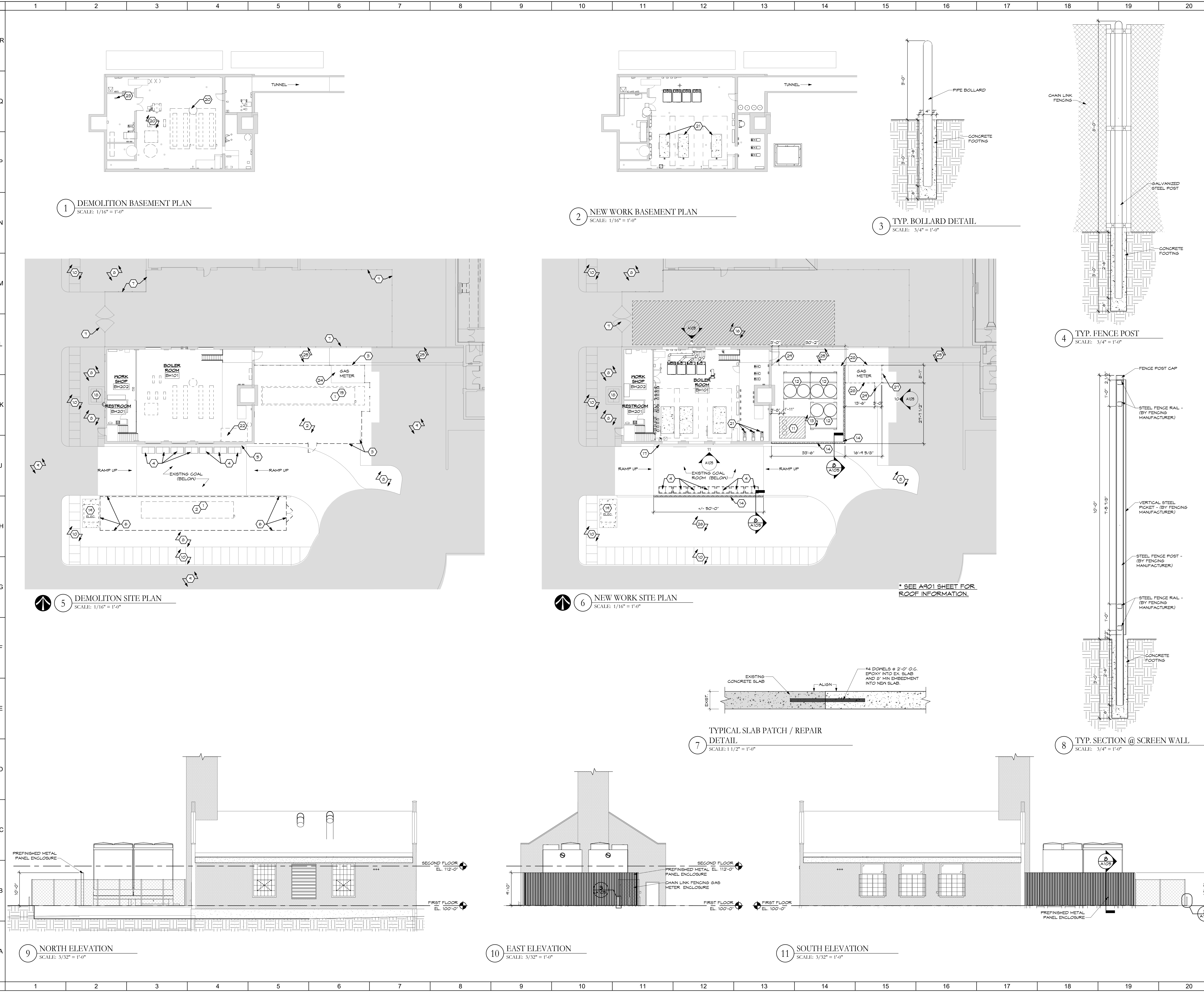
- 4.1 ACCEPTABLE MANUFACTURERS: Bell & Gossett, Taco, Armstrong.
- 4.2 Provide U-tube heat exchangers as indicated, of capacity as scheduled, and as specified herein.
- 4.3 Shell and tube, U-bend removable tube bundle, water in tubes, equipped with mounting legs.
- 4.4 MATERIALS:
- Shell - Steel.
 - Tubes - 3/4" O.D. copper.
 - Heads - Cast iron with "K" head for easy tube bundle removal.
 - Tube Sheets - Steel.
 - Tube Supports - Steel.

- 4.5 Provide bonnet head assembly to permit removal of tubes without affecting piping.
- 4.6 ASME Construction for 125 psi design pressure at 375°F.

END OF SECTION.

9/28/2021 11:00:06 AM

C:\Users\jls\Documents\2021\Richmond High School 2021 Bond Projects - Phase B - Mechanical_Isoppychn.rvt



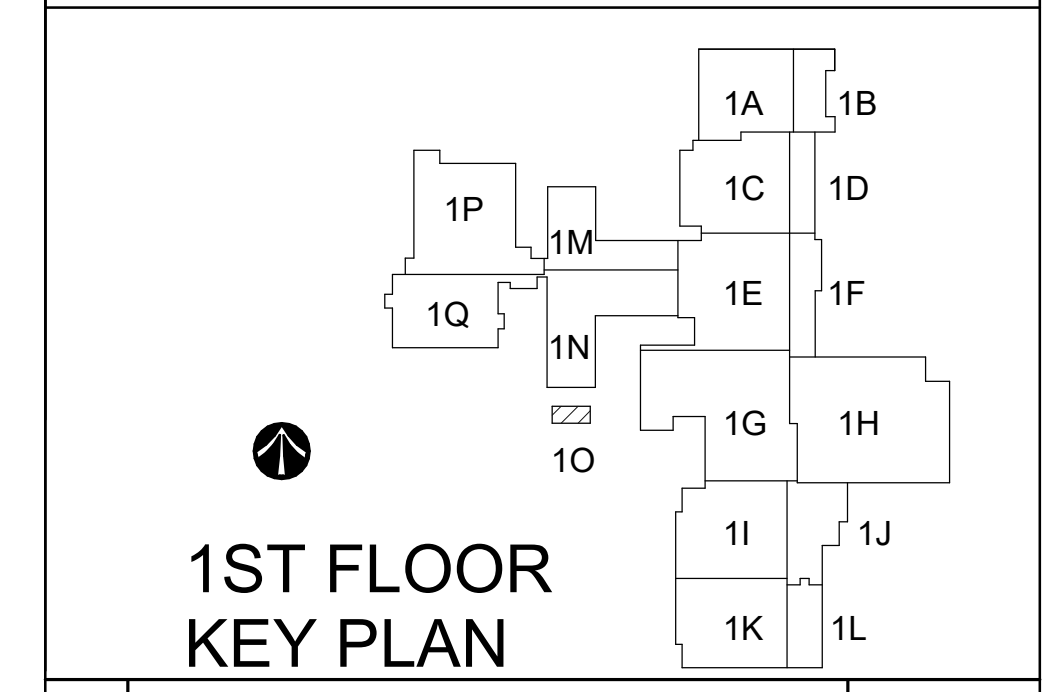
SHEET NOTES:

1. REMOVE EXISTING CHILLER COMPLETELY INCLUDING CONCRETE PAD.
2. REMOVE ALL EXISTING SITE IMPROVEMENTS IN THIS AREA. PREPARE SITE FOR GRAVEL. - SEE SPECS.
3. REMOVE EXISTING FENCE, INCLUDING FOOTINGS.
4. RELOCATE DUMPSTERS TO TEMPORARY LOCATION. REFER TO SITE LOGISTICS PLAN.
5. EXISTING GUARDRAIL. PROTECT THROUGHOUT PROJECT.
6. DEMOLISH EXISTING CONCRETE CHILLER PAD, FOOD FENCE, RESGRADE AREA AND RE-ESTABLISH LAWN. REFER TO ALTERNATE #01.
7. EXISTING FENCE TO REMAIN. PROTECT THROUGHOUT PROJECT.
8. EXISTING LAWN TO REMAIN. PROTECT THROUGHOUT PROJECT.
9. EXISTING ASPHALT DRIVE TO REMAIN. KEEP CLEAR THROUGHOUT PROJECT.
10. EXISTING SIDEWALK TO REMAIN. PROTECT THROUGHOUT PROJECT.
11. CONCRETE DRAIN BACK PIT. - SEE MECH. DWGS.
12. COOLING TOWER. - SEE MECH. DWGS.
13. 4" GRAVEL ON FIBER FABRIC THROUGHOUT MECHANICAL YARD. - SEE SPECS.
14. PREFINISHED METAL PANEL ENCLOSURE SYSTEM.
15. RELOCATE EXISTING CHILLER FOR TEMPORARY COOLING. DEMOLISH COMPLETELY AFTER TEMPORARY COOLING IS NO LONGER NEEDED.
16. APPROPRIATE LOCATION OF RELOCATED CHILLER. COORDINATE EXACT LOCATION WITH OWNER.
17. PRIMARY CENTRAL PLANT ACCESS FOR DEMOLITION OF EXISTING EQUIPMENT & INSTALLATION OF NEW ALL RISINGS BY GENERAL CONTRACTOR.
18. EXISTING ACCESS HATCH TO REMAIN.
19. EXISTING TRANSFORMER TO REMAIN.
20. PORTION OF SLAB TO BE PATCHED & REPAIRED IN THIS AREA. - SEE PLUMBING & MECHANICAL.
21. NEW CONCRETE SLAB.
22. BOILER TANK TO BE REMOVED. - SEE MECHANICAL.
23. FLOOR SLAB TO BE CUT AT BASEMENT LEVEL FOR NEW FLOOR DRAIN. - SEE PLUMBING.
24. EXISTING GAS SERVICE. PROTECT THROUGHOUT PROJECT.
25. LOCATION OF UNDERGROUND UTILITY TUNNEL. PROTECT FROM HEAVY LOADS.
26. SITE WORK TO THIS AREA SHALL INCLUDE FILL DIRT & TOP SOIL TO MATCH SURROUNDING GRADES. LAWN RESTORATION THROUGHOUT AREA TO MATCH EXISTING SURROUNDING LAWN.
27. NEW PIPE BOLLARDS.
28. NEW CHAIN LINK FENCING.
29. CHAIN LINK FENCE GATE.

GENERAL NOTES:

- A. PROTECT ALL EXISTING DRIVES, CURBS, & WALKS TO REMAIN THROUGHOUT PROJECT.
- B. PROTECT ALL LAWN AREAS THROUGHOUT PROJECT.
- C. KEEP ALL WALKS & DRIVES CLEAR FOR OWNER USE THROUGHOUT PROJECT. ANY ENCLOSURES MUST BE COORDINATED WITH OWNER AT LEAST 12 HRS. IN ADVANCE.
- D. PROTECT ALL UTILITIES TO REMAIN THROUGHOUT PROJECT. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY TEMPORARY SERVICES NECESSARY TO KEEP BUILDING OPERATIONAL DURING PROJECT.
- E. ALL RISINGS BY CONTRACTOR.
- F. GC IS RESPONSIBLE FOR COORDINATING ALL SLAB DEMOLITION WITH MECHANICAL DRAWINGS. IF THERE IS A CONFLICT NOTIFY ARCHITECT IMMEDIATELY.

KEY PLAN:



No.	Revisions / Submissions	Date
1	Bid Documents	08.27.2021
2	Addendum #3	09.28.2021

LWC
INCORPORATED
434 East First Street Dayton, OH 45402 937.223.6500
712 East Main Street Richmond, IN 47374 765.966.3546

Richmond Community Schools
RICHMOND HIGH SCHOOL
380 Hub Etchison Pkwy,
Richmond, IN 47374
MECHANICAL MODERNIZATION PROJECT

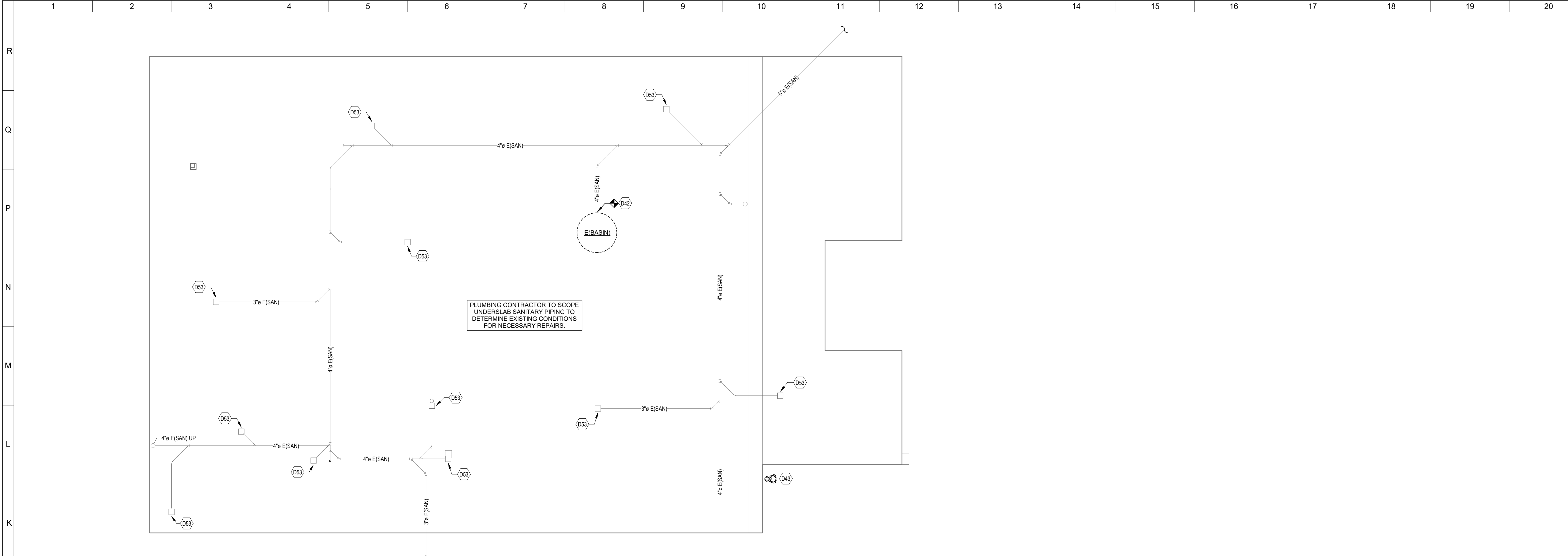
CENTRAL PLANT SITE PLAN

Comm. No.	Date
20104.02	06.18.2021
Drawn	Drawing No.
TOD	A105
Checked	KRM

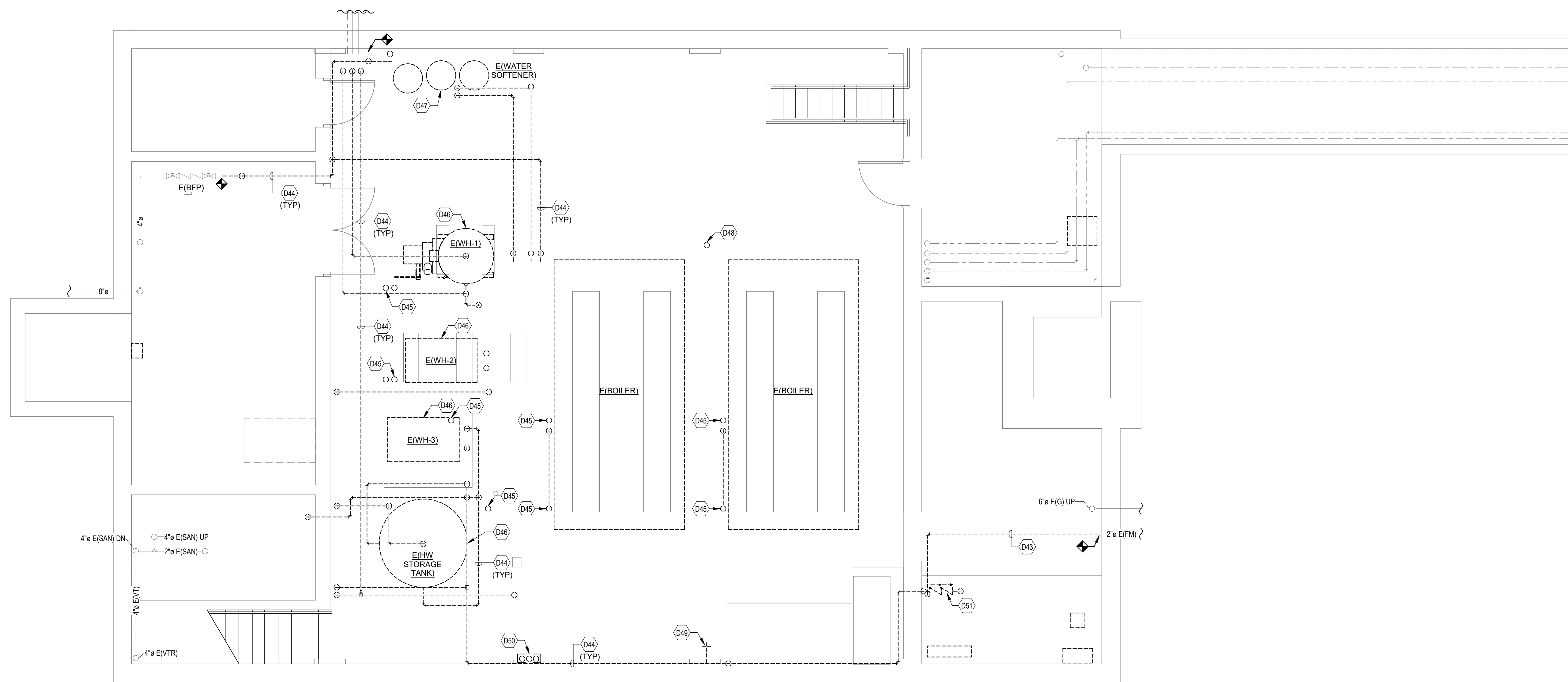
© 2021 LWC, INCORPORATED

9/29/2021 11:47:49 AM

C:\Users\jwaldron\Documents\VRH121_MECH_FR20_validation\LC2020.rvt



1 BOILER HOUSE UNDERSLAB - DEMOLITION
SCALE: 1/4" = 1'-0"



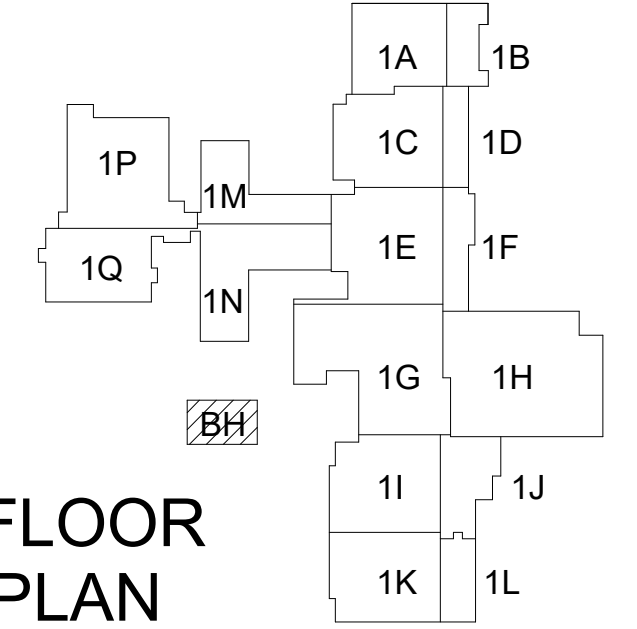
2 BOILER HOUSE LOWER LEVEL - DEMOLITION
SCALE: 1/4" = 1'-0"

SHEET NOTES:

- D42 EXISTING BASIN TO BE FILLED FOR ABANDONMENT. CAP EXISTING BRANCH PIPING PRIOR TO FILLING. PATCH AT SLAB TO MATCH EXISTING.
- D43 EXISTING SLUMP PUMP TO BE DEMOLISHED. EXISTING FORCE MAIN TO BE DEMOLISHED AS SHOWN AND CAPPED FOR ABANDONMENT.
- D44 EXISTING DOMESTIC WATER PIPING TO BE DEMOLISHED AS SHOWN.
- D45 EXISTING NATURAL GAS TO EQUIPMENT TO BE DEMOLISHED AS SHOWN. EXISTING GAS VENTING TO BE DEMOLISHED AS SHOWN. MAINTAIN EXISTING NATURAL GAS AND VENT PIPING THROUGH EXTERIOR WALL FOR RECONNECTION.
- D46 EXISTING DOMESTIC HOT WATER EQUIPMENT AND STORAGE TANK TO BE DEMOLISHED. DEMOLISH EXISTING EQUIPMENT PAD AND PATCH SLAB AS NECESSARY TO MATCH. TEMPORARILY UTILIZE EQUIPMENT WHILE NEW EQUIPMENT IS BEING INSTALLED. COORDINATE RELOCATIONS WITH ALL TRADES.
- D47 EXISTING WATER SOFTENER SYSTEM TO BE DEMOLISHED.
- D48 EXISTING VENT THROUGH ROOF FROM BASIN TO BE DEMOLISHED. PATCH ROOF AS NECESSARY.
- D49 EXISTING HOSE BIBB TO BE DEMOLISHED.
- D50 EXISTING NATURAL GAS SUBMETER TO BE DEMOLISHED.
- D51 EXISTING BACKFLOW PREVENTER AND MAKEUP WATER TO MECHANICAL EQUIPMENT TO BE DEMOLISHED.
- D53 EXISTING FLOOR DRAIN TO REMAIN. CLEAN EXISTING DRAINS AND REPLACE DAMAGED COVERS.

GENERAL NOTES:

KEY PLAN:



No.	Revisions / Submissions	Date
4	Bid Documents	08.27.2021
1	Addendum 3	10.1.2021

LWC
INCORPORATED
434 East First Street Dayton, OH 45402 937.223.6500
712 East Main Street Richmond, IN 47374 765.966.3546

RICHMOND Richmond Community Schools
RICHMOND HIGH SCHOOL
380 Hub Etchison Pkwy,
Richmond, IN 47374
MECHANICAL MODERNIZATION PROJECT

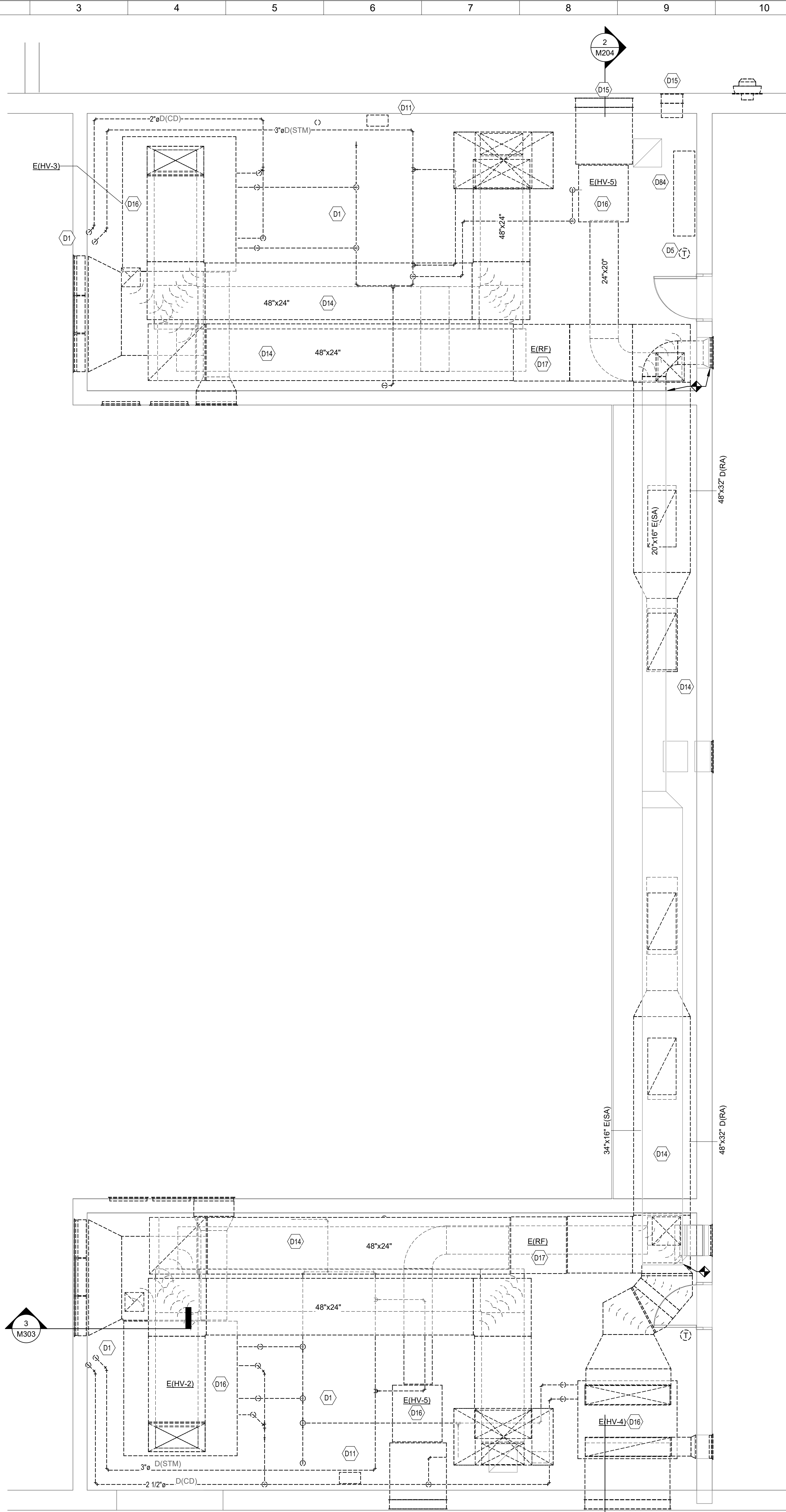
BOILER HOUSE LOWER LEVEL DEMOLITION PLAN

	Comm. No.	Date
	20104.02	8.27.2021
	Drawn	Drawing No.
JDW	P101	
Checked	BSB	

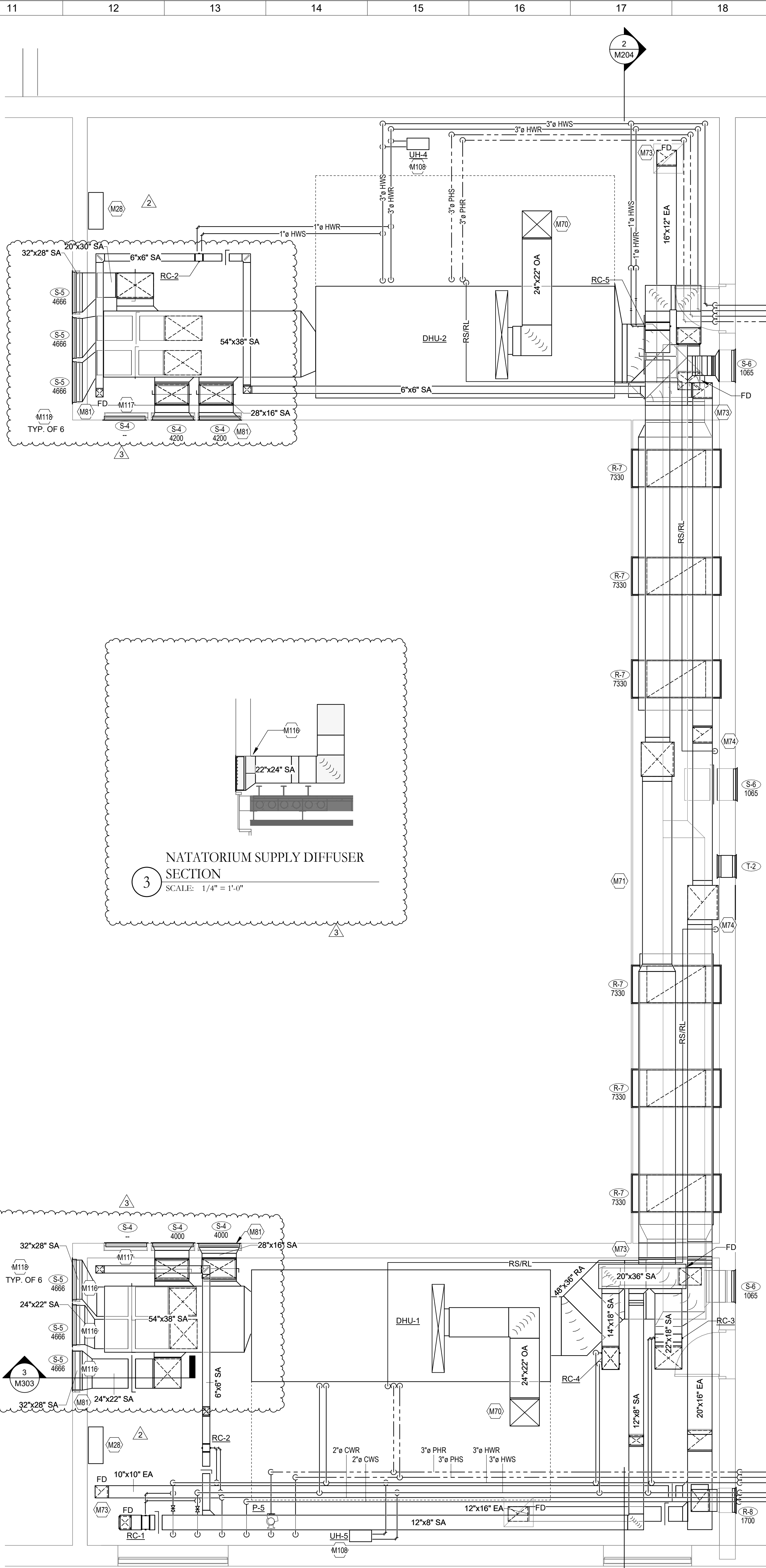
© 2021 LWC, INCORPORATED

10/11/2021 10:30:17 AM

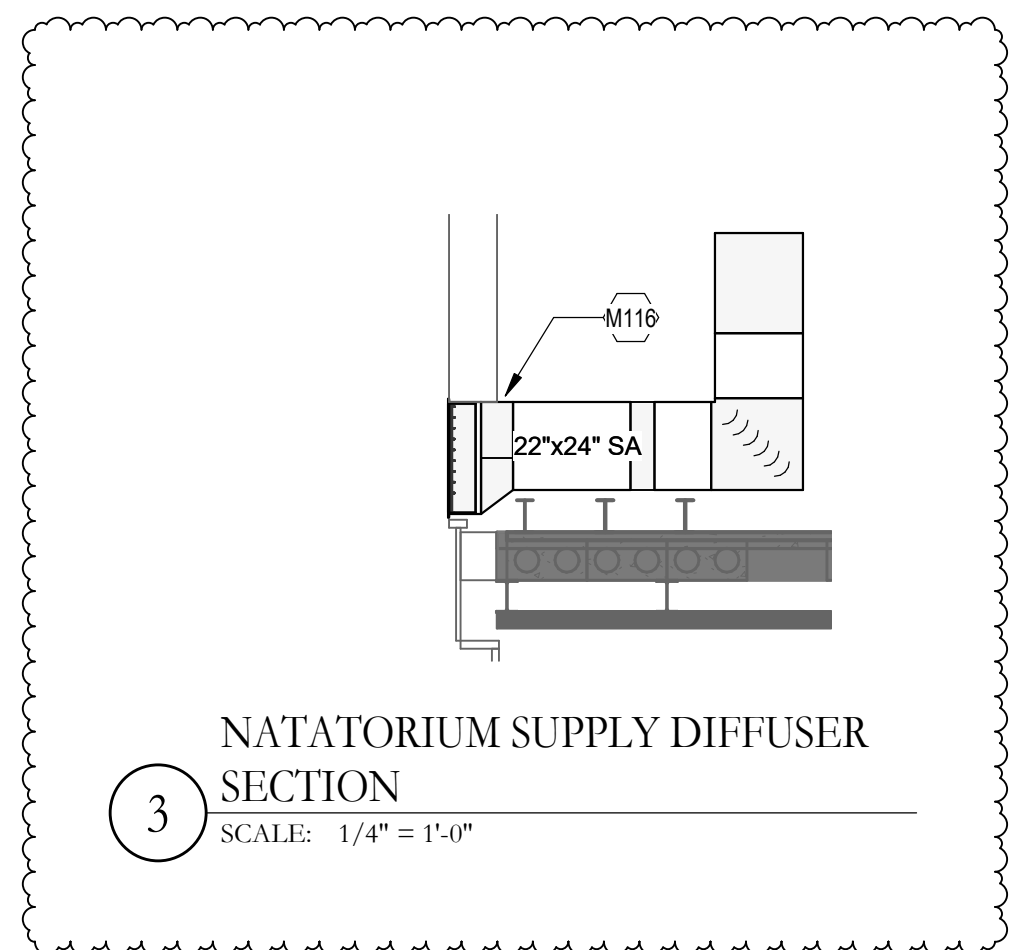
C:\Users\nrogers\Documents\VRH21_MECH_R20_nrogers\F49FQ.mt



1 ENLARGED MECHANICAL ROOM
- AREA G DEMO
SCALE: 1/4" = 1'-0"



2 ENLARGED MECHANICAL ROOM
- AREA G
SCALE: 1/4" = 1'-0"



3 NATATORIUM SUPPLY DIFFUSER SECTION
SCALE: 1/4" = 1'-0"

GRD RUNOUT SCHEDULE

SYMBOL	NECK SIZE
E-1	6"
E-2	8"
E-3	10"
E-4	30"x30"
E-5	8"x8"
E-6	24"x18"
E-7	18"x18"
R-2	6"
R-4	12"
R-6	16"
R-7	72"x30"
R-8	20"x40"
S-1	6"
S-2	8"
S-3	10"
S-4	34"x28"
S-5	32"x28"
S-6	26"x16"
T-1	16"x16"
T-2	18"x14"

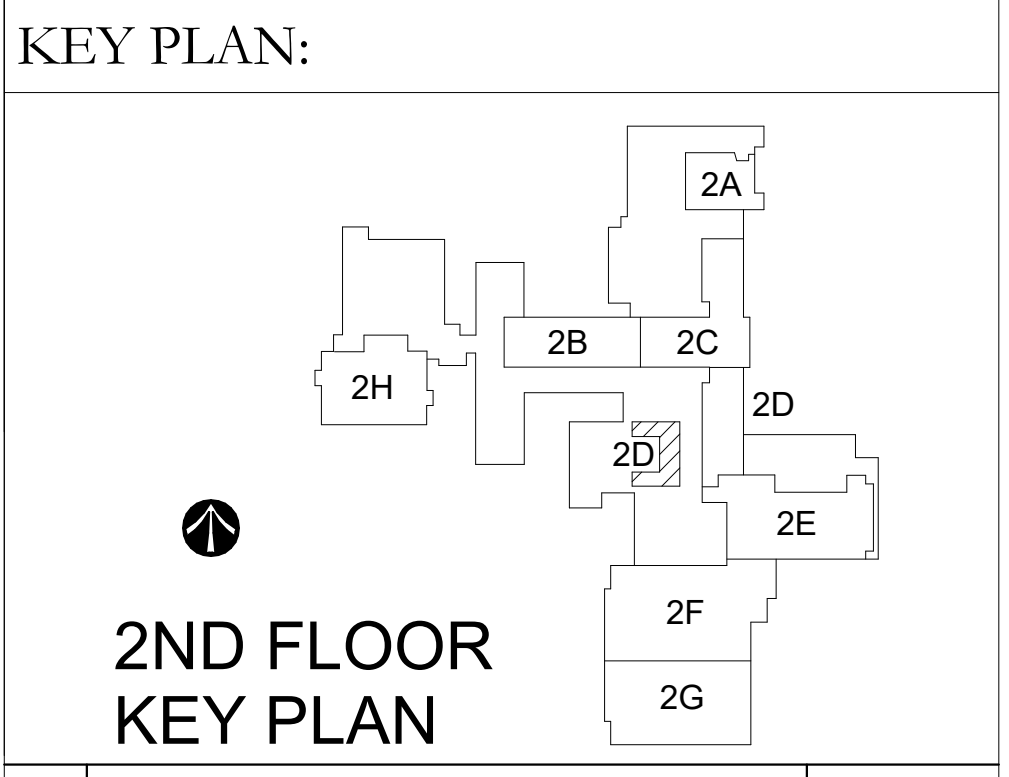
PIPE RUNOUT SCHEDULE

SYMBOL	HWS/HWR
CUH (ALL)	3/4"
VAV	3/4"
RC-1	1/2"
RC-2	1/2"
RC-3	1"
RC-4	3/4"
RC-5	3/4"

- SHEET NOTES:**
- D1 EXISTING STEAM AND LOW PRESSURE CONDENSATE PIPING, AND ALL ASSOCIATED VALVES, HANGERS, AND SUPPORTS TO BE COMPLETELY REMOVED. PATH TO BE REUSED FOR NEW HWS/HWR PIPING.
 - D5 REMOVE EXISTING THERMOSTAT/TEMPERATURE SENSOR AND ALL PNEUMATIC TUBING OR ELECTRICAL WIRING. IF SURFACE MOUNTED, EXISTING WIREMOLD MAY BE USED IF THERMOSTAT IS GOING BACK IN SAME LOCATION. PATCH AND PAINT WALL/CEILING IF WIREMOLD IS REMOVED. IF RECESSED, PROVIDE STAINLESS STEEL COVER PLATE AT EXISTING OPENING IF BACK BOX IS NOT REUSED.
 - D11 EXISTING UNIT HEATER TO BE REMOVED COMPLETELY, INCLUDING ALL PIPING, CONTROLS, AND ELECTRICAL CONNECTIONS. CONDENSATE RUN BELOW SLAB TO TUNNEL SHALL BE ABANDONED AND CAPPED BELOW FLOOR LINE. REFER TO ARCHITECTURAL PLANS FOR FINISH DETAILS.
 - D14 EXISTING SUPPLY/RETURN OUTSIDE AIR DUCTWORK INDICATED TO BE REMOVED COMPLETELY. REMOVE ALL ASSOCIATED HANGERS/SUPPORTS/ACCESSORIES.
 - D15 EXISTING LOUVER TO REMAIN AND BE BLANKED OFF WITH 2" INSULATED ALUMINUM. SEAL AIR AND WATER TIGHT.
 - D16 EXISTING HEATING/VENTILATION UNIT TO BE REMOVED COMPLETELY, INCLUDING ALL PIPING, DUCTWORK, ELECTRICAL AND CONTROLS CONNECTIONS. REFER TO ELECTRICAL DRAWINGS FOR INFORMATION ON DEMOLITION AND RECONNECTION OF ELECTRICAL.
 - D17 EXISTING RETURN FAN TO BE REMOVED COMPLETELY, INCLUDING ALL DUCTWORK, ELECTRICAL AND CONTROLS CONNECTIONS.
 - D84 PNEUMATIC CONTROL PANEL TO BE REMOVED COMPLETELY. SEE GENERAL DEMOLITION NOTES FOR MORE INFORMATION.
 - M28 BAS PANEL.
 - M70 26"x20" OA DUCT UP TO EXISTING ROOF INTAKE. TRANSITION AS NEEDED.
 - M71 REFER TO POOL BULKHEAD SECTION ON THIS SHEET FOR DUCT SIZES AND MORE DETAIL.
 - M73 FIRE DAMPERS TO BE PLACED AT ALL NEW FLOOR AND WALL PENETRATIONS.
 - M74 RS/RL OUT THROUGH EXISTING OPENING TO CONDENSING UNITS ON ROOF. SEE SHEET M206 FOR CONTINUATION.
 - M81 COLOR BY ARCHITECT.
 - M88 REFER TO DETAIL ON SHEET M403 FOR CONNECTION DETAILS.
 - M116 PROVIDE OFFSET IN SUPPLY DUCTWORK TO AVOID NEW STEEL SUPPORT BEAM.
 - M117 PROVIDE INACTIVE DIFFUSER TO MATCH ADJACENT. PROVIDE SHEET METAL PANEL ON BACK OF INACTIVE DIFFUSER.
 - M118 NATATORIUM SUPPLY DIFFUSERS SHALL MATCH EXISTING OPENINGS/PANEL SYSTEM. FIELD VERIFY EXACT DIMENSIONS PRIOR TO ORDERING.

- GENERAL NOTES:**
- A. FIELD VERIFY DUCT/PIPE LAYOUTS WITH EXISTING CONDITIONS PRIOR TO ORDERING ANY EQUIPMENT OR MATERIALS.
 - B. COORDINATE NEW WORK WITH ALL EXISTING AND NEW WORK OF OTHER TRADES.

- DEMOLITION NOTES:**
- A. DEMO PNEUMATIC CONTROLS BACK TO MAINS AND CAP FOR ALL COMPONENTS DEMOLISHED IN THIS AREA.
 - B. LOCATE AND CAP AT MAINS PRIOR TO DEMO TO KEEP THE SYSTEM SERVING THE BUILDING OPERATIONAL.
 - C. DEMOLISHED HYDRONIC RUNOUTS TO BE CAPPED AS CLOSE TO MAINS AS POSSIBLE.
 - D. ABANDON PIPING IN PLACE WHERE INACCESSIBLE WITHIN BLOCK WALLS AND ABOVE HARD CEILINGS.
 - E. DEMOLISH PIPING NOTED BELOW SLAB TO FLOOR LINE AND CAP. PATCH AND REFINISH FLOOR TO MATCH ADJACENT.



2ND FLOOR KEY PLAN

No.	Revisions / Submissions	Date
2	Addendum 2	9.24.2021
3	Addendum 3	10.1.2021
1		

LWC
INCORPORATED
434 East First Street Dayton, OH 45402 937.223.6500
712 East Main Street Richmond, IN 47374 765.966.3546

Richmond Community Schools
RICHMOND HIGH SCHOOL
380 Hub Etchison Pkwy,
Richmond, IN 47374

MECHANICAL MODERNIZATION PROJECT

ENLARGED MECHANICAL ROOMS

Comm. No.	Date
20104.02	8.27.2021

Drawn	Checked	Date
JLK	NPR	M303

© 2021 LWC, INCORPORATED

SHEET NOTES:

FIRE ALARM:

- 1. GENERAL:
 - A. THE BAS SHALL MONITOR THE STATUS OF THE FIRE ALARM SYSTEM. WHEN THE BUILDING IS IN ALARM.
- 2. ALARMS:
 - A. ALARM SIGNAL FROM THE FIRE ALARM PANEL.

POINTS LIST	AI	AO	DI	DO	TREND
FIRE ALARM STATUS			X		

WATER METER:

- 1. GENERAL:
 - A. COORDINATE LOCATIONS WITH PLUMBING CONTRACTOR AND REFER TO PLUMBING PLANS FOR LOCATIONS.
 - B. BUILDING WATER METER: BUILDING WATER USAGE SHALL BE AVAILABLE VIA UTILITY COMPANY METER WITH BAS INTEGRATION CAPABILITY OR BUILDING FLOW METER PROVIDED BY TCC. IF REQUIRED A BUILDING FLOW METER SHALL BE PROVIDED ON THE INCOMING 4" DCW WATER SERVICE TO THE BUILDING LOCATED IN THE FIRE PUMP ROOM. FLOW SHALL BE TOTALIZED CONSUMPTION FOR THE DOMESTIC COLD WATER. THE GALLONS SHALL BE RECORDED WEEKLY, MONTHLY AND ANNUALLY. THE DATA SHALL BE STORED FOR 5 YEARS.
 - C. COOLING TOWER DUCT FLOW METER: THE BAS SHALL PROVIDE SUB-METERED FLOW AND TOTALIZED CONSUMPTION FOR THE DOMESTIC COLD WATER. THE GALLONS SHALL BE RECORDED WEEKLY, MONTHLY, AND ANNUALLY. THE DATA SHALL BE STORED FOR 5 YEARS. COORDINATE METER WITH UTILITY COMPANY.

POINTS LIST	AI	AO	DI	DO	TREND
BUILDING WATER METER	X				X
COOLING TOWER DUCT METER	X				X

UNIT HEATER:

- 1. UNIT OPERATION:
 - A. ON A CALL FOR HEATING, THE DDC CONTROLLER STARTS UNIT HEATER'S FAN MOTOR, AND HOT WATER VALVE SHALL MODULATE, WHENEVER THE SPACE TEMPERATURE FALLS BELOW CONTROLLER'S HEATING SETPOINT (55°F, ADJ.)
- 2. ALARMS:
 - A. SPACE TEMPERATURE FALLS BELOW 52 °F FOR MORE THAN 30 MINUTES.

UNIT HEATERS POINTS LIST	AI	AO	DI	DO	TREND
SPACE TEMPERATURE	X				X
FAN				X	X
HOT WATER VALVE	X				X

EXHAUST FAN SEQUENCE:

- 1. GENERAL:
 - A. ALL EXHAUST FANS STATUS SHALL BE MONITORED BY THE BAS SYSTEM.
- 2. UNIT OPERATION:
 - A. POOL PUMP ROOM AND ELECTRICAL ROOM EXHAUST FAN SHALL CYCLE ON WHEN ABOVE 80 °F.
 - B. POOL CHLORINE ROOM SHALL OPERATE 24/7, PROVIDE ADJUSTABLE SCHEDULE.
 - C. BATHROOM EXHAUST FANS SHALL OPERATE DURING BUILDING OCCUPIED HOURS.
- 3. ALARMS:
 - A. SUPPLY STATUS DOES NOT EQUAL COMMAND INDICATES A FAN FAILURE.

EXHAUST FAN POINTS LIST	AI	AO	DI	DO	TREND
STATUS			X		X

RADIANT CEILING PANELS SYSTEMS:

- 1. GENERAL:
 - A. ALL PANELS IN THE ZONE SHALL BE CONTROLLED BY A SINGLE BAS THERMOSTAT.
- 2. UNIT OPERATION:
 - A. ON A CALL FOR MORE HEATING THE PANELS SHALL BE ENABLED TO MAINTAIN HEATING SETPOINT.
- 3. ALARMS:
 - A. LOW TEMPERATURE ALARM: ZONE AIR TEMPERATURE, 5°F BELOW SETPOINT FOR 1 HOUR.

RADIANT CEILING PANEL POINTS LIST	AI	AO	DI	DO	TREND
ZONE TEMPERATURE	X				X
RADIANT PANEL ON-OFF (ONE OUTPUT TO ALL PANELS IN THE ZONE)			X		X

POOL WATER HEATING (HX-1):

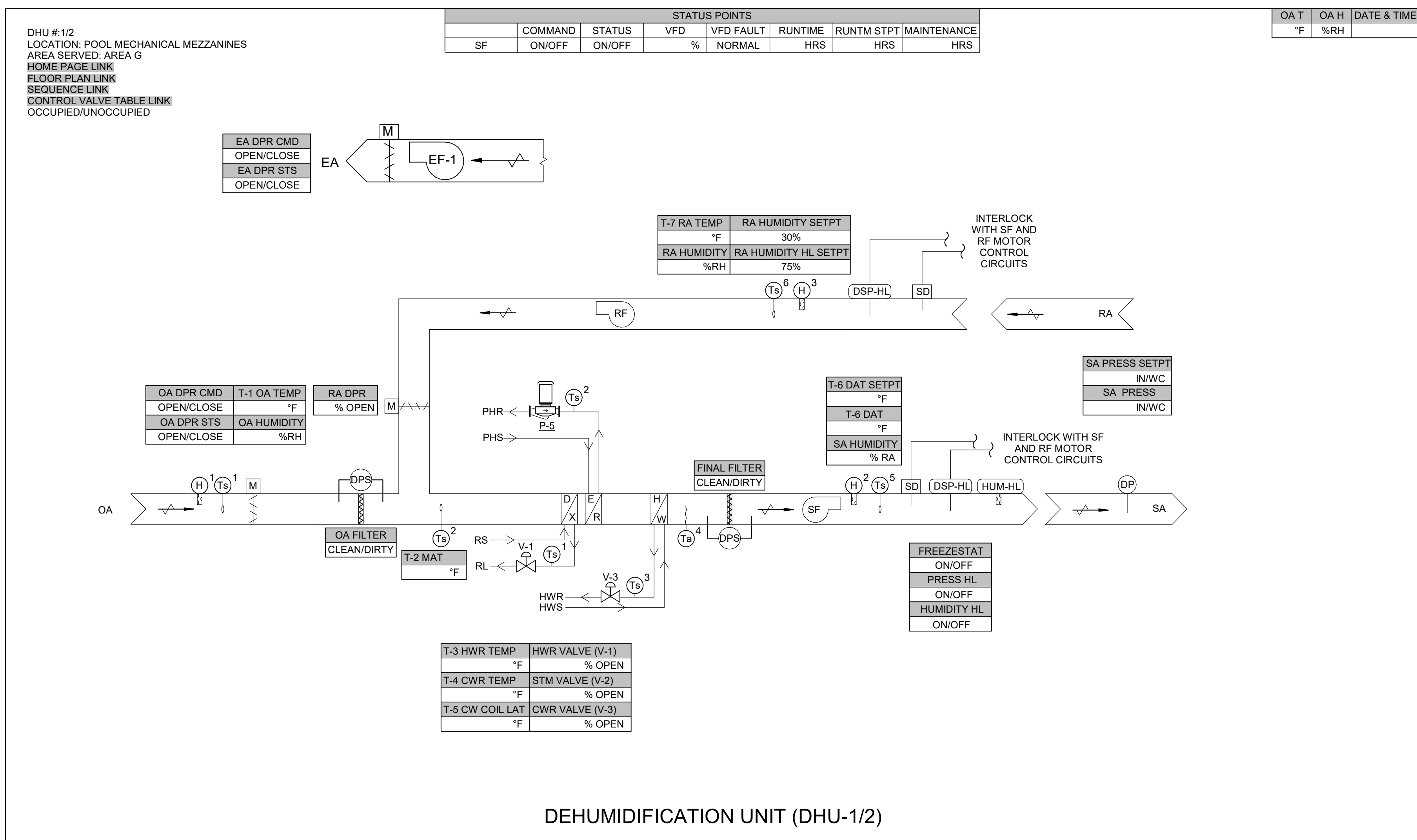
- A. THE POOL IS HEATED VIA THE POOL HOT WATER BOILERS/HEAT EXCHANGER.
- B. THESE SYSTEMS SHALL MAINTAIN THE POOL WATER TEMPERATURE AT 80°F.
- C. FROM THE POOL HOT WATER SYSTEM, PUMP PHWP-1A/1B (90 GPM) SHALL DELIVER 180°F TO THE POOL WATER HEAT EXCHANGER (HX-1). A DDC CONTROL VALVE SHALL MODULATE TO MAINTAIN RETURN TEMPERATURE FROM POOL WATER OF 80°F (ADJ.).
- D. 90°F IS THE MAX ALLOWABLE DISCHARGE SETPOINT TO THE POOL. IF NO WATER FLOW IS SENSED BY THE POOL SIDE RETURN FLOW SWITCH OR MIXED WATER TEMPERATURE TO THE POOL IS GREATER THAN 90°F, THEN AN ALARM SHALL BE GENERATED AT THE DDC SYSTEM.
- E. IF THE POOL RETURN WATER TEMPERATURE SENSOR IS GREATER THAN 86°F (ADJ.), THEN AN ALARM SHALL BE GENERATED AT THE DDC SYSTEM.

HEAT EXCHANGER POINTS LIST	AI	AO	DI	DO	TREND
HEATING VALVE		X		X	
POOL SUPPLY WATER TEMPERATURE	X			X	X
POOL RETURN WATER TEMPERATURE	X			X	X
POOL HX-1 LEAVING WATER TEMP	X			X	X

HIGH VOLUME LOW SPEED FANS (HVLS-1):

- A. FANS SHALL BE PROVIDED DUAL CONTROL VIA BAS AND LOCAL OVERRIDE.
- B. HVLS FAN SPEED AND DIRECTION SHALL BE SCHEDULED VIA THE BAS.

HVLS POINTS LIST	AI	AO	DI	DO	TREND
FAN SPEED		X			
FAN DIRECTION		X			
FAN STATUS			X		
FAN FAULT			X		



DEHUMIDIFICATION UNIT (DHU-1/2)

DEHUMIDIFICATION UNIT (DHU-1/2):

- 1. GENERAL: THE AIR HANDLING UNIT SHALL BE PLACED INTO OPERATION BY THE DDC SYSTEM BASED UPON USER DEFINED SCHEDULE AND SWITCH ON MCP.
- 2. SUPPLY AIR FAN: THE FAN SHALL RUN CONTINUOUSLY. DUE TO THE HUMIDITY CONTROL REQUIRED IN THE POOL SPACE, ONLY THE OUTSIDE AIR FLOW AND SPACE TEMPERATURES SHALL CHANGE MODES.
- 3. OUTSIDE AIR CONTROL: SHALL MODULATE THE UNITS MOTORIZED DAMPER TO SWITCH FROM THE SCHEDULED AIRFLOW TO ZERO FOR THE OCCUPIED/UNOCCUPIED MODES.
- 4. A WALL MOUNTED TEMPER AND HUMIDITY SENSOR SHALL PROVIDE AN INPUT TO THE UNIT'S CONTROL PANEL TO MAINTAIN ROOM SETPOINT AT 84 DEGREES F (ADJ.) AND 50% RH (ADJ.)
- 5. THE UNIT SHALL HAVE THE ABILITY TO HEAT THE POOL. REFER TO THE HEATING SEQUENCE OF OPERATION FOR DETAILS.
- 6. FREEZE PROTECTION: A LOW LIMIT TEMPERATURE SENSOR SHALL BE LOCATED ON THE DOWNSTREAM SIDE OF THE HOT WATER COIL. IF A TEMPERATURE OF 40 DEGREES F (ADJ.), OR LESS IS DETECTED, THEN THE OUTSIDE AIR DAMPER SHALL FULLY CLOSE. THE RETURN AIR DAMPER SHALL FULLY OPEN, THE HOT WATER CONTROL VALVE SHALL GO FULL OPEN. UPON CORRECTION OF THE PROBLEM, THE SYSTEM SHALL BE RESET AND SHALL RETURN TO NORMAL OPERATION. THE FREEZE PROTECTION CAPILLARY SHALL BE SERPENTINE ACROSS THE ENTIRE FACE OF THE WATER COIL EVERY SIX INCHES ON CENTER. FAN SHUTDOWN TO BE HARDWIRED INTERLOCKED WITH THE SUPPLY AND RETURN / RELIEF AIR FAN. PROVIDE REMOTE INDICATION AT THE MCP PANEL.
- 7. SMOKE DETECTOR: A SMOKE DETECTOR OR DETECTORS SHALL BE LOCATED IN THE SUPPLY AND RETURN AIR STREAM OF THE HANDLING UNIT (SEE DRAWINGS FOR LOCATION). IF SMOKE IS DETECTED, THE SUPPLY FAN SHALL DE-ACTIVATE. UPON CORRECTION OF THE PROBLEM, THE SYSTEM SHALL BE RESET AND UNIT SHALL RETURN TO NORMAL OPERATION.
- 8. TEMPERATURE INDICATION: PROVIDE AIR TEMPERATURE INDICATION IN THE SUPPLY AND RETURN/LEAVING AIR TEMPERATURE TO EACH WATER COIL. PROVIDE WATER TEMPERATURE INDICATION FOR WATER TEMPERATURE TO EACH COIL.
- 9. ALL OPERATING AND LOGIC CONTROLS SHALL BE FACTORY MOUNTED AND WIRED IN THE UNIT. CONTROL SEQUENCES SHALL BE DESIGNED SPECIFICALLY TO CONTROL SWIMMING POOL ENVIRONMENTAL CONDITIONS.
- 10. CONTROL SYSTEM SHALL PROVIDE MODULATION OF HEAT RECOVERY/HEATING SYSTEM BY PROPORTIONAL CONTROL OF DRY BULB TEMPERATURE, RELATIVE HUMIDITY, COLD WALL SURFACE CONDENSATION PREVENTION HUMIDITY RESET AND VENTILATION AIR VOLUME.
- 11. CONTROLS SHALL AUTOMATICALLY OPERATE HEATING, DEHUMIDIFICATION AND HEAT RECOVERY SYSTEM IN RESPONSE TO GREATEST REQUIREMENT AND ADJUST UNIT OUTPUTS TO MAINTAIN BUILDING CONDITIONS. UNIT AND CONTROLS SHALL BE CAPABLE OF PROVIDING FULL HEATING CAPACITY TO EITHER AIR OR WATER. CONTROLS SHALL BE CAPABLE OF PROPORTIONAL CONTROL OF HEATING AND DEHUMIDIFICATION BY LOADING STAGES OF COMPRESSOR CAPACITY AS NECESSARY. AS BUILDING REQUIREMENTS ARE SATISFIED, UNIT SHALL UNLOAD AND SHUT OFF COMPRESSORS.
- 12. UNIT SHALL PROVIDE THE FOLLOWING FUNCTIONS:
- 13. VENTILATION MODE: PROVIDE OUTDOOR VENTILATION AIR TO SATISFY MINIMUM VENTILATION AIR REQUIREMENTS PER EQUIPMENT SCHEDULE. WHEN THE OUTDOOR VENTILATION IS BEING PROVIDED TO THE SPACE THAT NATATORIUM EXHAUST FAN SHALL BE ENERGIZED.
- 14. OCCUPIED/UNOCCUPIED CONTROL MODE: MICROPROCESSOR-BASED, 7-DAY, 24-HOUR OPERATION CONTROLS MANAGE THE OCCUPIED/UNOCCUPIED MODE OPERATION DURING HEATING SEASON. DURING UNOCCUPIED TIMES THE OUTSIDE AIR DAMPERS SHALL BE CLOSED TO MINIMIZE THE AIR HEATING LOAD.
- 15. SPACE HEATING: FULL PROPORTIONAL CONTROL OF SPACE DRY BULB TEMPERATURE SHALL BE MAINTAINED BY STAGING COMPRESSOR LOADING OF UNIT CAPACITY, WITH HUMIDITY OVERRIDE. AUTOMATIC MECHANICAL HEAT RECOVERY FROM POOL ROOM RETURN AIR AS REQUIRED BY BUILDING AND WATER TEMPERATURES. AUTOMATIC SWITCHING AND PROPORTIONING OUTPUTS FOR CONTROL OF AUXILIARY AIR HEATING SHALL BE PERFORMED.
- 16. POOL WATER HEATING: IF THE SPACE TEMPERATURE IS AT OR ABOVE SET POINT AND THE POOL WATER TEMPERATURE IS BELOW THE SET POINT, HOT GAS IS DIRECTED TO THE POOL WATER CONDENSER WHEN THE COMPRESSOR IS RUNNING. AT TIMES WHEN THE POOL WATER REQUIRES HEAT, THE POOLPAK ACTIVATES THE MAIN POOL WATER HEATER. SEE SCHEDULE FOR AMOUNT OF HEAT REJECTION PROVIDED BY THE POOL WATER CONDENSER.
- 17. SMART PUMP CONTROL FOR POOL WATER HEATING: THE PUMP CIRCULATING WATER TO THE POOL WATER CONDENSER SHALL BE DEACTIVATED BY A SIGNAL FROM THE DEHUMIDIFIER CONTROL PANEL WHEN THE POOL WATER CONDENSER IS NOT BEING USED TO HEAT POOL WATER. THIS OPTION REQUIRES THE POOL WATER TEMPERATURE SENSOR TO BE SHIPPED LOOSE AND FIELD INSTALLED (BY OTHERS) IN A LOCATION WHERE IT CAN SENSE POOL WATER TEMPERATURE UNDER ALL CONDITIONS.
- 18. HUMIDITY CONTROL: FULL PROPORTIONAL CONTROL OF HUMIDITY IS DONE BY STAGING UNIT CAPACITY. THE HUMIDITY CONTROLLER ENERGIZES THE COMPRESSOR AND DIRECTS HOT GAS TO THE AIR REHEAT CONDENSER IF THE SPACE REQUIRES HEATING OR THE POOL WATER CONDENSER IF POOL WATER TEMPERATURE IS BELOW SET POINT.
- 19. IF DEHUMIDIFICATION IS REQUIRED AND THE AIR/WATER TEMPERATURES ARE SATISFIED, THEN THE HOT GAS IS DIRECTED TO THE AIR-COOLED CONDENSER.
- 20. DX COOLING WITH REMOTE AIR-COOLED CONDENSER: ON A CALL FOR SPACE COOLING, THE REFRIGERATION SYSTEM IS ENERGIZED. THE RETURN AIR PASSING THROUGH THE UNIT'S EVAPORATOR COIL IS COOLED. THE COOLED AIR IS DELIVERED TO THE NATATORIUM BY THE SUPPLY FAN. THE HEAT RECOVERED BY THE EVAPORATOR AND COMPRESSOR IS DIRECTED TO THE REMOTE AIR-COOLED CONDENSER.
- 21. CONDENSATION PREVENTION: COLD-WALL TEMPERATURE SENSOR HUMIDITY RESET CONTROL: WHEN THE TEMPERATURE OF THE INTERIOR SURFACE AT THE WALL SENSOR DROPS TO WITHIN 5 DEGREES F OF THE DEW POINT TEMPERATURE OF THE SPACE AIR, THE RELATIVE HUMIDITY SET POINT IS OFFSET DOWNWARD. THIS CONDITION CAUSES THE DEHUMIDIFIER SYSTEM TO ACTIVATE HUMIDITY CONTROL TO LOWER THE SPACE DEW POINT AND HINDER THE FORMATION OF CONDENSATION ON THE COLD WALL OR GLASS SURFACES.
- 22. BAS CONNECTION: THE DEHUMIDIFIER CONTROL PANEL SHALL BE CAPABLE OF DIRECT CONNECTION TO A BUILDING AUTOMATION SYSTEM. WITH PROPER CONNECTION TO THE ETHERNET NETWORK, THE DEHUMIDIFIER SHALL APPEAR AS A NATIVE DEVICE. COORDINATE INTERFACE WITH THE TCC.
- 23. EMERGENCY SYSTEM SHUTDOWN: TERMINAL POINTS ARE AVAILABLE FOR A BINARY CONTACT CLOSURE BY OTHERS TO CONTROL UNIT SHUTDOWN BY SMOKE DETECTOR OR OTHER SIMILAR DEVICE. AN OPEN CONTACT IN THE 24 VAC CIRCUIT WILL DEACTIVATE MOTORS, FANS AND COMPRESSORS.

DHU POINTS LIST	AI	AO	BI	BO	TREND	ALARM
MIXED AIR TEMPERATURE*	X				X	
OUTSIDE AIR HUMIDITY	X				X	
OUTSIDE AIR TEMPERATURE	X				X	
RETURN AIR HUMIDITY*	X				X	
RETURN AIR TEMPERATURE*	X				X	
SUPPLY AIR TEMPERATURE*	X				X	
ZONE SETPOINT ADJUST	X				X	
ZONE TEMPERATURE*	X				X	
ZONE HUMIDITY*	X				X	
OUTSIDE AIR DAMPERS	X				X	
RETURN AIR DAMPERS	X				X	
FREEZESTAT		X			X	X
SMOKE DETECTOR		X			X	X
FAN STATUS (DEPENDENT ON #TYPE OF FANS)	X				X	
COOLING STAGE 1*			X		X	
COOLING STAGE 2*			X		X	
COOLING STAGE 3*			X		X	
COOLING STAGE 4*			X		X	
SUPPLY FAN START/STOP			X		X	
EXHAUST FAN START/STOP			X		X	
EXHAUST FAN VFD SPEED***		X			X	
EXHAUST FAN VFD FAULT***		X			X	
COOLING SETPOINT**	X				X	
HEATING SETPOINT**	X				X	
EMERGENCY SHUTDOWN**		X			X	
HIGH RETURN AIR HUMIDITY					X	
HIGH ZONE HUMIDITY					X	
SUPPLY FAN FAILURE					X	
SUPPLY FAN IN HAND					X	
EXHAUST FAN STATUS		X			X	
SUPPLY FAN STATUS		X			X	
UNIT START/STOP		X			X	
EXHAUST FAN FAILURE					X	
EXHAUST FAN IN HAND					X	
HIGH SUPPLY AIR TEMPERATURE					X	
LOW SUPPLY AIR TEMPERATURE					X	

** - INDICATES MONITORING POINTS
 *** - INDICATES COMMAND POINTS
 *** - EF - ONLY
 NOTE: CONTROLS ARE BY THE UNIT MANUFACTURER. EMS WILL MONITOR / CONTROL VIA BAS INTERFACE ONLY.

GENERAL NOTES:

KEY PLAN:

No.	Addendum / Revisions / Submissions	Date
3	Addendum 3	10.1.2021

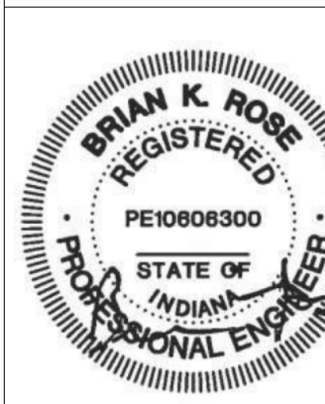
LWC
 INCORPORATED
 434 East First Street Dayton, OH 45402 937.223.6500
 712 East Main Street Richmond, IN 47374 765.966.3546

Richmond Community Schools
RICHMOND HIGH SCHOOL
 380 Hub Etchison Pkwy,
 Richmond, IN 47374
MECHANICAL MODERNIZATION PROJECT

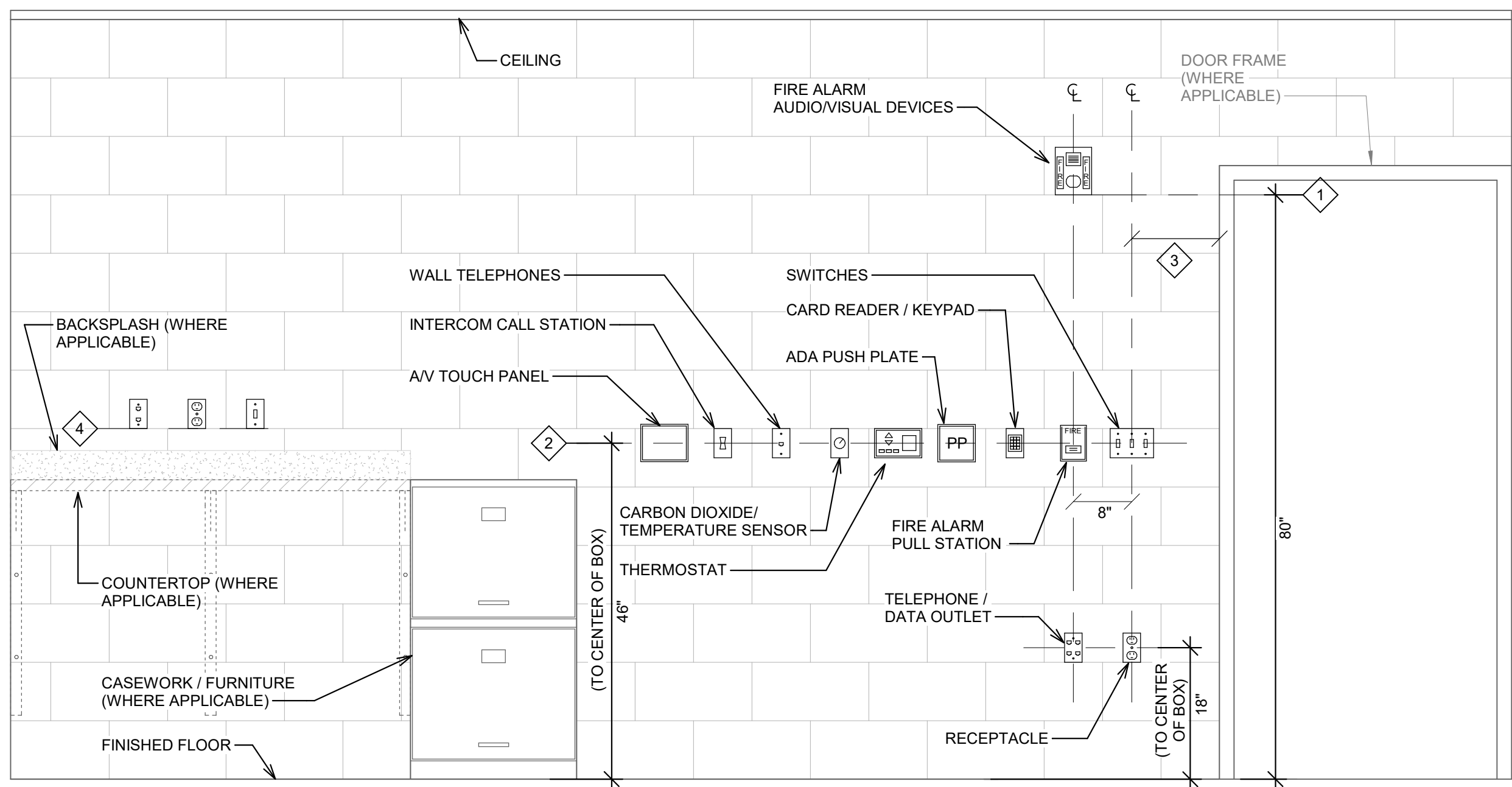
MECHANICAL CONTROLS

Comm. No.	Date
20104.02	8.27.2021
Drawn	Drawing No.
JLK	M607
Checked	
NPR	

© 2021 LWC, INCORPORATED



10/12/2021 8:16:41 PM
C:\Users\jeverson\Documents\ORH21_ELEC_R20_leverson\28D.GVT



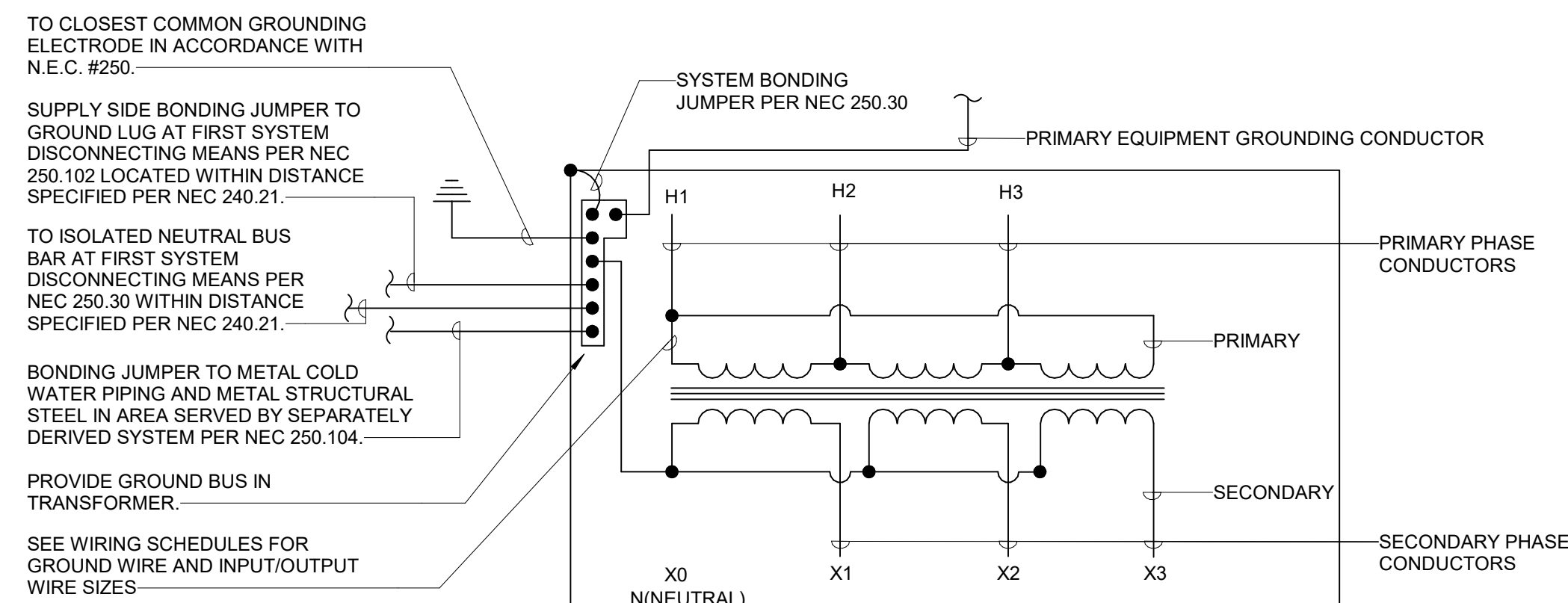
DEVICE MOUNTING DETAIL - GENERAL NOTES:

- WHERE DEVICES OF ANY DISCIPLINE ARE LOCATED IN THE SAME GENERAL AREA ON THE PLANS AND ARE SHOWN TO BE MOUNTED AT A SIMILAR HEIGHT, ALIGN HORIZONTALLY ALONG TOP OF DEVICE BACKBOX (AS SHOWN IN DETAIL AND DESCRIBED IN KEY NOTE #2).
- WHERE DEVICES OF ANY DISCIPLINE ARE LOCATED IN THE SAME GENERAL AREA ON THE PLANS AND ARE SHOWN MOUNTED AT DIFFERENT HEIGHTS, ALIGN VERTICALLY ALONG THE CENTERLINE OF THE DEVICE BACKBOX (AS SHOWN IN DETAIL).
- FOR ANY WALL OTHER THAN PAINTED GYPSUM BOARD OR CMU, DEVICE LOCATIONS MUST BE FIELD APPROVED BY ENGINEER OR ARCHITECT PRIOR TO INSTALLATION OF FINISHES.
- ADA REQUIRES 48" ABOVE FINISH FLOOR FOR FRONT ACCESS. SIDE REACH ACCESS ALLOWS A MAXIMUM OF 54" AND A LOW SIDE REACH OF NO LESS THAN 9" ABOVE FINISH FLOOR. ADA FRONT AND SIDE REACH ACCESS MUST BE MAINTAINED FOR NEW AND EXISTING CONSTRUCTION. NOTIFY ARCHITECT AND ENGINEER OF ANY DISCREPANCIES.

DEVICE MOUNTING DETAIL - KEY NOTES:

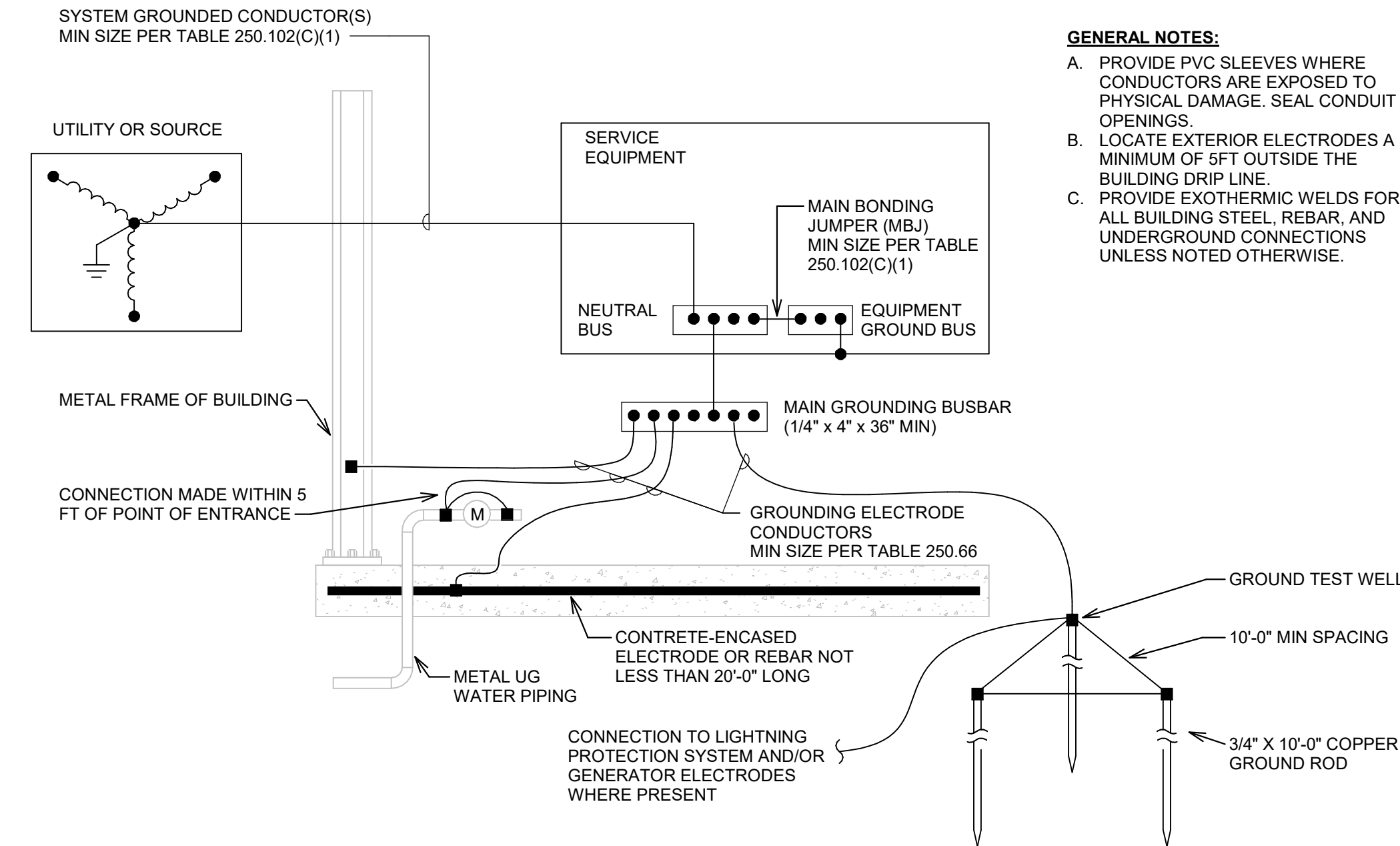
- MOUNT VISUAL NOTIFICATION APPLIANCES SO THAT ENTIRE LENS IS BETWEEN 80" AND 96" AFF. IF CEILING IS TOO LOW FOR DEVICE TO BE MOUNTED ABOVE 80", MOUNT SO THAT THE LENS IS WITHIN 1" OF FINISHED CEILING.
- ALIGN BACKBOXES OF DEVICES AT THE MOUNTING HEIGHT INDICATED. MEASURE TO THE CENTER OF THE BACKBOX FOR STANDARD OUTLET BOXES. NON-STANDARD BACKBOXES ARE TO BE INSTALLED SUCH THAT THE FINISHED DEVICES ARE ALIGNED ALONG THEIR RESPECTIVE CENTERLINES.
- MOUNTING HEIGHTS SHOWN ILLUSTRATE DESIGN INTENT AND ARE TO BE FOLLOWED UNLESS CONTRADICTED BY APPLICABLE CODE. WHERE DEVICES ARE SHOWN ADJACENT TO DOOR FRAMES ON PLANS INSTALL 12" FROM FRAME TO AVOID SLUSHED SECTIONS OR BRACING. SPECIFIC DEVICES ARE SHOWN IN RELATIVE ORDER FROM DOOR FRAME WHERE THESE DEVICES ARE NOT PRESENT AT A PARTICULAR LOCATION, ADJUST LOCATIONS CLOSER TO DOOR ACCORDINGLY.
- THE CONTRACTOR IS TO COORDINATE ALL ROUGH-INS WITH ANY COUNTERTOPS/BACKPLASHES/WALL PROTECTION TO AVOID CONFLICT. ALIGN DEVICE BACKBOXES IN THE BOTTOM OF THE NEXT FULL BLOCK ABOVE THE BACKPLASH AS SHOWN. FOR NON-BLOCK WALLS ALIGN BOTTOM OF DEVICE BACKBOXES 4" ABOVE BACKPLASH. COORDINATE WORK WITH CASEWORK AND KITCHEN SHOP DRAWINGS ACCORDINGLY. IF CONFLICT STILL ARISES CONTACT THE ENGINEER FOR DIRECTION ON HOW TO PROCEED.

A TYPICAL WALL DEVICE MOUNTING DETAIL
SCALE: NONE



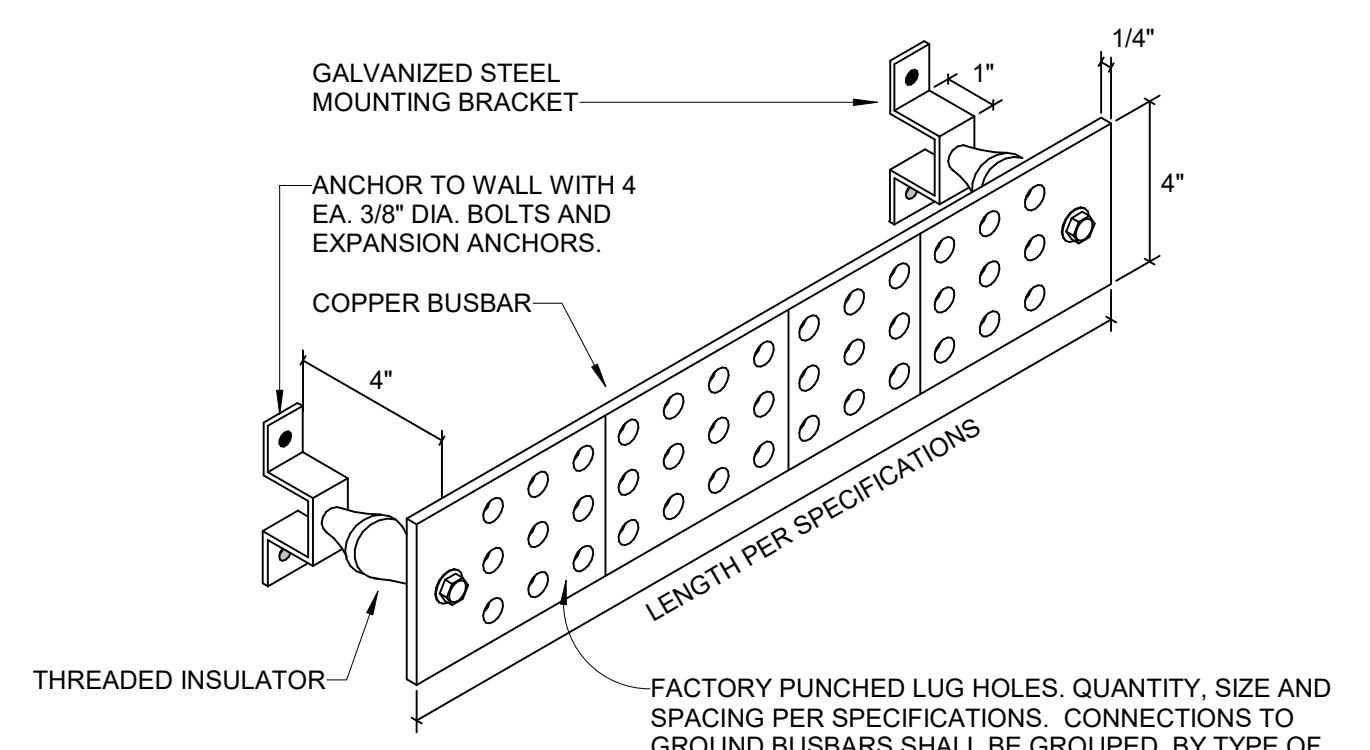
- GENERAL NOTES:**
- THE FINAL 12" TO 18" OF RACEWAY CONNECTION TO BOTH PRIMARY AND SECONDARY SIDES SHALL BE "SEAL-TITE" TYPE UA FLEXIBLE CONDUIT OR EQUAL, FOR VIBRATION ISOLATION.
 - ALL FLOOR-MOUNTED TRANSFORMERS 75KVA AND HIGHER TO HAVE A 4" HIGH REINFORCED CONCRETE PAD.

E DETAIL OF TYPICAL DRY-TYPE TRANSFORMER INSTALLATION
SCALE: NONE



- GENERAL NOTES:**
- PROVIDE PVC SLEEVES WHERE CONDUCTORS ARE EXPOSED TO PHYSICAL DAMAGE. SEAL CONDUIT OPENINGS.
 - LOCATE EXTERIOR ELECTRODES A MINIMUM OF 5 FT OUTSIDE THE BUILDING DRIP LINE.
 - PROVIDE EXOTHERMIC WELDS FOR ALL BUILDING STEEL REBAR, AND UNDERGROUND CONNECTIONS UNLESS NOTED OTHERWISE.

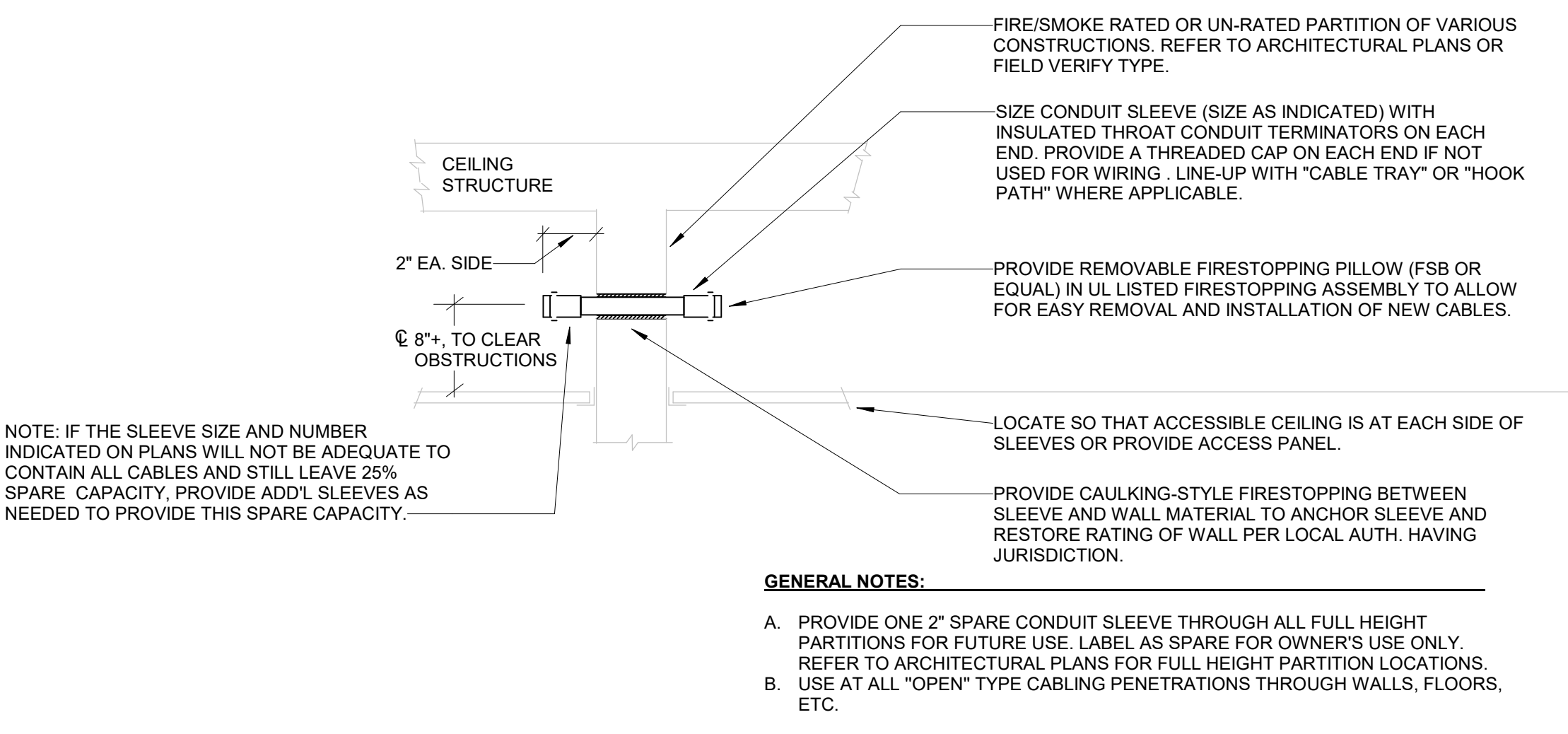
F GROUNDING ELECTRODE SYSTEM DETAIL
SCALE: NONE



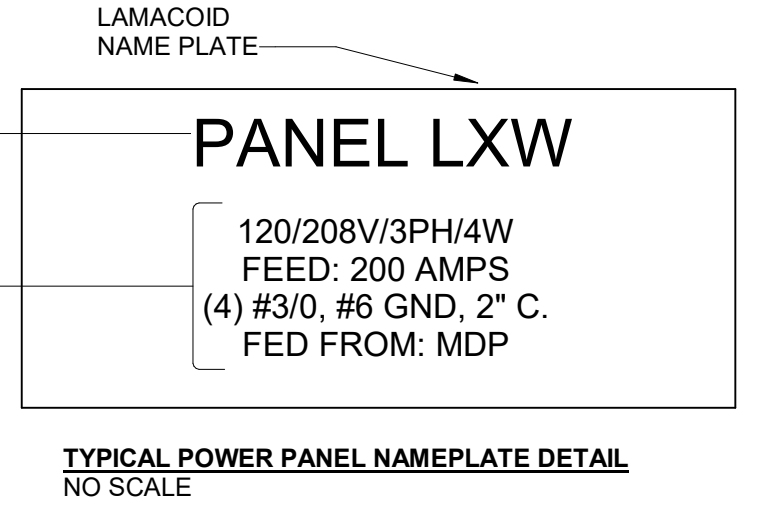
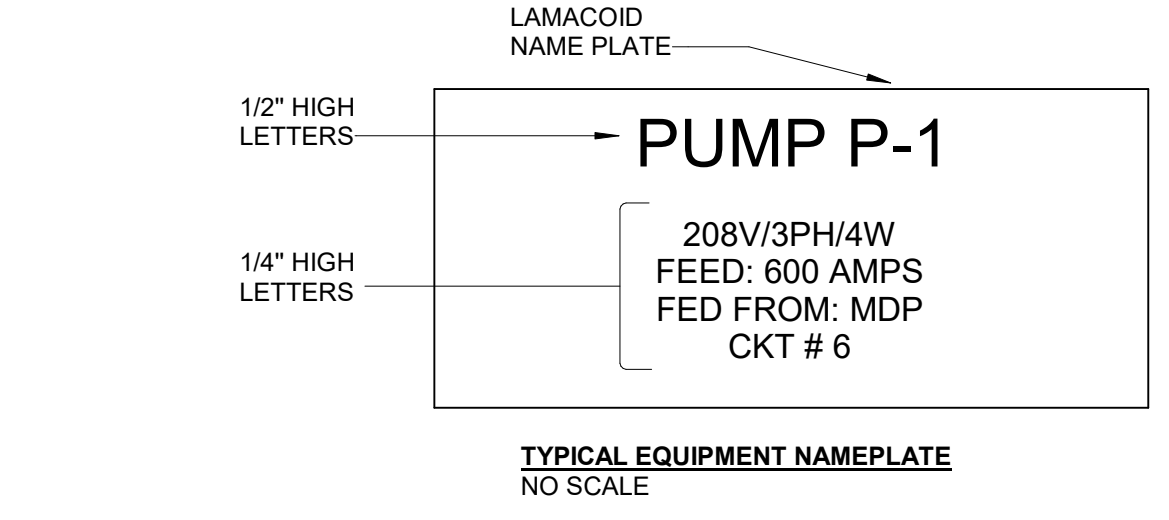
P	A	N	I
SURGE PRODUCERS	SURGE ABSORBERS	NON ISOLATED GROUND ZONES (2G)	ISOLATED GROUND ZONES (IGZ)
AC EQUIP. CABLE SHIELDS	BUILDING STEEL WATER LINE METALLIC PIPING CONCRETE ENCASED ELECTRODES GROUND RINGS	CABLE TRAY SYSTEM EQUIP. FRAME BATTERY RACKS ANCILLARY EQUIPMENT DC GROUND	LOGIC GROUND ISOLATED GROUNDS

G GROUND BUS BAR MOUNTING
SCALE: NONE

B CONDUIT WALL SLEEVE INSTALLATION
SCALE: NONE

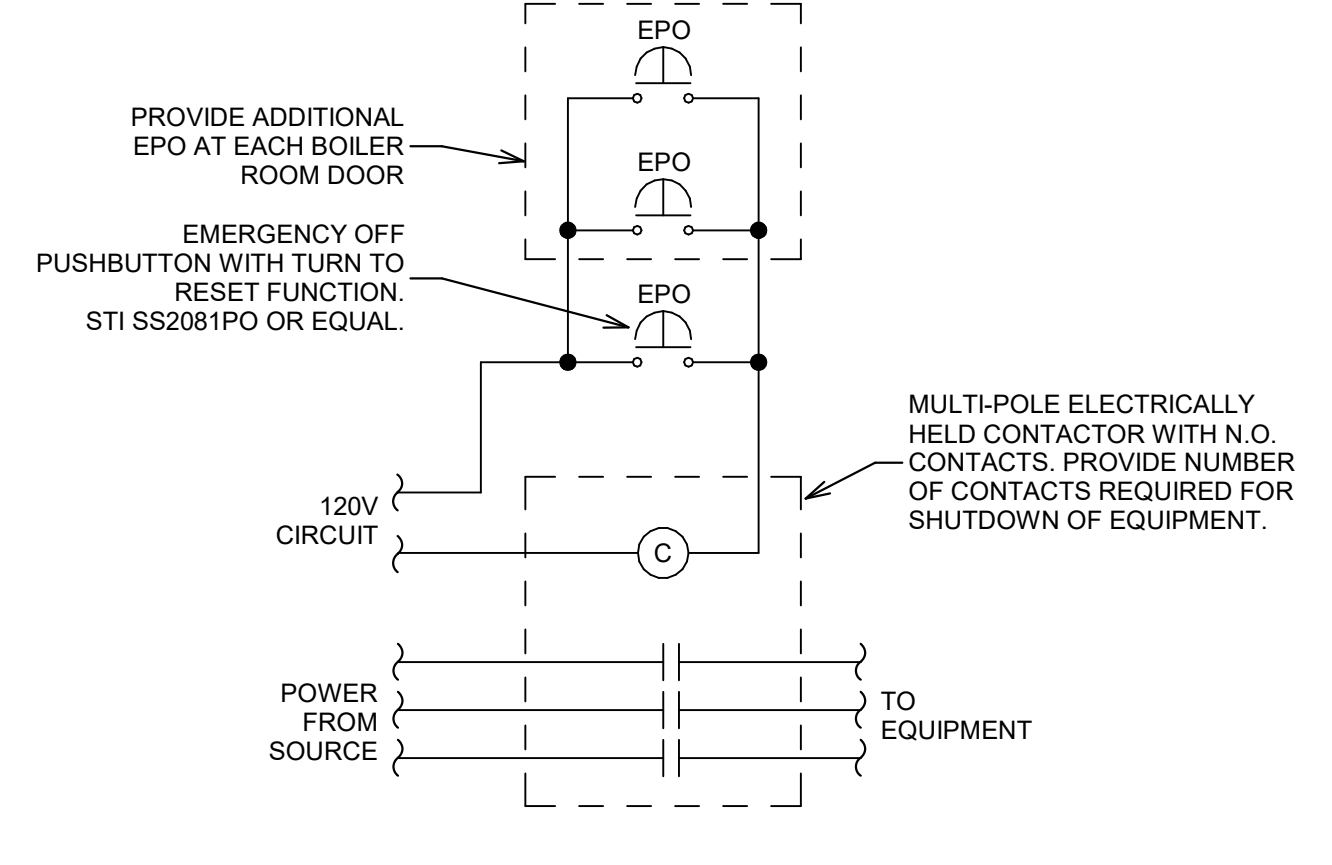


- GENERAL NOTES:**
- PROVIDE ONE 2" SPARE CONDUIT SLEEVE THROUGH ALL FULL HEIGHT PARTITIONS FOR FUTURE USE. LABEL AS SPARE FOR OWNER'S USE ONLY. REFER TO ARCHITECTURAL PLANS FOR FULL HEIGHT PARTITION LOCATIONS.
 - USE AT ALL "OPEN" TYPE CABLING PENETRATIONS THROUGH WALLS, FLOORS, ETC.



- GENERAL NOTES:**
- NORMAL POWER LABELS SHALL BE BLACK WITH WHITE LETTERS.
 - EMERGENCY POWER LABELS SHALL BE RED WITH WHITE LETTERS. LABEL SHOULD ALSO INCLUDE THE WORD "EMERGENCY" IN 1/4" LETTERS.
 - EMERGENCY POWER LABELS IN HEALTHCARE APPLICATIONS SHOULD INCLUDE SYSTEM SEVERED "LIFE SAFETY", "CRITICAL" OR "EQUIPMENT".
 - UTILIZE SCREW-IN TYPE LAMACOID PLATES.
 - THIS DETAIL APPLIES TO ALL ELECTRICAL EQUIPMENT INCLUDING PANELS, SWITCHGEAR, DISCONNECTS, TRANSFORMERS, MOTOR STARTERS, VARIABLE FREQUENCY DRIVES (VFD'S), SPECIAL DEVICE PLATES, INVERTER, AND SIMILAR MATERIALS SHALL BE CLEARLY MARKED AS TO THEIR FUNCTION AND USE.

C ELECTRICAL EQUIPMENT NAMEPLATE
SCALE: NONE



- NOTES:**
- ALL BOILER EMERGENCY SHUTDOWN DEVICES TO BE INSTALLED IN ACCORDANCE WITH CURRENT EDITION OF ASME CSD-1.
 - PROVIDE EPO WITH INDOOR/OUTDOOR PROTECTIVE COVER AND SOUNDER.
 - PROVIDE #12 CONTROL WIRING IN DEDICATED RACEWAY TO EPO(S).
 - SEQUENCE OF OPERATION:
 - UNDER NORMAL CONDITIONS THE CONTACTOR COIL IS ENERGIZED AND ALL CONTACTS IN THE CONTACTOR ARE CLOSED ALLOWING THE EQUIPMENT TO BE POWERED.
 - ACTIVATION: DEPRESSING ANY EPO BUTTON DE-ENERGIZES THE CONTACTOR COIL AND OPENS ALL CONTACTS TO REMOVE POWER TO THE EQUIPMENT.
 - RESET: EPO BUTTON TWIST RESET FUNCTION RE-ENERGIZES THE CONTACTOR COIL AND CLOSURES ALL CONTACTS.
 - FAIL-SAFE OPERATION: POWER OR WIRING FAILURE IN THE EMERGENCY OFF SYSTEM WILL DE-ENERGIZE THE BOILERS.

D BOILER EMERGENCY SHUT DOWN CONTACTOR
SCALE: NONE

No.	Revisions / Submissions	Date
1	Bid Documents	08.27.2021
2	ADDENDUM 3	10.01.2021

LWC
INCORPORATED
434 East First Street Dayton, OH 45402 937.223.6500
712 East Main Street Richmond, IN 47374 765.966.3546

CMTA

1650 Lake Shore Dr. Columbus, OH 43204 614.992.1500

WE R RICHMOND
RICHMOND COMMUNITY SCHOOLS
RICHMOND HIGH SCHOOL
380 Hub Etchison Pkwy,
Richmond, IN 47374

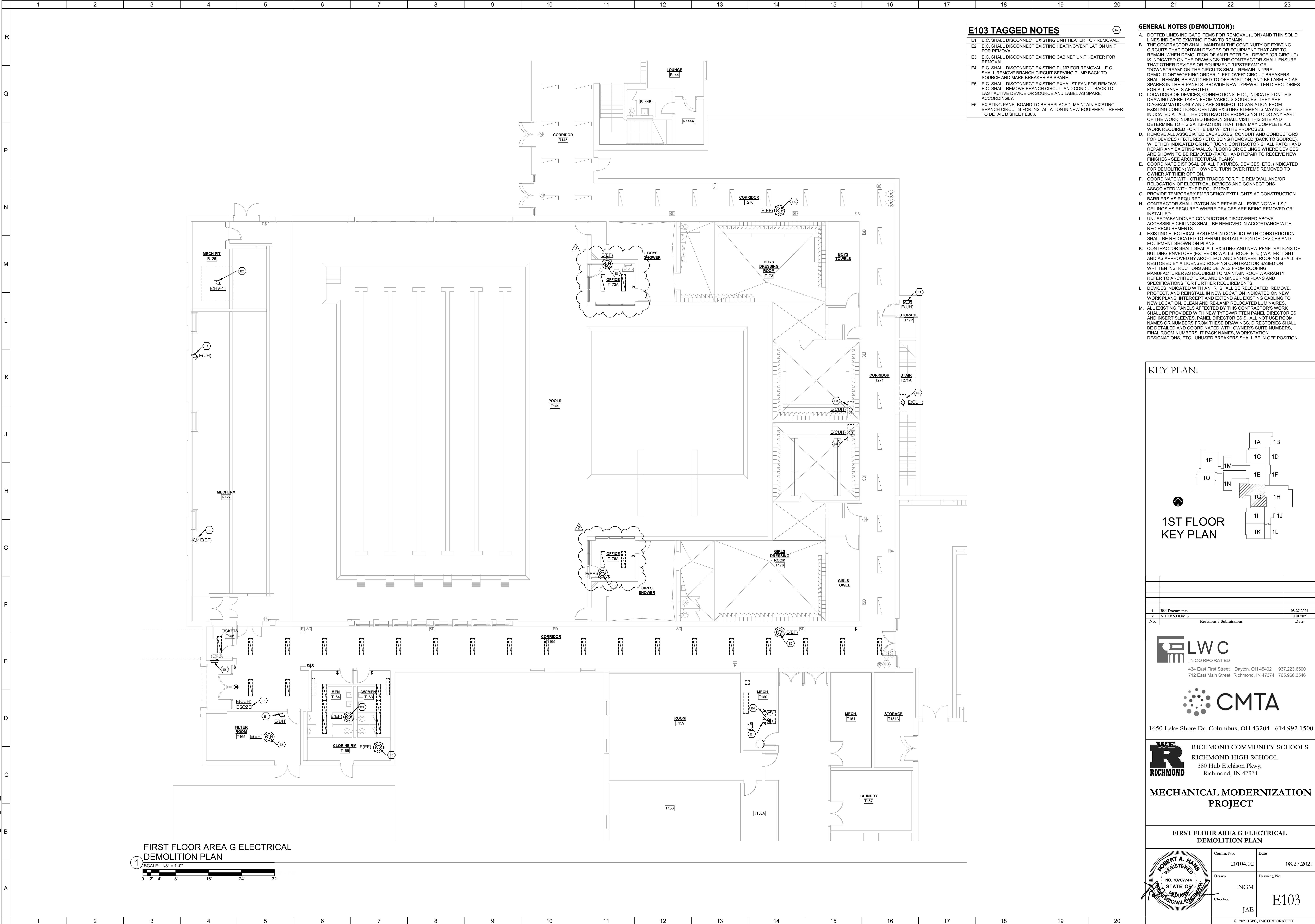
MECHANICAL MODERNIZATION PROJECT

LIGHTING FIXTURE SCHEDULE & ELECTRICAL DETAILS

TYPE	DESCRIPTION	BASIS OF DESIGN	EQUAL MANUFACTURERS	MOUNTING	LAMPS / CCT	MINIMUM LUMENS	MAXIMUM WATTAGE	VOLTAGE	REMARKS
D1	6" NATATORIUM RATED DOWNLIGHT	KENALL #HADL6-FF-33L-40K8-W-CSS-G-RIG6-DV-SIM1-NAT	LIGMAN	RECESSED	4000K	2375	35	120/277	
D2	6" RECESSED DOWNLIGHT	PRESCOLITE #LTR-6RD-H-SL10L-DM1-EM-LET-6RD-1-SL-40K-8-WD-SS-EM	GOTHAM, LITHONIA	RECESSED	4000K	1104	12	120/277	
ST1	4" LED LINEAR STRIP FIXTURE	COLUMBIA CSL4-LSC5-GLH5	LITHONIA, DAYBRITE	PENDANT	4000K	4050	30	120/277	
T1	2"X4" PANEL FIXTURE	COLUMBIA CBT240-LSC5	LITHONIA, DAYBRITE	RECESSED	4000K	2965	28	120/277	
T2	2"X4" FLAT PANEL FIXTURE	COLUMBIA CBT240-LSC5	LITHONIA, DAYBRITE	RECESSED	4000K	4959	28	120/277	
T3	1"X4" SEALED RECESSED TROFFER	KENALL #CSEDI-14-32L-40K8-DIM1-DV-2F-4H-SYM	DAYBRITE	RECESSED	4000K	3700	32	120/277	
X1	EXIT SIGN	LITHONIA #LOM-S-W-3-R-MOLT-ELN	CHLORIDE, DUAL-LIFE	WALL	RED		2	120/277	

ROBERT A. HANKS
REGISTERED PROFESSIONAL ENGINEER
No. 10707744
STATE OF INDIANA
Checked: JAE
Date: 2010.04.02
Drawing No.: NGM
Project No.: E002
© 2021 LWC, INCORPORATED

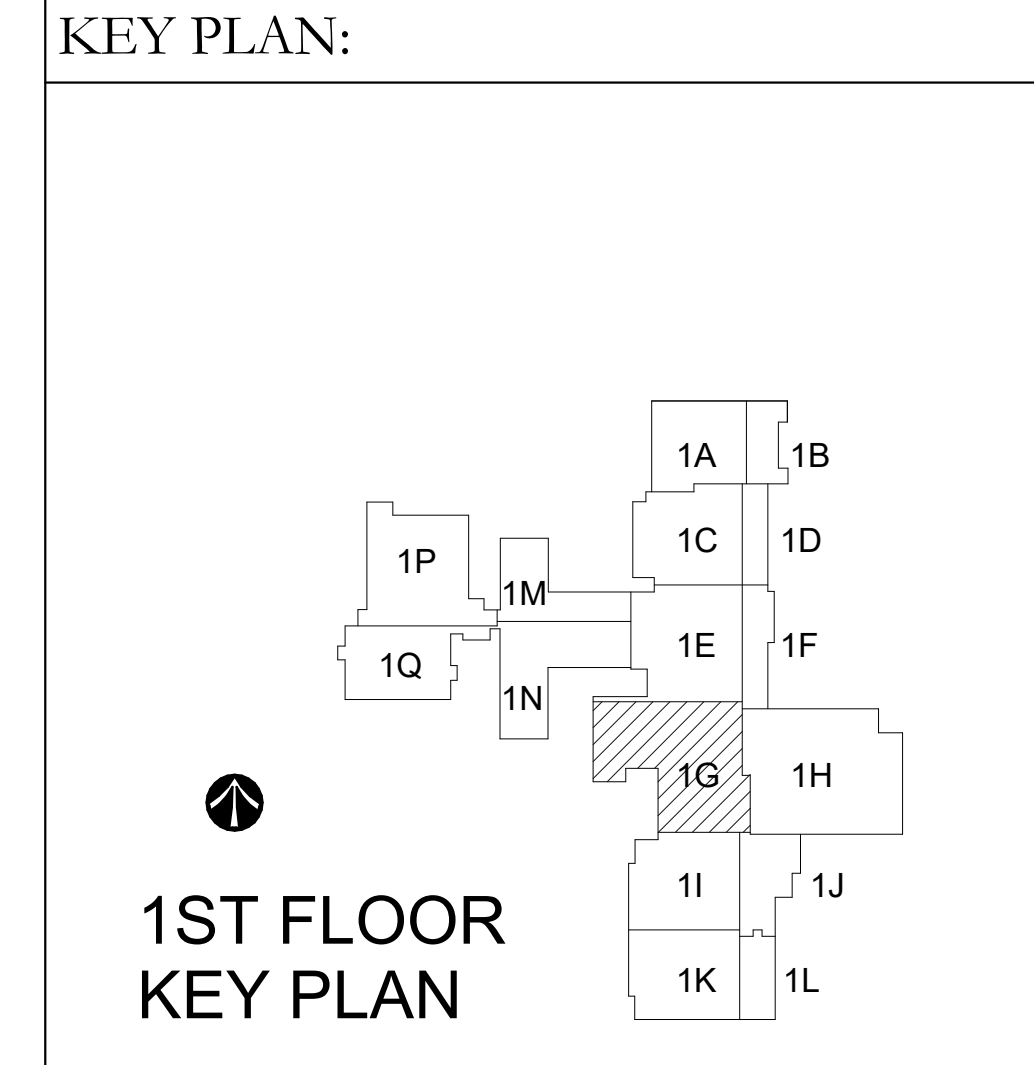
10/12/2021 8:16:45 PM
C:\Users\jeverson\Documents\ORH21_ELEC_R20_jevers128DG.rvt



E103 TAGGED NOTES

E1	E.C. SHALL DISCONNECT EXISTING UNIT HEATER FOR REMOVAL.
E2	E.C. SHALL DISCONNECT EXISTING HEATING/VENTILATION UNIT FOR REMOVAL.
E3	E.C. SHALL DISCONNECT EXISTING CABINET UNIT HEATER FOR REMOVAL.
E4	E.C. SHALL DISCONNECT EXISTING PUMP FOR REMOVAL. E.C. SHALL REMOVE BRANCH CIRCUIT SERVING PUMP BACK TO SOURCE AND MARK BREAKER AS SPARE.
E5	E.C. SHALL DISCONNECT EXISTING EXHAUST FAN FOR REMOVAL. E.C. SHALL REMOVE BRANCH CIRCUIT AND CONDUIT BACK TO LAST ACTIVE DEVICE OR SOURCE AND LABEL AS SPARE ACCORDINGLY.
E6	EXISTING PANELBOARD TO BE REPLACED. MAINTAIN EXISTING BRANCH CIRCUITS FOR INSTALLATION IN NEW EQUIPMENT. REFER TO DETAIL D SHEET E003.

- GENERAL NOTES (DEMOLITION):**
- DOTTED LINES INDICATE ITEMS FOR REMOVAL (UON) AND THIN SOLID LINES INDICATE EXISTING ITEMS TO REMAIN.
 - THE CONTRACTOR SHALL MAINTAIN THE CONTINUITY OF EXISTING CIRCUITS THAT CONTAIN DEVICES OR EQUIPMENT THAT ARE TO REMAIN. WHEN DEMOLITION OF AN ELECTRICAL DEVICE (OR CIRCUIT) IS INDICATED ON THE DRAWINGS, THE CONTRACTOR SHALL ENSURE THAT OTHER DEVICES OR EQUIPMENT "UPSTREAM" OR "DOWNSTREAM" ON THE CIRCUITS SHALL REMAIN IN "PRE-DEMOLITION WORKING ORDER". "LEFT-OVER" CIRCUIT BREAKERS SHALL REMAIN, BE SWITCHED TO OFF POSITION, AND BE LABELED AS SPARES IN THEIR PANELS. PROVIDE NEW TYPEWRITTEN DIRECTORIES FOR ALL PANELS AFFECTED.
 - LOCATIONS OF DEVICES, CONNECTIONS, ETC., INDICATED ON THIS DRAWING WERE TAKEN FROM VARIOUS SOURCES. THEY ARE DIAGRAMMATIC ONLY AND ARE SUBJECT TO VARIATION FROM EXISTING CONDITIONS. CERTAIN EXISTING ELEMENTS MAY NOT BE INDICATED AT ALL. THE CONTRACTOR PROPOSING TO DO ANY PART OF THE WORK INDICATED HEREON SHALL VISIT THIS SITE AND DETERMINE TO HIS SATISFACTION THAT THEY MAY COMPLETE ALL WORK REQUIRED FOR THE BID WHICH HE PROPOSES.
 - REMOVE ALL ASSOCIATED BACKBOXES, CONDUIT AND CONDUCTORS FOR DEVICES / FIXTURES / ETC. BEING REMOVED (BACK TO SOURCE), WHETHER INDICATED OR NOT (UON). CONTRACTOR SHALL PATCH AND REPAIR ANY EXISTING WALLS, FLOORS OR CEILINGS WHERE DEVICES ARE SHOWN TO BE REMOVED (PATCH AND REPAIR TO RECEIVE NEW FINISHES - SEE ARCHITECTURAL PLANS).
 - COORDINATE DISPOSAL OF ALL FIXTURES, DEVICES, ETC. (INDICATED FOR DEMOLITION) WITH OWNER. TURN OVER ITEMS REMOVED TO OWNER AT THEIR OPTION.
 - COORDINATE WITH OTHER TRADES FOR THE REMOVAL AND/OR RELOCATION OF ELECTRICAL DEVICES AND CONNECTIONS.
 - PROVIDE TEMPORARY EMERGENCY EXIT LIGHTS AT CONSTRUCTION BARRIERS AS REQUIRED.
 - CONTRACTOR SHALL PATCH AND REPAIR ALL EXISTING WALLS / CEILINGS AS REQUIRED WHERE DEVICES ARE BEING REMOVED OR INSTALLED.
 - UNUSED/ABANDONED CONDUCTORS DISCOVERED ABOVE ACCESSIBLE CEILINGS SHALL BE REMOVED IN ACCORDANCE WITH NEC REQUIREMENTS.
 - EXISTING ELECTRICAL SYSTEMS IN CONFLICT WITH CONSTRUCTION SHALL BE RELOCATED TO PERMIT INSTALLATION OF DEVICES AND EQUIPMENT SHOWN ON PLANS.
 - CONTRACTOR SHALL SEAL ALL EXISTING AND NEW PENETRATIONS OF BUILDING ENVELOPE (EXTERIOR WALLS, ROOF, ETC.) WATER-TIGHT AND AS APPROVED BY ARCHITECT AND ENGINEER. ROOFING SHALL BE RESTORED BY A LICENSED ROOFING CONTRACTOR BASED ON WRITTEN INSTRUCTIONS AND DETAILS FROM ROOFING MANUFACTURER AS REQUIRED TO MAINTAIN ROOF WARRANTY. REFER TO ARCHITECTURAL AND ENGINEERING PLANS AND SPECIFICATIONS FOR FURTHER REQUIREMENTS.
 - DEVICES INDICATED WITH AN "R" SHALL BE RELOCATED, REMOVE, PROTECT, AND REINSTALL IN NEW LOCATION INDICATED ON NEW WORK PLANS. INTERCEPT AND EXTEND ALL EXISTING CABLING TO NEW LOCATION. CLEAN AND RE-LAMP RELOCATED LUMINAIRES.
 - ALL EXISTING PANELS AFFECTED BY THIS CONTRACTOR'S WORK SHALL BE PROVIDED WITH NEW TYPEWRITTEN PANEL DIRECTORIES AND INSERT SLEEVES. PANEL DIRECTORIES SHALL NOT USE ROOM NAMES OR NUMBERS FROM THESE DRAWINGS. DIRECTORIES SHALL BE DETAILED AND COORDINATED WITH OWNER'S SUITE NUMBERS, FINAL ROOM NUMBERS, IT RACK NAMES, WORKSTATION DESIGNATIONS, ETC. UNUSED BREAKERS SHALL BE IN OFF POSITION.



No.	Revisions / Submissions	Date
1	Bid Documents	08.27.2021
2	ADDENDUM 3	10.01.2021

LWC
INCORPORATED
434 East First Street Dayton, OH 45402 937.223.6500
712 East Main Street Richmond, IN 47374 765.966.3546

CMTA
1650 Lake Shore Dr. Columbus, OH 43204 614.992.1500

WE R RICHMOND RICHMOND COMMUNITY SCHOOLS
RICHMOND HIGH SCHOOL
380 Hub Etchison Pkwy,
Richmond, IN 47374

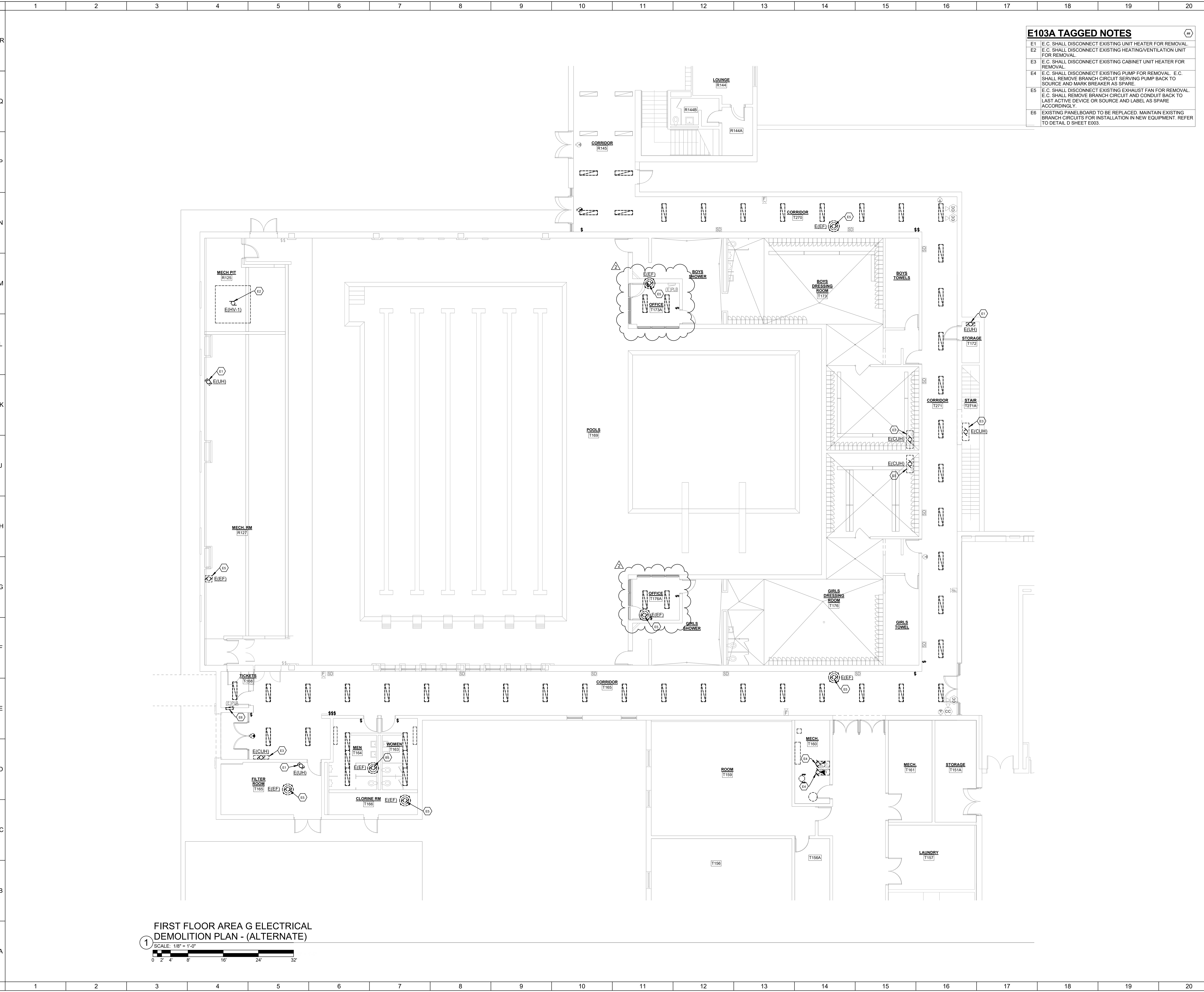
MECHANICAL MODERNIZATION PROJECT

FIRST FLOOR AREA G ELECTRICAL DEMOLITION PLAN

	Comm. No.	Date
	20104.02	08.27.2021
	Drawn	Drawing No.
	NGM	E103
Checked	JAE	

10/11/2021 8:16:47 PM

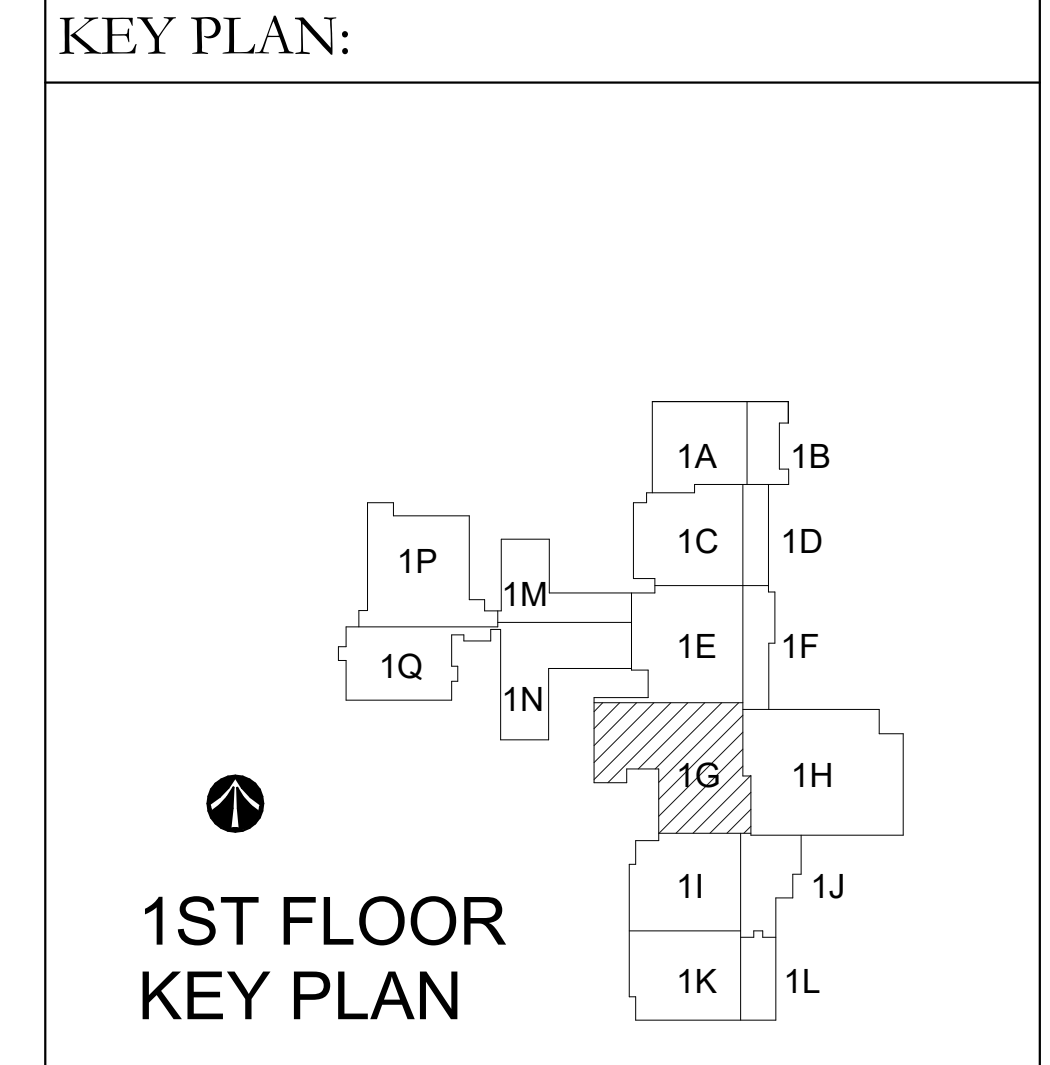
C:\Users\jeverson\Documents\ORH21_ELEC_R20_jevers128DGC.rvt



E103A TAGGED NOTES

- E1 E.C. SHALL DISCONNECT EXISTING UNIT HEATER FOR REMOVAL.
- E2 E.C. SHALL DISCONNECT EXISTING HEATING/VENTILATION UNIT FOR REMOVAL.
- E3 E.C. SHALL DISCONNECT EXISTING CABINET UNIT HEATER FOR REMOVAL.
- E4 E.C. SHALL DISCONNECT EXISTING PUMP FOR REMOVAL. E.C. SHALL REMOVE BRANCH CIRCUIT SERVING PUMP BACK TO SOURCE AND MARK BREAKER AS SPARE.
- E5 E.C. SHALL DISCONNECT EXISTING EXHAUST FAN FOR REMOVAL. E.C. SHALL REMOVE BRANCH CIRCUIT AND CONDUIT BACK TO LAST ACTIVE DEVICE OR SOURCE AND LABEL AS SPARE ACCORDINGLY.
- E6 EXISTING PANELBOARD TO BE REPLACED. MAINTAIN EXISTING BRANCH CIRCUITS FOR INSTALLATION IN NEW EQUIPMENT. REFER TO DETAIL D SHEET E003.

- GENERAL NOTES (DEMOLITION):**
- A. DOTTED LINES INDICATE ITEMS FOR REMOVAL (UON) AND THIN SOLID LINES INDICATE EXISTING ITEMS TO REMAIN.
 - B. THE CONTRACTOR SHALL MAINTAIN THE CONTINUITY OF EXISTING CIRCUITS THAT CONTAIN DEVICES OR EQUIPMENT THAT ARE TO REMAIN. WHEN DEMOLITION OF AN ELECTRICAL DEVICE (OR CIRCUIT) IS INDICATED ON THE DRAWINGS, THE CONTRACTOR SHALL ENSURE THAT OTHER DEVICES OR EQUIPMENT UPSTREAM OR "DOWNSTREAM" ON THE CIRCUITS SHALL REMAIN IN "PRE-DEMOLITION" WORKING ORDER. "LEFT-OVER" CIRCUIT BREAKERS SHALL REMAIN, BE SWITCHED TO OFF POSITION, AND BE LABELED AS SPARES IN THEIR PANELS. PROVIDE NEW TYPEWRITTEN DIRECTORIES FOR ALL PANELS AFFECTED.
 - C. LOCATIONS OF DEVICES, CONNECTIONS, ETC., INDICATED ON THIS DRAWING WERE TAKEN FROM VARIOUS SOURCES. THEY ARE DIAGRAMMATIC ONLY AND ARE SUBJECT TO VARIATION FROM EXISTING CONDITIONS. CERTAIN EXISTING ELEMENTS MAY NOT BE INDICATED AT ALL. THE CONTRACTOR PROPOSING TO DO ANY PART OF THE WORK INDICATED HEREON SHALL VISIT THIS SITE AND DETERMINE TO HIS SATISFACTION THAT THEY MAY COMPLETE ALL WORK REQUIRED FOR THE BID WHICH HE PROPOSES.
 - D. REMOVE ALL ASSOCIATED BACKBOXES, CONDUIT AND CONDUCTORS FOR DEVICES / FIXTURES / ETC. BEING REMOVED (BACK TO SOURCE), WHETHER INDICATED OR NOT (UON). CONTRACTOR SHALL PATCH AND REPAIR ANY EXISTING WALLS, FLOORS OR CEILINGS WHERE DEVICES ARE SHOWN TO BE REMOVED (PATCH AND REPAIR TO RECEIVE NEW FINISHES - SEE ARCHITECTURAL PLANS).
 - E. COORDINATE DISPOSAL OF ALL FIXTURES, DEVICES, ETC. (INDICATED FOR DEMOLITION) WITH OWNER. TURN OVER ITEMS REMOVED TO OWNER AT THEIR OPTION.
 - F. COORDINATE WITH OTHER TRADES FOR THE REMOVAL AND/OR RELOCATION OF ELECTRICAL DEVICES AND CONNECTIONS ASSOCIATED WITH THEIR EQUIPMENT.
 - G. PROVIDE TEMPORARY EMERGENCY EXIT LIGHTS AT CONSTRUCTION BARRIERS AS REQUIRED.
 - H. CONTRACTOR SHALL PATCH AND REPAIR ALL EXISTING WALLS / CEILINGS AS REQUIRED WHERE DEVICES ARE BEING REMOVED OR INSTALLED.
 - I. UNUSED/ABANDONED CONDUCTORS DISCOVERED ABOVE ACCESSIBLE CEILINGS SHALL BE REMOVED IN ACCORDANCE WITH NEC REQUIREMENTS.
 - J. EXISTING ELECTRICAL SYSTEMS IN CONFLICT WITH CONSTRUCTION SHALL BE RELOCATED TO PERMIT INSTALLATION OF DEVICES AND EQUIPMENT SHOWN ON PLANS.
 - K. CONTRACTOR SHALL SEAL ALL EXISTING AND NEW PENETRATIONS OF BUILDING ENVELOPE (EXTERIOR WALLS, ROOF, ETC.) WATER-TIGHT AND AS APPROVED BY ARCHITECT AND ENGINEER. ROOFING SHALL BE RESTORED BY A LICENSED ROOFING CONTRACTOR BASED ON WRITTEN INSTRUCTIONS AND DETAILS FROM ROOFING MANUFACTURER AS REQUIRED TO MAINTAIN ROOF WARRANTY. REFER TO ARCHITECTURAL AND ENGINEERING PLANS AND SPECIFICATIONS FOR FURTHER REQUIREMENTS.
 - L. DEVICES INDICATED WITH AN "R" SHALL BE RELOCATED, REMOVE, PROTECT, AND REINSTALL IN NEW LOCATION INDICATED ON NEW WORK PLANS. INTERCEPT AND EXTEND ALL EXISTING CABLING TO NEW LOCATION. CLEAN AND RE-LAMP RELOCATED LUMINAIRES.
 - M. ALL EXISTING PANELS AFFECTED BY THIS CONTRACTOR'S WORK SHALL BE PROVIDED WITH NEW TYPE-WRITTEN PANEL DIRECTORIES AND INSERT SLEEVES. PANEL DIRECTORIES SHALL NOT USE ROOM NAMES OR NUMBERS FROM THESE DRAWINGS. DIRECTORIES SHALL BE DETAILED AND COORDINATED WITH OWNER'S SUITE NUMBERS, FINAL ROOM NUMBERS, IT RACK NAMES, WORKSTATION DESIGNATIONS, ETC. UNUSED BREAKERS SHALL BE IN OFF POSITION.



No.	Revisions / Submissions	Date
1	Bid Documents	08.27.2021
2	ADDENDUM 3	10.01.2021

LWC
INCORPORATED
434 East First Street Dayton, OH 45402 937.223.6500
712 East Main Street Richmond, IN 47374 765.966.3546

CMTA
1650 Lake Shore Dr. Columbus, OH 43204 614.992.1500

WE R RICHMOND RICHMOND COMMUNITY SCHOOLS
RICHMOND HIGH SCHOOL
380 Hub Etchison Pkwy,
Richmond, IN 47374

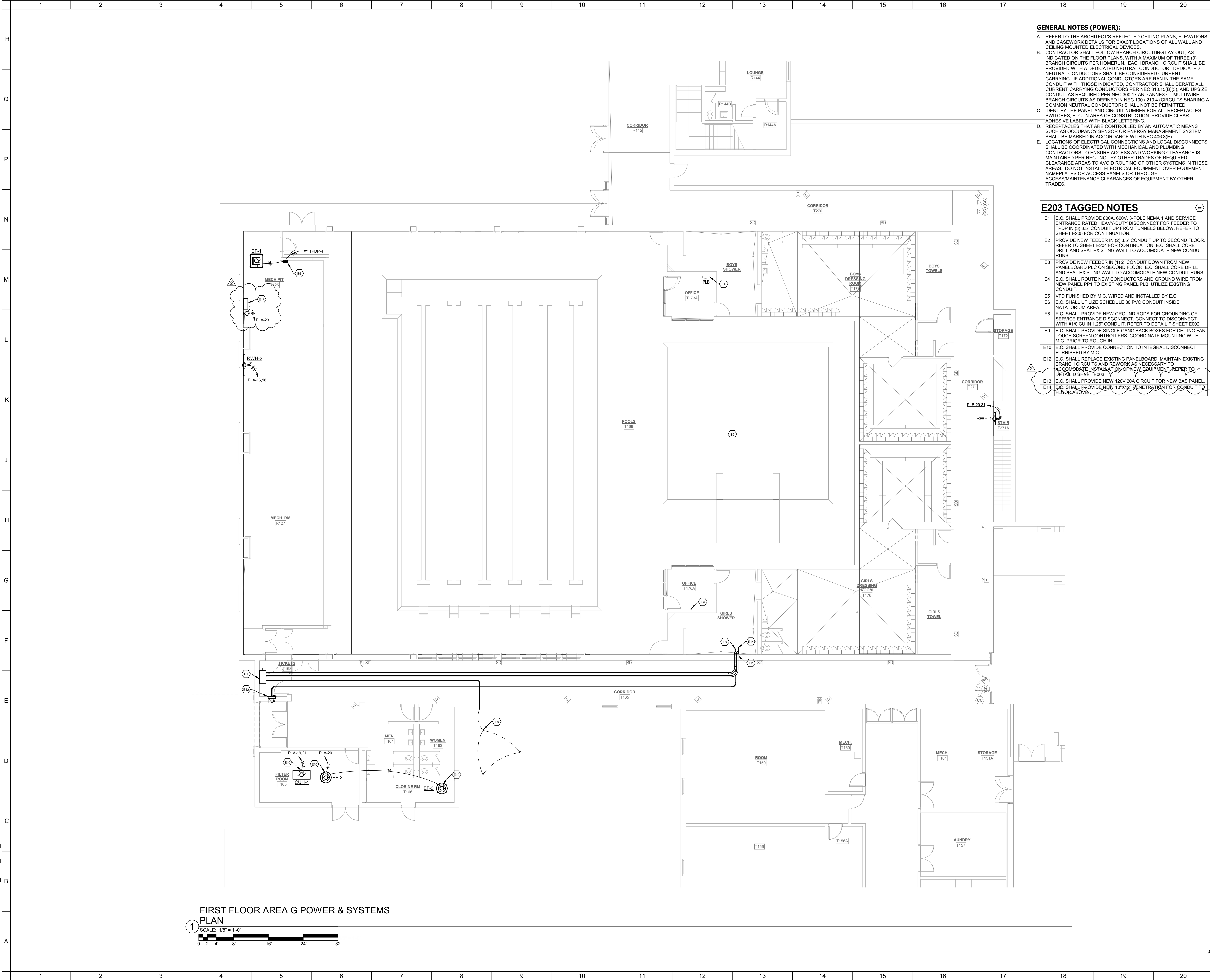
MECHANICAL MODERNIZATION PROJECT

FIRST FLOOR AREA G ELECTRICAL DEMOLITION PLAN - ALTERNATE

	Comm. No.	Date
	20104.02	08.27.2021
	Drawn	Drawing No.
NGM	E103A	
Checked	JAE	

© 2021 LWC, INCORPORATED

FIRST FLOOR AREA G ELECTRICAL DEMOLITION PLAN - (ALTERNATE)
SCALE: 1/8" = 1'-0"
0 2 4 8 16 24 32

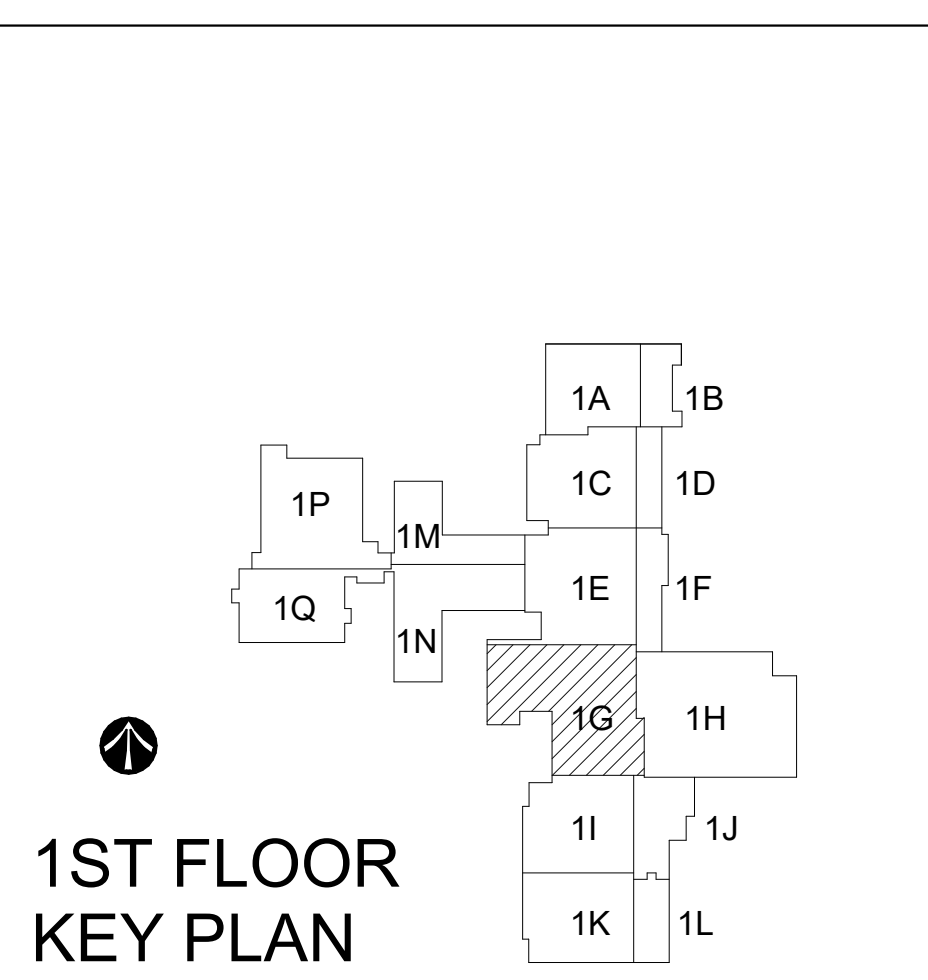


- GENERAL NOTES (POWER):**
- REFER TO THE ARCHITECT'S REFLECTED CEILING PLANS, ELEVATIONS, AND CASEWORK DETAILS FOR EXACT LOCATIONS OF ALL WALL AND CEILING MOUNTED ELECTRICAL DEVICES.
 - CONTRACTOR SHALL FOLLOW BRANCH CIRCUITING LAY-OUT, AS INDICATED ON THE FLOOR PLANS, WITH A MAXIMUM OF THREE (3) BRANCH CIRCUITS PER HOMERUN. EACH BRANCH CIRCUIT SHALL BE PROVIDED WITH A DEDICATED NEUTRAL CONDUCTOR. DEDICATED NEUTRAL CONDUCTORS SHALL BE CONSIDERED CURRENT CARRYING. IF ADDITIONAL CONDUCTORS ARE RAN IN THE SAME CONDUIT WITH THOSE INDICATED, CONTRACTOR SHALL DERATE ALL CURRENT CARRYING CONDUCTORS PER NEC 310.15(B)(3), AND UPSIZE CONDUIT AS REQUIRED PER NEC 300.17 AND ANNEX C. MULTIWIRE BRANCH CIRCUITS AS DEFINED IN NEC 100 / 210.4 (CIRCUITS SHARING A COMMON NEUTRAL CONDUCTOR) SHALL NOT BE PERMITTED.
 - IDENTIFY THE PANEL AND CIRCUIT NUMBER FOR ALL RECEPTACLES, SWITCHES, ETC. IN AREA OF CONSTRUCTION. PROVIDE CLEAR ADHESIVE LABELS WITH BLACK LETTERING.
 - RECEPTACLES THAT ARE CONTROLLED BY AN AUTOMATIC MEANS SUCH AS OCCUPANCY SENSOR OR ENERGY MANAGEMENT SYSTEM SHALL BE MARKED IN ACCORDANCE WITH NEC 408.3(E).
 - LOCATIONS OF ELECTRICAL CONNECTIONS AND LOCAL DISCONNECTS SHALL BE COORDINATED WITH MECHANICAL AND PLUMBING CONTRACTORS TO ENSURE ACCESS AND WORKING CLEARANCE IS MAINTAINED PER NEC. NOTIFY OTHER TRADES OF REQUIRED CLEARANCE AREAS TO AVOID ROUTING OF OTHER SYSTEMS IN THESE AREAS. DO NOT INSTALL ELECTRICAL EQUIPMENT OVER EQUIPMENT NAMEPLATES OR ACCESS PANELS OR THROUGH ACCESS/MAINTENANCE CLEARANCES OF EQUIPMENT BY OTHER TRADES.

- E203 TAGGED NOTES**
- E.C. SHALL PROVIDE 800A, 600V, 3-POLE NEMA 1 AND SERVICE ENTRANCE RATED HEAVY-DUTY DISCONNECT FOR FEEDER TO TRDP IN (3) 3.5" CONDUIT UP FROM TUNNELS BELOW. REFER TO SHEET E205 FOR CONTINUATION.
 - PROVIDE NEW FEEDER IN (2) 3.5" CONDUIT UP TO SECOND FLOOR. REFER TO SHEET E204 FOR CONTINUATION. E.C. SHALL CORE DRILL AND SEAL EXISTING WALL TO ACCOMMODATE NEW CONDUIT RUNS.
 - PROVIDE NEW FEEDER IN (1) 2" CONDUIT DOWN FROM NEW PANELBOARD P1C ON SECOND FLOOR. E.C. SHALL CORE DRILL AND SEAL EXISTING WALL TO ACCOMMODATE NEW CONDUIT RUNS.
 - E.C. SHALL ROUTE NEW CONDUCTORS AND GROUND WIRE FROM NEW PANEL P11 TO EXISTING PANEL P1B. UTILIZE EXISTING CONDUIT.
 - VFD FURNISHED BY M.C. WIRED AND INSTALLED BY E.C.
 - E.C. SHALL UTILIZE SCHEDULE 80 PVC CONDUIT INSIDE NATATORIUM AREA.
 - E.C. SHALL PROVIDE NEW GROUND RODS FOR GROUNDING OF SERVICE ENTRANCE DISCONNECT. CONNECT TO DISCONNECT WITH #10 CU IN 1.25" CONDUIT. REFER TO DETAIL F SHEET E202.
 - E.C. SHALL PROVIDE SINGLE GANG BACK BOXES FOR CEILING FAN TOUCH SCREEN CONTROLLERS. COORDINATE MOUNTING WITH M.C. PRIOR TO ROUGH IN.
 - E.C. SHALL PROVIDE CONNECTION TO INTEGRAL DISCONNECT FURNISHED BY M.C.
 - E.C. SHALL REPLACE EXISTING PANELBOARD, MAINTAIN EXISTING BRANCH CIRCUITS AND RENO OR AS NECESSARY TO ACCOMMODATE INSTALLATION OF NEW EQUIPMENT. REFER TO DETAIL D SHEET E003.
 - E.C. SHALL PROVIDE NEW 120V 20A CIRCUIT FOR NEW BAS PANEL.
 - E.C. SHALL PROVIDE NEW 10"x12" PENETRATION FOR CONDUIT TO FLOOR ABOVE.

- GENERAL NOTES (LIGHTING):**
- REFER TO THE ARCHITECT'S REFLECTED CEILING PLANS, ELEVATIONS, AND CASEWORK DETAILS FOR EXACT LOCATIONS OF ALL WALL AND CEILING MOUNTED ELECTRICAL DEVICES.
 - CONTRACTOR SHALL FOLLOW BRANCH CIRCUITING LAY-OUT, AS INDICATED ON THE FLOOR PLANS, WITH A MAXIMUM OF THREE (3) BRANCH CIRCUITS PER HOMERUN. EACH BRANCH CIRCUIT SHALL BE PROVIDED WITH A DEDICATED NEUTRAL CONDUCTOR. DEDICATED NEUTRAL CONDUCTORS SHALL BE CONSIDERED CURRENT CARRYING. IF ADDITIONAL CONDUCTORS ARE RAN IN THE SAME CONDUIT WITH THOSE INDICATED, CONTRACTOR SHALL DERATE ALL CURRENT CARRYING CONDUCTORS PER NEC 310.15(B)(3), AND UPSIZE CONDUIT AS REQUIRED PER NEC 300.17 AND ANNEX C. MULTIWIRE BRANCH CIRCUITS AS DEFINED IN N.E.C #100 / 210.4 (CIRCUITS SHARING A COMMON NEUTRAL CONDUCTOR) SHALL NOT BE PERMITTED.
 - IDENTIFY THE PANEL AND CIRCUIT NUMBER FOR ALL RECEPTACLES, SWITCHES, ETC. IN AREA OF CONSTRUCTION. PROVIDE CLEAR ADHESIVE LABELS WITH BLACK LETTERING.
 - LOCATE CHAIN-HUNG INDUSTRIAL FIXTURES IN MECHANICAL ROOMS TO AVOID DUCTWORK AND PIPING, TO MAXIMIZE AVAILABLE LIGHT SPACE AROUND EQUIPMENT, AIR HANDLERS, ETC. TO PROVIDE ADEQUATE LIGHTING TO ALL AREAS OF ROOM. PROVIDE ADDITIONAL FIXTURES OF SAME TYPE AS NEEDED TO FULFILL THIS REQUIREMENT.
 - LOCATE EXIT SIGNS FOR MAXIMUM VIEWING AREA TO IDENTIFY EGRESS PATHS AS INDICATED ON PLANS. COORDINATE LOCATIONS SUCH THAT ARCHITECTURAL FEATURES OR EQUIPMENT FROM OTHER TRADES DO NOT OBSTRUCT VIEW.
 - WHERE EXIT SIGNS OR EMERGENCY BATTERY PACKS ARE PROVIDED, THEY SHALL BE CONNECTED TO AN UNSWITCHED LINE.
 - LUMINAIRES INDICATED WITH MULTI-LEVEL SWITCHING SHALL HAVE SIMILAR LAMPS CONTROLLED TOGETHER, I.E. INBOARD AND OUTBOARD LAMPS OR RIGHT AND LEFT HAND LAMPS.
 - ALL LIGHTING FIXTURE LENSES, PARABOLIC LOUVERS, DOWNLIGHTING ALZAK CONES AND PARABOLIC LOUVERS SHALL BE HANDLED WITH COTTON GLOVES DURING INSTALLATION AND LAMPING TO AVOID FINGERPRINTS OR DIRT DEPOSITS. IT IS PREFERRED THAT FIXTURES BE SHIPPED AND INSTALLED WITH CLEAR PLASTIC BAGS TO PROTECT LOUVERS AT CLOSE OF PROJECT, AND AFTER CONSTRUCTION AIR FILTERS ARE CHANGED, REMOVE BAGS. ANY LOUVER OR CONE SHOWING DIRT OR FINGER PRINTS SHALL BE CLEANED WITH SOLVENT RECOMMENDED BY THE MANUFACTURER, OR REPLACED AS NECESSARY IN ORDER TO TURN OVER TO THE OWNER NEW FIXTURES AT OCCUPANCY.
 - RECESSED LUMINAIRES SHALL BE SECURED SUCH THAT THE FORCE REQUIRED INSERTING LAMPS, TRIMS, LENSES, LOUVERS, OR DOOR FRAMES DOES NOT SHIFT HOUSING. ALL TRIMS SHALL BE COMPLETELY FLUSH WITH FINISHED CEILING AT COMPLETION OF CONSTRUCTION.
 - CONTRACTOR SHALL PROVIDE UNSWITCHED CONDUCTOR TO ALL EXIT SIGNS, EMERGENCY INVERTER BATTERY PACKS, AND NIGHT LIGHTS AS REQUIRED.

KEY PLAN:



No.	Revisions / Submissions	Date
1	Bid Documents	08.27.2021
2	ADDENDUM 3	10.01.2021

LWC
INCORPORATED
434 East First Street Dayton, OH 45402 937.223.6500
712 East Main Street Richmond, IN 47374 765.966.3546

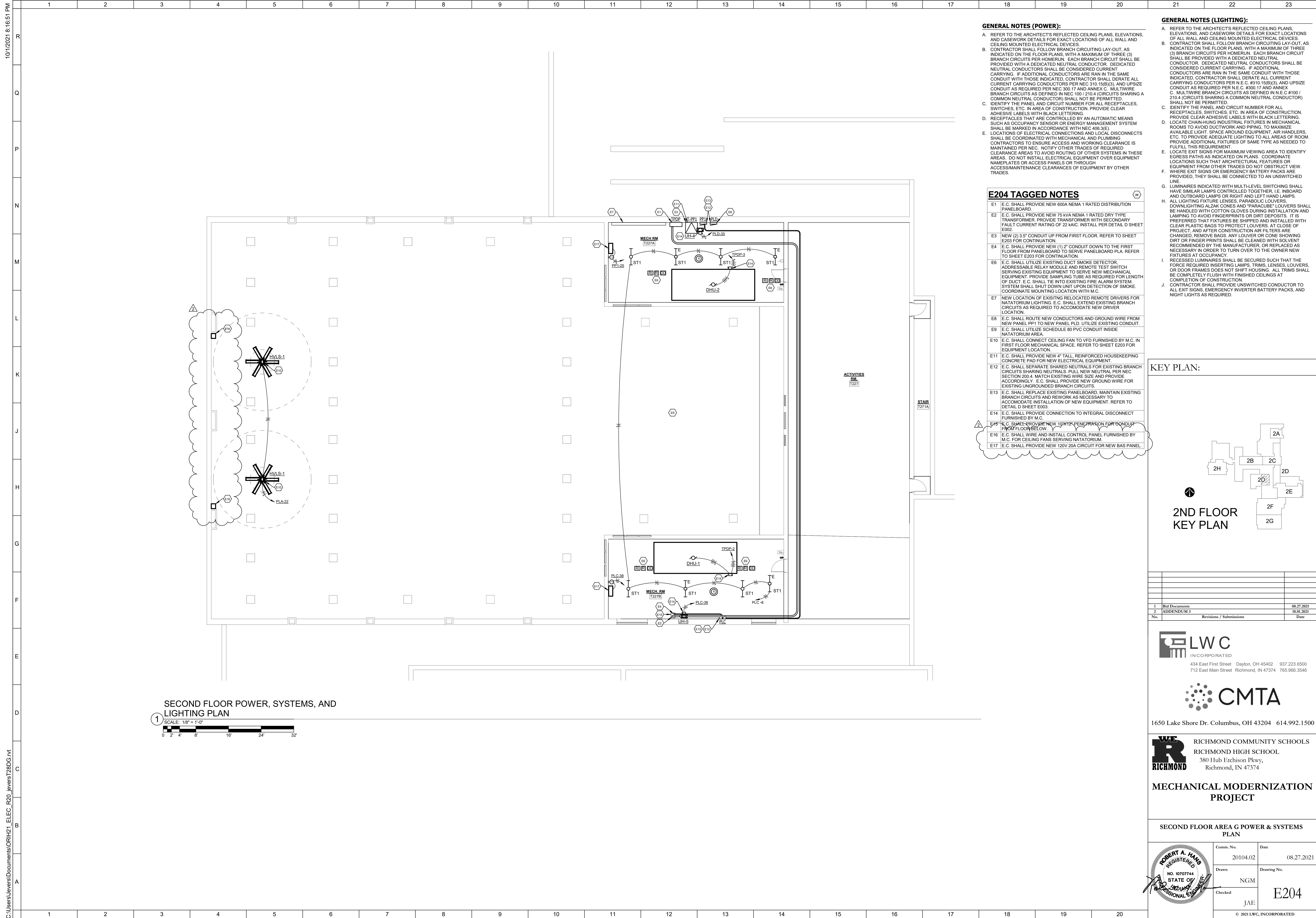
CMTA
1650 Lake Shore Dr. Columbus, OH 43204 614.992.1500

WE R RICHMOND RICHMOND COMMUNITY SCHOOLS
RICHMOND HIGH SCHOOL
380 Hub Etchison Pkwy,
Richmond, IN 47374

MECHANICAL MODERNIZATION PROJECT

FIRST FLOOR AREA G POWER & SYSTEMS PLAN

	Comm. No.	Date
	20104.02	08.27.2021
	Drawn	Drawing No.
Checked	NGM	E203
	JAE	

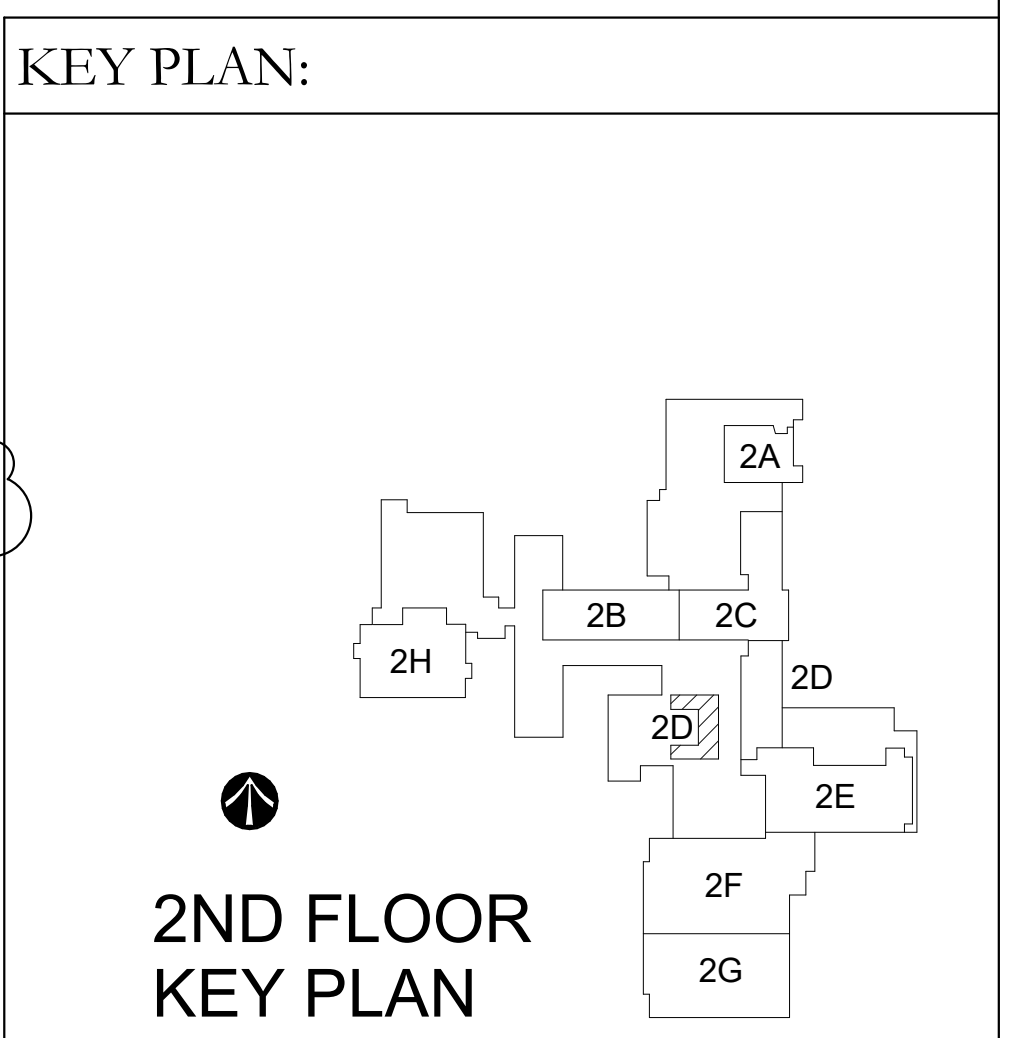


SECOND FLOOR POWER, SYSTEMS, AND LIGHTING PLAN
 1 SCALE: 1/8" = 1'-0"
 0 2 4 8 16 24 32

- GENERAL NOTES (POWER):**
- REFER TO THE ARCHITECT'S REFLECTED CEILING PLANS, ELEVATIONS, AND CASEWORK DETAILS FOR EXACT LOCATIONS OF ALL WALL AND CEILING MOUNTED ELECTRICAL DEVICES.
 - CONTRACTOR SHALL FOLLOW BRANCH CIRCUITING LAY-OUT, AS INDICATED ON THE FLOOR PLANS, WITH A MAXIMUM OF THREE (3) BRANCH CIRCUITS PER HOMERUN. EACH BRANCH CIRCUIT SHALL BE PROVIDED WITH A DEDICATED NEUTRAL CONDUCTOR. DEDICATED NEUTRAL CONDUCTORS SHALL BE CONSIDERED CURRENT CARRYING. IF ADDITIONAL CONDUCTORS ARE RAN IN THE SAME CONDUIT WITH THOSE INDICATED, CONTRACTOR SHALL DERATE ALL CURRENT CARRYING CONDUCTORS PER NEC 310.15(B)(3), AND UPSIZE CONDUIT AS REQUIRED PER NEC 300.17 AND ANNEX C. MULTIWIRE BRANCH CIRCUITS AS DEFINED IN NEC 100 / 210.4 (CIRCUITS SHARING A COMMON NEUTRAL CONDUCTOR) SHALL NOT BE PERMITTED.
 - IDENTIFY THE PANEL AND CIRCUIT NUMBER FOR ALL RECEPTACLES, SWITCHES, ETC. IN AREA OF CONSTRUCTION. PROVIDE CLEAR ADHESIVE LABELS WITH BLACK LETTERING.
 - RECEPTACLES THAT ARE CONTROLLED BY AN AUTOMATIC MEANS SUCH AS OCCUPANCY SENSOR OR ENERGY MANAGEMENT SYSTEM SHALL BE MARKED IN ACCORDANCE WITH NEC 406.3(E).
 - LOCATIONS OF ELECTRICAL CONNECTIONS AND LOCAL DISCONNECTS SHALL BE COORDINATED WITH MECHANICAL AND PLUMBING CONTRACTORS TO ENSURE ACCESS AND WORKING CLEARANCE IS MAINTAINED PER NEC. NOTIFY OTHER TRADES OF REQUIRED CLEARANCE AREAS TO AVOID ROUTING OF OTHER SYSTEMS IN THESE AREAS. DO NOT INSTALL ELECTRICAL EQUIPMENT OVER EQUIPMENT NAMEPLATES OR ACCESS PANELS OR THROUGH ACCESS/MAINTENANCE CLEARANCES OF EQUIPMENT BY OTHER TRADES.

- E204 TAGGED NOTES**
- E.C. SHALL PROVIDE NEW 600A NEMA 1 RATED DISTRIBUTION PANELBOARD.
 - E.C. SHALL PROVIDE NEW 75VA NEMA 1 RATED DRY TYPE TRANSFORMER. PROVIDE TRANSFORMER WITH SECONDARY FAULT CURRENT RATING OF 22 KAIC. INSTALL PER DETAIL D SHEET E002.
 - NEW (2) 3" 5' CONDUIT UP FROM FIRST FLOOR. REFER TO SHEET E203 FOR CONTINUATION.
 - E.C. SHALL PROVIDE NEW (1) 2" CONDUIT DOWN TO THE FIRST FLOOR FROM PANELBOARD TO SERVE PANELBOARD P.L.A. REFER TO SHEET E203 FOR CONTINUATION.
 - E.C. SHALL UTILIZE EXISTING DUCT SMOKE DETECTOR, ADDRESSABLE RELAY MODULE AND REMOTE TEST SWITCH SERVING EXISTING EQUIPMENT TO SERVE NEW MECHANICAL EQUIPMENT. PROVIDE SAMPLING TUBE AS REQUIRED FOR LENGTH OF DUCT. E.C. SHALL TIE INTO EXISTING FIRE ALARM SYSTEM. SYSTEM SHALL SHUT DOWN UNIT UPON DETECTION OF SMOKE. COORDINATE MOUNTING LOCATION WITH M.C.
 - NEW LOCATION OF EXISTING RELOCATED REMOTE DRIVERS FOR NATATORIUM LIGHTING. E.C. SHALL EXTEND EXISTING BRANCH CIRCUITS AS REQUIRED TO ACCOMMODATE NEW DRIVER LOCATION.
 - E.C. SHALL ROUTE NEW CONDUCTORS AND GROUND WIRE FROM NEW PANEL P.P.1 TO NEW PANEL P.L.D. UTILIZE EXISTING CONDUIT.
 - E.C. SHALL UTILIZE SCHEDULE 80 PVC CONDUIT INSIDE NATATORIUM AREA.
 - E.C. SHALL CONNECT CEILING FAN TO VFD FURNISHED BY M.C. IN FIRST FLOOR MECHANICAL SPACE. REFER TO SHEET E203 FOR EQUIPMENT LOCATION.
 - E.C. SHALL PROVIDE NEW 4" TALL REINFORCED HOUSEKEEPING CONCRETE PAD FOR NEW ELECTRICAL EQUIPMENT.
 - E.C. SHALL SEPARATE SHARED NEUTRALS FOR EXISTING BRANCH CIRCUITS SHARING NEUTRALS. PULL NEW NEUTRAL PER NEC SECTION 200.4. MATCH EXISTING WIRE SIZE AND PROVIDE ACCORDINGLY. E.C. SHALL PROVIDE NEW GROUND WIRE FOR EXISTING UNGROUNDED BRANCH CIRCUITS.
 - E.C. SHALL REPLACE EXISTING PANELBOARD, MAINTAIN EXISTING BRANCH CIRCUITS AND REWORK AS NECESSARY TO ACCOMMODATE INSTALLATION OF NEW EQUIPMENT. REFER TO DETAIL D SHEET E003.
 - E.C. SHALL PROVIDE CONNECTION TO INTEGRAL DISCONNECT FURNISHED BY M.C.
 - E.C. SHALL PROVIDE NEW 10X12" PENETRATION FOR CONDUIT FROM FLOOR BELOW.
 - E.C. SHALL WIRE AND INSTALL CONTROL PANEL FURNISHED BY M.C. FOR CEILING FANS SERVING NATATORIUM.
 - E.C. SHALL PROVIDE NEW 120V 20A CIRCUIT FOR NEW BAS PANEL.

- GENERAL NOTES (LIGHTING):**
- REFER TO THE ARCHITECT'S REFLECTED CEILING PLANS, ELEVATIONS, AND CASEWORK DETAILS FOR EXACT LOCATIONS OF ALL WALL AND CEILING MOUNTED ELECTRICAL DEVICES.
 - CONTRACTOR SHALL FOLLOW BRANCH CIRCUITING LAY-OUT, AS INDICATED ON THE FLOOR PLANS, WITH A MAXIMUM OF THREE (3) BRANCH CIRCUITS PER HOMERUN. EACH BRANCH CIRCUIT SHALL BE PROVIDED WITH A DEDICATED NEUTRAL CONDUCTOR. DEDICATED NEUTRAL CONDUCTORS SHALL BE CONSIDERED CURRENT CARRYING. IF ADDITIONAL CONDUCTORS ARE RAN IN THE SAME CONDUIT WITH THOSE INDICATED, CONTRACTOR SHALL DERATE ALL CURRENT CARRYING CONDUCTORS PER N.E.C. #310.15(B)(3), AND UPSIZE CONDUIT AS REQUIRED PER N.E.C. #300.17 AND ANNEX C. MULTIWIRE BRANCH CIRCUITS AS DEFINED IN N.E.C. #100 / 210.4 (CIRCUITS SHARING A COMMON NEUTRAL CONDUCTOR) SHALL NOT BE PERMITTED.
 - IDENTIFY THE PANEL AND CIRCUIT NUMBER FOR ALL RECEPTACLES, SWITCHES, ETC. IN AREA OF CONSTRUCTION. PROVIDE CLEAR ADHESIVE LABELS WITH BLACK LETTERING.
 - LOCATE CHAIN-HUNG INDUSTRIAL FIXTURES IN MECHANICAL ROOMS TO AVOID DUCTWORK AND PIPING. TO MAXIMIZE AVAILABLE LIGHT SPACE AROUND EQUIPMENT, AIR HANDLERS, ETC. TO PROVIDE ADEQUATE LIGHTING TO ALL AREAS OF ROOM. PROVIDE ADDITIONAL FIXTURES OF SAME TYPE AS NEEDED TO FULFILL THIS REQUIREMENT.
 - LOCATE EXIT SIGNS FOR MAXIMUM VIEWING AREA TO IDENTIFY EGRESS PATHS AS INDICATED ON PLANS. COORDINATE LOCATIONS SUCH THAT ARCHITECTURAL FEATURES OR EQUIPMENT FROM OTHER TRADES DO NOT OBSTRUCT VIEW.
 - WHERE EXIT SIGNS OR EMERGENCY BATTERY PACKS ARE PROVIDED, THEY SHALL BE CONNECTED TO AN UNSWITCHED LINE.
 - LUMINAIRES INDICATED WITH MULTI-LEVEL SWITCHING SHALL HAVE SIMILAR LAMPS CONTROLLED TOGETHER, I.E. INBOARD AND OUTBOARD LAMPS OR RIGHT AND LEFT HAND LAMPS.
 - ALL LIGHTING FIXTURE LENSES, PARABOLIC LOUVERS, DOWNLIGHTING ALZAK CONES AND PARABOLIC LOUVERS SHALL BE HANDLED WITH COTTON GLOVES DURING INSTALLATION AND LAMPING TO AVOID FINGERPRINTS OR DIRT DEPOSITS. IT IS PREFERRED THAT FIXTURES BE SHIPPED AND INSTALLED WITH CLEAR PLASTIC BAGS TO PROTECT LOUVERS AT CLOSE OF PROJECT, AND AFTER CONSTRUCTION AIR FILTERS ARE CHANGED. REMOVE BAGS. ANY LOUVER OR CONE SHOWING DIRT OR FINGER PRINTS SHALL BE CLEANED WITH SOLVENT RECOMMENDED BY THE MANUFACTURER, OR REPLACED AS NECESSARY IN ORDER TO TURN OVER TO THE OWNER NEW FIXTURES AT OCCUPANCY.
 - RECESSED LUMINAIRES SHALL BE SECURED SUCH THAT THE FORCE REQUIRED INSERTING LAMPS, TRIMS, LENSES, LOUVERS, OR DOOR FRAMES DOES NOT SHIFT HOUSING. ALL TRIMS SHALL BE COMPLETELY FLUSH WITH FINISHED CEILING AT COMPLETION OF CONSTRUCTION.
 - CONTRACTOR SHALL PROVIDE UNSWITCHED CONDUCTOR TO ALL EXIT SIGNS, EMERGENCY INVERTER BATTERY PACKS, AND NIGHT LIGHTS AS REQUIRED.



No.	Revisions / Submissions	Date
1	Bid Documents	08.27.2021
2	ADDENDUM 3	10.01.2021

LWC
 INCORPORATED
 434 East First Street Dayton, OH 45402 937.223.6500
 712 East Main Street Richmond, IN 47374 765.966.3546

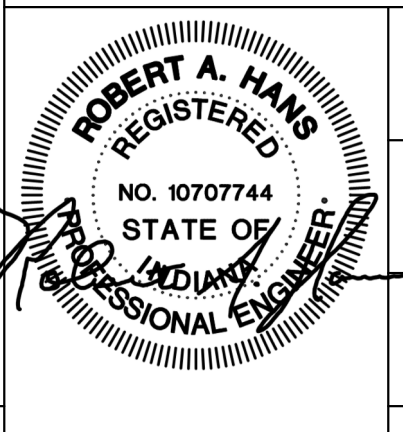
CMTA
 1650 Lake Shore Dr. Columbus, OH 43204 614.992.1500

RICHMOND COMMUNITY SCHOOLS
RICHMOND HIGH SCHOOL
 380 Hub Etchison Pkwy,
 Richmond, IN 47374

MECHANICAL MODERNIZATION PROJECT

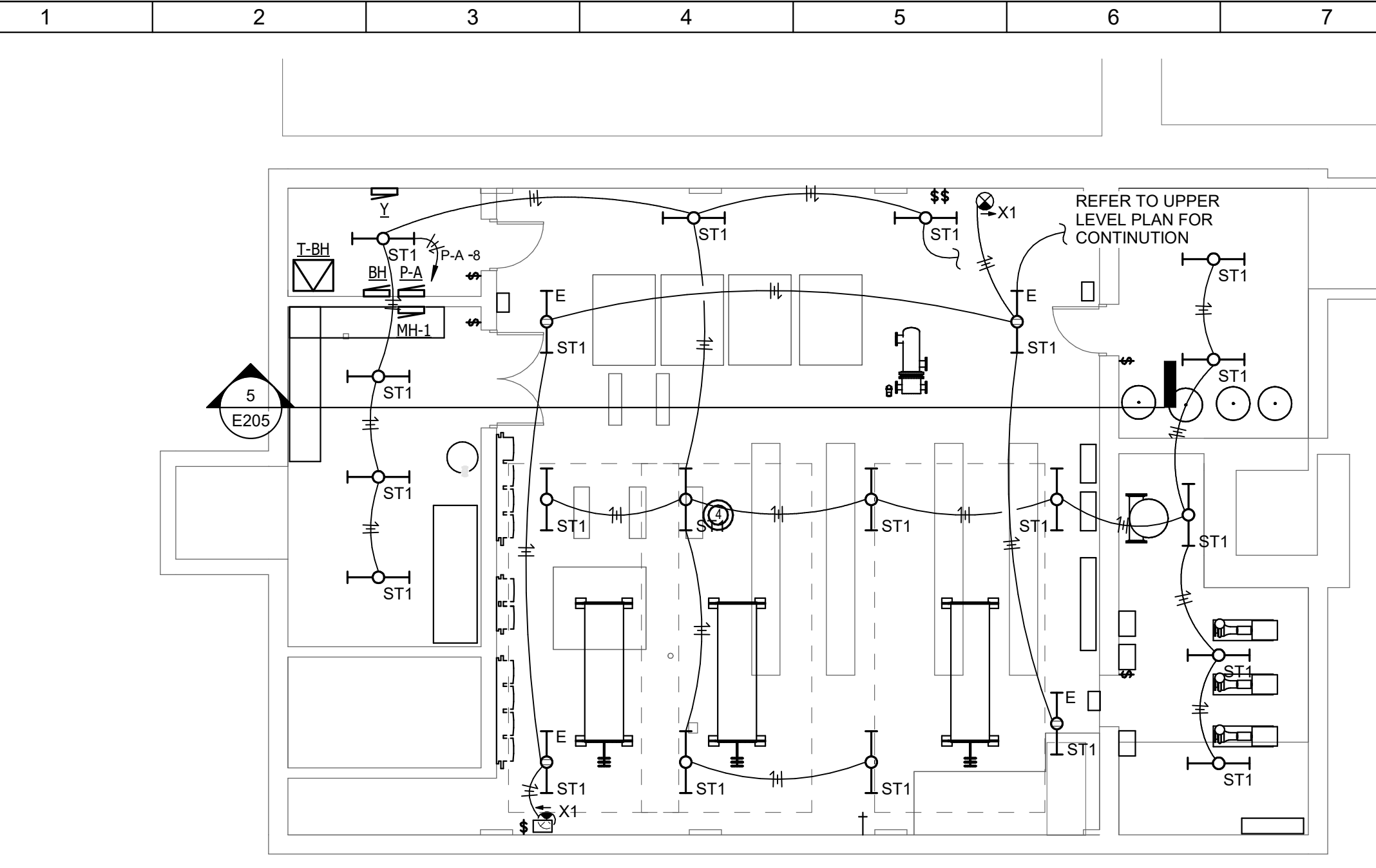
SECOND FLOOR AREA G POWER & SYSTEMS PLAN

Comm. No.	Date
20104.02	08.27.2021
Drawn	Drawing No.
NGM	E204
Checked	JAE

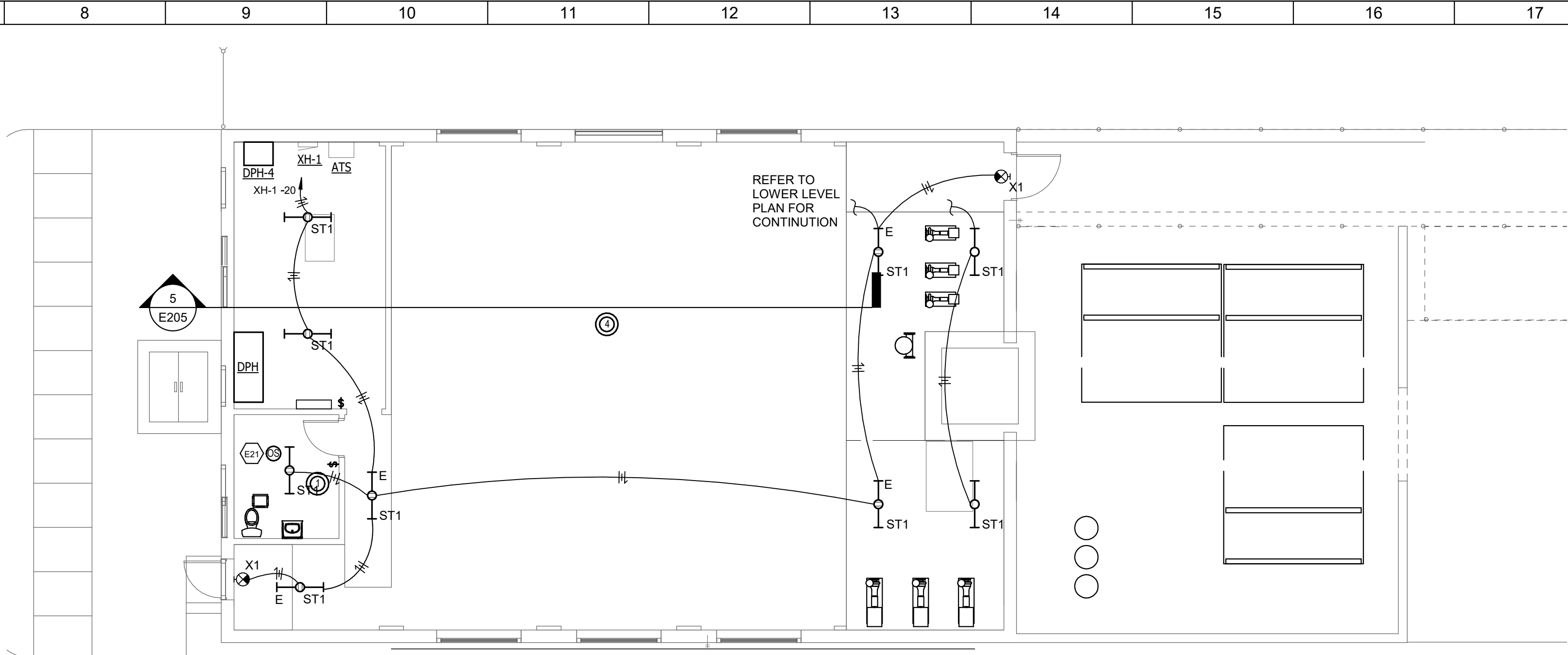


10/11/2021 8:16:59 PM

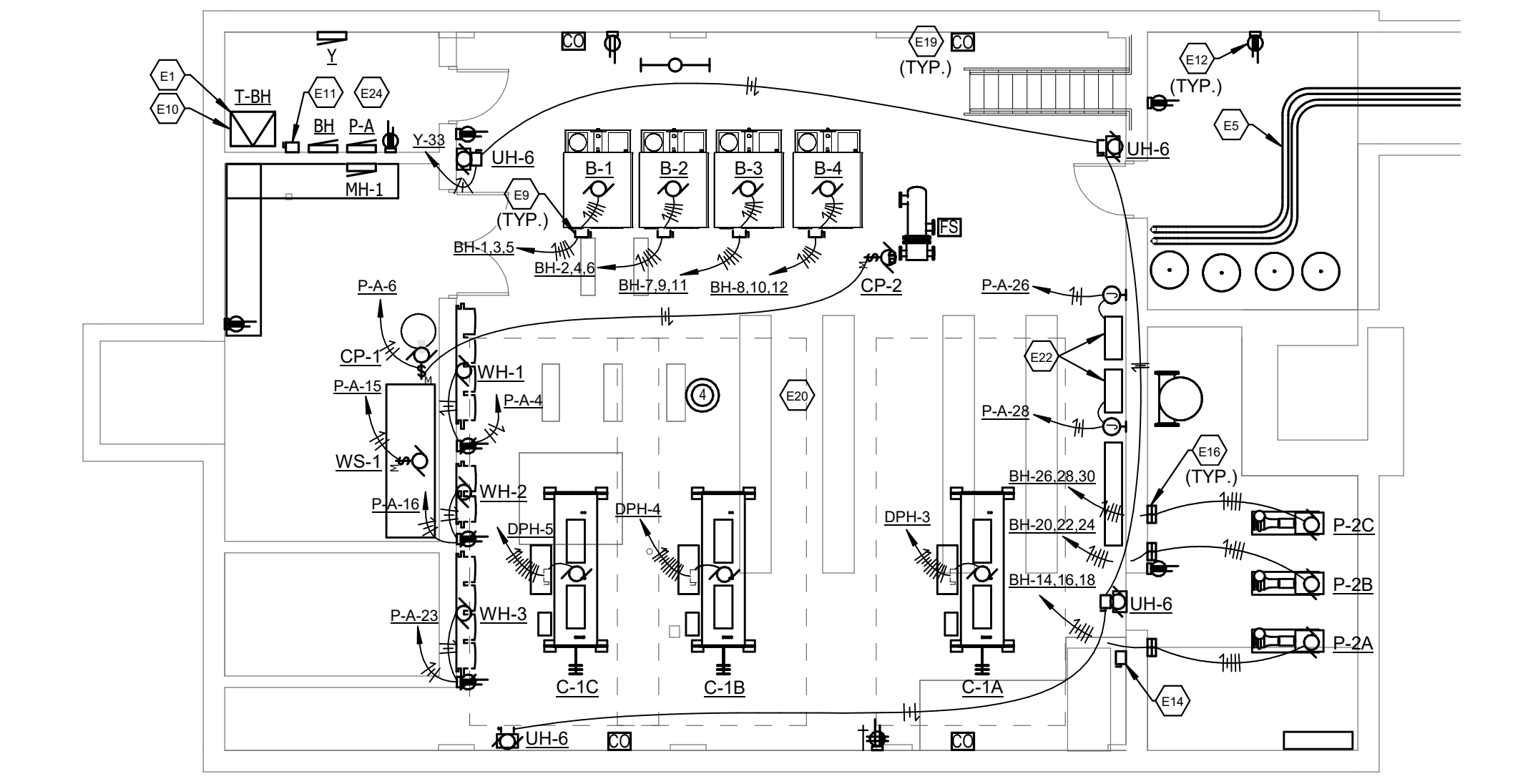
C:\Users\jeverson\Documents\ORH21_ELEC_R20_jeverson\T28DG.rvt



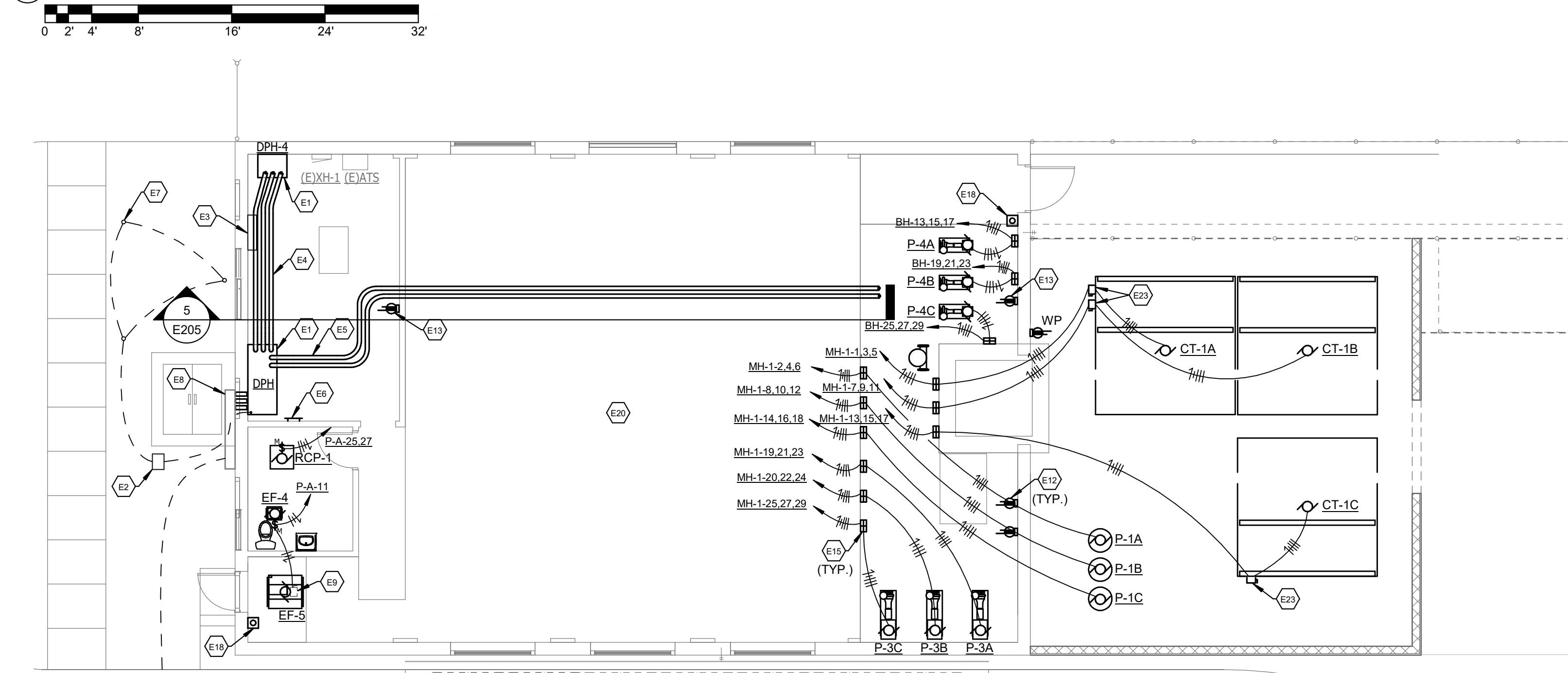
1 BOILER HOUSE LOWER LEVEL LIGHTING PLAN
SCALE: 1/8" = 1'-0"



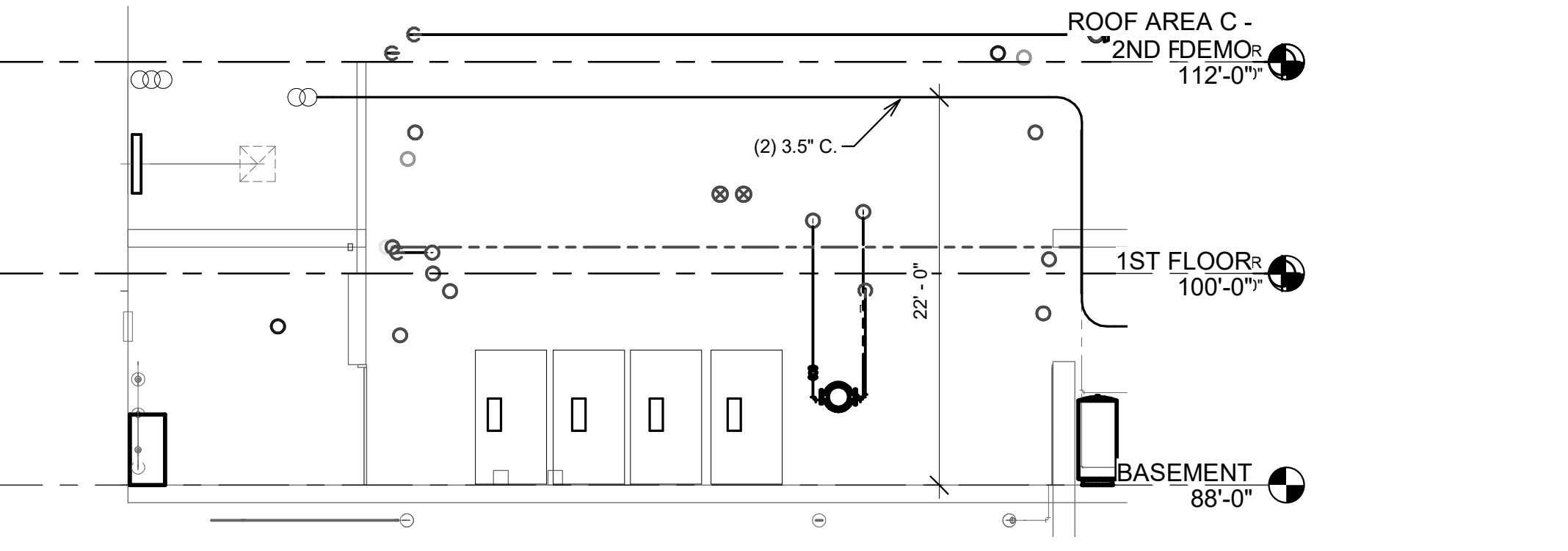
2 BOILER HOUSE UPPER LEVEL LIGHTING PLAN
SCALE: 1/8" = 1'-0"



3 BOILER HOUSE LOWER LEVEL POWER & SYSTEMS PLAN
SCALE: 1/8" = 1'-0"



4 BOILER HOUSE UPPER LEVEL POWER & SYSTEMS PLAN
SCALE: 1/8" = 1'-0"

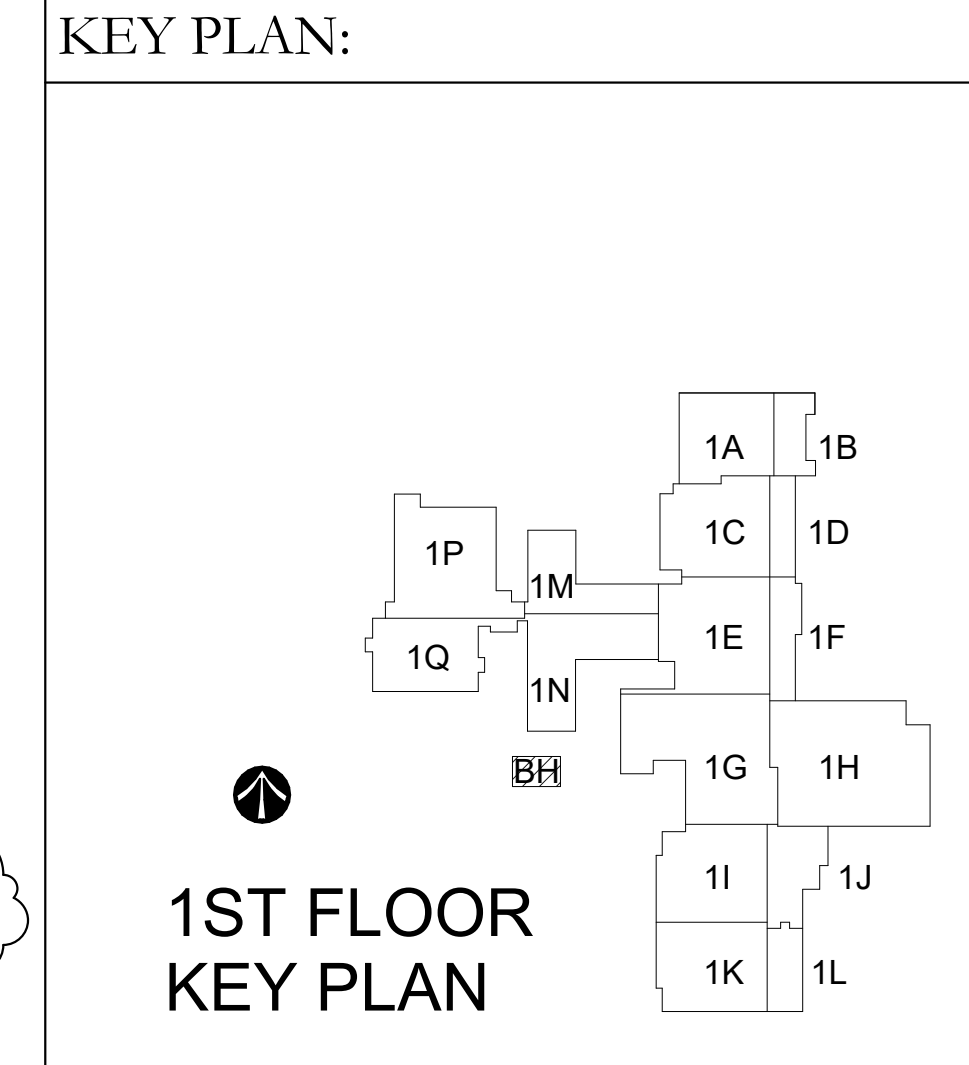


5 BOILER HOUSE SECTION
SCALE: 1/8" = 1'-0"

- GENERAL NOTES (POWER):**
- REFER TO THE ARCHITECT'S REFLECTED CEILING PLANS, ELEVATIONS, AND CASEWORK DETAILS FOR EXACT LOCATIONS OF ALL WALL AND CEILING MOUNTED ELECTRICAL DEVICES.
 - CONTRACTOR SHALL FOLLOW BRANCH CIRCUITING LAY-OUT, AS INDICATED ON THE FLOOR PLANS, WITH A MAXIMUM OF THREE (3) BRANCH CIRCUITS PER HOMERUN. EACH BRANCH CIRCUIT SHALL BE PROVIDED WITH A DEDICATED NEUTRAL CONDUCTOR. DEDICATED NEUTRAL CONDUCTORS SHALL BE CONSIDERED CURRENT CARRYING. IF ADDITIONAL CONDUCTORS ARE RAN IN THE SAME CONDUIT WITH THOSE INDICATED, CONTRACTOR SHALL DERATE ALL CURRENT CARRYING CONDUCTORS PER NEC 310.15(B)(3), AND UPSIZE CONDUIT AS REQUIRED PER NEC 300.17 AND ANNEX C. MULTIWIRE BRANCH CIRCUITS AS DEFINED IN NEC 100.12(D) (CIRCUITS SHARING A COMMON NEUTRAL CONDUCTOR) SHALL NOT BE PERMITTED.
 - IDENTIFY THE PANEL AND CIRCUIT NUMBER FOR ALL RECEPTACLES, SWITCHES, ETC. IN AREA OF CONSTRUCTION. PROVIDE CLEAR ADHESIVE LABELS WITH BLACK LETTERING.
 - RECEPTACLES THAT ARE CONTROLLED BY AN AUTOMATIC MEANS SUCH AS OCCUPANCY SENSOR OR ENERGY MANAGEMENT SYSTEM SHALL BE MARKED IN ACCORDANCE WITH NEC 406.3(E).
 - LOCATIONS OF ELECTRICAL CONNECTIONS AND LOCAL DISCONNECTS SHALL BE COORDINATED WITH MECHANICAL AND PLUMBING CONTRACTORS TO ENSURE ACCESS AND WORKING CLEARANCE IS MAINTAINED PER NEC. NOTIFY OTHER TRADES OF REQUIRED CLEARANCE AREAS TO AVOID ROUTING OF OTHER SYSTEMS IN THESE AREAS. DO NOT INSTALL ELECTRICAL EQUIPMENT OVER EQUIPMENT NAMEPLATES OR ACCESS PANELS OR THROUGH ACCESS MAINTENANCE CLEARANCES OF EQUIPMENT BY OTHER TRADES.

- E205 TAGGED NOTES**
- E.C. SHALL PROVIDE NEW 4" TALL, REINFORCED HOUSEKEEPING CONCRETE PAD FOR NEW ELECTRICAL EQUIPMENT.
 - E.C. SHALL PROVIDE GROUND INSPECTION WELL PER DETAIL C SHEET E003.
 - NEW LOCATION OF EXISTING RELOCATED POWER FACTOR REGULATOR. E.C. SHALL RECONNECT TO EXISTING BRANCH CIRCUIT. EXTEND EXISTING BRANCH CIRCUIT AS REQUIRED TO SERVE NEW EQUIPMENT LOCATION.
 - E.C. SHALL PROVIDE FEEDER IN (3) 3/8" CONDUIT FROM NEW SWITCHBOARD DPH TO SERVE NEW SWITCHBOARD DPH4.
 - E.C. SHALL PROVIDE FEEDER IN (2) 3/5" CONDUIT FROM NEW SWITCHBOARD DPH TO SERVE NEW SWITCHBOARD TPOD IN NATATORIUM MECHANICAL ROOM. ROUTE CONDUIT TO NEW SERVICE ENTRANCE RATED DISCONNECT IN MAIN BUILDING THROUGH EXISTING TUNNELS. REFER TO SHEET E203 FOR CONTINUATION.
 - E.C. SHALL PROVIDE MAIN GROUNDING BUS BAR ACCORDING TO DETAIL G SHEET E002.
 - E.C. SHALL PROVIDE NEW GROUND RODS. SIZE AND INSTALL PER DETAIL F SHEET E002.
 - E.C. SHALL UTILIZE EXISTING RIGID STEEL WIREWAY. E.C. SHALL CLEAN, PRIME, AND PAINT EXISTING WIREWAY COVERS AND REINSTALL BACK TO EXISTING LOCATION.
 - E.C. SHALL PROVIDE CONNECTION TO INTEGRAL DISCONNECT FURNISHED BY M.C.
 - E.C. SHALL PROVIDE NEW 75 KVA NEMA 1 RATED DRY TYPE TRANSFORMER. PROVIDE TRANSFORMER WITH SECONDARY FAULT CURRENT RATING OF 42KAIC. INSTALL PER DETAIL D SHEET E002.
 - E.C. SHALL PROVIDE NEW 200A NEMA 1 NON-FUSIBLE DISCONNECT FOR SECONDARY FEED FROM TRANSFORMER FEEDING PANEL Y. PROVIDE DISCONNECT WITH ADDITIONAL SET OF LUGS TO SERVE PANEL P-A.
 - E.C. SHALL REPLACE EXISTING RECEPTACLES IN BOILER HOUSE. PROVIDE NEW DEVICE, COVER PLATE AND BACKBOX. FEED WITH NEW CONDUCTORS AND SERVE FROM EXISTING BREAKERS.
 - E.C. SHALL PROVIDE NEW SURFACE MOUNT RECEPTACLE. TIE INTO NEAREST EXISTING RECEPTACLE BRANCH CIRCUIT.
 - E.C. SHALL PROVIDE NEW 30A NEMA 1 RATED NON-FUSIBLE DISCONNECT FOR EXISTING COMPRESSOR.
 - E.C. SHALL PROVIDE UNISTRUT MOUNTING FOR VFD UNITS FURNISHED BY M.C. WIRED AND INSTALLED BY E.C.
 - E.C. SHALL WIRE AND INSTALL VFD FURNISHED BY M.C.
 - E.C. SHALL REPLACE EXISTING SERVICE LATERAL TO SERVE SWITCHBOARD DPH. UTILIZE EXISTING PENETRATIONS INTO BOILER HOUSE AND RESEAL.
 - E.C. SHALL PROVIDE PUSHBUTTON FOR EMERGENCY SHUTDOWN OF BOILERS. REFER TO DETAIL D SHEET E002.
 - E.C. SHALL PROVIDE CARBON MONOXIDE DETECTOR WITH SOUNDING BASE. TIE INTO EXISTING FIRE ALARM SYSTEM. DEVICE SHALL SEND TROUBLE SIGNAL UPON DETECTION OF CARBON MONOXIDE.
 - E.C. SHALL UTILIZE INTERMEDIATE METAL CONDUIT OR RIGID METAL CONDUIT FROM FLOOR TO 8' AFF FOR ALL NEW WORK IN BOILER HOUSE.
 - E.C. SHALL PROVIDE CEILING MOUNTED OCCUPANCY SENSOR WITH ADDITIONAL CONTACTS FOR CONNECTION TO EXHAUST FAN EF-4 SERVING THIS SPACE. EXHAUST FAN SHALL BE CONTROLLED WITH LIGHTING IN THIS SPACE.
 - E.C. SHALL PROVIDE 20A 120V CIRCUIT FOR EACH NEW GAS PANEL FURNISHED BY M.C.
 - E.C. SHALL PROVIDE 30A-3P HEAVY DUTY NEMA 3R RATED NON-FUSIBLE DISCONNECT.
 - E.C. SHALL REPLACE EXISTING PANELBOARDS IN THIS SPACE. MAINTAIN EXISTING BRANCH CIRCUITS AND REWORK AS NECESSARY TO ACCOMMODATE INSTALLATION OF NEW EQUIPMENT. REFER TO DETAIL D SHEET E003.

- GENERAL NOTES (LIGHTING):**
- REFER TO THE ARCHITECT'S REFLECTED CEILING PLANS, ELEVATIONS, AND CASEWORK DETAILS FOR EXACT LOCATIONS OF ALL WALL AND CEILING MOUNTED ELECTRICAL DEVICES.
 - CONTRACTOR SHALL FOLLOW BRANCH CIRCUITING LAY-OUT, AS INDICATED ON THE FLOOR PLANS, WITH A MAXIMUM OF THREE (3) BRANCH CIRCUITS PER HOMERUN. EACH BRANCH CIRCUIT SHALL BE PROVIDED WITH A DEDICATED NEUTRAL CONDUCTOR. DEDICATED NEUTRAL CONDUCTORS SHALL BE CONSIDERED CURRENT CARRYING. IF ADDITIONAL CONDUCTORS ARE RAN IN THE SAME CONDUIT WITH THOSE INDICATED, CONTRACTOR SHALL DERATE ALL CURRENT CARRYING CONDUCTORS PER NEC 310.15(B)(3), AND UPSIZE CONDUIT AS REQUIRED PER NEC 300.17 AND ANNEX C. MULTIWIRE BRANCH CIRCUITS AS DEFINED IN NEC 100.12(D) (CIRCUITS SHARING A COMMON NEUTRAL CONDUCTOR) SHALL NOT BE PERMITTED.
 - IDENTIFY THE PANEL AND CIRCUIT NUMBER FOR ALL RECEPTACLES, SWITCHES, ETC. IN AREA OF CONSTRUCTION. PROVIDE CLEAR ADHESIVE LABELS WITH BLACK LETTERING.
 - LOCATE CHAIN-HUNG INDUSTRIAL FIXTURES IN MECHANICAL ROOMS TO AVOID DUCTWORK AND PIPING. TO MAXIMIZE AVAILABLE LIGHT SPACE AROUND EQUIPMENT, AIR HANDLERS, ETC. TO PROVIDE ADEQUATE LIGHTING TO ALL AREAS OF ROOM. PROVIDE ADDITIONAL FIXTURES OF SAME TYPE AS NEEDED TO FULFILL THIS REQUIREMENT.
 - LOCATE EXIT SIGNS FOR MAXIMUM VIEWING AREA TO IDENTIFY EGRESS PATHS AS INDICATED ON PLANS. COORDINATE LOCATIONS SUCH THAT ARCHITECTURAL FEATURES OR EQUIPMENT FROM OTHER TRADES DO NOT OBSTRUCT VIEW.
 - WHERE EXIT SIGNS OR EMERGENCY BATTERY PACKS ARE PROVIDED, THEY SHALL BE CONNECTED TO AN UNSWITCHED LINE.
 - LUMINAIRES INDICATED WITH MULTI-LEVEL SWITCHING SHALL HAVE SIMILAR LAMPS CONTROLLED TOGETHER, I.E. INBOARD AND OUTBOARD LAMPS OR RIGHT AND LEFT HAND LAMPS.
 - ALL LIGHTING FIXTURE LENSES, PARABOLIC LOUVERS, DOWNLIGHTING ALZAK CONES AND "PARACUBE" LOUVERS SHALL BE HANDLED WITH COTTON GLOVES DURING INSTALLATION AND LAMPING TO AVOID FINGERPRINTS OR DIRT DEPOSITS. IT IS PREFERRED THAT FIXTURES BE SHIPPED AND INSTALLED WITH CLEAR PLASTIC BAGS TO PROTECT LOUVERS, AT CLOSE OF PROJECT, AND AFTER CONSTRUCTION AIR FILTERS ARE CHANGED, REMOVE BAGS. ANY LOUVER OR CONE SHOWING DIRT OR FINGER PRINTS SHALL BE CLEANED WITH SOLVENT RECOMMENDED BY THE MANUFACTURER, OR REPLACED AS NECESSARY IN ORDER TO TURN OVER TO THE OWNER NEW FIXTURES AT OCCUPANCY.
 - RECESSED LUMINAIRES SHALL BE SECURED SUCH THAT THE FORCE REQUIRED INSERTING LAMPS, TRIMS, LENSES, LOUVERS, OR DOOR FRAMES DOES NOT SHIFT HOUSING. ALL TRIMS SHALL BE COMPLETELY FLUSH WITH FINISHED CEILINGS AT COMPLETION OF CONSTRUCTION.
 - CONTRACTOR SHALL PROVIDE UNSWITCHED CONDUCTOR TO ALL EXIT SIGNS, EMERGENCY INVERTER BATTERY PACKS, AND NIGHT LIGHTS AS REQUIRED.



No.	Revisions / Submissions	Date
1	Bid Documents	08.27.2021
2	ADDENDUM 3	10.01.2021

LWC
INCORPORATED
434 East First Street Dayton, OH 45402 937.223.6500
712 East Main Street Richmond, IN 47374 765.966.3546

CMTA
1650 Lake Shore Dr. Columbus, OH 43204 614.992.1500

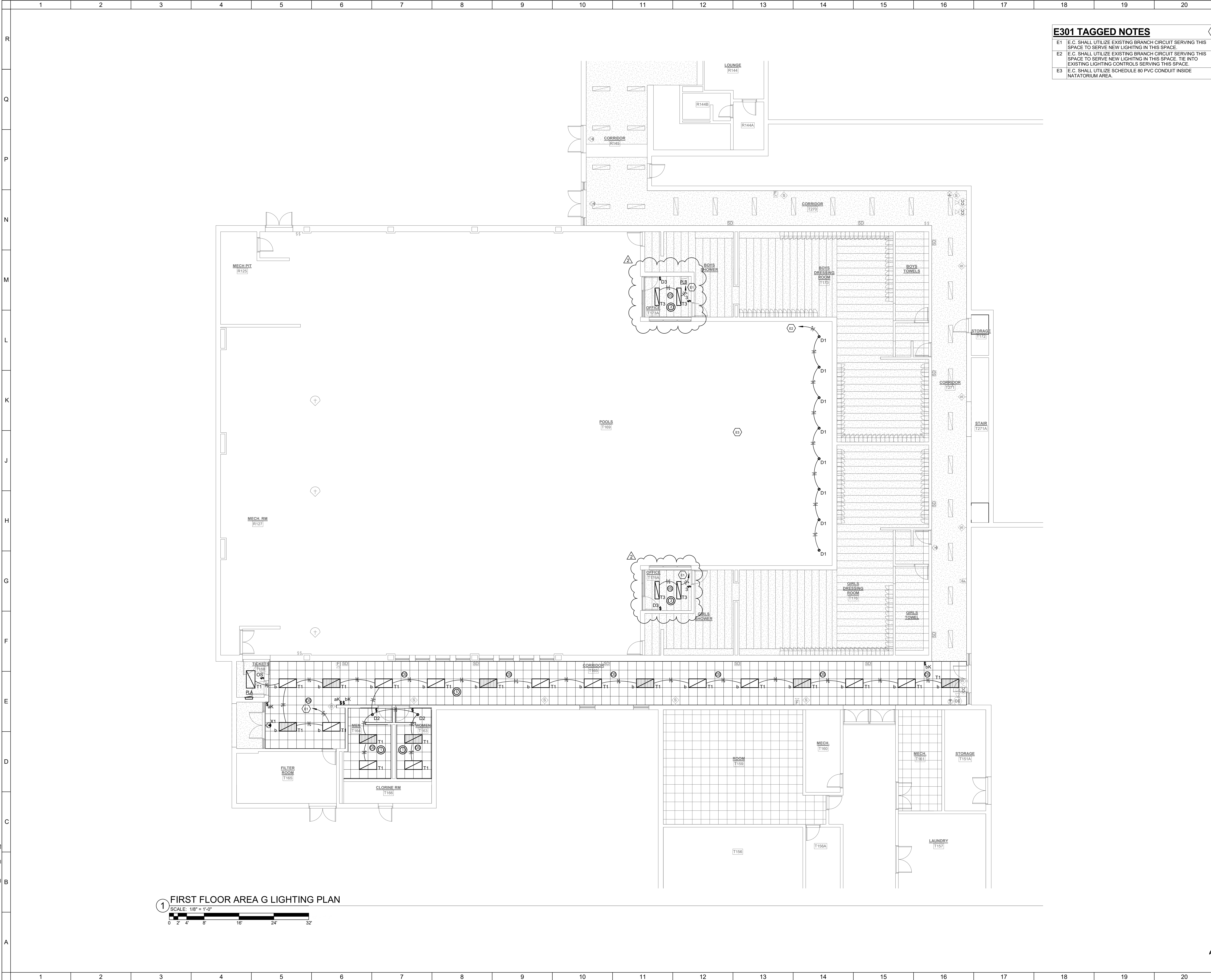
WE R RICHMOND RICHMOND COMMUNITY SCHOOLS
RICHMOND HIGH SCHOOL
380 Hub Etchison Pkwy, Richmond, IN 47374

MECHANICAL MODERNIZATION PROJECT

BOILER HOUSE POWER, SYSTEMS & LIGHTING PLANS

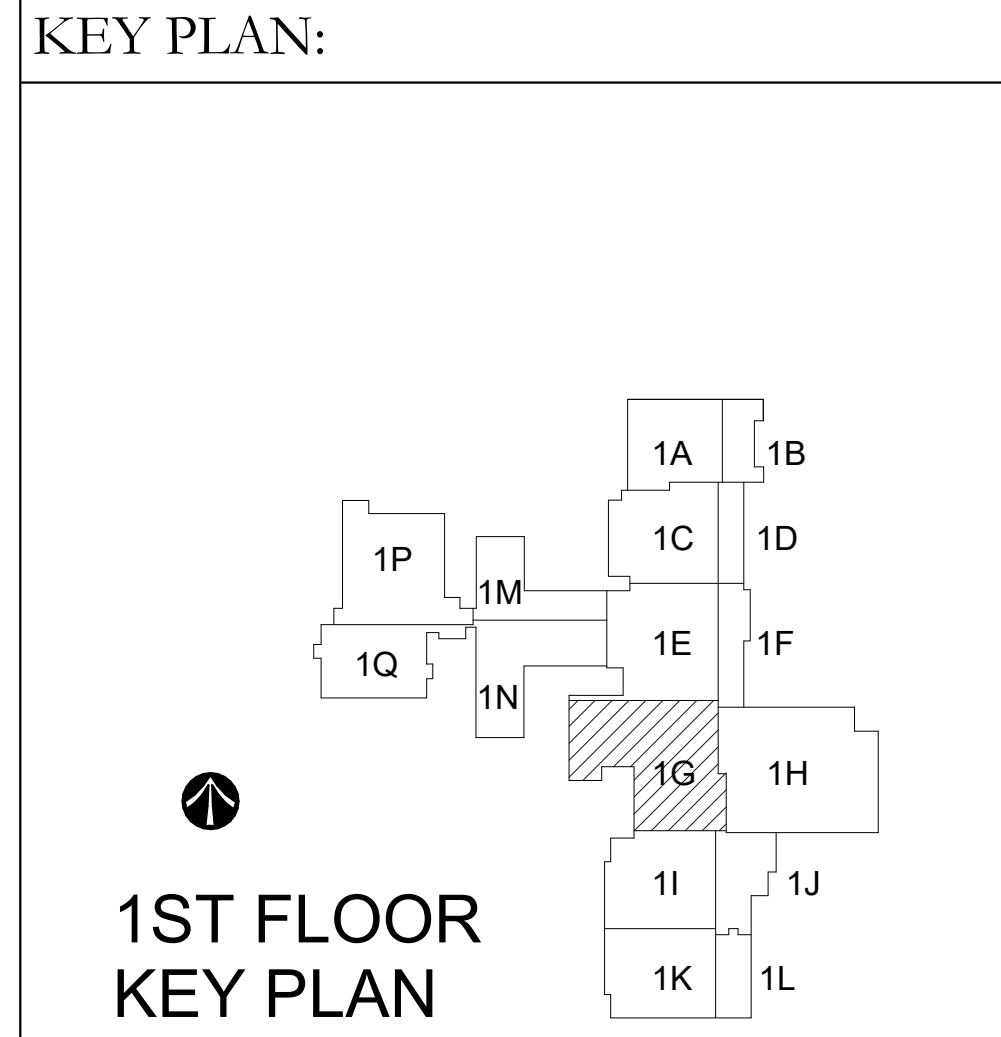
Comm. No.	Date	20104.02	08.27.2021
Drawn	Drawing No.	NGM	E205
Checked		JAE	

10/12/2021 8:17:02 PM
C:\Users\jeverson\Documents\ORH21_ELEC_R20_jevers128DG.rvt



E301 TAGGED NOTES	
E1	E.C. SHALL UTILIZE EXISTING BRANCH CIRCUIT SERVING THIS SPACE TO SERVE NEW LIGHTING IN THIS SPACE
E2	E.C. SHALL UTILIZE EXISTING BRANCH CIRCUIT SERVING THIS SPACE TO SERVE NEW LIGHTING IN THIS SPACE. TIE INTO EXISTING LIGHTING CONTROLS SERVING THIS SPACE.
E3	E.C. SHALL UTILIZE SCHEDULE 80 PVC CONDUIT INSIDE NATATORIUM AREA.

- GENERAL NOTES (LIGHTING):**
- REFER TO THE ARCHITECT'S REFLECTED CEILING PLANS, ELEVATIONS, AND CASEWORK DETAILS FOR EXACT LOCATIONS OF ALL WALL AND CEILING MOUNTED ELECTRICAL DEVICES.
 - CONTRACTOR SHALL FOLLOW BRANCH CIRCUITING LAY-OUT AS INDICATED ON THE FLOOR PLANS, WITH A MAXIMUM OF THREE (3) BRANCH CIRCUITS PER HOMERUN. EACH BRANCH CIRCUIT SHALL BE PROVIDED WITH A DEDICATED NEUTRAL CONDUCTOR. DEDICATED NEUTRAL CONDUCTORS SHALL BE CONSIDERED CURRENT CARRYING. IF ADDITIONAL CONDUCTORS ARE RAN IN THE SAME CONDUIT WITH THOSE INDICATED, CONTRACTOR SHALL DERATE ALL CURRENT CARRYING CONDUCTORS PER N.E.C. #310.15(B)(3), AND UPSIZE CONDUIT AS REQUIRED PER N.E.C. #300.17 AND ANNEX C. MULTIWIRE BRANCH CIRCUITS AS DEFINED IN N.E.C. #100 / 210.4 (CIRCUITS SHARING A COMMON NEUTRAL CONDUCTOR) SHALL NOT BE PERMITTED.
 - IDENTIFY THE PANEL AND CIRCUIT NUMBER FOR ALL RECEPTACLES, SWITCHES, ETC. IN AREA OF CONSTRUCTION. PROVIDE CLEAR ADHESIVE LABELS WITH BLACK LETTERING.
 - LOCATE CHAIN-HUNG INDUSTRIAL FIXTURES IN MECHANICAL ROOMS TO AVOID DUCTWORK AND PIPING, TO MAXIMIZE AVAILABLE LIGHT SPACE AROUND EQUIPMENT, AIR HANDLERS, ETC. TO PROVIDE ADEQUATE LIGHTING TO ALL AREAS OF ROOM. PROVIDE ADDITIONAL FIXTURES OF SAME TYPE AS NEEDED TO FULFILL THIS REQUIREMENT.
 - LOCATE EXIT SIGNS FOR MAXIMUM VIEWING AREA TO IDENTIFY EGRESS PATHS AS INDICATED ON PLANS. COORDINATE LOCATIONS SUCH THAT ARCHITECTURAL FEATURES OR EQUIPMENT FROM OTHER TRADES DO NOT OBSTRUCT VIEW.
 - WHERE EXIT SIGNS OR EMERGENCY BATTERY PACKS ARE PROVIDED, THEY SHALL BE CONNECTED TO AN UNSWITCHED LINE.
 - LUMINAIRES INDICATED WITH MULTILEVEL SWITCHING SHALL HAVE SIMILAR LAMPS CONTROLLED TOGETHER, I.E. INBOARD AND OUTBOARD LAMPS OR RIGHT AND LEFT HAND LAMPS.
 - ALL LIGHTING FIXTURE LENSES, PARABOLIC LOUVERS, DOWNLIGHTING ALZAK CONES AND PARABOLIC LOUVERS SHALL BE HANDLED WITH COTTON GLOVES DURING INSTALLATION AND LAMPING TO AVOID FINGERPRINTS OR DIRT DEPOSITS. IT IS PREFERRED THAT FIXTURES BE SHIPPED AND INSTALLED WITH CLEAR PLASTIC BAGS TO PROTECT LOUVERS. AT CLOSE OF PROJECT, AND AFTER CONSTRUCTION AIR FILTERS ARE CHANGED, REMOVE BAGS. ANY LOUVER OR CONE SHOWING DIRT OR FINGER PRINTS SHALL BE CLEANED WITH SOLVENT RECOMMENDED BY THE MANUFACTURER, OR REPLACED AS NECESSARY IN ORDER TO TURN OVER TO THE OWNER NEW FIXTURES AT OCCUPANCY.
 - RECESSED LUMINAIRES SHALL BE SECURED SUCH THAT THE FORCE REQUIRED INSERTING LAMPS, TRIMS, LENSES, LOUVERS, OR DOOR FRAMES DOES NOT SHIFT HOUSING. ALL TRIMS SHALL BE COMPLETELY FLUSH WITH FINISHED CEILINGS AT COMPLETION OF CONSTRUCTION.
 - CONTRACTOR SHALL PROVIDE UNSWITCHED CONDUCTOR TO ALL EXIT SIGNS, EMERGENCY INVERTER BATTERY PACKS, AND NIGHT LIGHTS AS REQUIRED.



No.	Revisions / Submissions	Date
1	Bid Documents	08.27.2021
2	ADDENDUM 3	10.01.2021

LWC
INCORPORATED
434 East First Street Dayton, OH 45402 937.223.6500
712 East Main Street Richmond, IN 47374 765.966.3546

CMTA
1650 Lake Shore Dr. Columbus, OH 43204 614.992.1500

WE R RICHMOND RICHMOND COMMUNITY SCHOOLS
RICHMOND HIGH SCHOOL
380 Hub Etchison Pkwy,
Richmond, IN 47374

MECHANICAL MODERNIZATION PROJECT

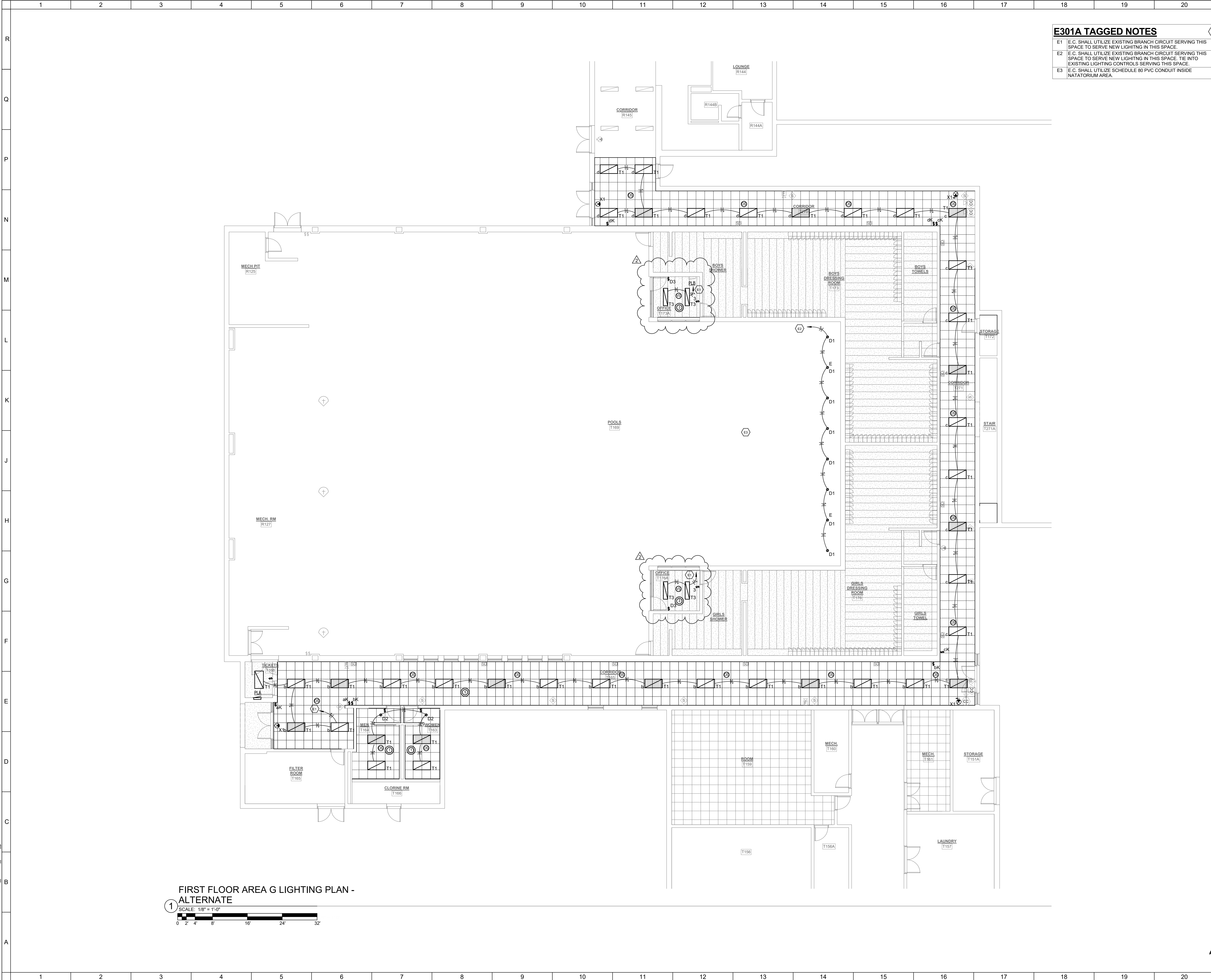
FIRST FLOOR AREA G LIGHTING PLAN

1 FIRST FLOOR AREA G LIGHTING PLAN
SCALE: 1/8" = 1'-0"
0 2' 4' 8' 16' 24' 32'

	Comm. No.	Date
	20104.02	08.27.2021
	Drawn	Drawing No.
	NGM	E301
Checked	JAE	

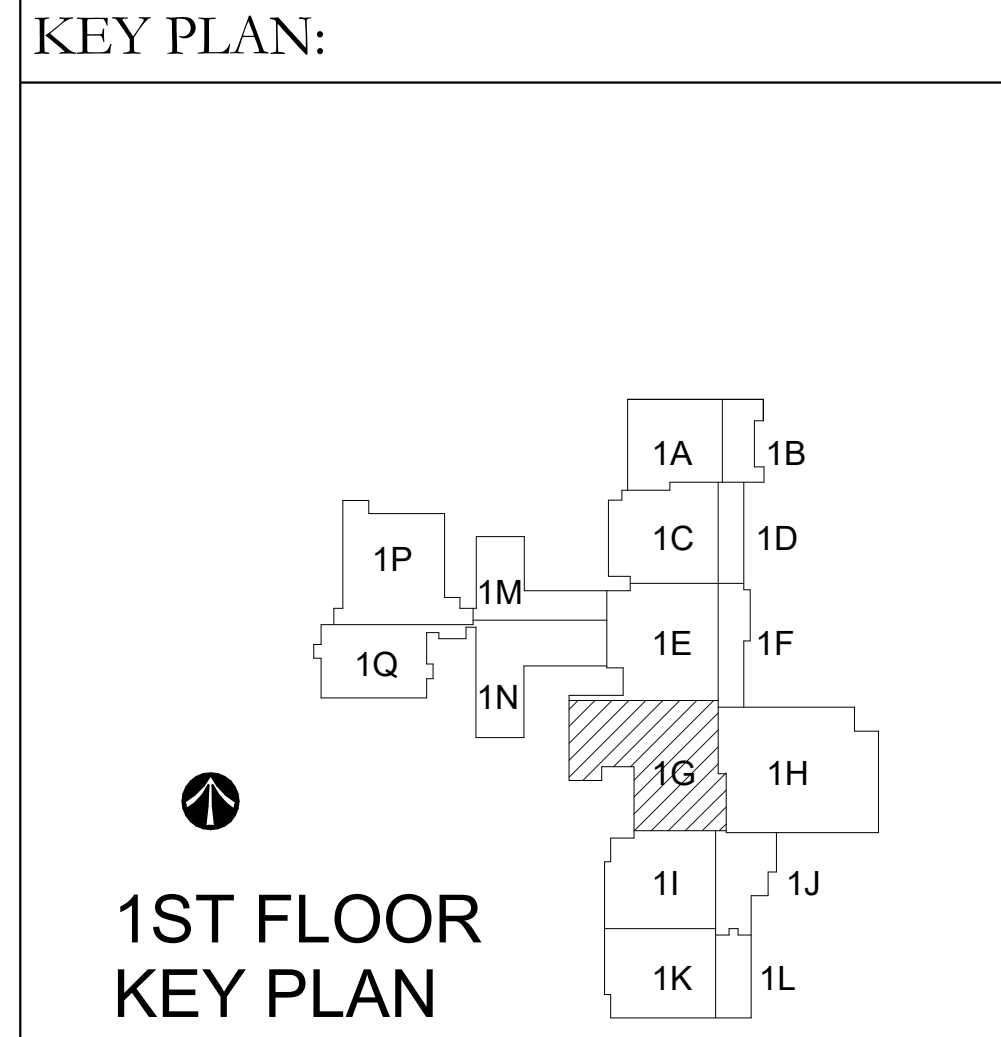
© 2021 LWC, INCORPORATED

10/12/2021 8:17:05 PM
C:\Users\jeverson\Documents\ORH21_ELEC_R20_jevers128DGC.rvt



E301A TAGGED NOTES	
E1	E.C. SHALL UTILIZE EXISTING BRANCH CIRCUIT SERVING THIS SPACE TO SERVE NEW LIGHTING IN THIS SPACE
E2	E.C. SHALL UTILIZE EXISTING BRANCH CIRCUIT SERVING THIS SPACE TO SERVE NEW LIGHTING IN THIS SPACE. TIE INTO EXISTING LIGHTING CONTROLS SERVING THIS SPACE.
E3	E.C. SHALL UTILIZE SCHEDULE 80 PVC CONDUIT INSIDE NATATORIUM AREA.

- GENERAL NOTES (LIGHTING):**
- REFER TO THE ARCHITECT'S REFLECTED CEILING PLANS, ELEVATIONS, AND CASEWORK DETAILS FOR EXACT LOCATIONS OF ALL WALL AND CEILING MOUNTED ELECTRICAL DEVICES.
 - CONTRACTOR SHALL FOLLOW BRANCH CIRCUITING LAY-OUT AS INDICATED ON THE FLOOR PLANS, WITH A MAXIMUM OF THREE (3) BRANCH CIRCUITS PER HOMERUN. EACH BRANCH CIRCUIT SHALL BE PROVIDED WITH A DEDICATED NEUTRAL CONDUCTOR. DEDICATED NEUTRAL CONDUCTORS SHALL BE CONSIDERED CURRENT CARRYING. IF ADDITIONAL CONDUCTORS ARE RAN IN THE SAME CONDUIT WITH THOSE INDICATED, CONTRACTOR SHALL DERATE ALL CURRENT CARRYING CONDUCTORS PER N.E.C. #310.15(B)(3), AND UPSIZE CONDUIT AS REQUIRED PER N.E.C. #300.17 AND ANNEX C. MULTIWIRE BRANCH CIRCUITS AS DEFINED IN N.E.C. #100 / 210.4 (CIRCUITS SHARING A COMMON NEUTRAL CONDUCTOR) SHALL NOT BE PERMITTED.
 - IDENTIFY THE PANEL AND CIRCUIT NUMBER FOR ALL RECEPTACLES, SWITCHES, ETC. IN AREA OF CONSTRUCTION. PROVIDE CLEAR ADHESIVE LABELS WITH BLACK LETTERING.
 - LOCATE CHAIN-HUNG INDUSTRIAL FIXTURES IN MECHANICAL ROOMS TO AVOID DUCTWORK AND PIPING, TO MAXIMIZE AVAILABLE LIGHT SPACE AROUND EQUIPMENT, AIR HANDLERS, ETC. TO PROVIDE ADEQUATE LIGHTING TO ALL AREAS OF ROOM. PROVIDE ADDITIONAL FIXTURES OF SAME TYPE AS NEEDED TO FULFILL THIS REQUIREMENT.
 - LOCATE EXIT SIGNS FOR MAXIMUM VIEWING AREA TO IDENTIFY EGRESS PATHS AS INDICATED ON PLANS. COORDINATE LOCATIONS SUCH THAT ARCHITECTURAL FEATURES OR EQUIPMENT FROM OTHER TRADES DO NOT OBSTRUCT VIEW.
 - WHERE EXIT SIGNS OR EMERGENCY BATTERY PACKS ARE PROVIDED, THEY SHALL BE CONNECTED TO AN UNSWITCHED LINE.
 - LUMINAIRES INDICATED WITH MULTILEVEL SWITCHING SHALL HAVE SIMILAR LAMPS CONTROLLED TOGETHER, I.E. INBOARD AND OUTBOARD LAMPS OR RIGHT AND LEFT HAND LAMPS.
 - ALL LIGHTING FIXTURE LENSES, PARABOLIC LOUVERS, DOWNLIGHTING ALZAK CONES AND PARABOLIC LOUVERS SHALL BE HANDLED WITH COTTON GLOVES DURING INSTALLATION AND LAMPING TO AVOID FINGERPRINTS OR DIRT DEPOSITS. IT IS PREFERRED THAT FIXTURES BE SHIPPED AND INSTALLED WITH CLEAR PLASTIC BAGS TO PROTECT LOUVERS. AT CLOSE OF PROJECT, AND AFTER CONSTRUCTION AIR FILTERS ARE CHANGED, REMOVE BAGS. ANY LOUVER OR CONE SHOWING DIRT OR FINGER PRINTS SHALL BE CLEANED WITH SOLVENT RECOMMENDED BY THE MANUFACTURER, OR REPLACED AS NECESSARY IN ORDER TO TURN OVER TO THE OWNER NEW FIXTURES AT OCCUPANCY.
 - RECESSED LUMINAIRES SHALL BE SECURED SUCH THAT THE FORCE REQUIRED INSERTING LAMPS, TRIMS, LENSES, LOUVERS, OR DOOR FRAMES DOES NOT SHIFT HOUSING. ALL TRIMS SHALL BE COMPLETELY FLUSH WITH FINISHED CEILINGS AT COMPLETION OF CONSTRUCTION.
 - CONTRACTOR SHALL PROVIDE UNSWITCHED CONDUCTOR TO ALL EXIT SIGNS, EMERGENCY INVERTER BATTERY PACKS, AND NIGHT LIGHTS AS REQUIRED.



No.	Revisions / Submissions	Date
1	Bid Documents	08.27.2021
2	ADDENDUM 3	10.01.2021

LWC
INCORPORATED
434 East First Street Dayton, OH 45402 937.223.6500
712 East Main Street Richmond, IN 47374 765.966.3546



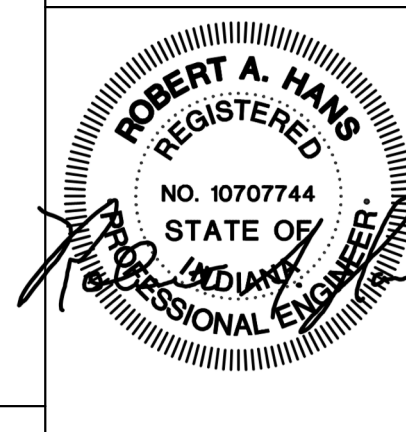
1650 Lake Shore Dr. Columbus, OH 43204 614.992.1500

WE R RICHMOND RICHMOND COMMUNITY SCHOOLS
RICHMOND HIGH SCHOOL
380 Hub Etchison Pkwy,
Richmond, IN 47374

MECHANICAL MODERNIZATION PROJECT

FIRST FLOOR AREA G LIGHTING PLAN - ALTERNATE

Comm. No.	Date	08.27.2021
Drawn	Drawing No.	E301A
Checked		



FIRST FLOOR AREA G LIGHTING PLAN - ALTERNATE
SCALE: 1/8" = 1'-0"
0 2 4 8 16 24 32

10/11/2021 8:17:07 PM
R
Q
P
N
M
L
K
J
H
G
F
E
D
C
B
A

SWITCHBOARD AND WIRING SCHEDULE											
SWITCHBOARD: DPH				KAIC VALUE: 64.5 KAIC				MOUNTING: FLOOR			
VOLTAGE: 480Y/277V, 3P, 4W				MAINS TYPE: 2500A MCB				SUPPLY FROM: DPH			
AMPERS: 2600 A				SPD: Yes				LOCATION: KITCHEN			
CKT	CIRCUIT DESCRIPTION	SETS	WIRE	GND	COND	POLES	FRAME	TRIP	LOAD (kVA)	REMARKS	
1	DPH4	3	#400	#10	3.5"	3	800 A	800 A	227.4		
2	TRIP	2	#400	#10	3.5"	3	800 A	800 A	265.7		
3	CHILLER C-1A	2	#500	#1	3.5"	3	500 A	500 A	262.4		
4	CHILLER C-1B	2	#500	#1	3.5"	3	500 A	500 A	262.4		
5	CHILLER C-1C	2	#500	#1	3.5"	3	500 A	500 A	262.4		
6	EXISTING LOAD A					3			400 A	0.0	
7	EXISTING LOAD B					3			400 A	0.0	
8	BH	1	#40	#4	3"	3	225 A	225 A	84.2		
9	SPACE								0.0		
10	SPACE								0.0		
11	SPACE								0.0		
12											
13											
14											
15											
16											
17											
18											
19											
20											

LOAD CLASSIFICATION				CONNECTED LOAD				DEMAND FACTOR				ESTIMATED DEMAND				PANEL TOTALS			
EQUIP	1245419 VA	100.00%	1245419 VA	TOTAL CONN. LOAD: 1364 KVA				TOTAL EST. DEMAND: 1364 KVA				TOTAL CONN. LOAD: 1364 KVA				TOTAL EST. DEMAND: 1364 KVA			
LTNG	570 VA	100.00%	570 VA	TOTAL CONN. LOAD: 360 VA				TOTAL EST. DEMAND: 360 VA				TOTAL CONN. CURRENT: 1641 A				TOTAL EST. DEMAND CURRENT: 1641 A			
REC	360 VA	100.00%	360 VA	TOTAL CONN. CURRENT: 1641 A				TOTAL EST. DEMAND CURRENT: 1641 A				TOTAL CONN. CURRENT: 1641 A				TOTAL EST. DEMAND CURRENT: 1641 A			
SPARE	118100 VA	100.00%	118100 VA	TOTAL EST. DEMAND CURRENT: 1641 A				TOTAL EST. DEMAND CURRENT: 1641 A				TOTAL EST. DEMAND CURRENT: 1641 A				TOTAL EST. DEMAND CURRENT: 1641 A			

SWITCHBOARD AND WIRING SCHEDULE											
SWITCHBOARD: DPH-4				KAIC VALUE: 89.0 KAIC				MOUNTING: FLOOR			
VOLTAGE: 480Y/277V, 3P, 4W				MAINS TYPE: MLO				SUPPLY FROM: DPH			
AMPERS: 800 A				SPD: Yes				LOCATION: KITCHEN			
CKT	CIRCUIT DESCRIPTION	SETS	WIRE	GND	COND	POLES	FRAME	TRIP	LOAD (kVA)	REMARKS	
1	ATS	2	#30	#6	2.5"	3	200 A	200 A	0.3		
2	MH-1	2	#30	#6	2.5"	3	400 A	400 A	190.3		
3	T-BH	1	#1	#6	2"	3	125 A	125 A	36.7		
4	SPARE					3			400 A	0.0	
5	SPARE					3			200 A	0.0	
6	SPARE					3			200 A	0.0	
7	SPARE					3			100 A	0.0	
8	SPACE								0.0		
9	SPACE								0.0		
10	SPACE								0.0		
11	SPACE								0.0		
12	SPACE								0.0		
13											
14											
15											
16											
17											
18											
19											
20											

LOAD CLASSIFICATION				CONNECTED LOAD				DEMAND FACTOR				ESTIMATED DEMAND				PANEL TOTALS			
EQUIP	179720 VA	100.00%	179720 VA	TOTAL CONN. LOAD: 1227 KVA				TOTAL EST. DEMAND: 1227 KVA				TOTAL CONN. LOAD: 1227 KVA				TOTAL EST. DEMAND: 1227 KVA			
LTNG	330 VA	100.00%	330 VA	TOTAL CONN. LOAD: 330 VA				TOTAL EST. DEMAND: 330 VA				TOTAL CONN. CURRENT: 273 A				TOTAL EST. DEMAND CURRENT: 273 A			
REC	0 VA	0.00%	0 VA	TOTAL CONN. CURRENT: 273 A				TOTAL EST. DEMAND CURRENT: 273 A				TOTAL CONN. CURRENT: 273 A				TOTAL EST. DEMAND CURRENT: 273 A			
SPARE	47300 VA	100.00%	47300 VA	TOTAL EST. DEMAND CURRENT: 273 A				TOTAL EST. DEMAND CURRENT: 273 A				TOTAL EST. DEMAND CURRENT: 273 A				TOTAL EST. DEMAND CURRENT: 273 A			

ELEC - EQUIPMENT CONNECTION SCHEDULE										
EQUIP ID	DESCRIPTION	DISCONNECT MEANS	VOLTAGE	POLES	HP	POWER (KVA)	MCA			
AUH-1	AIR HANDLING UNIT	VFD WITH INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	480	3	(4) @ 10 EACH	0.50	50			
B-1	BOILER	INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	480	3		2.00				
B-2	BOILER	INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	480	3		2.00				
B-3	BOILER	INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	480	3		2.00				
B-4	BOILER	INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	480	3		2.00				
C-1A	CHILLER	INTEGRAL DISCONNECT WITH CIRCUIT BREAKER FURNISHED BY M.C. WIRED BY E.C.	480	3		262.41	383			
C-1B	CHILLER	INTEGRAL DISCONNECT WITH CIRCUIT BREAKER FURNISHED BY M.C. WIRED BY E.C.	480	3		262.41	383			
C-1C	CHILLER	INTEGRAL DISCONNECT WITH CIRCUIT BREAKER FURNISHED BY M.C. WIRED BY E.C.	480	3		262.41	383			
CP-1	CIRCULATION PUMP	TOGGLE SWITCH PROVIDED AND WIRED BY E.C.	120	1	0.4	0.39				
CP-2	CIRCULATION PUMP	TOGGLE SWITCH PROVIDED AND WIRED BY E.C.	120	1	0.4	0.39				
CT-1A	COOLING TOWER	VFD WITH INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	480	3	15	11.20				
CT-1B	COOLING TOWER	VFD WITH INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	480	3	15	11.20				
CT-1C	COOLING TOWER	VFD WITH INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	480	3	15	11.20				
CU-1	CONDENSING UNIT	NON-FUSIBLE DISCONNECT PROVIDED AND WIRED BY E.C.	480	3	7.77	11.7				
CU-2	CONDENSING UNIT	NON-FUSIBLE DISCONNECT PROVIDED AND WIRED BY E.C.	480	3	7.77	11.7				
CUH-1	UNIT HEATER	INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	120	1	0.015	0.20				
CUH-2	UNIT HEATER	INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	120	1	0.015	0.20				
CUH-3	UNIT HEATER	INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	120	1	0.015	0.20				
CUH-4	UNIT HEATER	TOGGLE SWITCH PROVIDED AND WIRED BY E.C.	208	2	5	0.38				
DHU-1	DEHUMIDIFIER UNIT	INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	480	3		81.05	122			
DHU-2	DEHUMIDIFIER UNIT	INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	480	3		81.05	122			
EF-1	EXHAUST FAN	INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	480	3	3	2.24				
EF-2	EXHAUST FAN	INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	120	1	0.5	0.37				
EF-3	EXHAUST FAN	INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	120	1	0.5	0.37				
EF-4	EXHAUST FAN	TOGGLE SWITCH PROVIDED AND WIRED BY E.C.	120	1	0.1	0.20				
EF-5	EXHAUST FAN	INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	120	1	0.75	0.56				
EF-6	EXHAUST FAN	INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	120	1	0.125	0.93				
EF-7	EXHAUST FAN	INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	120	1	0.125	0.93				
ERV-1	ENERGY RECOVERY VENTILATOR	INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	480	3	7.5	8.06	21			
HVLS-1	CEILING FAN	INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	120	1	0.1	0.20				
OA-1	OUTSIDE AIR UNIT	INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	480	3		15.78	22			
P-1A	CONDENSER PUMP	VFD WITH INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	480	3	25	18.64				
P-1B	CONDENSER PUMP	VFD WITH INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	480	3	25	18.64				
P-1C	CONDENSER PUMP	VFD WITH INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	480	3	25	18.64				
P-2A	PRIMARY CHILLED WATER PUMP	VFD WITH INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	480	3	15	11.20				
P-2B	PRIMARY CHILLED WATER PUMP	VFD WITH INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	480	3	15	11.20				
P-2C	PRIMARY CHILLED WATER PUMP	VFD WITH INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	480	3	15	11.20				
P-3A	SECONDARY CHILLED WATER PUMP	VFD WITH INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	480	3	40	29.80				
P-3B	SECONDARY CHILLED WATER PUMP	VFD WITH INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	480	3	40	29.80				
P-3C	SECONDARY CHILLED WATER PUMP	VFD WITH INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	480	3	40	29.80				
P-4A	HOT WATER PUMP	VFD WITH INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	480	3	15	11.20				
P-4B	HOT WATER PUMP	VFD WITH INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	480	3	15	11.20				
P-4C	HOT WATER PUMP	VFD WITH INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	480	3	15	11.20				
RCP-1	RADIANT CEILING PANEL	TOGGLE SWITCH PROVIDED AND WIRED BY E.C.	208	2		0.36				
RWH-1	WALL MOUNTED HEATER	TOGGLE SWITCH PROVIDED AND WIRED BY E.C.	208	2		0.45	3.6			
RWH-2	WALL MOUNTED HEATER	TOGGLE SWITCH PROVIDED AND WIRED BY E.C.	208	2		0.75				
UH-1	UNIT HEATER	INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	120	1	0.015	0.20				
UH-2	UNIT HEATER	INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	120	1	0.015	0.20				
UH-3	UNIT HEATER	INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	120	1	0.015	0.20				
UH-4	UNIT HEATER	INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	120	1	0.015	0.20				
UH-5	UNIT HEATER	INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	120	1	0.015	0.20				
UH-6	UNIT HEATER	INTEGRAL DISCONNECT FURNISHED BY M.C. WIRED BY E.C.	120	1	0.015	0.20				
WH-1	WATER HEATER		120	1		1.08				
WH-2	WATER HEATER		120	1		0.54				
WH-3	WATER HEATER		120	1		1.08				
WS-1	WATER SOFTENER		120	1		1.20				

PANELBOARD AND WIRING SCHEDULE															
PANEL: BH				AVAILABLE FAULT CURRENT: 33.3 KAIC				MOUNTING: SURFACE							
VOLTAGE: 480Y/277V, 3P, 4W				MAINS TYPE: MLO				PANEL INTERRUPTING RATING: 42 KAIC							
AMPERS: 225 A				SPD: No				LOCATION: KITCHEN							
CIRCUIT DESCRIPTION	WIRE	GND	C	OCIP	P	CKT	A	B	C	CKT	P				
BOILER B-1						20	3	1	0.7	0.7	2				
BOILER B-3						20	3	9	0.7	0.7	10				
HOT WATER PUMP P-4A						30	3	13	3.7	3.7	14				
HOT WATER PUMP P-4B						30	3	21	3.7	3.7	22				
HOT WATER PUMP P-4C						30	3	27	3.7	3.7	28				
EXISTING VENT FAN						20	3	31	1.0	1.0	32				
SPACE									1.0	1.0	36				
SPACE									1.0	1.0	40				
SPACE									0.0	0.0	42				
TOTAL LOAD (kVA):				28.1 kVA				28.1 kVA				28.1 kVA			
TOTAL CURRENT (A):				101 A				101 A				101 A			

LOAD CLASSIFICATION				CONNECTED LOAD				DEMAND FACTOR				ESTIMATED DEMAND				PANEL TOTALS			
EQUIP	75200 VA	100.00%	75200 VA	TOTAL CONN. LOAD: 94200 VA				TOTAL EST. DEMAND: 94200 VA				TOTAL CONN. LOAD: 94200 VA				TOTAL EST. DEMAND: 94200 VA			
LTNG	9000 VA	100.00%	9000 VA	TOTAL CONN. LOAD: 103200 VA				TOTAL EST. DEMAND: 103200 VA				TOTAL CONN. CURRENT: 460 A				TOTAL EST. DEMAND CURRENT: 460 A			
SPARE				TOTAL CONN. CURRENT: 460 A				TOTAL EST. DEMAND CURRENT: 460 A				TOTAL CONN. CURRENT: 460 A				TOTAL EST. DEMAND CURRENT: 460 A			

PANELBOARD AND WIRING SCHEDULE															
PANEL: MH-1				AVAILABLE FAULT CURRENT: 48.0 KAIC				MOUNTING: SURFACE							
VOLTAGE: 480Y/277V, 3P, 4W				MAINS TYPE: MLO				PANEL INTERRUPTING RATING: 65 KAIC							
AMPERS: 400 A				SPD: No				LOCATION: KITCHEN							
CIRCUIT DESCRIPTION	WIRE	GND	C	OCIP	P	CKT	A	B	C	CKT	P				
COOLING TOWER CT-1A	(#) #10	#1	30	3	3	11	3.7	6.2	3.7	6.2	4				
COOLING TOWER CT-1B	(#) #10	#1	30	3	9	7	3.7	6.2	3.7	6.2	10				
COOLING TOWER CT-1C	(#) #10	#1	30	3	15	13	3.7	6.2	3.7	6.2	16				
SECONDARY CWP P-3A	#4	#8	1.5"	80	3	21	9.9	9.9	9.9	9.9	22				
SECONDARY CWP P-3B	#4	#8	1.5"	80	3	27	9.9	9.9	9.9	9.9	28				
EXISTING CAREER CENTER PUMP						20	3	29	1.9	0.0	30				
SPACE									1.9	0.0	36				
SPACE									0.0	0.0	40				
SPACE									0.0	0.0	42				
TOTAL LOAD (kVA):				63.4 kVA				63.4 kVA				63.4 kVA			
TOTAL CURRENT (A):				229 A				229 A				229 A			

LOAD CLASSIFICATION				CONNECTED LOAD				DEMAND FACTOR				ESTIMATED DEMAND				PANEL TOTALS			
EQUIP	178520 VA																		

10/11/2021 8:17:10 PM
 R
 Q
 P
 N
 M
 L
 K
 J
 H
 G
 F
 E
 D
 C
 B
 A
 C:\Users\jeverson\Documents\ORH21_ELEC_R20_leverson\T8D0G.rvt

SWITCHBOARD AND WIRING SCHEDULE

SWITCHBOARD: MSD (EXISTING) KAIC VALUE: EXISTING
 VOLTAGE: 480Y/277V, 3P, 4W MAINS TYPE: 800A MCB KAIC RATING: EXISTING
 AMPERES: 800 A SPD: No LOCATION: SUPPLY FROM: FLOOR

CKT	CIRCUIT DESCRIPTION	SETS	WIRE	GND	COND	POLES	FRAME	TRIP	LOAD (kVA)	REMARKS
1	EXISTING PANEL P	--	--	--	--	3	--	200 A	0.0	
2	EXISTING 225VA TRANSFORMER	--	--	--	--	3	--	400 A	0.0	
3	EXISTING LOAD	--	--	--	--	3	--	400 A	0.0	
4	EXISTING PANEL K	--	--	--	--	3	--	400 A	0.0	
5	SPARE	--	--	--	--	3	--	60 A	0.0	
6	AHL-1	--	#6	#10	1.5"	3	60 A	60 A	1.0	
7	EXISTING PANELS HA & HB	--	--	--	--	3	--	200 A	0.0	
8	EXISTING PANEL MH	--	--	--	--	3	--	200 A	0.0	
9	EXISTING CONDENSING UNIT	--	--	--	--	3	--	200 A	0.0	
10	ERV-1	--	--	--	--	3	60 A	25 A	9.1	
11	SPARE	--	--	--	--	3	--	60 A	0.0	

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
EQUIP	10064 VA	100.00%	10064 VA	TOTAL CONN. LOAD: 10 kVA TOTAL EST. DEMAND: 10 kVA
				TOTAL CONN. CURRENT: 12.2 A TOTAL EST. DEMAND CURRENT: 12.2 A

NOTES:

SWITCHBOARD AND WIRING SCHEDULE

SWITCHBOARD: TDPD KAIC VALUE: 24.2 KAIC
 VOLTAGE: 480Y/277V, 3P, 4W MAINS TYPE: 600A MCB KAIC RATING: 65 KAIC
 AMPERES: 600 A SPD: No LOCATION: SUPPLY FROM: DPH

CKT	CIRCUIT DESCRIPTION	SETS	WIRE	GND	COND	POLES	FRAME	TRIP	LOAD (kVA)	REMARKS
1	T-PP1	1	#1	#6	2"	3	125 A	125 A	67.0	
2	DHU-1	1	#1	#6	2"	3	125 A	125 A	61.1	
3	DHU-2	1	#1	#6	2"	3	125 A	125 A	61.1	
4	EP-1					3	30 A	30 A	2.2	
5	OA-1					3	30 A	30 A	16.8	
6	CU-1					3	20 A	20 A	8.8	
7	CU-2					3	20 A	20 A	8.8	
8	SPARE	--	--	--	--	3	--	100 A	0.0	
9	SPARE	--	--	--	--	3	--	30 A	0.0	
10	SPARE	--	--	--	--	3	--	20 A	0.0	
11	SPACE	--	--	--	--	--	--	--	0.0	
12	SPACE	--	--	--	--	--	--	--	0.0	
13	SPACE	--	--	--	--	--	--	--	0.0	
14	SPACE	--	--	--	--	--	--	--	0.0	

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
EQUIP	203280 VA	100.00%	203280 VA	TOTAL CONN. LOAD: 266 kVA TOTAL EST. DEMAND: 266 kVA
LTNG	240 VA	100.00%	240 VA	TOTAL CONN. CURRENT: 320 A TOTAL EST. DEMAND CURRENT: 320 A
REC	360 VA	100.00%	360 VA	
Spares	61800 VA	100.00%	61800 VA	

NOTES:

PANELBOARD AND WIRING SCHEDULE

PANEL: PP1 AVAILABLE FAULT CURRENT: 10.9 KAIC
 VOLTAGE: 208Y/120V, 3P, 4W MAINS TYPE: MLO PANEL INTERRUPTING RATING: 22 KAIC
 AMPERES: 400 A SPD: No LOCATION: SUPPLY FROM: T-PP1

CIRCUIT DESCRIPTION	WIRE	GND	C	OCP	P	CKT	MOUNTING: SURFACE			CKT	P	OCP	C	GND	WIRE	CIRCUIT DESCRIPTION
							A	B	C							
PLC	#40	#4	2.5"	150	3	1	8.2	7.2		2	3	100	#8	#3	EXISTING PLB	
EXISTING POOL FILTER PANEL	--	--	--	100	3	9	0.0	7.0		10	3	100	#8	#3	PLD	
SPARE	--	--	--	20	3	13	0.0	0.0		14	3	20	--	--	SPARE	
SPARE	--	--	--	20	3	15	0.0	0.0		16	3	20	--	--	SPARE	
SPARE	--	--	--	20	3	17	0.0	0.0		18	3	20	--	--	SPARE	
SPARE	--	--	--	20	3	19	0.0	0.0		20	3	20	--	--	SPARE	
BAS PANEL	--	--	--	20	1	25	0.5	0.0		25	--	--	--	--	SPARE	
SPACE	--	--	--	--	--	27	0.0	0.0		28	--	--	--	--	SPARE	
SPACE	--	--	--	--	--	29	0.0	0.0		30	--	--	--	--	SPARE	
SPACE	--	--	--	--	--	31	0.0	0.0		32	--	--	--	--	SPARE	
SPACE	--	--	--	--	--	33	0.0	0.0		34	--	--	--	--	SPARE	
SPACE	--	--	--	--	--	35	0.0	0.0		36	--	--	--	--	SPARE	
SPACE	--	--	--	--	--	37	0.0	0.0		38	--	--	--	--	SPARE	
SPACE	--	--	--	--	--	39	0.0	0.0		40	--	--	--	--	SPARE	
SPACE	--	--	--	--	--	41	0.0	0.0		42	--	--	--	--	SPARE	

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
EQUIP	4620 VA	100.00%	4620 VA	TOTAL CONN. LOAD: 67020 VA TOTAL EST. DEMAND: 67020 VA
LTNG	240 VA	100.00%	240 VA	TOTAL CONN. CURRENT: 186 A TOTAL EST. DEMAND CURRENT: 186 A
REC	360 VA	100.00%	360 VA	
Spares	61800 VA	100.00%	61800 VA	

NOTES: WHERE NOT LISTED, WIRE AND CONDUIT SHALL BE BE MINIMUM PER SPECIFICATIONS. SPARE BREAKERS TO BE 20A/1P.

PANELBOARD AND WIRING SCHEDULE

PANEL: PLA AVAILABLE FAULT CURRENT: 27 KAIC
 VOLTAGE: 208Y/120V, 3P, 4W MAINS TYPE: MLO PANEL INTERRUPTING RATING: 10 KAIC
 AMPERES: 225 A SPD: No LOCATION: SUPPLY FROM: PLC

CIRCUIT DESCRIPTION	WIRE	GND	C	OCP	P	CKT	MOUNTING: FLUSH			CKT	P	OCP	C	GND	WIRE	CIRCUIT DESCRIPTION
							A	B	C							
EXISTING LOAD	--	--	--	20	1	1	0.5	0.5		2	1	20	--	--	EXISTING LOAD	
EXISTING LOAD	--	--	--	20	1	3		0.5	0.5	4	1	20	--	--	EXISTING LOAD	
EXISTING LOAD	--	--	--	20	1	5			0.5	6	1	20	--	--	EXISTING LOAD	
EXISTING LOAD	--	--	--	20	1	7	0.5	0.5		8	1	20	--	--	EXISTING LOAD	
EXISTING LOAD	--	--	--	20	1	9			0.5	10	1	15	--	--	EXISTING LOAD	
EXISTING LOAD	--	--	--	15	1	11			0.5	12	1	20	--	--	EXISTING LOAD	
EXISTING LOAD	--	--	--	15	1	13	0.5	0.5		14	1	20	--	--	EXISTING LOAD	
EXISTING LOAD	--	--	--	20	2	15		0.7	0.4	16	2	20	--	--	RWH-2	
EXISTING LOAD	--	--	--	20	2	17			0.7	18	2	20	--	--	EF-2 & 3	
RCP-2	--	--	--	20	2	19	0.2	0.7		20	1	20	--	--	NATATORIUM CEILING FANS	
BAS PANEL	--	--	--	20	1	23		0.2	0.4	22	1	20	--	--	SPARE	
SPACE	--	--	--	--	--	25	0.0	0.0		26	--	--	--	--	SPACE	
SPACE	--	--	--	--	--	27	0.0	0.0		28	--	--	--	--	SPACE	
SPACE	--	--	--	--	--	29	0.0	0.0		30	--	--	--	--	SPACE	

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
EQUIP	2770 VA	100.00%	2770 VA	TOTAL CONN. LOAD: 11170 VA TOTAL EST. DEMAND: 11170 VA
Spares	8400 VA	100.00%	8400 VA	TOTAL CONN. CURRENT: 31 A TOTAL EST. DEMAND CURRENT: 31 A

NOTES: WHERE NOT LISTED, WIRE AND CONDUIT SHALL BE BE MINIMUM PER SPECIFICATIONS. SPARE BREAKERS TO BE 20A/1P.

PANELBOARD AND WIRING SCHEDULE

PANEL: PLB (EXISTING) AVAILABLE FAULT CURRENT: EXISTING
 VOLTAGE: 208Y/120V, 3P, 4W MAINS TYPE: MLO PANEL INTERRUPTING RATING: EXISTING
 AMPERES: 225 A SPD: No LOCATION: SUPPLY FROM: PP1

CIRCUIT DESCRIPTION	WIRE	GND	C	OCP	P	CKT	MOUNTING: SURFACE			CKT	P	OCP	C	GND	WIRE	CIRCUIT DESCRIPTION
							A	B	C							
EXISTING OVERHEAD LIGHTING	--	--	--	30	2	1	1.0	1.0		2	2	30	--	--	EXISTING OVERHEAD LIGHTING	
EXISTING OVERHEAD LIGHTING	--	--	--	30	2	5			1.0	1.0	6	2	30	--	--	EXISTING OVERHEAD LIGHTING
EXISTING LOAD	--	--	--	20	1	9			0.5	0.5	10	1	20	--	--	EXISTING RECEPTACLES
EXISTING LOAD	--	--	--	20	1	11			0.5	0.5	12	1	20	--	--	EXISTING OFFICE/SHOWER
EXISTING LOAD	--	--	--	20	1	13	0.5	0.5		14	1	20	--	--	EXISTING RECEPTACLES	
EXISTING LOAD	--	--	--	20	1	15			0.5	0.5	16	1	20	--	--	EXISTING DIVING WELL
EXISTING LOAD	--	--	--	20	1	17			0.5	0.5	18	1	20	--	--	EXISTING POOL LIGHTS
EXISTING LOAD	--	--	--	20	1	19	0.5	0.5		20	1	20	--	--	EXISTING POOL LIGHTS	
EXISTING LOAD	--	--	--	20	1	21			0.5	0.5	22	1	20	--	--	EXISTING RECEPTACLES
EXISTING SWITCH CIRCUIT	--	--	--	20	1	23			0.5	0.5	24	1	20	--	--	EXISTING DIVING POOL LIGHTS
EXISTING DIVING FLOOD LIGHTS	--	--	--	20	1	25	0.5	0.5		26	1	20	--	--	EXISTING POOL LIGHTS	
EXISTING GANOPY LIGHTS	--	--	--	20	1	27			0.5	0.5	28	1	20	--	--	EXISTING POOL LIGHTS
EH-4 & 5	--	--	--	20	2	29			0.2	0.0	30	--	--	--	SPACE	
SPACE	--	--	--	--	--	31	0.2	0.0		32	--	--	--	--	SPACE	
SPACE	--	--	--	--	--	33	0.0	0.0		34	--	--	--	--	SPACE	
SPACE	--	--	--	--	--	35	0.0	0.0		36	--	--	--	--	SPACE	
SPACE	--	--	--	--	--	37	0.0	0.0		38	--	--	--	--	SPACE	
SPACE	--	--	--	--	--	39	0.0	0.0		40	--	--	--	--	SPACE	
SPACE	--	--	--	--	--	41			0.0	0.0	42	--	--	--	SPACE	

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
EQUIP	450 VA	100.00%	450 VA	TOTAL CONN. LOAD: 18450 VA TOTAL EST. DEMAND: 18450 VA
Spares	18000 VA	100.00%	18000 VA	TOTAL CONN. CURRENT: 51 A TOTAL EST. DEMAND CURRENT: 51 A

NOTES: WHERE NOT LISTED, WIRE AND CONDUIT SHALL BE BE MINIMUM PER SPECIFICATIONS. SPARE BREAKERS TO BE 20A/1P.

PANELBOARD AND WIRING SCHEDULE

PANEL: PLC AVAILABLE FAULT CURRENT: 6.8 KAIC
 VOLTAGE: 208Y/120V, 3P, 4W MAINS TYPE: MLO PANEL INTERRUPTING RATING: 22 KAIC
 AMPERES: 225 A SPD: No LOCATION: SUPPLY FROM: PP1

CIRCUIT DESCRIPTION	WIRE	GND	C	OCP	P	CKT	MOUNTING: SURFACE			CKT	P	OCP	C	GND	WIRE	CIRCUIT DESCRIPTION
							A	B	C							
SPARE	--	--	--	20	1	1	0.0	0.5		2	1	20	--	--	EXISTING LIGHTING GIRLS DR	
EXISTING LIGHTING GIRLS DR	--	--	--	20	1	3		0.5	0.5	4	1	20	--	--	EXISTING LIGHTING GIRLS DR	
EXISTING LIGHTING E CORRIDOR	--	--	--	20	1	5			0.5	0.5	6	1	20	--	--	EXISTING LIGHTING ACTIVITIES
EXISTING LIGHTING ACTIVITIES	--	--	--	20	1	7	0.5	0.2		8	1	20	--	--	MECHANICAL ROOM LIGHTING	
EXISTING REC COORIDOR	--	--	--	20	1	9			0.5	0.5	10	1	20	--	--	EXISTING REC GIRLS DRESSING
EXISTING REC GIRLS DRESSING	--	--	--	20	1	11			0.5	0.5	12	1	20	--	--	EXISTING LOAD
EXISTING LIGHTS SHOWERS	--	--	--	20	1	13	0.5	0.5		14	1	20	--	--	EXISTING REC	
EXISTING EXHAUST FAN	--	--	--	20	1	15			0.7	0.7	16	1	20	--	--	EXISTING LOAD
EXISTING HAND DRYERS	--	--	--	20	2	17			0.7	0.7	18	2	20	--	--	EXISTING HAND DRYERS
EXISTING HAND DRYERS	--	--	--	20	2	19	0.7	0.7		20	2	20	--	--	EXISTING HAND DRYERS	
SPARE	--	--	--	20	3	21			0.7	0.7	22	3	20	--	--	SPARE
SPACE	--	--	--	--	--	23	0.0	0.0		24	3	20	--	--	SPARE	
SPACE	--	--	--	--	--	25	0.0	0.0		26	3	20	--	--	SPARE	
SPACE	--	--	--	--	--	27	0.0	0.0		28	3	20	--	--	SPARE	
SPACE	--	--	--	--	--	29	0.0	0.0		30	3	20	--	--	SPARE	
SPACE	--	--	--	--	--	31	0.0	0.5		32	1	15	--	--	EXISTING SHOWER SWITCH	
SPACE	--	--	--	--	--	33		3.9	0.4	34	1	20	--	--	RECEPTACLES ROOFTOP	
SPACE	--	--	--	--	--	35			3.7	0.2	36					