**GENERAL HVAC NOTES**

1. All HVAC systems are to be designed and installed in accordance with the latest editions of the National Electrical Code, International Plumbing Code, International Mechanical Code, and International Building Code.

2. All HVAC systems are to be designed and installed in accordance with the applicable local building and fire codes.

3. All HVAC systems are to be designed and installed in accordance with the applicable local plumbing codes.

4. All HVAC systems are to be designed and installed in accordance with the applicable local electrical codes.

5. All HVAC systems are to be designed and installed in accordance with the applicable local mechanical codes.

6. All HVAC systems are to be designed and installed in accordance with the applicable local health codes.

**HVAC LEGEND**

- Existing Equipment
- New Equipment
- Redraw by Owner
- Redraw by Contractor
- Rectangular Return Air
- Rectangular Supply Air
- Round Return Air
- Round Supply Air
- Rectangular Duct Smoke Detector
- Rectangular Supply Air Down
- Rectangular Return or Exhaust Air

**GENERAL PIPING NOTES**

- Existing Piping
- Redraw by Owner
- Redraw by Contractor
- New Piping
- Rectangular Duct Smoke Detector
- Rectangular Supply Air Down
- Rectangular Return or Exhaust Air

**PIPING LEGEND**

- Existing Piping
- Redraw by Owner
- Redraw by Contractor
- New Piping

**MECHANICAL DEMO NOTES & LEGEND**

- **Mechanical Demo Notes**
  - Existing Mechanical
  - New Mechanical
  - Redraw by Owner
  - Redraw by Contractor
  - New Mechanical

- **Mechanical Legend**
  - Existing Mechanical
  - New Mechanical
  - Redraw by Owner
  - Redraw by Contractor
  - New Mechanical
OXYGEN DEPLETION MONITOR SEQUENCE OF OPERATIONS

1. THE OXYGEN DEPLETION MONITOR (TOX-OXY2) SHALL CONTINUOUSLY MONITOR THE OXYGEN LEVEL IN THE SPACE.

2. UPON DETECTION OF AN OXYGEN LEVEL OF 18.5% OR LESS, THE OXYGEN DEPLETION MONITOR SHALL SIMULTANEOUSLY ALERT THE BAS, TRIGGER THE LOCAL AUDIO/VISUAL ALARM AT THE CONTROLLER, ENERGY EF-121, AND OPEN BOTH MOTOR OPERATED DAMPERS IN THE SPACE.

3. UPON OXYGEN LEVELS RETURNING TO GREATER THAN 18.5%, THE REVERSE SHALL OCCUR.

MECHANICAL NEW WORK NOTES:

1. PROVIDE TOXALERT TOX-OXY2 OXYGEN DEPLETION MONITOR AND (2) TOXALERT TOX-O2/1 OXYGEN DEPLETION SENSORS. SEE 2/M-101. SEE SEQUENCE OF OPERATIONS THIS DRAWING.

2. RHC-121, CAV-121 AND CEV-121 SHALL BE CONTROLLED BY THE EXISTING PHOENIX CONTROLS INTERFACE IN BUILDING TO MAINTAIN ROOM TEMPERATURE SETPOINT BY +/- 1°F. EXISTING PHOENIX CONTROLS INTERFACE SHALL REPORT TO EXISTING BAS. SEE LABORATORY AIRFLOW CONTROL SYSTEM SPECIFICATION.

3. MOUNT ALL NEW AIR TERMINALS AT 9'-6" A.F.F.
THE RECEIVER OF THESE PLANS BY HARD COPY OR ELECTRONIC TRANSMISSION UNDERSTANDS AND AGREES AS FOLLOWS: THE RECEIVING PARTY WILL NOT MAKE OR PERMIT ANY USE OF THE DATA OR PLANS IN ANY ENDEAVOR NOT DIRECTLY RELATED TO THE PROJECT FOR WHICH IT RECEIVED THE DATA OR PLANS.

E-000

DZ

SHEET

(D) DENOTES EQUIPMENT OR WIRING TO BE DEMOLISHED.

- ALL CONDUIT PENETRATIONS THROUGH WALLS OR CEILINGS SHALL BE PATCHED AND SEALED WITH FIRE RATED FOAM SEALANT.

VFD CABLE SHALL BE OKONITE C-L-X TYPE MC-HL (XHHW2) OR APPROVED EQUAL. 3/C VFD CABLE SHALL BE RATED FOR 600 /1000.

FACP. INSTALLATION OF DETECTOR BY MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL.

HIGH EFFICIENCY 6" LED DOWNLIGHT RECESSED 120/277.

1. PROVIDE MOUNTING HARDWARE AS REQUIRED.

2. PROVIDE IDENTIFICATION LABELS FOR ALL BRANCH CIRCUITS AND FEEDER CIRCUITS AT JUNCTION BOXES, PANELBOARDS, CONCEALED IN WALL. WIRING TO OUTLETS ON TABLE SHALL BE PROVIDE IN EITHER EMT CONDUIT OR FLEXIBLE METAL CONDUIT.

3. ROOM SHALL BE IN RIGID CONDUIT. USE OF MC CABLE IS LIMITED TO BRANCH CIRCUIT WIRING ABOVE RECESSED CEILING OR PROVISED. PERMANENTLY LABEL ALL NEW ELECTRICAL EQUIPMENT, INCLUDING BUT NOT LIMITED TO, DEVICE DESIGNATION AND SUPPLY PANEL DESIGNATION.

7. PROVIDE ALL LABOR AND MATERIALS FOR A COMPLETE INSTALLATION. WORK SHALL BE EXECUTED BY EXPERIENCED TRADESMEN WHO ARE LICENSED IN THE JURISDICTION WHERE THE PROJECT IS LOCATED.

14. CONTRACTOR SHALL SUBMIT FOR REVIEW, SHOP DRAWINGS FOR ALL EQUIPMENT AND MATERIALS USED ON THE PROJECT.

15. CONTRACTOR SHALL PROVIDE A COMPLETE PUNCH LIST OF ALL INSTALLED SYSTEMS TO THE CONSTRUCTION MANAGER WHEN THE PROJECT IS COMPLETED.

16. PROVIDE AND LEAVE ACCESSIBLE PULL STRINGS IN ALL CONDUITS, RACEWAYS, SLEEVES AND CHASES TO LOW VOLTAGE WIRING TO BE DRILLED. MAXIMUM CORE DRILL SIZE SHALL BE 5" IN DIAMETER. CORE DRILL LOCATIONS SHALL BE SPACED A MINIMUM OF 6".

17. WP - WEATHERPROOF

DISC - DISCONNECT

AF - AMPERE FRAME

SP - SPEAKER

SPD - SURGE PROTECTIVE DEVICE

GFCI - GROUND FAULT CIRCUIT INTERRUPTER

WP - WEATHERPROOF-NEMA3R ENCLOSURE. (NOMENCLATURE: 30A/20A = SWITCH SIZE/FUSE SIZE). SQ D CLASS

1. ELECTRICAL SYMBOL LEGEND

2. ELECTRICAL GENERAL NOTES

3. TELECOMMUNICATION GENERAL NOTES

4. ELECTRICAL ABBREVIATIONS

5. ELECTRICAL SYMBOL LEGEND

6. ELECTRICAL ABBREVIATIONS

7. GRAPHIC CONVENTIONS

8. LIGHTING FIXTURE SCHEDULE

9. FIRE ALARM SYSTEM

10. COMMUNICATION DEVICES

11. LIGHTING CONTROLS

12. FIRE ALARM DEVICES

13. COMMUNICATION DEVICES

14. LIGHTING CONTROLS

15. FIRE ALARM DEVICES

16. COMMUNICATION DEVICES

17. LIGHTING CONTROLS

18. FIRE ALARM DEVICES

19. COMMUNICATION DEVICES

20. LIGHTING CONTROLS

21. FIRE ALARM DEVICES

22. COMMUNICATION DEVICES

23. LIGHTING CONTROLS

24. FIRE ALARM DEVICES
(2) 2 1/2" CONDUIT ABOVE CEILING FROM NEW TRANSFORMER IN BASEMENT TO NEW PANEL, PL121. SEE E-600 FOR DETAILS.

DOWN TO BASEMENT FLOOR 1.

PROVIDE NEW ELECTRICAL DEVICES INCLUDING BUT NOT LIMITED TO POWER RECEPTACLES, TELEPHONE/DATA OUTLETS, WIRE, AND CONDUIT AS REQUIRED. CONTRACTOR TO CONFIRM POWER CORDS FOR ALL EQUIPMENT REQUIRING 208V POWER AND PROVIDE L15-20R OUTLETS.

PROVIDE NEW 42-CIRCUIT, 225A PANEL WITH WIRING ROUTED ABOVE CEILING FROM NEW TRANSFORMER.

PROVIDE NEW LIGHT FIXTURES, EMERGENCY LIGHT, LIGHT SWITCHES, MOTION SENSOR, POWER PACK, WIRE, AND CONDUIT AS REQUIRED. SEE LIGHT FIXTURE SCHEDULE ON ELECTRICAL COVER SHEET FOR FIXTURE DETAILS.

PROVIDE STARTER MOTORS FOR MECHANICAL EQUIPMENT AS REQUIRED.

ELECTRICAL POWER AND LIGHTING NOTES:

(MCC) SWITCHBOARD

(E) FEED TO FIRE PUMP

(N) 75 KVA TRANSFORMER 480V - 208/120V

(E) DISCONNECT SW.

(E) MDP-D4B1

(E) PNL-L4B1 TRANSFORMER 480V - 208/120V

(N) ENCLOSED CIRCUIT BREAKER

(2) 2 1/2" CONDUIT ALONG CEILING FROM NEW TRANSFORMER UP TO PANEL PL121 ON FIRST FLOOR. SEE E-600 FOR DETAILS.

30 KVA TRANSFORMER 480V - 208/120V

(2) 1/2" CONDUIT ALONG CEILING FROM MDP-D4B1 TO NEW TRANSFORMER. SEE E-600 FOR DETAILS.
CUSTOM FULLY HINGED SURFACE MOUNTED DOOR AND TRIM DETAIL

SCALE: NOT TO SCALE

CONTINUOUS PIANO STYLE HINGE
HINGE TRIM
SECONDARY LOCK
TRIM IS SECURED TO BOX LIP WITH SCREWS, AND ALSO TO THE PANEL INTERIOR DEADFRONT (AS ARE STANDARD MHC TRIMS). WITH TRIM HINGED TO BOX, IT ALLOWS ACCESS TO GUTTER AREA WITHOUT HAVING TO REMOVE TRIM.

DOOR OVER THE INTERIOR ALLOWS ACCESS TO BREAKERS (AS IN STANDARD TRIM). WITH THIS DOOR CLOSED, SCREWS THAT SECURE THE TRIM TO THE INTERIOR DEADFRONT AREA PROTECTED FROM REMOVAL BY UNAUTHORIZED PERSONS.

BOX STANDARD (MH STYLE) HINGED TRIM

NOTE: PRIMARY AND SECONDARY PANELS TO BE LOCKABLE WITH SAME KEYS AND TO OPEN IN THE SAME DIRECTION.

EQUIPMENT GROUND AND NEUTRAL WIRING IN PANELBOARD (TYP)

SCALE: NOT TO SCALE

1. PROVIDE GROUND BAR WITH ADEQUATE TERMINALS FOR EQUIPMENT GROUND WIRES.
2. DOUBLE LUGGING OF NEUTRAL OR EQUIPMENT GROUND WIRES IS NOT PERMITTED.
3. NUMBER OF NEUTRAL AND EQUIPMENT GROUND WIRES VARY BY PANEL AND BRANCH CIRCUITS.

NOTES:

PANELBOARD NEUTRAL BAR

A B C

OUTGOING BRANCH CIRCUIT WIRING WITH DEDICATED NEUTRAL AND GROUND WIRES. (TYP)

CONDUIT WITH INCOMING FEEDER LOCKNUT PLASTIC BUSHING GROUND BAR DEDICATED EQUIPMENT + GROUND WIRES PER EACH CIRCUIT PLASTIC BUSHING CONNECTOR WITH LOCKNUT MC CABLE CONDUIT CLAMP EMT OR RGS CONDUIT CONDUIT CLAMP PLASTIC BUSHING CONNECTOR WITH LOCKNUT DEDICATED NEUTRAL WIRES FOR CIRCUIT REQUIRING NEUTRAL WIRES.

APPROPRIATELY SEALED FOR LOCATION AND APPLICATION CONDUIT MAX. 5" Ø CORE DRILL EXISTING CONCRETE WALL OR FLOOR TYPICAL PENETRATION IN WALL OR FLOOR SCALE: NOT TO SCALE

MECHANICAL CONTROL DEVICE CABINET WALL OUTLET OR TELEPHONE WALL SWITCH DATA OUTLET ELECTRIC OR FRONT CABINET BASE LATCH SIDE DOOR FRAME SWITCH WHERE APPL. UNLESS STACKED COORDINATE ALL FINAL DIMENSIONS WITH ARCHITECTURAL PLANS ELECTRIC, TELEPHONE OR DATA OUTLET WHERE NO CASEWORK OCCURS SCALE: NO SCALE TYPICAL ELECTRICAL MOUNTING HEIGHTS

EMERGENCY LIGHTING RELAY DETAIL

EMERGENCY LIGHTING RELAY DETAIL 2#12 ACROSS LOCAL LIGHT SWITCH CIRCUIT 2#12 ACROSS LOCAL LIGHT SWITCH CIRCUIT
THE RECEIVER OF THESE PLANS BY HARD COPY OR ELECTRONIC TRANSMISSION BY USE THEREOF UNDERSTANDS AND AGREES AS FOLLOWS:

1. PROVIDE NEW TRANSFORMER XFMR-3 WITH CONDUIT AND WIRING AS REQUIRED.
2. PROVIDE NEW PANEL IN CONJUNCTION WITH NEW BREAKERS, CONDUIT AND WIRING AS REQUIRED.

*ALL ELECTRICAL EQUIPMENT ARE EXISTING UNLESS NOTED OTHERWISE."

**NEW WORK NOTED:**

- PROVIDE A 100A PANEL BOARD INTO EXISTING PANEL BOARD.

NEW PANEL:

- PROVIDE A 110A PANEL BOARD INTO EXISTING PANEL BOARD.

EXISTING EMERGENCY PANEL:

- PROVIDE A 250A PANEL BOARD INTO EXISTING PANEL BOARD.

PHASE A: __ kVA

- PROVIDE A 65KAIC SERVICE ENTRANCE RATED 3000 AMP BUS, 480Y/277V, 3PH-4W - 65KAIC

E-600

**NEW WORK NOTES:**

- PROVIDE A 225A TRANSFORMER ELEMENT WITH CONDUIT AND WIRING AS REQUIRED.

PROVIDE NEW 60A/2P CIRCUIT BREAKER AND 4#6 + 1#10G - 1"C WIRING.

PROVIDE NEW 40A/3P CIRCUIT BREAKER AND 4#8 + 1#10G - 1"C WIRING.

PROVIDE NEW 20A/3P CIRCUIT BREAKER AND 3#12 + 1#12G - 3/4"C WIRING.

PHASE A: 11.3 kVA

**NOTE:**

- PROVIDE A 110A PANEL BOARD INTO EXISTING PANEL BOARD.
THE RECEIVER OF THESE PLANS BY HARD COPY OR ELECTRONIC TRANSMISSION BY USE THEREOF UNDERSTANDS AND AGREES AS FOLLOWS:

1. THE RECEIVER SHALL NOT REPRODUCE OR OTHERWISE MAKE USE OF THE DATA OR PLANS IN ANY ENDEAVOR NOT DIRECTLY RELATED TO THE PROJECT FOR WHICH IT WAS PRODUCED.

2. THE RECEIVER SHALL MAKE NO CLAIM NOR INITIATE ANY ACTION IN LAW OR EQUITY AGAINST JAED CORPORATION WITH RESPECT TO CERTAIN COMPUTER PROGRAMS, PROGRAMMED DATA, AND RELATED DOCUMENTATION IN ANY CASE WHERE SUCH DATA OR PROGRAMS WERE USED IN ERROR OR UNDER FALSE PRETENSES.

3. THE RECEIVER AGREES TO DEFEND, INDEMNIFY, AND HOLD HARMLESS JAED CORPORATION AGAINST ANY CLAIM, LOSS, DAMAGE, OR LIABILITY WHICH MAY ARISE OUT OF OR RESULT FROM THE RECEIPT OR USE OF THE COMPUTER PROGRAMS AND PROGRAMMED DATA.

4. THE RECEIVER AGREES TO PAY ALL COSTS OF DEFENSE INCLUDING REASONABLE ATTORNEY'S FEES AND COSTS OF DEFENSE ARISING OUT OF OR RESULTING FROM THE USE OF ELECTRONIC DATA.

SHEET NO. TMC 20001 PROJECT NO. CHK'D MARCH 9, 2020 DOCUMENTS BID PLUMBING PLANS SHEET TITLE DATE DESCRIPTION MARK REVISIONS PROJECT WHEN REQUISITIONS FOR PAYMENT ARE SUBMITTED.

23. MAINTAIN RECORD DRAWINGS ON SITE. RECORD SET MUST BE COMPLETE, CURRENT AND AVAILABLE FOR INSPECTION AT CONSTRUCTION COMPLETION.

22. INSTALL WASTE AND SUPPLY GUARDS UNDER ALL LAVS-SEE FIXTURE SCHEDULE.

21. INSTALL ALL FIXTURES, AS SPECIFIED, WITH SUPPLY STOPS.

20. INSTALL SUCTION AND STRAINER DRAINS, AS REQUIRED, TO CAPTURE EXCESS WATER.

19. KEEP ALL OPENINGS IN PIPES OR FITTINGS PLUGGED OR CAPPED UNTIL CONNECTED.

18. CONTRACTOR TO PROVIDE SHUT-OFF VALVES AT ALL DEVICES.

17. INSTALL ALL SHUT-OFF AND ISOLATION VALVES (WITH ACCESS PANELS IF NECESSARY) IN A LOCATION WHICH IS ACCESSIBLE FROM THE MAIN FLOOR.

16. FURNISH AND INSTALL ACCESS PANELS WHERE REQUIRED FOR ACCESS TO ALL CONCEALED VALVES, TRAPS, OR OTHER EQUIPMENT FURNISHED UNDER THIS CONTRACT WHERE NO OTHER MEANS IS AVAILABLE.

15. ALL DIMENSIONS AND PIPE SIZES ARE IN INCHES, UNLESS NOTED OTHERWISE.

14. RUN 2" MINIMUM SIZES SOIL & WASTE PIPING BELOW GROUND INSIDE BUILDING REGARDLESS OF SIZE ON FIXTURE SCHEDULE.

13. CONNECT DHW, DCW, DHWR VENT, AND SOIL & WASTE LINES TO FIXTURES IN ACCORDANCE WITH SIZES INDICATED ON FIXTURE SCHEDULE.

12. CONTRACTOR TO PAY FOR ALL FEES AND PERMITS ASSOCIATED WITH PLUMBING WORK INDICATED AS NECESSARY TO SECURE A COMPLETE AND OPERATIONAL SYSTEM ON SCHEDULE AND IN A TIMELY MANNER.

11. SEAL ALL RESPECTIVE WALL, FLOOR, AND CEILING/ROOF PENETRATIONS AS APPROPRIATE TO MAINTAIN A WEATHER TIGHT ENCLOSURE, FIRE BARRIER, SMOKE BARRIER, ETC. AS APPLICABLE. REFER TO ARCHITECTURE PLANS FOR SMOKE AND FIRE BARRIERS.

10. INSTALL WATER HAMMER ARRESTORS IN DOMESTIC WATER PIPING AS REQUIRED PER P.D.I. WH-201 STANDARDS FOR WATER HAMMER ARRESTORS.

9. PROVIDE ALL LABOR, MATERIALS, AND INSTALLATION APPARATUS TO INSURE A COMPLETE OPERATING SYSTEM IMPLIED BY THE DRAWING CONTENT AND AS SPECIFIED.

8. INSTALL FIXTURES AND VENTS IN CONFORMITY WITH THE SPECIFICATIONS, DRAWINGS, AND REQUIREMENTS SPECIFIED.

7. ALL INSTALLATIONS SHALL COMPLY WITH ALL CODES OR REGULATIONS, LOCAL, STATE, OR NATIONAL HAVING JURISDICTION.

6. PRIOR TO SUBMITTING BID, THE CONTRACTOR/BIDDER SHALL VISIT THE SITE AND BE THOROUGHLY FAMILIAR WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE CONTRACT.

5. FOR ALL EQUIPMENT REQUIREMENTS, REFER TO SPECIFICATIONS, PLUMBING SCHEDULE OR DRAWINGS. CONTRACTOR SHALL NOT INSTALL EQUIPMENT/MATERIALS UNTIL SAME IS APPROVED.

4. INSTALL WATER HAMMER ARRESTORS IN DOMESTIC WATER PIPING AS REQUIRED PER P.D.I. WH-201 STANDARDS FOR WATER HAMMER ARRESTORS.

3. FOR ALL EQUIPMENT REQUIREMENTS, REFER TO SPECIFICATIONS, PLUMBING SCHEDULE OR DRAWINGS. CONTRACTOR SHALL NOT INSTALL EQUIPMENT/MATERIALS UNTIL SAME IS APPROVED.

2. COLLECT FIXTURE VENTS IN VENT HEADER ABOVE CEILING AND CONNECT TO CLOSEST EXISTING VTR OR BRANCH VENT LINE.

1. SEE THE ARCHITECTURAL DRAWINGS FOR INFORMATION ON THE SCOPE OF CONSTRUCTION.
NOTE: IN AREA SHOWN, RELOCATE EXISTING SPRINKLER HEADS AS REQUIRED TO FACILITATE NEW UTILITY LAYOUT IN ROOM AND/OR PROVIDE NEW SPRINKLER HEADS TO MAINTAIN DENSITY AND COVERAGE REQUIRED BY CODE. PROVIDE ALL PIPING EXTENSIONS AND PIPE HANGERS AS REQUIRED.