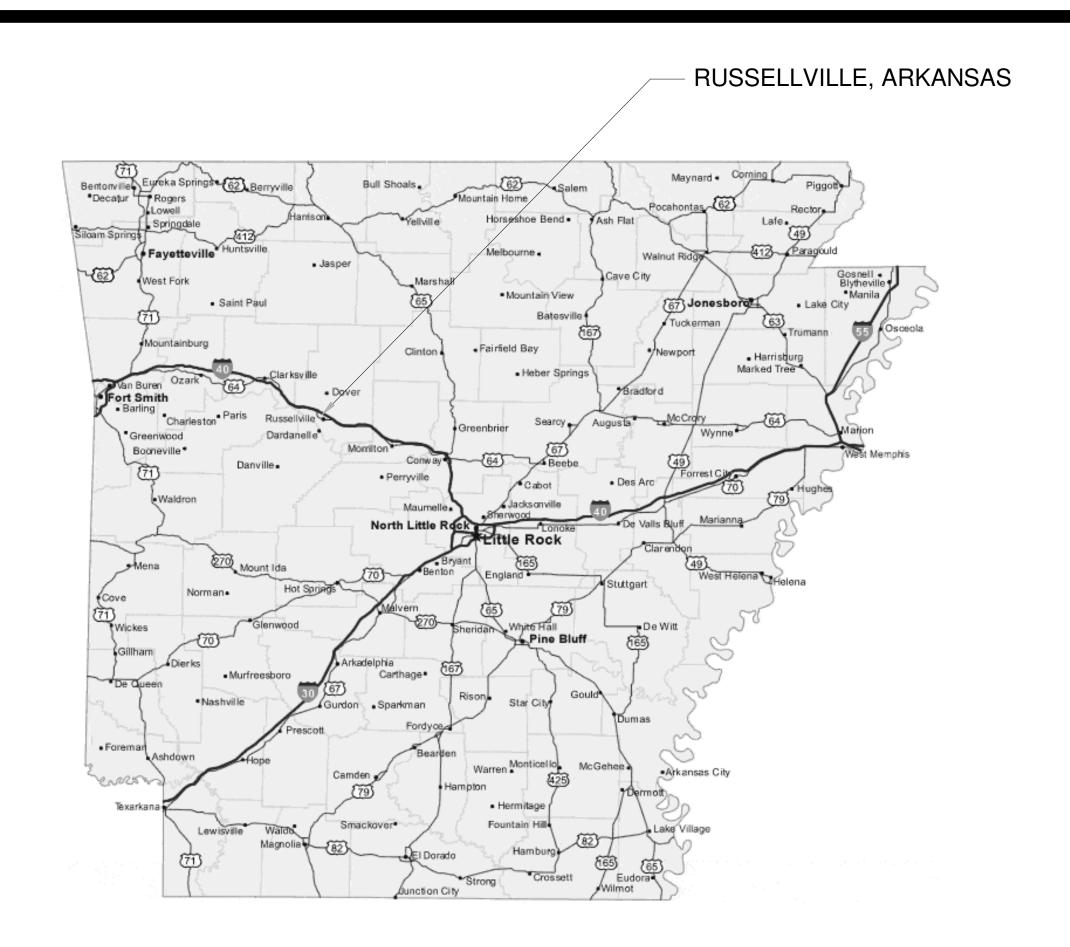
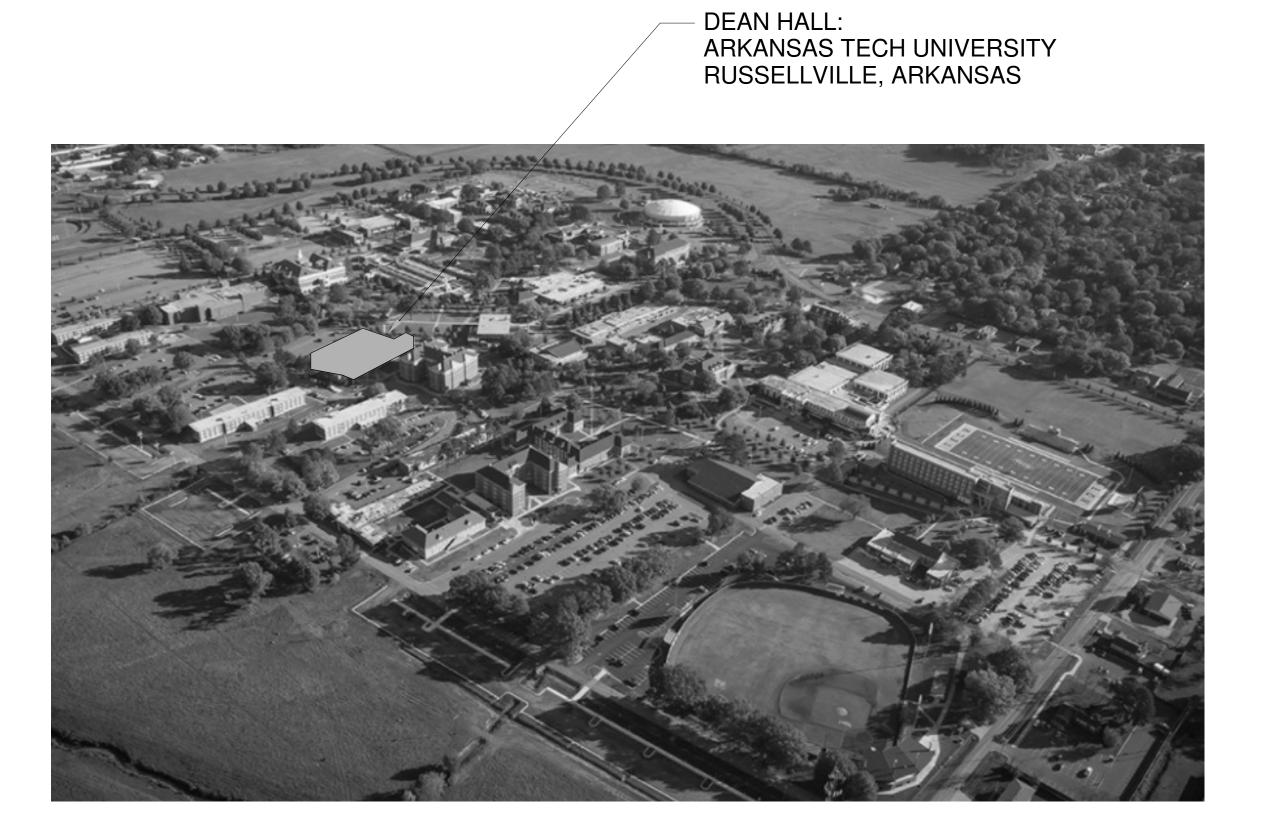
# HVAC SYSTEM UPGRADES FOR DEAN HALL

402 WEST O STREET RUSSELLVILLE, AR





## INSIGHT ENGINEERING, PLLC

201 S. CHESTER ST. LITTLE ROCK, AR 72201 501.237.3077

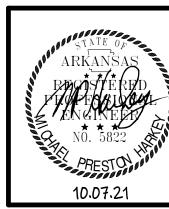


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CONSTRUCTION DOCUMENTS

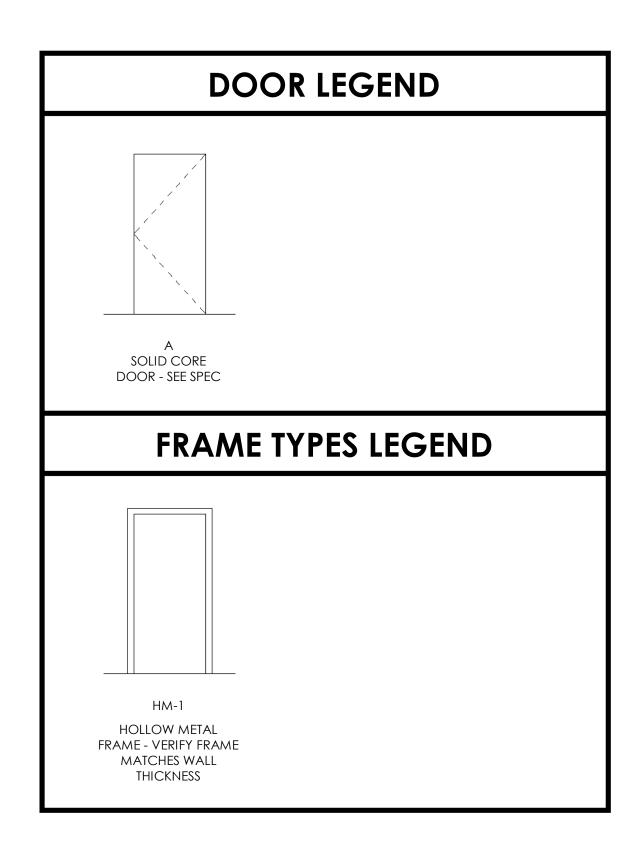
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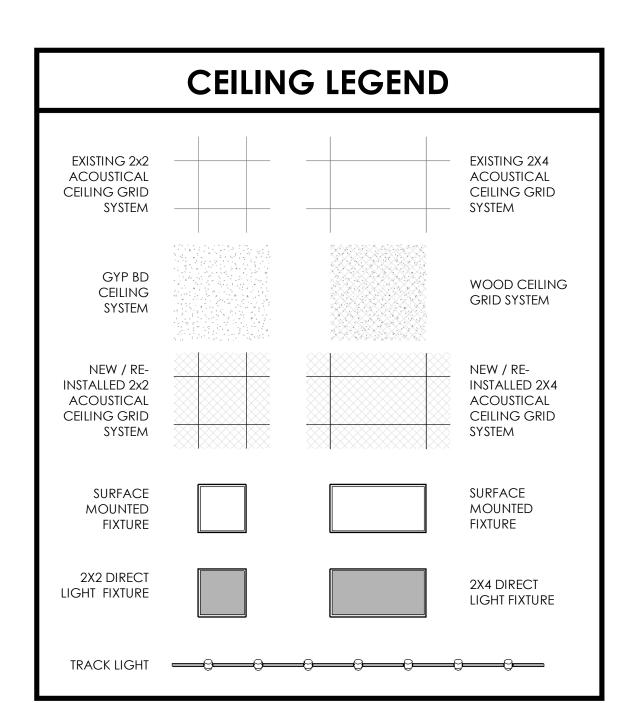


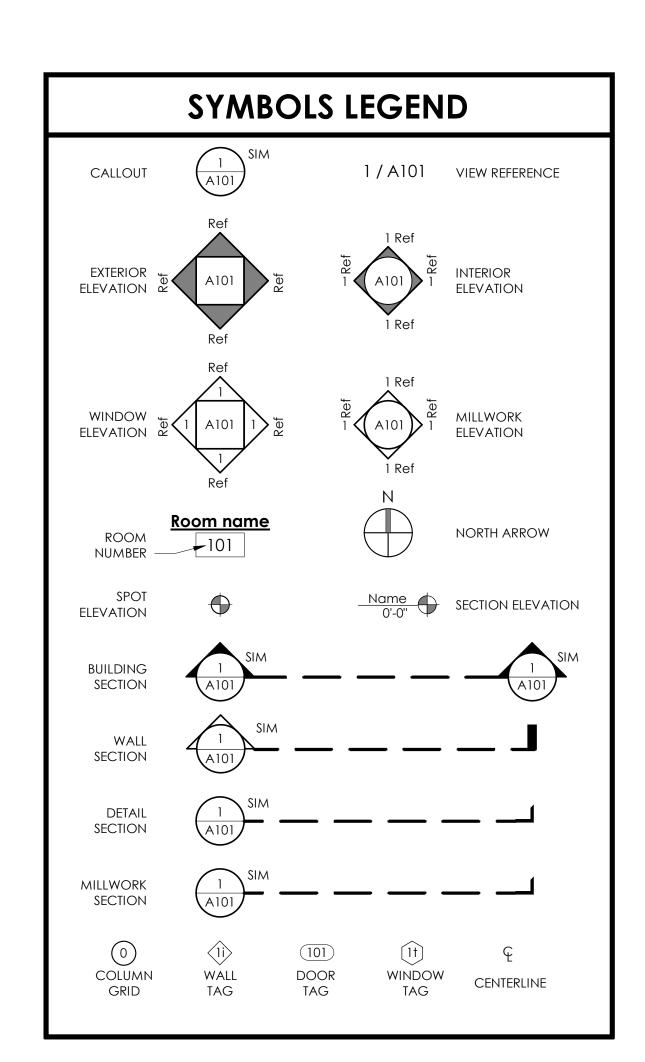




	DOOR SCHEDULE														
		DO	OR		FRAME										
DOOR NO.	TYPE	W HT	THK	MATERIAL	FRAME TYPE	FIRE RATING	HARDWAR E SET	COMMENTS							
161A	Α	3' - 0" 7' - 0"	1 3/4"	METAL	HM-1	N/A	HW-1								







#### GENERAL INFORMATION

#### GENERAL ARCHITECTURAL

- BUILDINGS OR PORTIONS OF BUILDINGS SHALL BE PERMITTED TO BE
  OCCUPIED DURING CONSTRUCTION, REPAIR, ALTERATIONS, OR ADDITIONS
  ONLY IF ALL MEANS OF EGRESS & ALL FIRE PROTECTION FEATURES ARE IN
  PLACE AND CONTINUOUSLY MAINTAINED FOR THE PORTION OCCUPIED.
   ALL DOOR HANDLES SHALL COMPLY WITH ADA AND BE LEVER OPERATED
  - UNLESS OTHERWISE SPECIFIED

    3. INTERIOR CEILINGS SHALL BE CLASS A FLAME SPREAD RATINGS OF 0-25 -
- SMOKE DEVELOPMENT OF 0-450

  4. INSULATION AND INSULATION ASSEMBLIES SHALL MEET THE REQUIREMENTS
- OF IBC AND ASHRAE 90.1

  5. TOP OF FIRE EXTINGUISHER, HAVING A GROSS WEIGHT OF LESS THAN 40 LBS, SHALL BE NOT MORE THAN 36" A.F.F. IF WEIGHT IS GREATER THAN 40 LBS,
- THEN THE HEIGHT SHALL NOT BE MORE THAN 42" A.F.F.

  6. A REQUIRED FIRE SEPARATION SHALL BE CONTINUOUS FROM FOUNDATION THROUGH ALL INTERVENING CONSTRUCTION TO THE ROOF DECK, FROM OUTSIDE WALL TO THE OUTSIDE WALL OF FROM FIRE BARRIER TO FIRE BARRIER PROVIDE UL OR FM LISTED ASSEMBLY
  - PENETRATIONS THROUGH RATED CONSTRUCTION SHALL BE SEALED WITH A MATERIAL CAPABLE OF PREVENTING THE PASSAGE OF FLAMES AND HOT GASES WHEN TESTED IN ACCORDANCE WITH ASTM-E814

#### GENERAL ADAAG

- PROVIDE HANDICAPPED ACCESSIBILITY IN ACCORDANCE WITH ADAAG

  A. GROUND AND FLOOR SURFACES 9 SLIP RESISTANT UNDER ALL

  WEATHER CONDITIONS!
- WEATHER CONDITIONS)

  B. DOOR HARDWARE SHALL COMPLY WITH THIS SECTION HARDWARE SHALL NOT REQUIRE TIGHT GRASPING, TIGHT PINCHING, OR
- TWISTING OF THE WRIST TO OPERATE

  C. SIGNAGE, WHERE PROVIDED AT PERMANENT ROOMS & SPACES AND OTHER SIGNS WHICH PROVIDE DIRECTION TO OR INFORMATION ABOUT FUNCTIONAL SPACES OF THE BUILDINGS, SHALL BE IN ACCORDANCE WITH ADA (RAISED CHARACTER, LETTER SIZE, MOUNTING)

#### GENERAL PLUMBING

- ALL PLUMBING WORK SHALL BE ACCOMPLISHED THROUGH THE USE OF A
  LICENSED CONTRACTOR OF THE TRADE IN A PROFESSIONAL AND WORKMAN
  LIKE MANNER
- 2. ALL PLUMBING WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE CURRENT PLUMBING CODE, REGIONAL, STATE AND/OR LOCAL HEATH DEPARTMENT, AND BUILDING CODES FOR THE GEOGRAPHICAL AREA OF CONSTRUCTION
- 3. ALL WATER LINES (HOT AND COLD) AND ALL WASTE LINES SHALL BE PRESSURE TESTED PRIOR TO CONCRETE PLACEMENT
- 4. INSTALL SANITARY HUBS AS PER MUNICIPAL AND STATE HEALTH DEPARTMENT REQUIREMENTS AND AS ILLUSTRATED HEREIN, AND PRESSURE TESTED PRIOR TO CONCRETE PLACEMENT
- 5. IT IS THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR TO INSURE THAT NO EXISTING UTILITIES ARE INTERRUPTED BY THE CONTRACTED EXCAVATION.

#### GENERAL MECHANICAL

- COORDINATED ALL DUCTWORK WITH ELECTRICAL LIGHTING PLAN
   ALL DUCTWORK SHALL CONFORM WITH THE LOCAL MECHANICAL CODE
   AIR CONDITIONING, HEATING, VENTILATION DUCT WORK AND RELATED
- EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH NFPA REGULATIONS
  4. SMOKE DETECTORS WILL BE INSTALLED IN ALL UNITS OVER 2000 CFM'S
- ACCORDING TO LOCAL MECHANICAL CODE

  5. PROVIDE FIRE DAMPERS IN AIR TRANSFER OPENINGS IN PARTITIONS REQUIRED TO BE FIRE RATED

#### GENERAL ELECTRICAL

- 1. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE CURRENT EDITION OF NFPA ELECTRICAL CODE. THE IECC, & ALL RULES & OR REGULATIONS HANDED DOWN BY THE STATE, LOCAL OR OTHER REGULATING AUTHORITY FOR THE END PROJECT
- 2. THE ELECTRICAL SUBCONTRACTORS SHALL VERIFY ALL ASPECTS OF THE ELECTRICAL WORK WITH THE LOCAL UTILITY COMPANY PROVIDING THE SERVICES TO THE PROPOSED BUILDING, INSURE THAT THE GENERAL INTENT OF THE DRAWINGS IN ACCORDANCE WITH THE LOCAL ELECTRICAL CODE IS APPLIED AND CONSIDERED WITH THE INITIAL BID PROPOSAL

## GENERAL DEMOLITION NOTES

#### EXISTING TO REMAIN

- THE CONTRACTOR SHALL TAKE ALL PRECAUTION TO PREVENT DAMAGE TO ALL BUILDING ELEMENTS AND SYSTEMS IN EXISTING AREAS NOT DESIGNATED FOR
- DEMOLITION OR NEW CONSTRUCTION.

  THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGE CAUSED BY HIS WORK OR ANY SUBCONTRACTOR.
- WHEN INSTALLING NEW EQUIPMENT OR FIXTURES, REMOVE CEILING TILES AND GRIDS TO ACCESS THE NECESSARY EQUIPMENT TIE-INS TO POWER, WATER, ETC. SHOULD EXISTING TILES OR GRIDS BECOME DAMAGED, REPLACE OR REPAIR THE DAMAGED PORTIONS.

#### CLEARANCES

- THE CONTRACTOR SHALL VERIFY THAT NEW CEILINGS CAN BE INSTALLED IN EXISTING SPACES TO CLEAR DUCTWORK AND OTHER CONSTRUCTED ITEMS
- AND MAINTAIN FLOOR TO CEILING HEIGHTS INDICATED ON DRAWINGS.
   IF DISCREPANCIES OCCUR DUE TO EXISTING CONDITIONS, CONSULT WITH THE ARCHITECT BEFORE PROCEEDING

#### ALIGNMENT OF EXISTING AND NEW ELEMENTS

THE FINISH FACE OF MATERIAL OF NEW PARTITIONS SHALL ALIGN ON BOTH SIDES OF THE PARTITION WITH THE FACE OF THE MATERIALS ON EXISTING COLUMNS, WALLS, OR PARTITIONS, UNLESS NOTED OTHERWISE.

#### GENERAL FOR RENOVATION

- THE CONTRACTOR SHALL VERIFY DIMENSIONS OF AS-BUILT CONDITIONS, AND NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES.
   ALL INFORMATION SHOWN ON THE CONSTRUCTION DOCUMENTS IS BASED ON FIELD OBSERVATIONS AND/OR THE ORIGINAL CONSTRUCTION DOCUMENTS OF
- THE FACILITY
  THE CONTRACTOR SHALL SURVEY AND DETERMINE THE REMOVAL OF EXISTING CONSTRUCTION, EITHER WHOLE OR IN PART, AS REQUIRED FOR THE INSTALLATION OF THE NEW MECHANICAL, PLUMBING AND ELECTRICAL WORK THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING OF ANY CONSTRUCTION DEFECTS FOUND IN UNCOVERING WORK IN THE EXISTING CONSTRUCTION
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING DEFECTIVE WORK
  IN EXISTING CONSTRUCTION WITHIN THE LIMITS OF THE CONSTRUCTION AREA.
  THIS INCLUDES, BUT IS NOT LIMITED TO, UNEVEN SURFACES AND FINISHES AT
  PLASTER OR GYPSUM BOARD. THE CONTRACTOR SHALL PATCH AND REPAIR
  SURFACES TO MATCH NEW ADJACENT SURFACES
   ALL PIPING ABOVE GRADE AND INSIDE THE BUILDING REQUIRED BY THE
- CONSTRUCTION DOCUMENTS SHALL BE INSTALLED IN AREAS WHERE IT WILL BE CONCEALED. THE CONTRACTOR SHALL CONSULT WITH THE ARCHITECT AND COORDINATE WITH OTHER TRADES TO PROVIDE FURRING FOR PIPING INSTALLED IN FINISH AREAS REMOVE MECHANICAL AND ELECTRICAL FIXTURES AND CAP OR REMOVE
- EXISTING BRANCH LINES AS INDICATED IN THE MECHANICAL AND ELECTRICAL DOCUMENTS
   COORDINATE PLANS FOR NEW CONSTRUCTION W/ DEMOLITION PLANS FOR EXTENT OF REMOVAL. REMOVE ONLY THOSE PORTIONS OF WALLS, FLOORS, CEILINGS, ETC. NECESSARY TO ACCOMMODATE NEW CONSTRUCTION

#### **GENERAL NOTES**

- A. THE DRAWINGS PREPARED BY LEVEL STUDIO ARE FOR USE SOLELY WITH RESPECT TO THIS PROJECT. UNLESS OTHERWISE PROVIDED, LEVEL STUDIO SHALL RETAIN ALL COMMON LAW STATUTORY AND OTHER RESERVED RIGHTS, INCLUDED THE COPYRIGHT. LEVEL STUDIO DRAWINGS SHALL NOT BE USED BY THE OWNER OR OTHERS ON OTHER PROJECTS, FOR ADDITIONS TO THIS PROJECT OR FOR COMPLETION OF THIS PROJECT BY OTHERS, UNLESS LEVEL STUDIO ACCEPTS BY AGREEMENT IN WRITING AND WITH APPROPRIATE COMPENSATION. DO NOT REPRODUCE THESE DRAWINGS WITHOUT WRITTEN APPROVAL OF LEVEL STUDIO
- B. CONTRACTORS SHALL PERFORM ALL WORK AS SHOWN ON THE DRAWINGS AND SPECIFICATIONS ALL WORK SHALL BE IN COMPLIANCE WITH THE INTERNATIONAL BUILDING CODE, AIA GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, RECOGNIZED INDUSTRY STANDARD, CRAFTSMANSHIP, STANDARDS IN THE AREA, ALL MANUFACTURER'S RECOMMENDATIONS AND ALL OTHER APPLICABLE CODES.
- C. THE ARCHITECT DOES NOT HAVE CONTROL OR CHARGE OF, AND SHALL NOT BE HELD RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES OF FOR THE SAFETY PRECAUTIONS, AND PROGRAMS IN CONNECTION WITH ANY OF THE WORK, OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- D. THE CONTRACTOR SHALL TAKE ALL PRECAUTION POSSIBLE TO PREVENT DAMAGE TO ANY EXISTING BUILDING ELEMENT TO REMAIN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGE CAUSED BY HIS WORK OR ANY SUBCONTRACTOR

THE FINISH FACE OF MATERIAL OF NEW PARTITIONS SHALL ALIGN ON BOTH

FIELD OBSERVATIONS AND/OR THE ORIGINAL CONSTRUCTION DOCUMENTS

- SIDES OF THE PARTITION WITH THE FACE OF THE MATERIALS ON EXISTING COLUMNS, WALLS, OR PARTITIONS, UNLESS NOTED OTHERWISE.

  F. THE CONTRACTOR SHALL VERIFY DIMENSIONS OF AS-BUILT CONDITIONS, AND NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES. ALL INFORMATION SHOWN ON THE CONSTRUCTION DOCUMENTS IS BASED ON
- OF THE FACILITY.

  G. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING OF ANY CONSTRUCTION DEFECTS FOUND IN UNCOVERING WORK IN THE EXISTING CONSTRUCTION.
- CONSTRUCTION.

  H. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING DEFECTIVE WORK IN EXISTING CONSTRUCTION WITHIN THE LIMITS OF THE CONSTRUCTION AREA.
- CONSTRUCTION DOCUMENTS SHALL BE INSTALLED IN AREAS WHERE IT WILL BE CONCEALED. THE CONTRACTOR SHALL CONSULT WITH THE ARCHITECT AND COORDINATE WITH OTHER TRADES TO PROVIDE FURRING FOR PIPING INSTALLED IN FINISH AREAS.

  J. REMOVE MECHANICAL AND FLECTRICAL FIXTURES AND CAP OR REMOVE

ALL PIPING ABOVE GRADE AND INSIDE THE BUILDING REQUIRED BY THE

- J. REMOVE MECHANICAL AND ELECTRICAL FIXTURES AND CAP OR REMOVE EXISTING BRANCH LINES AS INDICATED IN THE MECHANICAL AND ELECTRICAL DOCUMENTS.

  K. COORDINATE PLANS FOR NEW CONSTRUCTION W/ DEMOLITION PLANS FOR
- EXTENT OF REMOVAL. REMOVE ONLY THOSE PORTIONS OF WALLS, FLOORS, CEILINGS, ETC. NECESSARY TO ACCOMMODATE NEW CONSTRUCTION.

  DIMENSIONS ARE NOT ADJUSTABLE UNLESS NOTED WITH A +/- SYMBOL. ONLY NORMAL INDUSTRY STANDARD TOLERANCES ARE ACCEPTABLE DEVIATIONS FROM DIMENSIONS INDICATED. DO NOT SCALE DRAWINGS. ALL DIMENSIONS NOTED AS "CLEAR" SHALL MAINTAIN THE FULL SPACE INDICATED WITHOUT ENCROACHMENTS. ALL VERTICAL HEIGHTS INDICATED ARE FROM THE FINISH FLOOR ELEVATION AT THE BASE OF THE ITEM INDICATED, UNLESS NOTED OTHERWISE. WHERE WALLS, JAMBS, OR OTHER ITEMS ARE NOTED TO "ALIGN", THE FACE OF ITEMS INDICATED SHALL BE IN LINE WITH EACH OTHER TO FORM A STRAIGHT LINE, FREE OF OFFSETS OR DEVIATIONS. FIELD VERIFY ALL DIMENSIONS. UNLESS NOTED OTHERWISE,
- DIMENSIONS ARE ACTUAL, NOT NOMINAL.

  M. PROVIDE METAL STUD BLOCKING IN PARTITIONS BEHIND ALL WALL HUNG OR WALL MOUNTED EQUIPMENT, MILLWORK, SHELVING, OR OTHER DEVICES.

  N. ALL SCALES INDICATED ON DRAWINGS ARE FOR ARCHITECT'S REFERENCE ONLY. GC, OR SUBS AND TRADES SHALL NOT SCALE DRAWINGS AND INTERPRET ARCHITECT'S INTENT.
- O. CONTRACTOR TO VERIFY CONCRETE AT EXTERIOR DOORS SLOPES AWAY FROM DOOR SLOPE NOT TO EXCEED 1:50 INCLUDES OVERHEAD DOORS THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BARRICADES, SIGNAGE, REFLECTORS, LIGHTS, ETC DURING CONSTRUCTION PROPER DEMARCATE AREAS CLOSED TO THE PUBLIC
- THE CONTRACTOR WILL REMOVE ALL RUBBLE AND DEBRIS FROM THE JOB SITE AND LEAVE THE BUILDING AND GROUNDS BROOM CLEAN UPON COMPLETION OF WORK
- CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND COORDINATION OF ALL CONDUIT, PIPING, DUCTWORK, ETC WITH THE VARIOUS TRADES CONTRACTOR SHALL VISIT THE SITE AND ACQUAINT HIMSELF THOROUGHLY WITH ALL EXISTING FACILITIES AND CONDITIONS WHICH WOULD AFFECT HIS PORTION OF THE WORK FAILURE TO DO SO SHALL NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY OF INSTALLING THE WORK TO MEET SAID CONDITIONS
- WHENEVER THERE ARE DISCREPANCIES BETWEEN THE DRAWINGS, OR THE DRAWINGS AND SPECIFICATIONS, THE CONTRACTOR SHALL ESTIMATE UPON THE BETTER QUALITY OR GREATER QUANTITY OF MATERIAL OF WORK CALLED FOR, AND SHALL BE SO FURNISHED UNLESS OTHERWISE ORDERED IN WRITING THE GENERAL CONTRACTOR SHALL COMPLY WITH THE DESIGN INTENT OF THE CONTRACT DOCUMENTS. IF THE G.C. IS UNCERTAIN OF THE DESIGN INTENT HE SHALL CONTACT THE ARCHITECT FOR CLARIFICATION PRIOR TO PROCEEDING LACK OF UNDERSTANDING OF THE CONTRACT DOCUMENTS
- SHALL NOT BE AN EXCUSE FOR IMPROPER INSTALLATION.

  V. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL NECESSARY PERMITS
- THE GENERAL CONTRACTOR AND MILLWORK CONTRACTOR SHALL VERIFY ALL APPLIANCES AND PLUMBING FIXTURES SPACE REQUIREMENTS WITH THE SUPPLIER AND OWNER PRIOR TO THE MANUFACTURING OF CABINETS AND COUNTERTOP SUPPORTS THE MILLWORK CONTRACTOR SHALL COORDINATE THESE LOCATIONS WITH THE GENERAL CONTRACTOR. THE MILLWORK CONTRACTOR SHALL VERIFY ALL DIMENSIONS WITH MILLWORK ELEVATION AND SECTIONS (IF GIVEN), CLARIFY ANY DISCREPANCIES WITH THE ARCHITECT PRIOR TO MANUFACTURING THE CABINETS
- X. THE SIGN CONTRACTOR SHALL SEAL ALL PENETRATIONS REQUIRED FOR THE INSTALLATION OF TENANT FACADE SIGNAGE. PENETRATIONS MADE FOR THE MOUNTING AND POWER CONDUIT SHALL HAVE A WATERTIGHT SEAL COORDINATE WITH ARCHITECT
- PLANS AND DETAIL DRAWINGS ARE TO LIMIT, EXPLAIN AND DEFINE CONDITIONS, SPECIFIED REQUIREMENTS AND MANNER OF WORK. STRUCTURAL OR OTHER CONDITIONS MAY REQUIRE CERTAIN MODIFICATIONS FROM THE MANNER OF INSTALLATION SHOWN, AND SUCH DEVIATIONS ARE PERMISSIBLE AND SHALL BE MADE AS REQUIRED, BUT SPECIFIED SIZES AND REQUIREMENTS NECESSARY FOR SATISFACTORY OPERATION SHALL REMAIN UNCHANGED. ALL SUCH CHANGES SHALL BE MADE AS REQUIRED AND SHALL BE REFERRED TO THE ARCHITECT FOR APPROVAL BEFORE PROCEEDING. EXTRA CHARGES SHALL NOT BE ALLOWED FOR THESE CHANGES. THE CONTRACTOR SHALL REALIZE THAT THE DRAWINGS COULD NOT DELVE INTO EVERY STEP, SEQUENCE, OR OPERATION NECESSARY FOR THE COMPLETION OF THE PROJECT WITHOUT DRAWING ON THE CONTRACTOR'S EXPERIENCE OF INGENUITY. HOWEVER, ONLY TYPICAL DETAILS ARE SHOWN ON THE PLANS, IN CASES WHERE THE CONTRACTOR IS NOT CERTAIN ABOUT THE METHOD OF INSTALLATION OF HIS WORK, HE SHALL ASK FOR FURTHER EXPLANATION. LACK OF UNDERSTANDING SHALL NOT BE AN EXCUSE FOR IMPROPER INSTALLATION. IN GENERAL, THE DRAWINGS ARE DIAGRAMMATIC AND THE CONTRACTOR SHALL INSTALL HIS WORK IN A MANNER THAT INTERFERES BETWEEN THE VARIOUS TRADES AS AVOIDED. IN CASES WHERE INTERFERES DO OCCUR, THE ARCHITECT IS TO STATE WHICH EQUIPMENT, PIPING, ETC. IS TO BE RELOCATED REGARDLESS OF WHICH ITEM WAS INSTALLED FIRST.

Insight ENGINEERING

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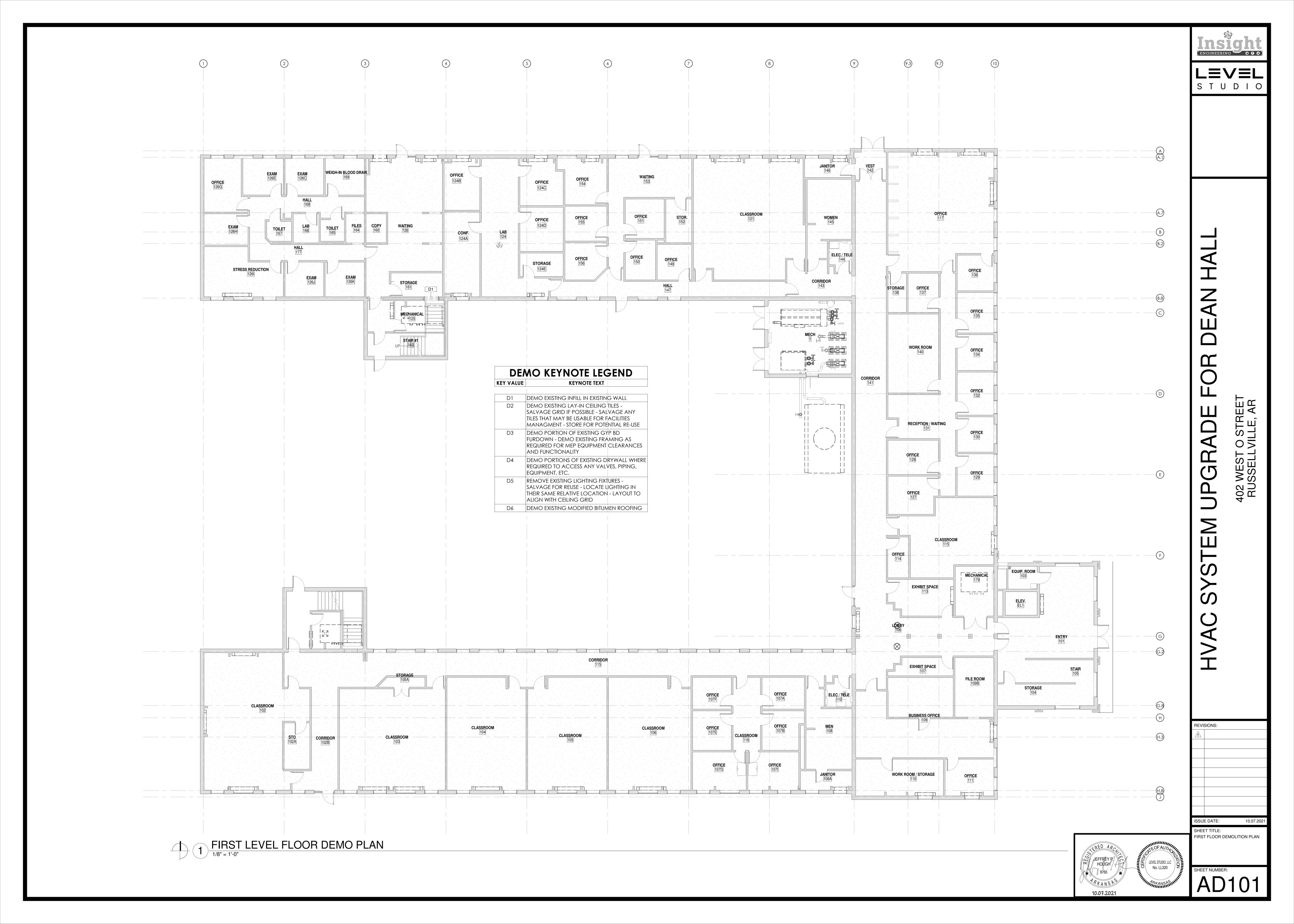
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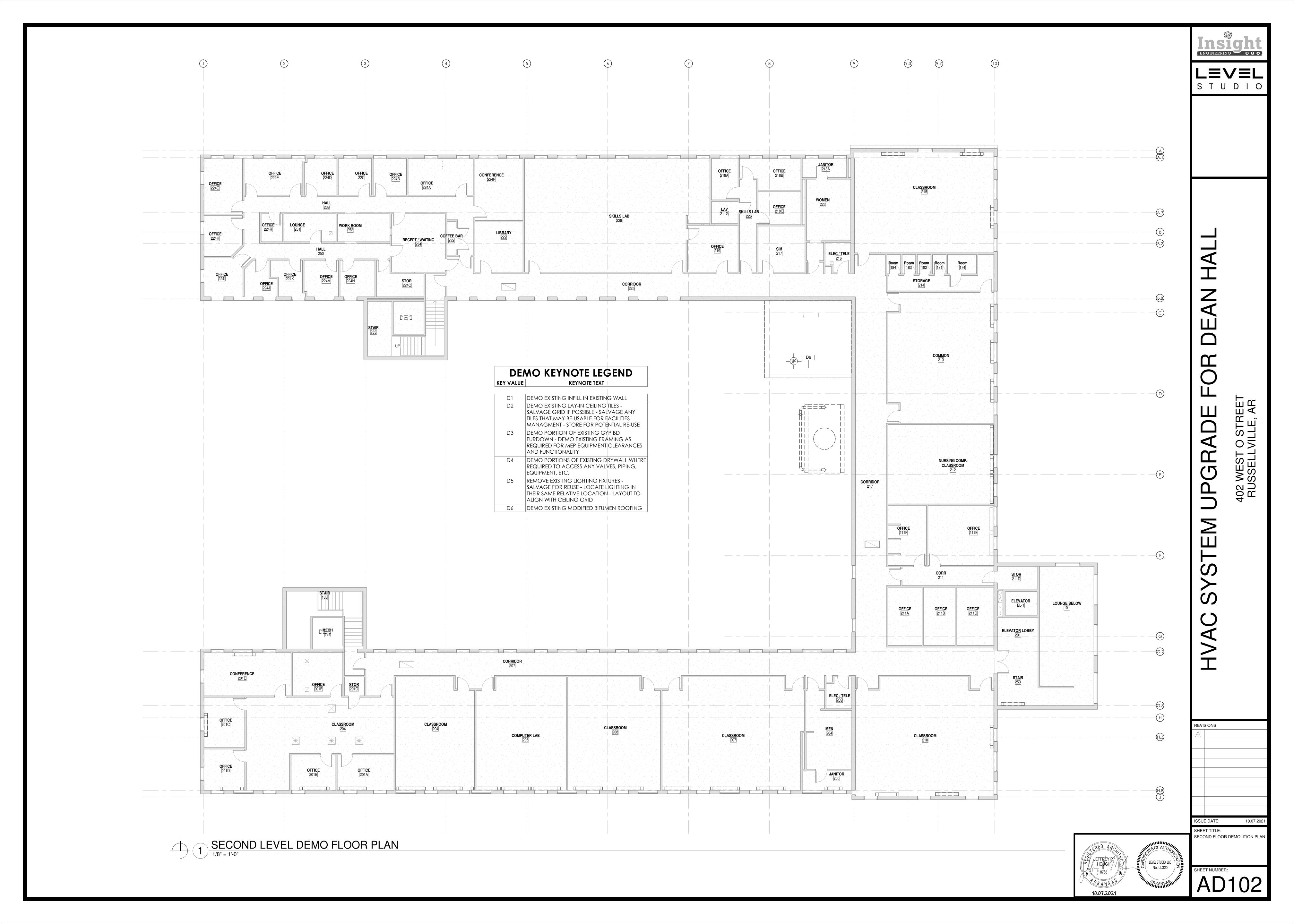
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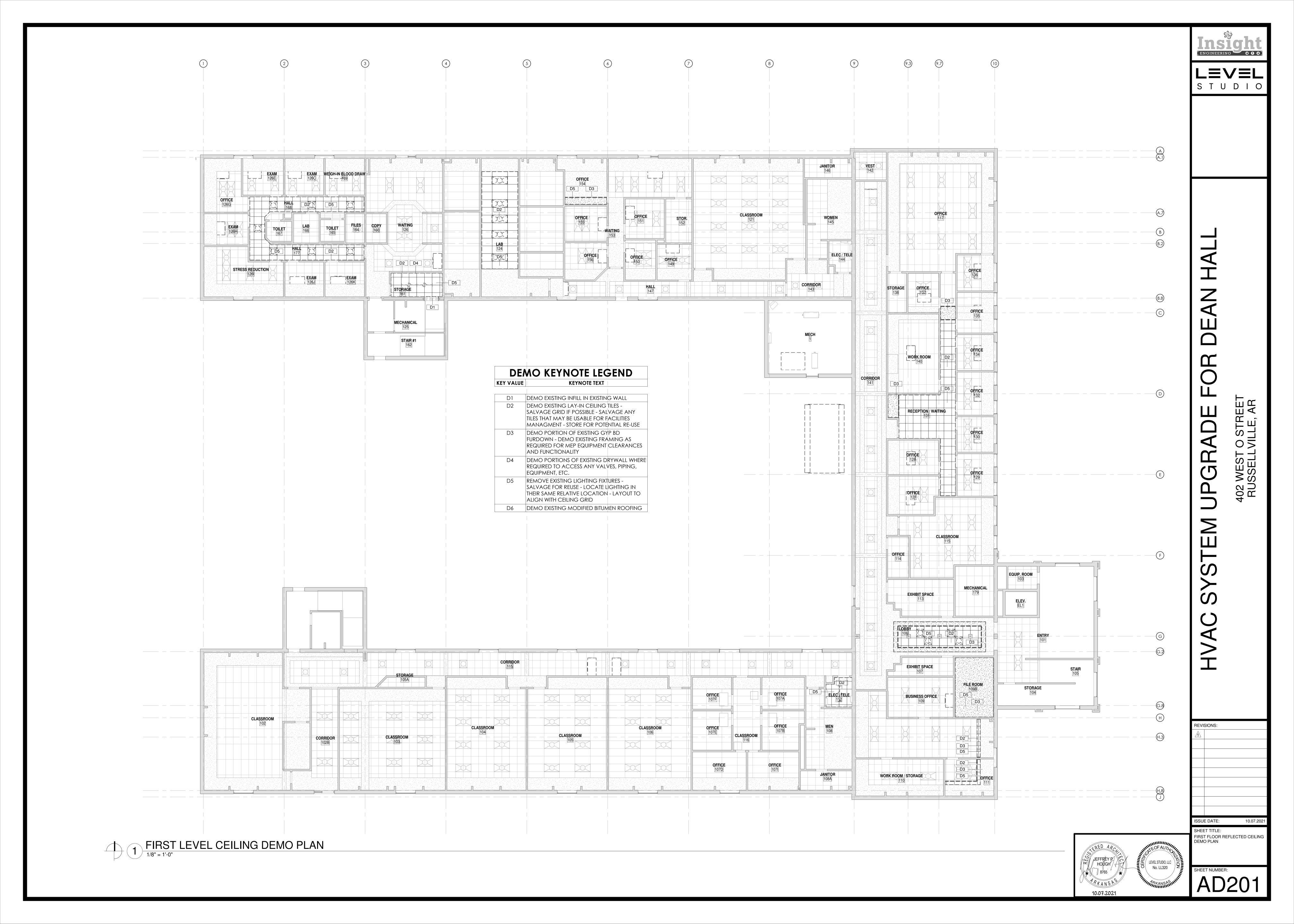
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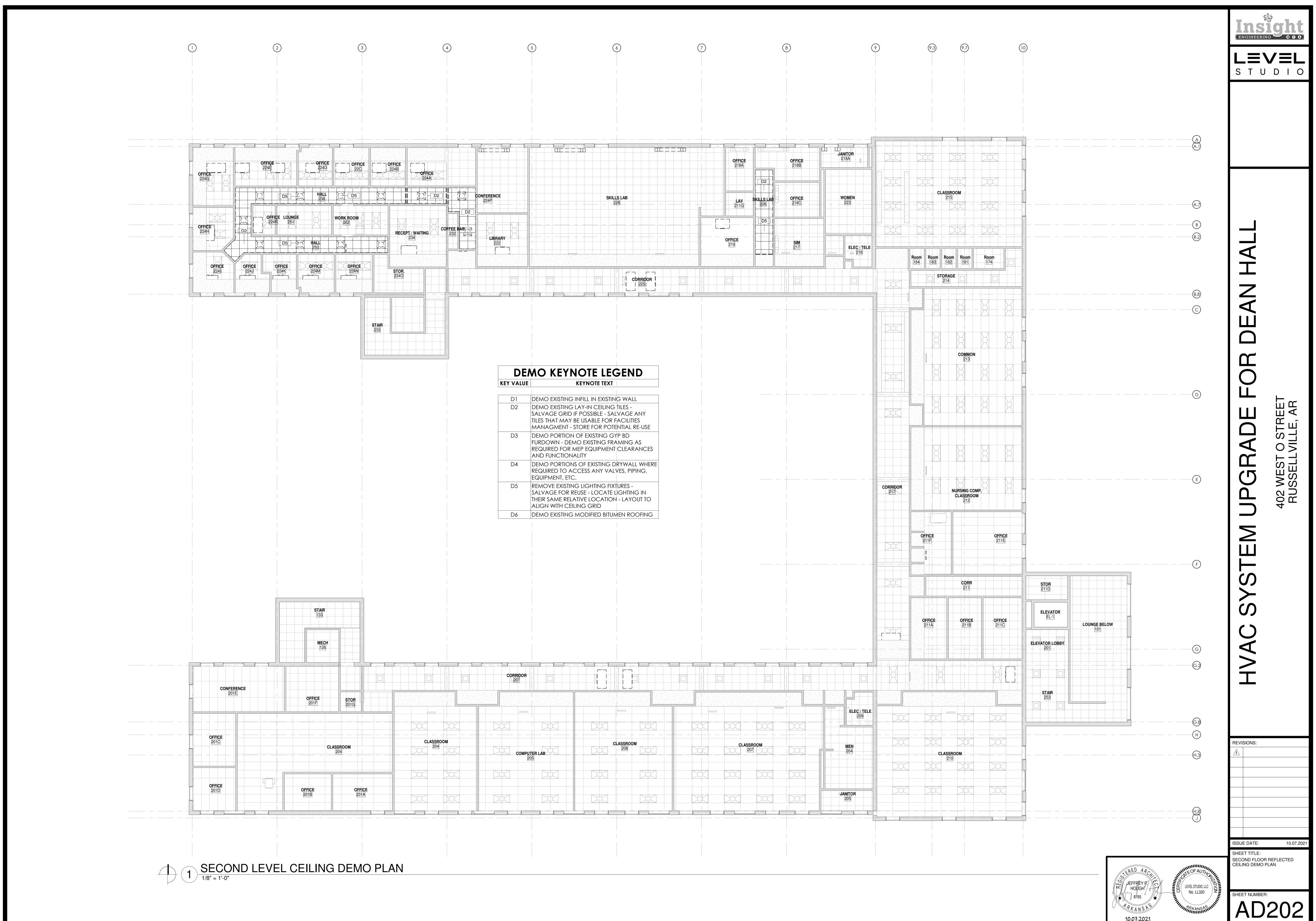
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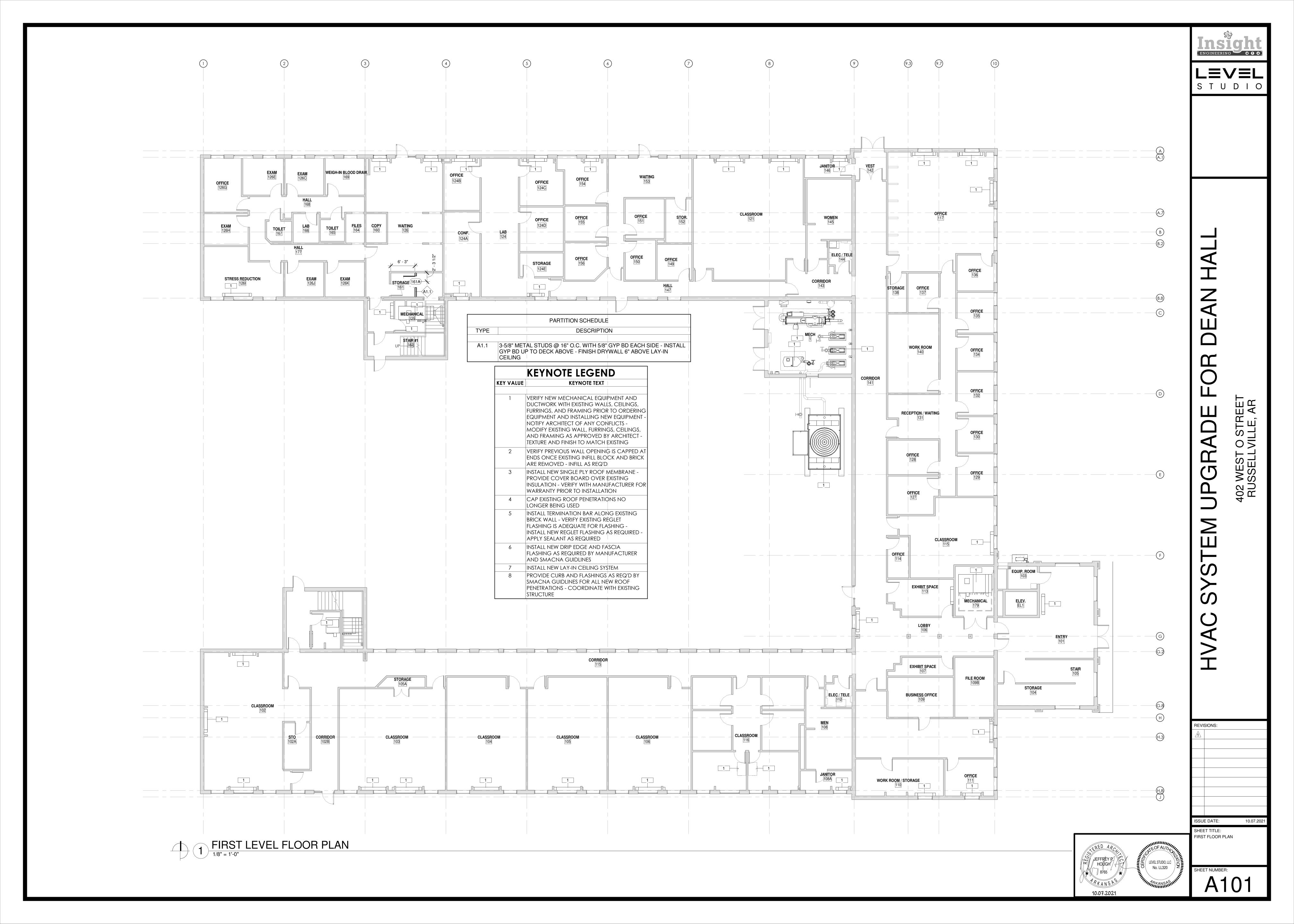
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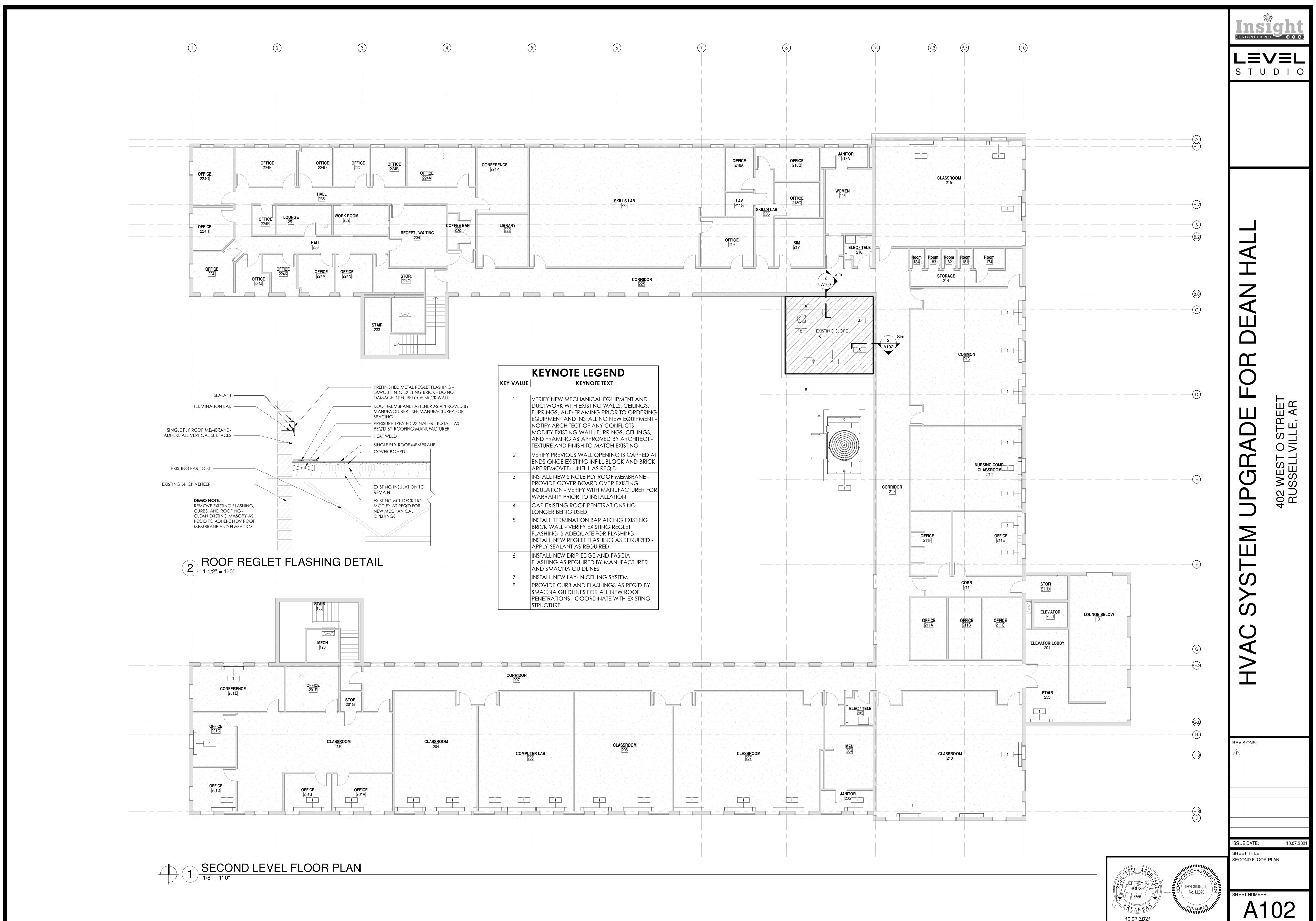


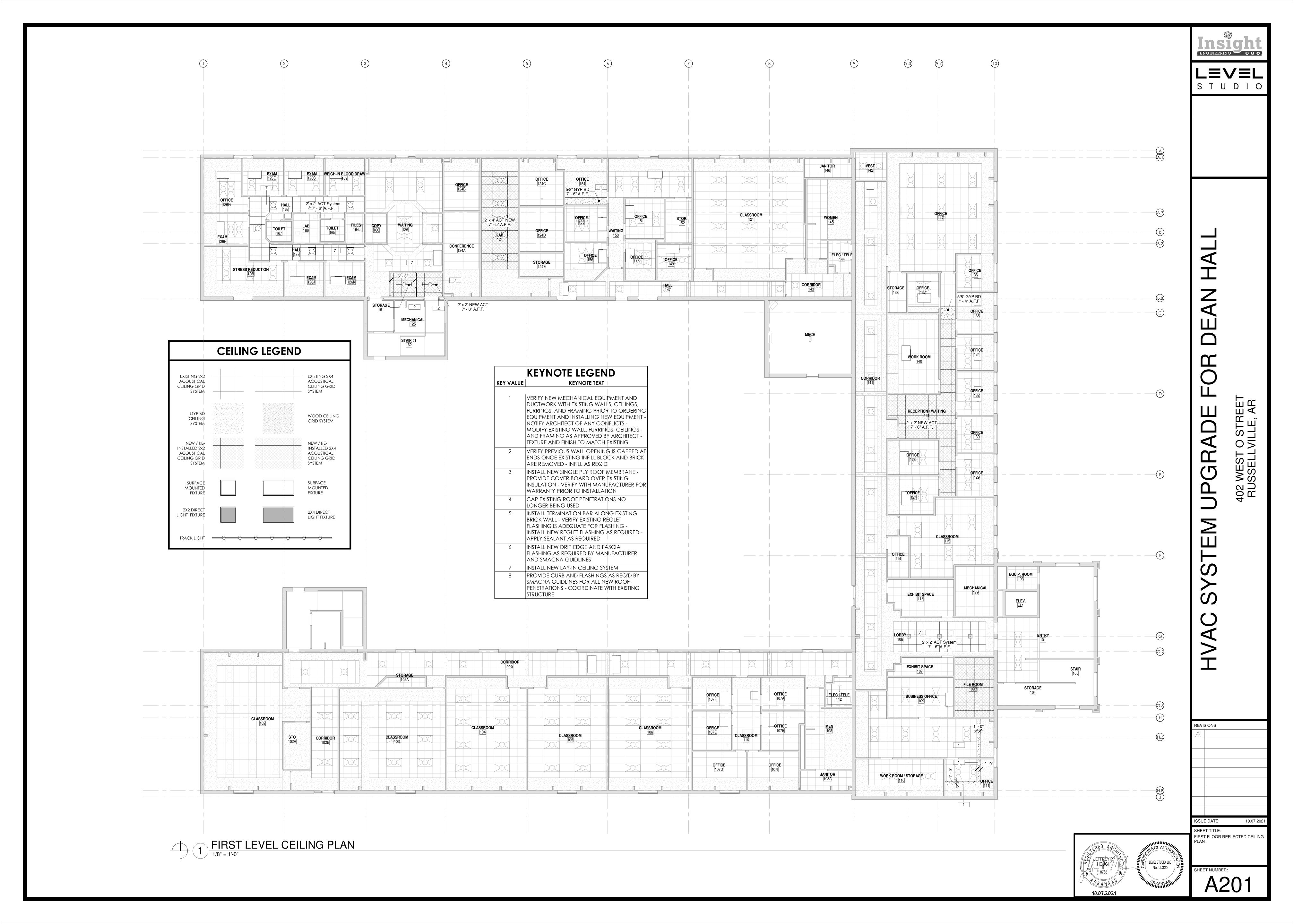


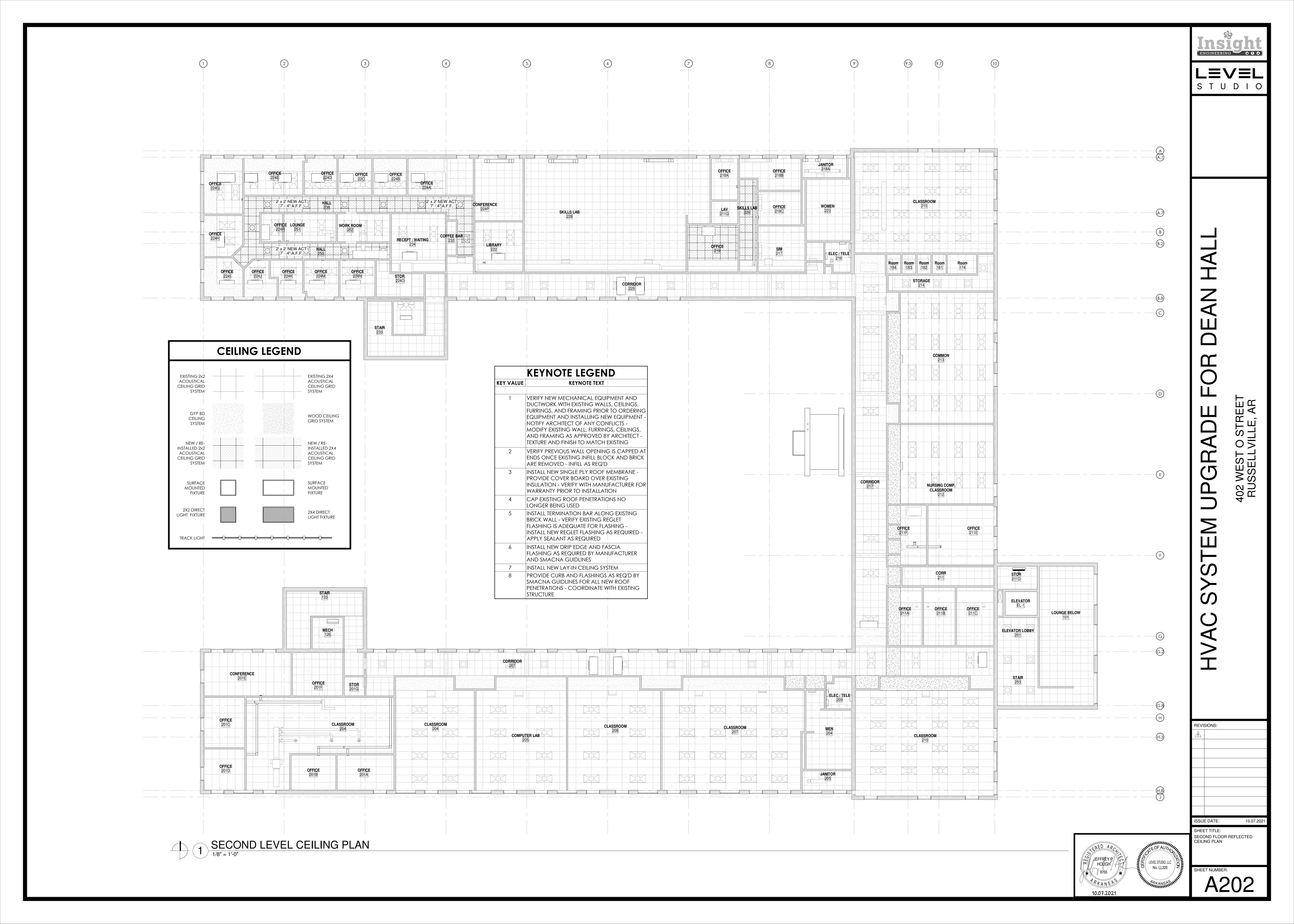












ISSUE DATE:

SHEET TITLE:

MECHANICAL GENERAL NOTES AT LEGEND

SHEET NUMBER:

MECHANICAL GENERAL NOTES ALL PIPING AND DUCTS IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN A FURRED CHASE OR ABOVE A HARD SUSPENDED CEILING. 2. THE FIRST FIGURE OF DUCT SIZE INDICATES DIMENSION OF FACE SHOWN OR INDICATED. DUCT SIZED ARE NET INSIDE DIMENSIONS. ACCESS PANELS IN HARD SUSPENDED CEILINGS ARE REQUIRED FOR ALL VALVES, TRAPS, DAMPERS, CLEANOUTS, CONTROLS, ETC. COORDINATE LOCATION OF PANELS WITH MECHANICAL INSTALLATION AND DEMONSTRATE ACCESS TO EQUIPMENT SERVED. TOTAL STATIC PRESSURE NOTES IN THE SCHEDULES INCLUDED DUCT SYSTEM, TERMINAL UNITS, FILTERS, COILS, ETC. LOSS FOR FILTERS SHALL BE FOR FILTERS AT 50% LOADING. 5. FOR TYPICAL WATER PIPING CONNECTIONS TO EQUIPMENT, SEE STANDARD EQUIPMENT DETAILS. WATER PIPE CONNECTIONS TO AIR HEATING AND COOLING COILS SHALL BE MADE TO PROVIDE COUNTER FLOW BETWEEN WATER AND AIR. ALL DUCT AND PIPE ROUTING AND CONSTRUCTION SHOWN ON THE DRAWINGS IS DIAGRAMMATIC IN NATURE AND MAY NOT BE SHOWN IN EXACT LOCATIONS OR WITH ALL ANCILLARY ITEMS REQUIRED FOR A COMPLETE AND OPERATING SYSTEM. CONTRACTOR SHALL COORDINATE ROUTING OF ALL DUCTWORK AND PIPING PER TYPICAL CONSTRUCTION PRACTICE IN THE MOST EFFICIENT WAY POSSIBLE WHILE ADHERING AS CLOSELY TO THE DRAWINGS AS POSSIBLE. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL INSTALLATION WITH THE WORK OF OTHER TRADES. FIELD MODIFICATIONS SUCH AS OFFSETS IN PIPING OR DUCTWORK NEEDED DUE TO OBSTRUCTIONS OR INTERFERENCES SHALL BE PROVIDED AT NO ADDITIONAL COST. ALL WORK SHALL BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER WITHIN STANDARD OF CARE FOR PROFESSION. ALL LABOR, MATERIAL, TOOLS, PERMITS, INSPECTIONS, TESTING, CERTIFICATION, ETC. REQUIRED FOR A COMPLETE AND SATISFACTORY INSTALLATION TO DESIGN INTENT SHALL BE FURNISHED BY CONTRACTOR. PROVIDE, AT NO ADDITIONAL COST, INCLUDING INCIDENTAL ITEMS NOT SHOWN WHEN REQUIRED FOR TYPICAL COMPLETION OF WORK. DRAWINGS NOT BEARING THE STAMP OR SEAL AND SIGNATURE OF A REGISTERED PROFESSIONAL ENGINEER SHALL NOT BE USED FOR BIDDING OR CONSTRUCTION PURPOSES UNLESS EXPRESSLY APPROVED IN WRITING BY THE ARCHITECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL DRAWINGS AND SPECIFICATIONS BEING USED FOR BIDDING AND CONSTRUCTION PURPOSES ARE OF THE LATEST REVISION AVAILABLE AND ALL ADDENDUM DOCUMENTS HAVE BEEN INCORPORATED EITHER BY REVISION RELEASE OF DRAWINGS/SPECIFICATIONS OR ATTACHMENT OF SKETCHES OR OTHER ADDENDUM INFORMATION. 11. THE MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL NEW PRODUCTS OF ESTABLISHED AND REPUTABLE MANUFACTURERS. NO EQUIPMENT SUBSTITUTIONS SHALL BE MADE THAT WOULD LEAVE INADEQUATE OPERATING OR SERVICE SPACE. EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES AND IN AN ARRANGEMENT THAT WILL GIVE THE GREATEST PRACTICAL EASE OF OPERATION AND SERVICE TO THE OWNER. 12. ALL EQUIPMENT WHICH IS INDICATED TO BE FURNISHED AND/OR INSTALLED BY OTHERS OR BY OWNER IS INCLUDED FOR REFERENCE ONLY UNLESS NOTED OTHERWISE. DESIGN OF MECHANICAL SYSTEMS IN THESE AREAS IS BASED ON INFORMATION AVAILABLE AT THE TIME OF DESIGN. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND VERIFYING INSTALLATION REQUIREMENTS OF THIS EQUIPMENT WITH THE APPLICABLE SUPPLIER OR THE OWNER. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. 13. IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO PAY FOR ALL NECESSARY PERMITS AND APPROVALS FOR THIS INSTALLATION. 14. ACCESS PANELS IN DUCTWORK AND CEILINGS SHALL BE PROVIDED WHERE REQUIRED FOR OPERATION, BALANCING OR MAINTENANCE OF ALL MECHANICAL EQUIPMENT. ACCESS PANELS SHALL BE CONVENIENTLY LOCATED WITH REFERENCE TO THE FINISHED BUILDING. COORDINATE LOCATION OF ACCESS PANELS WITH ARCHITECT. 15. DUCT CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE SMACNA HVAC DUCT CONSTRUCTION STANDARD CLASS A. 16. COORDINATE DIFFUSER, GRILLE AND REGISTER LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS AND EQUIPMENT OF ALL TRADES. VERIFY FINISH WITH ARCHITECT PRIOR TO PURCHASING GRILLES, REGISTERS, DIFFUSERS, LOUVERS AND 18. LOCATE THERMOSTATS AT 48" ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE. COORDINATE LOCATIONS WITH OTHER EQUIPMENT, FURNITURE, AND DOOR SWINGS. 19. ALL EQUIPMENT, DUCTWORK, ETC., SHALL BE SUPPORTED AS DETAILED AND/OR SPECIFIED. PROVIDE ADDITIONAL SUPPORTS AS REQUIRED TO PROVIDE A VIBRATION-FREE, RIGID INSTALLATION. 20. DUCTWORK DIMENSIONS SHOWN ON DRAWINGS ARE INSIDE CLEAR DIMENSIONS. DIMENSIONS MAY BE CHANGED SO LONG AS THE NET FREE FACE AREA IS MAINTAINED. 21. DAMPERS AND INSIDES OF DUCTS VISIBLE THROUGH GRILLES, REGISTERS AND DIFFUSERS SHALL BE PAINTED FLAT BLACK. 22. PROVIDE AND INSTALL SMOOTH TURN RADIUS ELBOWS IN ALL RECTANGULAR 90° ELBOWS AND TEES, UNLESS NOTED OTHERWISE. 23. EXHAUST DUCTS SHALL TERMINATE IN ACCORDANCE WITH ARKANSAS MECHANICAL CODE AND BE EQUIPPED WITH A BACKDRAFT DAMPER.

24. CONTRACTOR SHALL PROVIDE ALL AIR TEMPERATURE CONTROLS INCLUDING WIRING, THERMOSTATS AND ALL MISCELLANEOUS APPURTENANCES TO MEET THE INTENT OF THESE DOCUMENTS.

SHALL BE PROPERLY SEALED AFTER INSTALLATION OF ITEMS AND EQUIPMENT.

WIDTH AND DEPTH OF THE ELECTRICAL EQUIPMENT IN ACCORDANCE WITH NEC-110.26.

25. PENETRATIONS OF WALLS OR FLOORS FOR THE PASSAGE OF PIPING, DUCTWORK, OR OTHER EQUIPMENT

PIPING, DUCTWORK, LEAK PROTECTION APPARATUS, OR OTHER EQUIPMENT FOREIGN TO ELECTRICAL SWITCHBOARDS, PANELBOARDS, DISTRIBUTION BOARDS, OR MOTOR CONTROL CENTERS SHALL NOT BE INSTALLED WITHIN THE REQUIRED SPACE FOR WORKING CLEARANCES OR DEDICATED SPACES OF THE ELECTRICAL EQUIPMENT, EXTENDING IN FRONT OF AND FROM FLOOR TO STRUCTURAL CEILING WITH A

	LEGEND		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	NEW EQUIPMENT	<del></del>	BALL VALVE
	EXISTING EQUIPMENT TO REMAIN	—— <del> </del>	GATE VALVE
	EXISTING EQUIPMENT TO BE DEMOLISHED	ılı.	
	EXISTING DUCT/PIPING TO BE	——  —— H	BUTTERFLY VALVE (LEVER HANDLE)
	DEMOLISHED	——  —— *	BUTTERFLY VALVE (GEAR OPERATOR)
	EXISTING DUCT/PIPING TO REMAIN	<b>──</b> ♥──	OS & Y GATE VALVE
	NEW DUCT/PIPING	——————————————————————————————————————	GLOBE VALVE
-\/	THERMOSTAT WIRE	—— <u>\</u>	CHECK VALVE (SWING CHECK)
T	THERMOSTAT	——[<]——	CHECK VALVE (BUTTERFLY CHECK)
S	BUILDING PESSURE SENSOR		STRAINER W/ DRAIN VALVE
	POINT OF CONNECTION TO EXISTING	——  —— ■	UNION
<b>_</b>	POINT OF DEMOLITION	——————————————————————————————————————	CONTROL VALVE (2-WAY) ELECTRIC
$\wedge$	REVISION DELTA		CONTROL VALVE (3-WAY) ELECTRIC
<u>/1</u>		—————————————————————————————————————	PLUG VALVE
<b></b>	MANUAL VOLUME DAMPER STREAM INE CONNECTION (RECT. TO ROUND)		FLEXIBLE PIPE CONNECTOR
	STREAMLINE CONNECTION (RECT. TO ROUND) STREAMLINE CONNECTION (RECT. TO RECT.)	——□Ш—— Ѿн Ѿа	METAL BELLOWS PUMP CONNECTOR
<b></b>	STREAMLINE CONNECTION WITH MANUAL VOLUME DAMPER (RECT. TO ROUND)	<u> </u>	AIR VENT (A - AUTO, H - HAND)
8111111113	FLEXIBLE DUCT	<u> </u>	PRESSURE AND TEMPERATURE TAP
4		Ø	PRESSURE GAUGE
	SIDE WALL GRILLE		PRESSURE GAUGE W/ SIPHON
[X <u>[</u> ###]	GRILLE DESIGNATION ( GRILLE SCHEDULE DESIGNATION / CFM AIRFLOW )		THERMOMETER
$\boxtimes$	SUPPLY DIFFUSER		FLANGE WAS IN NEOLO
	RETURN GRILLE	<del>ф</del>	FLANGE (WELD NECK)
	EXHAUST GRILLE	<del>+</del> 0	ELBOW, TURNED DOWN
	SUPPLY RECTANGULAR DUCT UP	<del>+</del> -	ELBOW, TURNED DOWN
	RETURN RECTANGULAR DUCT UP	—+C+— —_t+	RISE OR DROP IN PIPE
	EXHAUST RECTANGULAR DUCT UP	<del></del>	TEE, SIDE CONNECTION
	SUPPLY RECTANGULAR DUCT DOWN	—— <del>———————————————————————————————————</del>	TEE, OUTLET UP
	RETURN RECTANGULAR DUCT DOWN  EXHAUST RECTANGULAR DUCT DOWN		TEE, OUTLET DOWN
<b>_</b>	ROUND DUCT UP	<del></del>	CAPPED OUTLET  CAPPED PIPE
ol 3	ROUND DUCT DOWN		CONCENTRIC REDUCER
	MOTORIZED DAMPER		ECCENTRIC REDUCER
	CONCENTRIC REDUCER		
	ECCENTRIC REDUCER	—— TFD —— CHS ——	PIPE TO FLOOR DRAIN  CONDENSER SUPPLY WATER
D	RECT. AND/OR ROUND DUCT 90° 1X RADIUS ELBOW	— CHS —	CONDENSER SUPPLY WATER  CONDENSER RETURN WATER
	RECT. AND/OR ROUND DUCT 90° 1.5X RADIUS ELBOW	— HWS —	HEATING WATER SUPPLY
			HEATING WATER RETURN
$\searrow$	RECT. AND/OR ROUND DUCT 45° 1X RADIUS ELBOW	— CHS —	CHILLED WATER SUPPLY
4	RECT. ELBOW (WITH TURNING VANES)	—— CHR ——	CHILLED WATER RETURN
	RECT. ELBOW (WITHOUT TURNING VANES)	— D —	CONDENSATE DRAIN
<u>_</u>		SA	SUPPLY AIR DUCT
~	SINGLE LINE CONTINUATION  AIR ELOW ARROW	RA	RETURN AIR DUCT
_ ►	AIR FLOW ARROW FLOW ARROW	EA	EXHAUST AIR DUCT
AP	ACCESS PANEL	CFM	CUBIC FEET PER MINUTE
		Ø	ROUND DIAMETER
		W	LICOMO DIVINETELL

DEMOLITION GENERAL NOTES

Insight
ENGINEERING
ENGINEERING

REMOVE ASSOCIATED THERMOSTAT AND WIRING FOR FAN COIL UNITS TO BE REMOVED.

DEMOLITION KEYED NOTES

DEMOLISH FAN COIL UNIT AS SHOWN. CAP EXISTING CHILLED WATER AND HEATING WATER PIPING SO THAT THE PIPING CAN BE CONNECTED TO NEW FAN COIL UNIT.
 DEMOLISH ANY NON-FUCTIONING OR UN-USED CONTROLS IN THIS SPACE.

STEM UPGRADES FOR DEAN HAL

:VISIONS:

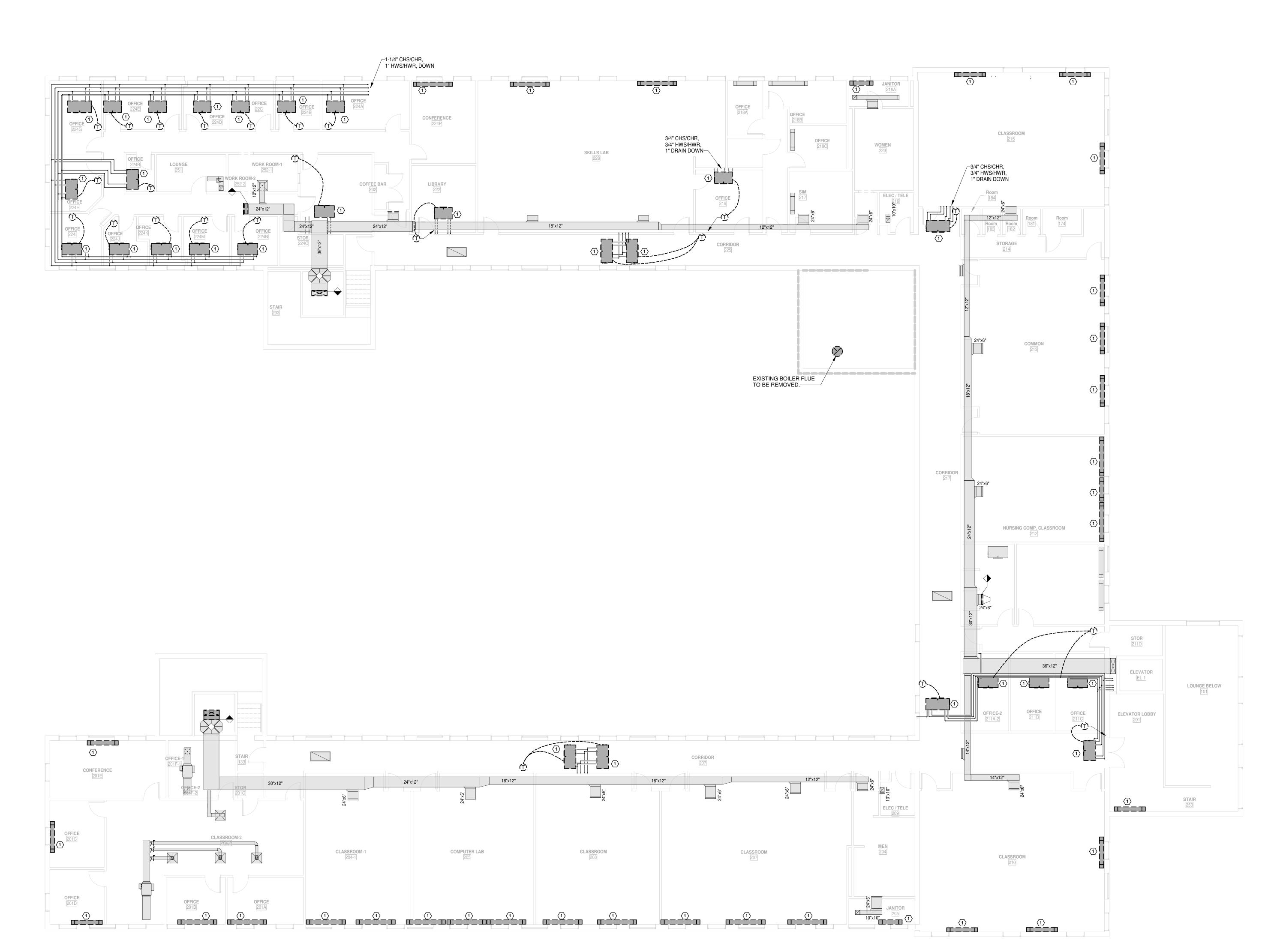
ISSUE DATE: 10.0

SHEET TITLE: FIRST LEVEL - HVAC DEMOLITION

**DEMOLITION KEYED NOTES** 

DEMOLISH FAN COIL UNIT AS SHOWN. CAP EXISTING CHILLED WATER AND HEATING WATER PIPING SO THAT THE PIPING CAN BE CONNECTED TO NEW FAN COIL UNIT.

SECOND LEVEL FLOOR PLAN -HVAC DEMOLITION



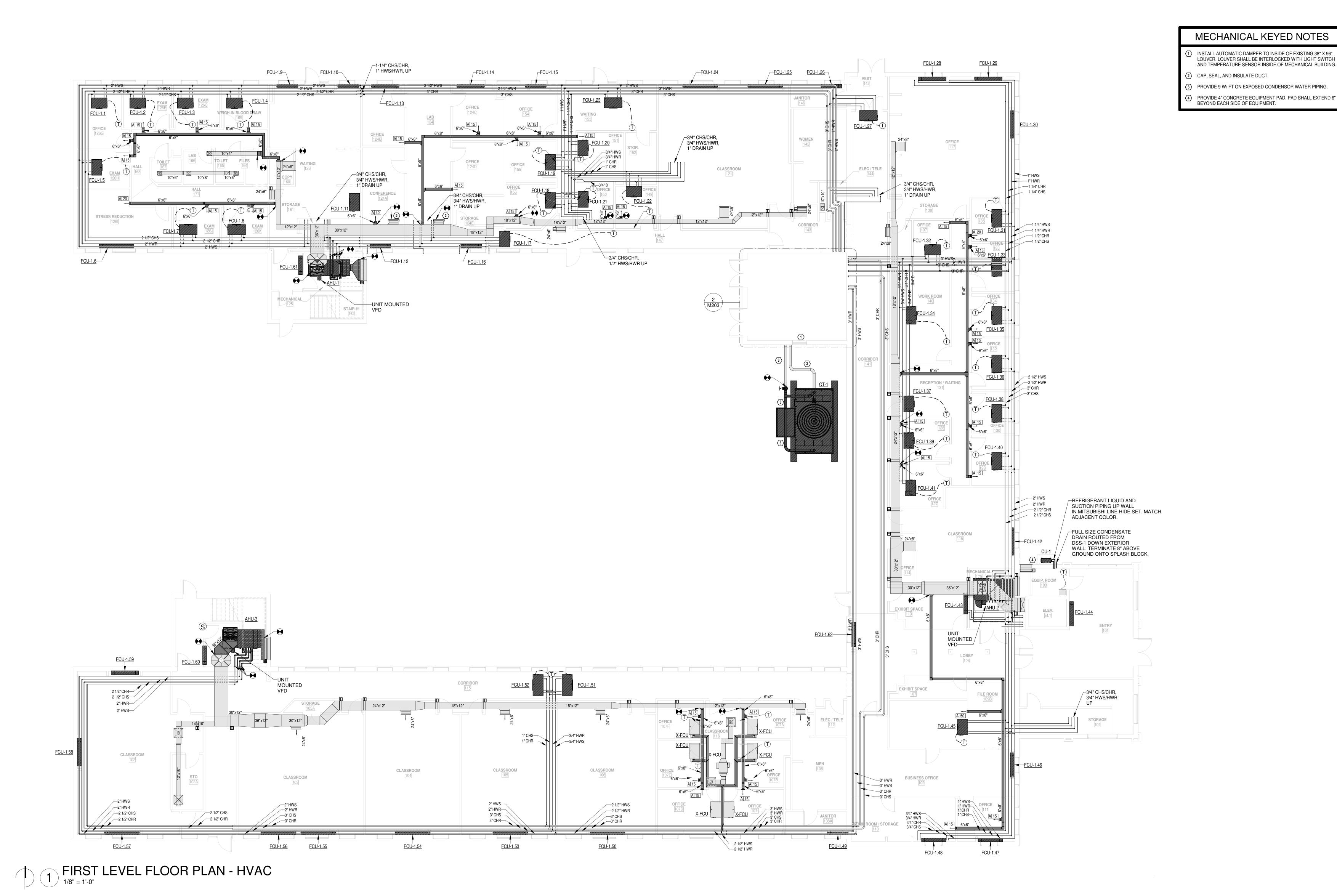
SECOND LEVEL FLOOR PLAN - HVAC DEMOLITION

1/8" = 1'-0"

CONSTRUCTION DOCUMENTS

**REVISIONS:** 

FIRST LEVEL FLOOR PLAN - HVAC



**GENERAL NOTES** 

NEW FAN COIL UNITS SHALL BE RECONNECTED TO EXISTING

EXISTING MOTORIZED RELIEF DAMPER ABOVE CEILING, PROVIDE NEW ACTUATOR FOR DAMPER.

MECHANICAL KEYED NOTES

ENGINEERING O 6 O:

REVISIONS:

SECOND LEVEL FLOOR PLAN -HVAC

FCU-2.41

CLASSROOM-1 204-1

COMPUTER LAB

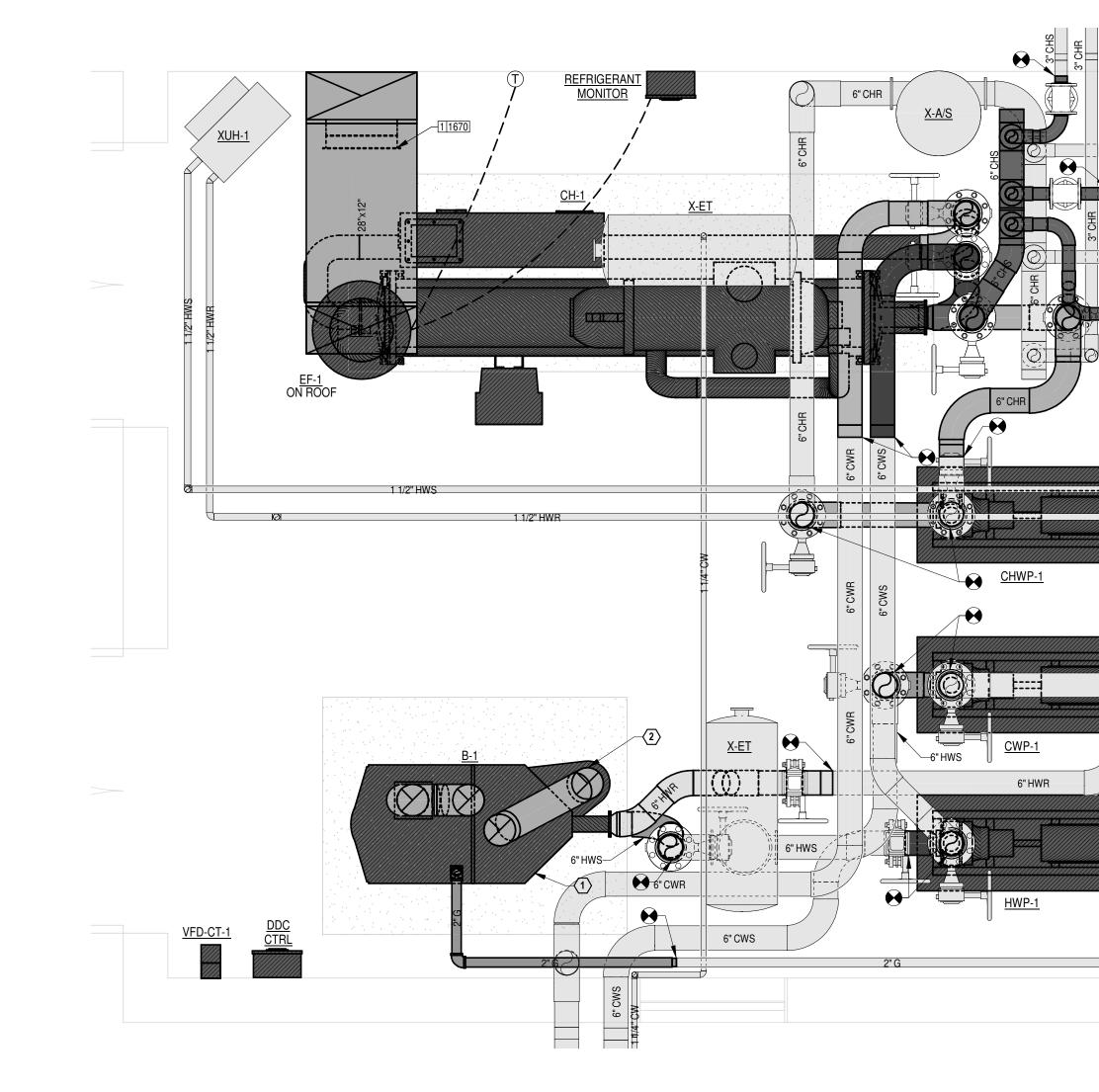
CLASSROOM 208

BOILER FLUE AND COMBUSTION AIR DUCT UP TO EXISTING PENETRATION. INSTALL GOOSENECK ON COMBUSTION AIR AND BIRDSCREEN ON BOTH COMBUSTION AIR AND FLUE PER MANUFACTURE'S RECOMMENDATIONS.

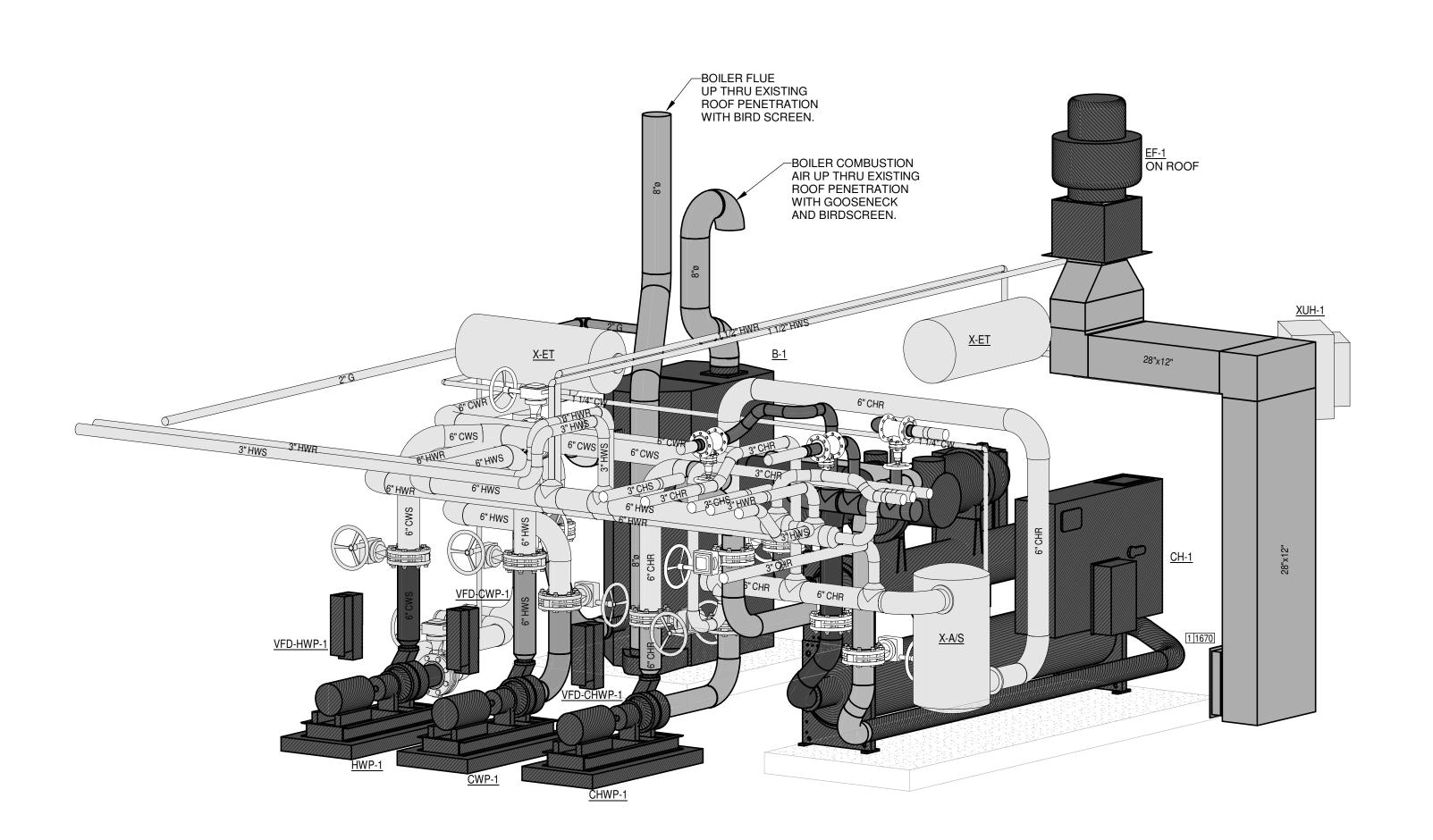
**REVISIONS:** 

MECHANICAL ENLARGED FLOOR PLANS

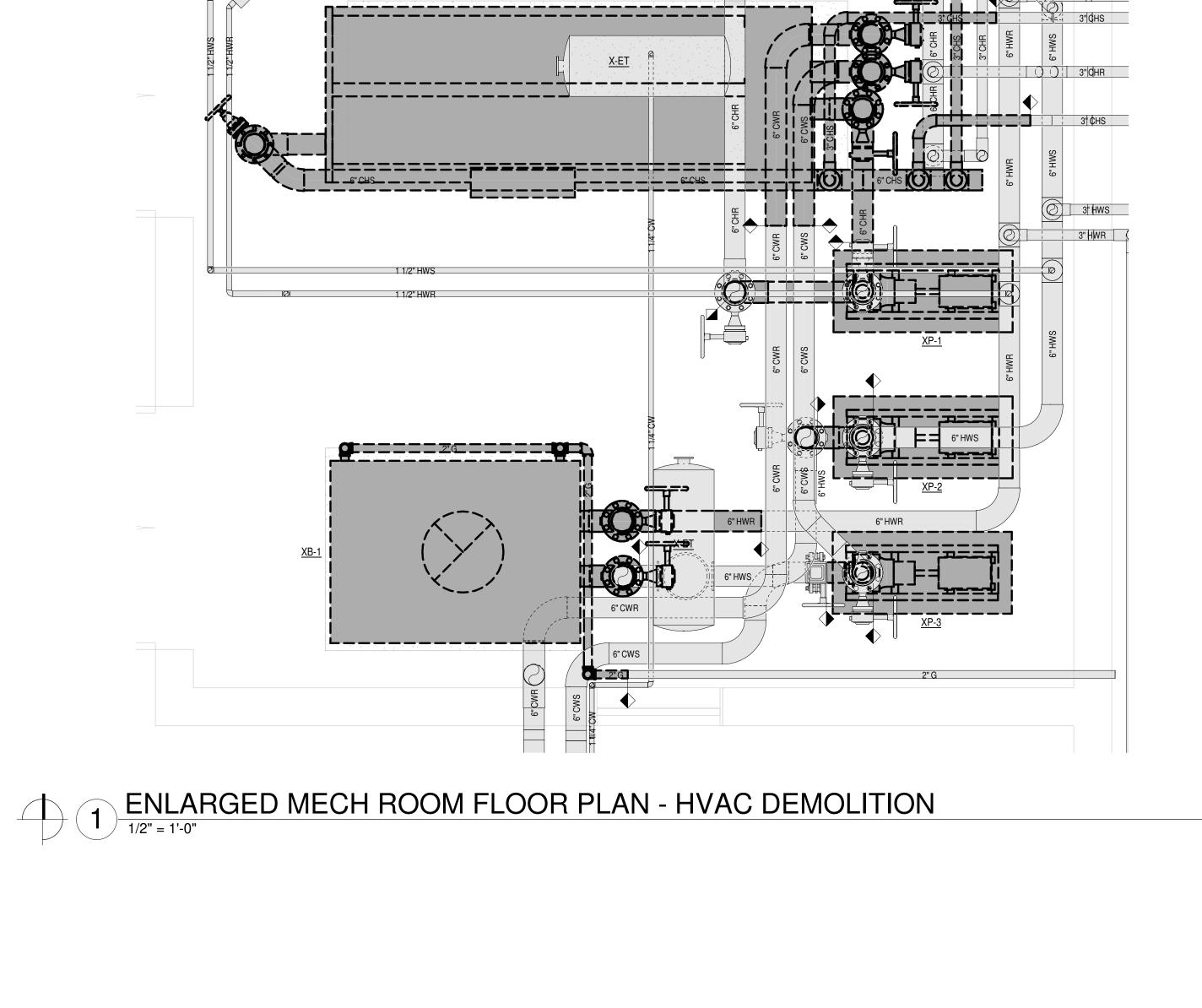
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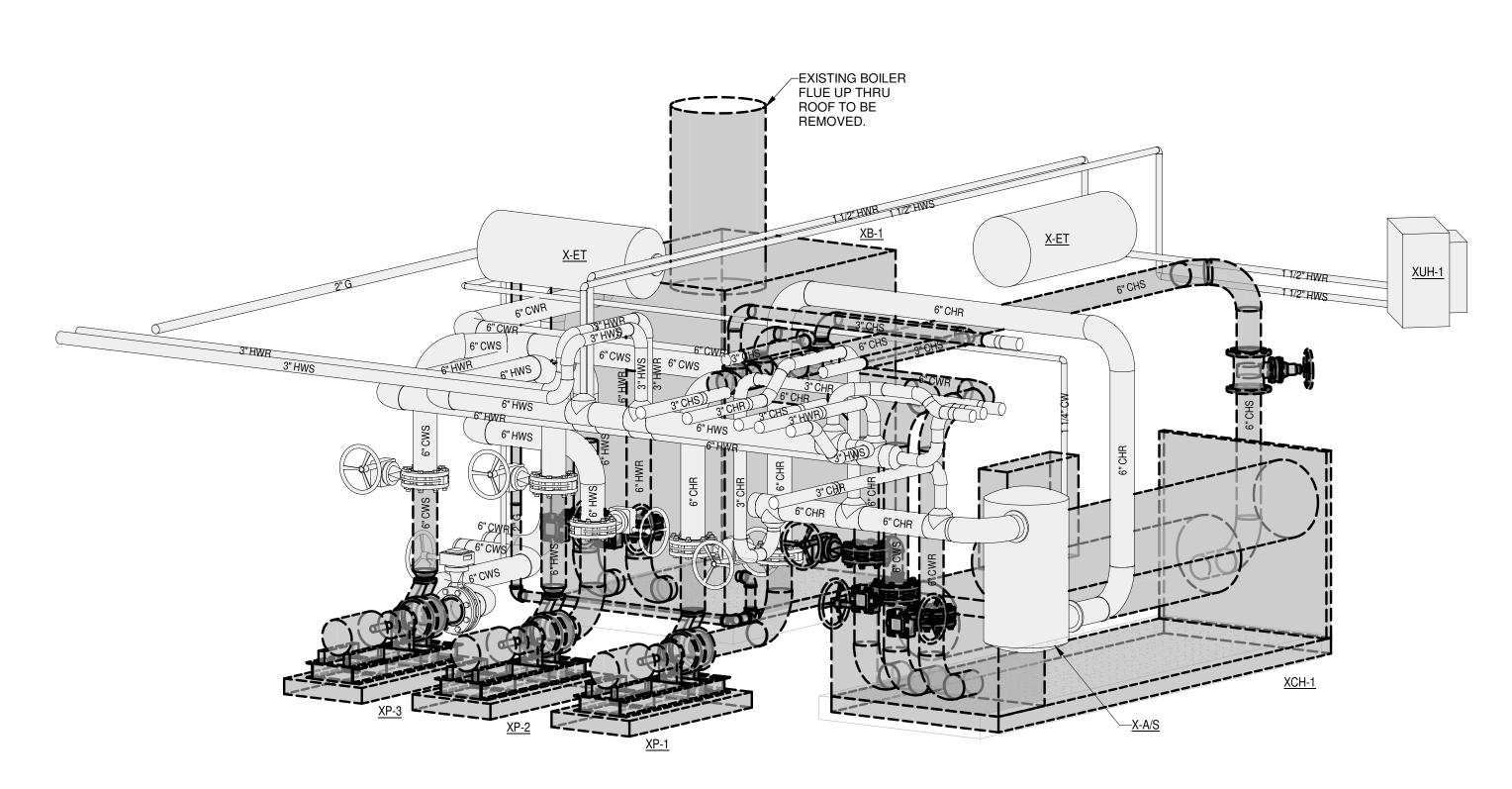


ENLARGED MECH ROOM FLOOR PLAN - HVAC



4 3D MECH RM NEW NOT TO SCALE:





3 MECH RM DEMOLITION

NOT TO SCALE:

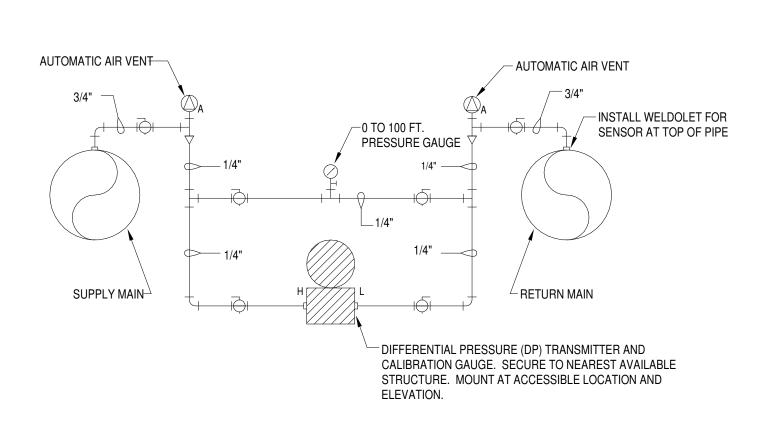
402 WEST O STREET RUSSELLVILLE, AR

ISSUE DATE:
SHEET TITLE:
MECHANICAL 3D VIEWS

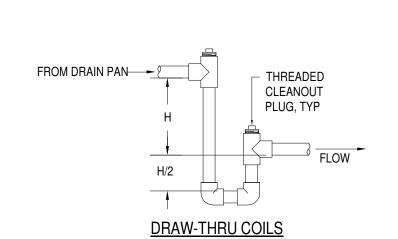
M204

MECHANICAL DETAILS

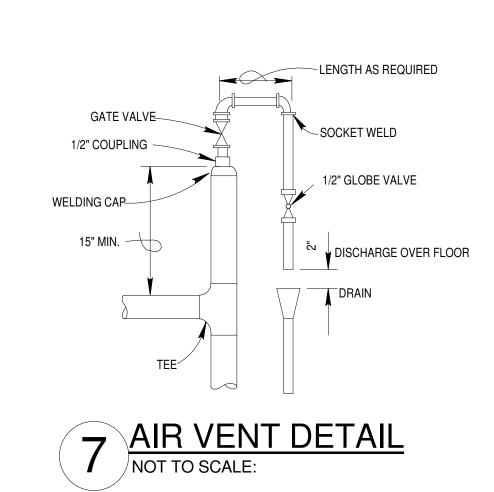
SHEET NUMBER:

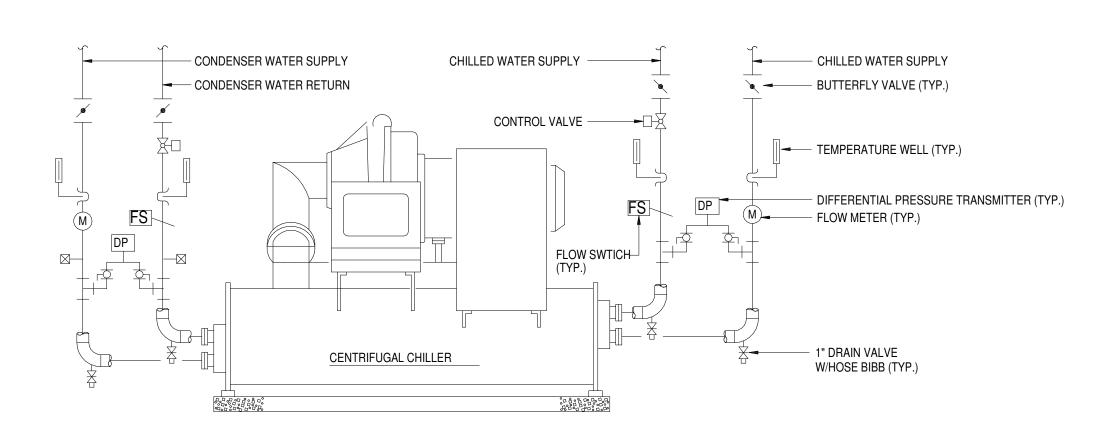


DIFFERENTIAL PRESSURE TRANSMITTER DETAIL NOT TO SCALE:

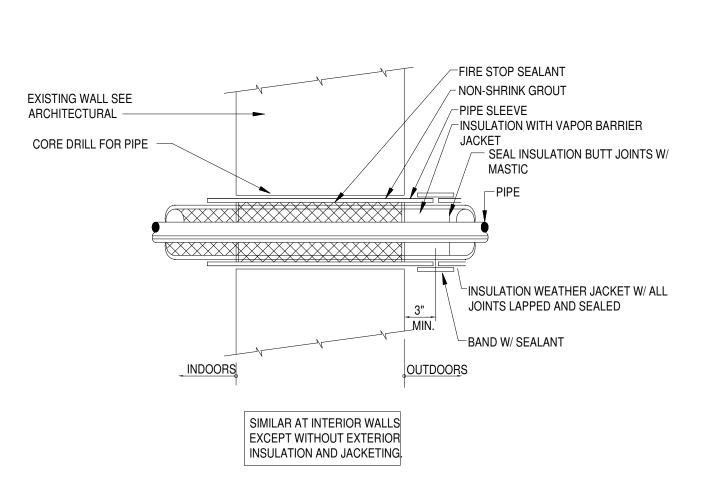


- 1. FOR DRAW-THRU COILS: H = FAN INLET PRESSURE (IN. W.C.) + 1", BUT NO LESS THAN 2". 2. FAN INLET/OUTLET PRESSURE (WHICHEVER IS APPLICABLE) SHALL BE MEASURED DURING AIR TEST AND BALANCE.
- 6. TRAPS SHALL BE INSULATED AS SPECIFIED FOR CONDENSATE DRAIN PIPING.
- 7. TRAPS SHALL BE LOCATED WITHIN 4' OF THE COIL. 8. CONDENSATE DRAIN SHALL TERMINATE WITH AN INDIRECT CONNECTION HAVING A MINIMUM 2" AIR GAP.
- 4 COIL CONDENSATE TRAP DETAIL
  NOT TO SCALE:

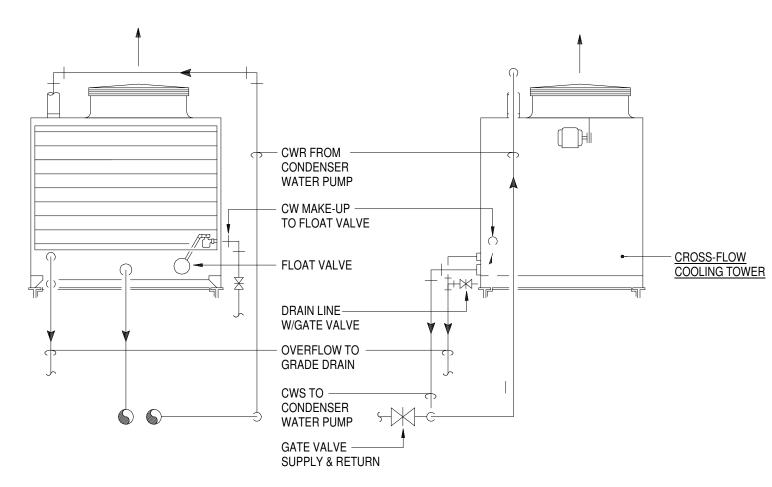




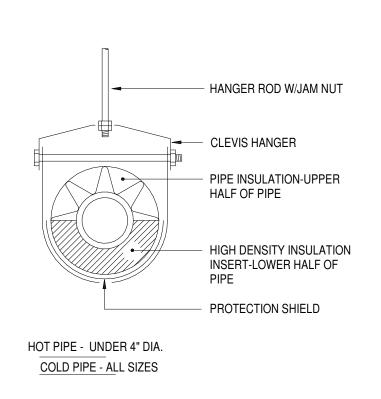
2 CENTRIFUGAL CHILLER DETAIL
NOT TO SCALE:



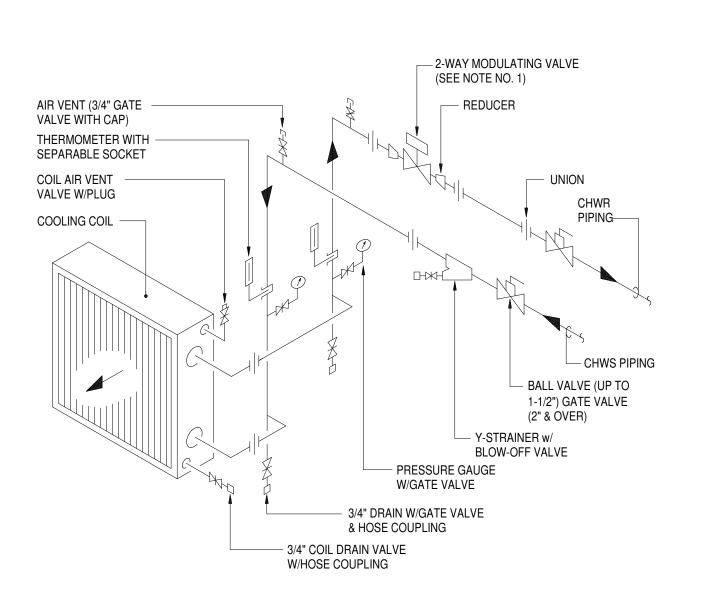
5 PIPE PENETRATION AT WALL DETAIL
NOT TO SCALE:



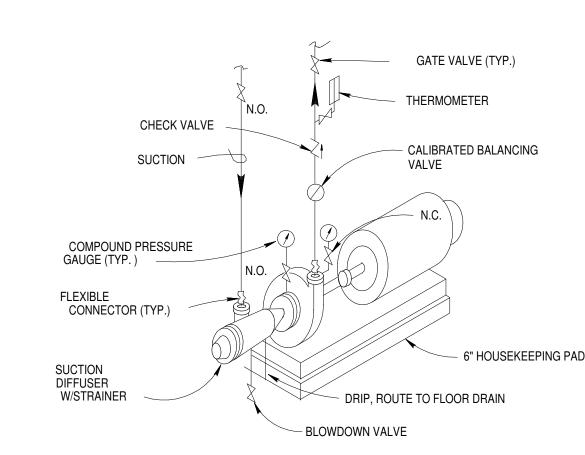
8 CROSS-FLOW COOLING TOWER DETAIL
NOT TO SCALE:



3 HANGER DETAILS - INSULATED PIPE DETAIL
NOT TO SCALE:



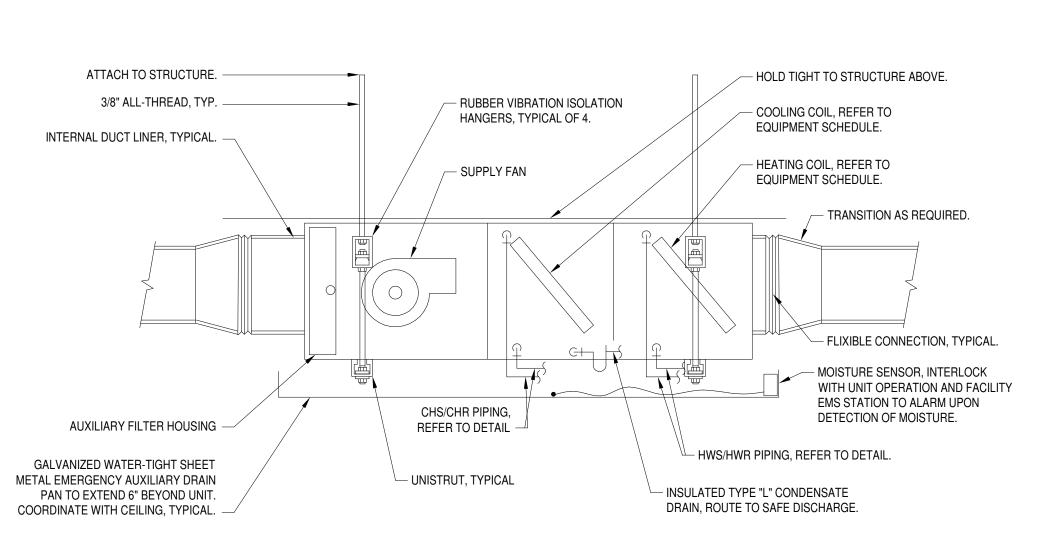
6 AIR HANDLING UNIT CHILLED WATER COIL PIPING DETAIL NOT TO SCALE:



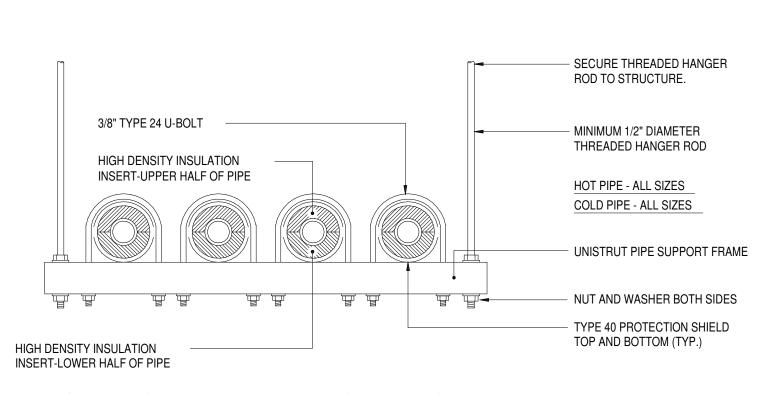
9 END SUCTION PUMP DETAIL NOT TO SCALE:

MECHANICAL DETAILS

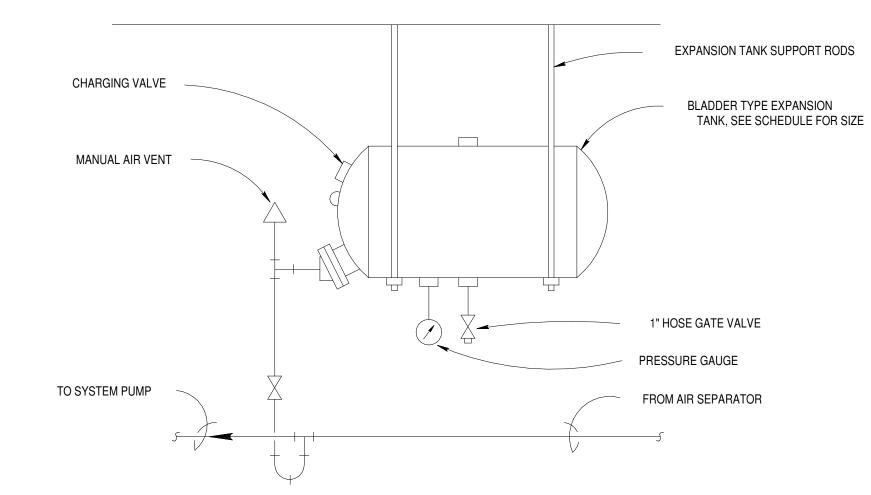
SHEET NUMBER:



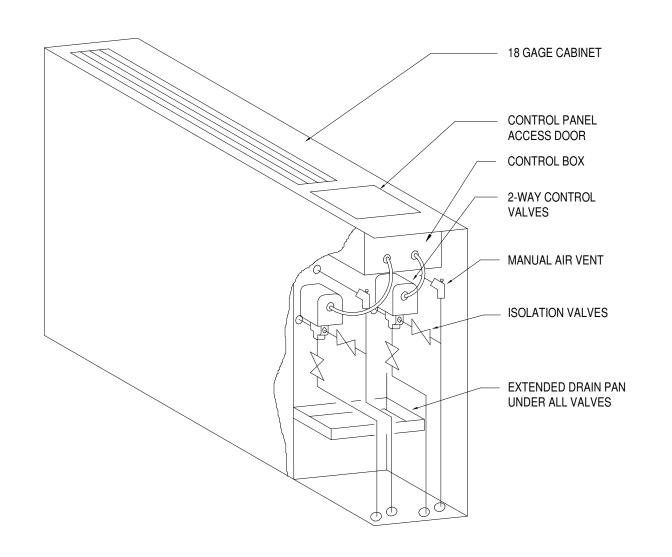
# 2 TYPICAL HORIZONTAL FAN/BLOWER COIL DETAIL NOT TO SCALE:



# 3 HORIZONTAL PIPE SUPPORT DETAIL NOT TO SCALE:



# 4 EXPANSION TANK DETAIL NOT TO SCALE:



1 HORIZONTAL RECESSED FANCOIL DETAIL NOT TO SCALE:

✓ FILTER

Ø INCHES

36 IN

50 IN

60 IN

DUCT COLLAR

— CWR —

CONDENSATE DRAIN PIPE

HINGED ACCESS PANEL

5 TYPICAL FLOOR MOUNTED FAN COIL UNIT DETAIL NOT TO SCALE:

MAX. LOAD MAX. SPACING INCHES

1320

144

144

144

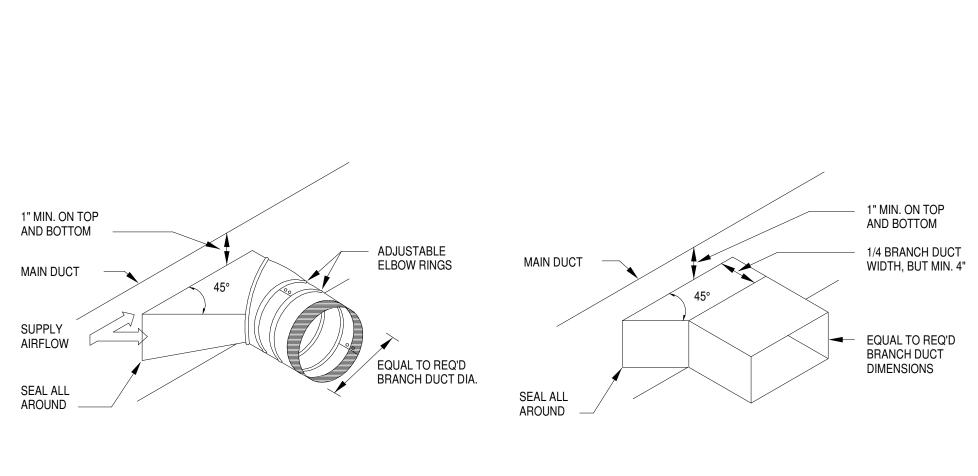
144

HANGER STRAPS OR RODS SCHEDULE

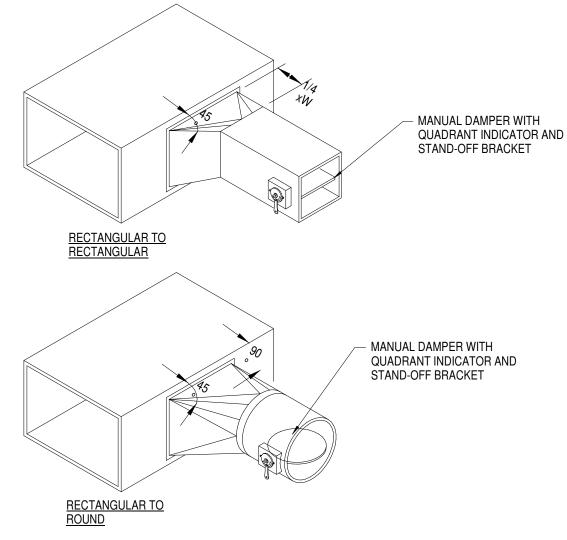
ONE 1 X 22 GAUGE STRAP

ONE 1 X 18 GAUGE STRAP

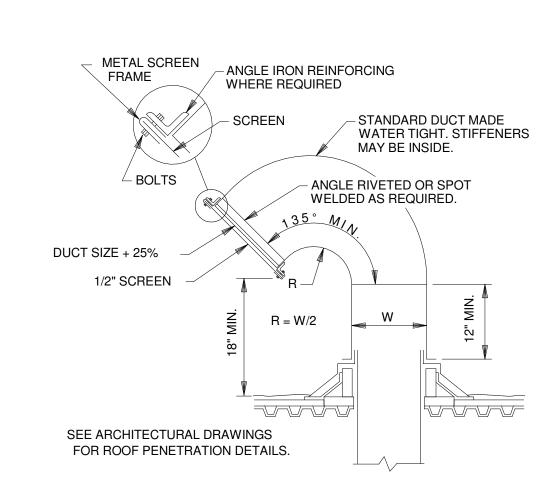
ONE 1 X 16 GAUGE STRAP



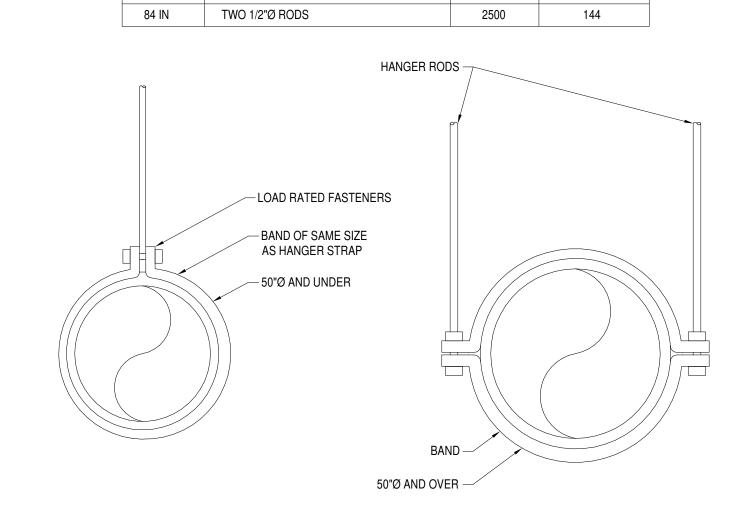
6 TYPICAL BRANCH TAKE-OFF FITTING DETAIL NOT TO SCALE:



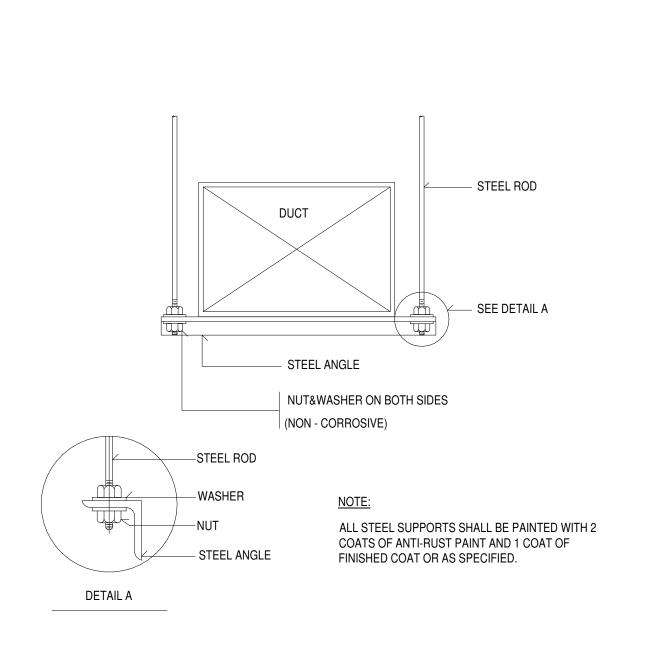
7 DUCT TAKE-OFF DETAIL
NOT TO SCALE:



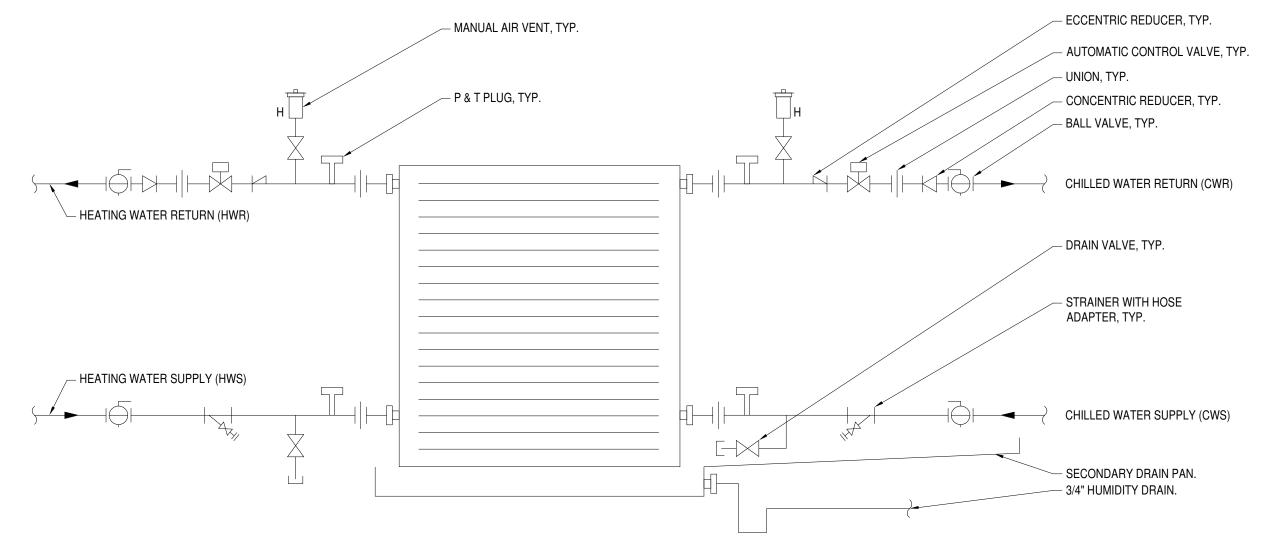
8 TYPICAL GOOSENECK DETAIL NOT TO SCALE:



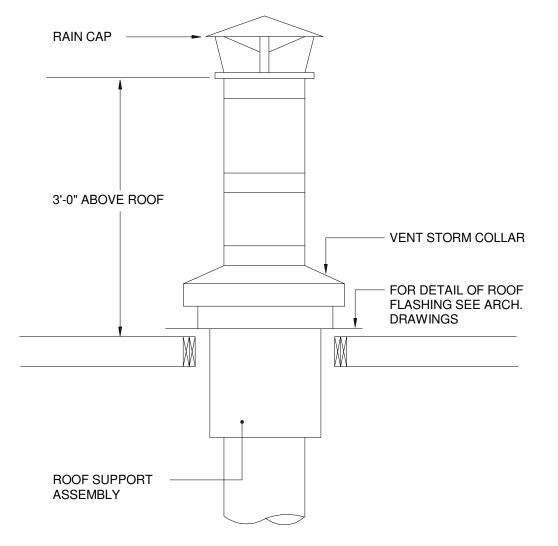
9 ROUND DUCT HANGER DETAIL
NOT TO SCALE:



10 DUCT HANGER DETAIL NOT TO SCALE:



11 FAN/BLOWER COIL UNIT PIPING DETAIL NOT TO SCALE:

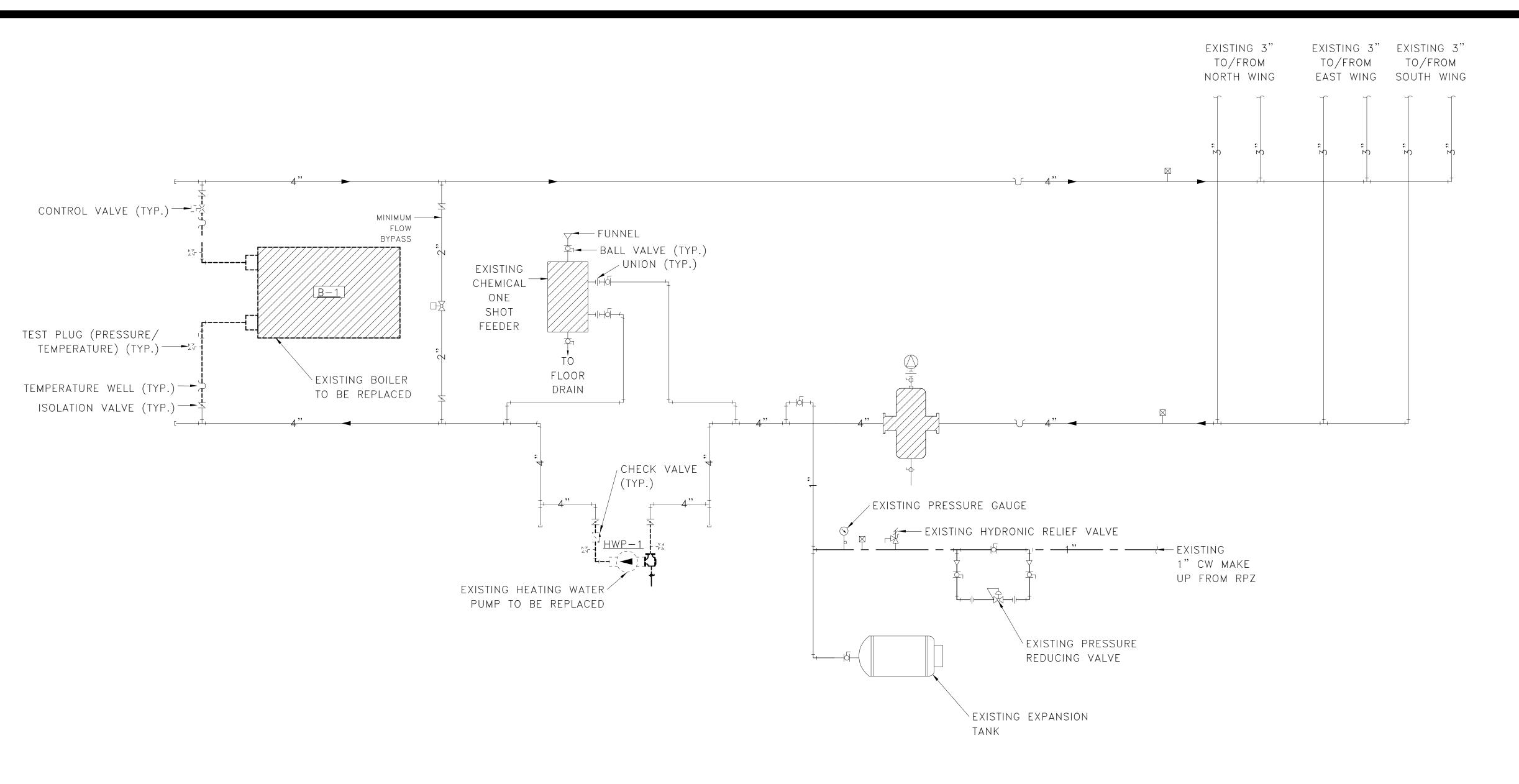


12 BOILER FLUE DETAIL NOT TO SCALE:

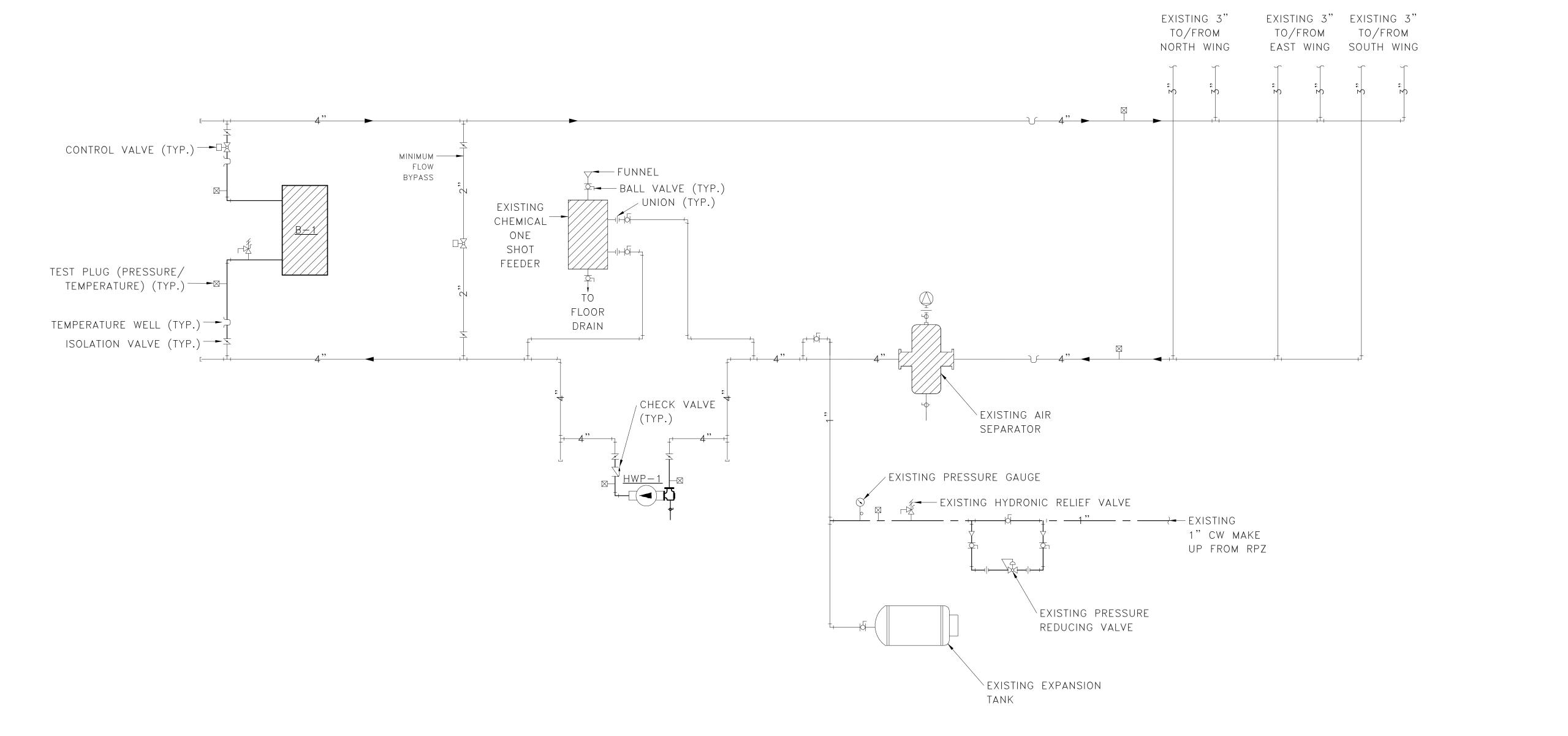


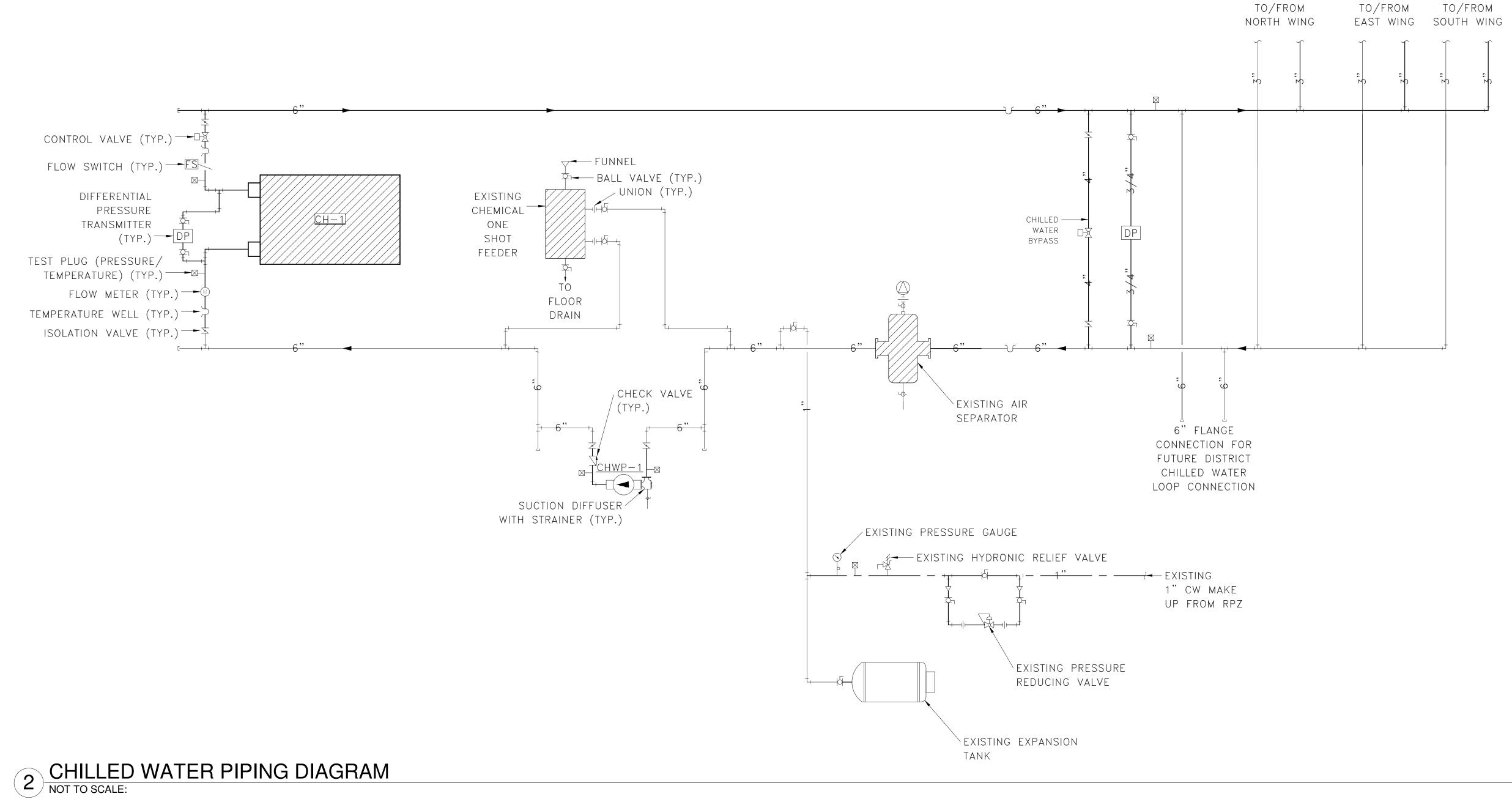
MECHANICAL PIPING DIAGRAMS

SHEET NUMBER: M303



1 HEATING WATER DEMOLITION PIPING DIAGRAM NOT TO SCALE:





ADES

402 WEST O STREE RUSSELLVILLE, AR

ENGINEERING O O O

CONSTRUCTION DOCUMENTS

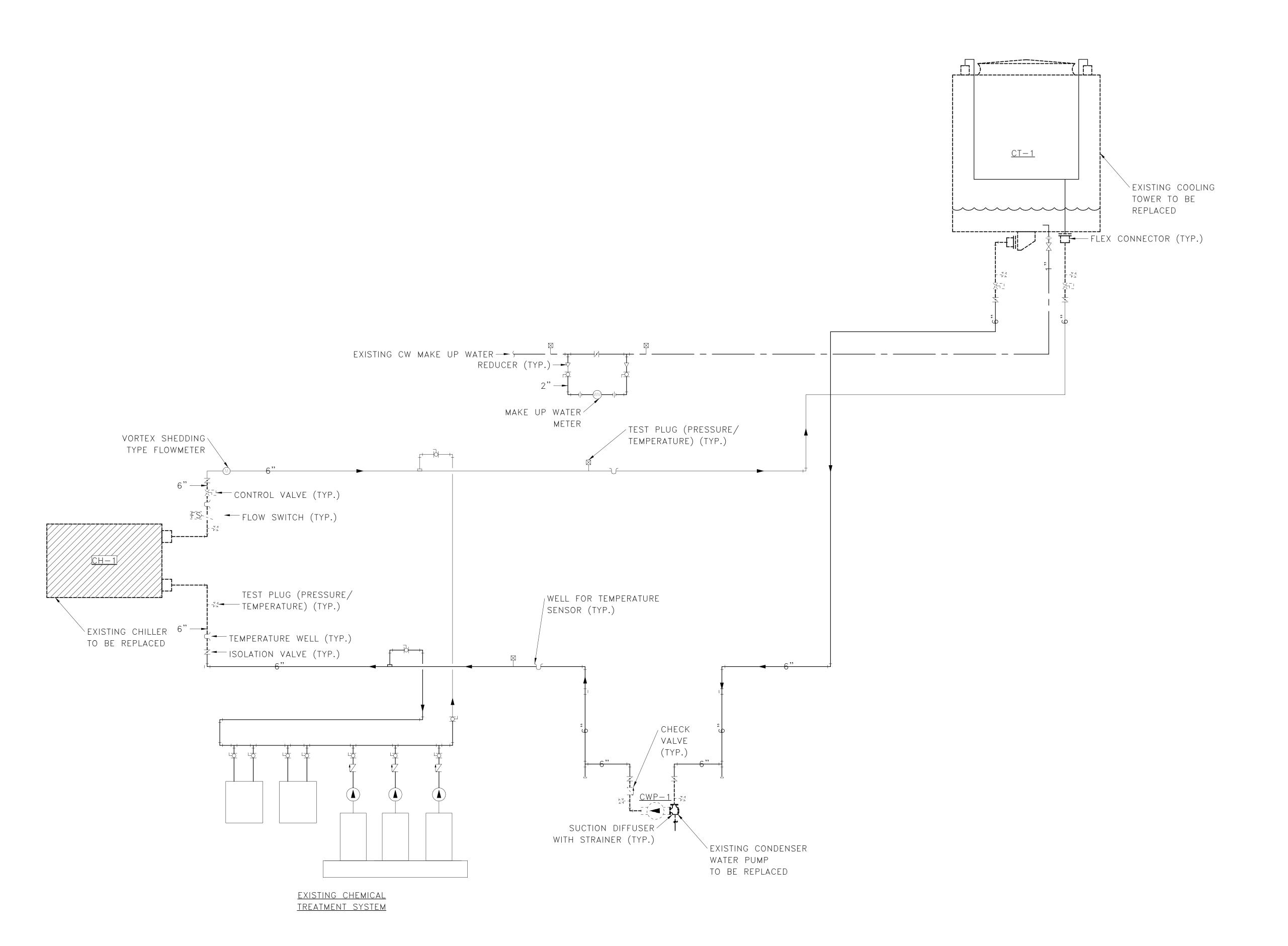
MECHANICAL PIPING DIAGRAMS Engineering, Pllc No. 3523 SHEET NUMBER:

M304

REVISIONS:

MECHANICAL PIPING DIAGRAM

SHEET NUMBER:



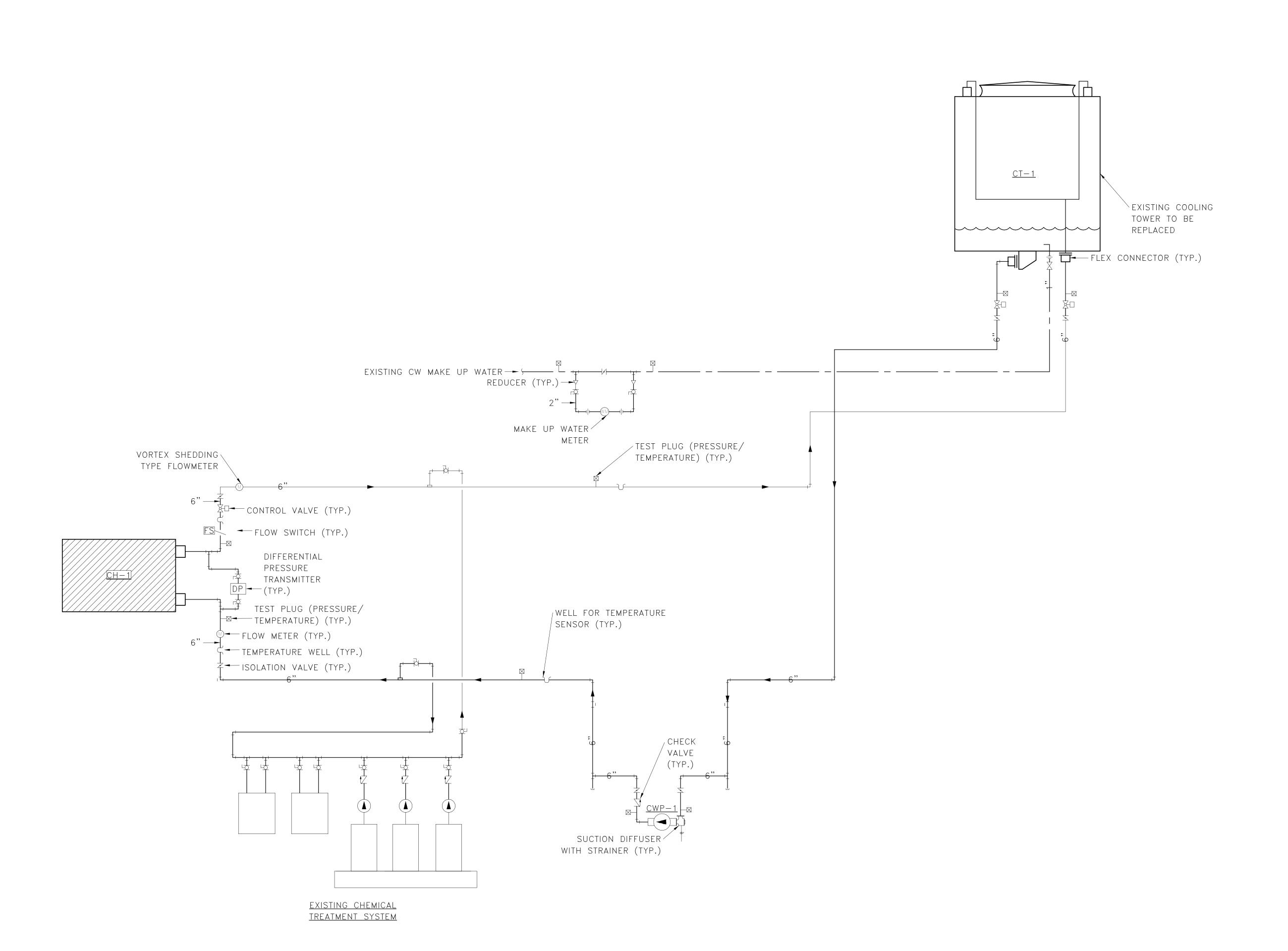
CONDENSOR WATER DEMOLTION PIPING DIAGRAM

NOT TO SCALE:

ISSUE DATE: 1

SHEET TITLE:
MECHANICAL PIPING DIAGRAM

SHEET NUMBER: M306



CONDENSOR WATER PIPING DIAGRAM

NOT TO SCALE:

EXHAU	JST FANS	}											
DESIGNATION	REFERENCE	TYPE	SERVES	AIR FLOW RATE	TOTAL STATIC	ROTATION	DRIVE	SONES	МОТОЯ	R SIZE	ELEC1	RICAL	REMARKS
	PRODUCT			(CFM)	PRESSURE (IN. WATER)	(RPM)			BHP	MHP	VOLTS	PHASE	
EF-1	GREENHECK: CUE-120-VG	UPBLAST	REFRIGERANT EXHAUST MONITOR	1,670	0.15	1200	DIRECT	12.7	0.26	0.5	120	1	INSTALL PER MANUFACTURER'S INSTRUCTIONS. PROVIDE BIRD SCREEN. PROVIDE 14" ROOF CURB. FAN SHALL BE INTERLOCKED WITH REFRIGERANT EXHAUST MONITOR AND L-1 DAMPER, AND WALL MOUNTED THERMOSTAT.

COOL	ING TOW	ERS							ELECTRI	CAL			
DESIGNATION	BASIS OF DESIGN	NUMBER OF CELLS	WATER FLOW RATE (GPM)	EWT / LWT (DEGREE F)	DESIGN WET BULB (DEGREE F)	STATIC LIFT (FT. WATER)	AIR FLOW RATE (CFM)	OPERATING WEIGHT (LBS)	NO. OF FANS	FAN MOTOR (HP)	BASIN HEATERS (KW)	VOLTS / PHASE	REMARKS
CT-1	MARLEY: NC8402PAN	1	600	95 / 85	80	10.6	84,340	10,080	1	15	6	480 / 3	FOR REFERENCE ONLY. EQUIPMENT PROCURED BY OWNER, INSTALLED BY CONTRACTOR.

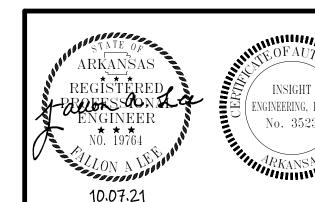
PUMP	S												
DESIGNATION	MANUFACTURER	LOCATION	SERVES	TYPE	WATER FLOW RATE	TOTAL HEAD	ROTATION	EFFICENCY	MOTO	R SIZE	ELEC1	RICAL	REMARKS
DEGIONATION	WANDI ACTORER	LOCATION	SERVES	1112	(GPM)	(FT. WATER)	(RPM)	(%)	ВНР	MHP	VOLTS	PHASE	KEWAKKO
CHWP-1	ARMSTRONG	CHILLER PLANT	CHILLED WATER	HORIZONTAL BASE MOUNT END SUCTION	400	125	1,780	76.15	17.82	25	460	3	
CWP-1	ARMSTRONG	CHILLER PLANT	CONDENSER WATER	HORIZONTAL BASE MOUNT END SUCTION	600	30	1,780	84.44	4.96	7.5	460	1 2	FOR REFERENCE ONLY. EQUIPMENT PROCURED BY OWNER, INSTALLED BY CONTRACTOR.
HWP-1	ARMSTRONG	CHILLER PLANT	HEATING WATER	HORIZONTAL BASE MOUNT END SUCTION	230	90	1,780	74.2	7.05	10	460	3	

BOILE	RS - HOT WA	TER							ELECTRICAL	
DESIGNATION	REFERENCE PRODUCT	TYPE	FUEL	NATURAL GAS INPUT (MBH)	EFFICIENC Y (%)	WORKING PRESSURE (PSIG)	FLUE DIAMETER (INCHES)	OPERATING WEIGHT (LBS)	CONTROLS (VOLTS)	REMARKS
B-1	LOCHINVAR:FB 2001	HOT WATER	NATURAL GAS	1,999	96.2	160	8	2,570	120	FOR REFERENCE ONLY. EQUIPMENT PROCURED BY OWNER, INSTALLED BY CONTRACTOR. CONTRACTOR TO PROVIDE CPVC FLUE, GOOSENECK FOR COMBUSTION AIR, BIRDSCREEN ON COMPUTSTION AIR INTAKE AND FLUE, CONDENSATE NEUTRALIZATION KIT, AND VARIABLE SPEED BOILER PUMP.

AIR DE	VICES								
DESIGNATION	REFERENCE PRODUCT	CONFIGURATION	MAXIMUM AIRFLOW (CFM)	TOTAL PRESSURE (IN. WATER)	NECK SIZE (IN.)	MAX. N.C.	MATERIAL	FINISH	REMARKS
А	TITUS: 300RL	SIDEWALL	100	0.11	6 X 6	25	STEEL	STANDARD	PROVIDE WITH OPPOSED BLADE DAMPER. PAINT TO MATCH ADJACENT SURFACE.
1	TITUS: 30R	SIDEWALL	1,800	0.022	24 X 20	25	STEEL	STANDARD	PROVIDE WITH OPPOSED BLADE DAMPER, 3/8" SPACING, 0 DEGREE DEFLECTION.

VAR	IABLE FF	REQUENC	Y DRIVES				
DESIGNATION	REFERENCE PRODUCT	LOCATION	SERVES	RATED HORSEPOWER	VOLTS	PHASE	REMARKS
VFD-CHWP-1	ABB	CHILLER PLANT	CHWP-1	25	460	3	PROVIDE WITH INPUT LINE REACTORS
VFD-CWP-1	ABB	CHILLER PLANT	CWP-1	7.5	460	3	PROVIDE WITH INPUT LINE REACTORS
VFD-CT-1	ABB	CHILLER PLANT	CT-1	15	460	3	PROVIDE WITH INPUT LINE REACTORS
VFD-AHU-1	ABB	MECH ROOM	AHU-1	5	460	3	PROVIDE WITH INPUT LINE REACTORS
VFD-AHU-2	ABB	MECH ROOM	AHU-2	5	460	3	PROVIDE WITH INPUT LINE REACTORS
VFD-AHU-3	ABB	MECH ROOM	AHU-3	5	460	3	PROVIDE WITH INPUT LINE REACTORS
VFD-HWP-1	ABB	CHILLER PLANT	HWP-1	10	460	3	PROVIDE WITH INPUT LINE REACTORS

AIK HANDL	ING UNITS			
DESIGNATION		AHU-1	AHU-2	AHU-3
MANUFACTURER/MODEL		YORK XTI-45 X 48	YORK XTI-36 X 57	YORK XTI-45 X 48
JNIT CONFIGURATION		HORIZONTAL DRAW THROUGH	HORIZONTAL DRAW THROUGH	HORIZONTAL DRAW THROUGH
CASING INSULATION		2" FOAM SPRING	2" FOAM	2" FOAM SPRING
SOLATION TYPE MAXIMUM UNIT LENGTH (I	NCHES)	104	SPRING 100	SPRING 104
MAXIMUM UNIT WIDTH (IN		48	57	48
MAXIMUM UNIT HEIGHT (II	•	45	36	45
BASE RAIL HEIGHT (INCH		6	6	6
INLET PLENUM WITH	CASING LINER	SOLID	SOLID	SOLID
FILTER	SECTION AIR PRESSURE DROP (INCHES W.G.)	0.29	0.29	0.29
	REAR DAMPER TYPE	OPPOSED BLADE	OPPOSED BLADE	OPPOSED BLADE
	AIR FLOW (CFM)	4,200	4,200	4,200
	FILTER DEPTH (INCHES)	2"	2"	2"
	FILTER TYPE	PLEATED MEDIA	PLEATED MEDIA	PLEATED MEDIA
	MERV RATING	8	8	8
PRE-HEAT COIL	COIL FACE VELOCITY (FPM)	477	506	477
	ROWS	2	2	2
	FIN SPACING (FINS PER INCH)	9	9	9
	ENTERING AIR TEMPERATURE (DB DEGREE F)	0	0	0
	LEAVING AIR TEMPERATURE (DB DEGREE F)	58.7	59.8	58.7
	COIL AIR PRESSURE DROP (INCHES W.G.)	0.14	0.17	0.14
	ENTERING HEATING WATER TEMPERATURE (DEGREE F)	160	160	160
	LEAVING HEATING WATER TEMPERATURE (DEGREE F)	130	130	130
	HEATING WATER FLOW (GPM)	20.7	18	20.7
	COIL WATER PRESSURE DROP (FEET W.G.)	1.3	7	1.3
	TOTAL HEAT TRANSFER (MBH)	304	294	304
	SENSIBLE HEAT TRANSFER (MBH) CASING LINER	304 SOLID	294 SOLID	304 SOLID
2001 INC COIL				
COOLING COIL	COIL FACE VELOCITY (FPM)	477	488	477
	ROWS	6	6	6
	FIN SPACING (FINS PER INCH)	12	12	12
	ENTERING AIR TEMPERATURE (DB/WB DEGREE F)  LEAVING AIR TEMPERATURE (DB/WB DEGREE F)	100 / 78 56 / 55	100 / 78 57 / 55	100 / 78 56 / 55
	COIL AIR PRESSURE DROP (INCHES W.G.)	0.76	0.79	0.76
	ENTERING CHILLED WATER TEMPERATURE (DEGREE F)	45	45	45
	LEAVING CHILLED WATER TEMPERATURE (DEGREE F)	55	55	55
	CHILLED WATER FLOW (GPM)	63	67	63
	COIL WATER PRESSURE DROP (FEET W.G.)	7.9	16.6	7.9
	TOTAL HEAT TRANSFER (MBH)	315	323	315
	SENSIBLE HEAT TRANSFER (MBH)	192	193	192
	CASING LINER	SOLID	SOLID	SOLID
	DRAIN PAN	STAINLESS STEEL IAQ	STAINLESS STEEL IAQ	STAINLESS STEEL IAQ
EATING COIL	COIL FACE VELOCITY (FPM)	477	488	477
	ROWS	2	2	2
	FIN SPACING (FINS PER INCH)	9	9	9
	ENTERING AIR TEMPERATURE (DB DEGREE F)	59	59	59
	LEAVING AIR TEMPERATURE (DB DEGREE F)	78	78	78
	COIL AIR PRESSURE DROP (INCHES W.G.)	0.11	0.11	0.11
	ENTERING HEATING WATER TEMPERATURE (DEGREE F)	110	110	110
	LEAVING HEATING WATER TEMPERATURE (DEGREE F)	90	90	90
	HEATING WATER FLOW (GPM)	9	7.9	9
	COIL WATER PRESSURE DROP (FEET W.G.)	2.1	2.9	2.1
	TOTAL HEAT TRANSFER (MBH)	89	82	89
	SENSIBLE HEAT TRANSFER (MBH)	89 89	82 SOLID	89 89
AN SECTION	CASING LINER	SOLID	SOLID	SOLID
AN SECTION	FAN TYPE	DWDI FORWARD CURVED	DWDI FORWARD CURVED	DWDI FORWARD CURVED
	AIR FLOW (CFM)	4,200	4,200	4,200
	TOTAL STATIC PRESSURE (INCHES W.G.)	2.83	2.51	2.83
	EXTERNAL STATIC PRESSURE (INCHES W.G.)  FAN RPM	1 1,385	1,800	1,385
	FAN RPM FAN BHP	1,385 3.81	1,800 2.94	1,385 3.81
	MOTOR HP	3.81 5	2.94 5	3.81 5
	MOTOR HP MOTOR EFFICENCY	NEMA PREMIUM	NEMA PREMIUM	NEMA PREMIUM
	MOTOR VOLTAGE / PHASE	460 / 3	460 / 3	460 / 3
	CASING LINER	SOLID	SOLID	SOLID
	ACCESS DOORS	LEFT	RIGHT	LEFT
	DISCHARGE CONFIGURATION	TOP	FRONT	TOP



INSIGHT ENGINEERING, PLLC No. 3523

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SYSTEM UPGRADES FOR DEAN

REVISIONS:

SHEET TITLE: MECHANICAL SCHEDULES

1ST	FLOOR F	AN COIL UNI	TS - FOUR	PIPE	COOLING					HEATING					ELECTR	ICAL				
	REFERENCE		COIL	AIRFLOW	TOTAL	AIR	WATER	WATER	WATER PRESSURE	TOTAL	AIR	WATER	WATER	WATER PRESSURE					DEDUCTIVE	
DESIGNATION	PRODUCT	TYPE	CONNECTION	(CFM)	CAPACITY (MBH)	EDB / LDB (DEGREE F)	FLOW RATE (GPM)	EWT / LWT (DEGREE F)	DROP (FT WATER)	CAPACITY (MBH)	EDB / LDB (DEGREE F)	FLOW RATE (GPM)	EWT / LWT (DEGREE F)	DROP (FT WATER)	VOLTS	PHASE	WATTS	AMPS	ALTERNATE	REMARKS
FCU-1.1	IES	HORIZONTAL CEILING MOUNTED	HW:RH, CW: LH, DRAIN: LH	300	6 MBH	75 / 58	1.0	45 / 54	1.6	10.0	70 / 96	0.5	160 / 130	0.7	120	1	77	1	Х	
FCU-1.2	IES	HORIZONTAL CEILING MOUNTED	HW:RH, CW: LH, DRAIN: LH	300	6 MBH	75 / 58	1.0	45 / 54	1.6	10.0	70 / 96	0.5	160 / 130	0.7	120	1	77	1	х	
FCU-1.3	IES	HORIZONTAL CEILING MOUNTED	HW:RH, CW: LH, DRAIN: LH	300	6 MBH	75 / 58	1.0	45 / 54	1.6	10.0	70 / 96	0.5	160 / 130	0.7	120	1	77	1	Х	
FCU-1.4	IES	HORIZONTAL CEILING MOUNTED	HW:RH, CW: LH, DRAIN: LH	300	6 MBH	75 / 58	1.0	45 / 54	1.6	10.0	70 / 96	0.5	160 / 130	0.7	120	1	77	1	Х	
FCU-1.5	IES	HORIZONTAL CEILING MOUNTED	HW:RH, CW: LH, DRAIN: LH	300	6 MBH	75 / 58	1.0	45 / 54	1.6	10.0	70 / 96	0.5	160 / 130	0.7	120	1	77	1	Х	
FCU-1.6	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	1,000	18 MBH	75 / 58	3.0	45 / 54	2.0	30.0	70 / 96	2.0	160 / 130	4.0	120	1	200	3	Х	
FCU-1.7	IES	HORIZONTAL CEILING MOUNTED HORIZONTAL	HW:RH, CW: LH, DRAIN: LH HW:RH, CW: LH,	400	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2	Х	
FCU-1.8	IES	CEILING MOUNTED	DRAIN: LH HW:RH, CW: LH,	400	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2	Х	
FCU-1.9	IES	FLOOR MOUNTED	DRAIN: LH HW:RH, CW: LH,	470	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2		
FCU-1.10	IES	FLOOR MOUNTED HORIZONTAL	DRAIN: LH HW:RH, CW: LH,	470	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2		
FCU-1.11	IES	CEILING MOUNTED		600	12 MBH	75 / 58	1.5	45 / 54	1.0	17.0	70 / 96	1.0	160 / 130	1.2	120	1	1/5	3	X	
FCU-1.12	IES	FLOOR MOUNTED FLOOR MOUNTED	DRAIN: LH HW:RH, CW: LH,	470 680	9 MBH 15 MBH	75 / 58 75 / 58	1.5	45 / 54 45 / 54	2.5	13.5 28.0	70 / 96	1.0	160 / 130	0.6	120	1	119	2		
FCU-1.13 FCU-1.14	IES	FLOOR MOUNTED	DRAIN: LH HW:RH, CW: LH,	680	15 MBH	75 / 58	2.0	45 / 54	3.0	28.0	70 / 96 70 / 96	1.5	160 / 130 160 / 130	4.0	120	1	186	3	^	
FCU-1.15	IES	FLOOR MOUNTED	DRAIN: LH HW:RH, CW: LH,	470	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2	× ×	
FCU-1.16	IES	FLOOR MOUNTED	DRAIN: LH HW:RH, CW: LH,	470	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2	^	
FCU-1.17	IES	HORIZONTAL	DRAIN: LH HW:RH, CW: LH,	300	6 MBH	75 / 58	1.0	45 / 54	1.6	10.0	70 / 96	0.5	160 / 130	0.7	120	1	77	1		
FCU-1.18	IES	HORIZONTAL	DRAIN: LH HW:RH, CW: LH,	300	6 MBH	75 / 58	1.0	45 / 54	1.6	10.0	70 / 96	0.5	160 / 130	0.7	120	1	77	1	X	
FCU-1.19	IES	HORIZONTAL	DRAIN: LH HW:RH, CW: LH,	300	6 MBH	75 / 58	1.0	45 / 54	1.6	10.0	70 / 96	0.5	160 / 130	0.7	120	1	77	1	X	
FCU-1.20	IES	HORIZONTAL	DRAIN: LH HW:RH, CW: LH,	300	6 MBH	75 / 58	1.0	45 / 54	1.6	10.0	70 / 96	0.5	160 / 130	0.7	120	1	77	1	Х	
FCU-1.21	IES	HORIZONTAL CEILING MOUNTED	DRAIN: LH HW:RH, CW: LH, DRAIN: LH	300	6 MBH	75 / 58	1.0	45 / 54	1.6	10.0	70 / 96	0.5	160 / 130	0.7	120	1	77	1	Х	
FCU-1.22	IES	HORIZONTAL CEILING MOUNTED	HW:RH, CW: LH, DRAIN: LH	300	6 MBH	75 / 58	1.0	45 / 54	1.6	10.0	70 / 96	0.5	160 / 130	0.7	120	1	77	1	Х	
FCU-1.23	IES	HORIZONTAL CEILING MOUNTED	HW:RH, CW: LH,	400	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2		
FCU-1.24	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	1,000	18 MBH	75 / 58	3.0	45 / 54	2.0	30.0	70 / 96	2.0	160 / 130	4.0	120	1	200	3		
FCU-1.25	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	1,000	18 MBH	75 / 58	3.0	45 / 54	2.0	30.0	70 / 96	2.0	160 / 130	4.0	120	1	200	3		
FCU-1.26	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	470	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2		
FCU-1.27	IES	HORIZONTAL CEILING MOUNTED	HW:RH, CW: LH, DRAIN: LH	400	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2		
FCU-1.28	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	680	15 MBH	75 / 58	2.0	45 / 54	3.0	28.0	70 / 96	1.5	160 / 130	4.0	120	1	186	3		
FCU-1.29	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	680	15 MBH	75 / 58	2.0	45 / 54	3.0	28.0	70 / 96	1.5	160 / 130	4.0	120	1	186	3		
FCU-1.30	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	680	15 MBH	75 / 58	2.0	45 / 54	3.0	28.0	70 / 96	1.5	160 / 130	4.0	120	1	186	3		
FCU-1.31	IES	HORIZONTAL CEILING MOUNTED	HW:RH, CW: LH, DRAIN: LH	400	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2	Х	FOR REFERENCE ONLY. EQUIPMENT PROCURED BY OWNER, INSTALLED BY
FCU-1.32	IES	HORIZONTAL CEILING MOUNTED		300	6 MBH	75 / 58	1.0	45 / 54	1.6	10.0	70 / 96	0.5	160 / 130	0.7	120	1	77	1	Х	CONTRACTOR.
FCU-1.33	IES	HORIZONTAL CEILING MOUNTED	HW:RH, CW: LH, DRAIN: LH	400	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2	Х	
FCU-1.34	IES	HORIZONTAL CEILING MOUNTED	HW:RH, CW: LH, DRAIN: LH	400	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2		
FCU-1.35	IES	HORIZONTAL CEILING MOUNTED HORIZONTAL	HW:RH, CW: LH, DRAIN: LH HW:RH, CW: LH,	400	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2	Х	
FCU-1.36	IES	CEILING MOUNTED HORIZONTAL	DRAIN: LH HW:RH, CW: LH,	400	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2	Х	
FCU-1.37	IES	CEILING MOUNTED HORIZONTAL	DRAIN: LH HW:RH, CW: LH,	300	6 MBH	75 / 58	1.0	45 / 54	1.6	10.0	70 / 96	0.5	160 / 130	0.7	120	1	77	1	X	
FCU-1.38	IES	CEILING MOUNTED HORIZONTAL	DRAIN: LH HW:RH, CW: LH,	400	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2	X	
FCU-1.39	IES	CEILING MOUNTED HORIZONTAL	DRAIN: LH HW:RH, CW: LH,	300	6 MBH	75 / 58	1.0	45 / 54	1.6	10.0	70 / 96	0.5	160 / 130	0.7	120	1	77	1	X	
FCU-1.40	IES	CEILING MOUNTED HORIZONTAL		400	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	77	2	X	
FCU-1.41 FCU-1.42	IES	CEILING MOUNTED FLOOR MOUNTED	DRAIN: LH HW:RH, CW: LH,	300 680	6 MBH 15 MBH	75 / 58 75 / 58	1.0	45 / 54 45 / 54	1.6	28.0	70 / 96	0.5	160 / 130 160 / 130	0.7	120	1		1	X	
FCU-1.42 FCU-1.43	IES	FLOOR MOUNTED	DRAIN: LH HW:RH, CW: LH,	470	9 MBH	75 / 58	1.5	45 / 54	3.0 2.5	13.5	70 / 96 70 / 96	1.5	160 / 130	0.6	120	1	186	2		
FCU-1.44	IES	FLOOR MOUNTED	DRAIN: LH HW:RH, CW: LH,	625	12 MBH	75 / 58	1.8	45 / 54	1.9	23.9	70 / 96	1.0	160 / 130	3.5	120	1	182	3		
FCU-1.45	IES	HORIZONTAL	DRAIN: LH HW:RH, CW: LH,	300	6 MBH	75 / 58	1.0	45 / 54	1.6	10.0	70 / 96	0.5	160 / 130	0.7	120	1	77	1	X	
FCU-1.46	IES	CEILING MOUNTED FLOOR MOUNTED	HW:RH, CW: LH,	470	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2	X	
FCU-1.47	IES	FLOOR MOUNTED	DRAIN: LH HW:RH, CW: LH,	470	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2	×	
FCU-1.48	IES	FLOOR MOUNTED	DRAIN: LH HW:RH, CW: LH,	470	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2	X	
FCU-1.49	IES	FLOOR MOUNTED	DRAIN: LH HW:RH, CW: LH,	470	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2		
FCU-1.50	IES	FLOOR MOUNTED	DRAIN: LH HW:RH, CW: LH,	1,000	18 MBH	75 / 58	3.0	45 / 54	2.0	30.0	70 / 96	2.0	160 / 130	4.0	120	1	200	3		
FCU-1.51	IES	HORIZONTAL CEILING MOUNTED	DRAIN: LH HW:RH, CW: LH, DRAIN: LH	600	12 MBH	75 / 58	1.5	45 / 54	1.0	17.0	70 / 96	1.0	160 / 130	1.2	120	1	175	3		
FCU-1.52	IES	HORIZONTAL CEILING MOUNTED	HW:RH, CW: LH, DRAIN: LH	600	12 MBH	75 / 58	1.5	45 / 54	1.0	17.0	70 / 96	1.0	160 / 130	1.2	120	1	175	3		
FCU-1.53	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	1,000	18 MBH	75 / 58	3.0	45 / 54	2.0	30.0	70 / 96	2.0	160 / 130	4.0	120	1	200	3		
FCU-1.54	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	1,000	18 MBH	75 / 58	3.0	45 / 54	2.0	30.0	70 / 96	2.0	160 / 130	4.0	120	1	200	3		
FCU-1.55	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	1,000	18 MBH	75 / 58	3.0	45 / 54	2.0	30.0	70 / 96	2.0	160 / 130	4.0	120	1	200	3		
FCU-1.56	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	1,000	18 MBH	75 / 58	3.0	45 / 54	2.0	30.0	70 / 96	2.0	160 / 130	4.0	120	1	200	3		
FCU-1.57	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	680	15 MBH	75 / 58	2.0	45 / 54	3.0	28.0	70 / 96	1.5	160 / 130	4.0	120	1	186	3		
FCU-1.58	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	680	15 MBH	75 / 58	2.0	45 / 54	3.0	28.0	70 / 96	1.5	160 / 130	4.0	120	1	186	3		
FCU-1.59	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	680	15 MBH	75 / 58	2.0	45 / 54	3.0	28.0	70 / 96	1.5	160 / 130	4.0	120	1	186	3		
FCU-1.60	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	470	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2	Х	
FCU-1.61	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	470	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2	х	
FCU-1.62	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	470	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2	Х	

CONSTRUCTION DOCUMENTS

UPGRADES SYSTEM

402 WEST O STREET RUSSELLVILLE, AR

REVISIONS:

ISSUE DATE:

ARKANSAS
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ENGINEER
NO. 19764

10.07.21

INSIGHT ENGINEERING, PLLC No. 3523

SHEET TITLE: MECHANICAL SCHEDULES

2ND	FLOOR F	AN COIL UNI	ITS - FOUR	PIPE	COOLING					HEATING					ELECTR	RICAL				
DESIGNATION	REFERENCE PRODUCT	TYPE	COIL CONNECTION	AIRFLOW (CFM)	TOTAL CAPACITY (MBH)	AIR EDB / LDB (DEGREE F)	WATER FLOW RATE (GPM)	WATER EWT / LWT (DEGREE F)	WATER PRESSURE DROP (FT WATER)		AIR EDB / LDB (DEGREE F)	WATER FLOW RATE ) (GPM)	WATER EWT / LWT (DEGREE F)	WATER PRESSURE DROP (FT WATER)	VOLTS	PHASE	WATTS	AMPS	DEDUCTIVE ALTERNATE	REMARKS
FCU-2.1	IES	HORIZONTAL CEILING MOUNTED	HW:RH, CW: LH, DRAIN: LH	600	12 MBH	75 / 58	1.5	45 / 54	1.0	17.0	70 / 96	1.0	160 / 130	1.2	120	1	175	3	X	
FCU-2.2	IES	HORIZONTAL CEILING MOUNTED	HW:RH, CW: LH,	400	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2	Х	
FCU-2.3	IES	HORIZONTAL CEILING MOUNTED	HW:RH, CW: LH, DRAIN: LH	400	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2	Х	
FCU-2.4	IES	HORIZONTAL CEILING MOUNTED		400	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2	Х	
FCU-2.5	IES	HORIZONTAL CEILING MOUNTED		400	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2	Х	
FCU-2.6	IES	HORIZONTAL CEILING MOUNTED	HW:RH, CW: LH, DRAIN: LH	400	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2	Х	
FCU-2.7	IES	HORIZONTAL CEILING MOUNTED HORIZONTAL	<del> </del>	400	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2	Х	
FCU-2.8	IES	CEILING MOUNTED HORIZONTAL	HW:RH, CW: LH, DRAIN: LH HW:RH, CW: LH,	400	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2	Х	
FCU-2.9	IES	CEILING MOUNTED HORIZONTAL	1 ' ' 1	300	6 MBH	75 / 58	1.0	45 / 54	1.6	10.0	70 / 96	0.5	160 / 130	0.7	120	1	77	1	X	
FCU-2.10	IES	CEILING MOUNTED HORIZONTAL	DRAIN: LH HW:RH, CW: LH,	300	6 MBH	75 / 58	1.0	45 / 54	1.6	10.0	70 / 96	0.5	160 / 130	0.7	120	1	77	1	X	
FCU-2.11 FCU-2.12	IES	CEILING MOUNTED HORIZONTAL	DRAIN: LH HW:RH, CW: LH,	300	6 MBH	75 / 58 75 / 58	1.0	45 / 54 45 / 54	1.6	10.0	70 / 96 70 / 96	0.5	160 / 130 160 / 130	0.7	120 120	1	77	1	X	
FCU-2.12	IES	CEILING MOUNTED HORIZONTAL	DRAIN: LH HW:RH, CW: LH,	300	6 MBH	75 / 58	1.0	45 / 54	1.6	10.0	70 / 96	0.5	160 / 130	0.7	120	1	77	1	×	
FCU-2.14	IES	CEILING MOUNTED HORIZONTAL	HW:RH, CW: LH,	300	6 MBH	75 / 58	1.0	45 / 54	1.6	10.0	70 / 96	0.5	160 / 130	0.7	120	1	77	1	X	
FCU-2.15	IES	CEILING MOUNTED HORIZONTAL	DRAIN: LH HW:RH, CW: LH,	400	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2	^	
FCU-2.16	IES	HORIZONTAL	DRAIN: LH HW:RH, CW: LH,	300	6 MBH	75 / 58	1.0	45 / 54	1.6	10.0	70 / 96	0.5	160 / 130	0.7	120	1	77	1		
FCU-2.17	IES	FLOOR MOUNTED	DRAIN: LH HW:RH, CW: LH, DRAIN: LH	1,000	18 MBH	75 / 58	3.0	45 / 54	2.0	30.0	70 / 96	2.0	160 / 130	4.0	120	1	200	3	X	
FCU-2.18	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	1,000	18 MBH	75 / 58	3.0	45 / 54	2.0	30.0	70 / 96	2.0	160 / 130	4.0	120	1	200	3		
FCU-2.19	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	1,000	18 MBH	75 / 58	3.0	45 / 54	2.0	30.0	70 / 96	2.0	160 / 130	4.0	120	1	200	3		
FCU-2.20	IES	HORIZONTAL CEILING MOUNTED	HW:RH, CW: LH,	600	12 MBH	75 / 58	1.5	45 / 54	1.0	17.0	70 / 96	1.0	160 / 130	1.2	120	1	175	3		
FCU-2.21	IES	HORIZONTAL CEILING MOUNTED	HW:RH, CW: LH, DRAIN: LH	600	12 MBH	75 / 58	1.5	45 / 54	1.0	17.0	70 / 96	1.0	160 / 130	1.2	120	1	175	3		
FCU-2.22	IES	HORIZONTAL CEILING MOUNTED	HW:RH, CW: LH, DRAIN: LH	300	6 MBH	75 / 58	1.0	45 / 54	1.6	10.0	70 / 96	0.5	160 / 130	0.7	120	1	77	1	Х	
FCU-2.23	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	470	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2		
FCU-2.24	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	680	15 MBH	75 / 58	2.0	45 / 54	3.0	28.0	70 / 96	1.5	160 / 130	4.0	120	1	186	3		
FCU-2.25	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	680	15 MBH	75 / 58	2.0	45 / 54	3.0	28.0	70 / 96	1.5	160 / 130	4.0	120	1	186	3		
FCU-2.26	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH HW:RH, CW: LH,	680	15 MBH	75 / 58	2.0	45 / 54	3.0	28.0	70 / 96	1.5	160 / 130	4.0	120	1	186	3		
FCU-2.27	IES	FLOOR MOUNTED HORIZONTAL	DRAIN: LH	470	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2		
FCU-2.28	IES	CEILING MOUNTED	1 ' '1	600	12 MBH	75 / 58	1.5	45 / 54	1.0	17.0	70 / 96	1.0	160 / 130	1.2	120	1	175	3		
FCU-2.29	IES	FLOOR MOUNTED	DRAIN: LH	680	15 MBH	75 / 58	2.0	45 / 54	3.0	28.0	70 / 96	1.5	160 / 130	4.0	120	1	186	3		
FCU-2.30 FCU-2.31	IES	FLOOR MOUNTED FLOOR MOUNTED	DRAIN: LH HW:RH, CW: LH,	680 680	15 MBH 15 MBH	75 / 58 75 / 58	2.0	45 / 54 45 / 54	3.0	28.0	70 / 96	1.5	160 / 130 160 / 130	4.0	120 120	1	186	3		FOR REFERENCE ONLY. EQUIPMENT PROCURED BY OWNER, INSTALLED BY
FCU-2.32	IES	FLOOR MOUNTED	DRAIN: LH HW:RH, CW: LH,	1,200	24 MBH	75 / 58	6.0	45 / 54	4.0	45.0	70 / 96 70 / 96	2.0	160 / 130	3.2	120	1	331	5		CONTRACTOR.
FCU-2.33	IES	FLOOR MOUNTED	DRAIN: LH HW:RH, CW: LH,	625	12 MBH	75 / 58	1.8	45 / 54	1.9	23.9	70 / 96	1.0	160 / 130	3.5	120	1	182	3		
FCU-2.34	IES	FLOOR MOUNTED	DRAIN: LH HW:RH, CW: LH,	1,200	24 MBH	75 / 58	6.0	45 / 54	4.0	45.0	70 / 96	2.0	160 / 130	3.2	120	1	331	5		
FCU-2.35	IES	HORIZONTAL CEILING MOUNTED	DRAIN: LH HW:RH, CW: LH, DRAIN: LH	600	12 MBH	75 / 58	1.5	45 / 54	1.0	17.0	70 / 96	1.0	160 / 130	1.2	120	1	175	3		
FCU-2.36	IES	HORIZONTAL CEILING MOUNTED	HW:RH, CW: LH, DRAIN: LH	400	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2		
FCU-2.37	IES	HORIZONTAL CEILING MOUNTED	HW:RH, CW: LH, DRAIN: LH	400	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2		
FCU-2.38	IES	HORIZONTAL CEILING MOUNTED	HW:RH, CW: LH,	400	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2		
FCU-2.39	IES	HORIZONTAL CEILING MOUNTED	HW:RH, CW: LH,	400	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2		
FCU-2.40	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	680	15 MBH	75 / 58	2.0	45 / 54	3.0	28.0	70 / 96	1.5	160 / 130	4.0	120	1	186	3		
FCU-2.41	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	680	15 MBH	75 / 58	2.0	45 / 54	3.0	28.0	70 / 96	1.5	160 / 130	4.0	120	1	186	3		
FCU-2.42	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	680	15 MBH	75 / 58	2.0	45 / 54	3.0	28.0	70 / 96	1.5	160 / 130	4.0	120	1	186	3		
FCU-2.43	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	680	15 MBH	75 / 58	2.0	45 / 54	3.0	28.0	70 / 96	1.5	160 / 130	4.0	120	1	186	3		
FCU-2.44	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	470	9 MBH	75 / 58	1.5	45 / 54	2.5	13.5	70 / 96	1.0	160 / 130	0.6	120	1	119	2		
FCU-2.45	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH HW:RH, CW: LH,	1,000	18 MBH	75 / 58	3.0	45 / 54	2.0	30.0	70 / 96	2.0	160 / 130	4.0	120	1	200	3		
FCU-2.46	IES	FLOOR MOUNTED	DRAIN: LH	1,000	18 MBH	75 / 58	3.0	45 / 54	2.0	30.0	70 / 96	2.0	160 / 130	4.0	120	1	200	3		
FCU-2.47	IES	FLOOR MOUNTED HORIZONTAL	DRAIN: LH	1,000	18 MBH	75 / 58	3.0	45 / 54	2.0	30.0	70 / 96	2.0	160 / 130	4.0	120	1	200	3		
FCU-2.48	IES	CEILING MOUNTED HORIZONTAL	1 ' '1	600	12 MBH	75 / 58	1.5	45 / 54	1.0	17.0	70 / 96	1.0	160 / 130	1.2	120	1	175	3		
FCU-2.49 FCU-2.50	IES	CEILING MOUNTED FLOOR MOUNTED	DRAIN: LH HW:RH, CW: LH,	1,000	12 MBH 18 MBH	75 / 58 75 / 58	1.5	45 / 54 45 / 54	1.0	17.0 30.0	70 / 96	1.0	160 / 130 160 / 130	1.2	120	1	175 200	3		
FCU-2.50 FCU-2.51	IES	FLOOR MOUNTED  FLOOR MOUNTED	DRAIN: LH HW:RH, CW: LH,	1,000	18 MBH 18 MBH	75 / 58 75 / 58	3.0	45 / 54 45 / 54	2.0	30.0	70 / 96 70 / 96	2.0	160 / 130 160 / 130	4.0	120 120	1	200	3		
FCU-2.51	IES	FLOOR MOUNTED	DRAIN: LH HW:RH, CW: LH,	1,200	24 MBH	75 / 58	6.0	45 / 54	4.0	45.0	70 / 96	2.0	160 / 130	3.2	120	1	331	5		
FCU-2.53	IES	FLOOR MOUNTED	DRAIN: LH HW:RH, CW: LH,	1,200	24 MBH	75 / 58	6.0	45 / 54	4.0	45.0	70 / 96	2.0	160 / 130	3.2	120	1	331	5		
FCU-2.54	IES	FLOOR MOUNTED	DRAIN: LH HW:RH, CW: LH,	1,200	24 MBH	75 / 58	6.0	45 / 54	4.0	45.0	70 / 96	2.0	160 / 130	3.2	120	1	331	5		
FCU-2.55		FLOOR MOUNTED	DRAIN: LH HW:RH, CW: LH,			75 / 58	3.0	45 / 54	2.0	30.0	70 / 96		160 / 130		120	1	200	3		
FCU-2.56	IES	FLOOR MOUNTED	DRAIN: LH HW:RH, CW: LH, DRAIN: LH	1,000	18 MBH	75 / 58	3.0	45 / 54	2.0	30.0	70 / 96	2.0	160 / 130	4.0	120	1	200	3		
FCU-2.57	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	1,000	18 MBH	75 / 58	3.0	45 / 54	2.0	30.0	70 / 96	2.0	160 / 130	4.0	120	1	200	3	х	
FCU-2.58	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	1,000	18 MBH	75 / 58	3.0	45 / 54	2.0	30.0	70 / 96	2.0	160 / 130	4.0	120	1	200	3	х	
FCU-2.59	IES	FLOOR MOUNTED	HW:RH, CW: LH, DRAIN: LH	680	15 MBH	75 / 58	2.0	45 / 54	3.0	28.0	70 / 96	1.5	160 / 130	4.0	120	1	186	3	Х	
FCU-2.60	IES	FLOOR MOUNTED	HW:RH, CW: LH,	680	15 MBH	75 / 58	2.0	45 / 54	3.0	28.0	70 / 96	1.5	160 / 130	4.0	120	1	186	3	X	

28.0

28.0

3.0

3.0

70 / 96

70 / 96

1.5

1.5

160 / 130

160 / 130

4.0

120

120

186

186

2.0

2.0

45 / 54

45 / 54

15 MBH 75 / 58

15 MBH 75 / 58

FLOOR MOUNTED HW:RH, CW: LH,

FLOOR MOUNTED HW:RH, CW: LH, DRAIN: LH

FCU-2.60

FCU-2.61

IES

IES

CONSTRUCTION DOCUMENTS

UPGRADES SYSTEM

402 WEST O STREET RUSSELLVILLE, AR

REVISIONS:

ISSUE DATE:

ARKANSAS
REGISTĒRED
PROEESSOONAL
ENGINEER
NO. 19764

10.07.21

INSIGHT ENGINEERING, PLLC No. 3523

SHEET TITLE: MECHANICAL SCHEDULES

DI VFD ALARM STATUS

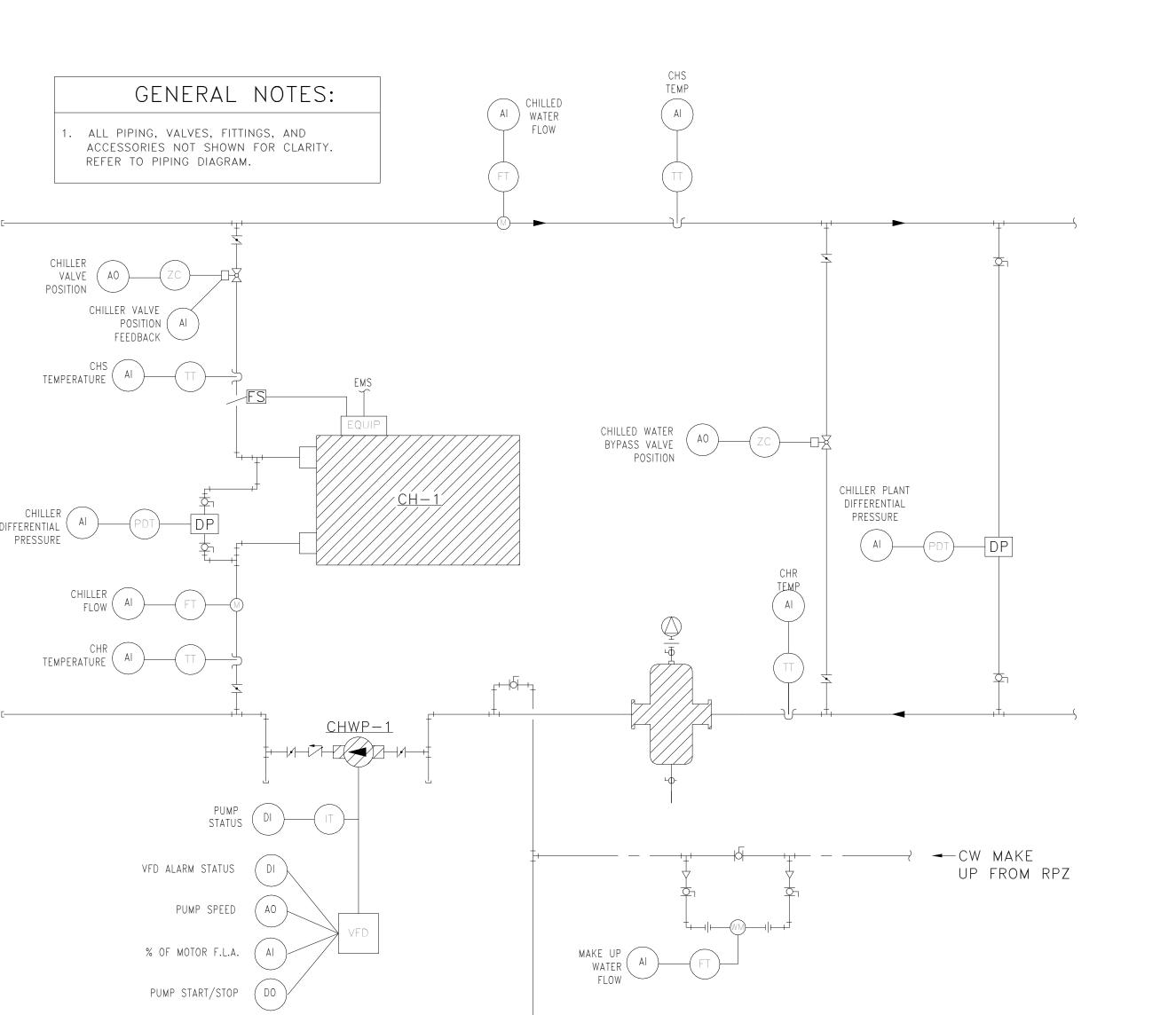
Al % OF MOTOR F.L.A.

( DO ) FAN START/STOP

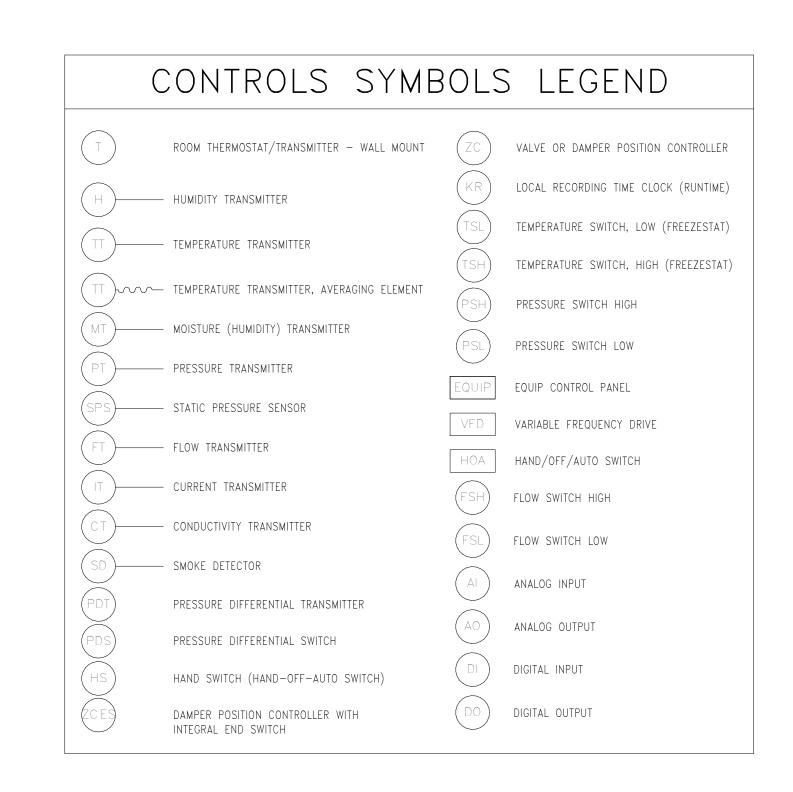
ISSUE DATE:

SHEET TITLE: MECHANICAL CONTROLS

SHEET NUMBER: M501



# CHILLED WATER CONTROL DIAGRAM NOT TO SCALE:



#### SEQUENCE OF OPERATION

CHILLED WATER SYSTEM SEQUENCE OF OPERATION

ATC CONTRACTOR SHALL ESTABLISH TRENDS FOR ALL POINTS ON CONTROL DRAWINGS. TRENDS SHALL INDICATE SETPOINTS AND SHALL BE ON 15 MINUTE INTERVALS UNLESS OTHERWISE INDICATED. ALL TRENDS SHALL BE PERMANENTLY ARCHIVED ON THE BAS SERVER.

ATC CONTRACTOR SHALL TUNE ALL LOOPS FOR SMOOTH AND STABLE OPERATION.

CHILLED WATER SYSTEM GRAPHICS SHALL INCLUDE THE FOLLOWING

- SUMMARY TABLE OF ALL AVAILABLE CHILLED WATER VALVE POSITIONS WITH HIGHLIGHT OF MOST OPEN VALVE POSITION.
- CHILLED PLANT LOAD (TONS)
- CHILLER SUPPLY TEMPERATURE SHALL BE RESET BASED ON OUTSIDE AIR DEWPOINT TEMPERATURE. WHEN THE CHILLER HAS TURNED DOWN TO MINIMUM DP/FLOW SETPOINT, THE CHILLER SUPPLY TEMPERATURE SHALL BE EQUAL TO THE MINIMUM OF 42 DEGREE F (ADJ) WHEN THE OUTSIDE AIR DEW POINT TEMPERATURE IS 48 DEGREE F (ADJ) OR HIGHER. THE CHILLER SUPPLY TEMPERATURE SHALL BE EQUAL TO A MAXIMUM OF 45 DEGREE F (ADJ) WHEN THE OUTSIDE AIR DEW POINT TEMPERATURE IS 40 DEGREE F (ADJ) OR LOWER. THE CHILLED WATER SUPPLY TEMPERATURE SHALL BE LINEARLY RESET BETWEEN MINIMUM AND MAXIMUM WHEN THE

CHILLER FLOW SETPOINTS SHALL BE LIMITED TO THE

WHEN THE CHILLER IS ENABLED THE FOLLOWING SEQUENCE WILL

WATER FLOW SETPOINT 2. OPEN CONDENSER VALVE AND CONTROL TO CONDENSER WATER WHEN THE CHILLER IS DISABLED THE FOLLOWING SEQUENCE WILL

1. CHILLER SHALL DISABLE 2. CONDENSER WATER VALVE CLOSES UPON SIGNAL FROM CHILLER NO LONGER REQUESTING FLOW

3. EVAPORATOR WATER VALVE CLOSES UPON SIGNAL FROM CHILLER NO LONGER REQUESTING FLOW

CHILLER ENABLE OR DISABLE SEQUENCE SHALL NOT START FOR 20 MINUTES (ADJ) AFTER THE CHILLER IS ENABLED OR DISABLED.

CHILLED WATER PUMP THE CHILLED WATER PUMP SPEED SHALL MODULATE TO MAINTAIN SYSTEM DIFFERENTIAL PRESSURE, BETWEEN MINIMUM OF 15 PSI (ADJ) TO MAXIMUM OF 30 PSI (ADJ). PRESSURE SETPOINT SHALL BE AUTOMATICALLY RESET IN 0.1" INCREMENTS (ADJ) EVERY 1 MINUTE (ADJ) BASED ON THE MAXIMUM CHILLED WATER VALVE POSITION. IF THE MOST OPEN VALVE IS OPEN MORE THAN 95% THE PRESSURE SETPOINT SHALL INCREASE. IF THE MOST OPEN VAVLE IS LESS THAN 80% THE PRESSURE SETPOINT SHALL BE DECREASED.

CHILLED WATER PLANT BYPASS VALVE THE CHILLED WATER SYSTEM BYPASS VALVE SHALL MODULATE TO MAINTAIN THE MINIMUM FLOW RATE OF THE CHILLER.

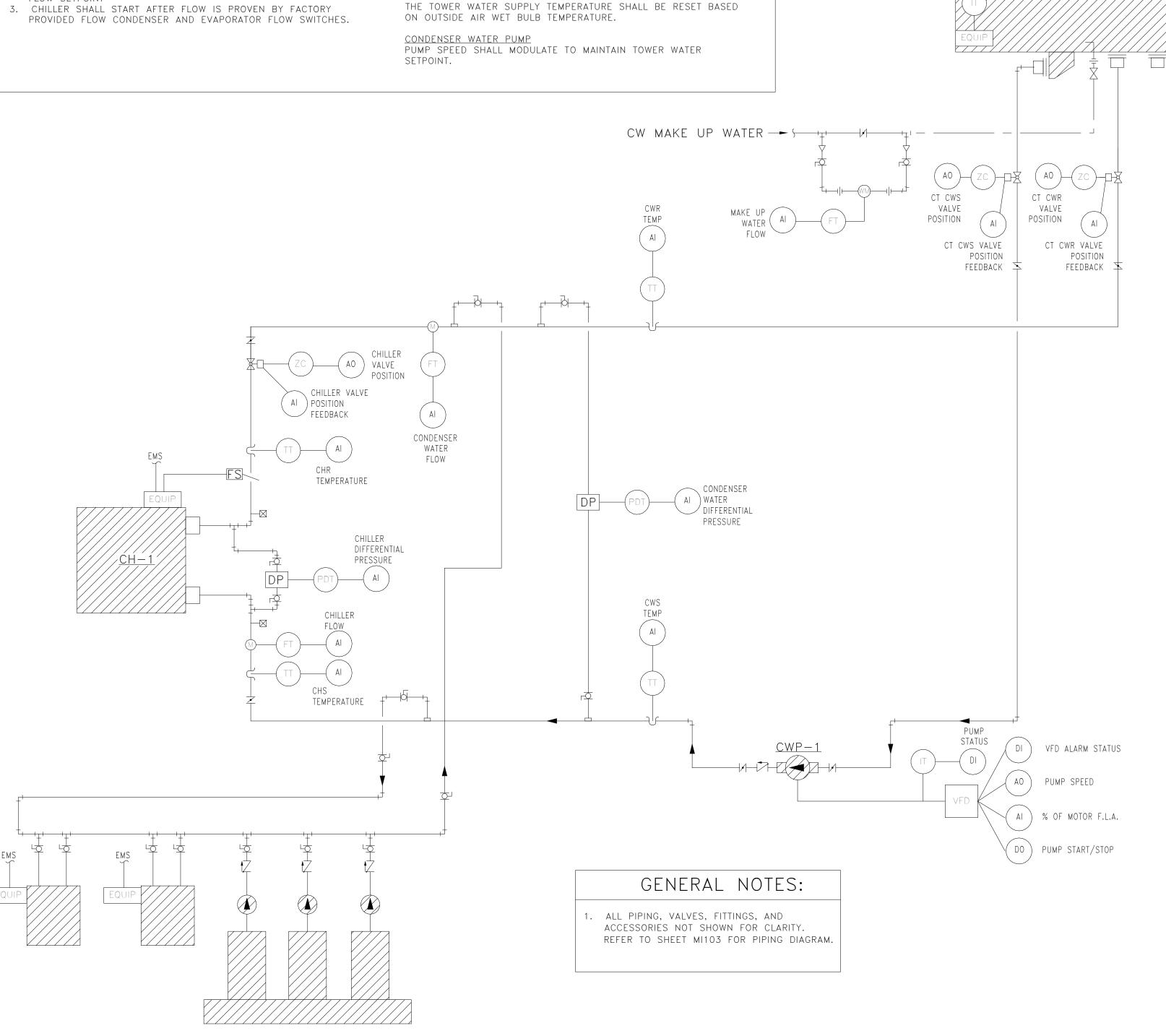
THE COOLING TOWER SHALL BE SEQUENCED TO MAINTAIN CONDENSER WATER SUPPLY TEMPERATURE AT SETPOINT.

1. OPEN CONDENSER WATER SUPPLY VALVE FULLY

WHEN THE COOLING TOWER IS ENABLED THE FOLLOWING SEQUENCE WILL OCCUR:

2. OPEN CONDENSER WATER RETURN VALVE FULLY 3. WHEN THE TOWER WATER SUPPLY TEMPERATURE INCREASES MORE THAN 2 DEGREES (ADJ) ABOVE THE TOWER WATER SUPPLY TEMPERATURE THE TOWER FAN SHALL BE ENABLED. THE SPEED OF THE COOLING TOWER FAN SHALL BE MODULATED AS REQUIRED TO MAINTAIN THE TOWER WATER SETPOINT. 4. WHEN THE TOWER WATER SUPPLY TEMPERATURE IS MORE THAN 2 DEGREES (ADJ) BELOW THE TOWER WATER SUPPLY

TEMPERATURE THE COOLING TOWER FAN SHALL BE DISABLED. CHANGES IN COOLING TOWER SEQUENCING SHALL NOT OCCUR MORE OFTEN THAN ONCE EVERY 30 MINUTES.



No. 3523

ITEMS COMPILED FROM OTHER SYSTEMS OR CALCULATED AS

 CHILLED WATER DELTA T CONDENSER WATER DELTA T

OUTSIDE AIR DEW POINT TEMPERATURE IS BETWEEN 40 DEGREE F (ADJ) AND 48 DEGREE F (ADJ). FACTORY CHILLER CONTROLS SHALL

MANUFACTURER'S RECOMMENDED FLOW RATE OF CHANGE.

CONTROL THE CHILLER TO MAINTAIN SETPOINT.

OCCUR: 1. OPEN EVAPORATED VALVE AND CONTROL TO EVAPORATOR

CHEMICAL -TREATMENT CONTROL PANEL (TYP.)

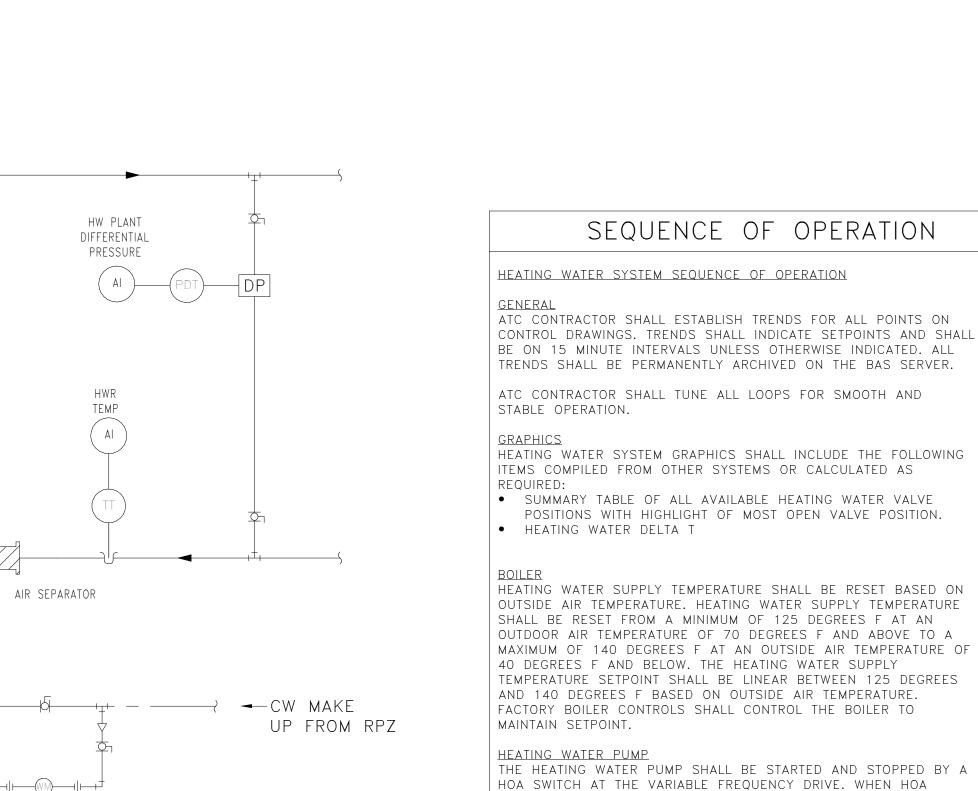
> CHEMICAL TREATMENT <u>SYSTEM</u>

> > 2 TOWER WATER CONTROL DIAGRAM NOT TO SCALE:

ISSUE DATE:

MECHANICAL CONTROLS

SHEET NUMBER: M502



# HEATING WATER CONTROL DIAGRAM

EXPANSION TANK

AI HEATING WATER

FLOW

BOILER VALVE

POSITION ( AI

FEEDBACK \

GENERAL NOTES:

ALL PIPING, VALVES, FITTINGS, AND

REFER TO PIPING DIAGRAM.

ACCESSORIES NOT SHOWN FOR CLARITY.

HEATING WATER

BYPASS VALVE

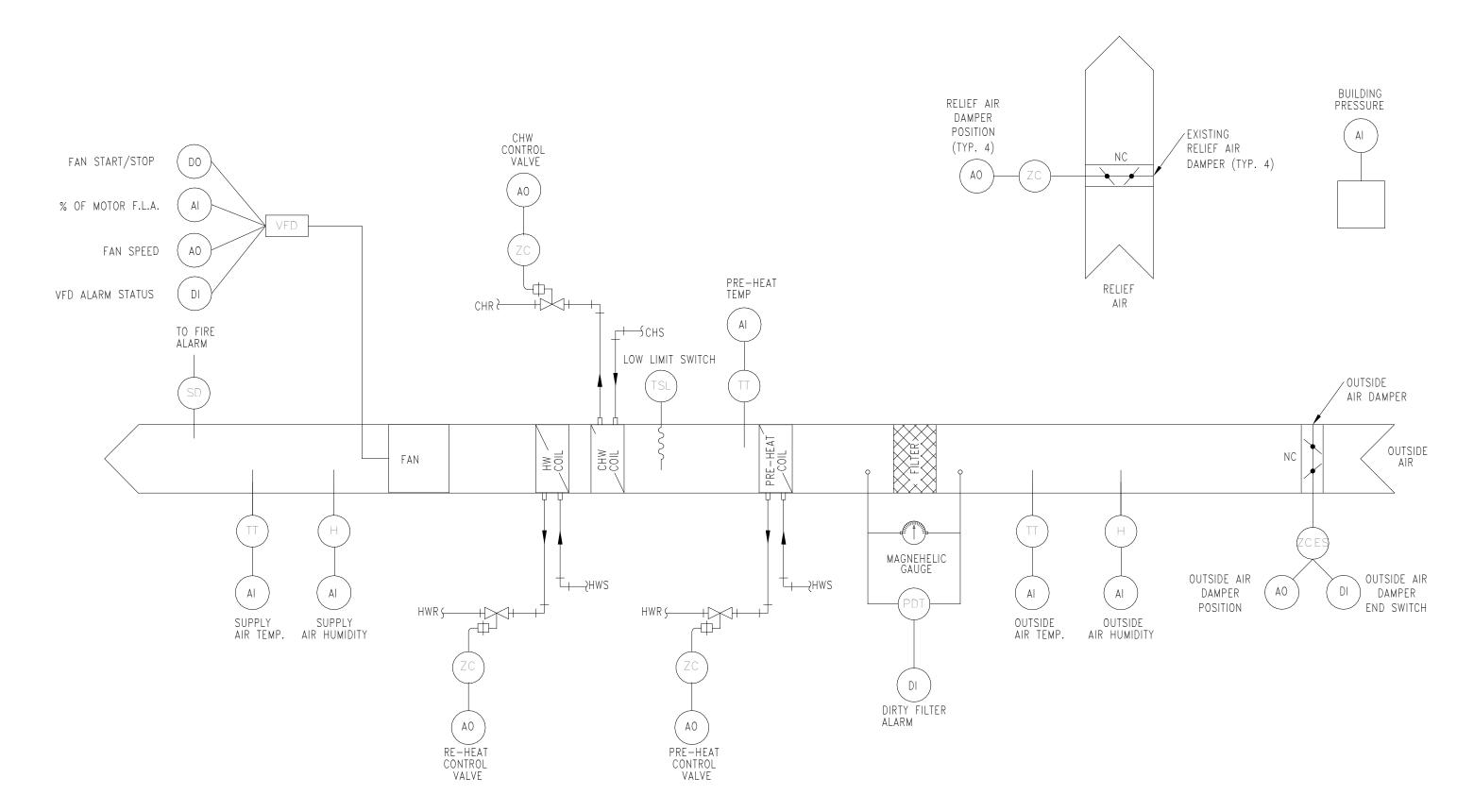
POSITION

VFD ALARM STATUS ( DI

PUMP SPEED

PUMP START/STOP ( DO

% OF MOTOR F.L.A.



3 AHU-1,2,3,4 CONTROL DIAGRAM NOT TO SCALE:

# SEQUENCE OF OPERATION

## **SUPPLY FANS:**

WATER DIFFERENTIAL PRESSURE AT SETPOINT.

WHEN VFDS ARE IN THE "MANUAL" MODE, SUPPLY FANS ARE STARTED AND STOPPED AT VFD CONTROL PANELS AND FAN SPEED IS MANUALLY CONTROLLED AT VFD CONTROL PANELS. WHEN VFDS ARE IN THE "AUTOMATIC" MODE, SUPPLY FANS ARE STARTED AND STOPPED BY DDC PANEL DIGITAL OUTPUT BASED

UPON WEEKLY SCHEDULE OR OPERATOR COMMAND. SUPPLY FANS WILL BE AUTOMATICALLY SHUTDOWN BY LOW LIMIT SWITCH, FIRE ALARM PANEL, AND OUTSIDE AIR DAMPER END SWITCH IN THE EVENT OF AN UNSAFE CONDITION.

FILTER PRESSURE DROPS WILL BE MONITORED BY DIFFERENTIAL PRESSURE SWITCHES AND DDC PANEL DIGITAL INPUTS. WHEN THE FILTER PRESSURE DROP INCREASES ABOVE THE DIFFERENTIAL PRESSURE SWITCH SETTING (ADJUSTABLE AT THE DP SWITCH), DDC PANEL WILL GENERATE A "DIRTY FILTER" ALARM.

THE OUTSIDE AIR DAMPER SHALL BE NORMALLY CLOSED. WHEN THE

CONTROL VALVE WILL BE CLOSED.

IN THE CASE OF A LOW LIMIT ALARM, THE PRE-HEAT WATER VALVE SHALL BE FULLY OPENED.

#### CHILLED WATER CONTROL VALVE:

DISCHARGE AIR TEMPERATURE AT SETPOINT.

CONTROL VALVE WILL BE CLOSED. WHEN THE SUPPLY FAN IS IN OPERATION, CHILLED WATER CONTROL VALVE WILL BE MODULATED AS REQUIRED TO MAINTAIN THE

IN THE CASE OF A LOW LIMIT ALARM, THE CHILLED WATER VALVE SHALL BE FULLY OPENED.

REHEAT WATER CONTROL VALVE WILL BE MODULATED BY DDC

WHEN THE SUPPLY FAN IS IN OPERATION, REHEAT WATER CONTROL VALVE WILL BE MODULATED AS REQUIRED TO MAINTAIN THE DISCHARGE AIR TEMPERATURE AT SETPOINT.

IN THE CASE OF A LOW LIMIT ALARM, THE REHEAT WATER VALVE SHALL BE FULLY OPENED.

#### DISCHARGE AIR TEMPERATURE SETPOINT

OUTSIDE AIR TEMPERATURE.

THE RELIEF AIR DAMPERS SHALL MODULATE IN UNISON TO MAINTAIN BUILDING PRESSURE AT POSITIVE 0.02 IN. W.G.

SWITCH IS IN THE AUTO POSITION, THE PUMP SHALL BE STARTED AND STOPPED BY THE DDC PANEL. THE SPEED OF THE PUMP

SHALL BE MODULATED AS REQUIRED TO MAINTAIN THE HEATING

## <u>AHU−1, 2, 3 AND 4 SEQUENCE OF OPERATION</u>

#### **FILTERS:**

OPEN.

#### OUTSIDE AIR DAMPER: OUTSIDE AIR DAMPER WILL BE CONTROLLED BY DDC PANEL ANALOG

AHU FANS ARE ENABLED THE OUTSIDE AIR DAMPER SHALL FULLY

#### PRE-HEAT COIL CONTROL VALVE:

PRE-HEAT COIL CONTROL VALVE WILL BE MODULATED BY DDC PANEL ANALOG OUTPUT. WHEN THE SUPPLY FAN IS NOT IN OPERATION, PRE-HEAT COIL

#### WHEN THE SUPPLY FAN IS IN OPERATION, PRE-HEAT WATER CONTROL VALVE WILL BE MODULATED AS REQUIRED TO MAINTAIN THE PRE-HEAT TEMPERATURE AT SETPOINT, 55 DEG. F (ADJUSTABLE).

#### CHILLED WATER CONTROL VALVE WILL BE MODULATED BY DDC PANEL ANALOG OUTPUT.

WHEN THE SUPPLY FAN IS NOT IN OPERATION, CHILLED WATER

#### REHEAT WATER CONTROL VALVE:

PANEL ANALOG OUTPUT. WHEN THE SUPPLY FAN IS NOT IN OPERATION, REHEAT WATER CONTROL VALVE WILL BE CLOSED.

THE DISCHARGE AIR TEMPERATURE SETPOINT SHALL BE RESET WITH

REFRIGERANT MONIT CONTROL PANEL FAN STATUS EXHAUST AIR INTAKE AIR DAMPER DAMPER POSITION POSITION EXHAUST AIR INTAKE AIR DAMPER DAMPER END SWITCH END SWITCH EXHAUST TEMPERATURE

SEQUENCE OF OPERATION

REFRIGERANT MONITOR AND EXHAUST FAN SEQUENCE OF OPERATION

CONTROL CONTRACTOR SHALL PROVIDE A REFRIGERANT MONITOR AND ALARM EQUAL TO BACHARACH SZ COMPATIBLE WITH CH-1. ALARM SHALL MONITOR AND ALARM THROUGH THE BAS WHEN

REFRIGERANT EXHAUST FAN SHALL BE NORMALLY BE DISABLED.

UPON A MECHANICAL ROOM SPACE TEMPERATURE ABOVE 85

INTAKE DAMPER THE FAN SHALL OPERATE AT FULL SPEED.

EXHAUST AIR DAMPER AND INTAKE AIR DAMPER WILL BE

AUTOMATICALLY CLOSED UPON EXHAUST FAN SHUTDOWN.

DEGREES F. AND PROVEN END SWITCHES A THE FAN AND THE

AUTOMATICALLY OPENED PRIOR TO EXHAUST FAN START-UP AND

UPON AN ALARM FROM THE REFRIGERANT MONITORING SYSTEM AND

PROVEN END SWITCHES AT THE FAN AND THE INTAKE DAMPER THE

REFRIGERANT MONITOR AND ALARM:

REFRIGERANT LEAK IS DETECTED.

FAN SHALL OPERATE AT FULL SPEED.

REFRIGERANT EXHAUST FAN AND INTAKE DAMPER:

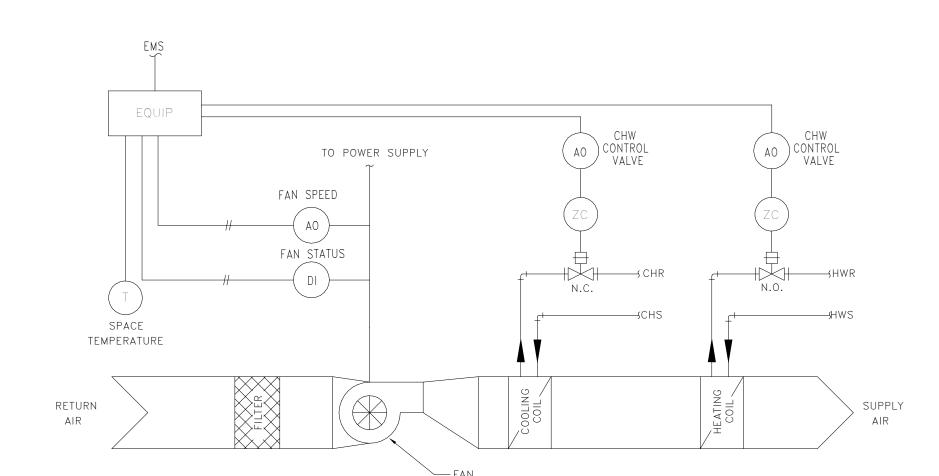
2 MECHANICAL ROOM VENTILATION CONTROL DIAGRAM NOT TO SCALE:

#### SEQUENCE OF OPERATION

#### FAN COIL UNIT SEQUENCE OF OPERATION

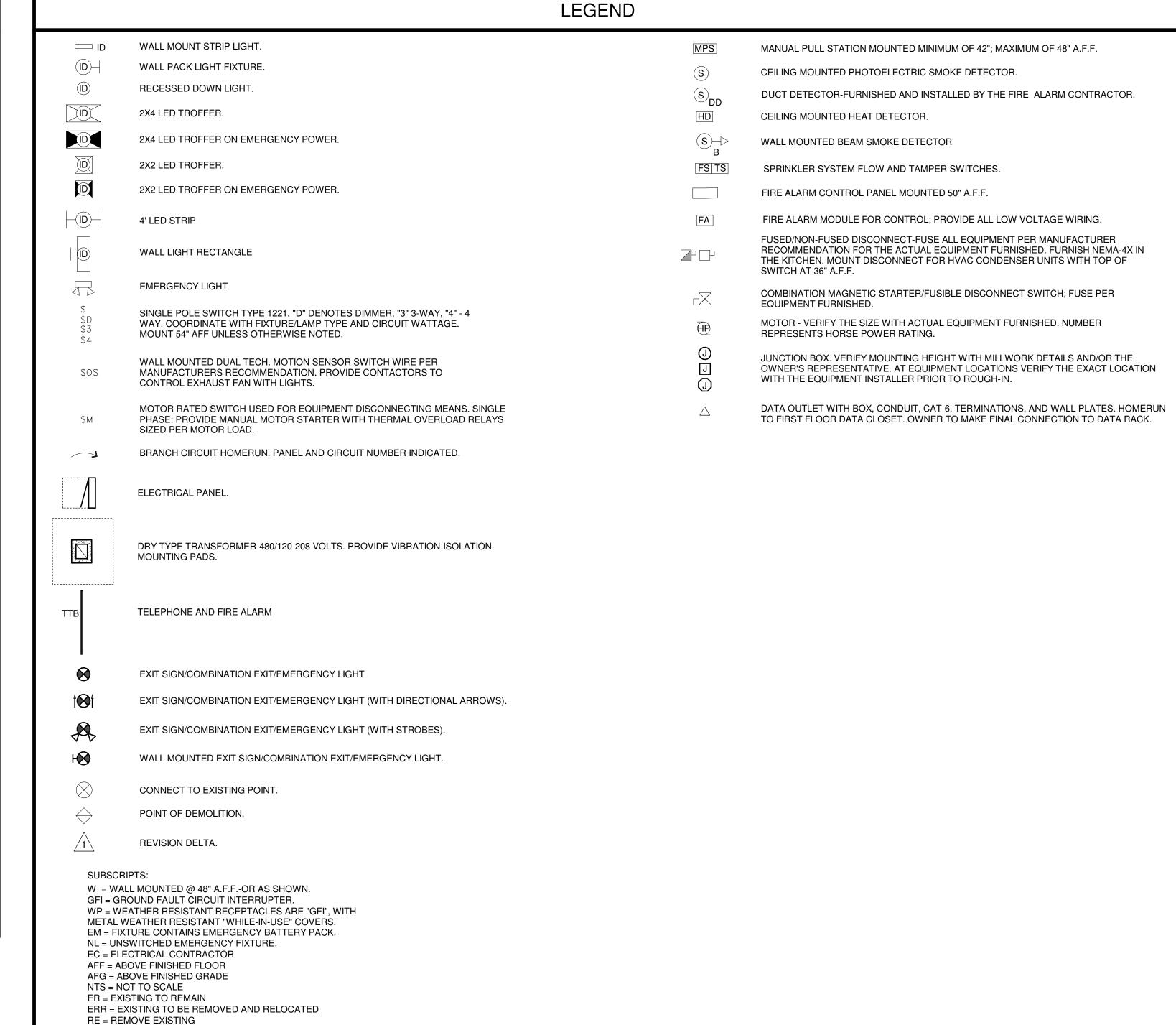
DEADBAND.

THE FAN MOTOR SHALL BE STARTED AND STOPPED BASED ON WEEKLY SCHEDULE AND OPERATOR COMMAND. AS SPACE TEMPERATURE INCREASES ABOVE SETPOINT, THE HEATING VALVE SHALL MODULATE CLOSED AND THE COOLING VALVE SHALL MODULATE OPEN. AS SPACE TEMPERATURE DECREASES BELOW SETPOINT, THE COOLING VALVE SHALL MODULATE CLOSED AND THE HEATING VALVE SHALL MODULATE OPEN. SPACE TEMPERATURE SETPOINTS SHALL BE ADJUSTABLE BY THERMOSTAT COMMAND BETWEEN 68 DEG. F AND 72 DEG. F (ADJ) WITH A 2 DEG. F





#### ELECTRICAL GENERAL NOTES CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL INSTALLATION WITH THE WORK OF OTHER TRADES. FIELD MODIFICATIONS NEEDED DUE TO OBSTRUCTIONS OR INTERFERENCES SHALL BE PROVIDED AT NO ADDITIONAL COST. ALL WORK SHALL BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER WITHIN STANDARD OF CARE FOR PROFESSION. ALL LABOR, MATERIAL, TOOLS, PERMITS, INSPECTIONS, TESTING, CERTIFICATION, ETC. REQUIRED FOR A COMPLETE AND SATISFACTORY INSTALLATION TO DESIGN INTENT SHALL BE FURNISHED BY CONTRACTOR. PROVIDE, AT NO ADDITIONAL COST, INCLUDING INCIDENTAL ITEMS NOT SHOWN WHEN REQUIRED FOR TYPICAL COMPLETION OF WORK. DRAWINGS NOT BEARING THE STAMP OR SEAL AND SIGNATURE OF A REGISTERED PROFESSIONAL ENGINEER SHALL NOT BE USED FOR BIDDING OR CONSTRUCTION PURPOSES UNLESS EXPRESSLY APPROVED IN WRITING BY THE ARCHITECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL DRAWINGS AND SPECIFICATIONS BEING USED FOR BIDDING AND CONSTRUCTION PURPOSES ARE OF THE LATEST REVISION AVAILABLE AND ALL ADDENDUM DOCUMENTS HAVE BEEN INCORPORATED EITHER BY REVISION RELEASE OF DRAWINGS/SPECIFICATIONS OR ATTACHMENT OF SKETCHES OR OTHER ADDENDUM INFORMATION. THE CONTRACTOR SHALL FURNISH AND INSTALL NEW PRODUCTS OF ESTABLISHED AND REPUTABLE MANUFACTURERS. NO EQUIPMENT SUBSTITUTIONS SHALL BE MADE THAT WOULD LEAVE INADEQUATE OPERATING OR SERVICE SPACE. EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES AND IN AN ARRANGEMENT THAT WILL GIVE THE GREATEST PRACTICAL EASE OF OPERATION AND SERVICE TO THE OWNER. ALL EQUIPMENT WHICH IS INDICATED TO BE FURNISHED AND/OR INSTALLED BY OTHERS OR BY OWNER IS INCLUDED FOR REFERENCE ONLY UNLESS NOTED OTHERWISE. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND VERIFYING INSTALLATION REQUIREMENTS OF THIS EQUIPMENT WITH THE APPLICABLE SUPPLIER OR THE OWNER. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF ALL APPLICABLE CODES AND REGULATIONS INCLUDING BUT NOT LIMITED TO NATIONAL, CITY, STATE, LOCAL ORDINANCES, AND UTILITY COMPANY REGULATIONS. ALL PLUMBING MATERIALS, INSTALLATION PROCEDURES, AND SYSTEM LAYOUTS SHALL BE APPROVED BY ALL APPLICABLE AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR NECESSARY TO COMPLY WITH THESE RULES. REGULATIONS. AND ORDINANCES. THESE CODES REPRESENT THE MINIMUM ACCEPTABLE REQUIREMENTS, THEREFORE, WHERE DRAWINGS AND/OR SPECIFICATIONS INDICATE MATERIALS OR CONSTRUCTION MORE STRINGENT THAT CODE REQUIREMENTS, THE DRAWINGS AND/OR SPECIFICATIONS SHALL GOVERN. IF COMPLIANCE WITH STANDARDS, CODES, REGULATIONS AND CONTRACT DOCUMENTS ESTABLISH DIFFERENT OR CONFLICTING REQUIREMENTS FOR MINIMUM QUANTITIES OR QUALITY LEVELS, REFER CONFLICTING REQUIREMENTS TO ENGINEER FOR A DECISION BEFORE PROCEEDING. WHERE CONTRACT DOCUMENTS NAME A SINGLE MANUFACTURER AND PRODUCT, PROVIDE THE NAMED PRODUCT THAT COMPLIES WITH REQUIREMENTS. COMPARABLE PRODUCTS OR SUBSTITUTIONS FOR CONTRACTOR'S CONVENIENCE WILL BE CONSIDERED. THE PROJECT. CLOSEOUT SUBMITTALS SHALL INCLUDE, BUT NOT LIMITED TO, OPERATION AND MAINTENANCE MANUALS AND RECORD DRAWINGS. THE CONTRACTOR SHALL VISIT THE SITE OF THE BUILDING BEFORE SUBMITTING A PROPOSAL ON THIS WORK AND SHALL THOROUGHLY FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS AND OPERATIONS. FAILURE ON HIS PART TO DO THIS WILL NOT BE CAUSE OF EXTRAS AFTER THE CONTRACT IS SIGNED, BY REASON OF UNFORESEEN CONDITIONS. NO PERSON SHALL PERFORM ELECTRICAL WORK ON THE CONTRACT WITHOUT POSSESSING A MASTER'S OR JOURNEYMAN'S LICENSE FROM THE STATE ELECTRICAL EXAMINERS BOARD. ALL ELECTRICAL WORK AND APPRENTICE ELECTRICIANS SHALL BE SUPERVISED BY A MASTER JOURNEYMAN ELECTRICIAN ON A ONE TO ONE RATIO. 12. PREPARE AND SUBMIT SUBMITTALS TO ENGINEER. ALL AREAS USED AS RETURN AIR PLENUMS SHALL BE CONSTRUCTED WITH FIRE RESISTANT MATERIALS AND SHALL ONLY CONTAIN MATERIALS WHICH HAVE SMOKE DEVELOPED RATINGS NOT GREATER THAN 50 AND FLAME SPREAD RATINGS NOT GREATER THAN 25. ALL ELECTRICAL EQUIPMENT, SUCH AS SWITCHES, CIRCUIT BREAKERS, ETC. SHALL BE TESTED BY OPERATING THE DEVICE TO VERIFY THAT THE MECHANICAL PORTIONS OF THE DEVICE ARE FUNCTIONING. THE CONTRACT SHALL ASSIST ALL OTHER TRADES IN PERFORMING ROTATIONAL TESTS ON ALL MOTORS PROVIDED UNDER THIS CONTRACT. 16. ALL EXPOSED CONDUIT SHALL BE GALVANIZED RIGID STEEL, SIZED AS SCHEDULED. 17. WIRE SIZE PER CODE: WIRE SIZE 277V WIRE SIZE 120V A. #12 LESS THAN 75 FEET LESS THAN 150 FEET B. #10 BETWEEN 75-150 FEET BETWEEN 150-300 FEET BETWEEN 300-450 FEET C. #8 BETWEEN 150-250 FEET BETWEEN 450-700 FEET D. #6 BETWEEN 250-375 FEET



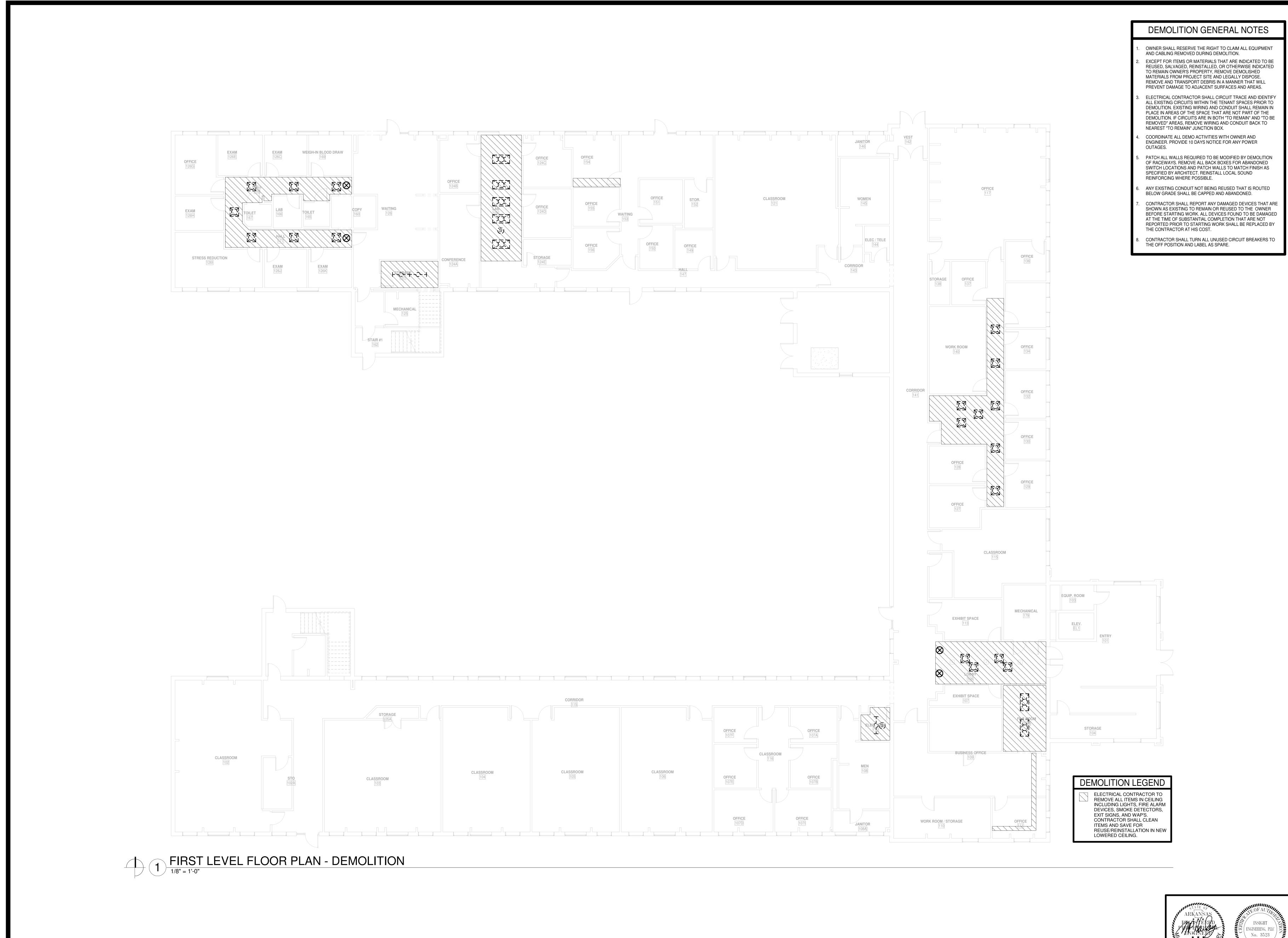


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**REVISIONS:** 

ELECTRICAL GENERAL NOTES AN





FIRST LEVEL FLOOR PLAN

### DEMOLITION GENERAL NOTES

- OWNER SHALL RESERVE THE RIGHT TO CLAIM ALL EQUIPMENT AND CABLING REMOVED DURING DEMOLITION.
- EXCEPT FOR ITEMS OR MATERIALS THAT ARE INDICATED TO BE REUSED, SALVAGED, REINSTALLED, OR OTHERWISE INDICATED TO REMAIN OWNER'S PROPERTY, REMOVE DEMOLISHED MATERIALS FROM PROJECT SITE AND LEGALLY DISPOSE. REMOVE AND TRANSPORT DEBRIS IN A MANNER THAT WILL PREVENT DAMAGE TO ADJACENT SURFACES AND AREAS.
- ELECTRICAL CONTRACTOR SHALL CIRCUIT TRACE AND IDENTIFY ALL EXISTING CIRCUITS WITHIN THE TENANT SPACES PRIOR TO DEMOLITION. EXISTING WIRING AND CONDUIT SHALL REMAIN IN PLACE IN AREAS OF THE SPACE THAT ARE NOT PART OF THE DEMOLITION. IF CIRCUITS ARE IN BOTH "TO REMAIN" AND "TO BE REMOVED" AREAS, REMOVE WIRING AND CONDUIT BACK TO NEAREST "TO REMAIN" JUNCTION BOX.
- COORDINATE ALL DEMO ACTIVITIES WITH OWNER AND ENGINEER. PROVIDE 10 DAYS NOTICE FOR ANY POWER
- PATCH ALL WALLS REQUIRED TO BE MODIFIED BY DEMOLITION OF RACEWAYS. REMOVE ALL BACK BOXES FOR ABANDONED SWITCH LOCATIONS AND PATCH WALLS TO MATCH FINISH AS SPECIFIED BY ARCHITECT. REINSTALL LOCAL SOUND REINFORCING WHERE POSSIBLE.
- ANY EXISTING CONDUIT NOT BEING REUSED THAT IS ROUTED BELOW GRADE SHALL BE CAPPED AND ABANDONED.
- CONTRACTOR SHALL REPORT ANY DAMAGED DEVICES THAT ARE SHOWN AS EXISTING TO REMAIN OR REUSED TO THE OWNER BEFORE STARTING WORK. ALL DEVICES FOUND TO BE DAMAGED AT THE TIME OF SUBSTANTIAL COMPLETION THAT ARE NOT REPORTED PRIOR TO STARTING WORK SHALL BE REPLACED BY THE CONTRACTOR AT HIS COST.
- CONTRACTOR SHALL TURN ALL UNUSED CIRCUIT BREAKERS TO THE OFF POSITION AND LABEL AS SPARE.

#### **KEYED NOTES**

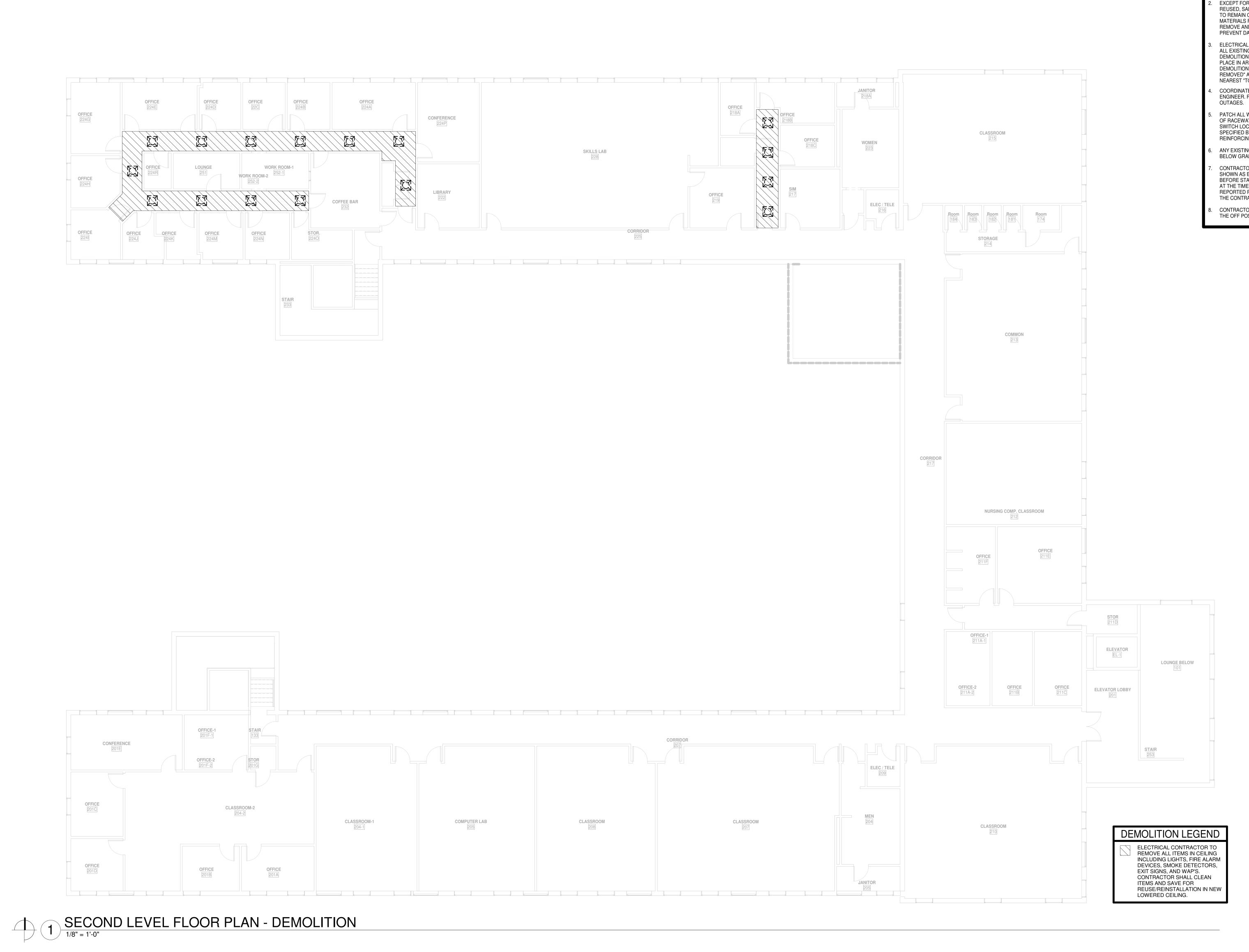
- DEMOLISH EXISTING CHILLER, PUMPS AND ALL ASSOCIATED ELECTRICAL EQUIPMENT, DEVICES, FEEDER, CONDUIT AND ELECTRICAL CONNECTIONS. TURN ALL DISTRIBUTION PANEL AND PANELBOARD BREAKERS TO THE OFF POSITION. OWNER SHALL RESERVE THE RIGHT OF REFUSAL FOR ALL EQUIPMENT. COORDINATE WITH OWNER PRIOR TO DEMOLITON. RE: MECHANICAL PLANS.
- DEMOLISH EXISTING PUMPS AND ALL ASSOCIATED ELECTRICAL EQUIPMENT, DEVICES, FEEDER, CONDUIT AND ELECTRICAL CONNECTIONS. TURN ALL DISTRIBUTION PANEL AND PANELBOARD BREAKERS TO THE OFF POSITION. OWNER SHALL RESERVE THE RIGHT OF REFUSAL FOR ALL EQUIPMENT. COORDINATE WITH OWNER PRIOR TO DEMOLITON. RE: MECHANICAL PLANS.
- DEMOLISH EXISTING BOILER WITH ALL ASSOCIATED ELECTRICAL EQUIPMENT AND DEVICES. EXISTING BOILER FEEDER AND CONDUIT SHALL REMAIN FOR REUSE. TURN ALL PANELBOARD BREAKERS TO THE OFF POSITION. OWNER SHALL RESERVE THE RIGHT OF REFUSAL FOR ALL EQUIPMENT. COORDINATE WITH OWNER PRIOR TO DEMOLITION. RE: MECHANICAL PLANS.
- DEMOLISH EXISTING COOLING TOWER WITH ALL ASSOCIATED ELECTRICAL EQUIPMENT, HEAT TAPE, AND DEVICES. TURN ALL PANELBOARD BREAKERS TO THE OFF POSITION. OWNER SHALL RESERVE THE RIGHT OF REFUSAL FOR ALL EQUIPMENT. COORDINATE WITH OWNER PRIOR TO DEMOLITION. RE: MECHANICAL PLANS.
- DEMOLISH EXISTING BASIN HEATER WITH ALL ASSOCIATED ELECTRICAL EQUIPMENT AND DEVICES. TURN ALL PANELBOARD BREAKERS TO THE OFF POSITION. OWNER SHALL RESERVE THE RIGHT OF REFUSAL FOR ALL EQUIPMENT. COORDINATE WITH OWNER PRIOR TO DEMOLITION. RE: MECHANICAL PLANS.
- DEMOLISH EXISTING FAN COIL UNIT. EXISTING FAN COIL UNIT FEEDER AND CONDUIT SHALL REMAIN FOR REUSE. TURN ALL PANELBOARD BREAKERS TO THE OFF POSITION. OWNER SHALL RESERVE THE RIGHT OF REFUSAL FOR ALL EQUIPMENT. COORDINATE WIHT OWNER PRIOR TO DEMOLITION. RE: MECHANICAL PLANS.
- DEMOLISH EXISTING AIR HANDLING UNIT WITH ALL ASSOCIATED ELECTRICAL EQUIPMENT AND DEVICES. EXISTING AIR HANDLING UNIT FEEDER AND CONDUIT SHALL REMAIN FOR REUSE. TURN ALL PANELBOARD BREAKERS TO THE OFF POSITION. OWNER SHALL RESERVE THE RIGHT OF REFUSAL FOR ALL EQUIPMENT. COORDINATE WIHT OWNER PRIOR TO DEMOLITION. RE: MECHANICAL PLANS.

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**REVISIONS:** 

FIRST LEVEL FLOOR PLAN -MECHANICAL POWER DEMOLITION

E102



DEMOLITION GENERAL NOTES

OWNER SHALL RESERVE THE RIGHT TO CLAIM ALL EQUIPMENT AND CABLING REMOVED DURING DEMOLITION.

2. EXCEPT FOR ITEMS OR MATERIALS THAT ARE INDICATED TO BE REUSED, SALVAGED, REINSTALLED, OR OTHERWISE INDICATED TO REMAIN OWNER'S PROPERTY, REMOVE DEMOLISHED MATERIALS FROM PROJECT SITE AND LEGALLY DISPOSE. REMOVE AND TRANSPORT DEBRIS IN A MANNER THAT WILL PREVENT DAMAGE TO ADJACENT SURFACES AND AREAS.

ELECTRICAL CONTRACTOR SHALL CIRCUIT TRACE AND IDENTIFY ALL EXISTING CIRCUITS WITHIN THE SPACES PRIOR TO DEMOLITION. EXISTING WIRING AND CONDUIT SHALL REMAIN IN PLACE IN AREAS OF THE SPACE THAT ARE NOT PART OF THE DEMOLITION. IF CIRCUITS ARE IN BOTH "TO REMAIN" AND "TO BE REMOVED" AREAS, REMOVE WIRING AND CONDUIT BACK TO

NEAREST "TO REMAIN" JUNCTION BOX.

COORDINATE ALL DEMO ACTIVITIES WITH OWNER AND ENGINEER. PROVIDE 10 DAYS NOTICE FOR ANY POWER

5. PATCH ALL WALLS REQUIRED TO BE MODIFIED BY DEMOLITION OF RACEWAYS. REMOVE ALL BACK BOXES FOR ABANDONED SWITCH LOCATIONS AND PATCH WALLS TO MATCH FINISH AS SPECIFIED BY ARCHITECT. REINSTALL LOCAL SOUND REINFORCING WHERE POSSIBLE.

ANY EXISTING CONDUIT NOT BEING REUSED THAT IS ROUTED BELOW GRADE SHALL BE CAPPED AND ABANDONED.

7. CONTRACTOR SHALL REPORT ANY DAMAGED DEVICES THAT ARE SHOWN AS EXISTING TO REMAIN OR REUSED TO THE OWNER BEFORE STARTING WORK. ALL DEVICES FOUND TO BE DAMAGED AT THE TIME OF SUBSTANTIAL COMPLETION THAT ARE NOT REPORTED PRIOR TO STARTING WORK SHALL BE REPLACED BY THE CONTRACTOR AT HIS COST.

8. CONTRACTOR SHALL TURN ALL UNUSED CIRCUIT BREAKERS TO THE OFF POSITION AND LABEL AS SPARE.

HVAC SYSTEM UPGRADES FOR DEAN HA

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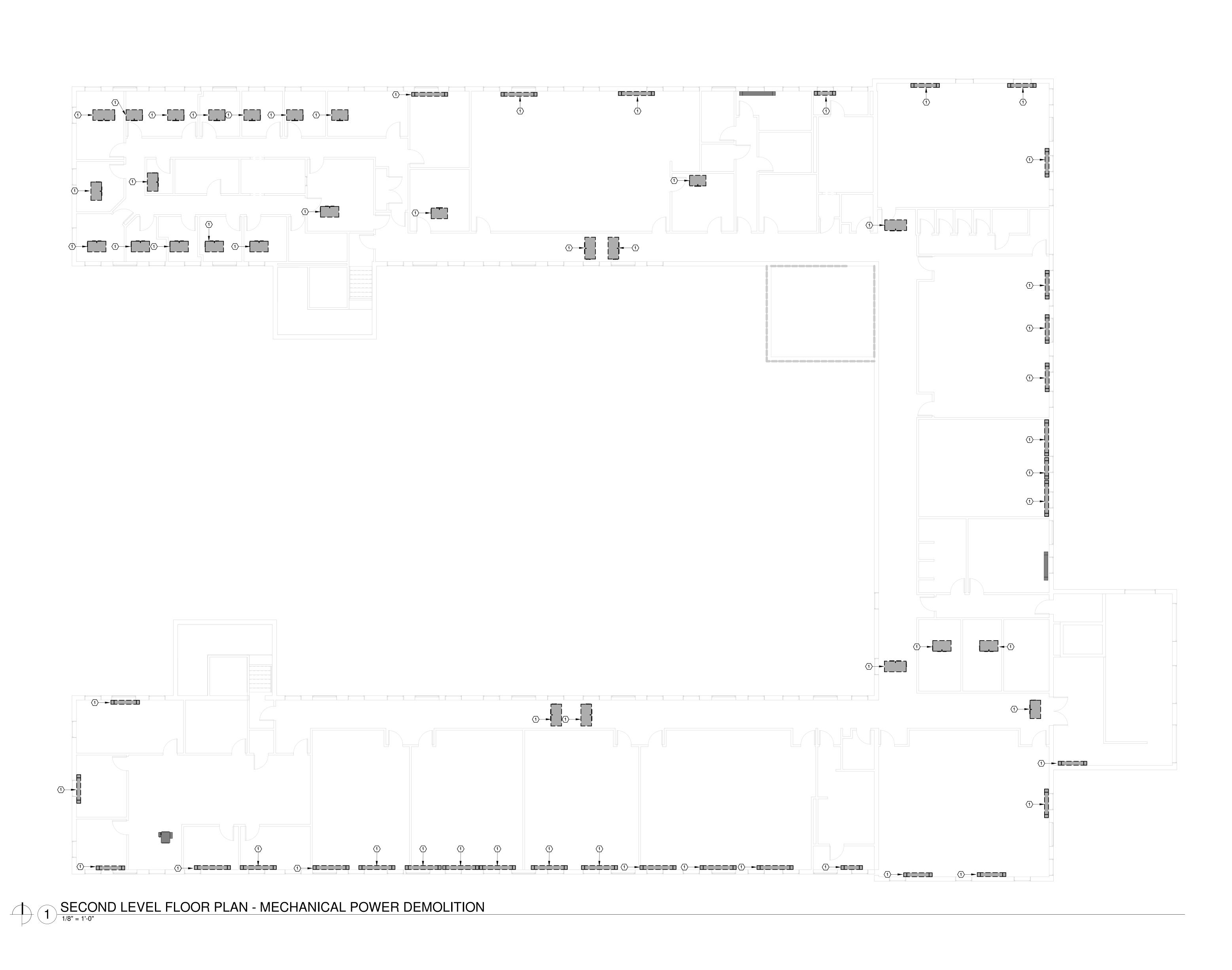
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REVISIONS:

ISSUE DATE:

SHEET TITLE: SECOND LEVEL FLOOR PLAN -DEMOLITION

E103



DEMOLITION GENERAL NOTES

OWNER SHALL RESERVE THE RIGHT TO CLAIM ALL EQUIPMENT AND CABLING REMOVED DURING DEMOLITION. EXCEPT FOR ITEMS OR MATERIALS THAT ARE INDICATED TO BE REUSED, SALVAGED, REINSTALLED, OR OTHERWISE INDICATED TO REMAIN OWNER'S PROPERTY, REMOVE DEMOLISHED MATERIALS FROM PROJECT SITE AND LEGALLY DISPOSE. REMOVE AND TRANSPORT DEBRIS IN A MANNER THAT WILL PREVENT DAMAGE TO ADJACENT SURFACES AND AREAS.

ELECTRICAL CONTRACTOR SHALL CIRCUIT TRACE AND IDENTIFY ALL EXISTING CIRCUITS WITHIN THE TENANT SPACES PRIOR TO DEMOLITION. EXISTING WIRING AND CONDUIT SHALL REMAIN IN PLACE IN AREAS OF THE SPACE THAT ARE NOT PART OF THE DEMOLITION. IF CIRCUITS ARE IN BOTH "TO REMAIN" AND "TO BE REMOVED" AREAS, REMOVE WIRING AND CONDUIT BACK TO

NEAREST "TO REMAIN" JUNCTION BOX. COORDINATE ALL DEMO ACTIVITIES WITH OWNER AND ENGINEER. PROVIDE 10 DAYS NOTICE FOR ANY POWER

PATCH ALL WALLS REQUIRED TO BE MODIFIED BY DEMOLITION OF RACEWAYS. REMOVE ALL BACK BOXES FOR ABANDONED SWITCH LOCATIONS AND PATCH WALLS TO MATCH FINISH AS SPECIFIED BY ARCHITECT. REINSTALL LOCAL SOUND REINFORCING WHERE POSSIBLE.

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CONTRACTOR SHALL REPORT ANY DAMAGED DEVICES THAT ARE SHOWN AS EXISTING TO REMAIN OR REUSED TO THE OWNER BEFORE STARTING WORK. ALL DEVICES FOUND TO BE DAMAGED AT THE TIME OF SUBSTANTIAL COMPLETION THAT ARE NOT REPORTED PRIOR TO STARTING WORK SHALL BE REPLACED BY THE CONTRACTOR AT HIS COST.

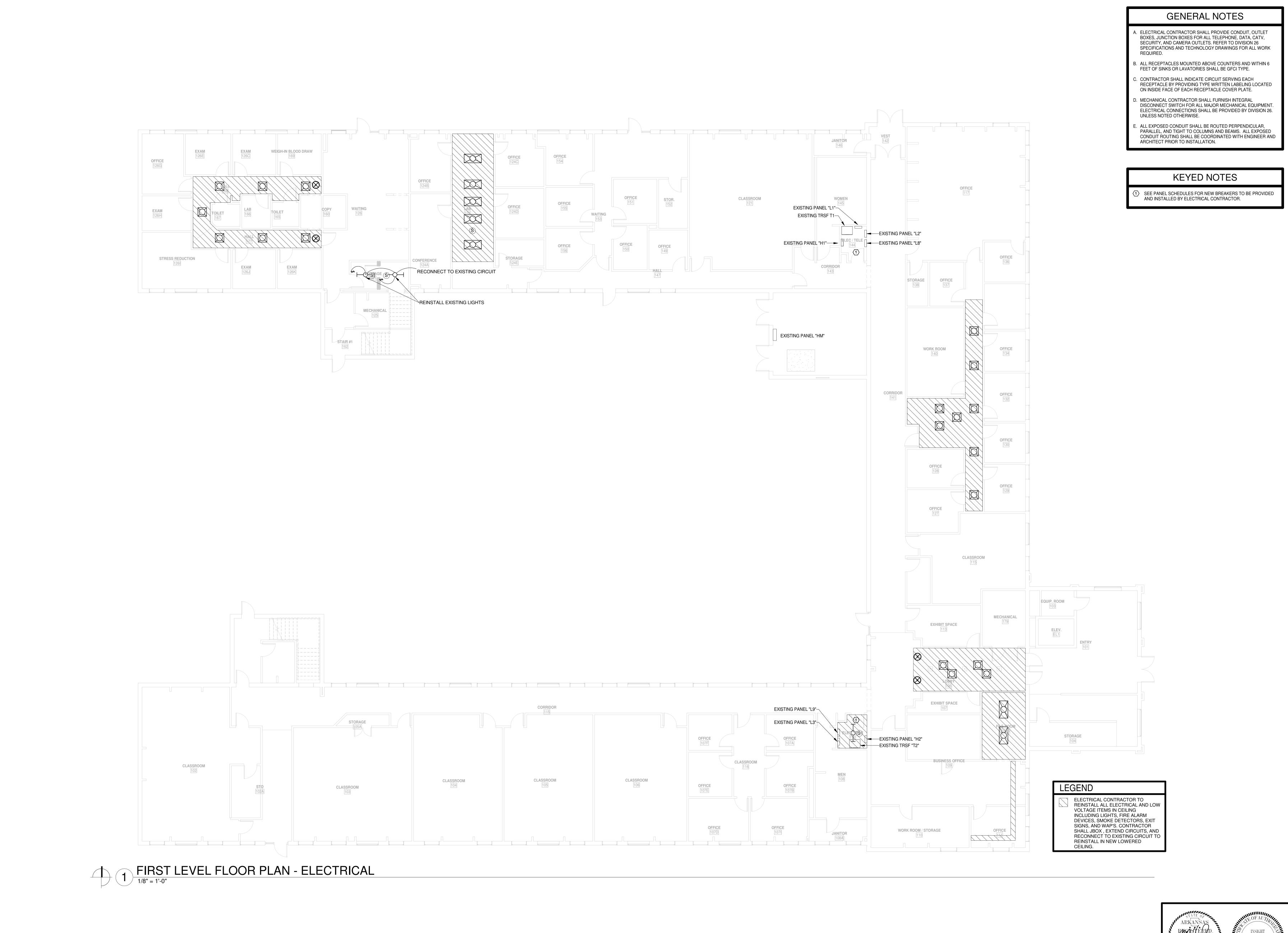
CONTRACTOR SHALL TURN ALL UNUSED CIRCUIT BREAKERS TO THE OFF POSITION AND LABEL AS SPARE.

#### DEMOLITION KEYED NOTES

DEMOLISH EXISTING FAN COIL UNIT. EXISTING FAN COIL UNIT FEEDER AND CONDUIT SHALL REMAIN FOR REUSE. TURN ALL PANELBOARD BREAKERS TO THE OFF POSITION. OWNER SHALL RESERVE THE RIGHT OF REFUSAL FOR ALL EQUIPMENT. COORDINATE WIHT OWNER PRIOR TO DEMOLITION. RE: MECHANICAL PLANS.

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SECOND LEVEL FLOOR PLAN -MECHANICAL POWER DEMOLITION



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REVISIONS:

FIRST FLOOR PLAN - ELECTRICAL

A. ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUIT, OUTLET BOXES, JUNCTION BOXES FOR ALL TELEPHONE, DATA, CATV, SECURITY, AND CAMERA OUTLETS. REFER TO DIVISION 26 SPECIFICATIONS AND TECHNOLOGY DRAWINGS FOR ALL WORK

B. ALL RECEPTACLES MOUNTED ABOVE COUNTERS AND WITHIN 6

FEET OF SINKS OR LAVATORIES SHALL BE GFCI TYPE. . CONTRACTOR SHALL INDICATE CIRCUIT SERVING EACH RECEPTACLE BY PROVIDING TYPE WRITTEN LABELING LOCATED

. MECHANICAL CONTRACTOR SHALL FURNISH INTEGRAL DISCONNECT SWITCH FOR ALL MAJOR MECHANICAL EQUIPMENT. ELECTRICAL CONNECTIONS SHALL BE PROVIDED BY DIVISION 26. UNLESS NOTED OTHERWISE.

E. ALL EXPOSED CONDUIT SHALL BE ROUTED PERPENDICULAR, PARALLEL, AND TIGHT TO COLUMNS AND BEAMS. ALL EXPOSED CONDUIT ROUTING SHALL BE COORDINATED WITH ENGINEER AND ARCHITECT PRIOR TO INSTALLATION.

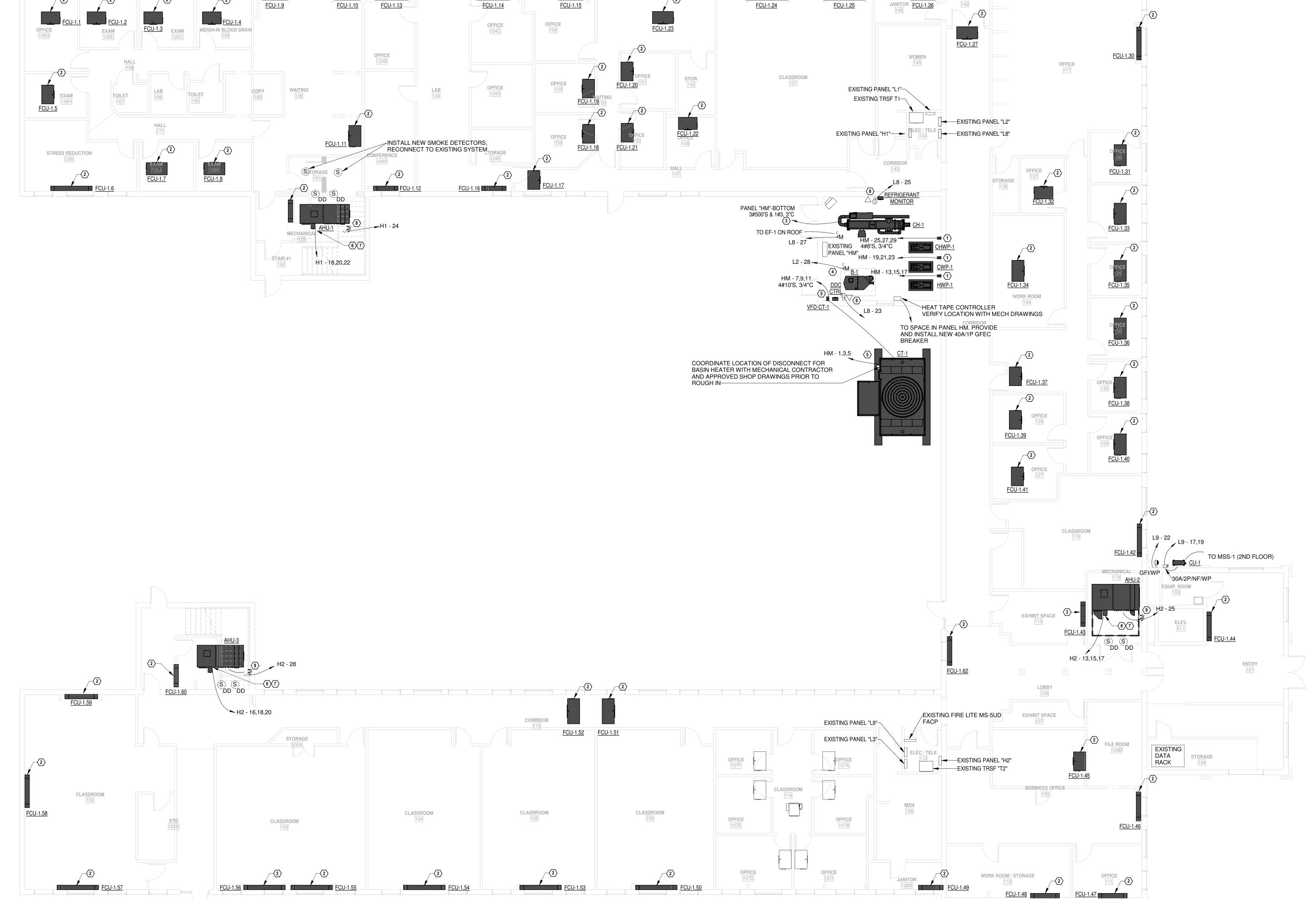
#### **KEYED NOTES**

- PROVIDE NEW ELECTRICAL CONNECTION TO VFD FROM NEW CIRCUIT BREAKER IN PANEL "HM". COORDINATE VFD LOCATION WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. RE: MECHANICAL PLANS.
- RECONNECT NEW FAN COIL UNIT TO EXISTING CIRCUIT. SPLICE AND EXTEND AS NECESSARY. COORDINATE FINAL LOCATION WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. RE: MECHANICAL PLANS.
- PROVIDE NEW ELECTRICAL CONNECTION TO NEW CHILLER VFD FROM EXISTING 350A CIRCUIT BREAKER IN PANEL "HM". COORDINATE VFD LOCATION WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. RE: MECHANICAL PLANS.
- RECONNECT NEW BOILER TO EXISTING CIRCUIT AND BREAKER. SPLICE AND EXTEND AS NECESSARY. COORDINATE FINAL LOCATION WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. RE: MECHANICAL PLANS.
- PROVIDE NEW ELECTRICAL CONNECTION TO NEW COOLING TOWER AND BASIN HEATER. COORDINATE FINAL LOCATION WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. RE: MECHANICAL PLANS.
- SPLICE AND EXTEND AS NECESSARY TO UNIT MOUNTED VFD. COORDINATE FINAL LOCATION WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. RE: MECHANICAL PLANS. PROVIDE DUCT SMOKE DETECTOR IN SUPPLY AND RETURN OF
- COORDINATE WITH MECHANICAL CONTRACTOR PRIOR TO PROVIDE NEW CIRCUIT TO (1) RECEPTACLE AND (1) DATA CONNECTION TO MECHANICAL PANEL FURNISHED BY DIVISION
- PROVIDE AND INSTALL NEW CIRCUIT AND MOTOR SWITCH TO NEW UV LIGHTS INSTALLED IN AIR HANDLING UNIT.

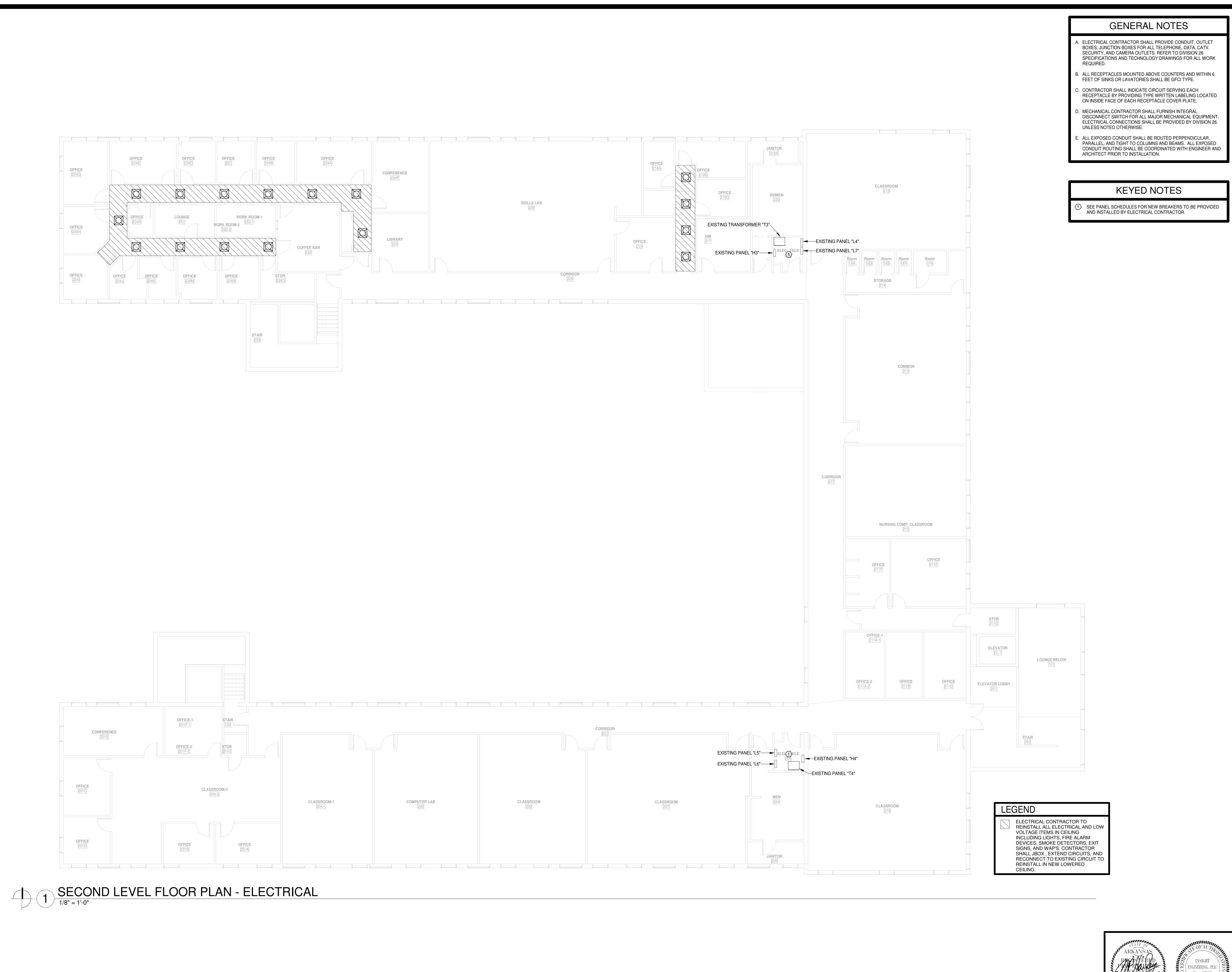
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FIRST LEVEL FLOOR PLAN MECHANICAL POWER

E202



FIRST LEVEL FLOOR PLAN - MECHANICAL POWER



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REVISIONS:

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SHEET TITLE:

SHEET TITLE: SECOND FLOOR PLAN -ELECTRICAL

E203

**GENERAL NOTES** 

A. ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUIT, OUTLET BOXES, JUNCTION BOXES FOR ALL TELEPHONE, DATA, CATV, SECURITY, AND CAMERA OUTLETS. REFER TO DIVISION 26 SPECIFICATIONS AND TECHNOLOGY DRAWINGS FOR ALL WORK

B. ALL RECEPTACLES MOUNTED ABOVE COUNTERS AND WITHIN 6

FEET OF SINKS OR LAVATORIES SHALL BE GFCI TYPE. C. CONTRACTOR SHALL INDICATE CIRCUIT SERVING EACH RECEPTACLE BY PROVIDING TYPE WRITTEN LABELING LOCATED ON INSIDE FACE OF EACH RECEPTACLE COVER PLATE.

D. MECHANICAL CONTRACTOR SHALL FURNISH INTEGRAL DISCONNECT SWITCH FOR ALL MAJOR MECHANICAL EQUIPMENT. ELECTRICAL CONNECTIONS SHALL BE PROVIDED BY DIVISION 26. UNLESS NOTED OTHERWISE.

E. ALL EXPOSED CONDUIT SHALL BE ROUTED PERPENDICULAR, PARALLEL, AND TIGHT TO COLUMNS AND BEAMS. ALL EXPOSED CONDUIT ROUTING SHALL BE COORDINATED WITH ENGINEER AND ARCHITECT PRIOR TO INSTALLATION.

**KEYED NOTES** 

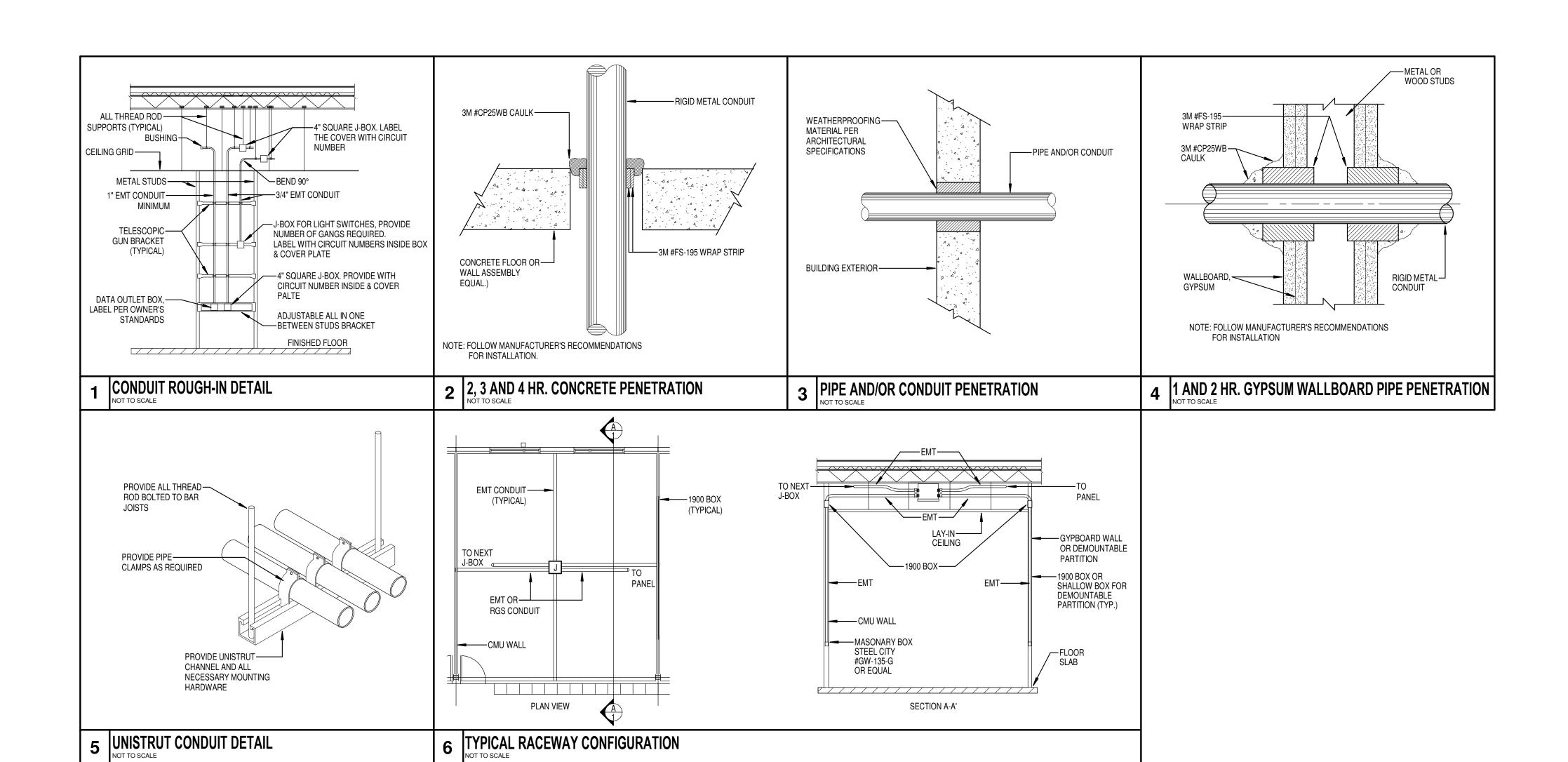
RECONNECT NEW FAN COIL UNIT TO EXISTING CIRCUIT. SPLICE AND EXTEND AS NECESSARY. COORDINATE FINAL LOCATION WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. RE: MECHANICAL PLANS.

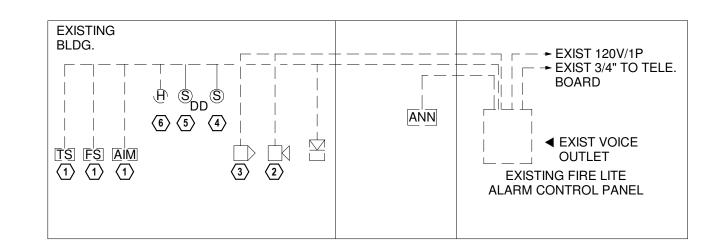
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SECOND LEVEL FLOOR PLAN -MECHANICAL POWER

ELECTRICAL DIAGRAMS AND

SHEET NUMBER:





## FIRE ALARM GENERAL NOTES:

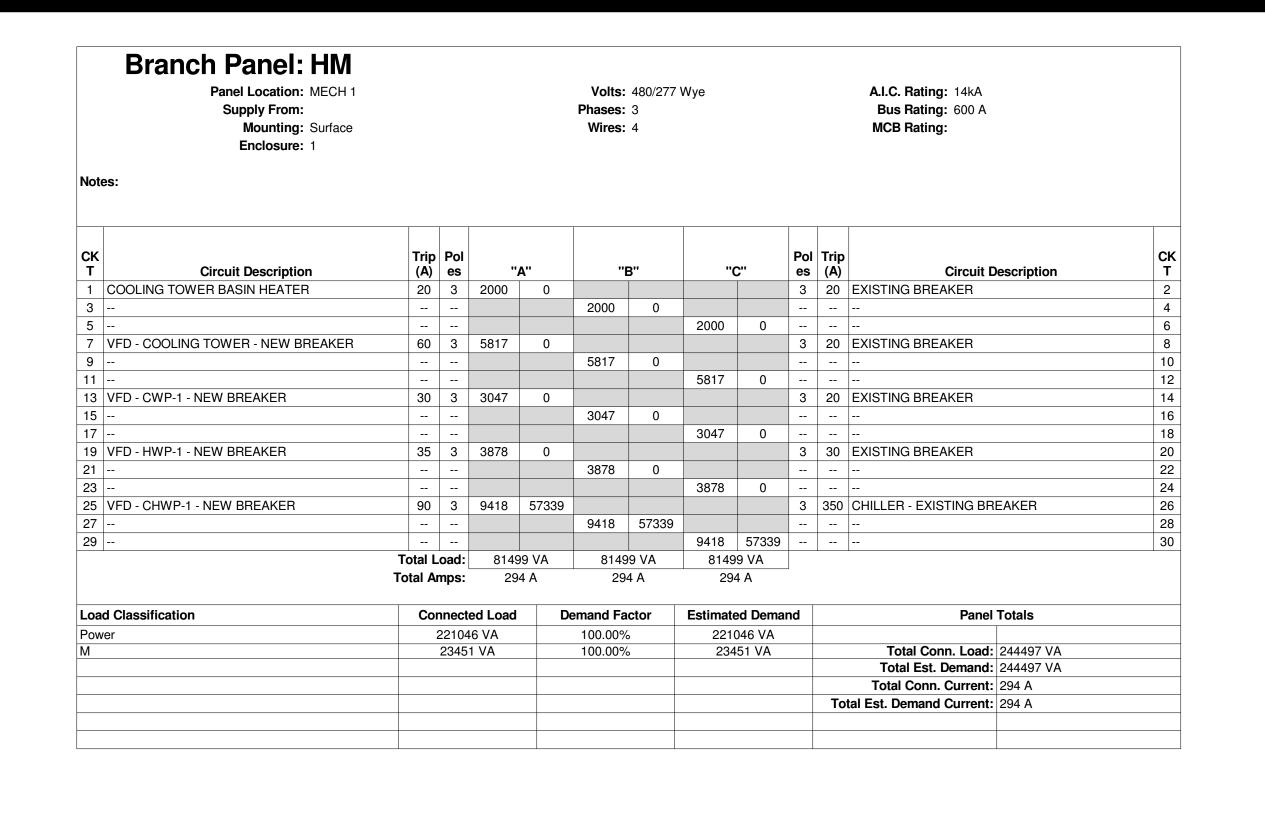
- 1. PROVIDE PLASTIC BUSHING ON EACH CONDUIT TERMINATION STUB
- 2. ALL CABLES SHALL BE PLENUM RATED.
- 3. PROVIDE DEDICATED SYSTEM SLEEVES WITHIN EACH WALL AS REQUIRED.
- 4. FIRE ALARM WIRING SHALL BE PER THE FIRE ALARM SYSTEM MANUFACTURERS RECOMMENDATIONS.
- 5. ALL FIRE ALARM CIRCUITRY SHALL BE IN MINIMUM 3/4"C. 6. ALL FIRE ALARM JUNCTION BOXES TO BE PAINTED RED.
- PROVIDE AND INSTALL NEW DEVICES TO MATCH EXISTING FIRE LITE SYSTEM.
- 8. CONTRACTOR TO EXTEND AND RECONNECT ALL FIRE ALARM DEVICES REQUIRED TO BE MOVED FOR LOWERED CEILINGS.

## FIRE ALARM KEYED NOTES:

- 1 TYPICAL FIRE ALARM PULL STATION
- TYPICAL FIRE ALARM HORN/STROBE (CANDELA AS INDICATED ON SYSTEMS PLANS)
- (3) TYPICAL FIRE ALARM STROBE. (CANDELA AS INDICATED ON SYSTEMS PLANS)
- 4 TYPICAL FIRE ALARM SMOKE DETECTOR 5 TYPICAL FIRE ALARM DUCT DETECTOR
- 6 TYPICAL FIRE ALARM HEAT DETECTOR
- 7 TYPICAL FLOW SWITCH
- (8) TYPICAL TAMPER SWITCH
- TYPICAL ADDRESSABLE INPUT MODULE
- 10 TYPICAL ADDRESSABLE CONTROL RELAY

7 FIRE ALARM RISER

12" = 1'-0"



Volts: 120/208 Wye

Phases: 3

"A"

20 | 1 | 0 | 0 |

20 1 0 0

0 VA

0 A

Total Load:

Total Amps:

Connected Load

20 1 0 0

Wires: 4

"B"

0 0

0 1500

0 0

0 0

1500 VA

13 A

Volts: 120/208 Wye

Phases: 3

Demand Factor

A.I.C. Rating: 10kA

MCB Rating:

Pol Trip es (A)

1 20 EXISTING BREAKER

1 20 EXISTING BREAKER

0 0 1 20 EXISTING FCU CIRCUIT

0 0 1 20 EXISTING BREAKER

1 20 EXISTING BREAKER

0 0 1 20 EXISTING BREAKER

0 0 1 20 EXISTING BREAKER

0 0 1 20 EXISTING BREAKER

1 20 EXISTING BREAKER

1 20 EXISTING BREAKER

1 20 EXISTING FCU CIRCUIT

1 20 EXISTING BREAKER

3 80 EXISTING BREAKER

1 20 EXISTING BREAKER

1 20 EXISTING BREAKER

1 20 EXISTING FCU CIRCUIT

20 BOILER - EXISTING CIRCUIT BREAKER

"C"

0 0 -- -- Space

0 VA

0 A

**Estimated Demand** 

1500 VA

0 0 1 20 EXISTING FCU CIRCUIT

Bus Rating: 225 A

**Circuit Description** 

Panel Totals

Total Conn. Load: 1500 VA

Total Est. Demand: 1500 VA

Total Conn. Current: 4 A

Total Est. Demand Current: 4 A

A.I.C. Rating: 10kA

Bus Rating: 225 A

MCB Rating:

**Branch Panel: L2** 

Panel Location: ELEC / TELE 144

Mounting: Surface

Enclosure: 1

Supply From:

Circuit Description

1 EXISTING BREAKER

3 EXISTING BREAKER

5 EXISTING BREAKER

7 EXISTING BREAKER

9 EXISTING BREAKER

11 EXISTING BREAKER

13 EXISTING FCU CIRCUIT

15 EXISTING FCU CIRCUIT

17 EXISTING FCU CIRCUIT

19 EXISTING FCU CIRCUIT

21 EXISTING BREAKER

23 EXISTING BREAKER

25 EXISTING BREAKER

27 EXISTING BREAKER

29 EXISTING BREAKER 31 EXISTING BREAKER

33 EXISTING BREAKER

35 EXISTING BREAKER 37 EXISTING BREAKER

39 EXISTING BREAKER

**Branch Panel: L7** 

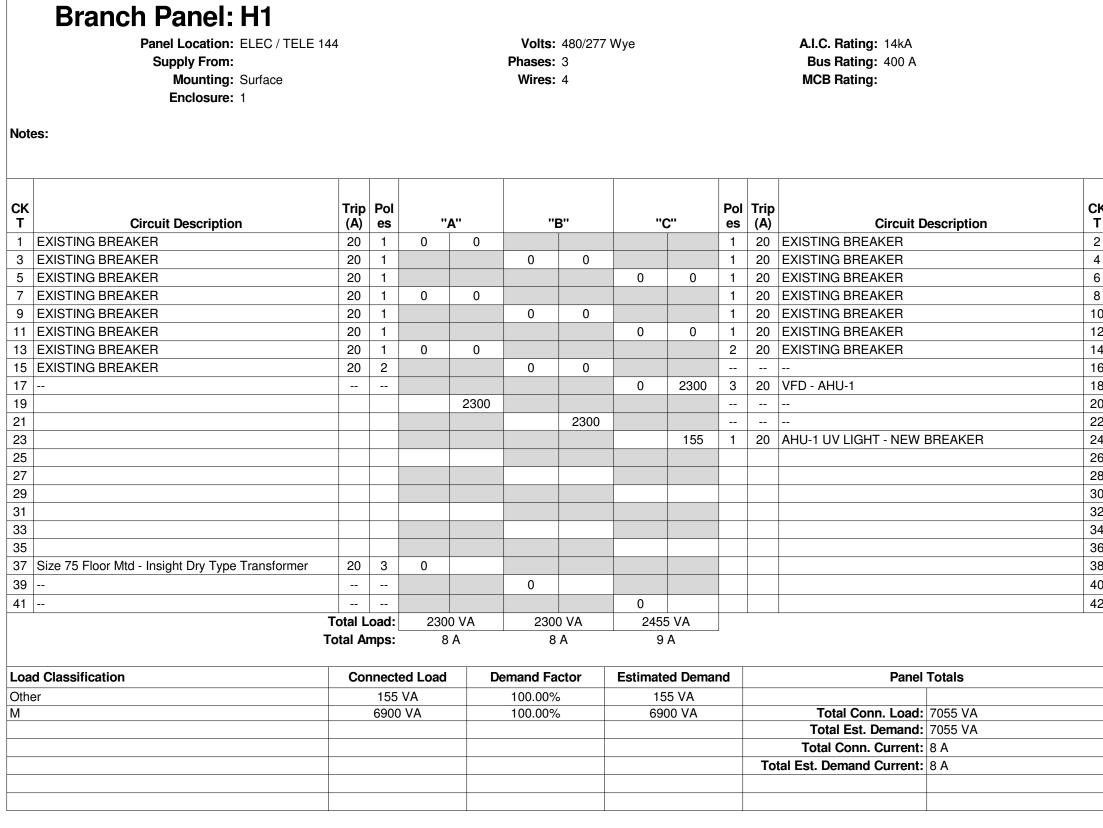
Panel Location: ELEC / TELE 216

Mounting: Surface

Enclosure: 1

Supply From: Size 75 Floor Mtd - Insight Dry..

**Load Classification** 



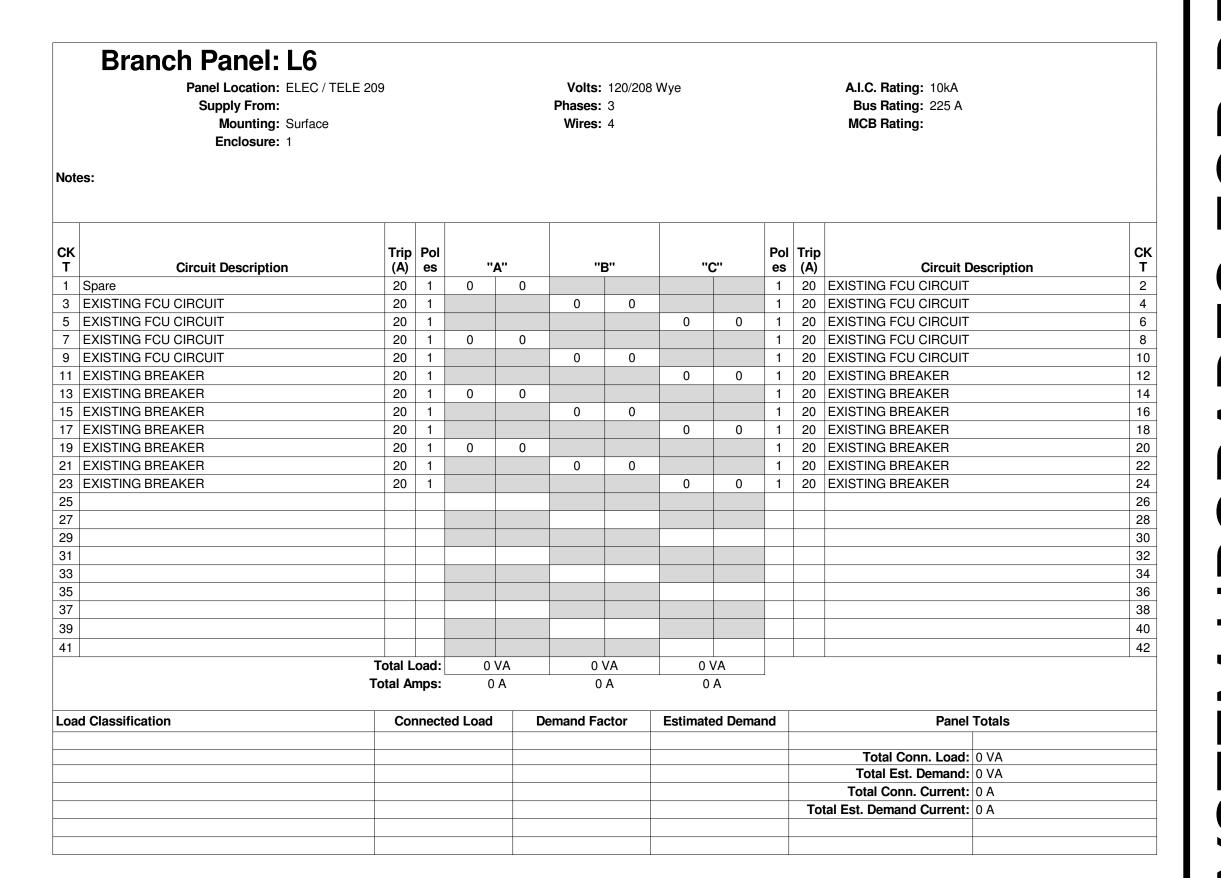
Notes:	2				Volts: Phases: Wires:		Wye				A.I.C. Rating: 10kA Bus Rating: 225 A MCB Rating:	
NOIGS.	_											
CK T Circuit Description	Trip (A)	Pol es	•	'A"		'B''	.,	C"	Pol es	Trip (A)	Circuit Description	Ck T
1 EXISTING BREAKER	20	1	0	0					1	20	EXISTING BREAKER	2
3 EXISTING BREAKER	20	1			0	0			1	20	EXISTING BREAKER	4
5 EXISTING BREAKER	20	1					0	0	1	20	EXISTING BREAKER	6
7 EXISTING BREAKER	20	1	0	0					1	20	EXISTING BREAKER	8
9 EXISTING BREAKER	20	1			0	0			1	20	EXISTING BREAKER	10
11 EXISTING BREAKER	20	1					0	0	1	20	EXISTING BREAKER	12
13 EXISTING BREAKER	20	1	0	0					1	20	EXISTING BREAKER	14
15 EXISTING BREAKER	20	1			0	0			1	20	EXISTING BREAKER	16
17 EXISTING BREAKER	20	1					0 0		1	20	EXISTING BREAKER	18
19 EXISTING BREAKER	20	1	0	0					1	20	EXISTING FCU CIRCUIT	20
21 EXISTING FCU CIRCUIT	20	1			0	0			1	20	EXISTING FCU CIRCUIT	22
23 EXISTING FCU CIRCUIT	20	1					0	0	1	20	EXISTING BREAKER	24
25 EXISTING FCU CIRCUIT 27 EXISTING BREAKER	20	1	0	0	0	_			1	20	EXISTING FCU CIRCUIT EXISTING BREAKER	28
29 EXISTING BREAKER	20	1			0	0	0	0	1	20	EXISTING BREAKER	30
31	20	'					0	U	1	20	EXISTING BREAKER	32
33												34
35												36
37												38
39												40
41												42
	Total L	oad:	0	VA	0	VA	0	VA				
	Total Ar	L		) A		) A		A				
Load Classification		nnecte	ed Load	I	Demand Fa	actor	Estimat	ed Dema	and	Panel Totals		
											Total Conn. Load: 0 VA	
											Total Est. Demand: 0 VA	
											Total Conn. Current: 0 A	
		_									Total Collin Carro	

										To	tal Est. Demand Current:		
Branch Panel: L8  Panel Location: ELEC / TELE 1 Supply From: Mounting: Surface Enclosure: 1	44				Volts: Phases: Wires:		3 Wye				A.I.C. Rating: 10kA Bus Rating: 225 A MCB Rating:		
K Circuit Description	Trip (A)	Pol es		"A"	.,,	B"		C''	Pol es	Trip (A)		escription	Ck
EXISTING BREAKER	20	1	0	0					1		EXISTING BREAKER	escription	2
B EXISTING BREAKER	20	1			0	0			1	20	EXISTING BREAKER		4
EXISTING BREAKER	20	1					0	0	1		EXISTING BREAKER		6
ZEXISTING BREAKER	20	1	0	0					1	20	EXISTING BREAKER		8
EXISTING BREAKER	20	1			0	0			1	20	EXISTING BREAKER		10
1 EXISTING BREAKER	20	1					0	0	1	20	EXISTING BREAKER		12
3 EXISTING BREAKER	20	1	0	0					1		EXISTING BREAKER		14
5 EXISTING BREAKER	20	1			0	0			1	20	EXISTING BREAKER		16
7 EXISTING BREAKER	20	1					0	0	2	30	EXISTING BREAKER		18
9 EXISTING BREAKER	20	1	0	0									20
21 EXISTING BREAKER	20	1			0	0					Space		22
3 DDC CONTROL PANEL - NEW BREAKER	20	1					200	0	2	100	EXISTING BREAKER		24
25 REFRIGERANT MONITOR - NEW BREAKER	20	1	200	0									26
7 BOILER ROOM EXHAUST FAN - NEW BREAKER	20	1			1176	0			1	20	Spare - NEW BREAKER		28
29 Spare - NEW BREAKER	20	1					0	0	1		Spare - NEW BREAKER		30
31													32
33													34
35													36
37													38
39													40
11													42
1	Total L	Total Load:		00 VA	1176 VA		200 VA			1	1		
	Total A			2 A		) A		A					
and Classification	0-	nne	od Las		Domond C	oto:	Cationat	ad Dames:	\ al		Denal	Totala	
Load Classification	Connected Load 1576 VA				Demand Factor Estimated Dema 100.00% 1576 VA						Totals		
Other	-	15/6	o VA		100.00%	0	15	/ο ۷Α			Total Conn. Load:	1576 \/^	
											Total Est. Demand:		
											iotai Est. Dellialia:	13/0 VA	

Total Conn. Current: 4 A

Total Est. Demand Current: 4 A

Panel Location: ELEC / TELE 112 Supply From: Mounting: Surface Enclosure: 1				Volts: 480/277 Wye Phases: 3 Wires: 4							A.I.C. Rating: 14kA  Bus Rating: 400 A  MCB Rating:				
Note CK	otes:  Trip Pol Pol Trip													C	
Т	Circuit Description		es	"A"		"B"		"(	es	(A)		escription	T		
1	EXISTING BREAKER		1	0	0					1 20 EXISTING BREAKER		EXISTING BREAKER			
3	EXISTING BREAKER	20	1			0	0			1	20	EXISTING BREAKER			
5	EXISTING BREAKER	20	1					0	0	1	20	EXISTING BREAKER			
7	EXISTING BREAKER	20	1	0	0					1	20	EXISTING BREAKER			
9	EXISTING BREAKER	20	1			0	0			1	20	EXISTING BREAKER			
11	EXISTING BREAKER		1					0	0	2	20	EXISTING BREAKER			
13	VFD - AHU-2		3	2300	0										
15						2300	2200			3	20	VFD - AHU-3			
17								2300	2200						
19	EXISTING BREAKER	70	3	0	2200										
21						0	0			3	100	Spare			
23								0	0						
	AHU-2 UV LIGHT - NEW BREAKER	20	1	155	0										
27							155			1	20	AHU-3 UV LIGHT - NEW E	BREAKER		
29															
31															
33															
35															
37															
39														,	
41			+								-				
		Total Lo	ad.	465	5 VA	465	5 VA	4500	) VA		I	<u> </u>			
		Total Am		17 A		4655 VA 17 A		4500 VA 16 A		1					
			,, ,,			.,	-		-						
Load Classification Connected Load						Demand Factor Estimated Dema					and Panel Totals				
Other			310 VA			100.00%		0 VA							
M			13500 VA			100.00%		13500 VA				Total Conn. Load:	13810 VA		
												Total Est. Demand:			
												Total Conn. Current:			





CONSTRUCTION

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4 WEST SSEL 402 A

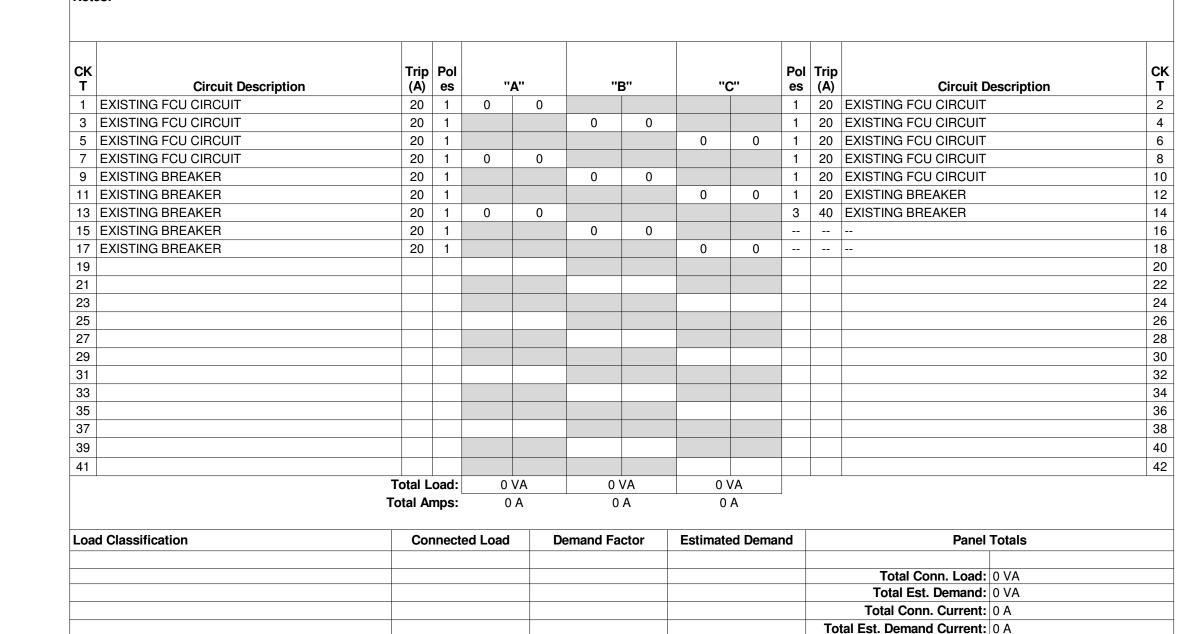
**REVISIONS:** 

10.07.2

ISSUE DATE: SHEET TITLE:

ELECTRICAL SCHEDULES





**Branch Panel: L9** Panel Location: ELEC / TELE 112 A.I.C. Rating: 10kA Volts: 120/208 Wye Bus Rating: 225 A Supply From: Phases: 3 Mounting: Surface MCB Rating: Wires: 4 Enclosure: 1 Trip Pol (A) es "A" "B" "C" Pol Trip es (A) | Circuit Description **Circuit Description Circuit Description** 1 EXISTING BREAKER 3 EXISTING BREAKER 5 EXISTING BREAKER 7 EXISTING BREAKER 9 EXISTING BREAKER 11 EXISTING BREAKER 13 EXISTING BREAKER 15 EXISTING BREAKER 17 CU-1 - NEW BREAKER 1040 VA Total Load: 1040 VA 200 VA Total Amps: 10 A 2 A **Load Classification** Connected Load Demand Factor Estimated Demand Panel Totals 200 VA 100.00% 200 VA Total Conn. Load: 2280 VA 2080 VA 2080 VA 100.00% Total Est. Demand: 2280 VA Total Conn. Current: 7 A Total Est. Demand Current: 6 A

ENGINEERING O O.

402 WEST O STREET RUSSELLVILLE, AR

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REVISIONS:

SHEET TITLE: ELECTRICAL SCHEDULES