

ROGERS STATE UNIVERSITY 1701 W. WILL ROGES BLVD. CLAREMORE, OK 74017

RE: Addendum No. 1

PROJECT: Request for Bid – Health Sciences 226 & 236 Rehabilitation HVAC Replacement, RFB 2425-1

DATE OF REQUEST FOR BID: January 31, 2025
DATE OF ADDENDUM ISSUE: February 26, 2025

THIS SCOPE OF WORK IS HEREBY MADE PART OF THE CONTRACT AS THOUGH IT HAD BEEN INCLUDED ORIGINALLY THEREIN, AND IT SHALL SUPERSEDE ANYTHING CONTAINED IN THE CONTRACT WITH WHICH IT MIGHT CONFLICT.

CLARIFICATIONS:

Item No.1 - For fire safety related work, RSU utilizes Firetrol Services. You may contact Firetrol with assistance of the fire suppression and duct detection equipment.

Firetrol Protection Systems, Inc. 918-624-1000 3060 N Hemlock Circ | Broken Arrow, OK 74012

- Item No. 2 Contractor to provide and d install new line-set.
- Item No. 3 Contractor to provide and install new electrical disconnect & power whips at rooftop locations.
- Item No. 4 Alternate No 1 is for provision of new lighting and switches per plans and specifications.
- Item No. 5 Alternate No 2 is for continuation/construction of perimeter walls above the ceiling to deck and the associated HVAC ductwork requirements per plans and specifications.
- Item No.6 Question Do you want us to include Demo or is that not in our scope? Answer Yes, should be included in the project.
- Item No. 7 Question Where are panels PPO and LPP on these drawings.

 Answer The existing panels are located in the electrical room across the hallway towards the south.
- Item No. 8 Question Do you have the previous redline drawings from original construction. Answer - No.
- Item NO. 9 Question -- Are we adding and new receptacles to level 2? it's not clear what is ETR and what is new. Answer Yes. New and ETR receptacles clarified in Addendum 1
- Item No. 10 Question As far as I can tell F-1 and F-2 are only 20a single phase, do they require a disconnect or can we use a motor rated switch?

 Answer Motor rated switches are acceptable.
- Item No 11 Question Is any of the roof work in our scope?

 Answer Yes, the existing roof mounted condensing unit is being replaced. Refer to Addendum 1 for electrical scope.

ADDITIONS:

- Item No. 1- Contractor to provide ad install new galvanized metal, condenser pad covers pad locations, approximately 48" x 48".
- Item No. 2 Contractor to provide and install in room 236, lighting dimmer controls for the new lighting system, per the drawings.

CHANGE:

- Item No. 1 "Form of Bid" has been CHANGED to reflect Alternates 1 & 2. (See attached "Revised Form of Bid").
- Item No. 2 Both R454b and R32 refrigerants are acceptable.
- Item No. 3 Rheem equipment is an approved manufacturer.
- Item No. 4 Johnson Controls is the acceptable HVAC controls provider, NOT ABS. (see attached revised Sheet M002).
- Item No. 5 See attached sheets M001, M002, M101, E101 for associated Clarifications, Additions, and/or Changes.

END OF ADDENDUM

REVISED BID FORM HEALTH SCIENCES REHAB FOR ROOMS 226 & 236

TO: ROGERS STATE University Claremore, Rogers County, Oklahoma

To Whom It May Concern,

Having Carefully Examined the Specifications and Having Visited the Site & Examined all Conditions Affecting the Work, the Undersigned Proposes to Furnish All Labor, Materials, and Incidentals Called for by Said Documents for Complete Services Described Herein:

<u>TOTAL BASE PRICE FOR REHABILITATION</u> The Undersigned Agrees to Perform all Work Required by the Request for bid for the sum of:	
(\$)
(Amount shall be shown in both words and figures; in case of discrepancy, the amount	Dollars) nt in writing shall govern.)
<u>ALTERNATE NO. 1 - TOTAL PRICE FOR ROOMM 226 LIGHTING</u> The Undersigned Agrees to Perform all Work Required by the Request for bid for the sum of:	
(\$)
(Amount shall be shown in both words and figures; in case of discrepancy, the amount	Dollars) nt in writing shall govern.)
ALTERNATE NO. 2 -TOTAL PRICE FOR PERIMETER WALLS AND HVAC RELAT The Undersigned Agrees to Perform all Work Required by the Request for bid for the sum of:	TED WORK.
(\$)
(Amount shall be shown in both words and figures; in case of discrepancy, the amount	Dollars) nt in writing shall govern.)
BID GUARANTEE	
For bids including all alternates, totaling in excess of \$50,000.00, a 5% security in the sum of form of Is submittee Specifications.	Dollars (\$), in the ed herewith in accordance with the
ACKNOWLEDGMENT OF ADDENDA (if applicable):	
Addendum No. 1 DateAddendum No. 2 DateAddendum No. 3	3 Date

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REVISED BID FORM (continued) HEALTH SCIENCES REHAB FOR ROOMS 226 & 236

(Typed or Printed Name)	(Signature)
(Title)	(Date)
(Company Name)	(Federal Identification #)
(Company Address)	(Company Telephone Number)
(Company City, State & Zip Code)	(Company Fax Number
subscribed and sworn to before me thisda	of ,2 .

JNIT PLAN NO.		1	2	
MANUFACTURER		DAIKIN	DAIKIN	
SEER2 (AT AHRI CONDITIONS)		14.3	14.3	
SENSIBLE CAP / TOT	AL CAP (AT AHRI CONDITIONS)	16.3 MBH / 23.2 MBH	16.3 MBH / 23.2 MBH	
OUTSIDE AIR FLOW		250	250	
	UNIT DESIGNATION	F	F	
	MODEL NO.	CAPTA6030C3	CAPTA6030C3	
	NOMINAL TONNAGE	5	5	
NDOOR	AIR FLOW - CFM	1,750	1,750	
NIT	FAN TYPE	ECM	ECM	
	EXTERNAL STATIC PRESSURE - IN. WG.	0.55	0.55	
	VOLTS/PHASE/HERTZ	120/60	120/60	
	MCA / MOCP	15.32/20	15.32/20	
	CAPACITY - INPUT MBH	80	80	
AS	CAPACITY - OUTPUT MBH	64	64	
EATING	NO. OF STAGES	2	2	
	MODEL NO.	DM80TN0805CN	DM80TN0805CN	
	UNIT DESIGNATION	CU	CU	
	MODEL NO.	DC3SEN6010	DC3SEN6010	
ONDENSING	NOMINAL TONNAGE	5	5	
NIT	COMPRESSOR TYPE	SCROLL	SCROLL	
	VOLTS/PHASE/HERTZ	208/1/60	208/1/60	
	MCA / MOCP	31.5/50	31.5/50	
REMARKS		1,2,3,4,5,6,7,8	1,2,3,4,5,6,7,8	

WALL MOUNTED TEMPERATURE SENSOR, CONNECT TO EXISTING FMS (JCI).

2. CONNECT TO EXISTING CONDENSATE DRAIN LINE. 3. PROVIDE 2-POSITION LOW VOLTAGE MOTORIZED OUTSIDE AIR DAMPER INTERLOCKED WITH UNIT.

4. NATURAL GAS HEAT, AND R-454B OR R-32 REFRIGERANT.

5. FILTER BOX, WITH 2" FILTER (MERV-8). 6. CONDENSATE OVERFLOW SWITCH.

CONDENSING UNIT HAIL GUARD.

3. CONTRACTOR TO FIELD VERIFY EXISTING FURNACE VOLTAGE AND MATCH EXISTING.

			UNIT	REFRIGERANT	
SYSTEM		CONDENSATE	SUCTION &		
			HOT GAS		
	SIZE/THICKNESS		ALL / 1/2"	< 1 / 1/2"	
			ALL / 1/2	>/= 1" / 1"	
			WRAP	WRAP	
INDOOR	MATERIAL		FIBERGLASS	CLOSED CELL	
	FIELD-APPLIED	CONCEALED	NONE	NONE	
	JACKET	EXPOSED	NONE	NONE	
	REMARKS				
	SIZE/THICKNESS			ALL / 2"	
	TYPE			WRAP	
OUTDOOR	MATERIAL	MATERIAL		CLOSED CELL	
	FIELD-APPLIED	CONCEALED		NONE	
	JACKET	EXPOSED		NONE	
	REMARKS				

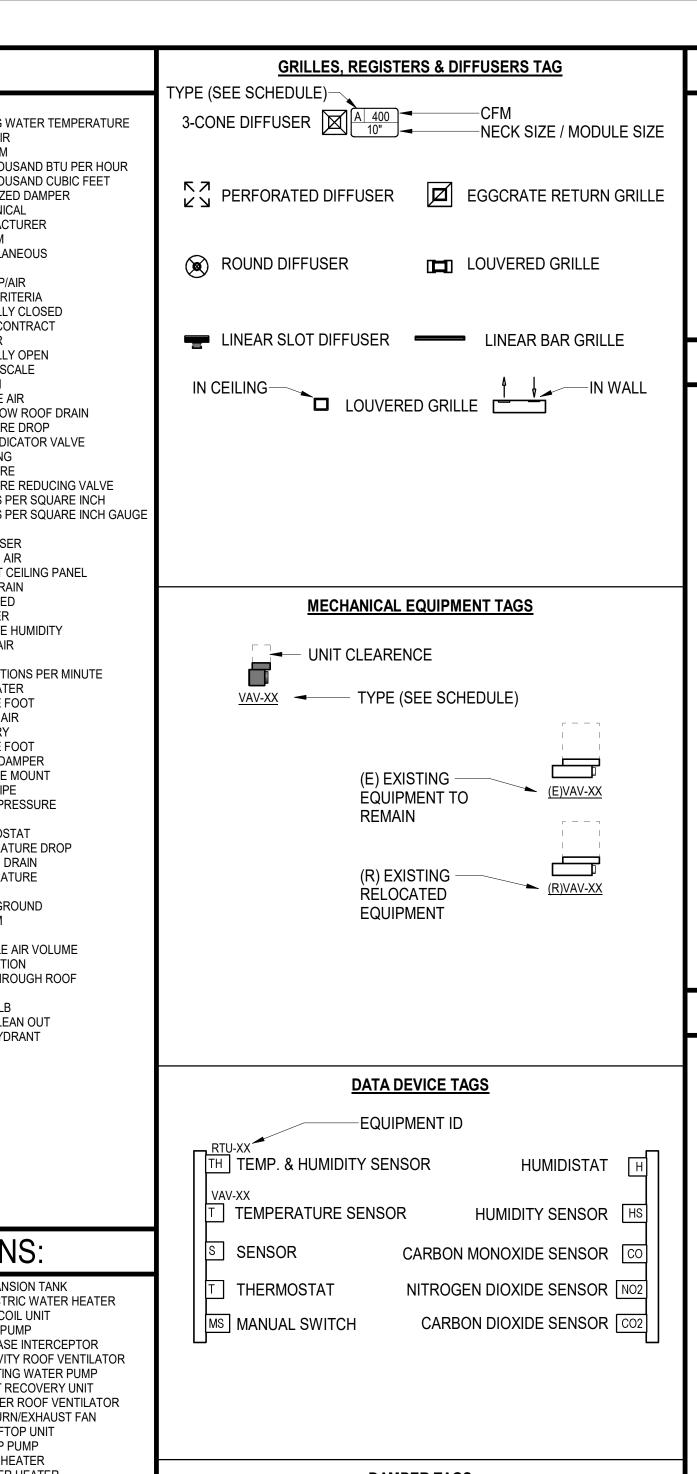
. REFER TO HVAC INSULATION SPECIFICATION AND PLANS FOR ADDITIONAL REQUIREMENTS.

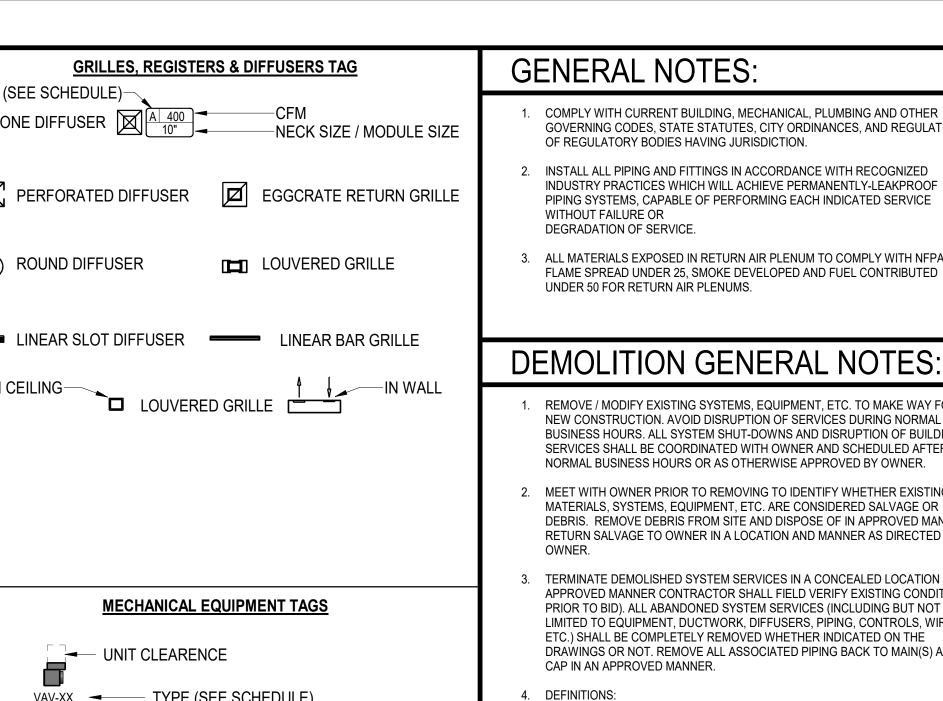
B. REFER TO DIVISION 09 FOR PAINTING REQUIREMENTS.

:. WHERE FIELD-APPLIED JACKET IS NOT REQUIRED, PROVIDE ZESTON 2000 PVC (OR EQUAL) PREMOLDED COVERS AND JACKETING AT ALL ELBOWS, TEES, FLANGES, CAPS AND SIMILAR FITTINGS.

D. USE BRUSH-APPLIED ULTRAVIOLET-PROTECTIVE COATING ON CLOSED-CELL INSULATION WHERE EXPOSED TO WEATHER.

ABREVATIONS: LVR LOUVER ABV ABOVE LWT LEAVING WATER TEMPERATURE AC AIR CONDITIONING M/A MIXED AIR AD AREA DRAIN MAX MAXIMUM MBH ONE THOUSAND BTU PER HOUR ADD ADDENDUM AFF ABOVE FINISHED FLOOR MCF ONE THOUSAND CUBIC FEET AFUE ANNUAL FUEL UTILIZATION EFFICIENCY MD MOTORIZED DAMPER ALT ALTERNATE MECH MECHANICAL AP ACCESS PANEL MFR MANUFACTURER ARCH ARCHITECT/ARCHITECTURAL MIN MINIMUM BFF BELOW FINISHED FLOOR MISC MISCELLANEOUS BLW BELOW MTR MOTOR BTU BRITISH THERMAL UNITS MU/A MAKE-UP/AIR BTUH BRITISH THERMAL UNITS PER HOUR NC NOISE CRITERIA CAP CAPACITY NORMALLY CLOSED CB CATCH BASIN NIC NOT IN CONTRACT CFM CUBIC FEET PER MINUTE NO NUMBER CLG CEILING CO CLEAN OUT CW COLD WATER NO NORMALLY OPEN NTS NOT TO SCALE OXYGEN O/A OUTSIDE AIR D DEGREE ORD OVERFLOW ROOF DRAIN DB DRY BULB DIA DIAMETER PD PRESSURE DROP DN DOWN PIV POST INDICATOR VALVE DW DISTILLED WATER PLBG PLUMBING EA EACH PRESS PRESSURE EAT ENTERING AIR TEMPERATURE PRV PRESSURE REDUCING VALVE ELEC ELECTRICAL PSI POUNDS PER SQUARE INCH PSIG POUNDS PER SQUARE INCH GAUGE EQUIP EQUIPMENT EWC ELECTRIC WATER COOLER PWR POWER R DUCT RISER EWT ENTERING WATER TEMPERATURE E/A EXHAUST AIR R/A RETURN AIR EXIST EXISTING RCP RADIANT CEILING PANEL F DEGREES FAHRENHEIT RD ROOF DRAIN FCO FLOOR CLEAN OUT REC RECESSED FD FLOOR DRAIN RED REDUCER RH RELATIVE HUMIDITY FD FIRE DAMPER FDV FIRE DEPARTMENT VALVE RL/A RELIEF AIR FL FLOOR RM ROOM FO FUEL OIL RPM REVOLUTIONS PER MINUTE FOV FUEL OIL VENT RW RAIN WATER FOR FUEL OIL RETURN SF SQUARE FOOT FOS FUEL OIL SUPPLY S/A SUPPLY AIR FPM FEET PER MINUTE SAN SANITARY FS FLOOR SINK SF SQUARE FOOT FOOT/FEET SMOKE DAMPER FTR FIN TUBE RADIATION SM SURFACE MOUNT GAL GALLON GC GENERAL CONTRACTOR STANDPIPE SP STATIC PRESSURE GPM GALLONS PER MINUTE STM STEAM THERMOSTAT GW GREASE WASTE HB HOSE BIB TEMPERATURE DROP HP HORSE POWER TDR TRENCH DRAIN HTG HEATING TEMP TEMPERATURE TYP TYPICAL HTR HEATER HW HOT WATER UG UNDERGROUND HYD HYDRANT VAC VACUUM ID INDIRECT V VENT IN INCH VAV VARIABLE AIR VOLUME INV INVERT VENT VENTILATION LB POUND VTR VENT THROUGH ROOF LB/HR POUNDS PER HOUR W WASTE WB WET BULB LAT LEAVING AIR TEMPERATURE LP LOW PRESSURE WCO WALL CLEAN OUT LPG LIQUEFIED PETROLEUM GAS WH WALL HYDRANT **EQUIPMENT ABREVATIONS:** AC AIR CONDITIONING UNIT EXPANSION TANK ACCU AIR COOLING CONDENSING UNIT EWH ELECTRIC WATER HEATER AHU AIR HANDLING UNIT FCU FAN COIL UNIT AS AIR SEPARATOR FP FIRE PUMP BOILER GI GREASE INTERCEPTOR CH CHILLER GRV GRAVITY ROOF VENTILATOR CT COOLING TOWER HWP HEATING WATER PUMP CUH CABINET UNIT HEATER HRU HEAT RECOVERY UNIT CHWP CHILLED WATER PUMP PRV POWER ROOF VENTILATOR DBP DOMESTIC WATER BOOSTER PUMP RE RETURN/EXHAUST FAN RTU ROOFTOP UNIT DC DUCT MOUNTED COIL DCP DOMESTIC WATER CIRCULATING PUMP SP SUMP PUMP EF EXHAUST FAN UH UNIT HEATER EDC ELECTRIC DUCT COIL WH WATER HEATER ✓ SHUT-OFF VALVE





DAMPER TAGS <B | MANUAL BALANCING DAMPER FIRE DAMPER F REMOTE MANUAL SMOKE DAMPER |s> BALANCING DAMPER MOTORIZED DAMPER M> D BACKDRAFT DAMPER COMBINATION FIRE/SMOKE DAMPER

PIPE ACCESSORIES

W DOMESTIC WATER METER → MOTORIZED CONTROL VALVE 罗 3-WAY MOTOR CONTROL VALVE BALANCING VALVE

Output

Description

Description ▶ PRESSURE REDUCING VALVE ರ್ BALL VALVE 岗 REFRIGERANT SOLENOID VALVE CHECK VALVE

♣ 3-WAY MIXING VALVE ^I BUTTERFLY VALVE

- . COMPLY WITH CURRENT BUILDING, MECHANICAL, PLUMBING AND OTHER GOVERNING CODES, STATE STATUTES, CITY ORDINANCES, AND REGULATIONS OF REGULATORY BODIES HAVING JURISDICTION.
- INSTALL ALL PIPING AND FITTINGS IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES WHICH WILL ACHIEVE PERMANENTLY-LEAKPROOF PIPING SYSTEMS, CAPABLE OF PERFORMING EACH INDICATED SERVICE
- . ALL MATERIALS EXPOSED IN RETURN AIR PLENUM TO COMPLY WITH NFPA 90A FLAME SPREAD UNDER 25, SMOKE DEVELOPED AND FUEL CONTRIBUTED

REMOVE / MODIFY EXISTING SYSTEMS, EQUIPMENT, ETC. TO MAKE WAY FOR NEW CONSTRUCTION. AVOID DISRUPTION OF SERVICES DURING NORMAL BUSINESS HOURS. ALL SYSTEM SHUT-DOWNS AND DISRUPTION OF BUILDING SERVICES SHALL BE COORDINATED WITH OWNER AND SCHEDULED AFTER

- 2. MEET WITH OWNER PRIOR TO REMOVING TO IDENTIFY WHETHER EXISTING MATERIALS, SYSTEMS, EQUIPMENT, ETC. ARE CONSIDERED SALVAGE OR DEBRIS. REMOVE DEBRIS FROM SITE AND DISPOSE OF IN APPROVED MANNER. RETURN SALVAGE TO OWNER IN A LOCATION AND MANNER AS DIRECTED BY
- 3. TERMINATE DEMOLISHED SYSTEM SERVICES IN A CONCEALED LOCATION IN AN APPROVED MANNER CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO BID). ALL ABANDONED SYSTEM SERVICES (INCLUDING BUT NOT LIMITED TO EQUIPMENT, DUCTWORK, DIFFUSERS, PIPING, CONTROLS, WIRING, ETC.) SHALL BE COMPLETELY REMOVED WHETHER INDICATED ON THE DRAWINGS OR NOT. REMOVE ALL ASSOCIATED PIPING BACK TO MAIN(S) AND
- REMOVE: DETACH ITEMS FROM EXISTING CONSTRUCTION AND LEGALLY OF THEM OFF-SITE UNLESS INDICATED TO BE REMOVED AND SALVAGED OR REMOVAL AND REINSTALLED.
- REMOVE AND SALVAGE: CAREFULLY DETACH FROM EXISTING CONSTRUCTION. IN A MANNER TO PREVENT DAMAGE, AND DELIVER TO OWNER. REMOVE AND REINSTALL: DETACH ITEMS FROM EXISTING CONSTRUCTION,

PREPARE FOR REUSE, AND REINSTALL WHERE INDICATED.

EXISTING TO REMAIN: EXISTING ITEMS ITEMS OF CONSTRUCTION THAT ARE NOT TO BE PERMANENTLY REMOVED CAN THAT ARE NOT OTHERWISE INDICATED TO BE REMOVED, REMOVE AND SALVAGE, OR REMOVED AND

HVAC GENERAL NOTES:

1. COORDINATE ALL DUCT AND HVAC PIPE ROUTING WITH PLUMBING, ELECTRICAL, ARCHITECTURAL AND STRUCTURAL TRADES PRIOR TO INSTALLATION. TRANSITION AS REQUIRED TO ROUTE DUCT UNDER STRUCTURAL BEAMS.

- 2. ROUTE ALL DUCT AND HVAC PIPING HIGH AS POSSIBLE.
- ALL DUCT SIZES SHOWN ARE INSIDE CLEAR DIMENSIONS.
- 3. COORDINATE ACCESS DOOR REQUIREMENTS AND LOCATIONS WITHARCHITECT AND GENERAL CONTRACTOR.
- 4. A MAXIMUM OF 5 FEET OF FLEXIBLE DUCT CAN BE PROVIDED AT CEILING DIFFUSER RUN OUTS. FLEXIBLE DUCT IS NOT ALLOWED
- ABOVE INACCESSIBLE CEILINGS (I.E. GYPBOARD CEILINGS, ETC.) PROVIDE TURNING VANES IN ACCORDANCE WITH
- SPECIFICATIONS, ALTHOUGH NOT ALL ARE SHOWN ON THE DRAWINGS. PROVIDE DAMPER REGULATOR AND EXTENSION CABLE/ROD FORALL DAMPERS LOCATED ABOVE INACCESSIBLE CEILINGS AND CHASES.
- COORDINATE EXACT LOCATION OF CEILING MOUNTED CONTROLLER WITH ARCHITECT PRIOR TO INSTALLATION. . PROVIDE BALANCE DAMPERS AT ALL BRANCH DUCTS AND BRANCH
- RUNOUTS TO DIFFUSERS AND GRILLES, ALTHOUGH ALL ARE NOT SHOWN ON THE DRAWINGS.
- 8. PROVIDE EASEMENTS WHERE LOW-PRESSURE DUCTWORK CONFLICTS WITH STRUCTURAL AND PIPING, LIGHTS, OR OTHER EQUIPMENT; WHERE EASEMENTS EXCEED 10% DUCT AREA, SPLIT INTO TWO DUCTS MAINTAINING ORIGINAL DUCT AREA, OFFSET DUCTS AROUND OBSTRUCTIONS, OR TRANSITION DUCT TO AN EQUIVALENT DUCT SIZE USING ASHRAE TABLE OF EQUIVALENT RECTANGULAR AND ROUND DUCTS. NOTIFY ENGINEER FOR APPROVAL BEFORE EASEMENTS, DUCT SPLITS, OFFSETS AND TRANSITIONS ARE MADE. INCLUDE ALL COSTS FOR EASEMENTS. SPLIT DUCTS, OFFSETS AND TRANSITIONS NECESSARY TO COMPLETE THE INSTALLATION, ALTHOUGH NOT ALL ARE SHOWN ON THE
- INCREASE DUCT HEIGHT OR WIDTH WHERE LOW-PRESSURE DUCTWORK DIMENSIONS SHOWN ARE LESS THAN THAT REQUIRED OR CONNECTION OF BRANCH DUCTS AND CONICAL OR STRAIGHT SPIN-INS. WHERE APPROPRIATE, DUCT MAIN MAY BE ROTATED 90 DEGREES TO ALLOW BRANCH DUCT CONNECTION TO OTHER SIDE OF MAIN DUCT; OR TRANSITION DUCT TO AN EQUIVALENT DUCT SIZE USING ASHRAE TABLE OF EQUIVALENT RECTANGULAR AND ROUND DUCTS. NOTIFY CITY CONTRACT ADMINISTRATOR FOR APPROVAL BEFORE ROTATIONS AND TRANSITIONS ARE MADE. INCLUDE ALL COSTS FOR ROTATIONS AND TRANSITIONS NECESSARY TO COMPLETE THE INSTALLATION, ALTHOUGH NOT ALL ARE SHOWN ON THE
- 10. PROVIDE TEMPORARY FILTERS TO ALL AFFECTED AIR HANDLING EQUIPMENT DURING CONSTRUCTION, REPLACE WITH FINAL FILTERS UPON PROJECT COMPLETION, PRIOR TO TEST AND BALANCE.
- 11. ALL INTERIOR DUCT, HVAC PIPING, AND MECHANICAL EQUIPMENT SHALL BE PAINTED TO MATCH THE CEILING OR UNDERSIDE OF

CONTROLS GENERAL NOTES:

OWNERSHIP OF DOCUMENTS: ALL DRAWINGS, SPECIFICATIONS AND OTHER WORK PRODUCT OF THE ENGINEER FOR THIS PROJECT ARE INSTRUMENTS OF SERVICE FOR THIS PROJECT ONLY AND SHALL REMAIN THE PROPERTY OF THE ENGINEER WHETHER THE PROJECT IS COMPLETED OR NOT. REUSE OF ANY OF THE INSTRUMENTS OF SERVICE OF THE ENGINEER BY THE OWNER ON EXTENSIONS OF THIS PROJECT WITHOUT WRITTEN PERMISSION OF THE ENGINEER SHALL BE AT THE OWNER'S RISK AND THE OWNER AGREES TO DEFEND, INDEMNIFY AND HOLD HARMLESS THE ENGINEER FROM ALL CLAIMS. DAMAGES, AND EXPENSES INCLUDING ATTORNEYS' FEES ARISING OUT OF UNAUTHORIZED REUSE OF THE ENGINEER'S INSTRUMENTS OF SERVICE BY THE OWNER OR BY OTHERS ACTING THROUGH THE OWNER.

ALL OF GENERAL NOTES ON THIS SHEET ARE TO BE APPLIED TO ALL OTHER DRAWINGS IN THIS SET.THE SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET MAY OR MAY NOT BE USED IN THIS SET OF DRAWINGS.



110 WEST SEVENTH, SUITE 710 TULSA, OK 74119 T: 918.583.5300

: 918.585.1967 **OKLAHOMA CITY** 31 DEAN A McGEE AVE. SUITE 135 OKLAHOMA CITY, OK 73102

T: 405.232.7007 **NEW YORK CITY**

287 PARK AVENUE SOUTH NEW YORK, NY 10010 T: 917.522.1703

202401 PROJECT: **RSU NURSING CLASSROOMS** RENOVATION

PROJECT NUMBER:

Phillips+Gomez • Consulting Engineers 5 W 6th St., Suite 2510 Tulsa, OK 74119 PH. 918.584.0102 Oklahoma Certificate of Authorization #CA1395 Renewal Date: 06.30.25

CONSULTANT:

ISS	SUE / REVISION	 :
No	Description	Date
1	Addendum 1	05-30-24
2	Addendum 1	02-25-25

SEAL:



100% CONSTRUCTION **DOCUMENTS**

ISSUE DATE:

05.18.2024

SHEET NUMBER:

M001

MECHANICAL NOTES, SYMBOLS AND **ABBREVIATIONS**

GENERAL PROVISIONS

- 1.01 FURNISH ALL LABOR MATERIALS FOUIPMENT FIXTURES APPARATUS SPECIAL OR OCCASIONAL SERVICES AND OTHER APPURTENANCES REQUIRED FOR COMPLETE INSTALLATION OF MECHANICAL SYSTEMS AS INDICATED IN THE DRAWINGS AND AS DESCRIBED IN THE SPECIFICATIONS. THIS WORK SHALL INCLUDE ALL MATERIALS. APPARATUS, AND APPLIANCES NOT SPECIFICALLY MENTIONED HEREIN OR NOTED ON THE DRAWINGS AS BEING FURNISHED AND INSTALLED UNDER ANOTHER SECTION.
- 1.02 INSTALL ALL PIPING AND FITTINGS IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES WHICH WILL ACHIEVE PERMANENTLY-LEAKPROOF PIPING SYSTEMS. CAPABLE OF PERFORMING EACH INDICATED SERVICE WITHOUT FAILURE OR DEGRADATION OF SERVICE.

1.03 NOT USED.

- 1.04 COORDINATION OF MECHANICAL WORK/DRAWINGS: IT IS RECOGNIZED THAT THE CONTRACT DOCUMENTS ARE DIAGRAMMATIC IN NATURE AND SHOW CERTAIN PHYSICAL RELATIONSHIPS WHICH MUST BE ESTABLISHED WITHIN THE MECHANICAL WORK AND IN ITS INTERFACE WITH OTHER WORK, INCLUDING UTILITIES AND ELECTRICAL WORK. THIS ESTABLISHMENT IS THE EXCLUSIVE RESPONSIBILITY OF THE CONTRACTOR.
- 1.05 PERMITS AND INSPECTIONS: OBTAIN ALL PERMITS AND INSPECTIONS AND PAY ALL FEES FOR COMPLETION OF
- 1.06 CODES AND STANDARDS: COMPLY WITH CURRENT BUILDING, MECHANICAL, PLUMBING AND OTHER GOVERNING CODES, STATE STATUTES, CITY ORDINANCES, AND REGULATIONS OF REGULATORY BODIES HAVING
- 1.07 SUBMITTALS AND REVIEW OF MATERIALS, SAMPLES, AND DRAWINGS: SUBMIT PRODUCT DATA, SHOP DRAWINGS, AND COORDINATION DRAWINGS. SUBMIT NO LESS THAN TWO (2) COPIES PROPERLY BOUND. IDENTIFIED. INDEXED, AND TABBED IN 3-RING BINDER. SHOP DRAWINGS SHALL HAVE THE ARCHITECT/ENGINEER'S
- 1.08 GUARANTEES AND WARRANTIES: PROVIDE A ONE-YEAR WARRANTY FOR ALL MATERIALS AND SYSTEMS INSTALLED UNDER THIS SECTION.
- 1.09 NOT USED (SERVICE MAINTENANCE CONTRACT)

APPROVAL PRIOR TO ORDERING OR FABRICATING EQUIPMENT.

- 1.10 OWNER'S MANUAL, SERVICE TOOLS, AND RECORD OF TESTING: PREPARE AND SUBMIT FOR APPROVAL IN ELECTRONIC (PDF) FORM WITH INDEX FOR EACH SECTION AS DESCRIBED HEREIN . INCLUDE PRECAUTIONS AND INSTRUCTIONS FOR SERVICING EACH ITEM OF THE SYSTEM AND VALVE TAG CHART.
- UPON APPROVAL. SUBMIT TWO (2) COPIES OF THE OWNER'S MANUAL TO THE OWNER INCLUDING ELECTRONIC (PDF) COPY. PROVIDE AND DELIVER TO THE OWNER'S AUTHORIZED REPRESENTATIVE ANY SPECIAL TOOLS REQUIRED FOR MAINTENANCE OF SYSTEMS, EQUIPMENT, AND APPARATUS INSTALLED UNDER THIS DIVISION PRIOR TO REQUESTING FINAL ACCEPTANCE OF THE INSTALLATION.
- 1.11 DELIVERY, STORAGE, HANDLING, AND PROTECTION OF MATERIALS: PROTECT ALL ITEMS INSTALLED UNDER THIS DIVISION FROM PHYSICAL AND MOISTURE DAMAGE.
- 1.12 ALL MATERIALS IN HVAC SYSTEMS OR EXPOSED IN RETURN AIR PLENUM TO COMPLY WITH NFPA 90A FLAME SPREAD UNDER 25, SMOKE DEVELOPED AND FUEL CONTRIBUTED UNDER 50 FOR RETURN AIR PLENUMS.
- 1.13 PROVIDE ACCESS DOORS WHERE INDICATED ON DRAWINGS AND /OR AS REQUIRED TO PROPERLY OPERATE, ADJUST AND MAINTAIN ALL EQUIPMENT. COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO
- 1.14 CAULKING AND FLASHING: SEAL ALL FLOOR, WALL AND ROOF PENETRATIONS WATER TIGHT WITH SUITABLE SEALANT. SEAL PENETRATIONS THROUGH FIRE RATED ASSEMBLIES WITH MINIMUM 1" THICKNESS 3M BRAND FIRE BARRIER CAULK CP-25 (OR OTHER APPROVED MANNER) TO MAINTAIN RATING OF ASSEMBLY.
- 1.15 CLEANING AND STERILIZATION: DISINFECT HOT AND COLD WATER SYSTEMS AS FOLLOWS: FILL SYSTEMS WITH WATER SOLUTION CONTAINING 50 PPM AVAILABLE CHLORINE; ALLOW TO STAND FOR 24 HOURS, OPENING AND CLOSING ALL VALVES SEVERAL TIMES DURING THIS PERIOD; THOROUGHLY FLUSH; REFILL AND PLACE SYSTEM IN SERVICE; ENSURE A RESIDUAL CHLORINE CONTENT OF 2.5 PPM. THE PROCEDURE SHALL BE REPEATED IF IT IS SHOWN BY A BACTERIOLOGICAL EXAMINATION MADE BY THE LOCAL AUTHORITY THAT CONTAMINATION IS STILL PRESENT IN THE SYSTEM. PROVIDE A CERTIFIED COPY OF THE TEST RESULTS VERIFYING COMPLIANCE WITH THIS REQUIREMENT.
- THOROUGHLY CLEAN AND DISINFECT ALL PLUMBING FIXTURES, INCLUDING ALL EXPOSED TRIM. ADJUST ALL FLUSH VALVES FOR PROPER FLUSHING. BUT WITHOUT EXCESS USE OF WATER. DEMONSTRATE TO THE ARCHITECT THAT THE ENTIRE PLUMBING SYSTEM AND ALL COMPONENTS THEREOF ARE FUNCTIONING PROPERLY.
- 1.16 TESTING: PLUMBING EQUIPMENT SHALL BE BLANKED OFF DURING TESTS. TESTS SHALL BE PERFORMED BEFORE PIPING IS ENCLOSED IN WALLS, FLOORS, PARTITIONS, OR IN ANY OTHER WAY CONCEALED FROM VIEW. TESTS MAY BE PERFORMED IN SECTIONS.
- POTABLE WATER SYSTEM: TEST HOT AND COLD WATER SYSTEMS HYDROSTATICALLY TO A PRESSURE OF 100 PSIG OR 1 1/2 TIMES WORKING PRESSURE. WHICHEVER IS GREATER. FOR A PERIOD OF 4 HOURS. REPAIR ALL LEAKS, REPLACING MATERIALS AS NECESSARY, AND REPEAT TESTS UNTIL SYSTEMS ARE PROVEN TIGHT.
- SOIL, WASTE, AND VENT PIPING: TEST SOIL AND VENT PIPING BY PLUGGING ALL OPENINGS AND FILLING SYSTEM TO HEIGHT REQUIRED BY CITY PLUMBING INSPECTOR, BUT NO LESS THAN 20 FEET. INSPECT ALL JOINTS FOR LEAKS, REPAIR ANY LEAKS FOUND, AND RETEST UNTIL PIPING IS DEMONSTRATED TO BE FREE FROM LEAKS.
- GRAVITY CONDENSATE DRAINAGE PIPING: TEST CONDENSATE DRAINAGE PIPING SYSTEM AS INDICATED ABOVE FOR SOIL, WASTE, AND VENT PIPING SYSTEM.
- FINAL TEST AND BALANCE: TOTAL SYSTEM TEST AND BALANCE SHALL BE PERFORMED BY A CERTIFIED CONTRACTOR (AABC OR NEBB) THAT HAS COMPLETED A MINIMUM OF 10 PREVIOUS PROJECTS WHICH HAVE RENDERED SATISFACTORY SERVICE. SYSTEMS SHALL BE BALANCED TO WITHIN 10 PERCENT (PLUS OR MINUS) OF DESIGN REQUIREMENTS. SUBMIT FINAL COMPILATION OF DATA FOR EVALUATION AND APPROVAL. UPON COMPLETION OF BALANCING THE CONTRACTOR SHALL MAKE SUCH ADDITIONAL ADJUSTMENTS AS REQUIRED TO PRODUCE SATISFACTORY SPACE CONDITIONS.
- 1.17 START-UP: START-UP EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- ON DATES SELECTED BY OWNER, OPERATE THE ENTIRE SYSTEM FOR THE INSTRUCTION OF THE DESIGNATED MAINTENANCE ENGINEER. INDOCTRINATING HIM AND THE PERSONNEL HE SELECTS IN THE MAINTENANCE AND OPERATION OF THE SYSTEM.
- 1.18 EQUIPMENT AND SYSTEMS INSTALLATION: INSTALL EQUIPMENT AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND IN ACCORDANCE WITH ACCEPTED INDUSTRY STANDARDS AND ALL
- 1.19 PROJECT RECORD DOCUMENTS: MAINTAIN PROJECT RECORD DOCUMENTS AT THE SITE AND SUBMIT THREE (3) COPIES FOR APPROVAL
- 1.20 OWNER FURNISHED EQUIPMENT: OWNER-FURNISHED EQUIPMENT SHALL BE RECEIVED AND INSTALLED BY THIS CONTRACTOR IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND OTHER REQUIREMENTS OF THE OWNER. START-UP FOR THIS EQUIPMENT SHALL BE BY THE MANUFACTURER'S AUTHORIZED REPRESENTATIVE AND THE START-UP COSTS INCLUDED BY THIS CONTRACTOR.
- 1.21 SPACE REQUIREMENTS: DETERMINE IN ADVANCE OF PURCHASE THAT THE EQUIPMENT AND MATERIALS PROPOSED FOR INSTALLATION WILL FIT INTO THE CONFINES INDICATED, LEAVING ADEQUATE CLEARANCES FOR ADJUSTMENT, REPAIR, OR REPLACEMENT.
- 1.22 SUPERVISION: CONTRACTOR SHALL PERSONALLY OR THROUGH AN AUTHORIZED AND COMPETENT REPRESENTATIVE SUPERVISE THE WORK FROM BEGINNING TO COMPLETION AND WITHIN REASON, MAINTAIN THE SAME WORKMEN AND FOREMAN ON THE PROJECT THROUGHOUT THE PROJECT DURATION.
- 1.23 MATERIALS AND WORKMANSHIP: ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND OF BEST GRADE AND QUALITY. AND STANDARD PRODUCTS OF REPUTABLE MANUFACTURERS REGULARLY ENGAGED IN THE PRODUCTION OF SUCH MATERIALS AND EQUIPMENT. WORK SHALL BE EXECUTED AND ALL MATERIALS INSTALLED IN ACCORDANCE WITH THE BEST PRACTICE OF THE TRADES IN A THOROUGH, SUBSTANTIAL, WORKMANLIKE MANNER BY COMPETENT WORKMEN.
- 1.24 EQUIPMENT SCHEDULED: THE DESIGN IS BASED ON THE EQUIPMENT SCHEDULED; MANUFACTURERS NAMED IN THE SPECIFICATIONS SHALL HAVE PRIOR APPROVAL OF THE ARCHITECT/ENGINEER AND SHALL MATCH IN EVERY RESPECT, INCLUDING PERFORMANCE CHARACTERISTICS, THE EQUIPMENT SCHEDULED AND SPECIFIED.
- 1.25 CUTTING AND PATCHING: PLACE ALL EQUIPMENT IN TIME TO AVOID CUTTING NEW CONSTRUCTION. UNDERTAKE NO CUTTING OR PATCHING WITHOUT FIRST SECURING APPROVAL FROM ARCHITECT/STRUCTURAL ENGINEER. ALL PATCHING SHALL CREATE A SURFACE WHICH IS STRUCTURALLY AND AESTHETICALLY EQUAL TO THE SURFACE SURROUNDING THE AREA PATCHED.
- 1.26 ROTATING SHAFTS: SHAFTS FOR ROTATING EQUIPMENT, SUCH AS FANS, SHALL BE DESIGNED, SIZED, AND FABRICATED SO THAT THE SHAFT WILL NOT PASS THROUGH THE FIRST CRITICAL SPEED WHEN ACCELERATING FROM REST TO NORMAL OPERATING SPEED. THIS PROVISION SHALL INCLUDE THE EFFECT OF THE DRIVEN EQUIPMENT, SUCH AS FAN BLADES AND RELATED APPURTENANCES, THAT MAY INFLUENCE PERFORMANCE.
- 1.27 BELT AND COUPLING GUARDS: PROVIDE METAL BELT GUARDS FOR ALL BELT-DRIVEN EQUIPMENT. GUARDS SHALL BE CONSTRUCTED SUFFICIENTLY RIGID TO PROVIDE THE REQUIRED PROTECTION AND SHALL BE NOISE-FREE WHEN THE EQUIPMENT IS IN OPERATION. PROVIDE COUPLING GUARDS FOR ALL FLEXIBLE COUPLINGS. COUPLING GUARDS AND BELT GUARDS MAY BE PERFORATED METAL TO ALLOW VISUAL
- 1.28 NOISE AND VIBRATION: IT IS THE INTENT TO SPECIFY AND FOR THE CONTRACTOR TO PROVIDE EQUIPMENT AND SYSTEMS THAT, AS DEFINED HEREIN, SHALL BE QUIET AND FREE OF APPARENT VIBRATION IN OPERATION.
- IT IS INTENDED THAT VIBRATION SHALL NOT BE APPARENT TO THE SENSES IN OCCUPIED AREAS OF THE BUILDING. TO THIS END. BOTH THE BALANCING OF ROTATING MACHINERY AND THE INSTALLATION OF VIBRATION ISOLATION AT VARIOUS LOCATIONS IS REQUIRED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN EQUIPMENT THAT IS QUIET IN OPERATION AS COMPARED TO OTHER AVAILABLE EQUIPMENT OF ITS SIZE, CAPACITY, AND TYPE; TO INSTALL EQUIPMENT SO THAT A MINIMUM AMOUNT OF NOISE OR VIBRATION IS TRANSMITTED TO THE BUILDING; AND TO FABRICATE THE DUCT SYSTEM SO THAT AIR NOISES GENERATED IN THE SYSTEM ARE HELD TO AN ABSOLUTE MINIMUM.

1.29 IDENTIFICATION:

PIPING: PROVIDE MANUFACTURER'S STANDARD PRE-PRINTED. SELF-ADHESIVE PIPE LABEL WITH FLOW DIRECTIONAL ARROWS AT BOTH ENDS: PRINTED PLASTIC WITH CONTACT TYPE, PERMANENT-ADHESIVE BACKING, COMPLYING WITH ANSI A13.1. MARKERS SHALL INCORPORATE FLOW DIRECTIONAL ARROWS. FOR EXTERNAL DIAMETERS LESS THAN 6 INCHES INCLUDING INSULATION PROVIDE FULL-BAND PIPE MARKERS EXTENDING 360 DEGREES AROUND PIPE FASTENED WITH COLOR-CODED PLASTIC ADHESIVE TAPE NOT LESS THAN 3/4 INCH WIDE; INSTALL IDENTIFICATION AFTER COMPLETION OF COVERING AND PAINTING AND PRIOR TO CONCEALMENT (I.E. ACOUSTICAL CEILINGS).

LABEL / COLOR CODE LETTERS / BACKGROUND DOMESTIC COLD WATER / WHITE / GREEN DOMESTIC HOT WATER / WHITE / GREEN DOMESTIC HOT WATER RET / WHITE / GREEN

- EQUIPMENT: PROVIDE SEATON (OR EQUAL) 1/16 INCH THICK ENGRAVED PHENOLIC PLASTIC NAMEPLATES WITH ADHESIVE BACKING ON ALL MECHANICAL AND PLUMBING EQUIPMENT (I.E. FANS. FAN COIL UNITS. WATER HEATERS, CONTROLS PANELS, ETC.) LETTERING SHALL BE 7/8 INCH HIGH BLACK LETTERS (CORE) ENGRAVED IN
 - VALVE TAGS: PROVIDE ENGRAVED BRASS OR ALUMINUM TAGS WITH BEADED CHAINS ATTACHED TO EACH VALVE IN DOMESTIC HOT AND COLD WATER SYSTEMS. AT COMPLETION OF PROJECT SUBMIT VALVE CHART INCLUDING TAG NUMBER, SERVICE, FUNCTION, NORMAL VALVE POSITION (OPEN OR CLOSED), AND ANY SPECIAL PROCEDURES OR SEQUENCES FOR OPERATING CERTAIN VALVES.
 - OTHER ACCEPTABLE MANUFACTURERS: W.H. BRADY CO., WESTLINE CO., EMED CO., INC.
 - 1.30 FINAL REVIEW: UPON COMPLETION OF THE WORK,
- PERFORM A FINAL REVIEW OF THE ENTIRE SYSTEM. THE SYSTEM SHALL BE OPERATING PROPERLY WITH ALL WATER AND AIR VOLUMES BALANCED AND ALL TEMPERATURE CONTROLS ADJUSTED.
- AFTER THE REVIEW ANY CHANGES OR CORRECTIONS NOTED AS NECESSARY FOR THE WORK TO COMPLY WITH THE CONTRACT DOCUMENTS SHALL BE ACCOMPLISHED WITHOUT DELAY IN ORDER TO SECURE FINAL ACCEPTANCE OF THE WORK
- 1.01 WORK INCLUDED: ALL FIRE PROTECTION SPRINKLER SYSTEMS.

SPRINKLER SYSTEMS. ALL EQUIPMENT SHALL BE UL LISTED.

- 1.02 REFERENCE STANDARDS: INSTALLATION SHALL COMPLY WITH NFPA 13 STANDARD FOR INSTALLATION OF
- 1.03 SUBMITTALS: SUBMIT SHOP DRAWINGS OF ENTIRE SPRINKLER SYSTEM TO FIRE MARSHAL FOR APPROVAL. SUBMIT PROOF OF APPROVAL TO ARCHITECT/ENGINEER.
- 1.04 SPRINKLER HEADS: TEMPERATURE RATING ON FUSIBLE LINKS TO SUIT SPECIFIC HAZARD AREA WITH MINIMUM MARGIN OF SAFETY 50 F.

SPRINKLER HEAD TYPES: SUSPENDED CEILING: MATCH EXISTING

FIRE PROTECTION SYSTEM

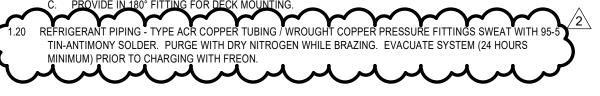
- 1.05 PIPING: SCHEDULE 40 BLACK STEEL PIPE ASTM, A-120. CLASS 150 BLACK MALLEABLE ASME B16.3 FITTINGS. THREADED, GROOVED, FLANGED OR WELDED JOINTS.
- 1.06 HAZARD RATING: PROVIDE SYSTEM TO NFPA 13 HAZARD OCCUPANCY REQUIREMENTS OR AS OTHERWISE INDICATED ON DRAWINGS.
- 1.07 INSTALLATION REQUIREMENTS: COMPANY SPECIALIZING IN SPRINKLER SYSTEMS WHO IS STATE CERTIFIED FOR DESIGN AND INSTALLATION OF SPRINKLER SYSTEMS. SPRINKLER HEADS SHALL BE INSTALLED WHERE INDICATED. LOCATE IN CENTER OF CEILING TILE WHERE APPLICABLE. COORDINATE EXACT LOCATION OF SPRINKLER HEADS WITH LIGHTS, DIFFUSERS, CEILING GRID AND OTHER ARCHITECTURAL FEATURES.
- 1.08 PAINTING: EXPOSED SPRINKLER PIPING SHALL BE PAINTED AS DIRECTED BY THE ARCHITECT. DO NOT PAINT SPRINKLER HEADS. PIPING IN EQUIPMENT ROOMS IS NOT CONSIDERED EXPOSED.
- 1.09 SPRINKLER CONTRACTOR SHALL INFORM THE BUILDING OWNER/SECURITY OFFICE ON EVERY DAY WHEN SHUTDOWN OF SPRINKLER SYSTEM IS REQUIRED FOR CONSTRUCTION. CONTRACTOR SHALL RECONNECT AND FILL THE SPRINKLER SYSTEM INTO WORKING CONDITION AT THE END OF EACH WORKING DAY TO ASSURE PROTECTION DURING UNOCCUPIED PERIODS.

PIPING SYSTEMS

- 1.01 WORK INCLUDED: INSTALLATION OF ALL PIPING SYSTEMS. ALL VALVES, FITTINGS, AND PIPING SHALL BE SUITABLE FOR INTENDED SERVICE AND SYSTEM PRESSURES AND TEMPERATURES. VERIFY EXISTING PRESSURES AND TEMPERATURES PRIOR TO ANY SYSTEM TIE-INS. ALL NEW MATERIALS SHALL MEET OR EXCEED PERFORMANCE OF MATERIALS USED ON EXISTING SYSTEMS.
- 1.02 DOMESTIC WATER: TYPE "L" HARD COPPER ASTM B-88 PIPE. WROUGHT COPPER ASTM B16.22 FITTINGS. SWEAT 95-5 TIN ANTIMONY SOLDER JOINTS. USE TYPE "K" COPPER BELOW GRADE (NO JOINTS ALLOWED BELOW FLOOR SLAB INSIDE BUILDING).
- 1.03 UNIT CONDENSATE DRAIN: COPPER. DRAINAGE PATTERN ASTM D2729 FITTINGS. SOLDER 95/5 JOINTS. DO NOT USE PVC IN RETURN AIR PLENUMS EXCEPT WHERE ALLOWED BY CODE. PIPING IN RETURN AIR PLENUMS SHALL BE SAME AS DOMESTIC WATER EXCEPT USE DRAINAGE PATTERN FITTINGS WITH THREADED CLEANOUT PLUGS AT ALL CHANGES IN DIRECTION.
- 1.04 SOIL, WASTE AND VENT: SERVICE WEIGHT ASTM A74 OR NO-HUB CISPI 301 C.I. SOIL PIPE DRAINAGE PATTERN FITTINGS. RUBBER GASKET OR NO-HUB ASTM C564 JOINTS. NO-HUB PIPING NOT ALLOWED UNDERGROUND.
- 1.05 ACID WASTE AND VENT: PP DRAINAGE PIPE AND FITTINGS: ASTM F 1412, PIPE EXTRUDED AND DRAINAGE-PATTERN FITTINGS MOLDED. WITH SCHEDULE 40 DIMENSIONS. FROM PP RESIN WITH
- FIRE-RETARDANT ADDITIVE COMPLYING WITH ASTM D 4101; WITH FUSION- AND MECHANICAL-JOINT ENDS.
- 1.06 GAS PIPING (INTERIOR PIPING AND EXTERIOR PIPING ABOVE GROUND): 5PSI OR HIGHER DELIVERY PRESSURE: ALL SIZES, BLACK STEEL, SCHEDULE 40, FACTORY-FABRICATED STANDARD WEI DED EITTINGS, BEI OW 5 PSI DELIVERY PRESSURE: 2" DIAMETER AND SMALLER, BLACK STEEL SCHEDULE 40, CLASS 150 MALLEABLE IRON, BLACK, THREADED FITTINGS. 2-1/2" DIAMETER AND LARGER, BLACK STEEL, SCHEDULE 40, BLACK FACTORY-FABRICATED STANDARD WELDED FITTINGS. GAS PIPING ROUTED IN RETURN AIR PLENUMS MUST BE WELDED.
- 1.07 CHILLED AND HEATING WATER 2 1/2" SIZE AND LARGER SCHEDULE 40 BLACK STEEL PIPE / STANDARD WELD FITTINGS / WELDED JOINTS. 2" SIZE AND SMALLER - SCHEDULE 40 BLACK STEEL PIPE / CLASS 150 MALLEABLE IRON FITTINGS SCREWED FITTINGS. SYSTEM TO BE SUITABLE FOR 150 PSIG MINIMUM OPERATING PRESSURE
- 1.08 SHOCK ABSORBERS: PROVIDE PDI WH-201 APPROVED SHOCK ABSORBERS AT ALL EQUIPMENT SUBJECT TO WATER HAMMER. INSTALL IN ACCESSIBLE LOCATION OR PROVIDE ACCESS DOOR.
- 1.09 PIPE HANGERS AND SUPPORTS: PROVIDE PIPE HANGERS AND SUPPORTS DESIGNED TO CARRY THE LOAD WITH A SAFETY FACTOR OF 5 OR LARGER.

ARCHITECT/ENGINEER.

- 1.10 VALVES AND COCKS: UNLESS OTHERWISE INDICATED, USE VALVES SUITABLE FOR 125 MINIMUM PSIG SWP AND 450 F, AND 170 PSIG WOG AND 250°F. FIELD VERIFY SYSTEM PRESSURES PRIOR TO CONNECTING TO EXISTING SYSTEMS AND PROVIDE VALVES WITH HIGHER RATING WHERE REQUIRED. ALL VALVES SHALL BE OF A SUITABLE TYPE FOR THE INTENDED SERVICE. USE GLOBE VALVES OR BALL VALVES WITH LEVER-LOCK HANDLES FOR BALANCING WATER FLOW. USE BALL VALVES OR BUTTERFLY VALVES IN DOMESTIC COLD WATER SYSTEMS INTERCHANGEABLY IN PLACE OF GATE OR GLOBE VALVES. MTHW VALVES: PROVIDE HIGH-TEMPERATURE FULL PORT BALL VALVES RATED AT 325 F AT 150 PSIG.
- 1.11 BALL VALVES: TWO-PIECE, FULL PORT, BRONZE VALVE WITH BRONZE TRIM, PTFE, MPTFE OR TFE SEAT, 150 SWP, CHROME-PLATED BRASS: NIBCO T-585-70 OR APPROVED EQUAL: OTHER ACCEPTABLE MANUFACTURERS: AMERICAN VALVE, APOLLO, CRANE, MILWAUKEE, WATTS.
- 1.12 CHECK VALVES: NPS 2 AND SMALLER: BRONZE SWING CHECK VALVE, CLASS 125 WITH BRONZE; NIBCO T-413 OR APPROVED EQUAL; OTHER ACCEPTABLE MANUFACTURERS: CRANE, STOCKHAM, WATTS. NPS 2-1/2 TO NPS 12: CLASS 125, IRON, GLOBE, SPRING LOADED, CENTER-GUIDED CHECK VALVE WITH METAL SEAT; NIBCO F-910-B OR APPROVED EQUAL; OTHER ACCEPTABLE MANUFACTURERS: METRAFLEX, MILWAUKEE
- 1.13 STRAINERS: UNLESS OTHERWISE INDICATED, USE STRAINERS WITH BALL VALVE AND UNION CONNECTION, SUITABLE FOR 125 MINIMUM PSIG SWP AND 450° F (MTHW), AND 170 PSIG WOG AND 250° F (CHW). FIELD VERIFY SYSTEM PRESSURES PRIOR TO CONNECTING TO EXISTING SYSTEMS AND PROVIDE STRAINERS WITH HIGHER RATING WHERE REQUIRED.
- 1.14 BALANCE VALVES: CWP RATING 125 PSIG MINIMUM, 250°F MAXIMUM OPERATING TEMPERATURE, BRONZE BODY, BALL OR PLUG TYPE WITH CALIBRATED ORIFICE OR VENTURL BRASS OR STAINLESS STEEL BALL RESIN PLUG PTFE SEAT, THREADED OF SOCKET END CONNECTIONS, INTEGRAL SEALS FOR PORTABLE DIFFERENTIAL PRESSURE METER ON PRESSURE GAGE CONNECTIONS, LEVER HANDLE WITH MEMORY STOP TO RETAIN SET POSITION, BELL & GOSSETT DOMESTIC PUMP; A DIVISION OF ITT INDUSTRIES OR APPROVED EQUAL.
- 1.15 PIPING INSTALLATION: PROVIDE UNIONS AND ISOLATION VALVES AT ALL EQUIPMENT TO FACILITATE REMOVAL 1.16 SLOPE ALL DRAIN LINES IN DIRECTION OF FLOW 1/4" PER FOOT MINIMUM UNLESS OTHERWISE APPROVED BY
- 1.17 KEEP BOTTOM ELEVATION OF ALL PIPE MINIMUM 8" ABOVE FINISHED CEILING TO AVOID CONFLICT WITH LIGHTS.
- 1.18 SEAL ALL FLOOR PENETRATIONS WATERTIGHT. SEAL AROUND ALL MECHANICAL WALL PENETRATIONS. CAULK WITH REQUIRED THICKNESS 3M BRAND FIRE BARRIER CAULK CP-25 (OR OTHER APPROVED METHOD) TO MAINTAIN FIRE RESISTANCE RATING OF FIRE RATED ASSEMBLES.
- 1.19 DOUBLE NEEDLE VALVES (LABORATORY NATURAL GAS): PROVIDE SERVICE FITTINGS AS FOLLOWS: MODEL 981-VR909CAGCP BY CHICAGO FAUCETS: A. UNIT SHALL HAVE STOP VALVE AND REGULATING FLOW VALVES. UNIT SHALL HAVE FORGED BRASS BODY WITH 3/8* IPS FEMALE OUTLET FOR ATTACHMENT OF SERRATED HOSE ENDS, QUICK DISCONNECTS OR OTHER OUTLET FITTINGS. ANTI-ROTATIONAL DECK PIN IN FAUCET BODY TO PREVENT TURNING. VALVES SHALL HAVE A SELF-CENTERING REPLACEABLE STAINLESS STEEL FLOATING CONE AND A REPLACEABLE BRASS VALVE SEAT. NEEDLE VALVES SHALL BE FULLY ASSEMBLED AND INDIVIDUALLY
- TESTED AT 300-PSI HELIUM UNDER WATER. MAXIMUM WORKING PRESSURE SHALL BE 125-PSI B. PROVIDE UNIT WITH PROVISIONS TO ACCEPT 1/8" ® INSTRUMENT PIPING. SPARE FITTINGS: IN ADDITION TO THOSE GAS SERVICE FITTINGS SHOWN IN THE DRAWINGS, PROVIDE 8 ADDITIONAL SPARE UNITS, DELIVERED TO THE OWNER IN UNOPENED CONTAINERS.



PIPING AND DUCT INSULATION

- 1.01 WORK INCLUDED: ALL PIPING AND DUCT SYSTEM INSULATION AND ACOUSTICAL LINER.
- 1.02 DOMESTIC COLD WATER: PIPE SIZES TO 3/4"; 1/2" THICK. PIPE SIZES 1" AND LARGER; 1" THICK PREFORMED
- FIBERGLASS, ASJ-VB.
- 1.03 DOMESTIC HOT WATER AND RETURN: PIPE SIZES TO 1 1/4"; 1" THICK. PIPE SIZES 1 1/2" AND LARGER; 1 1/2" THICK PREFORMED FIBERGLASS, ASJ.
- 1.04 SANITARY WASTE: ALL PIPE SIZES; 1" THICK PREFORMED FIBERGLASS, ASJ-VB.
- 1.05 STORM DRAINAGE: ALL PIPE SIZES; 1" THICK PREFORMED FIBERGLASS, ASJ-VB.
- FIBERGLASS, ASJ-VB. 1.07 CHILLED WATER AND HEATING WATER - ALL PIPE SIZES 2" THICK PREFORMED FIBERGLASS, ASJ-VB.
- 1.08 INSTALL ALL HANGERS OVER OUTSIDE SURFACE OF INSULATION. PROVIDE SHEET METAL INSULATION SHIELD BETWEEN HANGER AND INSULATION TO PREVENT INSULATION FROM COMPRESSING EXCESSIVELY (PROVIDE

1.06 CONDENSATE DRAIN: PIPE SIZES TO 3/4"; 1/2" THICK. PIPE SIZES 1" AND LARGER; 1" THICK PREFORMED

INSULATION INSERTS WHERE REQUIRED). 1.09 PROVIDE ZESTON 2000 PVC (OR APPROVED EQUAL) PRE-MOLDED INSULATED FITTING COVERS AND JACKETING AT ALL ELBOWS, TEES, VALVES, FLANGES, CAPS AND SIMILAR FITTINGS ON PIPING SYSTEM INSULATED WITH

FIBERGLASS. INSTALLATION SHALL BE ACCORDING TO MANUFACTURER RECOMMENDATIONS.

- 1.10 SEAL ALL INSULATION JOINTS ON COLD PIPING VAPOR TIGHT.
- 1.11 DUCT ACOUSTICAL LINER: LINE ALL RECTANGULAR TRANSFER, EXHAUST, SUPPLY, RETURN, AND OUTSIDE AIR DUCTS WITH 1" THICK, NOMINAL 11/2 PCF LINER. LINER SHALL HAVE AN ACRYLIC, ANTI-MICROBIAL COATING ON EXPOSED SURFACES. LINER TO BE JOHNS-MANVILLE LINACOUSTIC STANDARD OR EQUAL. LINED DUCTS DO NOT
- 1.12 WHERE TIE-INS TO EXISTING SYSTEMS ARE MADE, PATCH AND REPAIR DAMAGED INSULATION WITH INSULATION TYPE AND THICKNESS TO MATCH EXISTING.
- 1.13 PATCH AND REPAIR ALL EXISTING PIPING INSULATION AT SYSTEM TIE-INS AND OTHER DAMAGE RESULTING FROM NEW CONSTRUCTION.
- 1.14 BASE BID MANUFACTURER: ARMAFLEX, ARMACELL OR APPROVED EQUAL.
- 1.15 COMBUSTION AIR INTAKE DUCT INSULATION: INSULATE ALL ROUND DUCTS WITH 2" THICK R-5 MINIMUM FACED DUCTED WRAP FIBERGLASS INSULATION (SEAL AND TAPE ALL JOINTS AND SEAMS).
- TEMPERATURE CONTROLS AND INSTRUMENTATION 230900

CONTRACTOR (JOHNSON CONTROLS). WHERE NEW DEVICES INCLUDING CONTROLLERS ARE REQUIRED THE CONTROLS CONTRACTOR SHALL PROVIDE THE LATEST TECHNOLOGY. ALL SYSTEM COMPONENTS AND INSTALLATION SHALL MATCH BUILDING STANDARDS. SUBMIT TEMPERATURE CONTROLS SHOP DRAWINGS AND DATA SHEETS FOR APPROVAL PRIOR TO INSTALLATION. PROVIDE ALL ELECTRICAL POWER AND INTERLOCK TED OR REMAIN AS SHOWN. WHERE SHOWN LOCATED DIRECTLY

- NEXT TO LIGHT SWITCH, MOUNT THERMOSTAT 4" TO SIDE OF SWITCH. IN CASES WHERE GANGS OF LIGHTS SWITCHES EXIST, MAINTAIN THE SAME SPACING ESTABLISHED BETWEEN SWITCHES.
- 1.06 ELECTRICAL WIRING: ALL CONTROL WIRING, POWER WIRING FOR CONTROL SYSTEM COMPONENTS, INTERLOCK WIRING, AND OTHER ELECTRICAL DEVICES IN CONJUNCTION WITH THE CONTROL APPARATUS OF THE CONTROL SYSTEM SHALL BE PROVIDED BY THE TEMPERATURE CONTROLS CONTRACTOR. ALL WIRING IN AIR PLENUMS SHALL BE IN CONDUIT OR SHALL BE RATED FOR PLENUM USE.
- 1.07 PROVIDE FULL ELECTRONIC COPIES OF THE CONTROLS SEQUENCES AS WELL AS POINTS LIST.
- AIR DISTRIBUTION
- 1.01 WORK INCLUDED: ALL DUCT DISTRIBUTION, GRILLES, REGISTERS, DAMPERS, ETC. REQUIRED FOR A COMPLETE OPERATING SYSTEM. 1.02 REFERENCE STANDARDS: FABRICATE ALL DUCTWORK IN ACCORDANCE WITH LATEST EDITION SMACNA DUCT

MANUALS, ASHRAE HANDBOOKS AND LOCAL CODES. CONSTRUCT DUCTWORK TO NFPA 90A STANDARD FOR AIR CONDITIONING AND VENTILATING SYSTEMS, AND NFPA 90B STANDARD FOR THE INSTALLATION OF WARM

- AIR HEATING AND AIR CONDITIONING. 1.03 DUCT SIZES: ALL DUCT SIZES INDICATED ON DRAWINGS ARE CLEAR INSIDE DIMENSIONS. WHERE DUCT SIZES
- ARE NOT INDICATED, SIZE ALL DUCT AT 0.08"/100' MAXIMUM PRESSURE DROP. 1.04 DUCT PRESSURE CLASS: LOW PRESSURE CLASS - STATIC PRESSURE IN DUCT LESS THAN 2" W.G. AND VELOCITIES LESS THAN 2400 FPM. MEDIUM PRESSURE CLASS - STATIC PRESSURE IN DUCT LESS THAN 6" W.G.
- ALL LOW PRESSURE RECTANGULAR DUCTS TO BE SHEET METAL WITH LINER. LINER SHALL BE JOHNS-MANVILLE PERMACOTE LINACOUSTIC STANDARD FIBERGLASS LINER WITH ACRYLIC ANTI-MICROBIAL COATING, OR EQUAL. LINER SHALL BE 1 INCH THICK WITH A CONDUCTANCE AT 75 DEG. F. OF 0.25 BTU/HR SF DEG. F. INSTALL ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. ALL LOW PRESSURE ROUND DUCTS TO SHEET METAL WITH 2 INCH THICK, 1 PCF FIBERGLASS INSULATION WITH VAPOR BARRIER. FABRICATE IN ACCORDANCE WITH BASE BUILDING SPECIFICATIONS AND LATEST EDITION OF SMACNA.
- ALL MEDIUM PRESSURE RECTANGULAR DUCTS TO BE SHEET METAL WITH FLANGED JOINTS (DUCT-MATE OR APPROVED EQUAL) AND LINER. LINER SHALL BE SCHULLER PERMACOTE LINACOUSTIC STANDARD FLEXIBLE FIBERGLASS LINER WITH ACRYLIC ANTI-MICROBIAL COATING. OR APPROVED EQUAL. LINER SHALL BE 1 INCH THICK WITH A CONDUCTANCE AT 75°F. OF 0.25 BTU/HR SF °F. INSTALL ACCORDING TO MANUFACTURER'S RECOMMENDATIONS ALL MEDIUM PRESSURE ROUND DUCTS TO BE SHEET METAL SPIRAL DUCT WITH 2' THICK, 1 PCF FIBERGLASS INSULATION WITH VAPOR BARRIER. DUCTWORK DOWNSTREAM OF VAV AIR HANDLING UNITS AND UPSTREAM OF TERMINAL BOXES SHALL BE CONSIDERED MEDIUM PRESSURE. FABRICATE IN ACCORDANCE WITH BASE BUILDING SPECIFICATIONS AND LATEST EDITION OF SMACNA. SEAL ALL JOINTS, TRANSVERSE AND LONGITUDINAL, WITH HEAVY LIQUID SEALANT (HARDCAST - GALVIGRIP OR APPROVED EQUAL) TO PREVENT LEAKAGE.
- 1.05 DUCT MATERIAL: GALVANIZED SHEET METAL.

REQUIRED BY CODE.

AND VELOCITIES GREATER THAN 2400 FPM.

1.06 LABORATORY EXHAUST SYSTEM DUCTS TO BE WELDED STAINLESS STEEL SS316 FABRICATED IN ACCORDANCE WITH SMACNA STANDARDS. CONSTRUCT FOR LIQUID TIGHT SEAL. USE LONG RADIUS FITTINGS WITHOUT TURNING VANES. INSULATE ALL DUCTWORK EXPOSED TO WEATHER AND PROVIDE HEAVY GAUGE ALUMINUM RECOVERING JACKET SEALED WEATHER TIGHT. ALL DUCT INSULATION SHALL COMPLY WITH ASHRAE 90.1.

1.08 FLEXIBLE DUCTS: MAXIMUM ALLOWABLE LENGTH IS 6'0". AVOID TIGHT RADIUS TURNS THAT RESTRICT AIR FLOW.

WHERE TIGHT RADIUS TURNS ARE NECESSARY, PROVIDE RIGID SHEET METAL ELBOWS. ONLY USE IN

- 1.07 JOINTS: SEAL ALL LONGITUDINAL AND TRANSVERSE JOINTS WITH HEAVY LIQUID (HARDCAST GALVAGRIP) SEALANT. SCREW OR RIVET ALL ROUND DUCT JOINT CONNECTIONS.
- ACCESSIBLE AREAS. 1.09 DAMPERS: PROVIDE BALANCE DAMPERS AT ALL DUCT BRANCHES TO INDIVIDUAL DIFFUSERS, GRILLES AND REGISTERS. LOCATE DAMPER AS CLOSE AS PRACTICAL TO MAIN DUCT BRANCH CONNECTION. PROVIDE
- DAMPER ROD EXTENSION AND CEILING FLANGE WHERE DAMPERS ARE CONCEALED AND INACCESSIBLE. 1.10 GRILLES, REGISTERS, AND DIFFUSERS: PROVIDE IN ACCORDANCE WITH SCHEDULE OR NOTATIONS ON DRAWINGS. ACCEPTABLE MANUFACTURES ARE NAILOR. TITUS. PRICE AND CARNES. UNLESS OTHERWISE
- MATCH EXISTING BUILDING STANDARD. 1.11 FIRE DAMPERS: PROVIDE UL LISTED FIRE DAMPERS WHERE INDICATED ON THE DRAWINGS OR OTHERWISE
- 1.12 PROVIDE AIR FOIL TURNING VANES AT ALL LOW PRESSURE RECTANGULAR DUCT TURNS GREATER THAN 30
- DEGREES. THIS DOES NOT PERTAIN TO LABORATORY EXHAUST SYSTEM. 1.13 DUCT-MOUNTED DOUBLE WALL ACCESS DOORS INCLUDING FULL LENGTH PIANO HINGE AND CAM LOCK. DOUBLE GASKETED, HIGH DENSITY FIBERGLASS INSULATION, GALVANIZED SHEET METAL, AND CONSTRUCTED IN ACCORDANCE WITH SMACNA. DUCTMATE INDUSTRIES OR EQUAL.

NOTED, ALL CEILING SUPPLY AIR DIFFUSERS AND LIGHT TROFFERS, AND RETURN AIR REGISTERS ARE TO

- 1.14 SEAL ALL FLOOR PENETRATIONS WATERTIGHT. SEAL AROUND ALL MECHANICAL WALL PENETRATIONS. CAULK WITH REQUIRED THICKNESS 3M BRAND FIRE BARRIER CAULK CP-25 (OR OTHER APPROVED METHOD) TO MAINTAIN FIRE RESISTANCE RATING OF FIRE RATED ASSEMBLES.
- 1.15 PROVIDE TEMPORARY FILTERS AT THE BASE BUILDING MAIN RETURN AIR DUCT(S) AND/OR AIR HANDLER(S) TO LIMIT THE INFUSION OF DUST AND FUMES GENERATED AS A RESULT OF THE PERFORMANCE OF WORK FOR THIS PROJECT. FILTERS ARE TO BE CHANGED AT A MINIMUM BIWEEKLY THROUGHOUT THE DURATION OF THE PROJECT. FILTERS AND ANY TEMPORARY BRACKETS ARE TO BE REMOVED AT THE COMPLETION OF PROJECT THE COST OF THIS WORK IS TO BE INCLUDED IN THE MECHANICAL CONTRACTOR'S PRICE.
- 1.16 LOCATE DUCTS WITH SUFFICIENT SPACE AROUND EQUIPMENT TO ALLOW NORMAL OPERATION AND MAINTENANCE ACTIVITIES.

- 01 WORK INCLUDED: INSTALLATION OF SPLIT SYSTEM WITH NATURAL GAS-FIRED FURNACE.
- 1.02 ACCEPTABLE MANUFACTURERS: CARRIER CORPORATION, LENNOX, TRANE, RHEEM, DAIKIN.
- 03 CABINET: GALVANIZED STEEL, FACTORY-INSTALLED INSULATION.
- .04 FAN: CENTRIFUGAL, FACTORY BALANCED, RESILIENT MOUNTED, DIRECT DRIVE. SPECIAL MOTOR FEATURES:
- HEAT EXCHANGER: PRIMARY: ALUMINIZED STEEL. SECONDARY: STAINLESS STEEL.
- .06 BURNER: GAS VALVE: 100% SAFETY TWO-STAGE MAIN GAS VALVE, MAIN SHUTOFF VALVE, PRESSURE REGULATOR, SAFETY PILOT WITH ELECTRONIC FLAME SENSOR, LIMIT CONTROL, TRANSFORMER, AND COMBINATION IGNITION/FAN TIMER CONTROL BOARD. IGNITION: ELECTRIC PILOT IGNITION, WITH HOT-SURFACE IGNITER OR ELECTRIC SPARK IGNITION.

MULTITAPPED, MULTISPEED WITH INTERNAL THERMAL PROTECTION AND PERMANENT LUBRICATION.

- REFRIGERATION COIL: COPPER TUBES MECHANICALLY EXPANDED INTO ALUMINUM FINS.
- 1.08 AIR-COOLED COMPRESSOR-CONDENSER UNIT: HERMETICALLY SEALED OR SCROLL TYPE, REFRIGERANT CO ALUMINUM-PROPELLER TYPE FAN, DIRECTLY CONNECTED TO MOTOR, PERMANENTLY LUBRICATED FAN WITH

RIGHT BECK ASSOCIATES ARCHITECTS, PLLC; DBA BECK DESIGN - 05.18.2024

10 WEST SEVENTH, SUITE 710 ULSA, OK 74119 T: 918 583 5300

918.585.1967

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NEW YORK CITY 87 PARK AVENUE SOUTH NEW YORK. NY 10010 917.522.1703

PROJECT NUMBER:

CONSULTANT

N 6th St., Suite 2510 Tulsa, OK 74119 PH. 918.584.0102 klahoma Certificate of Authorization #CA1395 Renewal Date: 06.30.25

ISSUE / REVISION:



DOCUMENTS

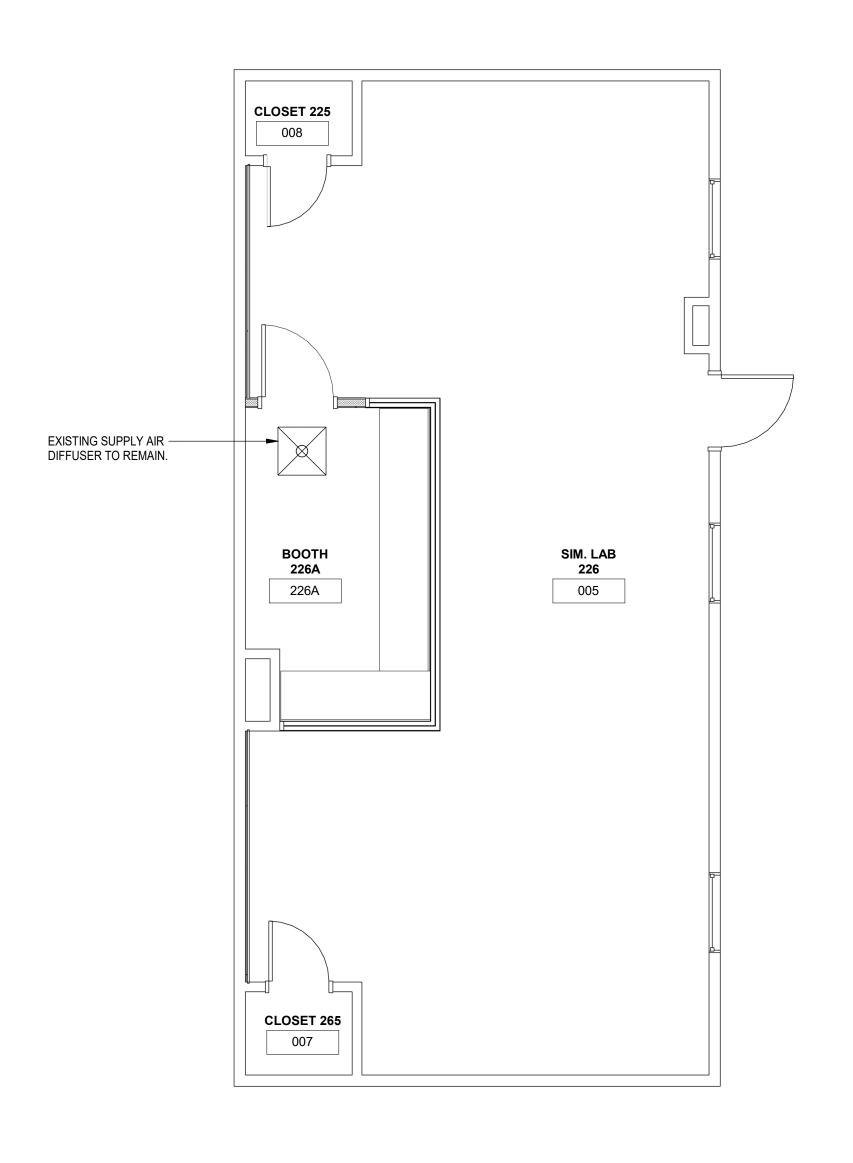
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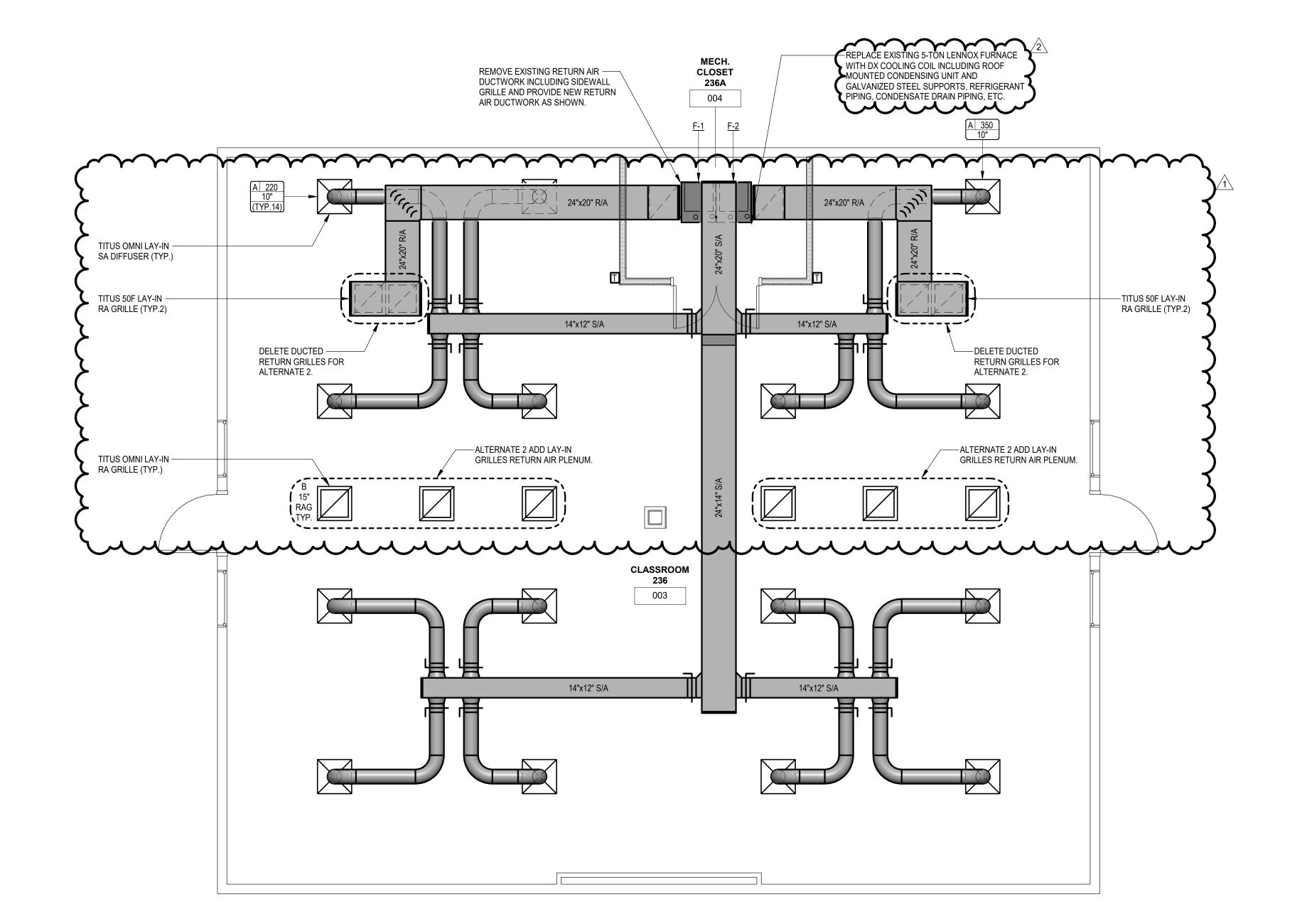
05.18.2024

ISSUE DATE:

M002 MECHANICAL

SPECIFICATIONS





SECOND FLOOR HVAC PLAN

1/4" = 1'-0"

SECOND FLOOR HVAC PLAN

1/4" = 1'-0"



TULSA
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202401
PROJECT:
RSU NURSING
CLASSROOMS

RENOVATION

PROJECT NUMBER:

Phillips+Gomez

Consulting Engineers

15 W 6th St., Suite 2510 Tulsa, OK 74119
PH. 918.584.0102

Oklahoma Certificate of Authorization
#CA1395 Renewal Date: 06.30.25

CONSULTANT:

SEAL



100%
CONSTRUCTION
DOCUMENTS

ISSUE DATE:

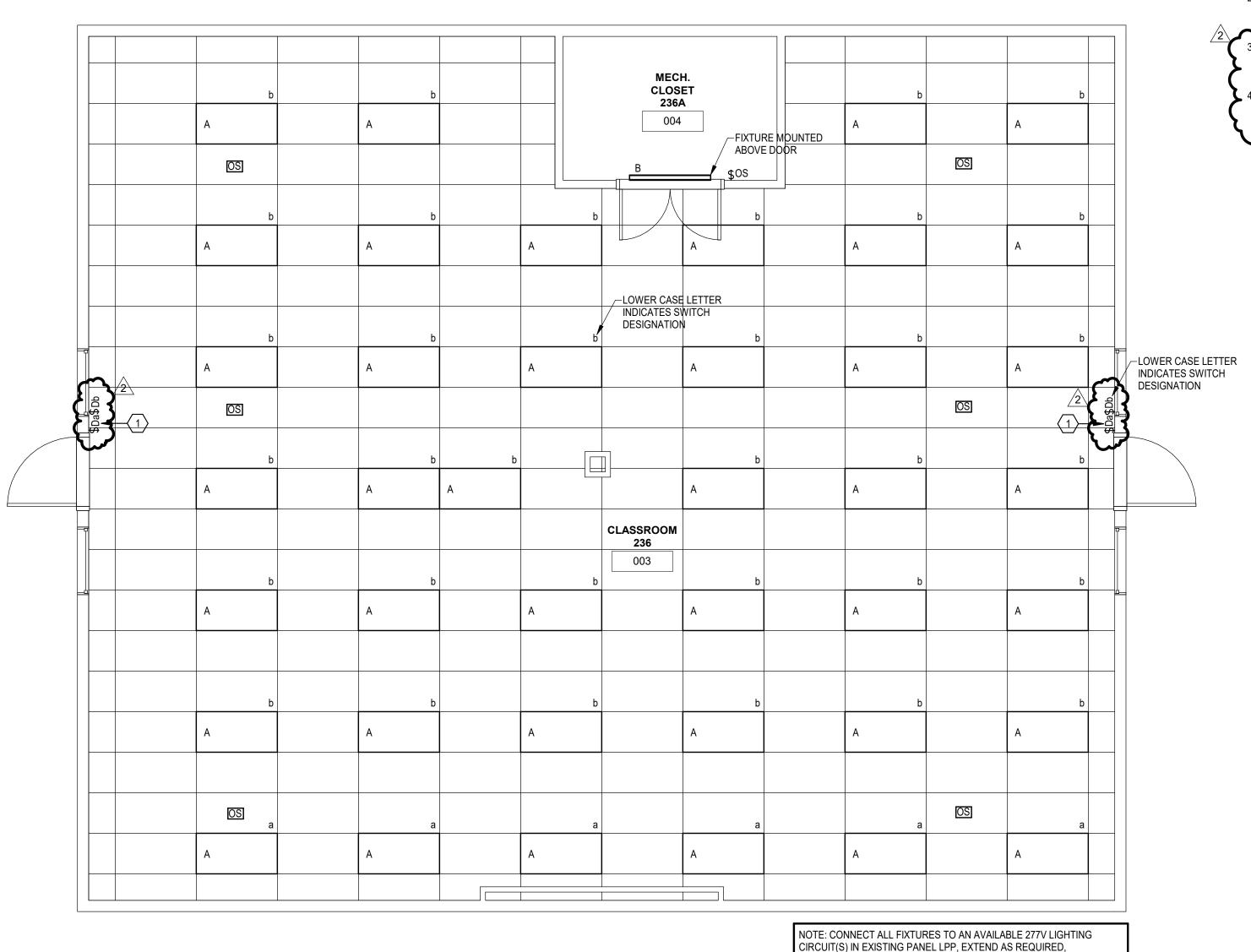
05.18.2024

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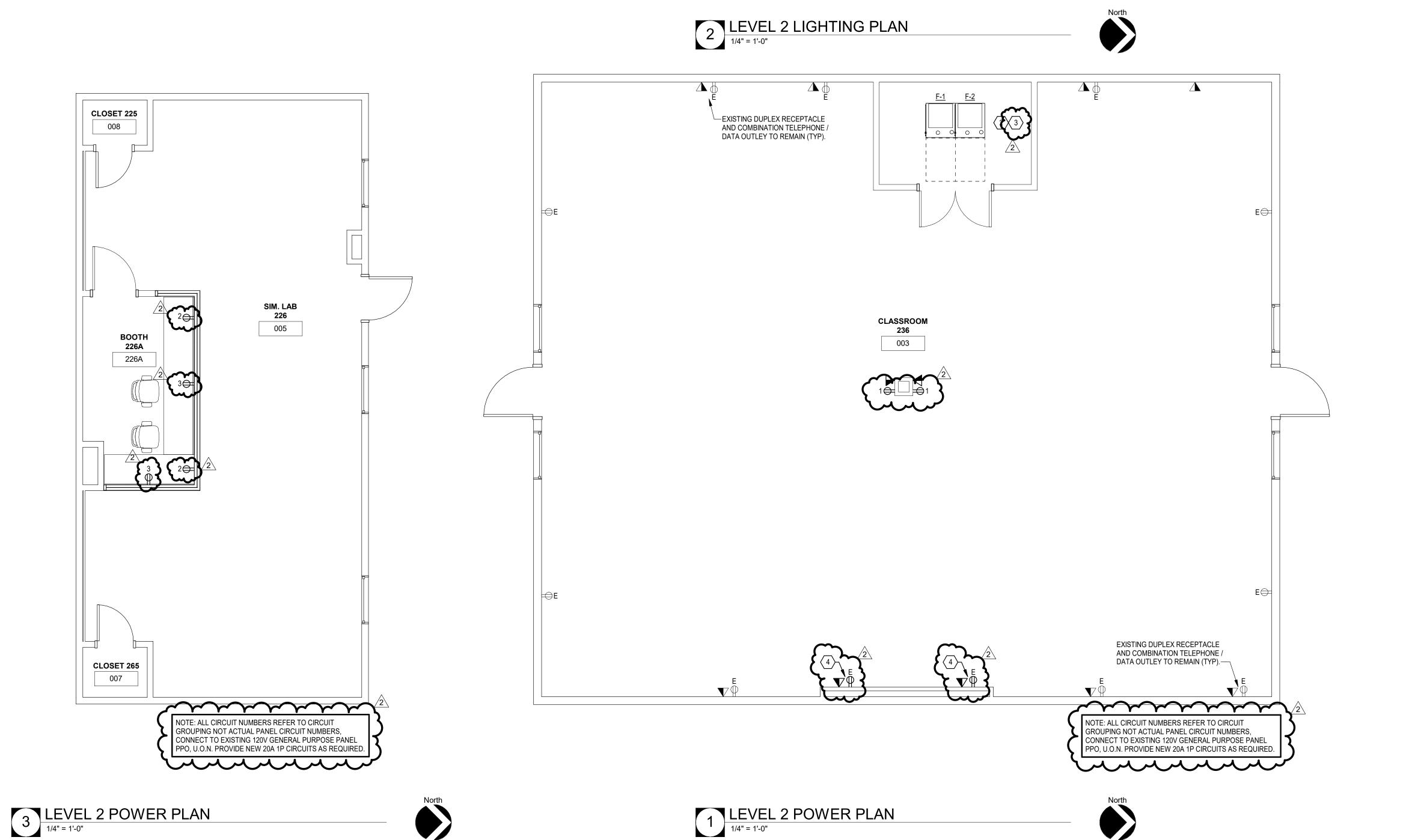
PLAN

M101

SECOND FLOOR HVAC



CONTRACTOR VERIFY EXISTING AVAILABLE BREAKERS AND CAPACITY 13 AMPERES MAXIMUM, PROVIDE NEW 20A 1P CIRCUIT AS REQUIRED CONNECT FIXTURES TO ACCOMPLISH SWITCHING AS INDICATED.



ELECTRICAL NUMBERED NOTES

1. PROVIDE MANUAL OVER-RIDE SWITCH INTERCONNECTED TO OCCUPANCY SENSOR SYSTEM TO CONTROL LIGHTING IN LOCAL ROOM/AREA. COORDINATE WITH INTERCONNECTION TO OCCUPANCY SENSOR CONTROL SYSTEM. REFER TO OCCUPANCY SENSOR WIRING DIAGRAMS. 2. REMOVE ELECTRICAL SERVICE TO EXISTING MECHANICAL EQUIPMENT TO BE REMOVED AND REPLACED, REFER TO MECHANICAL FOR ADDITIONAL INFORMATION. RECONNECT SERVICE TO

COORDINATE FEEDER AND DISCONNECT SIZE AND LOCATION WITH EXISTING EQUIPMENT. DISCONNECT TO BE IN NEAM 3R ENCLOSURE.

> RELOCATE EXISTING DUPLEX RECEPTACLE(S) AND COMM/DATA OUTLET DEVICE(S) TO NEW FURRED OUT WALL, EXTEND CIRCUITING AS REQUIRE. CONTRACTOR VERIFY EXACT QUANTITY



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PROJECT NUMBER: 202401

PROJECT: **RSU NURSING CLASSROOMS** RENOVATION

CONSULTANT: Phillips+Gomez •

5 W 6th St., Suite 2510 Tulsa, OK 74119 PH. 918.584.0102 Oklahoma Certificate of Authorization #CA1395 Renewal Date: 06.30.25

ISSUE / REVISION:



100% CONSTRUCTION **DOCUMENTS**

ISSUE DATE:

05.18.2024

SHEET NUMBER:

E101

LIGHTING AND POWER **PLANS**

RFB 2425-10 Health 226 & 236 Rehab – Plan Holders List

Mcintosh	Shoemaker
918-323-2547	918-585-1239
Samantha Stephenson	Allen Morgan
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goodwin.l@mcintoshOK.com	jmunoz@shoemakerac.com
Plan Room	Vickrey Heat & Air
D constructeennest"	Josh Harrison
CONSTRUCTCONNECT Powering connections. Improving results.	918-341-5704
content@constructconnect.com	<u>jharrison@vickreyhratair.com</u>
Mechanical Air Systems, Inc.	Magnum Construction
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B5 Heating and Air	
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Waygh's Heat and Air	Limestone
Waugh's Heat and Air	Limestone
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O: 580-372-6003 C: 580-743-2030	918-504-3601 Robert
O: 580-372-6003 C: 580-743-2030 Leighton Byrd	918-504-3601
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