ETSU BUILDING 2 RENOVATION

EAST TENNESSEE STATE UNIVERSITY

BUILDING #2 DOGWOOD AVE VA MEDICAL CENTER CAMPUS MOUNTAIN HOME, TN 37684

SCHEMATIC DESIGN 01.07.2021

RENOVATION OF LEVEL 1 OF BUILDING NO.2 OF THE JAMES H. QUILLEN COLLEGE OF MEDICINE AT EAST TENNESSEE STATE UNIVERSITY. SPACES INCLUDE CLASSROOMS, FACULTY OFFICES, LABORATORY SPACE, AND STUDY/MEETING ROOMS. THIS BUILIDING IS LOCATED ON THE CAMPUS OF THE "MOUNTAIN BRANCH HOME FOR DISABLED VOLUNTEER SOLDIERS", A U.S. NATIONAL HISTORIC LANDMARK

APPLICABLE CODES -- TENNESSEE STATE FIRE MARSHAL'S OFFICE.

INTERNATIONAL BUILDING CODE 2012

INTERNATIONAL ENERGY CONSERVATION CODE 2012

INTERNATIONAL GAS CODE 2012

INTERNATIONAL MECHANICAL CODE

INTERNATIONAL PLUMBING CODE

INTERNATIONAL FIRE CODE

INTERNATIONAL EXISTING BUILDING CODE

LIFE SAFETY CODE (NFPA 101)

20:

BUILDING CLASSIFICATIONS

PROJECT SCOPE

IBC OCCUPANCY:

IBC CONSTRUCTION TYPE:

NFPA OCCUPANCY:

NFPA CONSTRUCTION TYPE:

TYPE IIIB, SPRINKLERED

EXISTING BUSINESS (LSC CHAPTER 39)

TYPE III (2-1-1)

NO RATING

NO RATING

NO RATING

NO RATING

2 HR RATED

FIRE PROTECTION
INTERIOR BEARING WALLS:
COLUMNS:
BEAMS:
FLOOR-CEILING ASSEMBLY:
EXTERIOR BEARING WALL:
SHAFT ENCLOSURERS:

SHAFT ENCLOSURERS: 2 HR RATED

OCCUPANCY SEPARATIONS: (NOT APPLICABLE)

SMOKE PARTITIONS: NO RATING, SMOKE TIGHT

"HAZARDOUS" SPACE PROTECTION: SMOKE TIGHT (>50SF) OR 1HR (>100 SF)

SMOKE BARRIERS: (NOT APPLICABLE)

HORIZONTAL EXITS: (NOT APPLICABLE)

RATED ASSEMBLIES

FLOOR-CEILING (N/A): NO RATING

ROOF-CEILING (N/A): NO RATING

COLUMNS (N/A): NO RATING

EXTERIOR BEARING WALLS (EXISTING SOLID BRICK: 2 HOUR

SEE IBC TABLE 721.1(2), ITEM 1-1.2:

ZONING
ZONING JURISDICTION: JOHNSON CITY, TENNESSEE
EXISTING BUILDING ZONING: R-4 , MEDIUM-DENSITY RESIDENTIAL DISTRICT

BUILDING DATA
ALLOWABLE HEIGHTS AND AREAS

BUILDING HEIGHT (STORIES) 4

BUILDING HEIGHT (FEET) 75 FEET

AREA PER STORY 57,000 SF

TOTAL BUILDING AREA (3 STORIES PLUS BASEMENT) 228,000 SF

NOTE: SEE IBC TABLE 503; SECTION S504.2; AND SECTION 506.3

ACTUAL HIEIGHTS
BUILDING HEIGHT (STORIES)

BUILDING HEIGHT (STORIES) 3 PLUS BASEMENT
BUILDING HEIGHT (FEET) 748 FEET

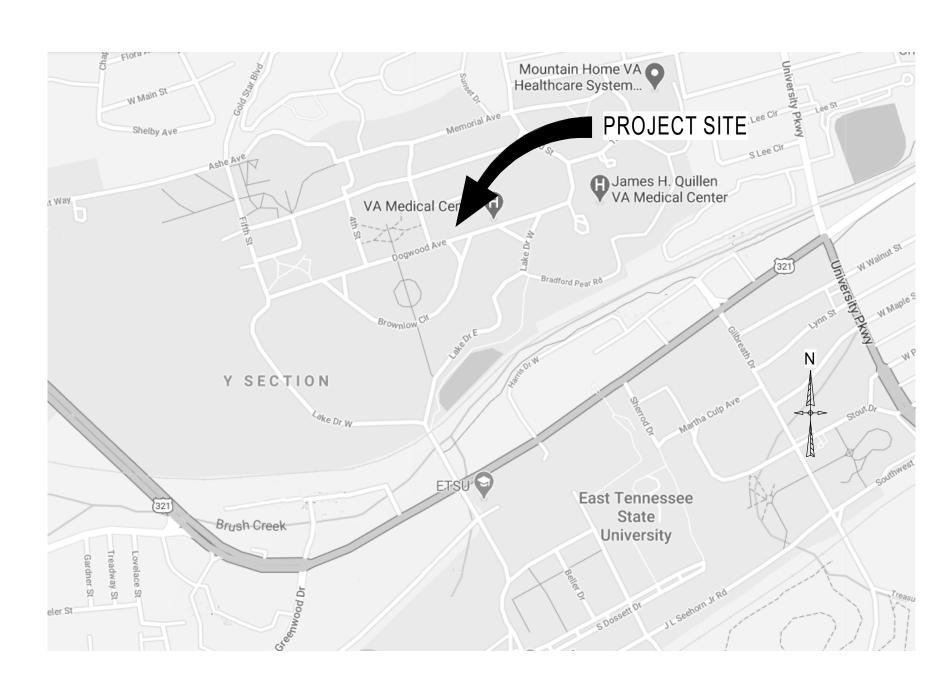
LEVEL 1 - RENOVATED AREA 13,400 SF

TOTAL BUILDING AREA (3 STORIES PLUS BASEMENT) APPROX 55,000 SF

NUMBER SHEET NAME GENERAL COVER SHEET FIRST FLOOR LIFE SAFETY PLAN ARCHITECTURAL LEGENDS AND NOTES **DEMOLITION PLANS** BASEMENT FLOOR PLAN FIRST FLOOR PLAN FIRST FLOOR REFLECTED CEILING PLAN INTERIOR ELEVATIONS INTERIOR ELEVATIONS Mechanical MECHANICAL LEGEND SCHEDULES FIRST FLOOR DEMOLITION PLAN - HVAC FIRST FLOOR DEMOLITION PLAN - PIPING BASEMENT FLOOR NEW WORK PLAN - HVAC FIRST FLOOR NEW WORK PLAN - HVAC FIRST FLOOR NEW WORK PLAN - PIPING

SITE MAP

PROJECT TEAM



OWNER

EAST TENNESSEE STATE UNIVERSITY

ARCHITECT
CLARK NEXSEN
210 EAST WATAUGA AVENUE,
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STRUCTURAL ENGINEER
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MECHANICAL, PLUMBING, ELECTRICAL AND FIRE PROTECTION ENGINEER

CLARK NEXSEN 210 EAST WATAUGA AVENUE, JOHNSON CITY, TN 37601 T: 423.929.2191 F: 757.455.5638 EAST TENNESSEE STATE UNIVERSITY

ETSU BUILDING 2
RENOVATION

BUILDING #2 DOGWOOD AVE
VA MEDICAL CENTER CAMPUS
MOUNTAIN HOME, TN 37684

DESIGNER

CLARKNEXSEN

210 E. WATAUGA AVENUE JOHNSON CITY, TN 37601 423.929.2191

PROFESSIONAL SEAL

SUBMITTAL 01.07.2021

SCHEMATIC DESIGN

REVISIONS

KEY PLAN

SHEET

COVER SHEET

G-001

DESIGN: Designer
DRAWN: Author
REVIEW: Checker

CN 9195

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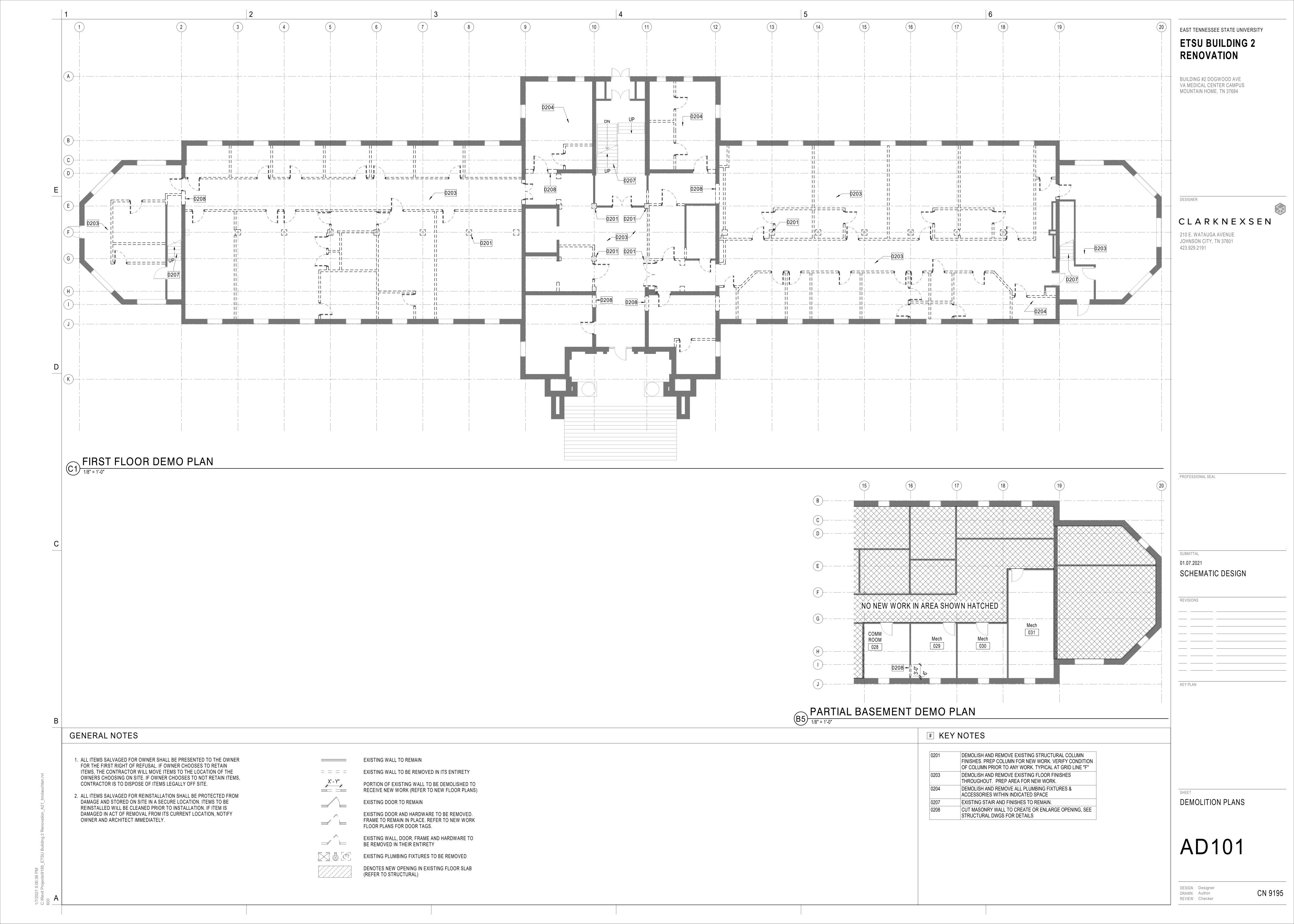
EAST TENNESSEE STATE UNIVERSITY ETSU BUILDING 2 1. COORDINATE ALL FIRE EXTINGUISHERS LOCATIONS SHOWN ON PLANS W/ LOCAL FIRE OFFICIAL'S REQUIREMENTS. RENOVATION 2. GC TO PROVIDE & INSTALL ALL BLOCKING IN WALLS AS REQUIRED FOR MOUNTING FIRE EXTINGUISHERS. BUILDING #2 DOGWOOD AVE 3. GC TO COORDINATE INSTALLATION REQUIREMENTS OF EXIT SIGNS, ALL VA MEDICAL CENTER CAMPUS ASSOCIATED HARDWARE, JUNCTION BOXES, WIRING & REQUIRED EXIT MOUNTAIN HOME. TN 37684 DEVICES W/ ELECTRICAL DRAWINGS & LOCAL INSPECTOR. 4. RATED WALLS AND PARTITIONS REQUIRED TO HAVE PROTECTED OPENINGS SHALL BE PERMANENTLY STENCILED EVERY 10'-0" ABOVE THE CEILING OR CONCEALED SPACE. **EXAMPLE**: 1-HOUR RATED BARRIER - PROTECT ALL OPENINGS DESIGNER CLARKNEXSEN 210 E. WATAUGA AVENUE JOHNSON CITY, TN 37601 423.929.2191 STORAGE 167 SF | 1 OCC | Area 110 SF 8 OCC Area DOORS: TOTAL OCCUPANTS THIS DOOR 68 68 (.15") = 10.2 " REQUIRED 36" PROVIDED STORAGE Area 639 SF 7 OCC Area 3 137 SF 1 OCC 314 SF 2 OCC 468 SF | 5 OCC DOORS: TOTAL OCCUPANTS THIS DOOR 57 57 (.15") = 8.55" REQUIRED 36" PROVIDED PATH A **_____** Area PROFESSIONAL SEAL 656 SF 13 OCC PATH B 126' - 6" Area Area 🖺 155 SF |11 OCC STORAGE Area Area 201 SF 1 OCC 1,076 SF52 OCC 1,093 SF 52 OCC 1,318 SF26 OCC ALALALALALALALA assembly Area 162 SF 11 OCC \$ 600 SF 3 OCC AAAAAAAAA SUBMITTAL 01.07.2021 DOORS:
 TOTAL OCCUPANTS THIS DOOR 13.
 13 (.15") = 1.95" REQUIRED
 36" PROVIDED SCHEMATIC DESIGN Area BUSINESS 46 SF 3 OCC 331 SF 4 OCC DOORS:
 TOTAL OCCUPANTS THIS DOOR 34.
 34 (.15") = 5.1" REQUIRED
 36" PROVIDED REVISIONS PATH ID EGRESS TRAVEL PATH DOOR TAG. REFER TO LIFE SAFETY EGRESS DOOR SCHEDULE. (101A) DOORS:
TOTAL OCCUPANTS THIS DOOR 78
78 (.15") = 11.7 " REQUIRED
36" PROVIDED STAIR TAG. REFER TO LIFE SAFETY EGRESS STAIR SCHEDULE FEC FIRE EXTINGUISHER CABINET KEY PLAN FEB FIRE EXTINGUISHER BRACKET FIRST FLOOR LIFE SAFETY PLAN

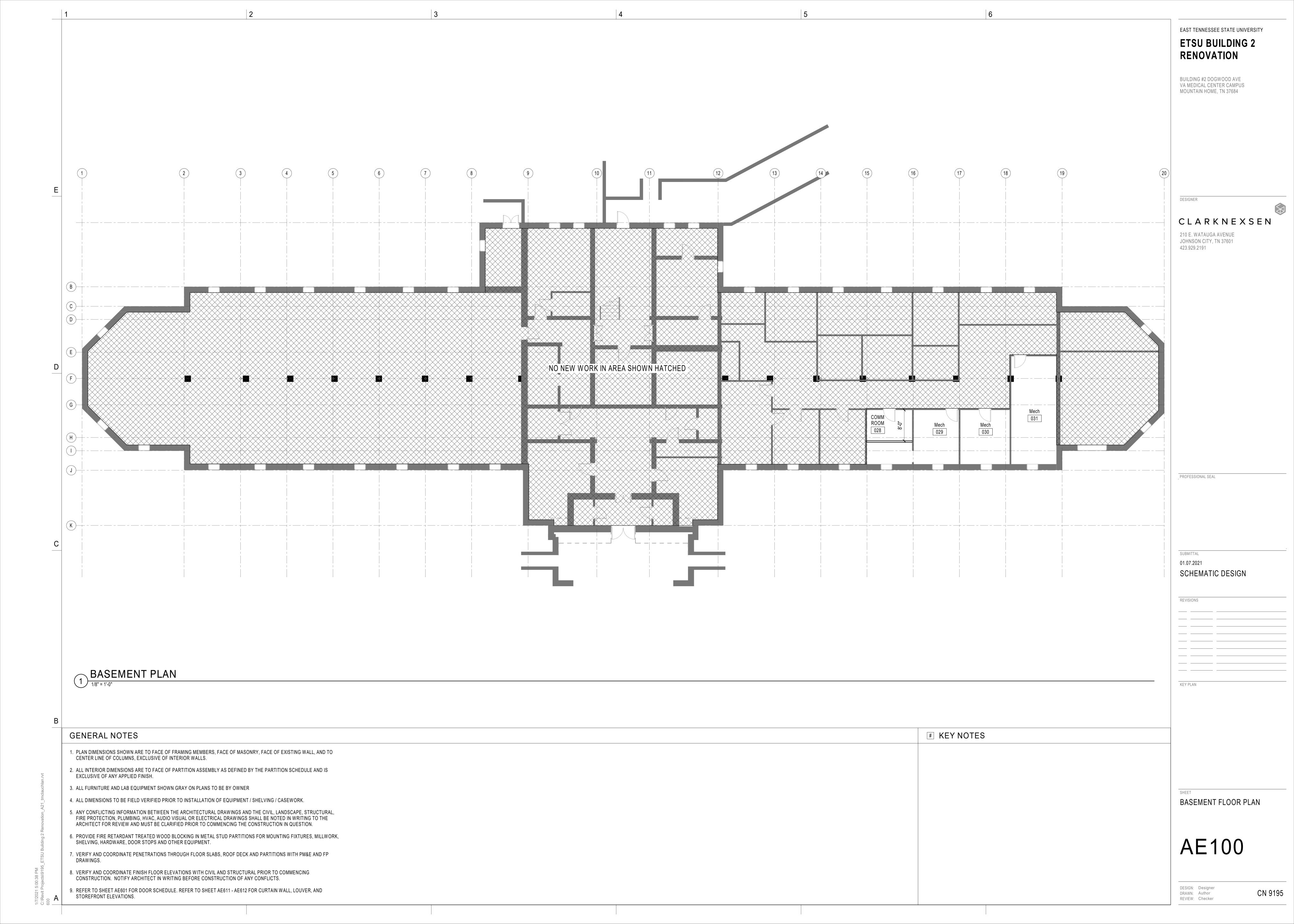
1/8" = 1'-0" **SPACE NAME** SPACE NAME 9,876 SF 385 OCC OCCUPANCY LOAD (PEOPLE) - SPACE AREA PATH OF TRAVEL SCHEDULE ONE HALF HOUR FIRE RATING CLEAR STAIR | EGRESS | OCCUPANT LOAD PERSON OCCUPANCY SF TYPE LEVEL PATTERN OCCUPANCY AREA PEOPLE OCCUPANTS WIDTH WIDTH MAX PATH A 100'-11" ONE HOUR FIRE RATING TOP LEVEL | STAIR MARK | PROVIDED | FACTOR | PROVIDED | REQUIRED | FIRST FLOOR 1,419 SF ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM PATH B 126'-6" 473 SF FIRST FLOOR LIFE SAFETY FIRST FLOOR ASSEMBLY UNCONCENTRATED TABLES AND CHAIRS PATH C TWO HOUR FIRE RATING 122'-4" FIRST FLOOR BUSINESS AREAS 1,439 SF PLAN 152 FIRST FLOOR EDUCATIONAL CLASSROOM AREA 3,126 SF 157 THREE HOUR FIRE RATING LIFE SAFETY - EGRESS DOOR SCHEDULE - FIRST FLOOR 39 FIRST FLOOR EDUCATIONAL SHOPS & OTHER VOCATIONAL 1,974 SF 41 DOOR NO.CLEAR EGRESS
WIDTH PROVIDEDEGRESS WIDTH
FACTOROCCUPANT LOAD
MAX PROVIDEDDELAYED EGRESS
(SECONDS)ELECTROMAGNETIC
LOCKHOLD OPEN
DEVICEPANIC
HARDWARE FOUR HOUR FIRE RATING FIRST FLOOR TOTALS: 8,430 SF 255 * NUMBER OF OCCUPANTS IS AN AGGREGATE AND IS A RESULT OF ROUNDING UP INDIVIDUAL AREAS SMOKE BARRIER (SB), SMOKE PARTITION (SP), OR PARTITION CAPABLE OF RESISTING THE PASSAGE OF SMOKE (S)

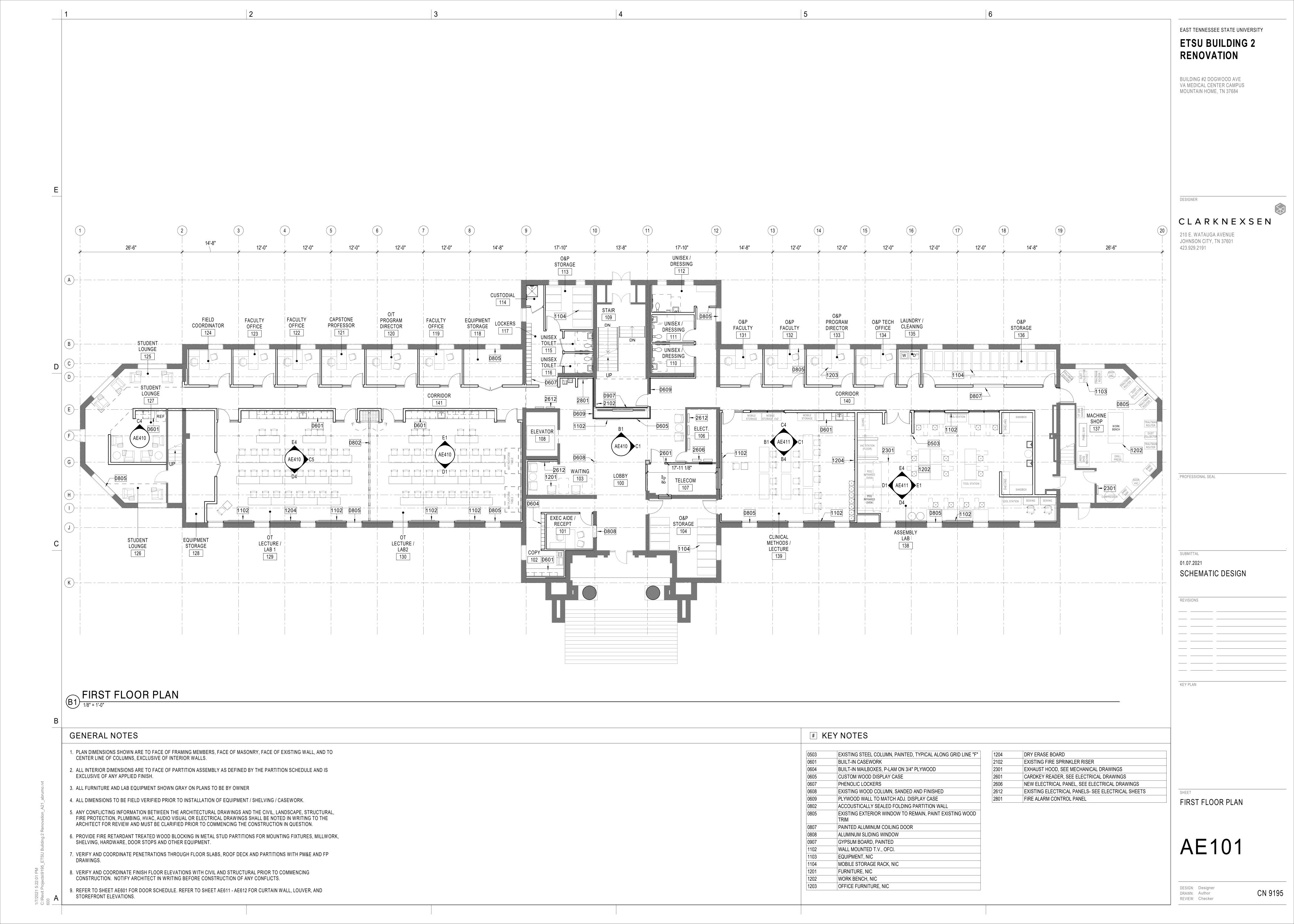
DESIGN: Designer DRAWN: Author REVIEW: Checker

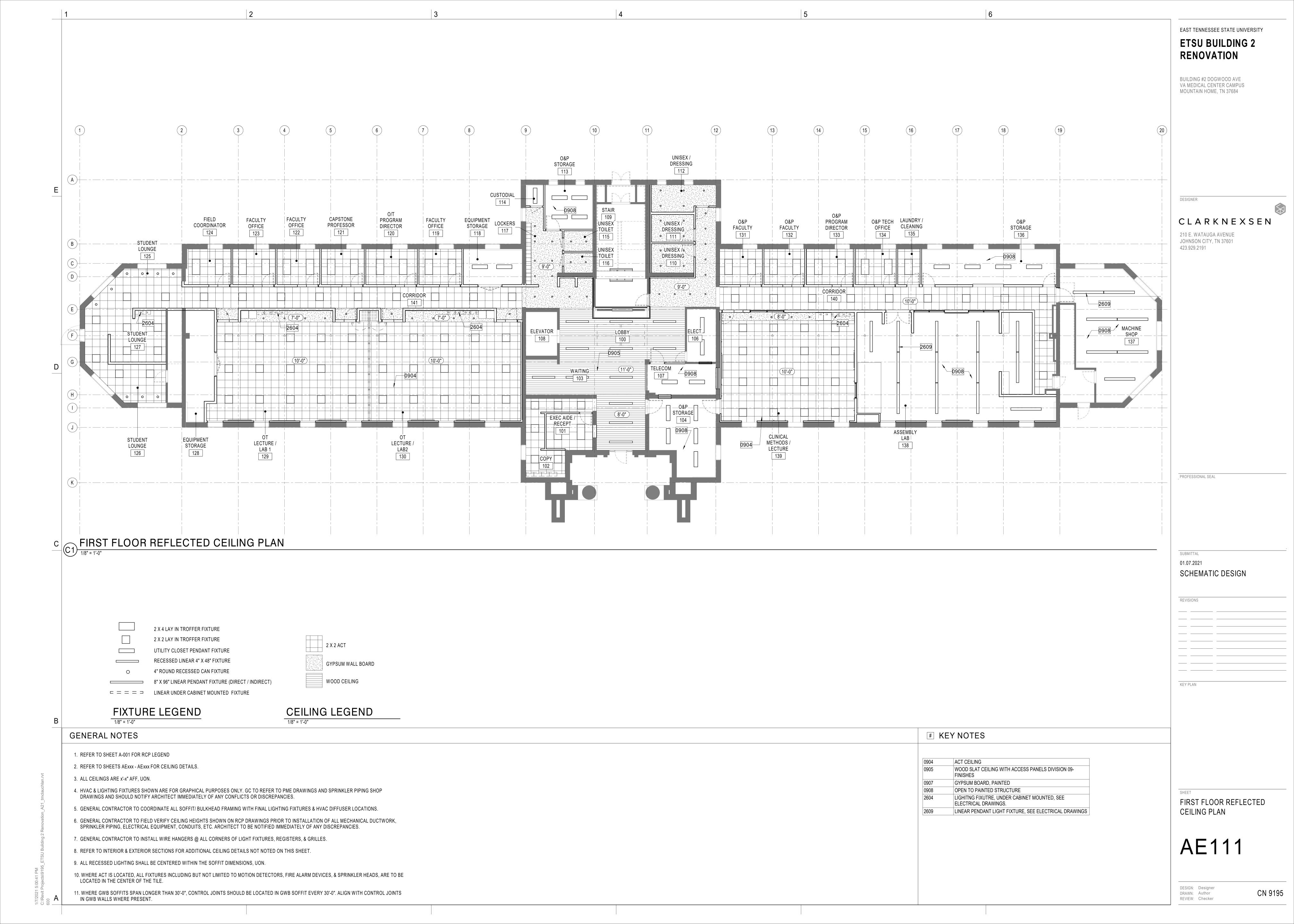
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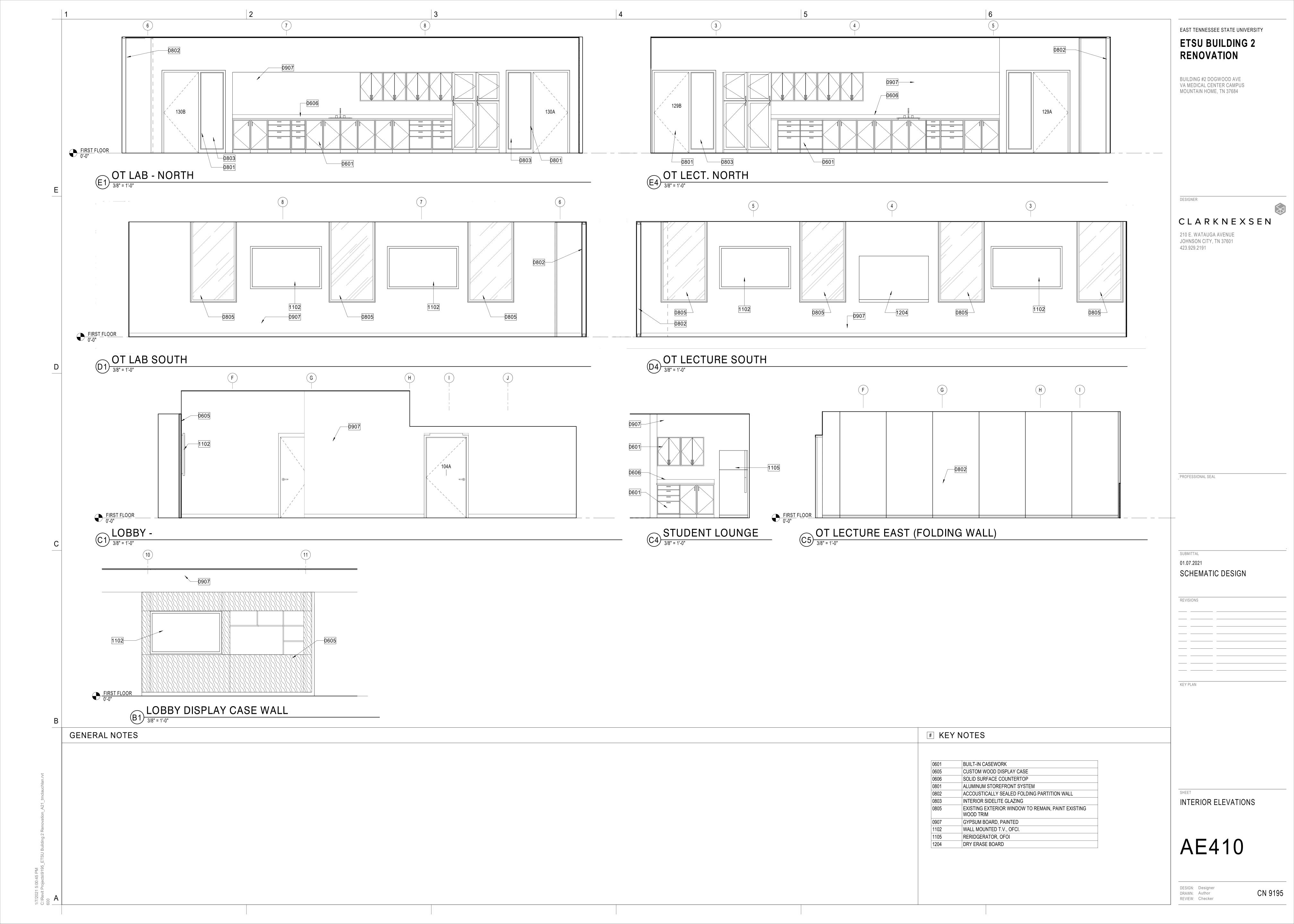
ARCHITECTURAL GENERAL NOTES RCP LEGEND ARCHITECTURAL SYMBOLOGY EAST TENNESSEE STATE UNIVERSITY ETSU BUILDING 2 \boxtimes (#) # 1. PLAN DIMENSIONS SHOWN ARE TO FACE OF FRAMING MEMBERS. FACE OF MASONRY, FACE RENOVATION 10. NOTIFY ARCHITECT OF ANY DISCREPANCY BETWEEN DRAWINGS, SPECIFICATIONS AND/OR EXISTING CONDITIONS. OF EXISTING WALL AND TO CENTERLINE OF COLUMNS. SUPPLY GRILLE / RETURN GRILLE NEW WORK KEYNOTE **DEMOLITION KEYNOTE** 2. ALL NOTES, DETAILS, AND FEATURES DRAWN AS APPLICABLE FOR ONE CONDITION ARE 11. PROVIDE WOOD OR METAL BLOCKING BEHIND GWB AT THE FOLLOWING LOCATIONS: APPLICABLE TO SIMILAR CONDITIONS, WHETHER OR NOT SPECIFICALLY INDICATED. BUILDING #2 DOGWOOD AVE A. ALL WALL-MOUNTED OR CEILING-MOUNTED DOOR STOPS, DOOR HOLD-OPEN DEVICES, AND VA MEDICAL CENTER CAMPUS OTHER HARDWARE. 3. IN STUD WALLS, LOCATE ALL INTERIOR DOOR FRAMES A DISTANCE OF 4" (FOUR) INCHES $\langle W1 \rangle$ $\langle L1 \rangle$ MOUNTAIN HOME, TN 37684 FROM THE THROAT RETURN TO THE CLOSEST ADJACENT PERPENDICULAR PARTITION, UON. IN CMU WALLS, LOCATE MASONRY OPENING AT DOORS 8" (EIGHT) FROM THE B. ALL WALL-MOUNTED TOILET ACCESSORIES. AT GRAB BARS, PROVIDE BLOCKING CAPABLE OF EXHAUST FAN WINDOW / LOUVER / CURTAIN WALL / STOREFRONT SPECIALTY ITEM DESIGNATION PERPENDICULAR WALL. RESISTING A MINIMUM LOAD OF 250 POUNDS APPLIED VERTICALLY OR HORIZONTALLY AT ANY DESIGNATION POINT ON THE GRAB BAR. 4. ALL ELEVATIONS ARE MEASURED FROM THE REFERENCE ELEVATION +0'-0", WHICH IS THE TOP OF THE FIRST FLOOR SLAB, UON. C. ALL WALL-MOUNTED PLUMBING FIXTURES, INCLUDING BUT NOT LIMITED TO LAVATORIES, SINKS, \square FD URINALS, WATER CLOSETS, AND WATER COOLERS. PROVIDE BLOCKING CAPABLE OF RESISTING 5. DO NOT SCALE DRAWINGS TO DETERMINE DIMENSIONS OR SIZES OF BUILDING ELEMENTS. A MINIMUM LOAD OF 400 POUNDS APPLIED VERTICALLY AT ANY POINT ON THE PLUMBING INDICATES BRACKET, WALL MOUNTED FLOOR DRAIN **REVISION TAG** ELECTRICAL LIGHT / FIXTURE / EQUIPMENT, ETC 6. ALL WOOD BLOCKING AND MISCELLANEOUS STEEL SHOWN IN DETAILS AND SECTIONS SHALL BE CONTINUOUS, UON. D. ALL WALL-MOUNTED CABINETRY, SHELVING, AND SIMILAR ITEMS. 7. USE FIRE-RETARDANT TREATED WOOD PRODUCTS FOR ALL CONCEALED WOOD BLOCKING, E. ALL WALL-MOUNTED VIDEO MONITORS, AND SIMILAR ITEMS (E1)-----(1)----O O UON. 12. ALL MATERIALS USED IN THE PROJECT SHALL BE NEW AND PROVIDED BY THE CONTRACTOR, UON. EXISTING COLUMN GRID LINE LIGHT FIXTURE **EMERGENCY EGRESS COLUMN GRID LINE** 8. USE PRESERVATIVE-TREATED WOOD PRODUCTS FOR ALL WOOD BLOCKING IN CONTACT LIGHT FIXTURE 13. USE BITUMINOUS MEMBRANE TO SEPARATE PRESERVATIVE-TREATED WOOD PRODUCTS FROM WITH EXTERIOR MASONRY OR CONCRETE WALLS, AND FOR ALL WOOD BLOCKING IN CONTACT WITH ANY METAL SURFACE. CONTACT WITH CONCRETE SLABS ON GRADE. DESIGNER **ROOM NAME** 9. VERIFY ALL DIMENSIONS. BRING ANY DISCREPANCIES TO THE IMMEDIATE ATTENTION OF 101 CEILING CEILING THE ARCHITECT. MOUNTED EXIT MOUNTED EXIT ROOM DESIGNATION **ELEVATION DATUM** CLARKNEXSEN LIGHT LIGHT W/ ARROW 210 E. WATAUGA AVENUE ARCHITECTURAL ABBREVIATIONS JOHNSON CITY, TN 37601 423.929.2191 **CEILING MOUNTED DIRECTION OF SLOPE** ROOF SLOPE AND EACH SOUND ATTENUATING BLANKET LENGTH / LONG OCCUPANCY SENSOR SOUND ATTENUATING FIRE BLANKET **EXPANSION JOINT** SQUARE FEET ACT ACOUSTICAL CEILING TILE ELEC ELECTRICAL MATERIAL ADJUSTABLE, ADJUST SIMILAR ADJ ELEVATION MAXIMUM FEB ABOVE FINISH FLOOR SQUARE EDGE OF SLAB MECHANICAL AFS STAINLESS STEEL ABOVE FINISH SLAB EPS EXPANDED POLYSTYRENE MANUFACTURER CEILING MOUNTED RECEPTACLE FIRE EXTINGUISHER CABINET FIRE EXTINGUISHER BRACKET STRUCT STRUCTURAL ALTERNATE EQUAL MINIMUM STD STANDARD ALUM ALUMINUM **EQUIPMENT** MISCELLANEOUS **EXIST** STL STEEL APPROX APPROXIMATE EXISTING MASONRY OPENING □□□ APC ARCHITECTURAL PRECAST CONCRETE EXP EXPANSION / EXPOSED SUSP SUSPENDED MTG MOUNTING EXT **EXTERIOR** MTL CEILING MOUNTED SECURITY CAMERA ACCESSIBLE BEDROOMS - MOBILITY FEATURES ACCESSIBLE BEDROOMS - COMMUNICATION FEATURES BD TOP & BOTTOM BOARD T & B FLOOR DRAIN TELECOMMUNICATION BUILDING TELE NOT IN CONTRACT FEB FIRE EXTINGUISHER BRACKET BLKG BLOCKING THR THRESHOLD NUMBER ADJACENT AREA REFERENCE A1 / AE101 BRG BEARING FIRE EXTINGUISHER CABINET TOP OF CONCRETE NOMINAL NOM BUR FINISH FLOOR BUILT-UP ROOFING TOW TOP OF WALL NOT TO SCALE **EXPANSION** CONTROL BUILDING INDICATES BRACKET, WALL MOUNTED MATCHLINE **FIBERGLASS TOILET PARTITION** JOINT SEPARATION JOINT JOINT TP FIRE PROTECTION FIXTURE / EQUIPMENT, ETC FINISH CENTER LINE OC ON CENTER FLOOR **CORNER GUARD** OUTSIDE DIAMETER FACE OF **CONTROL JOINT** OWNER FURNISHED A1 NAME SCALE: DETAIL, SECTION, FIRE PROTECTION UNLESS OTHERWISE NOTED CLR CLEAR CONTRACTOR INSTALLED **ELEVATION TITLE** FIRE RETARDANT TREATED SPRINKLER HEAD CLG CEILING OWNER FURNISHED CONCRETE MASONRY UNIT VINYL BASE OWNER INSTALLED COL VINYL COMPOSITION TILE COLUMN GAUGE OPPOSITE HAND CONCRETE GALVANIZED VERTICAL OPENING $\mathsf{F} \triangleleft$ — PLAN NORTH INDICATOR VERIFY IN FIELD CONST CONSTRUCTION GENERAL CONTRACTOR OPPOSITE TRUE NORTH INDICATOR CONTINUOUS VENT THRU ROOF VTR GLASS FIBER REINFORCED GYPSUM ORD OVERFLOW ROOF DRAIN FIRE ALARM STROBE / FIRE ALARM HORN STROBE PLAN TITLE CARPET AND NORTH ARROW CT CERAMIC TILE PANIC HARDWARE WIDTH / WASHER GYPSUM WALLBOARD W/ WITH PLATE PROFESSIONAL SEAL DEPTH / DRYER WITHOUT PLAM PLASTIC LAMINATE - DETAIL / PLAN NUMBER DBL DOUBLE WALLCOVERING HDW HARDWARE PLYWD PLYWOOD SMOKE DETECTOR DIAMETER HARDWOOD POLYISO POLYISOCYANURATE DETAIL / ENLARGED PLAN DIAGONAL INSULATION WINDOW HOLLOW METAL DIMENSION WINDOW OPENING HORIZONTAL PAIR DISPENSER **WORK POINT** SHEET WHERE SHOWN WEIGHT DOWN HVAC HEATING, VENTILATION, & AIR SPEAKER / SPEAKER W/STROBE CONDITIONING A1 — ELEVATION NUMBER DOWNSPOUT RADIUS DRAWING EXTRUDED POLYSTYRENE INSIDE DIAMETER **ROOF DRAIN** INTERIOR ELEVATION INSULATING GLASS UNIT REFRIGERATOR INSULATION REINFORCING INTERIOR REQUIRED 01.07.2021 SHEET WHERE SHOWN CARBON MONOXIDE SENSOR SCHEMATIC DESIGN ROUGH OPENING **ELEVATION NUMBER** JOINT RAIN WATER LEADER KO KNOCK OUT **EXTERIOR ELEVATION** MATERIAL LEGEND HEAT SENSOR / PHOTO SENSOR - SHEET WHERE SHOWN SECTION NUMBER SPANDREL GLAZING ALUMINUM EXPOSED CEILING BRICK GWB / GROUT / SPRAY FIREPROOFING STEEL SHEET WHERE SHOWN SECTION NUMBER 8'-0" 34 4 44 CONCRETE INSULATION - BATT / LOOSE / BLANKET WOOD BLOCKING / FRAMING - CONTINUOUS **CEILING HEIGHT** DETAIL / WALL SECTION KEY PLAN INSULATION - MINERAL WOOL CONCRETE MASONRY UNIT (CMU) WOOD BLOCKING - INTERRUPTED SHEET WHERE SHOWN DETAIL NUMBER ACCESS PANEL **INSULATION - RIGID** DETAIL SECTION FILL - GRANULAR INSULATION - SPRAY FOAM SHEET NUMBER NOTED IN GENERAL NOTES ON SHEET PLYWOOD / MDF FILL - POROUS ARCF PHOTOGRAPH / 3D VIEW REFERENCE O RATED PARTITION LEGEND A1 / AE101 A1 / AE101 2' x 2' ACOUSTICAL CEILING / SOFFIT TILE LAY-IN CEILING ARCHITECTURAL LEGENDS AND NOTES ONE HALF HOUR FIRE RATING 2' x 4' ACOUSTICAL WOOD PARTITION / WALL TYPE **|**—XX.X ONE HOUR FIRE RATING TILE LAY-IN CEILING CEILING / SOFFIT TWO HOUR FIRE RATING A-001 THREE HOUR FIRE RATING 4' x 4' ACOUSTICAL METAL PANEL TILE LAY-IN CEILING CEILING / SOFFIT FOUR HOUR FIRE RATING DOOR NUMBER SMOKE BARRIER (SB), SMOKE PARTITION NOT ALL ABBREVIATIONS, SYMBOLS, AND LEGEND GRAPHICS LISTED ARE NECESSARILY USED DESIGN: Designer (SP), OR PARTITION CAPABLE OF CN 9195 ON THIS PROJECT. REFER TO DOCUMENTS FOR SPECIFIC INFORMATION. DRAWN: Author RESISTING THE PASSAGE OF SMOKE (S) REVIEW: Checker

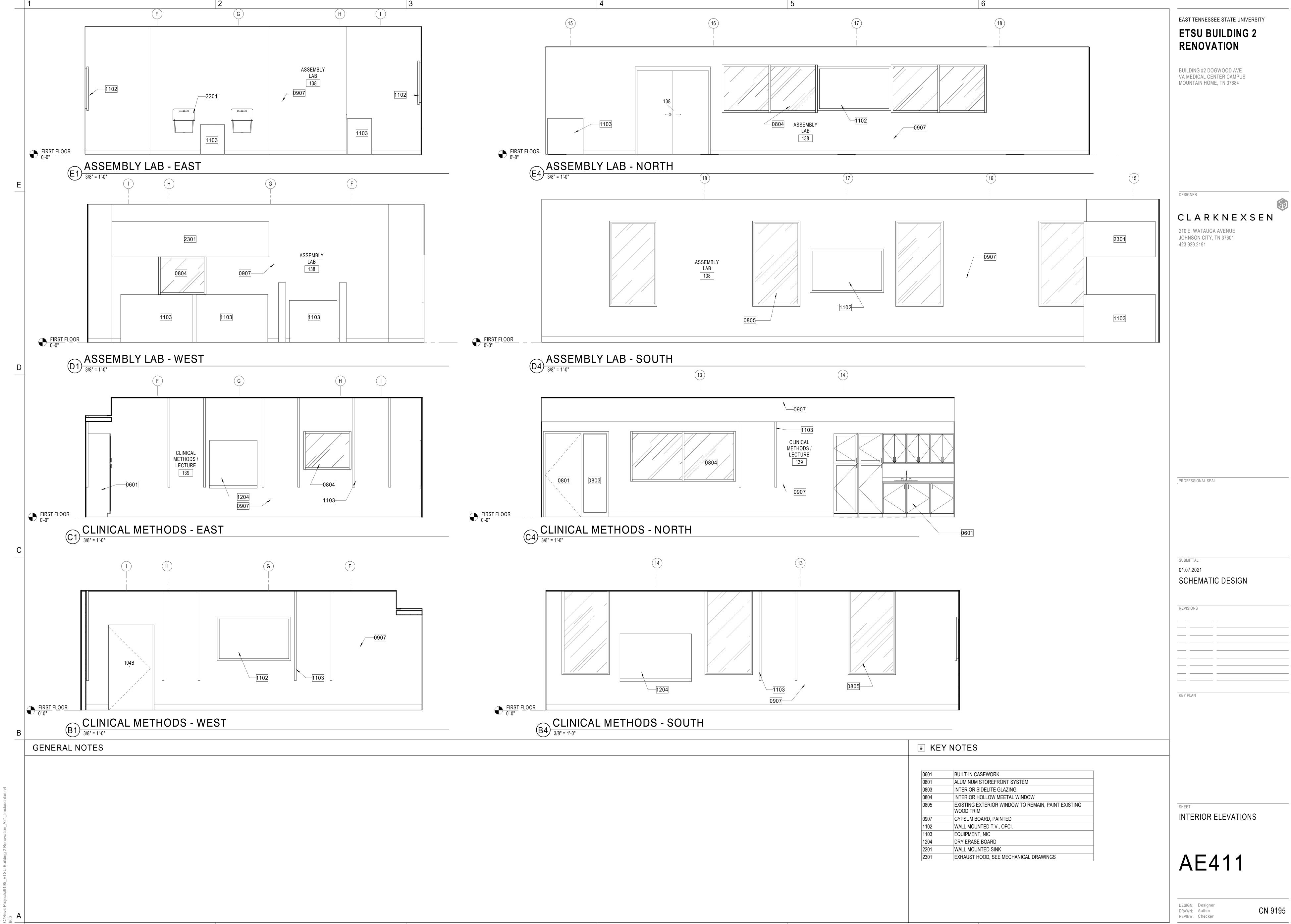












LEGEND

GENERAL						
$\overline{\langle \# \rangle}$	DEMOLITION NOTE IDENTIFICATION					
#	CONSTRUCTION NOTE IDENTIFICATION					
	INDICATES EXISTING ITEM					
	INDICATES NEW ITEM					
	INDICATES ITEM TO BE REMOVED					
	REMOVE TO THIS POINT					
T	CONNECT NEW TO EXISTING					
XXX	ROOM NUMBER IDENTIFICATION					
AD	ACCESS DOOR					
AFF	ABOVE FINISHED FLOOR					
AFG	ABOVE FINISHED GRADE					
ALUM	ALUMINUM					
ARCH	ARCHITECTURAL					
DIA	DIAMETER					
DWG	DRAWING					
EX	EXISTING					
EXR	EXISTING TO REMAIN					
GA	GAUGE					
GALV	GALVANIZED					
MISC	MISCELLANEOUS					
NIC	NOT IN CONTRACT					
TYP	TYPICAL					
UON	UNLESS OTHERWISE NOTED					
F <u>10/</u> 6 (CFM)	EXHAUST GRILLE DESIGNATION WITH CFM INDICATED					
<u>A6</u> (CFM)	CEILING DIFFUSER DESIGNATION WITH CFM INDICATED					
G20/20	RETURN GRILLE DESIGNATION					
DUCTWORK						

SUPPLY DUCT TURNING UP (OVAL)

RETURN DUCT TURNING UP

□□□ EXHAUST DUCT TURNING UP

CEILING SUPPLY DIFFUSER

10"/10" OVAL DUCTWORK

RETURN DUCT TURNING DOWN

EXHAUST DUCT TURNING DOWN

SUPPLY DUCT TURNING DOWN (OVAL)

CEILING RETURN, EXHAUST OR TRANSFER REGISTER

MITERED ELBOW WITH TURNING VANES

10"x10" SQUARE OR RECTANGULAR DUCTWORK

FLEXIBLE DUCT CONNECTION

INDICATES ROUND DUCTWORK

RETURN, EXHAUST OR TRANSFER AIR FLOW

FLEXIBLE DUCT CONNECTION

VOLUME DAMPER

M MOTORIZED CONTROL DAMPER

FLEXIBLE CONNECTION

DUCT SMOKE DETECTOR

VERTICAL FIRE DAMPER

SUPPLY AIR FLOW

VALVES AND ACCESSORIES							
A	AUTOMATIC AIR VENT						
——————————————————————————————————————	AUTOMATIC FLOW CONTROL VALVE						
	BACKFLOW PREVENTER						
─	BALL VALVE						
	BOTTOM CONNECTION						
<u>—</u> ф—	BUTTERFLY VALVE						
	CAPPED PIPE						
	CHECK VALVE						
 	CLEAN OUT						
	CONCENTRIC REDUCER						
	DIRECTION OF FLOW						
	ECCENTRIC REDUCER						
	FLANGED CONNECTION FLEXIBLE CONNECTION						
	FLOW METER						
— 	BALL VALVE FOR 2" & UNDER						
2 7	BUTTERFLY FOR 2.5" AND LARGER						
— X	GLOBE VALVE						
<u></u>	MANUAL AIR VENT						
— <u>Q</u> —	METERED BALANCING VALVE W/PRESSURE TAPS						
<u> </u>	PRESSURE/TEMPERATURE TEST PLUG						
——	PIPE TURNING UP						
	PIPE TURNING DOWN						
	PITCH						
	PRESSURE REDUCING VALVE						
	PRESSURE RELIEF VALVE						
	PRESSURE GAUGE WITH GAUGE COCK						
	PUMP						
	STEAM TRAP						
	STRAINER						
	TWO WAY CONTROL VALVE						
	THREE WAY CONTROL VALVE						
	THERMOMETER						
	TOP CONNECTION						
	UNION						
	VACUUM BREAKER						
\ <u>/_1</u>	VALVE IDENTIFICATION						

V-1 VALVE IDENTIFICATION

CONT	
Al	ANALOG INPUT (TO PANEL)
AO	ANALOG OUTPUT (OUT OF PANEL)
BI BO	BINARY INPUT (TO PANEL) BINARY OUTPUT (OUT OF PANEL)
	TWO WAY CONTROL VALVE
	THREE WAY CONTROL VALVE
(BT)	BYPASS TIMER SWITCH
C - — — – DTC	COMMON CONTROL WIRING (SIGNAL PATH) DATA TERMINAL CABINET
(DP)	DIFFERENTIAL PRESSURE SWITCH
DPS	DIFFERENTIAL PRESSURE SENSOR DUCT SMOKE DETECTOR
F	FAN ON-OFF SWITCH
(VSF)	FAN VARIABLE SPEED SWITCH
FMS	FLOW MEASURING SYSTEM
(FS)	FIRESTAT
FZ	FREEZESTAT
H	HUMIDISTAT
TCP	LOCAL TEMPERATURE CONTROL PANEL
	LOW LIMIT TEMPERATURE SENSOR
M	MOTOR
M	MOTORIZED CONTROL DAMPER
MS	MOTOR STARTER
NC	NORMALLY CLOSED
NO	NORMALLY OPENED
—EP—	POWER WIRING
S	SENSOR
Р	STATIC PRESSURE SENSOR
STS	STATIC TOTALIZER STATION
(s)	SWITCH
Т	ZONE TEMPERATURE SENSOR
	TEMPERATURE TRANSMITTER
H,C	THERMOSTAT (C=COOLING, H=HEATING, H,C=HEATING AND COOLING
CSR	CURRENT SENSING RELAY
——	NORMALLY OPEN CONTROLS

NORMALLY CLOSED CONTROLS

PIPING

——CWS—— CHILLED WATER SUPPLY

CHILLED WATER RETURN

CONDENSATE DRAIN LINE

DIRECTION OF FLOW

NATURAL GAS PIPING

HOT WATER SUPPLY

HOT WATER RETURN

LOW PRESSURE STEAM

LOW PRESSURE CONDENSATE

MEDIUM PRESSURE CONDENSATE

MEDIUM PRESSURE STEAM

PUMPED CONDENSATE

REFRIGERANT LIQUID

— V — STEAM VENT LINE

REFRIGERANT SUCTION

GENERAL NOTES

- 1. GENERAL NOTES ON THIS DRAWING ARE APPLICABLE TO EACH MECHANICAL DRAWING OF THIS SET. NOTES SPECIFIC TO INDIVIDUAL MECHANICAL DRAWINGS WILL BE SHOWN ON THE RESPECTIVE MECHANICAL DRAWING.
- PROVIDE A COMPLETE HVAC SYSTEM TO INCLUDE ALL LABOR. MATERIALS, TOOLS, AND EQUIPMENT FOR A COMPLETE AND FUNCTIONAL SYSTEM INCLUDING ALL NECESSARY APPURTENANCES CUSTOMARILY INCLUDED IF NOT SPECIFICALLY CALLED OUT.
- 3. CONFORM WITH ALL APPLICABLE LAWS, CODES, AND REGULATIONS OF MUNICIPAL, STATE AND FEDERAL AUTHORITIES.
- 4. CONFORM TO APPLICABLE ASHRAE, NFPA, AND SMACNA STANDARDS AND OTHER REGULATORY BODIES HAVING JURISDICTION OVER THE CLASS OF WORK.
- ARI, ASME, UL, AND ASTM. 6. MAKE TESTS FOR ACCEPTANCE AND APPROVAL AS REQUIRED BY CODE AND THE REQUIREMENTS OF APPLICABLE REGULATORY AGENCIES. REQUIRED TESTS SHALL BE

5. MATERIALS AND EQUIPMENT SHALL HAVE STAMPS OR SEALS OF

- PERFORMED IN THE PRESENCE OF THE OWNER UNLESS OTHERWISE WAIVED IN WRITING. 7. OBTAIN AND PAY FOR ALL PERMITS, LICENSES, DOCUMENTS. AND SERVICES RELATED TO INSTALLATION OF THE WORK.
- 8. COORDINATE WORK WITH THE OTHER TRADES IN ORDER TO RESOLVE ANY CONFLICT THAT MIGHT ARISE DUE TO THE LOCATION OF EQUIPMENT OR THE USE OF SPACE.
- 9. EQUIPMENT OF HIGHER ELECTRICAL CHARACTERISTICS MAY BE SUBSTITUTED PROVIDED SUCH PROPOSED EQUIPMENT IS APPROVED IN WRITING AND CONNECTING ELECTRICAL SERVICE, CIRCUIT BREAKERS AND CONDUIT SIZES ARE APPROPRIATELY MODIFIED AT NO COST TO THE OWNER.
- 10. RUN ALL HORIZONTAL PIPING AND DUCTWORK ABOVE CEILING UNLESS OTHERWISE NOTED.
- 11. CUT OPENINGS, AS REQUIRED, IN THE EXISTING CONSTRUCTION FOR THE INSTALLATION OF PIPING, DUCTWORK, AND EQUIPMENT. PATCH AND REPAIR TO MATCH THE EXISTING ADJACENT CONSTRUCTION.
- 12. MAKE DUCT PENETRATIONS OF ALL WALLS WITH SHEET METAL DUCTS. FLEXIBLE DUCT PENETRATIONS OF WALLS ARE NOT ACCEPTABLE.
- 13. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF DIFFUSERS, REGISTERS, AND GRILLES. FINISH AND COLOR TO BE SELECTED BY GOVERNMENT FROM MANUFACTURER'S STANDARD PALETTE.
- 14. DUCTWORK SIZES ARE INSIDE CLEAR DIMENSIONS.
- 15. ALL ELBOWS IN DUCTWORK SHALL BE RADIUS ELBOWS UNLESS OTHERWISE NOTED. WHERE SQUARE ELBOWS ARE SHOWN, INSTALL DOUBLE WALL TURNING VANES. RADIUS ELBOWS SHALL HAVE A MINIMUM CENTERLINE RADIUS OF CURVATURE OF 1.5 TIMES DUCT WIDTH OR DIAMETER
- 16. PROVIDE DYNAMIC FIRE AND SMOKE DAMPERS IN ACCORDANCE WITH THEIR U.L. LISTING AND THE REQUIREMENTS OF NFPA-90A.
- 17. DO NOT INSTALL EQUIPMENT, PIPING OR DUCTWORK OVER ANY

ELECTRICAL EQUIPMENT OR ELECTRICAL SERVICE SPACE.

- 18. LAYOUT OF PIPING AND DUCTWORK IS DIAGRAMMATIC. RUN ALL EXPOSED PIPING AND DUCTWORK AS HIGH AS POSSIBLE UNLESS OTHERWISE NOTED. ALLOW FOR RISES, DROPS AND OFFSETS AS REQUIRED.
- 19. PROVIDE ACCESS PANELS WHERE COMPONENTS REQUIRING ACCESS ARE INSTALLED BEHIND WALLS OR ABOVE INACCESSIBLE CEILINGS. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.
- 20. INSTALL MECHANICAL EQUIPMENT TO FACILITATE SERVICING, MAINTENANCE, AND REPAIR OR REPLACEMENT OF EQUIPMENT COMPONENTS. CONNECT EQUIPMENT FOR EASE OF DISCONNECTING, WITH A MINIMUM OF INTERFERENCE WITH OTHER INSTALLATIONS. PIPING SHALL NOT INTERFERE WITH FILTER PULL. MAINTAIN EQUIPMENT MANUFACTURER'S RECOMMENDED MINIMUM SERVICE CLEARANCE.

- 21. MECHANICAL CONTRACTOR SHALL PROVIDE AUTOMATIC CONTROL DEVICES, SUCH AS TEMPERATURE SENSORS, RELAYS, PRESSURE SWITCHES WHICH ARE ASSOCIATED WITH MECHANICAL EQUIPMENT AND ASSOCIATED CONTROL WIRING FROM STARTER TO THE CONTROL DEVICE. ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUIT AND WIRING FROM POWER SOURCE TO DISCONNECT SWITCH, FROM DISCONNECT SWITCH TO STARTER, AND FROM STARTER TO THE EQUIPMENT.
- 22. ALL CONTROL WIRING EXCEPT IN EQUIPMENT ROOMS SHALL BE RUN CONCEALED. WIRING IN WALLS SHALL BE IN CONDUIT. ALL WIRING SHALL BE PLENUM RATED. CONTROL WIRING IN EXPOSED AREAS SHALL BE BUNDLED AND SECURED OR RUN IN CONDUIT. NO WIRING MUST BE SURFACE MOUNTED IN FINISHED SPACES. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE.
- 23. LOCATE THERMOSTATS 48" ABOVE FINISHED FLOOR OR AS NOTED ON THE PLANS.
- 24. FOR EQUIPMENT WITH WATER OR STEAM CONNECTIONS, OR ANY COOLING EQUIPMENT, PROVIDE AUXILIARY DRAIN PANS UNDER EQUIPMENT LOCATED ABOVE CEILINGS.
- 25. ALL VALVES ARE FULL LINE SIZE EXCEPT CONTROL AND BALANCING VALVES. SIZE CONTROL VALVES TO OPERATE ACROSS THE FULL RANGE OF FLOW AT THE COIL SERVED.
- 26. FOR BALANCING 3-WAY VALVES, BALANCE BY-PASS WITH VALVE AT 50% POSITION SUCH THAT TOTAL FLOW DOES NOT EXCEED 100%.
- 27. PROVIDE PRESSURE/TEMPERATURE (P/T) PLUGS, WITH CAPS UP AND DOWNSTREAM OF ALL EQUIPMENT, AT THE SUPPLY AND RETURN TAPS OF ALL PIPING BRANCHES AND WHERE INDICATED. PROVIDE EXTENDED PLUGS AND LABELS WHERE PIPING IS INSULATED. PROVIDE REMOVABLE INSULATION PLUG.
- 28. PROVIDE MANUAL AIR VENTS AT ALL HIGH POINTS AND THE ENDS OF ALL PIPING LOOPS. PROVIDE 1/2" DRAIN VALVES AT LOW POINTS IN PIPING. PROVIDE MINIMUM PITCH SUFFICIENT TO INSURE ADEQUATE VENTING AND DRAINING.
- 29. PROVIDE FLUSHING VALVES AND TEES AT BOTH SIDES OF ALL EQUIPMENT. TAPS SHALL MATCH EQUIPMENT PIPING UP TO 1". FOR LARGER EQUIPMENT AND PIPE LOOPS PROVIDE 1 1/2" TAPS AND
- 30. LOCATE AND SIZE 5 1/2" THICK CONCRETE HOUSEKEEPING PADS AND CURBS IN ACCORDANCE WITH ACTUAL EQUIPMENT PURCHASED. EXTEND PAD BEYOND EQUIPMENT FOR 6" IN ALL DIRECTIONS.

VALVES.

- 31. ALL EQUIPMENT REMOVED FROM THE BUILDING, DURING DEMOLITION, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE UNLESS OTHERWISE NOTED.
- 32. EXISTING DUCT, PIPE AND EQUIPMENT SIZES NOTED ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY AND ARE NOT WARRANTED TO BE CORRECT. FIELD VERIFY ALL EXISTING DUCT, PIPE AND EQUIPMENT SIZES AND THEIR RESPECTIVE LOCATIONS BEFORE PROCEEDING WITH ANY ASSOCIATED WORK.
- 33. PRIOR TO SUBMITTING A PROPOSAL THE CONTRACTOR IS STRONGLY ENCOURAGED TO VISIT THE SITE AND THOROUGHLY INSPECT ALL EXISTING CONDITIONS TO INSURE THAT THE WORK REPRESENTED ON THE DRAWINGS CAN BE INSTALLED AS
- 34. UNLESS OTHERWISE NOTED, FLEXIBLE CONNECTORS AND RIGID DUCT RUNOUTS SERVING A SINGLE GRILLE/REGISTER/DIFFUSER MUST BE THE SAME SIZE AS THE GRILLE/REGISTER/DIFFUSER NECK. REFER TO SCHEDULES FOR NECK SIZES.
- 35. REFER TO ELECTRICAL DRAWINGS FOR VOLTAGE AND PHASE REQUIREMENTS FOR ALL EQUIPMENT REQUIRING AN ELECTRICAL CONNECTION.
- 36. ALL REFRIGERANT PIPING MUST BE SIZED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.

ETSU BUILDING 2 RENOVATION

EAST TENNESSEE STATE UNIVERSITY

Ed Allen Hall, 3rd St, Johnson City, TN 37604

DESIGNER

PROFESSIONAL SEAL

01.07.2021

SCHEMATIC DESIGN

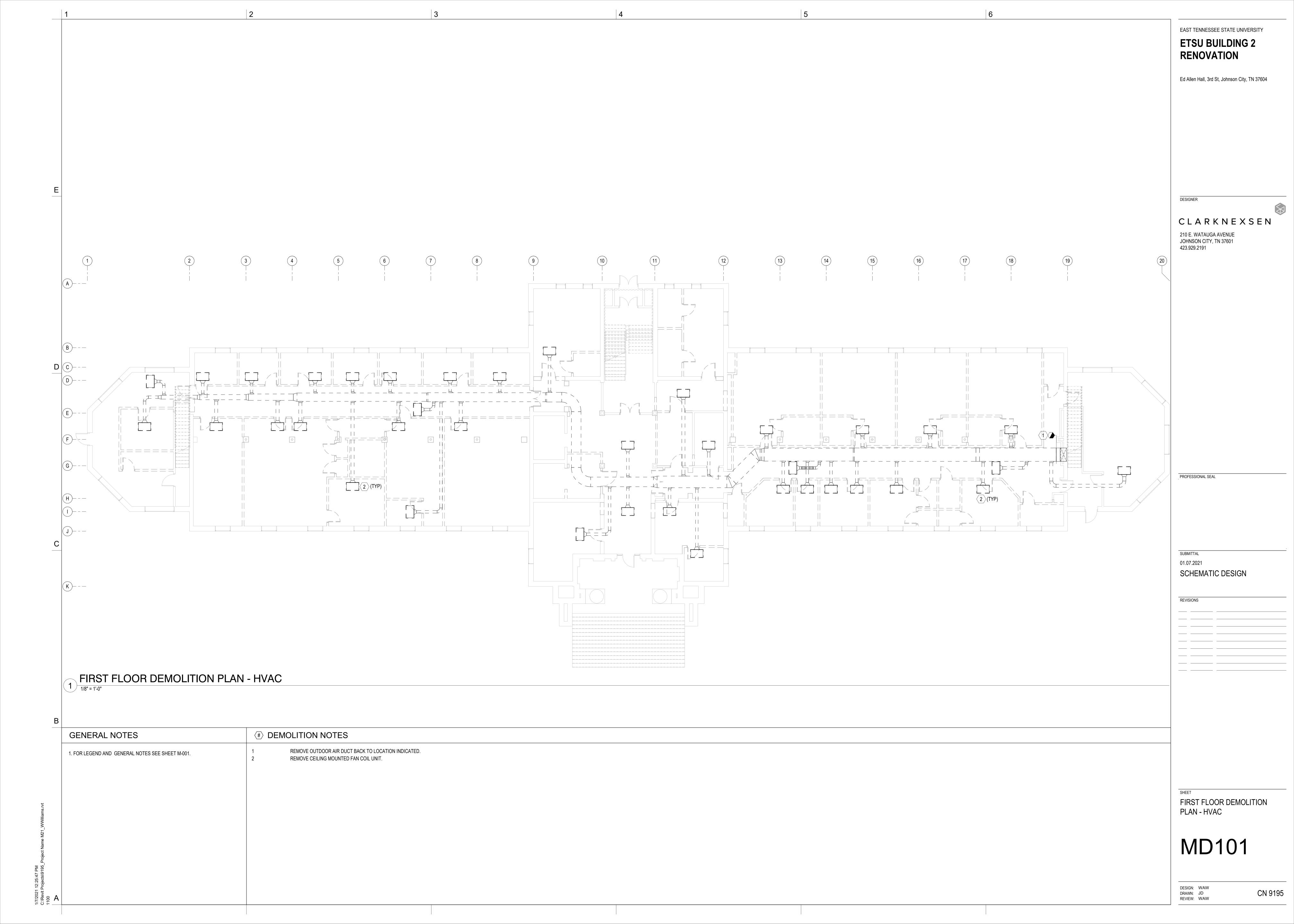
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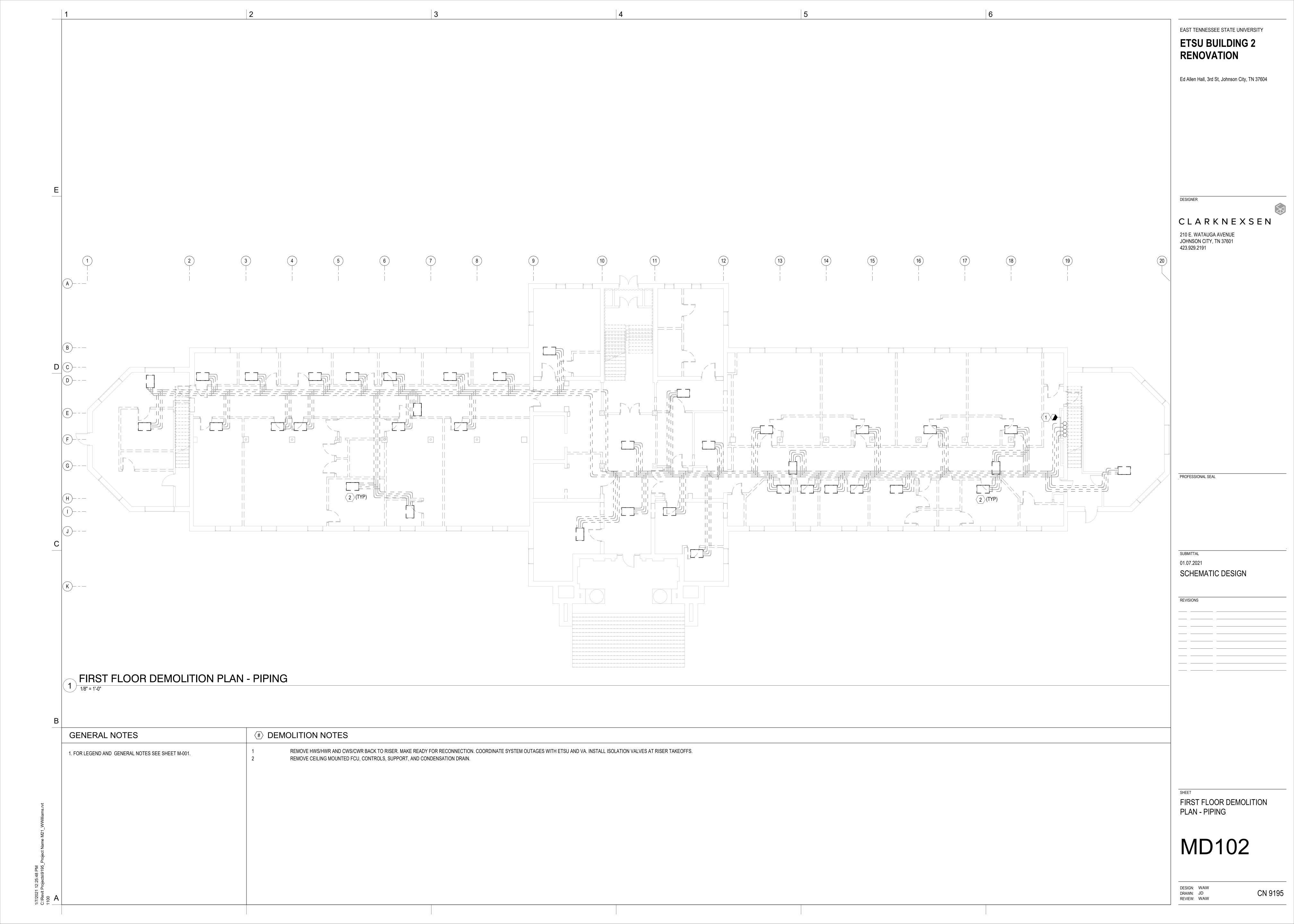
210 E. WATAUGA AVENUE JOHNSON CITY, TN 37601 423.929.2191

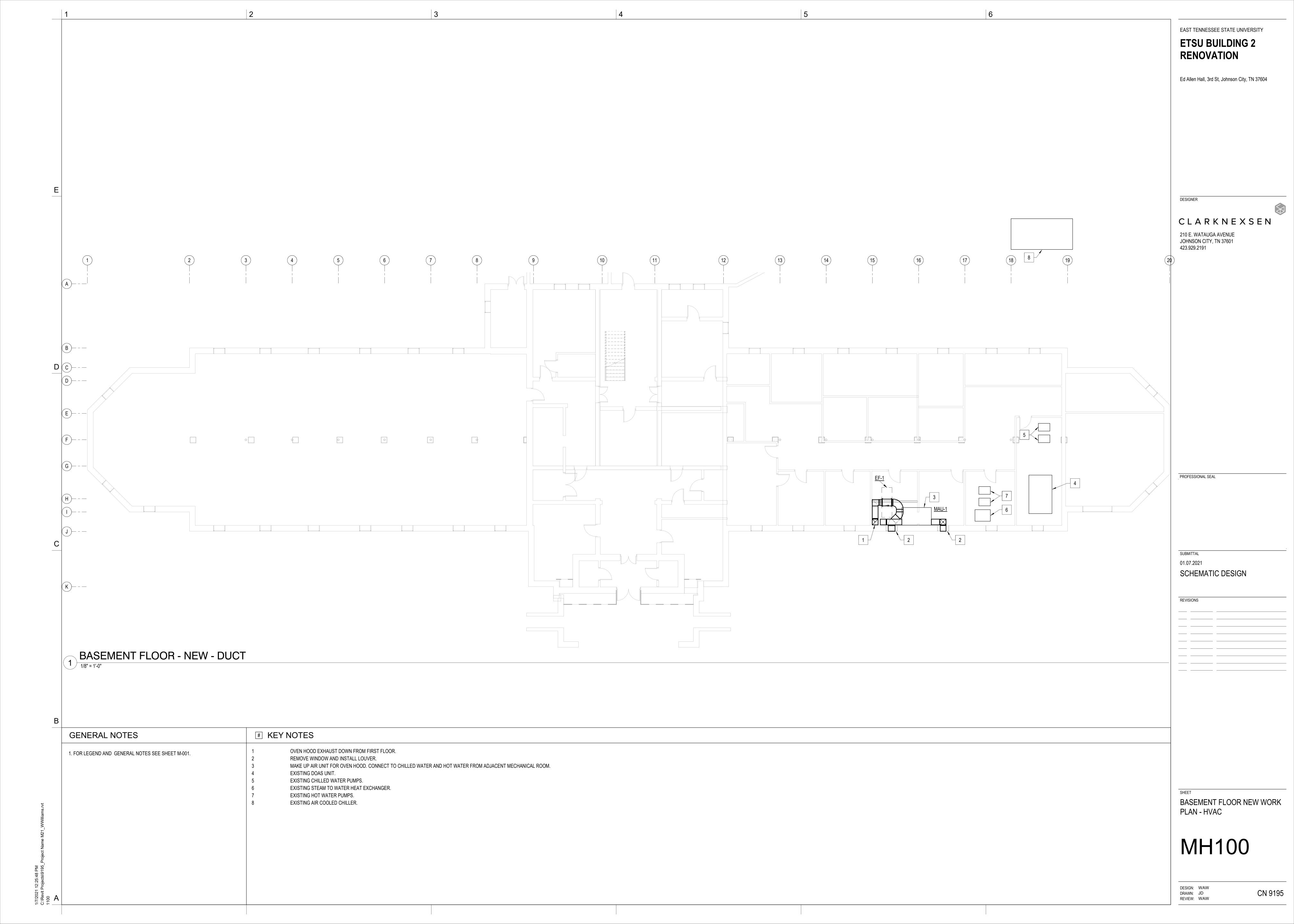
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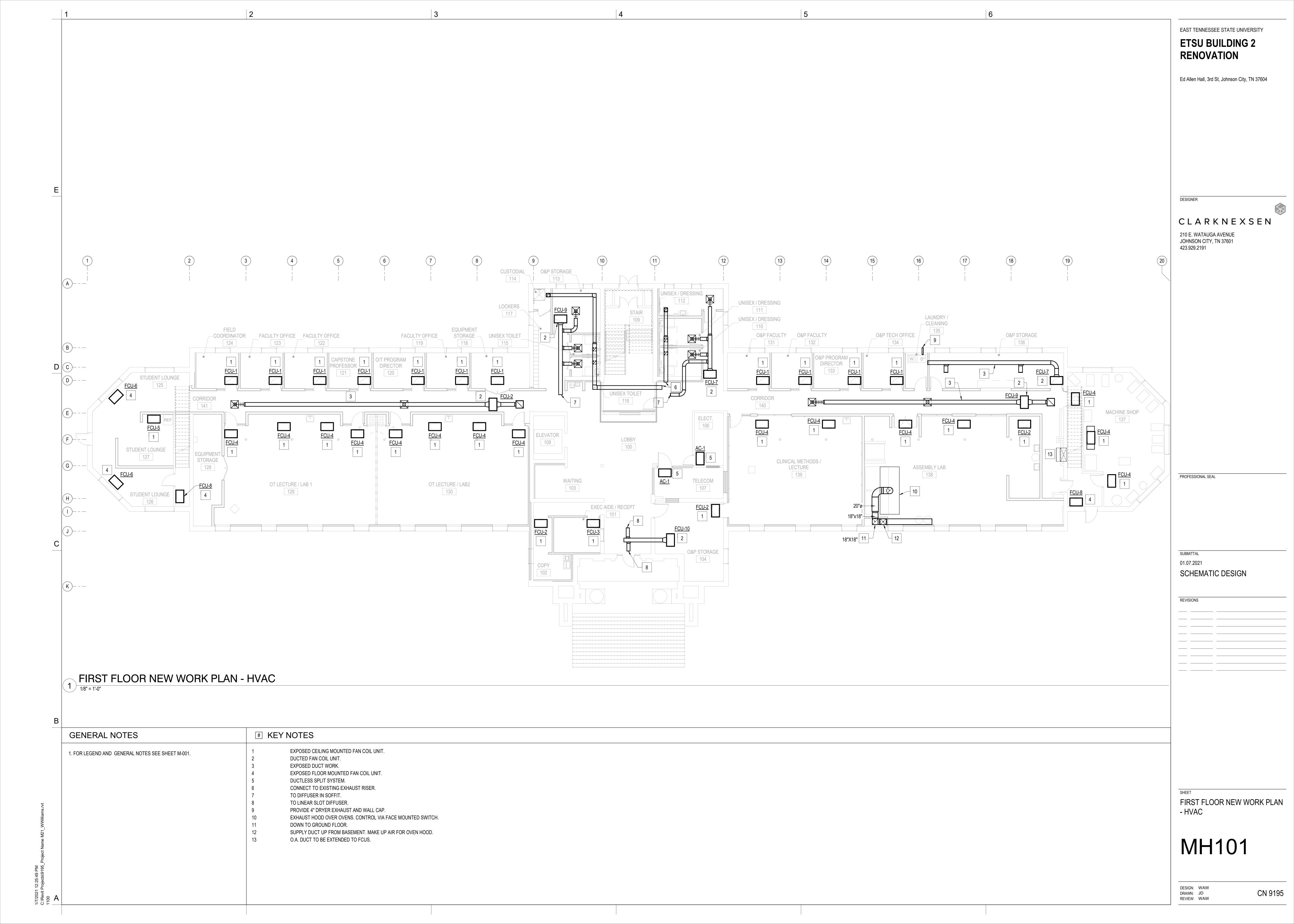
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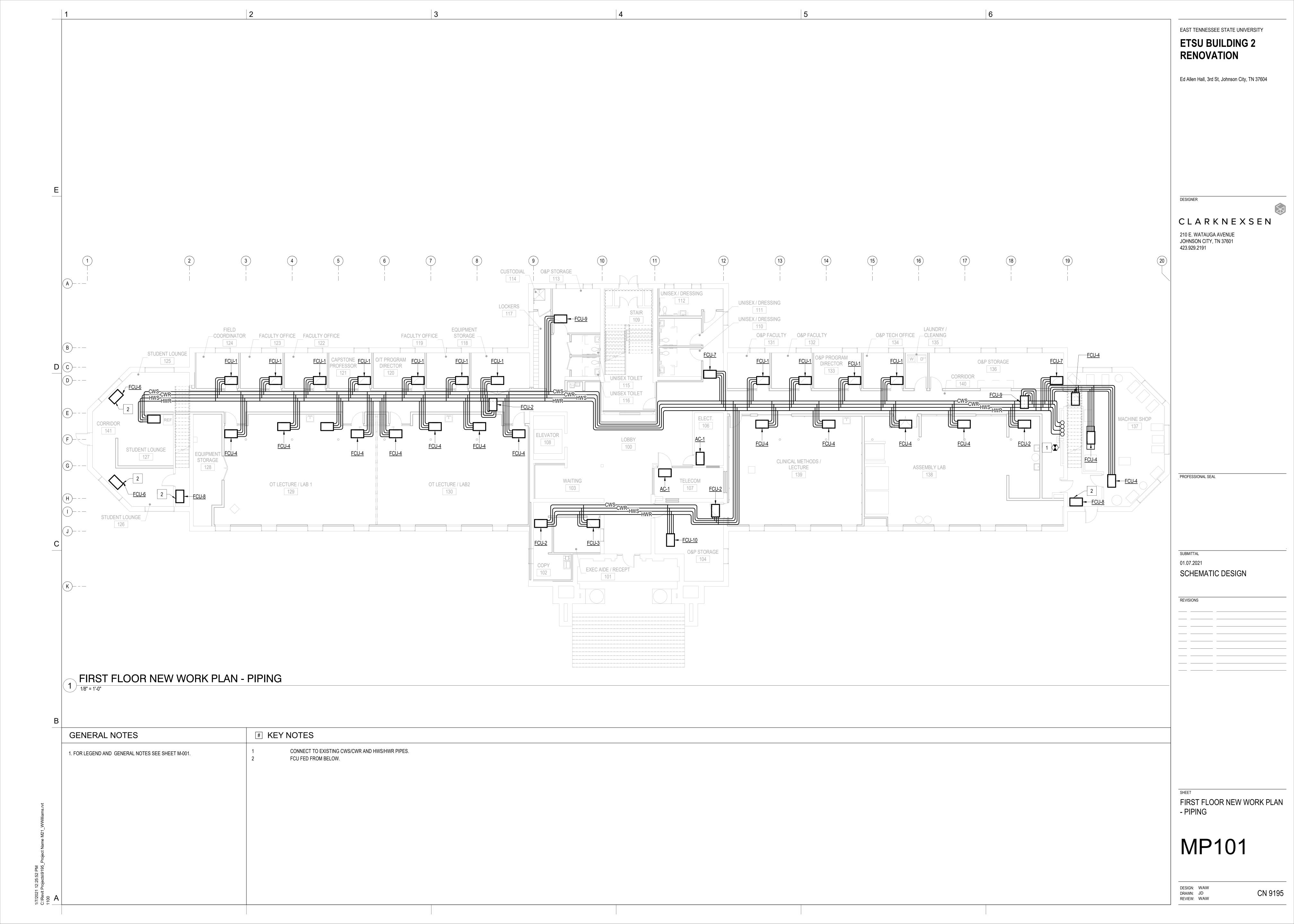
CN 9195











1 2	3		4		5	6
			FAN COIL UNIT SCHEDULE			
	EXPOSED CEILING CEILING MOUNTED ON THE CEILING MOUNTED ON THE CEILING MOUNTED THE CEIL	SUPPLY E.S.P. IN. WAX. HP. COCE	OOLING COOLING TOTAL EAT LAT COOLING N	SENSIBLE COOLING COOMBH COOLING MBH COOLING MBH EWT/LWT	OOLING WPD AIR PRESSURE CAPACITY MBH	HEATING EAT/LAT HEATING GPM WPD AIR PRESSURE DROP NOTES
	FCU-1 X FCU-2 X FCU-3 X FCU-4 X FCU-5 X FCU-6 X FCU-7 X FCU-8 X	225 0.15 75 0.15 550 0.15 375 0.15 375 0.15 250 0.25 100 0.05 74 75 100 0.05 74 75 100 0.05 75 100 0.05	74/62 55.3/54.6 2.36 74/62 57.5/55.8 3.75 74/62 53.2/52.9 1.77 74/62 54.5/53.3 12.7 74/62 58.1/56.0 5.93 75/63 55.1/53.4 9.87 75/63 53.6/52.9 6.85 75/63 55.7/54 2.46	3.68 45/55 1.5 45/55 10.7 45/55 5.8 45/55 7.46 45/55 5.34 45/55 1.92 45/55	0.5 0.5 0.02 3.18 0.8 0.4 0.04 6.80 0.4 0.3 0.01 2.27 2.8 1.39 0.09 16.6 1.5 0.33 0.04 11.3 2.1 3.28 0.04 11.3 1.5 1.35 0.06 7.56 0.5 3.32 0.03 3.02	67/95 180/160 0.32 0.06 0.01 67/95 180/160 0.68 0.13 0.02 67/95 180/160 0.23 0.06 0.02 67/95 180/160 1.66 0.33 0.05 67/95 180/160 1.13 0.17 0.03 67/95 180/160 1.13 0.05 0.01 67/95 180/160 0.756 0.3 0.03 67/95 180/160 0.30 0.23 0.01
	FCU-9 X FCU-10 X NOTES:		75/63 56.7/54.7 7.77 75/63 54.5/53.5 13.3		1.8 0.8 0.03 10.6 2.9 1.51 0.09 15.7	67/95 180/160 1.06 0.15 0.02 67/95 180/160 1.57 0.37 0.04
				MAKE UP AIR U	UNIT	
	MARK MAKE MODEL NO.	SUPPLY E.S.P. IN. WAX. HP. COCE	OOLING COOLING TOTAL EAT LAT COOLING N	SENSIBLE COOLING COOMBH COOLING MBH COOLING MBH	OOLING WPD AIR PRESSURE CAPACITY MBH	HEATING HEATING GPM WPD AIR PRESSURE DROP NOTES
	MAU-1	2,500 0.5 86.7	.7/71.8 55/54 144.9	86 45/55 2	26.3 171.4	8.8/72 180/160 17.1
	NOTES:					
						FAN SCHEDULE MARK: SF=SUPPLY FAN
				MAF EF-	MAX G. COOK G. WAX	MAX. TIP MAX. SPEED NOISE SONES
				NOTE 1: PR NON F		BBER IN SHEAR VIBRATION ISOLATORS, BUILT IN THERMAL OVERLOAD PROTECTION AND
						TYPE MODEL NO. OUTDOOR UNIT INDOOR UNIT SUPPLY COOLING MBH NOTES MBH X
					NOTES: 1: PROVIDE WITH HARD	WIRED WALL MOUNTED THERMOSTAT AND FACTORY CONTROLS.
						PUMP SCHEDULE MNFR
					CWI	NO. G.F.IVI. W.G. MOTOR HF. P-1 X 560 70 15 CHILLED WATER 1:
						P-2 X 560 70 15 CHILLED WATER 1: -1 X * 2 HOT WATER 1:2:
						ES: (ISTING PUMP TO BE REBALANCED. CAPCITY SHOWN BASED ON EXISTING CONDITIONS. (ISTING PUMP TAG NOT LEGIBLE
						INDUSTRIAL HOOD SCHEDULE MATERIAL DIMENSION AIR MARK FLOW MAXIMUM AIR O C SKIRT NOTES

IENSION LENGTH WIDTH SKIRT NOTES 12' 4" 5' 6" 1: NOTES:

1. REFER TO HOOD DETAIL DRAWINGS

EAST TENNESSEE STATE UNIVERSITY

ETSU BUILDING 2 RENOVATION

Ed Allen Hall, 3rd St, Johnson City, TN 37604

423.929.2191

CLARKNEXSEN

210 E. WATAUGA AVENUE JOHNSON CITY, TN 37601

PROFESSIONAL SEAL

SUBMITTAL 01.07.2021 SCHEMATIC DESIGN

SCHEDULES

M-601

DESIGN: Designer DRAWN: Author REVIEW: Checker

CN 9195