#### GENERAL PATTERNS KEY

	EARTH		BRICK
V - / - / - / - / - / - / - / - / - / -	GYPSUM BOARD		STEEL
	GRAVEL TYPE 1 (ENGINEERED FILL)		GROUT
4 4 4	PRECAST CONCRETE		ROUGH WOOD BLOCKING
	CRUSHED STONE		ROUGH WOOD BLOCKING, NON-CONTINUOUS
	CONCRETE MASONRY UNIT (CMU)		WOOD, FINISHED WOODWORK
	METAL STUD PARTITION		PLYWOOD (LARGE SCALE)
	RIGID INSULATION		1 HR RATING
	BATT OR LOOSE INSULATION		2 HR RATING
	CAVITY DRAINAGE MAT	1111111	SMOKE RATING
	ALUMINUM		EXISTING BUILDING MATERIALS
	STANDING SEAM ROOF		
<b>△</b> ,	CONCRETE, POURED		
	TERRAZZO		
·		·	

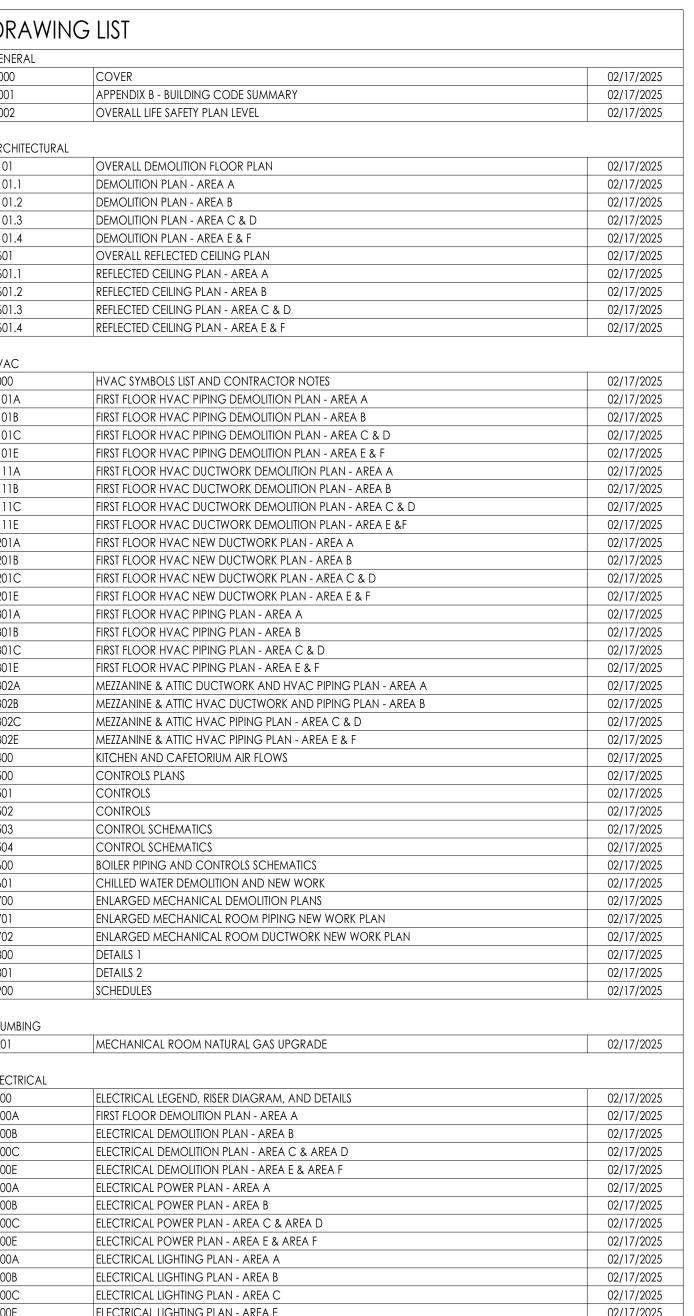
# JOHNSTON COUNTY PUBLIC SCHOOLS CLEVELAND ES - HVAC REPLACEMENT

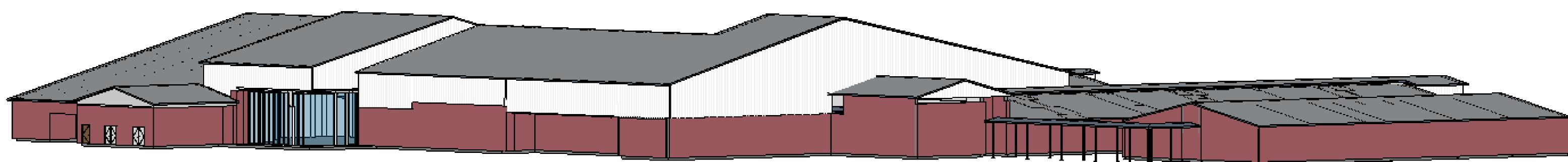
HVAC REPLACEMENT

99% OWNER REVIEW SET

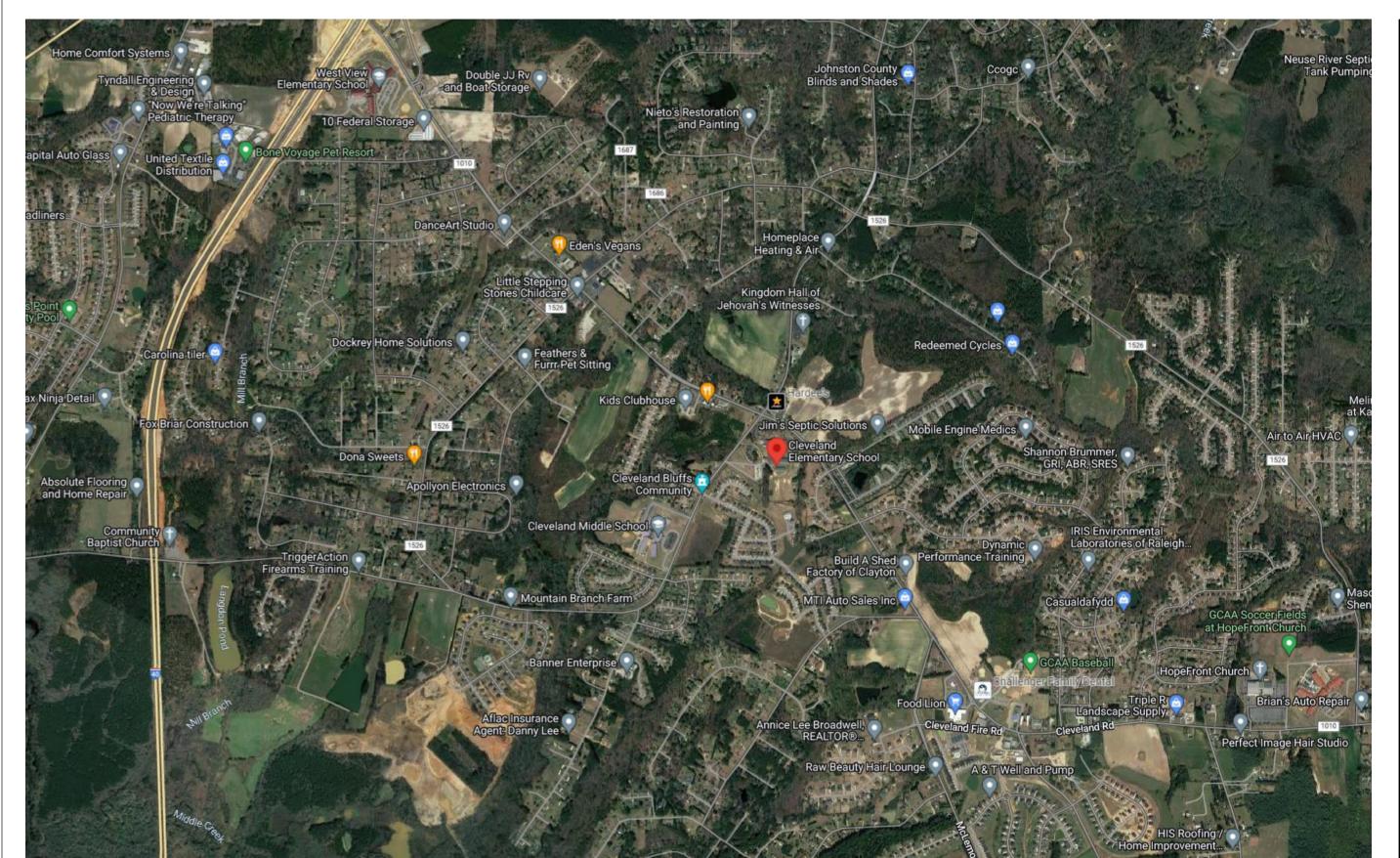
10225 CLEVELAND RD, CLAYTON, NC 27520

GENERAL		
G000	COVER	02/17/2
G001	APPENDIX B - BUILDING CODE SUMMARY	02/17/2
G002	OVERALL LIFE SAFETY PLAN LEVEL	02/17/2
ARCHITECTURA		
A101	OVERALL DEMOLITION FLOOR PLAN	02/17/2
A101.1	DEMOLITION PLAN - AREA A	02/17/2
A101.2	DEMOLITION PLAN - AREA B	02/17/2
A101.3	DEMOLITION PLAN - AREA C & D	02/17/2
A101.4 A601	DEMOLITION PLAN - AREA E & F OVERALL REFLECTED CEILING PLAN	02/17/2
A601.1	REFLECTED CEILING PLAN - AREA A	02/17/2
A601.2	REFLECTED CEILING PLAN - AREA B	02/17/2
A601.3	REFLECTED CEILING PLAN - AREA C & D	02/17/2
A601.4	REFLECTED CEILING PLAN - AREA E & F	02/17/2
HVAC		
H000	HVAC SYMBOLS LIST AND CONTRACTOR NOTES	02/17/2
H101A	FIRST FLOOR HVAC PIPING DEMOLITION PLAN - AREA A	02/17/2
H101B	FIRST FLOOR HVAC PIPING DEMOLITION PLAN - AREA B	02/17/2
H101C	FIRST FLOOR HVAC PIPING DEMOLITION PLAN - AREA C & D	02/17/2
H101E	FIRST FLOOR HVAC PIPING DEMOLITION PLAN - AREA E & F	02/17/2
H111A H111B	FIRST FLOOR HVAC DUCTWORK DEMOLITION PLAN - AREA A  FIRST FLOOR HVAC DUCTWORK DEMOLITION PLAN - AREA B	02/17/2
HIIIC	FIRST FLOOR HVAC DUCTWORK DEMOLITION PLAN - AREA C & D	02/17/2
H111E	FIRST FLOOR HVAC DUCTWORK DEMOLITION PLAN - AREA E &F	02/17/2
H201A	FIRST FLOOR HVAC NEW DUCTWORK PLAN - AREA A	02/17/2
H201B	FIRST FLOOR HVAC NEW DUCTWORK PLAN - AREA B	02/17/2
H201C H201E	FIRST FLOOR HVAC NEW DUCTWORK PLAN - AREA C & D  FIRST FLOOR HVAC NEW DUCTWORK PLAN - AREA E & F	02/17/2
H301A	FIRST FLOOR HVAC PIPING PLAN - AREA A	02/17/2
H301B	FIRST FLOOR HVAC PIPING PLAN - AREA B	02/17/2
H301C	FIRST FLOOR HVAC PIPING PLAN - AREA C & D	02/17/2
H301E	FIRST FLOOR HVAC PIPING PLAN - AREA E & F	02/17/2
H302A	MEZZANINE & ATTIC DUCTWORK AND HVAC PIPING PLAN - AREA A	02/17/2
H302B H302C	MEZZANINE & ATTIC HVAC DUCTWORK AND PIPING PLAN - AREA B MEZZANINE & ATTIC HVAC PIPING PLAN - AREA C & D	02/17/2
H302E	MEZZANINE & ATTIC HVAC PIPING PLAN - AREA E & F	02/17/2
H400	KITCHEN AND CAFETORIUM AIR FLOWS	02/17/2
H500	CONTROLS PLANS	02/17/2
H501	CONTROLS	02/17/2
H502 H503	CONTROLS  CONTROL SCHEMATICS	02/17/2
H504	CONTROL SCHEMATICS  CONTROL SCHEMATICS	02/17/2
H600	BOILER PIPING AND CONTROLS SCHEMATICS	02/17/2
H601	CHILLED WATER DEMOLITION AND NEW WORK	02/17/2
H700	ENLARGED MECHANICAL DEMOLITION PLANS	02/17/2
H701	ENLARGED MECHANICAL ROOM PIPING NEW WORK PLAN	02/17/2
H702 H800	DETAILS 1	02/17/2
H801	DETAILS 2	02/17/2
H900	SCHEDULES	02/17/2
		·
PLUMBING	MECHANICAL DOOM MATURAL OAR UPOR AR	20.41=
P201	MECHANICAL ROOM NATURAL GAS UPGRADE	02/17/2
ELECTRICAL		
E000	ELECTRICAL LEGEND, RISER DIAGRAM, AND DETAILS	02/17/2
E100A	FIRST FLOOR DEMOLITION PLAN - AREA A	02/17/2
E100B	ELECTRICAL DEMOLITION PLAN - AREA B	02/17/2
E100C E100E	ELECTRICAL DEMOLITION PLAN - AREA C & AREA D  ELECTRICAL DEMOLITION PLAN - AREA E & AREA F	02/17/2
E200A	ELECTRICAL DEMOLITION FLAN - AREA E & AREA F  ELECTRICAL POWER PLAN - AREA A	02/17/2
E200B	ELECTRICAL POWER PLAN - AREA B	02/17/2
E200C	ELECTRICAL POWER PLAN - AREA C & AREA D	02/17/2
E200E	ELECTRICAL POWER PLAN - AREA E & AREA F	02/17/2
E300A	ELECTRICAL LIGHTING PLAN - AREA A	02/17/2
E300B	ELECTRICAL LIGHTING PLAN - AREA B	02/17/2
E300C	ELECTRICAL LIGHTING PLAN - AREA C  ELECTRICAL LIGHTING PLAN - AREA E	02/17/2
E301A	LIGHTING MEZZANINE & ATTIC PLAN	02/17/2
E700	ELECTRICAL ENLARGED PLANS	02/17/2





VICINITY MAP



### PROJECT ABBREVIATIONS

		D		FS	FULL SIZE
FF	ABOVE FINISHED FLOOR	DP	DAMP PROOFING	FUT	FUTURE
Р	ACCESS PANEL	DEMO	DEMOLISH	G	
COUS	ACOUSTICAL	DEPT	DEPARTMENT	GALV	GALVANIZED
CT	ACOUSTICAL CEILING TILE	DET,DTL	DETAIL	G	GAS
WP	ACOUSTICAL WALL PANEL	DIA	DIAMETER	GA	GAUGE
DJ	ADJACENT	DIM	DIMENSION	GEN	GENERAL
/C	AIR CONDITIONING	DISP	DISPENSER	GC	GENERAL CONTRACTOR
LT	ALTERNATE	DSP	DISPOSAL	GL	GLASS, GLAZING
LUM	ALUMINUM	DO	DITTO, REPEAT, SAME	GB	GRAB BAR
В	ANCHOR BOLT	DR	DOOR	GR	GRADE, GRADING
NOD	ANODIZED	DBL	DOUBLE	GSF	GROSS SQUARE FOOT
PPROX	APPROXIMATE	DN	DOWN	GYP	GYPSUM
RCH	ARCHITECT, ARCHITECTURAL	DS	DOWNSPOUT	GYP BD	GYPSUM BD
D	AREA DRAIN	DT	DRAIN TILE	GWB	GYPSUM WALL BOARD
СМ	ASBESTOS CONTAINING MATERIAL	DWR	DRAWER	H	
)	AT	DWG	DRAWING	HDWR	HARDWARE
UTO	AUTOMATIC	DF	DRINKING FOUNTAIN	HDWD	HARDWOOD
		E		HVAC	HEATING, VENTILATING & AIR
P	BEARING PLATE	EA	EACH		CONDITIONING
М	BENCH MARK	EF	EACH FACE	HT, HGT	HEIGHT
ITUM	BITUMINOUS	EW	EACH WAY	HEX	HEXAGONAL
LK	BLOCK	E	EAST	HWY	HIGHWAY
LKG	BLOCKING	ELEC	ELECTRICAL	НМ	HOLLOW METAL
D	BOARD	ELEV	ELEVATION	HORZ	HORIZONTAL
OT	ВОТТОМ	EL	ELEVATOR	НВ	HOSE BIBB
RK	BRICK	EMER	EMERGENCY	HW	HOT WATER
LDG	BUILDING	ENCL	ENCLOSURE	HR	HOUR
N	BULLNOSE	ENTR	ENTRANCE	ı	
		EQ	EQUAL	IN	INCH
:AB	CABINET	EQUIP	EQUIPMENT	INCL	INCLUDING
:	CAST IRON	EST	ESTIMATE(D)	ID	INSIDE DIAMETER
:B	CATCH BASIN OR CHALK BOARD	EXHST	EXHAUST	INSUL	INSULATION
:LG	CEILING	EXIST	EXISTING	INT	INTERIOR
LG HT	CEILING HEIGHT	EXP	EXPANSION	INTERM	INTERMEDIATE
:L	CENTER LINE	EJ	EXPANSION JOINT	INV	INVERT
:ER	CERAMIC	F		J	
IRC	CIRCUMFERENCE	FAB	FABRICATE	JAN	JANITOR
:0	CLEAN OUT	FT	FEET	JS	JANITOR SINK
:LR	CLEAR	FIG	FIGURE	JT	JOINT
OL	COLUMN	FIN	FINISH	K	
ONC	CONCRETE	FF	FINISH FLOOR	KIT	KITCHEN
:MU	CONCRETE MASONRY UNIT	FEC	FIRE EXTINGUISHER CABINET	L	
ONST	CONSTRUCTION	FH	FIRE HOSE	LBL	LABEL
:JT	CONSTRUCTION JOINT	FL,FLR	FLOOR	LAB	LABORATORY
ONT	CONTINUOUS	FD	FLOOR DRAIN	LAM	LAMINATE(D)
ONTR	CONTRACTOR	FTG	FOOTING	LAV	LAVATORY
:J	CONTROL JOINT	FND	FOUNDATION	LYR	LAYER

LDR	LEADER	PVC	POLYVINYL CHLORIDE
LH	LEFT HAND	PC CONC	PRECAST CONCRETE
LIB	LIBRARY	PRE FAB	PREFABRICATED
LT	LIGHT	PT	PRESSURE TREATED
LW	LIGHT WEIGHT	PL	PROPERTY LINE
М		Q	
MACH	MACHINE	QTY	QUANTITY
MH	MAN HOLE	R	· ·
MHC	MAN HOLE COVER	RAD	RADIUS
MFR	MANUFACTURE	RECP	RECEPTACLE
MFRR	MANUFACTURER	RE:	REFER TO
MAS	MASONRY	REF	REFERENCE
МО	MASONRY OPENING	REFR	REFRIGERATOR
MAT	MATERIALS	REINF	REINFORCED(ING)
MAX	MAXIMUM	REQ'D	REQUIRED
MECH	MECHANICAL	REV	REVISED
MET	METAL	RH	RIGHT HAND
MTL	METAL	R	RISER
М	METER	RD	ROOF DRAIN
MEZZ	MEZZANINE	RM	ROOM
MIN	MINIMUM	RO	ROUGH OPENING
MISC	MISCELLANEOUS	S	
MR	MOISTURE RESISTANT	SAN	SANITARY
MTD	MOUNTED	SCHED	SCHEDULE
N	'	SEC	SECOND
NAT	NATURAL	SECT	SECTION
NRC	NOISE REDUCTION COEFFICIENT	SIM	SIMILAR
NOM	NOMINAL	SSM	SOLID SURFACE MATERIAL
N	NORTH	STC	SOUND TRANSMISSION
NIC	NOT IN CONTRACT		COEFFICIENT
NTS	NOT TO SCALE	SPEC	SPECIFICATION
NO, #	NUMBER	SQ	SQUARE
0		SS	STAINLESS STEEL
OC	ON CENTER	STD	STANDARD
OPNG	OPENING	STL	STEEL
OD	OUTSIDE DIAMETER	STOR	STORAGE
OH	OVERHEAD	SGFT	STRUCTURAL GLAZED FACING TILE
Р		ST STL	STRUCTURAL STEEL
PT	PAINT(ED)	STRUCT	STRUCTURE, STRUCTURAL
PR	PAIR	SUSP	SUSPENDED
PTP	DADED TOWEL DECEDTOD	SAT	SUSPENDED A COUSTICAL TILE

TEMPERATURE

TOILET PAPER DISPENSER TOP OF SLAB/STEEL

TEAM MEMBERS

## ARCHITECT/ENGINEERS



UNLESS NOTED OTHERWISE

WELDED WIRE FABRIC WELDED WIRE MESH

CPL | Architecture Engineering Planning 1111 HAYNES ST, STE 100 RALEIGH, NC 27604 T. 919.833.6064 CPLteam.com

# **OWNER**



JOHNSTON COUNTY PUBLIC SCHOOLS 2320 US 70 BUSINESS HWY EAST SMITHFIELD, NC 27577 T. T 919.934.6031 johnston.k12.nc.us

SHEET INFORMATION

PROFESSIONAL STAMPS

R23.00487.00

**SCHOOLS** 

**REPLACEMENT** HVAC REPLACEMENT

Project Address 10225 CLEVELAND RD, CLAYTON, NC 27520

JOHNSTON COUNTY PUBLIC

PROJECT ISSUE & REVISION SCHEDULE

vv Date Description

CLEVELAND ES - HVAC

99% OWNER REVIEW SET

# 2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

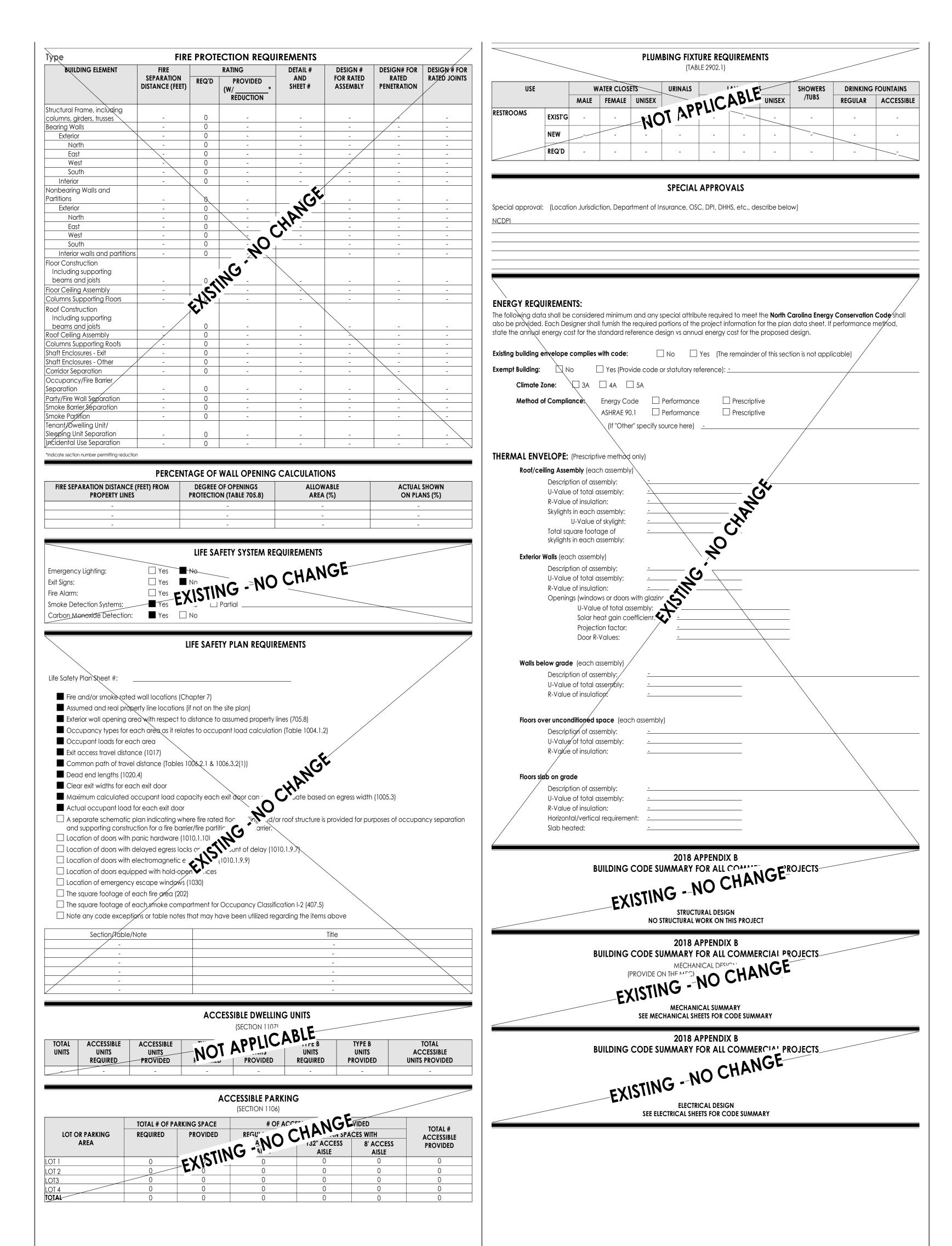
Address:	: CLEVELANI 10225 CLEV	'ELAND RD,	PLACEMENT				
Proposed Use: CLAYTON, NC 27520  Owner / Authorized Agent: BROOKS  Owned By:  Code Enforcement Jurisdiction:			OORE City/County City		Phone #: <u>(919)</u> □ Private _ ■ County <u></u>	<u>-934-2021</u> Email: IOHNSTON COUNTY	brooksmoore@johnston.k12.nc.us  □ State ■ State
CONTACT:							
<b>DESIGNER</b> Architectural Civil	FIRM CPL		NAME CHRIS COLBY	(	LICENSE # NC# 15305	<b>PHONE</b> 802.293.1029	EMAIL CCOLBY@CPLTEAM.COM
Electrical Fire Alarm	CPL		MIKE RANIER	<u> </u>	NC #020216	336.232.5725	MRANIERI@CPLTEAM.COM
Plumbing Mechanical Fire Protection Structural			MIKE PENA MIKE PENA -		- NC #052834 NC #052834 -	336.232.5709 336.232.5709	MPENA@CPLTEAM.COM MPENA@CPLTEAM.COM -
Retaining Walls Other	<u>-</u> CPL		- GRAHAM BO	NYD	<u>-</u> NC# 13612	<u>-</u> 919.645.9016	<u>-</u> GBOYD@CPLTEAM.COM
2018 NC EX				- · · · · ·	_		I I Chapter 14
2010 NO EX				□ Level I □ Historic Prop		Level II	<ul><li>□ Chapter 14</li><li>□ Level III</li><li>□ Change of Use</li></ul>
C	ONSTRUCT			☐ Historic Prop	occupancy	: (Ch. 3) <u>EDU</u>	☐ Level III
C	NOVATED	: 1604.5) Cu		Historic Prop  CURRENT  PROPOSE	perty	: (Ch. 3) <u>EDU</u>	<ul><li>□ Level III</li><li>□ Change of Use</li></ul>
CO RE RISK CATEGO BASIC BUILDI Construction Typ	NOVATED ORY: (TABLE	: E 1604.5) Cu Pro	prrent:	Historic Prop	OCCUPANCY D OCCUPANC	; (Ch. 3) <u>EDU</u> ;Y; (Ch. 3) <u>EDU</u>	☐ Level III☐ Change of Use  CATION (GROUP E)
CO RE RISK CATEGO BASIC BUILDI Construction Typ	NOVATED ORY: (TABLE	: E 1604.5) Cu Pro	prrent:	Historic Prop	OCCUPANCY D OCCUPANC  III	: (Ch. 3) <u>EDU</u> :Y: (Ch. 3) <u>EDU</u>	☐ Level III☐ Change of Use  CATION (GROUP E)
RERISK CATEGO  BASIC BUILDI Construction Typ (check all that c	NOVATED ORY: (TABLE	E 1604.5) Cu	prrent: □   pposed: □   □   □           ■	Historic Prop	OCCUPANCY D OCCUPANC	: (Ch. 3) <u>EDU</u> :Y: (Ch. 3) <u>EDU</u>	☐ Level III☐ Change of Use  CATION (GROUP E)
RERISK CATEGORISK CATEGORIST BASIC BUILDING Construction Type (check all that construction the construction that construction the construction that construction the construction that construct	ORY: (TABLE ORY: (TABLE ING DATA: De:	E 1604.5) Cu Pro	prrent: □   pposed: □   □   □           ■	Historic Prop	OCCUPANCY D OCCUPANC  III	; (Ch. 3) <u>EDU</u> ; (Ch. 3) <u>EDU</u> A  B	☐ Level III☐ Change of Use  CATION (GROUP E)
CO RE RISK CATEGO BASIC BUILDI	ORY: (TABLE  ING DATA:  De:  Expply)	E 1604.5) Cu Pro	prrent:	Historic Prop	OCCUPANCY D OCCUPANC    III	; (Ch. 3) <u>EDU</u> ; (Ch. 3) <u>EDU</u> A  B	☐ Level III☐ Change of Use  CATION (GROUP E)

GROSS BUILDING AREA TABLE					
FLOOR	EXISTING TO REMAIN (SQ FT)	NEW (SQ FT)	RENOVATION (SQ FT)	SUB TOTAL	
	0 SF	0 SF	0 SF	0 SF	
FIRST FLOOR	114,459.37 SF	0 SF	2857 SF	117317 SF	
TOTALS	114,459.37 SF	0 SF	2857 SF	117317 SF	

		_		ALLO	NABLE AF	EA		
Primary Occupancy C								
Assembly	□ A-1	☐ A-2	■ A-3	☐ A-4	□ A-5			
Business								
Educational								
Factory	☐ F-1 Mc		☐ F-2 Lov					
Hazardous	☐ H-1 De	etonate	☐ H-2 De	•	☐ H-3 C	ombust	☐ H-4 Health	☐ H-5 HPM
Institutional	□ I-1			□ 2				
	□ I-2			□ 2				
	□ I-3		□ 1	□ 2	□ 3	□ 4	□ 5	
	□ I-4							
Mercantile								
Residential	□ R-1	□ R-2	□ R-3	☐ R-4				
Storage	□ S-1 Mc			□ S-2 Lo		□ High	•	
		g Garage	□ Open	☐ Enclo	sed	□ Repo	air Garage	
Utility & Miscel	ianeous $\square$							
Accessory Occupanc								
Incidental Uses (Table								
Special Provisions: (Ch			ons):					
Mixed Occupancy:							Exception	າ:
☐ Non-Separated	d Use (508.3) -						I be determined by	
							he applicable	_
		•			•		e type of construction	n,
		so deter	mined, shall	арріу то т	ne entire bu	liaing,		
☐ Separated Use	(508.4) -	See belo	ow for area o	calculation	s for each s	torv, the ar	ea of the occupancy	v shall
,	(/						area of each use divi	
			wable floor c					•
			+ Actu	al Aroa of	Occupancy	, D	≤ 1.00	
Actual Area of	Occupancy	Δ -						

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.24 AREA	(C) AREA FOR FRONTAGE INCREASE <sup>1,5</sup>	(D) ALLOWABLE AREA PER STORY OR UNLIMITED <sup>2,3</sup>
FIRST	FIRST FLOOR	23750 SF	14500 SF	10875 SF	23750 SF
<sup>3</sup> Maximum Bi <sup>4</sup> The maximu	ea increases from Section 506 Perimeter which fronts a put Total Building Perimeter Ratio (F/P) = 1 W= Minimum width of publication Percent of frontage increase applicable under conditional units of the publication of the publication of the unspring garderease is based on the unspring processes in the publication of the unspring garderease is based on the unspring garderease g	f stories in the building x [ ges must comply with Ta	O (maximum 3 stori ıble 406.5.4.		72) (F) (%) (%)
		ALLC	WABLE HEIGH	I ANGE	

	ALLOWABLE HE	EIGHT	
	VIIVIII - VIV	CHANGE IS	CODE REFERENCE
	ICTING - NO	C117 **	
building Height in Feet (Table 504.3)2	13111 <sub>55 ft</sub> –	16 ft	504.3
Building Height in Stories (Table 504.4) <sup>2</sup>	2	1	504.4



THE SCOPE OF THIS PROJECT IS THE REPLACEMENT OF HVAC UNITS IN KIND - NO CHANGE TO USE, OCCUPANCY, EGRESS, OR LIFE SAFETY REQUIREMENTS





CPLteam.com

PROJECT INFORMATION

Project Number
R23.00487.00
Client Name
JOHNSTON COUNTY PUBLIC

- SCHOOLS
Project Name
CLEVELAND ES - HVAC
REPLACEMENT

HVAC REPLACEMENT

10225 CLEVELAND RD, CLAYTON, NC 27520

PROJECT ISSUE & REVISION SCHEDULE

PROFESSIONAL STAMPS

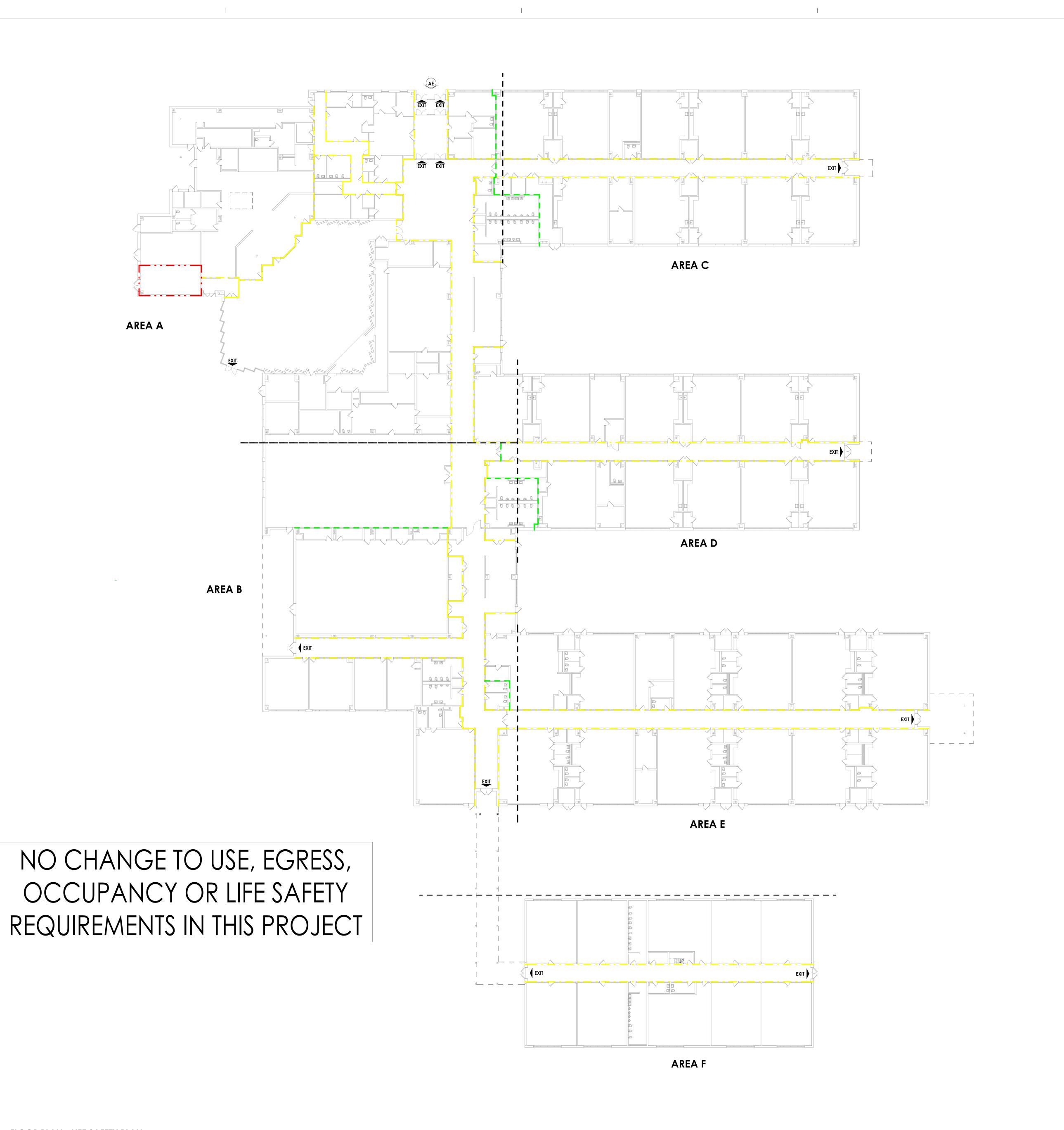


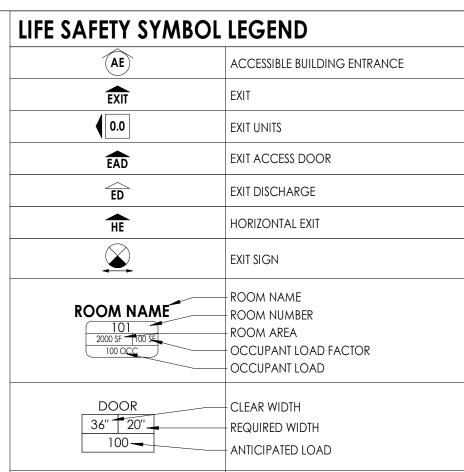


Project Status
99% OWNER REVIEW SET
Drawn By Checked By
KV GB
Drawing Title
APPENDIX B - BUILDING COE
SUMMARY

Drawing Number

3001





FFE EFEC EFHC CONDITIONS.

1 HOUR SMOKE TIGHT BARRIER

1 HOUR RATED FIRE PARTITION

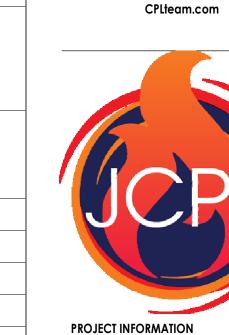
1 HOUR RATED FIRE BARRIER

2 HOUR RATED FIRE BARRIER

1 HOUR FIRE RATED & SMOKE BARRIER

2 HOUR RATED BUILDING SEPARATION

EXISTING FIRE EXTINGUISHER/HOSE CABINET



PROJECT INFORMATION

Project Number
R23.00487.00
Client Name
JOHNSTON COUNTY PUBLIC
SCHOOLS
Project Name

CPL | Architecture Engineering Planning
1111 Haynes Street Suite 100,

Raleigh, NC 27604

CLEVELAND ES - HVAC REPLACEMENT HVAC REPLACEMENT

10225 CLEVELAND RD, CLAYTON, NC 27520

PROFESSIONAL STAMPS





SHEET INFORMATION

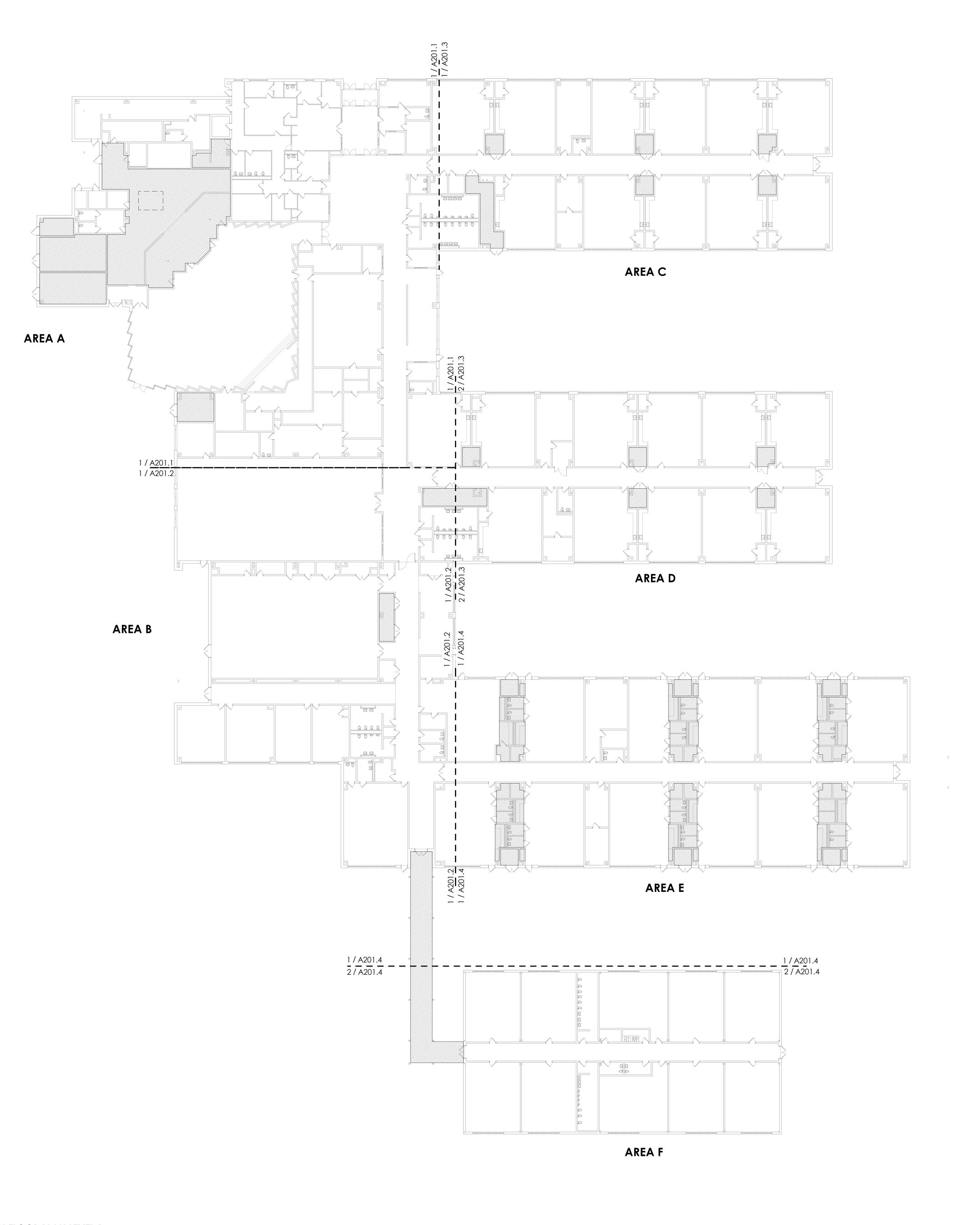
Issued Scale
02/17/2025 As indicated
Project Status
99% OWNER REVIEW SET
Drawn By Checked By
KV GB
Drawing Title
OVERALL LIFE SAFETY PLAN LEVEL

Drawing Number

G002

FLOOR PLAN - LIFE SAFETY PLAN

F



#### **DEMOLITION GENERAL NOTES**

DEMOLITION OF EXISTING UTILITIES AND SERVICES.

- 1. ALL DRAWINGS ARE GRAPHIC REPRESENTATION OF APPROXIMATE LOCATIONS OF MATERIALS TO BE REMOVED. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY ALL EXISTING CONDITIONS & DIMENSIONS PRIOR TO COMMENCEMENT OF ALL
- DEMOLITION WORK.

  2. REFER TO THE MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR
- 3. ALL ITEMS TO BE SALVAGED WITHIN THE DEMOLITION AREA WILL BE REMOVED BY THE OWNER PRIOR TO ONSET OF DEMOLITION WORK.

  4. REMAINING SUBSTRATES SHALL BE LEFT IN A CONDITION ACCEPTABLE TO RECEIVE NEW MODIC AND THE ACTION OF TH
- WORK. WHERE NEW FINISHES ARE SCHEDULED AT EXISTING CONDITIONS, REMOVE EXISTING FINISHES DOWN TO SUBSTRATE AMD PREPARE SURFACE FOR NEW FINISH.

  5. THE CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO ANY EXISTING FINISHES AND EQUIPMENT NOT REMOVED UNDER THE SCOPE OF WORK. ANY DAMAGE WILL BE
- REPAIRED TO THE OWNER/ARCHITECT'S SATISFACTION.

  6. POWER, COMMUNICATION & FIRE PROTECTION SHUT DOWNS SHALL NOT EFFECT PORTIONS OF BUILDING(S) THAT NEED TO REMAIN IN USE. CONTRACTOR TO REROUTE OR PROVIDE TEMPORARY POWER, COMMUNICATION, FIRE PROTECTION AND MEDICAL GAS. COORDINATE SHUT DOWNS WITH OWNER AND GENERAL CONTRACTOR.
- REMOVE AND REPLACE EXISTING CEILINGS, UNLESS OTHERWISE NOTED ON THE DRAWINGS, FOR PERFORMING DEMOLITION OF ALL WORK INDICATED ON THE CONSTRUCTION DRAWINGS. THE EXISTING CEILING SHALL BE REMOVED AND REPLACED IN A MANNER TO AVOID DAMAGE TO THE WALL SYSTEM.
- NOTIFY ARCHITECT AND OWNER OF EXISTING DUCTWORK, PIPE AND CONDUIT PENETRATIONS EXPOSED AFTER DEMOLITION THAT ARE NOT FIRESTOPPED THROUGH EXISTING FLOORS AND WALLS IDENTIFIED AS FIRE AND/OR SMOKE RATED ON LIFE SAFETY PLANS. EXISTING NON-COMPLIANT PENETRATIONS ARE TO BE FIRESTOPPED.
   WORK AREAS SHALL BE MAINTAINED AND ALL WORK AREAS SHALL BE LEFT BROOM CLEANED AT END OF EACH DAY.
- 10. IN ALL LOCATIONS THAT A DOOR IS ILLUSTRATED TO BE DEMOLISHED, REMOVE AND DISPOSE OF DOOR, FRAME, HARDWARE AND ALL ASSOCIATED ITEMS, UNLESS NOTED OTHERWISE.
- OTHERWISE.

  11. ALL ITEMS SHOWN WITH A DASHED LINE ARE TO BE REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED.
- 12. TYPICAL BUILDING COMPONENTS TO BE LEFT IN PLACE WHICH ARE NOT TO BE DEMOLISHED, UNLESS NOTED OTHERWISE:

  A. FIRE PROOFING ON COLUMNS AND BEAMS WHICH IS NOT PART OF A WALL OR
- CEILING SYSTEM. THIS INCLUDES PLASTER, MASONRY, AND CONCRETE COVERS WHICH MAY BE ENCAPSULATED BY THE WALL OR CEILING ASSEMBLIES.

  B. ELECTRIC, PLUMBING AND HVAC LINES FEEDING AREAS TO REMAIN IN OPERATION. COORDINATE WITH MEP DRAWINGS.
- SUPPORTING IN NATURE AND REQUIRING VERIFICATION PRIOR TO DEMOLITION.

  THIS INCLUDES EQUIPMENT SUPPORTS AND STRUCTURE ADDED AS A RESULT OF PREVIOUS CONSTRUCTION OR ADDITIONS.

  HE OWNER WILL BEACOVE ALL ACCVEAGE OR UNATURE CHECKED ITEMS TO BE SAVED OR

C. ANY STRUCTURES UNCOVERED AS A RESULT OF DEMOLITION WHICH APPEAR TO BE

- 13. THE OWNER WILL REMOVE ALL MOVEABLE OR UNATTACHED ITEMS TO BE SAVED OR STORED PRIOR TO CONTRACTORS' SALVAGE OPERATIONS. ITEMS TO BE SALVAGED INCLUDE BUT ARE NOT LIMITED TO, THOSE ITEMS SHOWN ON THE DRAWINGS.

  14. OWNER HAS THE RIGHT TO SALVAGE ANY FIXTURES AND/OR MILLWORK WITHIN AN
- AREA OF DEMOLITION PRIOR TO CONTRACTOR STARTING WORK IN THAT ZONE.
  COORDINATE TIMING OF SUCH REMOVALS WITH OWNER.

  15. JCPS HAS CONFIRMED THERE IS NO ASBESTOS CONTAINING MATERIALS (ACM) IN THE BUILDING. IN THE CASE THAT ANY SUSPICIOUS MATERIALS ARE UNCOVERED OR QUESTIONED, LEAVE THE PREMISES AND NOTIFY THE OWNER & ABATEMENT
- CONTRACTOR FOR REQUIRED TESTING AND/OR REMOVALS.

  16. IN THE CASE THAT ANY SUSPICIOUS MATERIALS ARE UNCOVERED THAT APPEAR TO CONTAIN HAZARDOUS MATERIALS SUCH AS BUT NOT LIMITED TO MOLD, LEAD PAINT OR ASBESTOS, LEAVE THE PREMISES AND NOTIFY THE OWNER & ABATEMENT CONTRACTOR FOR REQUIRED TESTING AND/OR REMOVALS.
- 17. REMOVE ASSOCIATED CEILING MOUNTED DEVICES WERE EXISTING CEILING IS INDICATED TO BE REMOVED. SALVAGE AND STORE DEVICES IN A SECURE LOCATION AND CLEAN FOR REINSTALLATION IN THE SAME LOCATION WHEN THE CEILING IS REINSTALLED. THIS INCLUDES, BUT IS NOT LIMITED TO, CEILING MOUNTED DEVICES AND FIXTURES SUCH AS LAY-IN TYPE, RECESSED OR SURFACE MOUNTED LIGHT FIXTURES, EXIT SIGNS, EMERGENCY LIGHTS, ALARMS, STROBES, SMOKE DETECTORS, OCCUPANCY SENSORS, AUDIO SPEAKERS, WIRELESS ACCESS DEVICES, ELECTRICAL OUTLETS, CEILING PROJECTORS OR SCREENS, AND SECURITY CAMERAS.

# PROJECT ISSUE & REVISION SCHEDULE w Date Description

CPL | Architecture Engineering Planning

1111 Haynes Street Suite 100,

Raleigh, NC 27604

CPLteam.com

PROJECT INFORMATION

JOHNSTON COUNTY PUBLIC

CLEVELAND ES - HVAC

Project Number

R23.00487.00

**SCHOOLS** 

REPLACEMENT

**HVAC REPLACEMENT** 

10225 CLEVELAND RD,

CLAYTON, NC 27520

Project Name

# AREAS WHERE SELECTIVE DEMOLITION TO OCCUR (INCLUDED BUT NOT LIMITED TO)

AREA OF SELECTIVE DEMOLITION

(INCLUDED BUT NOT LIMITED TO)

PROFESSIONAL STAMPS





SHEET INFORMATION

Issued Scale
02/17/2025 As indicate Project Status
99% OWNER REVIEW SET
Drawn By Checked By

Drawing Title

OVERALL DEMOLITION FLOOR

Drawing Number

A 1 O 1

OVERALL - DEMOLITION FLOOR PLAN LEVEL 1



CPL | Architecture Engineering Planning 1111 Haynes Street Suite 100, Raleigh, NC 27604 CPLteam.com



PROJECT INFORMATION

R23.00487.00

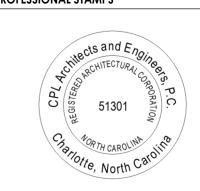
JOHNSTON COUNTY PUBLIC SCHOOLS

CLEVELAND ES - HVAC REPLACEMENT **HVAC REPLACEMENT** 

10225 CLEVELAND RD, CLAYTON, NC 27520

PROJECT ISSUE & REVISION SCHEDULE
w Date Description

PROFESSIONAL STAMPS

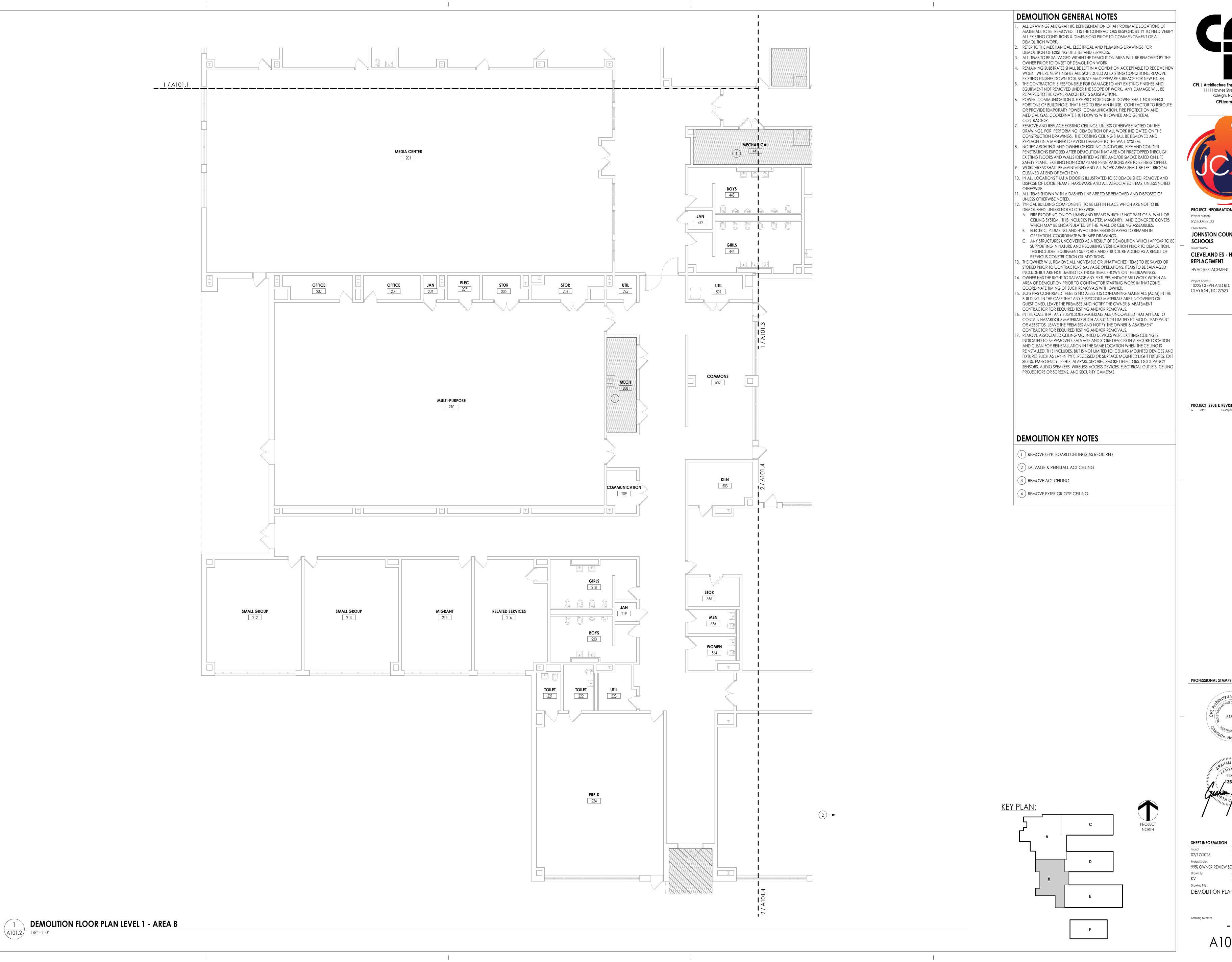




SHEET INFORMATION

02/17/2025 As indicated Project Status 99% OWNER REVIEW SET

DEMOLITION PLAN - AREA A



CPL | Architecture Engineering Planning 1111 Haynes Street Suite 100, Raleigh, NC 27604 CPLteam.com



PROJECT INFORMATION

R23.00487.00

JOHNSTON COUNTY PUBLIC SCHOOLS

CLEVELAND ES - HVAC REPLACEMENT HVAC REPLACEMENT

PROJECT ISSUE & REVISION SCHEDULE

w Date Description

PROFESSIONAL STAMPS

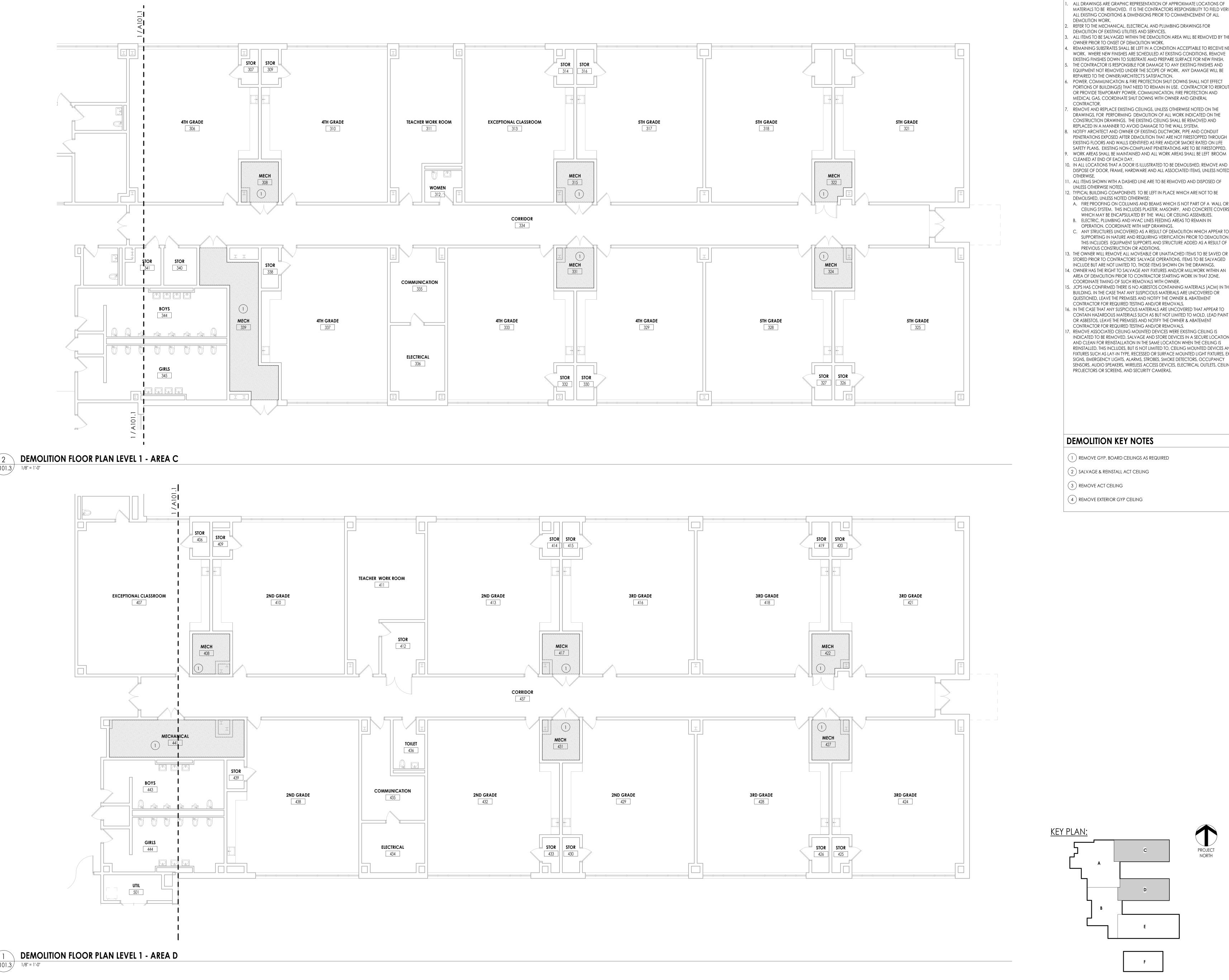




SHEET INFORMATION

02/17/2025 Project Status 99% OWNER REVIEW SET

DEMOLITION PLAN - AREA B



**DEMOLITION GENERAL NOTES** 

1. ALL DRAWINGS ARE GRAPHIC REPRESENTATION OF APPROXIMATE LOCATIONS OF MATERIALS TO BE REMOVED. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY ALL EXISTING CONDITIONS & DIMENSIONS PRIOR TO COMMENCEMENT OF ALL

2. REFER TO THE MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR

3. ALL ITEMS TO BE SALVAGED WITHIN THE DEMOLITION AREA WILL BE REMOVED BY THE OWNER PRIOR TO ONSET OF DEMOLITION WORK. 4. REMAINING SUBSTRATES SHALL BE LEFT IN A CONDITION ACCEPTABLE TO RECEIVE NEW

WORK. WHERE NEW FINISHES ARE SCHEDULED AT EXISTING CONDITIONS, REMOVE EXISTING FINISHES DOWN TO SUBSTRATE AMD PREPARE SURFACE FOR NEW FINISH. THE CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO ANY EXISTING FINISHES AND

REPAIRED TO THE OWNER/ARCHITECT'S SATISFACTION. POWER, COMMUNICATION & FIRE PROTECTION SHUT DOWNS SHALL NOT EFFECT PORTIONS OF BUILDING(S) THAT NEED TO REMAIN IN USE. CONTRACTOR TO REPOUTE OR PROVIDE TEMPORARY POWER, COMMUNICATION, FIRE PROTECTION AND MEDICAL GAS. COORDINATE SHUT DOWNS WITH OWNER AND GENERAL

REMOVE AND REPLACE EXISTING CEILINGS, UNLESS OTHERWISE NOTED ON THE DRAWINGS, FOR PERFORMING DEMOLITION OF ALL WORK INDICATED ON THE CONSTRUCTION DRAWINGS. THE EXISTING CEILING SHALL BE REMOVED AND REPLACED IN A MANNER TO AVOID DAMAGE TO THE WALL SYSTEM.

SAFETY PLANS. EXISTING NON-COMPLIANT PENETRATIONS ARE TO BE FIRESTOPPED. WORK AREAS SHALL BE MAINTAINED AND ALL WORK AREAS SHALL BE LEFT BROOM

10. IN ALL LOCATIONS THAT A DOOR IS ILLUSTRATED TO BE DEMOLISHED, REMOVE AND DISPOSE OF DOOR, FRAME, HARDWARE AND ALL ASSOCIATED ITEMS, UNLESS NOTED

11. ALL ITEMS SHOWN WITH A DASHED LINE ARE TO BE REMOVED AND DISPOSED OF

DEMOLISHED, UNLESS NOTED OTHERWISE: A. FIRE PROOFING ON COLUMNS AND BEAMS WHICH IS NOT PART OF A WALL OR CEILING SYSTEM. THIS INCLUDES PLASTER, MASONRY, AND CONCRETE COVERS

B. ELECTRIC, PLUMBING AND HVAC LINES FEEDING AREAS TO REMAIN IN OPERATION. COORDINATE WITH MEP DRAWINGS. C. ANY STRUCTURES UNCOVERED AS A RESULT OF DEMOLITION WHICH APPEAR TO BE SUPPORTING IN NATURE AND REQUIRING VERIFICATION PRIOR TO DEMOLITION.

PREVIOUS CONSTRUCTION OR ADDITIONS. . THE OWNER WILL REMOVE ALL MOVEABLE OR UNATTACHED ITEMS TO BE SAVED OR STORED PRIOR TO CONTRACTORS' SALVAGE OPERATIONS. ITEMS TO BE SALVAGED INCLUDE BUT ARE NOT LIMITED TO, THOSE ITEMS SHOWN ON THE DRAWINGS.

AREA OF DEMOLITION PRIOR TO CONTRACTOR STARTING WORK IN THAT ZONE. COORDINATE TIMING OF SUCH REMOVALS WITH OWNER. 15. JCPS HAS CONFIRMED THERE IS NO ASBESTOS CONTAINING MATERIALS (ACM) IN THE BUILDING. IN THE CASE THAT ANY SUSPICIOUS MATERIALS ARE UNCOVERED OR QUESTIONED, LEAVE THE PREMISES AND NOTIFY THE OWNER & ABATEMENT

CONTRACTOR FOR REQUIRED TESTING AND/OR REMOVALS. 16. IN THE CASE THAT ANY SUSPICIOUS MATERIALS ARE UNCOVERED THAT APPEAR TO CONTAIN HAZARDOUS MATERIALS SUCH AS BUT NOT LIMITED TO MOLD, LEAD PAINT OR ASBESTOS, LEAVE THE PREMISES AND NOTIFY THE OWNER & ABATEMENT CONTRACTOR FOR REQUIRED TESTING AND/OR REMOVALS.

REMOVE ASSOCIATED CEILING MOUNTED DEVICES WERE EXISTING CEILING IS INDICATED TO BE REMOVED. SALVAGE AND STORE DEVICES IN A SECURE LOCATION AND CLEAN FOR REINSTALLATION IN THE SAME LOCATION WHEN THE CEILING IS REINSTALLED. THIS INCLUDES, BUT IS NOT LIMITED TO, CEILING MOUNTED DEVICES AND FIXTURES SUCH AS LAY-IN TYPE, RECESSED OR SURFACE MOUNTED LIGHT FIXTURES, EXIT SIGNS, EMERGENCY LIGHTS, ALARMS, STROBES, SMOKE DETECTORS, OCCUPANCY SENSORS, AUDIO SPEAKERS, WIRELESS ACCESS DEVICES, ELECTRICAL OUTLETS, CEILING PROJECTORS OR SCREENS, AND SECURITY CAMERAS.

CPL | Architecture Engineering Planning 1111 Haynes Street Suite 100, Raleigh, NC 27604 CPLteam.com



PROJECT INFORMATION Project Number

> R23.00487.00 JOHNSTON COUNTY PUBLIC SCHOOLS

Project Name CLEVELAND ES - HVAC REPLACEMENT **HVAC REPLACEMENT** 

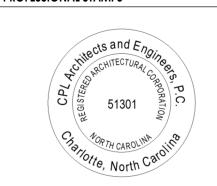
10225 CLEVELAND RD, CLAYTON, NC 27520

PROJECT ISSUE & REVISION SCHEDULE

w Date Description

1) REMOVE GYP. BOARD CEILINGS AS REQUIRED

PROFESSIONAL STAMPS

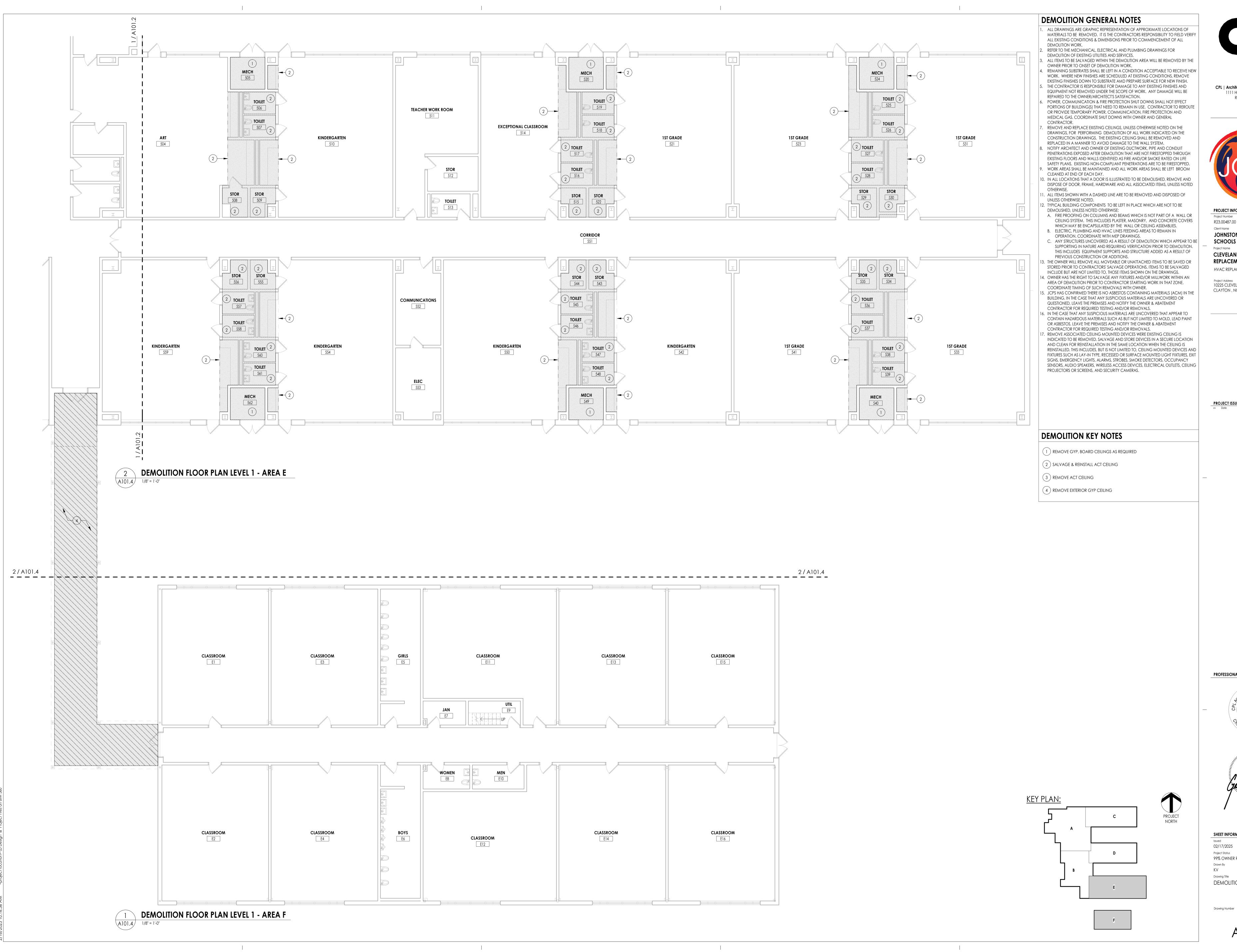




SHEET INFORMATION 02/17/2025 As indicated Project Status 99% OWNER REVIEW SET

DEMOLITION PLAN - AREA C & D

Drawing Number



CPL | Architecture Engineering Planning 1111 Haynes Street Suite 100, Raleigh, NC 27604 CPLteam.com



PROJECT INFORMATION Project Number

R23.00487.00

JOHNSTON COUNTY PUBLIC SCHOOLS Project Name

CLEVELAND ES - HVAC REPLACEMENT **HVAC REPLACEMENT** 

10225 CLEVELAND RD, CLAYTON, NC 27520

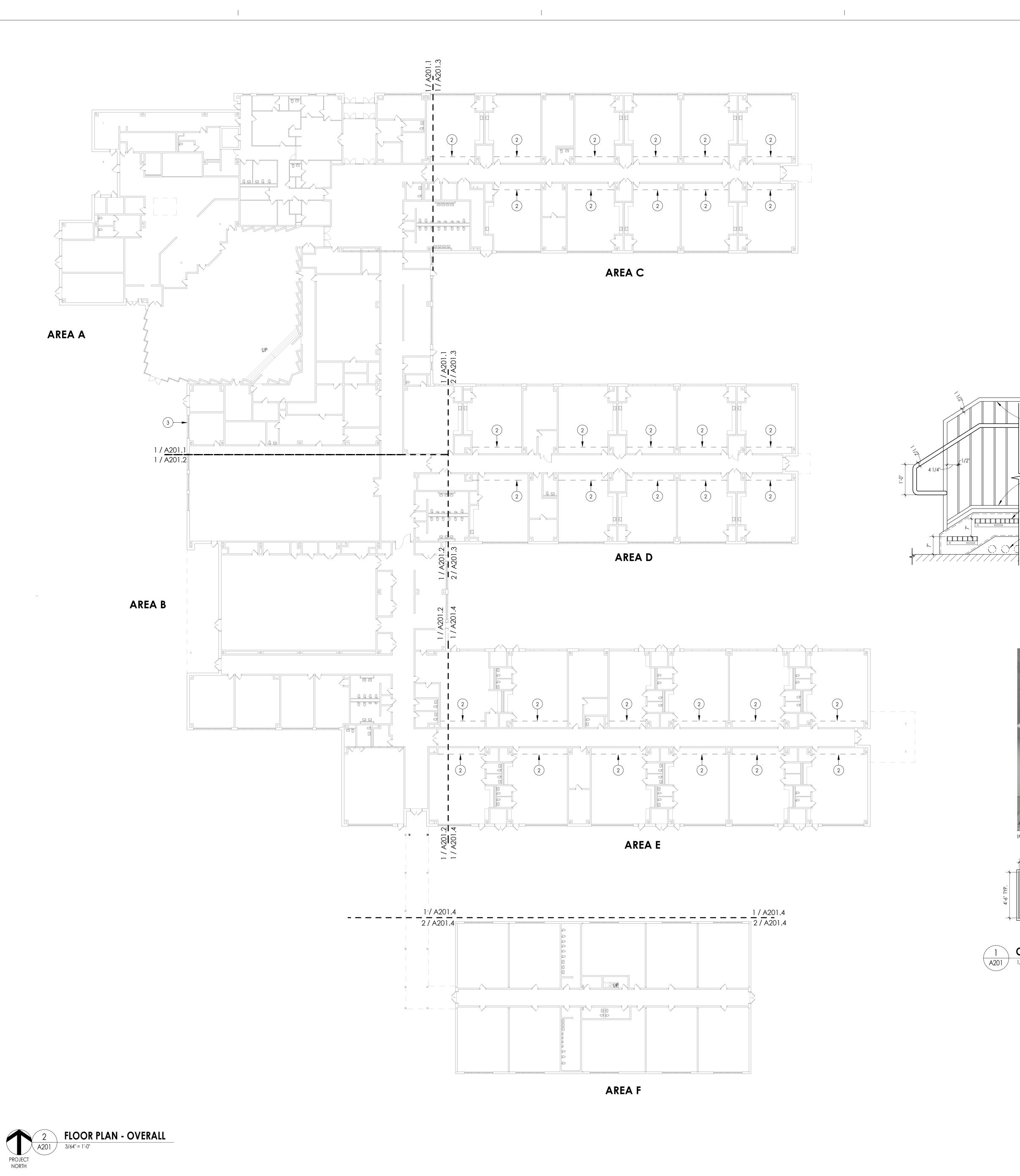
PROFESSIONAL STAMPS





SHEET INFORMATION 02/17/2025 As indicated Project Status 99% OWNER REVIEW SET

DEMOLITION PLAN - AREA E & F



#### FLOOR PLAN GENERAL NOTES

- ALL DRAWINGS ARE GRAPHIC REPRESENTATIONS OF APPROXIMATE LOCATIONS OF NEW MATERIALS. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO COMMENCEMENT 2. ALL WALL DIMENSIONS INDICATED ON FLOOR PLANS ARE FROM FACE OF FINISH TO FACE OF FINISH UNLESS OTHERWISE NOTED. 3. WORK AREAS SHALL BE MAINTAINED AND ALL WORK AREAS SHALL BE LEFT BROOMED
- CLEAN AT END OF EACH DAY. 4. COORDINATE WITH OTHER TRADES FOR SEQUENCING OF WORK.
- 5. EQUIPMENT SHOWN ON THESE DOCUMENTS ARE FOR REFERENCE ONLY AND ARE FOR COORDINATION OF M,E,P INFRASTRUCTURE TO OPERATE ITEMS INCLUDED UNDER THE 6. PATCH AND FINISH ALL EXISTING WALLS TO REMAIN WITHIN THE PROJECT LIMIT AREA
- TO RECEIVE SPECIFIED FINISHES. ALL EXISTING EXPANSION JOINT COVERS OR ASSEMBLIES ARE TO BE PROTECTED AND MAINTAINED DURING THE COURSE OF CONSTRUCTION UNLESS OTHERWISE NOTED.

CPL | Architecture Engineering Planning

1111 Haynes Street Suite 100,

Raleigh, NC 27604

CPLteam.com

NC ARCHITECTURAL FIRM LICENSE NO. 51301

PROJECT INFORMATION

JOHNSTON COUNTY PUBLIC

PROJECT ISSUE & REVISION SCHEDULE

CLEVELAND ES - HVAC

R23.00487.00

SCHOOLS Project Name

**REPLACEMENT** 

Project Address 10225 CLEVELAND RD, CLAYTON, NC 27520

#### FLOOR PLAN LEGEND

NOTE: THIS LEGEND MAY CONTAIN SYMBOLS THAT ARE NOT USED IN THIS PROJECT.



**ROOM TAG** 10'-0" x 10'-0"



DETAIL FOR REFERENCE MARK



DENOTES FINISH FLOOR GRADE ELEVATION



XXX WALL TYPE SEE A/400

#### FLOOR PLAN KEY NOTES

- ALL LOOSE-LAID BATT INSULATION IN ATTIC TO BE SALVAGED & STORED DURING CONSTRUCTION & RE-INSTALLED, REPLACE ANY DAMAGED INSULATION WITH
- (2) PROVIDE FROSTED FILM ON EXISTING CLERESTORY WINDOWS
- PROPOSED LOCATION OF CONTRACTOR ATTIC ACCESS. EXISTING METAL WALL (3) WILL NEED TO BE REMOVED AND STORED. TO BE REINSTALLED AT CONCLUSION

OF CONSTRUCTION. REFER TO MECH DRAWINGS.

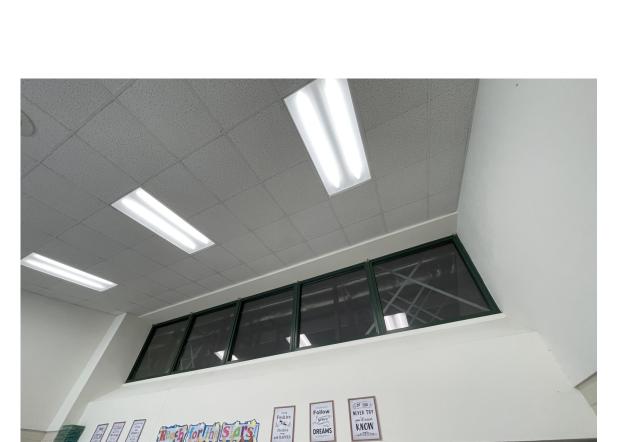


IMAGE OF CLERESTORY WINDOW PROVIDED FOR REFERENCE ONLY

- 42" HIGH PAINTED GUARDRAIL WITH 36"

11" GALVANIZED BAR GRATING TREAD WITH CHECKER NOSE PLATING, FSINDUSTRIES MODEL #36TRGBG-11 OR SIM

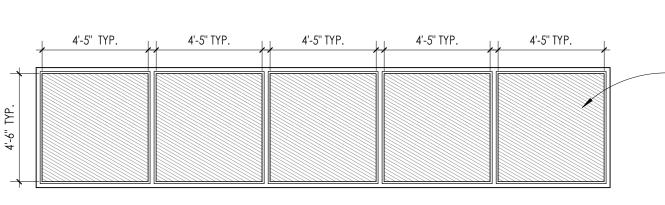
— NEW HVAC AND PIPING, PROVIDE ENOUGH CLEARNACE FOR PIPING TO RUN UNDERNEATH

SEE H302A-H302E FOR STAIR

LOCATIONS IN THE ATTIC

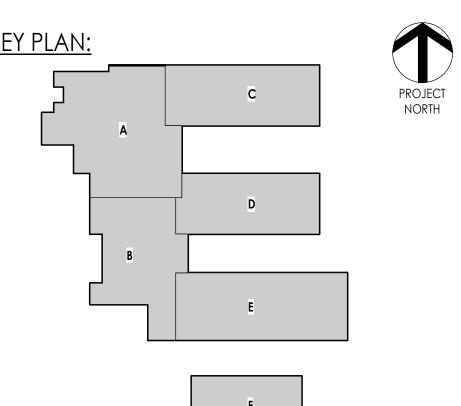
HIGH HAND RAIL

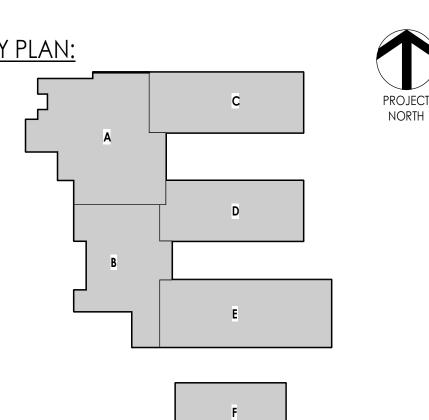
PAINTED 1-1/2" STL TUBE



- DASHED REGION DENOTES FROSTED WINDOW FILM AREA (APPROX. 20 SF PER WINDOW LITE, 100 SF TOTAL; VERIFY IN FIELD)







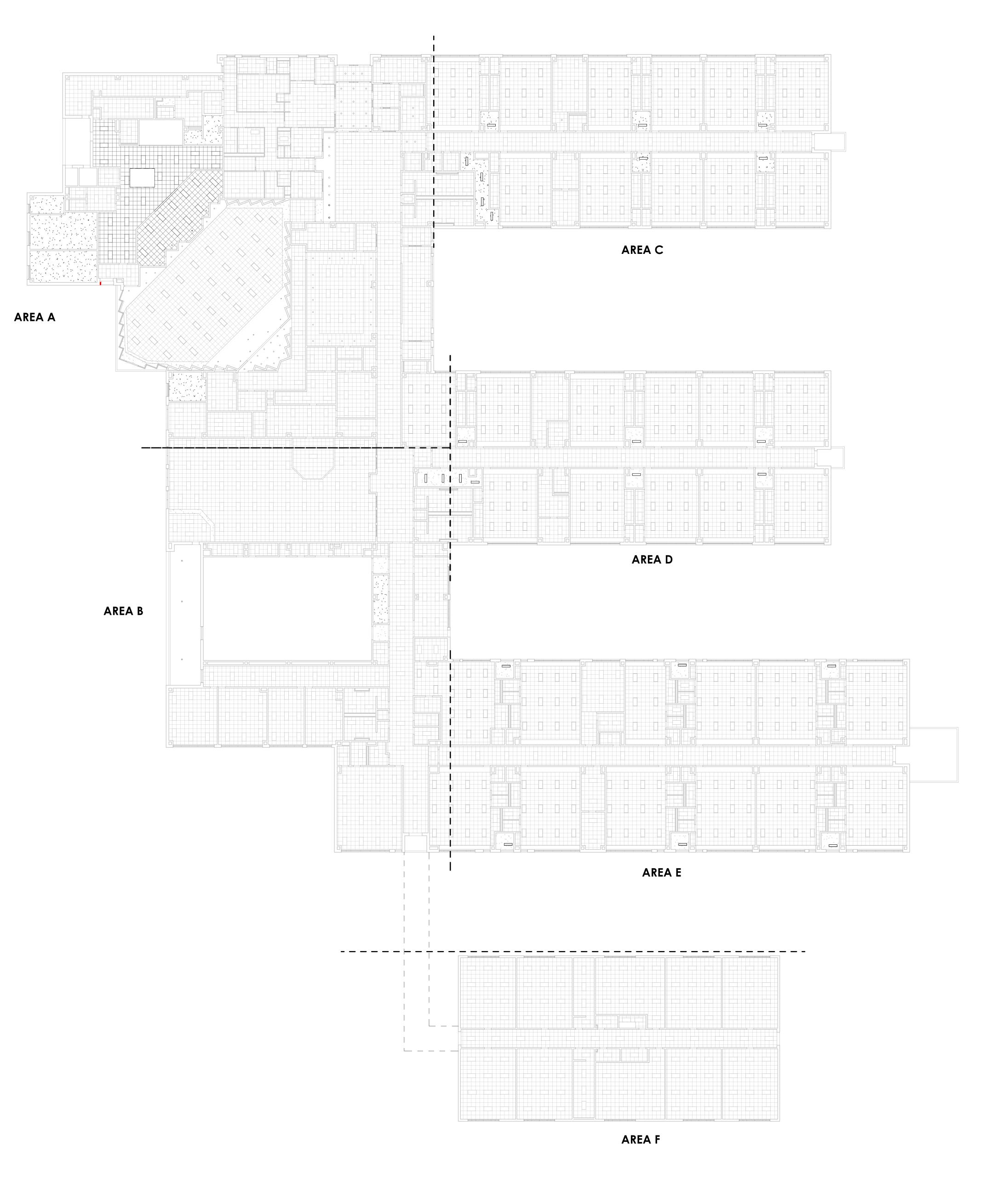
Project Status
99% OWNER REVIEW SET Drawing Title OVERALL FLOOR PLAN

02/17/2025 As indicated

SHEET INFORMATION

PROFESSIONAL STAMPS

Drawing Number



#### GENERAL CEILING NOTES

- 1. ALL DRAWINGS ARE GRAPHIC REPRESENTATION OF APPROXIMATE LOCATIONS OF NEW MATERIALS FOR CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ALL CONDITIONS PRIOR TO COMMENCEMENT OF WORK.
- FIELD VERIFY ALL CONDITIONS PRIOR TO COMMENCEMENT OF WORK.

  2. REFER TO **A200 SERIES** FOR FLOOR PLAN.
- 3. FOR ANY DISCREPANCY BETWEEN THE REFLECTED CEILING PLAN AND THE FLOOR PLAN: THE FLOOR PLAN SHALL TAKE PRECEDENCE. ANY DISCREPANCY SHALL BE CALLED TO THE ATTENTION OF THE ARCHITECT.
- 4. FIRE STOP MECHANICAL, ELECTRICAL AND PLUMBING ITEMS, INCLUDING BUT NOT LIMITED TO DUCTWORK AND CONDUIT PENETRATIONS THROUGH FLOORS AND
- WALLS.

  5. COORDINATE CEILING INSTALLATIONS WITH MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS.
- REFER TO "H" SERIES DRAWINGS FOR DIFFUSERS AND GRILLE LOCATIONS.
   REFER TO "E" SERIES DRAWINGS FOR LIGHTING TYPES AND CONTROLS.
   REFER TO "P" OR "FP" SERIES DRAWINGS FOR SPRINKLER HEAD LOCATIONS.
- 9. WORK AREAS SHALL BE MAINTAINED AND ALL WORK AREAS SHALL BE LEFT BROOMED CLEAN AT THE END OF EACH DAY.
  10. CENTER CEILING GRID (EACH WAY) IN ROOMS SCHEDULED TO RECEIVE
- ACOUSTICAL CEILING SYSTEMS UNLESS OTHERWISE NOTED.

  11. VERIFY WITH ARCHITECT THE INSTALLATION OF ANY CEILING TILES LESS THAN 4" IN WIDTH
- PROVIDE MOISTURE RESISTANT GYP. BD. AT ALL TOILET ROOMS, JANITOR'S CLOSETS, MECHANICAL ROOMS AND OTHER WET LOCATION CEILING ASSEMBLIES.
   ALL GYP. BD. CEILINGS AND SOFFITS SHALL BE PRIMED AND PAINTED SCHEDULED
- COLOR ON ALL FACES AND UNDERSIDE SURFACE.

  14. VERIFY SOFFIT SIZE WITH MILLWORK SHOP DRAWINGS. PROVIDE 2" OVERHANG ON
- EXPOSED EDGES UNLESS NOTED OTHERWISE.

  15. WHERE APPLICABLE ALL FIXTURES AND DEVICES SHALL BE CENTERED ON A CEILING
- 16. INSTALL CONTROL JOINTS IN GYP. CEILINGS PER ASTM C 840.

# CEILING SYMBOL LEGEND

NOTE: THIS LEGEND MAY CONTAIN SYMBOLS THAT ARE NOT USED IN THIS PROJECT.

2'x4' LIGHTS

1'X4' LINEAR LIGHT FIXTURE

RECESSED CAN LIGHT FIXTURE

PENDANT LIGHT FIXTURES

SUPPLY AIR DIFFUSERS

RETURN AIR DIFFUSERS

EXHAUST DIFFUSERS
LINEAR SLOT AIR DIFFUSERS

GYPSUM WALL BOARD CEILING

ACOUSTICAL TILE CEILING

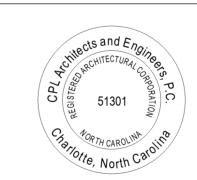
ACT-1
9'-0"

CEILING TYPE AND CEILING HEIGHT ABOVE FINISHED FLOOR

### **CEILING KEYNOTES**

- 1 NEW GYP. CEILING
- 2 NEW HEALTHZONE ACT CEILING
- 3 SALVAGE AND REINSTALL EXISTING ACT CEILING AT SAME LOCATION
- 4 NEW EIFS CEILING

PROFESSIONAL STA



CPL | Architecture Engineering Planning

1111 Haynes Street Suite 100,

Raleigh, NC 27604

CPLteam.com

NC ARCHITECTURAL FIRM LICENSE NO. 51301

PROJECT INFORMATION

JOHNSTON COUNTY PUBLIC

PROJECT ISSUE & REVISION SCHEDULE

CLEVELAND ES - HVAC

R23.00487.00

SCHOOLS
Project Name

REPLACEMENT

10225 CLEVELAND RD, CLAYTON, NC 27520



SHEET INFORMATION

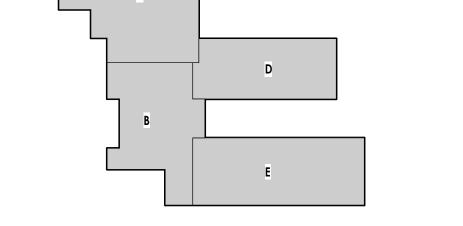
Issued Scale
02/17/2025 As indicated
Project Status
99% OWNER REVIEW SET
Drawn By Checked By
KV GB

Drawing Title

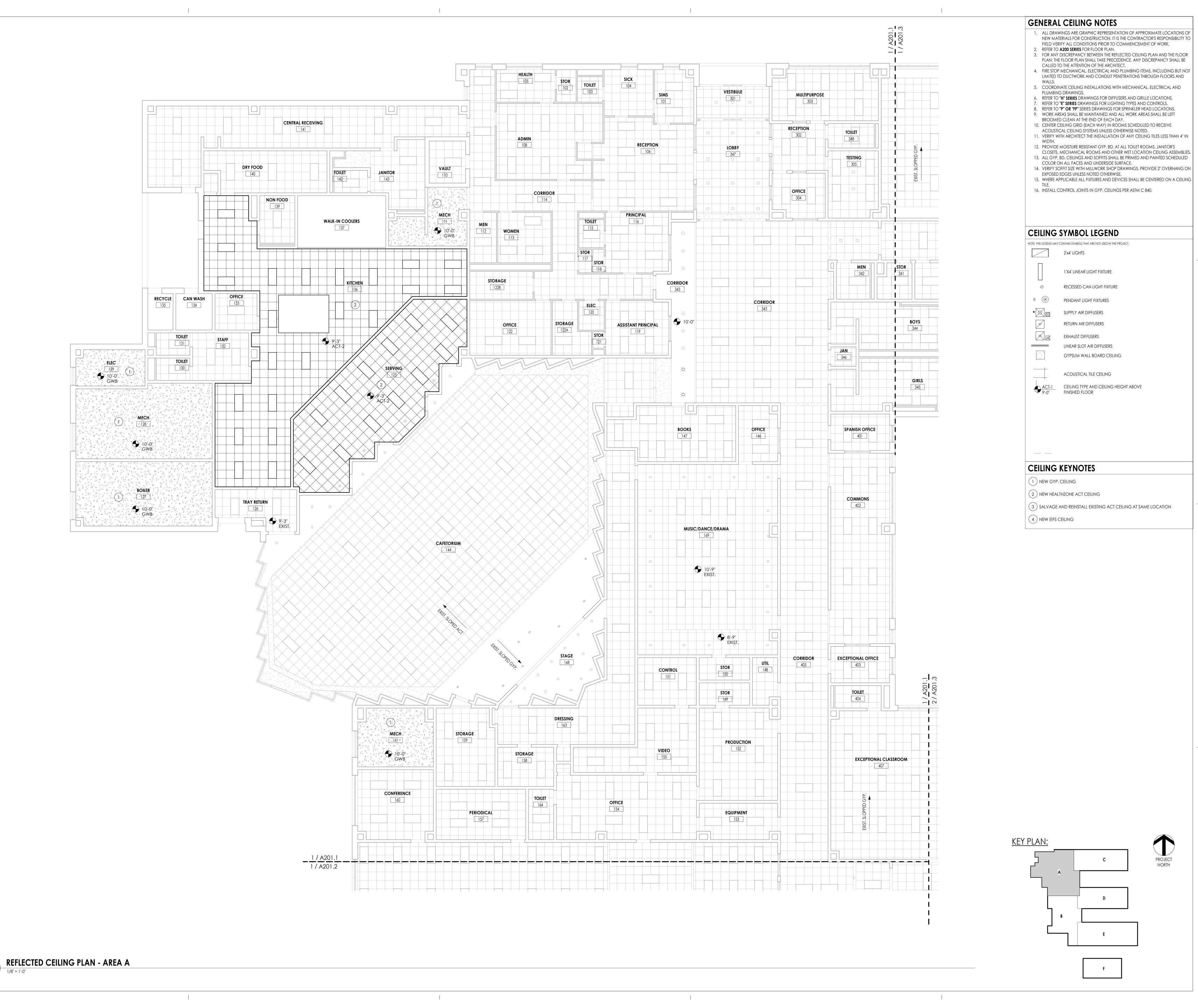
OVERALL REFLECTED CEILING

Drawing Number

A601



1 REFLECTED CEILING PLAN -OVERALL



CPL | Architecture Engineering Planning
1111 Haynes Street Suite 100,

CPLteam.com

NC ARCHITECTURAL FIRM LICENSE NO. 51301

Raleigh, NC 27604

PROJECT INFORMATION

Project Name

REPLACEMENT

R23.00487.00
Client Name
JOHNSTON COUNTY PUBLIC
SCHOOLS

oject Address

CLEVELAND ES - HVAC

10225 CLEVELAND RD, CLAYTON , NC 27520

PROJECT ISSUE & REVISION SCHEDULE

PROFESSIONAL STAMPS





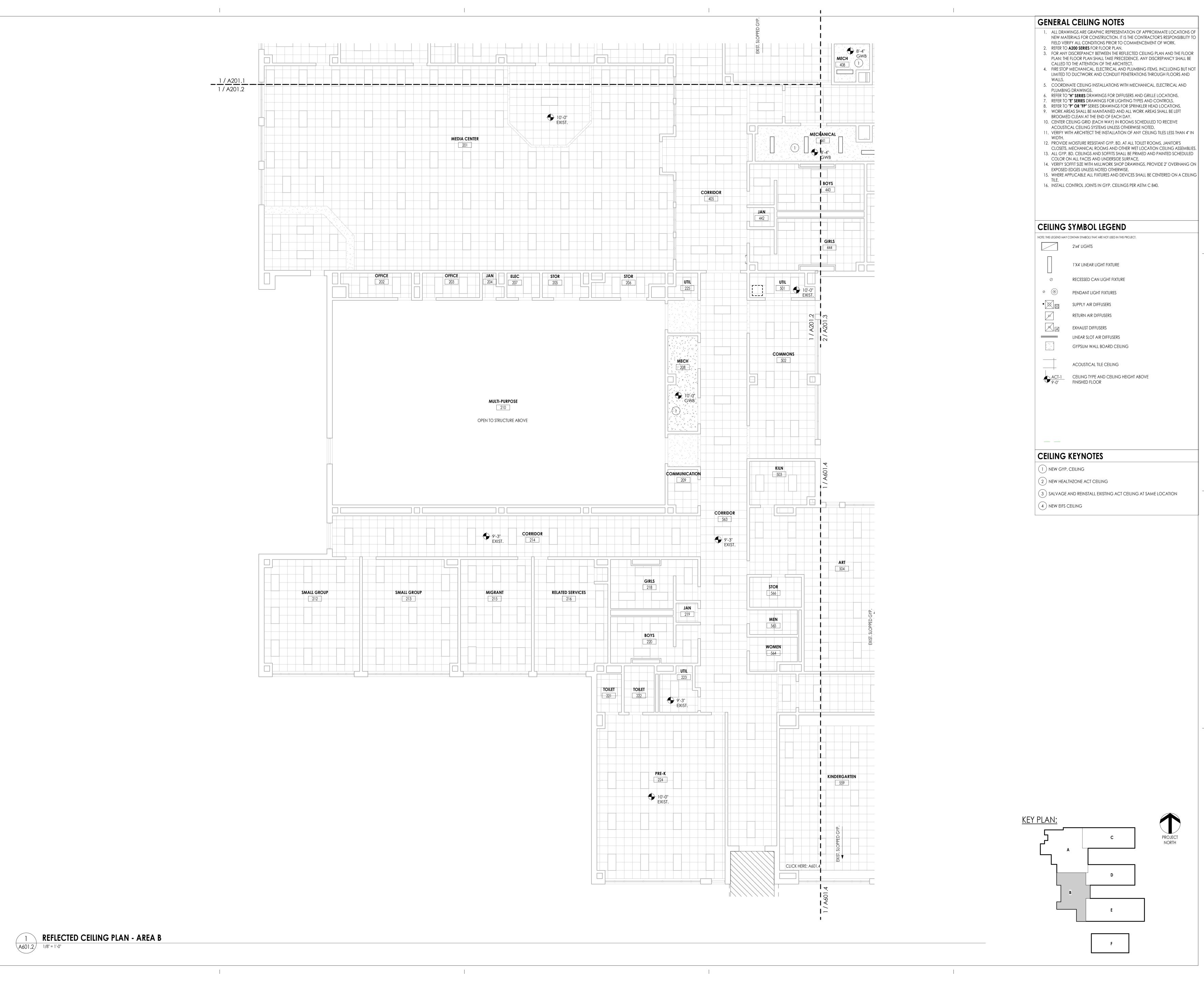
Issued Scale
02/17/2025 As indicated
Project Status
99% OWNER REVIEW SET
Drawn By Checked By
KV GB

Drawing Title

REFLECTED CEILING PLAN - AREA

Drawing Number

Δ Δ Λ Λ 1 1



CPL | Architecture Engineering Planning
1111 Haynes Street Suite 100,
Raleigh, NC 27604

CPLteam.com

NC ARCHITECTURAL FIRM LICENSE NO. 51301

PROJECT INFORMATION

Project Name

R23.00487.00
Client Name
JOHNSTON COUNTY PUBLIC
SCHOOLS

REPLACEMENT

CLEVELAND ES - HVAC

Project Address 10225 CLEVELAND RD, CLAYTON , NC 27520

PROJECT ISSUE & REVISION SCHEDULE

PROFESSIONAL STAMPS





SHEET INFORMATION

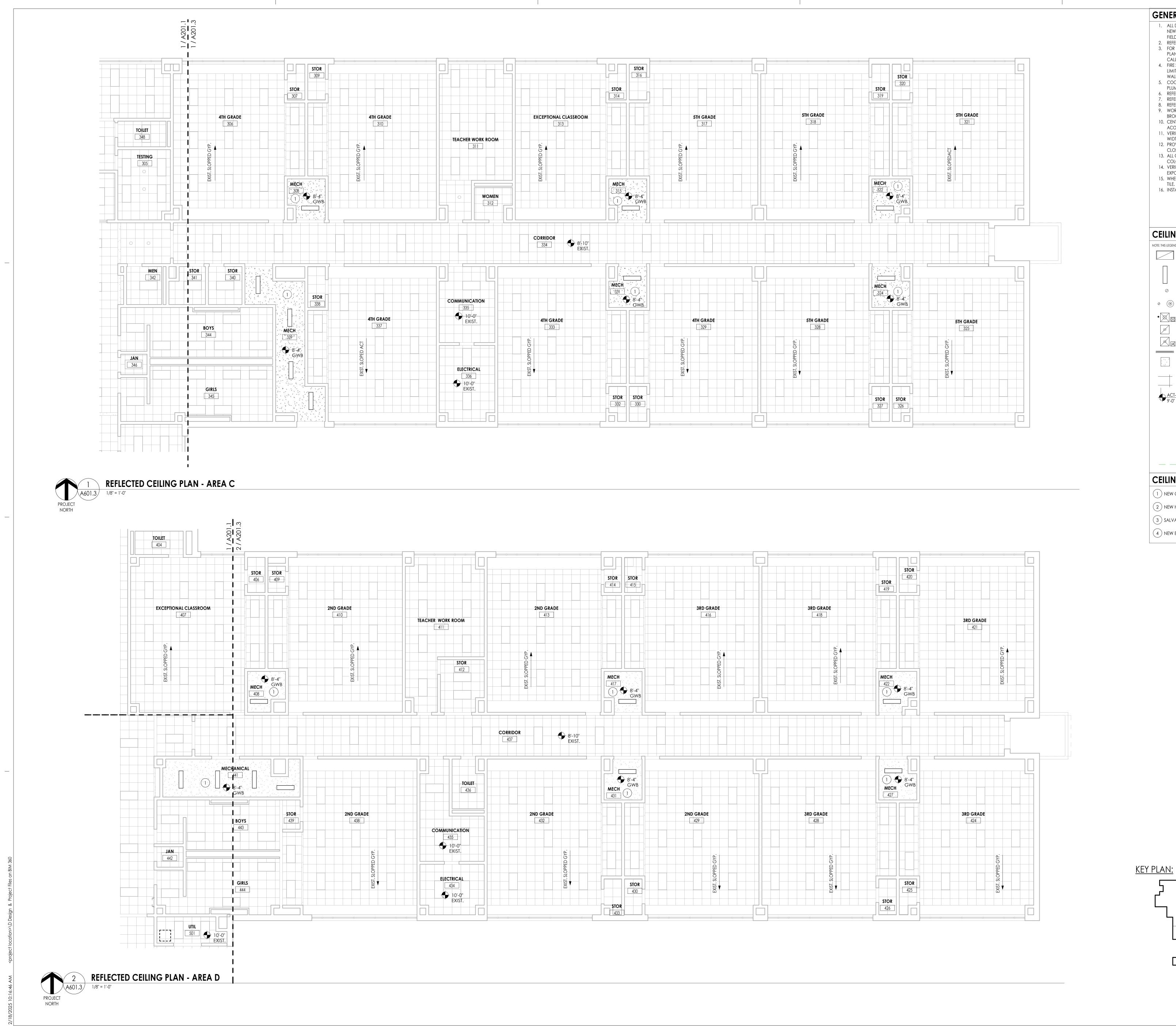
Issued Scc. 02/17/2025 As

02/17/2025 As indicate
Project Status
99% OWNER REVIEW SET
Drawn By Checked By
KV GB

Drawing Title
REFLECTED CEILING PLAN - AREA

Drawing Number

Δ ( ) 1 ( )



#### GENERAL CEILING NOTES

- 1. ALL DRAWINGS ARE GRAPHIC REPRESENTATION OF APPROXIMATE LOCATIONS OF NEW MATERIALS FOR CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ALL CONDITIONS PRIOR TO COMMENCEMENT OF WORK.
- 2. REFER TO **A200 SERIES** FOR FLOOR PLAN. 3. FOR ANY DISCREPANCY BETWEEN THE REFLECTED CEILING PLAN AND THE FLOOR
- PLAN: THE FLOOR PLAN SHALL TAKE PRECEDENCE, ANY DISCREPANCY SHALL BE CALLED TO THE ATTENTION OF THE ARCHITECT. 4. FIRE STOP MECHANICAL, ELECTRICAL AND PLUMBING ITEMS, INCLUDING BUT NOT
- LIMITED TO DUCTWORK AND CONDUIT PENETRATIONS THROUGH FLOORS AND 5. COORDINATE CEILING INSTALLATIONS WITH MECHANICAL, ELECTRICAL AND
- PLUMBING DRAWINGS. 6. REFER TO "H" SERIES DRAWINGS FOR DIFFUSERS AND GRILLE LOCATIONS. 7. REFER TO **"E" SERIES** DRAWINGS FOR LIGHTING TYPES AND CONTROLS.
- 8. REFER TO "P" OR "FP" SERIES DRAWINGS FOR SPRINKLER HEAD LOCATIONS. 9. WORK AREAS SHALL BE MAINTAINED AND ALL WORK AREAS SHALL BE LEFT BROOMED CLEAN AT THE END OF EACH DAY.

10. CENTER CEILING GRID (EACH WAY) IN ROOMS SCHEDULED TO RECEIVE

- ACOUSTICAL CEILING SYSTEMS UNLESS OTHERWISE NOTED. 11. VERIFY WITH ARCHITECT THE INSTALLATION OF ANY CEILING TILES LESS THAN 4" IN
- 12. PROVIDE MOISTURE RESISTANT GYP. BD. AT ALL TOILET ROOMS, JANITOR'S CLOSETS, MECHANICAL ROOMS AND OTHER WET LOCATION CEILING ASSEMBLIES. 13. ALL GYP. BD. CEILINGS AND SOFFITS SHALL BE PRIMED AND PAINTED SCHEDULED
- COLOR ON ALL FACES AND UNDERSIDE SURFACE. 14. VERIFY SOFFIT SIZE WITH MILLWORK SHOP DRAWINGS. PROVIDE 2" OVERHANG ON
- EXPOSED EDGES UNLESS NOTED OTHERWISE. 15. WHERE APPLICABLE ALL FIXTURES AND DEVICES SHALL BE CENTERED ON A CEILING
- 16. INSTALL CONTROL JOINTS IN GYP. CEILINGS PER ASTM C 840.

### CEILING SYMBOL LEGEND

NOTE; THIS LEGEND MAY CONTAIN SYMBOLS THAT ARE NOT USED IN THIS PROJECT. 2'x4' LIGHTS

1'X4' LINEAR LIGHT FIXTURE RECESSED CAN LIGHT FIXTURE

> PENDANT LIGHT FIXTURES SUPPLY AIR DIFFUSERS RETURN AIR DIFFUSERS

EXHAUST DIFFUSERS LINEAR SLOT AIR DIFFUSERS

GYPSUM WALL BOARD CEILING

ACOUSTICAL TILE CEILING ACT-1 CEILING TYPE AND CEILING HEIGHT ABOVE FINISHED FLOOR

#### **CEILING KEYNOTES**

- 1 NEW GYP. CEILING
- 2 NEW HEALTHZONE ACT CEILING
- (3) SALVAGE AND REINSTALL EXISTING ACT CEILING AT SAME LOCATION
- 4 NEW EIFS CEILING



CPL | Architecture Engineering Planning

1111 Haynes Street Suite 100,

Raleigh, NC 27604

CPLteam.com

NC ARCHITECTURAL FIRM LICENSE NO. 51301

PROJECT INFORMATION

JOHNSTON COUNTY PUBLIC

PROJECT ISSUE & REVISION SCHEDULE

CLEVELAND ES - HVAC

R23.00487.00

SCHOOLS Project Name

**REPLACEMENT** 

10225 CLEVELAND RD, CLAYTON, NC 27520



SHEET INFORMATION 02/17/2025 Project Status 99% OWNER REVIEW SET

Drawing Title
REFLECTED CEILING PLAN - AREA

Drawing Number

A601.3



CPL | Architecture Engineering Planning 1111 Haynes Street Suite 100, Raleigh, NC 27604

CPLteam.com NC ARCHITECTURAL FIRM LICENSE NO. 51301

PROJECT INFORMATION

JOHNSTON COUNTY PUBLIC





SHEET INFORMATION 02/17/2025 As indicated 99% OWNER REVIEW SET

\_\_\_\_ xx \_\_\_\_

PUMP

AIR FLOW

X = DIFFUSER OR GRILL TYPE XX = AIR FLOW VALUE (CFM)

X = DIFFUSER OR GRILL TYPE XX = CONNECTION SIZE

XXX = AIR FLOW VALUE (CFM) XXXX = NOMINAL SIZE

**←** 

XX / XXXX

#### MECHANICAL GENERAL NOTES

- MAINTAIN CLEARANCE OF A MINIMUM OF 6" BETWEEN DUCTWORK, PIPING, EQUIPMENT, ETC. AND ALL RATED WALL ASSEMBLIES TO ALLOW FOR INSPECTIONS OF RATED WALLS.
- 2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS WITHIN THE BUILDING PRIOR TO COMMENCEMENT OF ALL DEMOLITION AND NEW WORK.
- 3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE AND REPLACE EXISTING CEILINGS, UNLESS OTHERWISE NOTED ON THE ARCHITECTURAL DRAWINGS, FOR PERFORMING DEMOLITION OR NEW WORK WITHIN THE BUILDING. THE EXISTING CEILINGS SHALL BE REMOVED IN A MANNER TO AVOID DAMAGE TO THE CEILING SYSTEMS. STORAGE OF CEILING SYSTEM COMPONENTS FOR REINSTALLATION IS THE RESPONSIBILITY OF THE CONTRACTOR. THE STORAGE OF ALL MATERIAL SHALL BE IN AREAS OR LOCATIONS APPROVED BY THE OWNER. THE OWNER WILL NOT COMPENSATE FOR ANY DAMAGED OR LOST MATERIAL WHILE IN STORAGE. AFTER COMPLETION OF ALL DEMOLITION OR NEW WORK, THE CONTRACTOR SHALL REINSTALL THE CEILING SYSTEMS TO MATCH THE ORIGINAL INSTALLATION.
- 4. DEMOLITION DRAWINGS SHOW MAJOR EQUIPMENT, PIPING, AND DUCTWORK REMOVALS. THE INTENT IS NOT TO IDENTIFY ALL MISCELLANEOUS PIPING, PIPING ACCESSORIES, DUCTWORK, DUCTWORK ACCESSORIES, SUPPORTS, CONTROLS, CONTROL ACCESSORIES, CONTROL WIRING, CONDUIT, AND PNEUMATIC CONTROL TUBING TO BE DISCONNECTED AND REMOVED, BUT IS THE REQUIREMENT UNDER THIS CONTRACT. NO EQUIPMENT, PIPING, DUCTWORK OR CONTROLS SHALL BE ABANDONED IN PLACE, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- 5. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR ANY EQUIPMENT DAMAGED DURING REMOVAL AND DELIVERY. ANY DAMAGE TO EQUIPMENT PRIOR TO DISCONNECTING SHOULD BE REPORTED TO THE OWNER'S REPRESENTATIVE. IF NOT REPORTED, THE CONTRACTOR TAKES FULL RESPONSIBILITY FOR REPAIRS TO THE EQUIPMENT.
- ALL DUCTWORK, PIPING, AND CONDUIT PENETRATIONS THROUGH RATED VERTICAL AND HORIZONTAL ASSEMBLIES SHALL BE PROVIDED WITH FIRE/SMOKE STOPPINGS PER SPECIFICATION. REFER TO CODE ANALYSIS DRAWING FOR ALL RATED LOCATIONS.
- 7. UNLESS SHOWN ON THE ARCHITECTURAL DRAWINGS, IT IS THE RESPONSIBILITY OF THIS CONTRACT TO PATCH AND FINISH ALL EXISTING DUCTWORK OR PIPE PENETRATIONS THROUGH FLOORS, ROOFS, INTERIOR WALLS, AND EXTERIOR WALLS AFTER DEMOLITION WORK. IN ADDITION, ALL NEW PENETRATIONS SHALL BE PROVIDED FOR INSTALLATION OF MECHANICAL SYSTEMS INCLUDING, BUT NOT LIMITED TO, EQUIPMENT, CURBING, DUCTWORK, PIPING, CONTROLS, ETC. PATCHING AND FINISHING SHALL MATCH EXISTING CONSTRUCTION INCLUDING FIRE RATINGS. PROVIDE LINTELS PER LINTEL SCHEDULE.
- 8. IT IS NOT THE INTENT OF THE DRAWINGS TO SHOW ALL AIR VENTS AND DRAINS IN THE PIPING SYSTEMS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE AIR VENTS AT ALL SYSTEM HIGH POINTS AND AT AREAS WITHIN THE PIPING SYSTEMS THAT COULD ACCUMULATE OR TRAP AIR WHICH WOULD PREVENT PROPER VENTING OR OPERATION OF THE SYSTEMS. DRAINS SHALL BE PROVIDED AT ALL LOW POINTS WITHIN THE PIPING SYSTEM TO FACILITATE COMPLETE DRAINING OF THE SYSTEM.
- 9. UNLESS NOTED OTHERWISE IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO MODIFY AND PATCH ROOFING AND ROOF DECKS AS NECESSARY TO INSTALL NEW EQUIPMENT SUPPORTS, PIPING PORTALS, CURBS AND RAILS. IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO PATCH ROOFING AND DECKS WHEN DEMOLISHING ROOF MOUNTED EQUIPMENT. COORDINATE WITH THE OWNER AND EXISTING ROOFING MANUFACTURERS TO MAINTAIN THE WARRANTIES ON ALL ROOFS. ALL ROOFING WORK TO BE PERFORMED BY CERTIFIED ROOFING CONTRACTOR. IT IS ALSO THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE STRUCTURAL FRAMING ASSOCIATED WITH THE WORK IN THIS CONTRACT. REFER TO ARCHITECTURAL DRAWINGS FOR ROOF AND DECK TYPES AND FRAMING DETAILS. PROVIDE STRUCTURAL FRAMING FOR EQUIPMENT AND ROOF OPENINGS. REFER TO STRUCTURAL DRAWINGS FOR DETAILS.

MECHANICAL DESIGN CRITERIA TEMPERATURE DESIGN					
CONDITION	CRITERIA	COMMENTS			
SUMMER (COOLING): OUTSIDE AIR DESIGN	94.9°F / 76.1°F	DERIVED FROM ASHRAE 90.1 FOR JOHNSTON CO., NC			
WINTER (HEATING): OUTSIDE AIR DESIGN	19.3°F	DERIVED FROM ASHRAE 90.1 FOR JOHNSTON CO., NC			
INDOOR DESIGN: GENERAL OCCUPIED	COOLING: 75°F HEATING: 72°F	RELATIVE HUMIDITY: 50%			



1620 Hillsborough Street Suite A, Raleigh, NC 27605 CPLteam.com NC ENGINEERING FIRM LICENSE NO. C-2194



PROJECT INFORMATION

Project Number
R23.00487.00
Client Name

JOHNSTON COUNTY PUBLIC
SCHOOLS
Project Name

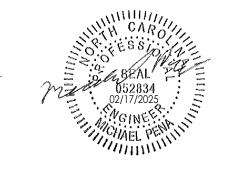
CLEVELAND ELEMENTARY

SCHOOL HVAC RENOVATION

10225 CLEVELAND RD. CLAYTON, NC 27520

PROJECT ISSUE & REVISION SCHEDULE
vv Date Description

PROFESSIONAL STAMPS



SHEET INFORMATION

Drawn By

Issued Scale
02/17/2025 NOT TO SCALE
Project Status
BID SET

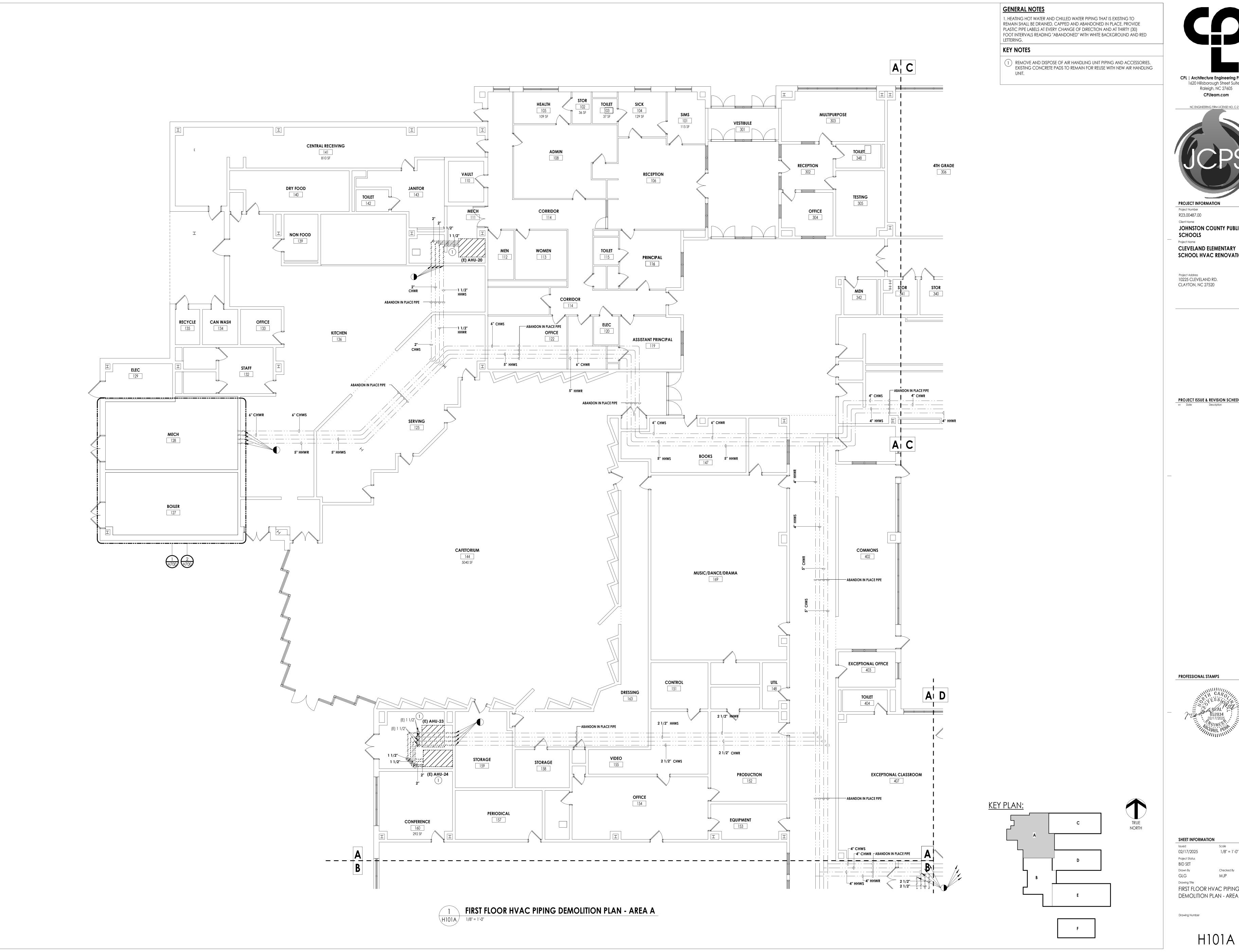
Drawing Title

HVAC SYMBOLS LIST AND

CONTRACTOR NOTES

Drawing Number

000



CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605 CPLteam.com

NC ENGINEERING FIRM LICENSE NO. C-2194

PROJECT INFORMATION Project Number R23.00487.00

JOHNSTON COUNTY PUBLIC **SCHOOLS** Project Name

SCHOOL HVAC RENOVATION

Project Address 10225 CLEVELAND RD. CLAYTON, NC 27520

PROJECT ISSUE & REVISION SCHEDULE

w Date Description

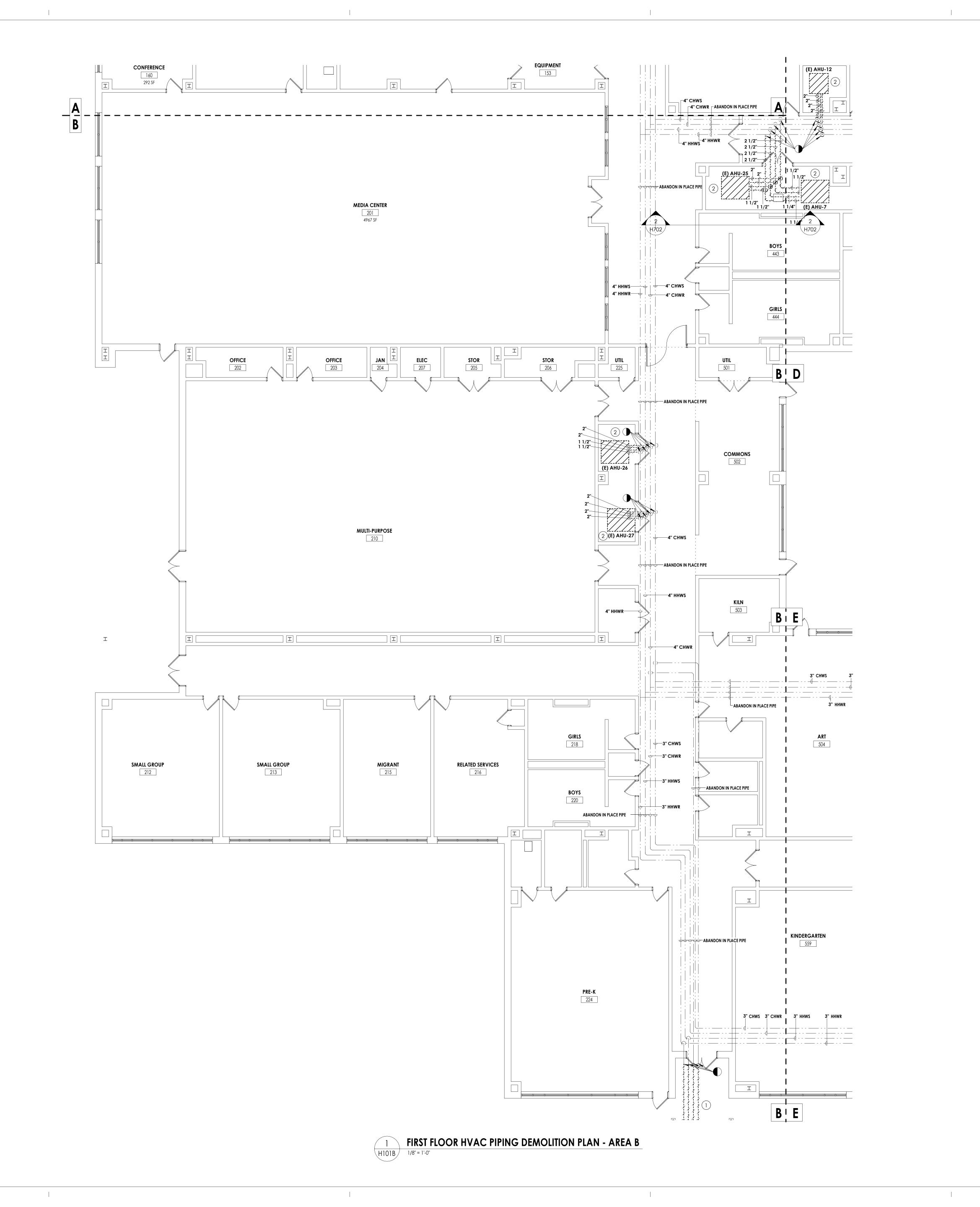
PROFESSIONAL STAMPS



SHEET INFORMATION 02/17/2025 1/8" = 1'-0" Project Status BID SET Drawn By Drawing Title FIRST FLOOR HVAC PIPING DEMOLITION PLAN - AREA A

Drawing Number

H101A



#### **GENERAL NOTES**

1. HEATING HOT WATER AND CHILLED WATER PIPING THAT IS EXISTING TO REMAIN SHALL BE DRAINED, CAPPED AND ABANDONED IN PLACE. PROVIDE PLASTIC PIPE LABELS AT EVERY CHANGE OF DIRECTION AND AT THIRTY (30) FOOT INTERVALS READING "ABANDONED" WITH WHITE BACKGROUND AND RED LETTERING.

#### **KEY NOTES**

KEY PLAN:

- REMOVE AND DISPOSE OF HEATING HOT WATER AND CHILLED WATER PIPING LOCATED ABOVE HARD CEILING OF OUTDOOR COVERED WALKWAY. PREPARE FOR NEW PIPING INSTALLATION.
- REMOVE AND DISPOSE OF AIR HANDLING UNIT PIPING AND ACCESSORIES. EXISTING CONCRETE PADS TO REMAIN FOR REUSE WITH NEW AIR HANDLING

CPLteam.com

NC ENGINEERING FIRM LICENSE NO. C-2194

CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605

PROJECT INFORMATION

JOHNSTON COUNTY PUBLIC
SCHOOLS
Project Name

Project Number R23.00487.00

CLEVELAND ELEMENTARY SCHOOL HVAC RENOVATION

Project Address 10225 CLEVELAND RD. CLAYTON, NC 27520

PROJECT ISSUE & REVISION SCHEDULE

v Date Description

PROFESSIONAL STAMPS



TRUE NORTH

SHEET INFORMATION

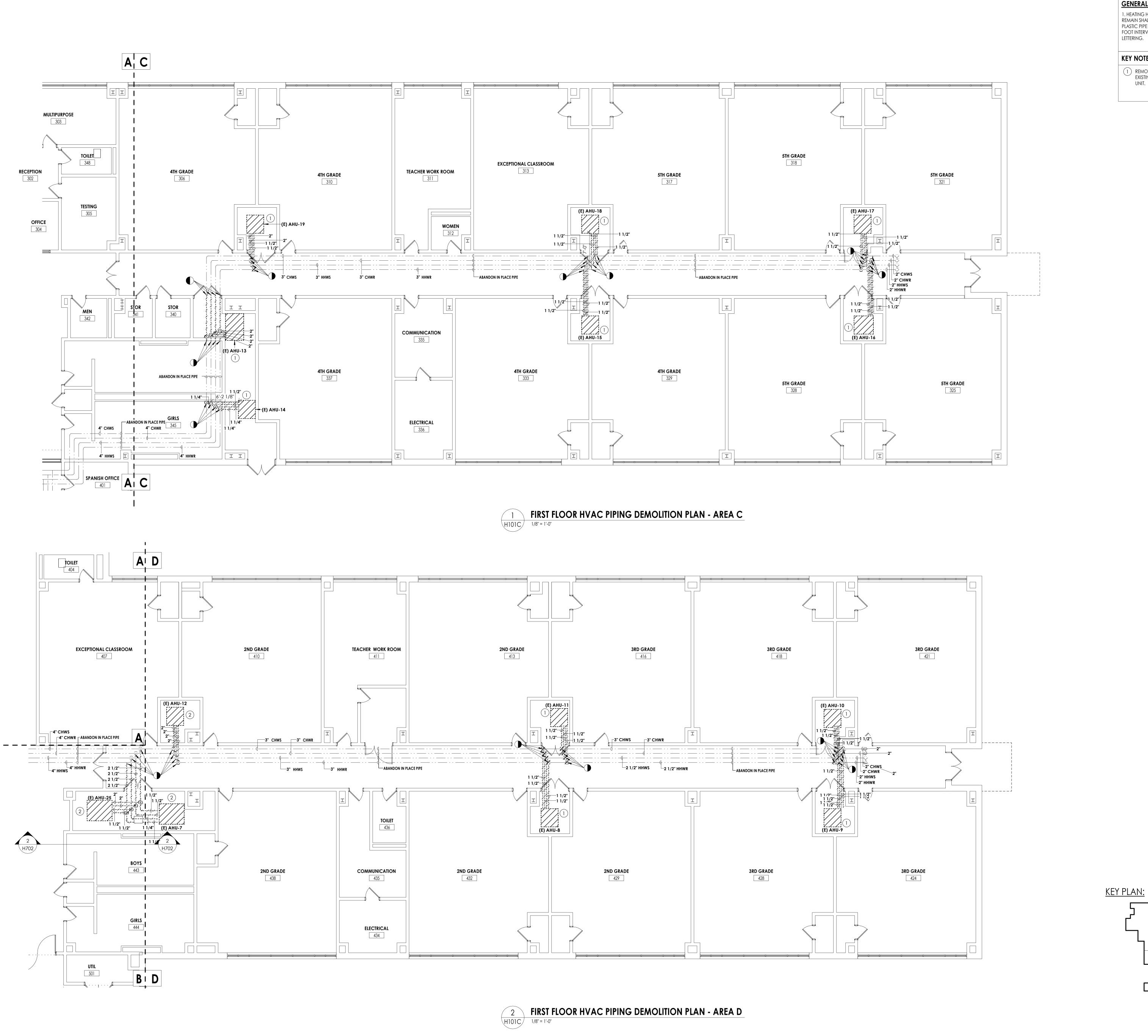
Issued Scale
02/17/2025 1/8" = 1'-0"

Project Status
BID SET
Drawn By Checked By
GLG MJP
Drawing Title

FIRST FLOOR HVAC PIPING
DEMOLITION PLAN - AREA B

Drawing Number

H101B



**GENERAL NOTES** 

1. HEATING HOT WATER AND CHILLED WATER PIPING THAT IS EXISTING TO REMAIN SHALL BE DRAINED, CAPPED AND ABANDONED IN PLACE. PROVIDE PLASTIC PIPE LABELS AT EVERY CHANGE OF DIRECTION AND AT THIRTY (30) FOOT INTERVALS READING "ABANDONED" WITH WHITE BACKGROUND AND RED

KEY NOTES

REMOVE AND DISPOSE OF AIR HANDLING UNIT PIPING AND ACCESSORIES. EXISTING CONCRETE PADS TO REMAIN FOR REUSE WITH NEW AIR HANDLING

CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605

NC ENGINEERING FIRM LICENSE NO. C-2194

CPLteam.com

PROJECT INFORMATION Project Number R23.00487.00 JOHNSTON COUNTY PUBLIC **SCHOOLS** Project Name **CLEVELAND ELEMENTARY** 

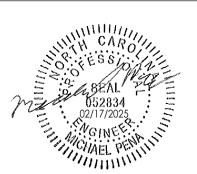
Project Address 10225 CLEVELAND RD. CLAYTON, NC 27520

SCHOOL HVAC RENOVATION

PROJECT ISSUE & REVISION SCHEDULE

w Date Description

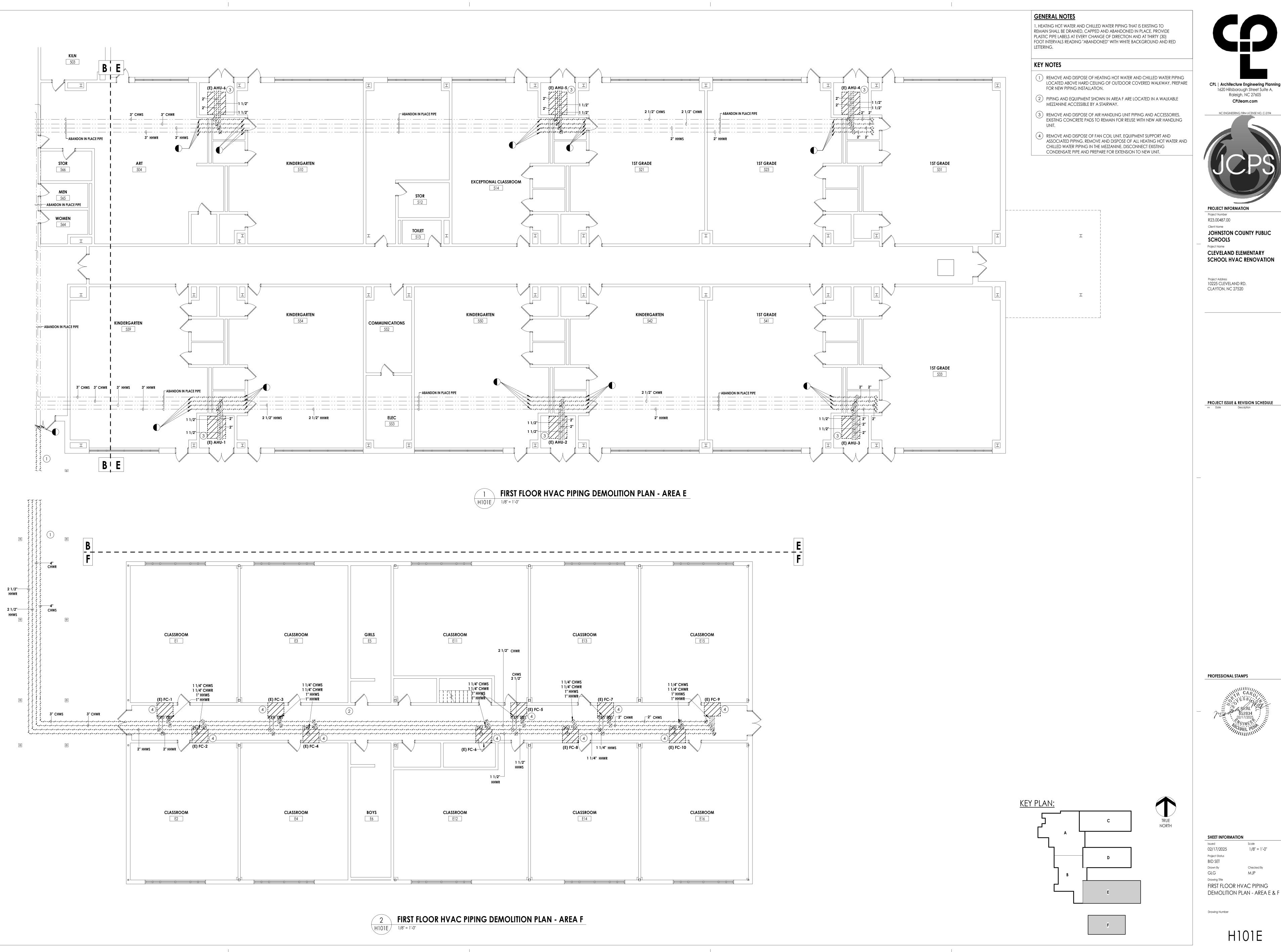
PROFESSIONAL STAMPS



SHEET INFORMATION 02/17/2025 1/8" = 1'-0" Project Status BID SET Drawn By Drawing Title FIRST FLOOR HVAC PIPING DEMOLITION PLAN - AREA C & D

Drawing Number

H101C



CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605



PROJECT INFORMATION R23.00487.00

JOHNSTON COUNTY PUBLIC

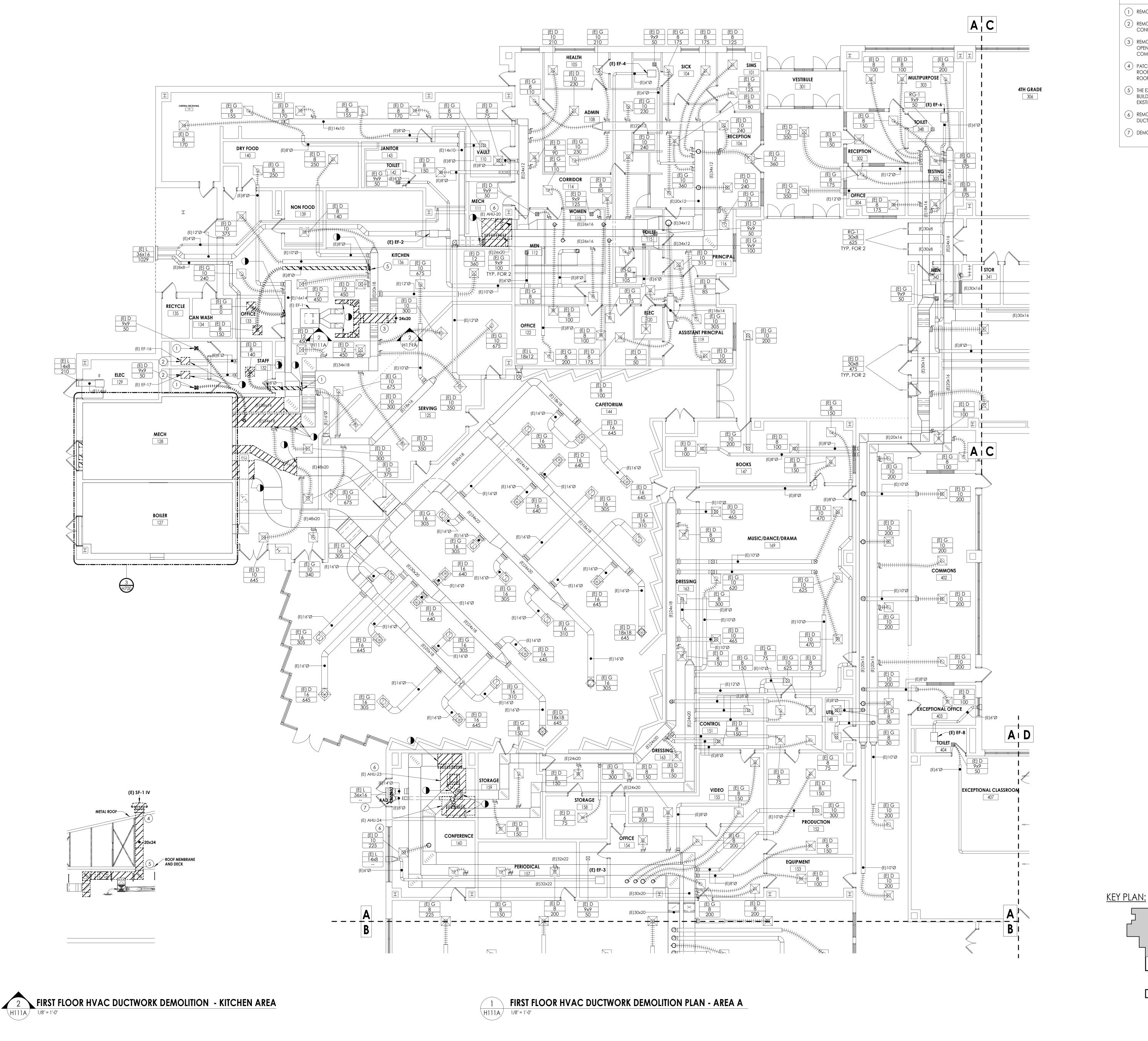
10225 CLEVELAND RD. CLAYTON, NC 27520

PROFESSIONAL STAMPS



SHEET INFORMATION 1/8" = 1'-0" FIRST FLOOR HVAC PIPING

H101E



#### KEY NOTES

- 1 REMOVE AND DISPOSE OF DUCT, DIFFUSERS AND HANGERS/SUPPORTS.
- 2 REMOVE AND DISPOSE OF EXISTING EXHAUST FANS. PREPARE DUCT FOR CONNECTION TO NEW EXHAUST FANS.
- REMOVE GRAVITY VENTILATOR AND ALL ASSOCIATED DUCTWORK. CAP OPENINGS IN EXISTING HOOD WITH WELDED STAINLESS STEEL SHEET METAL TO COMPLY WITH NFPA 96.
- COMPLY WITH NFPA 96.

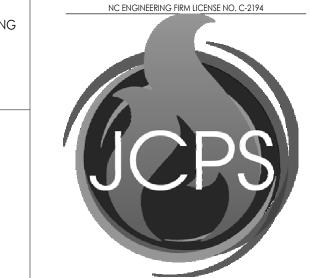
  4 PATCH METAL ROOF AND DECK. COORDINATE WITH OWNER AND EXISTING ROOFING MANUFACTURER TO MAINTAIN WARRANTY ON EXISTING ROOF. ALL
- ROOFING WORK SHALL BE PER NRCA RECOMMENDATIONS.

  5 THE EXISTING SLOPED METAL ROOF IS BUILT OVER WHAT IS FORMERLY THE BUILDING'S FLAT ROOF. PATCH THE OLD FLAT ROOF AND DECK TO MATCH THE
- REMOVE AND DISPOSE OF EXISTING AIR HANDLING UNIT. MODIFY THE EXISTING DUCTWORK IN PREPARATION FOR NEW UNIT INSTALLATION.

EXISTING CONSTRUCTION. ALL WORK TO BE PER NRCA RECOMMENDATIONS.

DUCTWORK IN PREPARATION FOR NEW UNIT INSTALLATION.

(7) DEMOLISH ACTUATOR AND LOCK DAMPER OPEN.



CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605

CPLteam.com

PROJECT INFORMATION
Project Number
R23.00487.00

Client Name

JOHNSTON COUNTY PUBLIC

SCHOOLS
Project Name

CLEVELAND ELEMENTARY
SCHOOL HVAC RENOVATION

Project Address 10225 CLEVELAND RD. CLAYTON, NC 27520

PROJECT ISSUE & REVISION SCHEDULE

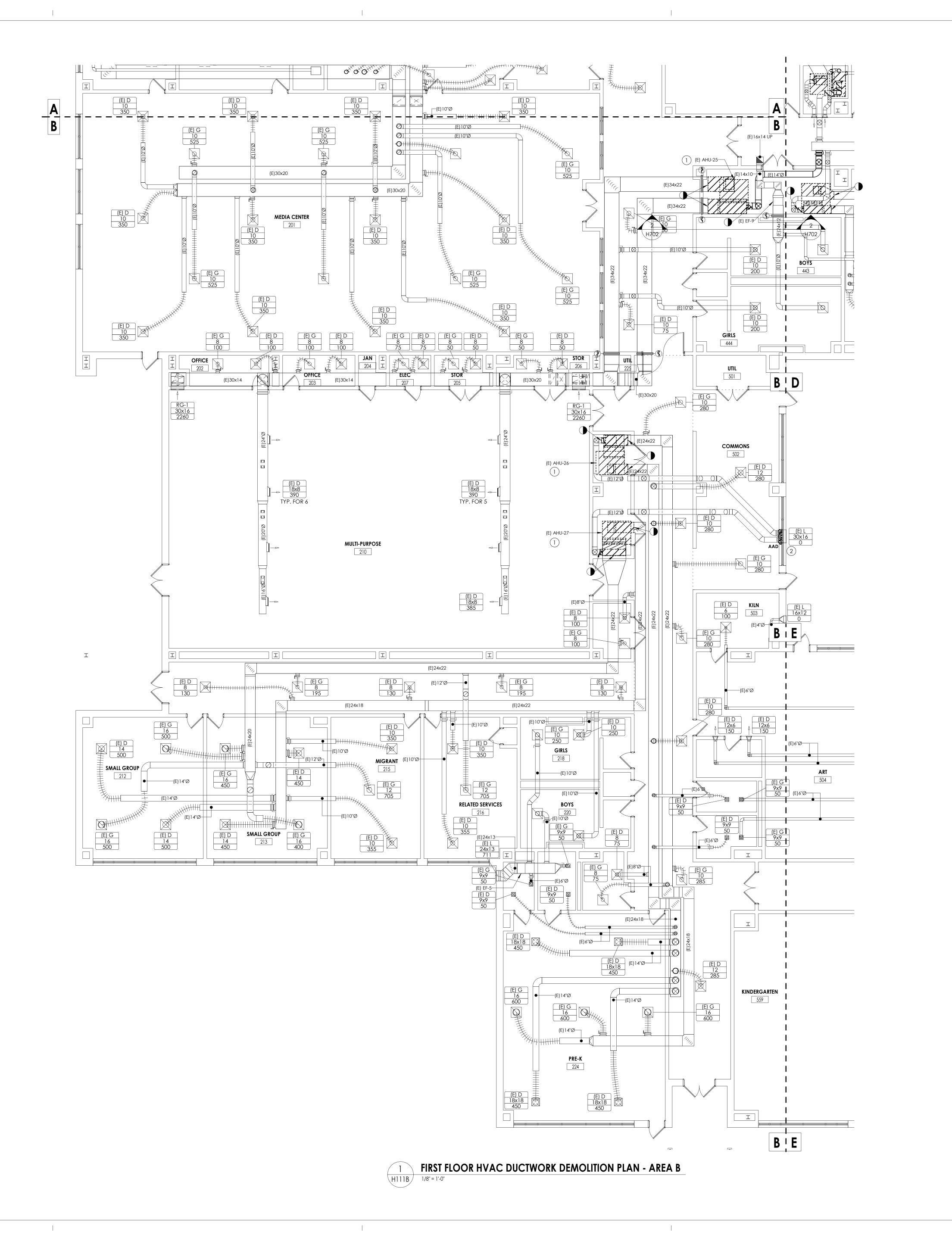
PROFESSIONAL STAM



Drawing Title
FIRST FLOOR HVAC DUCTWORK
DEMOLITION PLAN - AREA A

Drawing Number

H111A



#### KEY NOTES

- 1 REMOVE AND DISPOSE OF EXISTING AIR HANDLING UNIT. MODIFY THE EXISTING DUCTWORK IN PREPARATION FOR NEW AIR HANDLING UNIT INSTALLATION.
- 2 DEMOLISH ACTUATOR AND LOCK DAMPER OPEN.

CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605 CPLteam.com



PROJECT INFORMATION

Project Number
R23.00487.00

Client Name

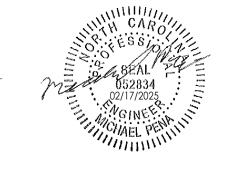
JOHNSTON COUNTY PUBLIC SCHOOLS
Project Name

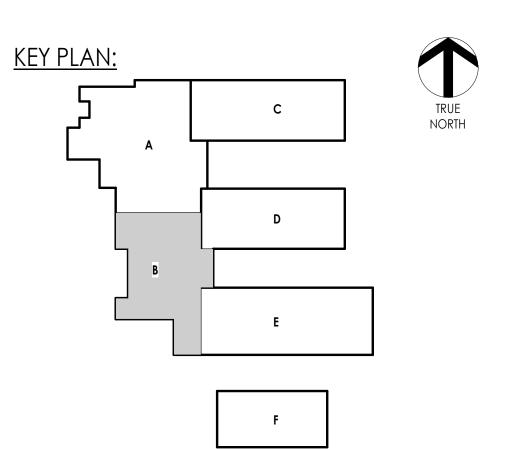
CLEVELAND ELEMENTARY SCHOOL HVAC RENOVATION

Project Address 10225 CLEVELAND RD. CLAYTON, NC 27520

PROJECT ISSUE & REVISION SCHEDULE
vv Date Description

PROFESSIONAL STAM





Issued Scale
02/17/2025 1/8" = 1'-0"
Project Status
BID SET
Drawn By Checked By
GLG MJP
Drawing Title
FIRST FLOOR HVAC DUCTWORK
DEMOLITION PLAN - AREA B

Drawing Number

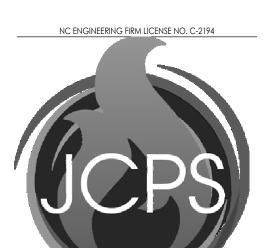
H111B



1 REMOVE AND DISPOSE OF EXISTING AIR HANDLING UNIT. MODIFY THE EXISTING DUCTWORK IN PREPARATION FOR NEW AIR HANDLING UNIT INSTALLATION.

2 DEMOLISH ACTUATOR. LOCK DAMPER OPEN.





PROJECT INFORMATION

Project Number
R23.00487.00
Client Name
JOHNSTON COUNTY PUBLIC
SCHOOLS
Project Name
CLEVELAND ELEMENTARY

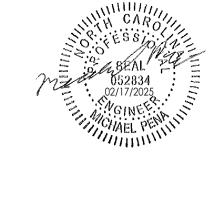
Project Address 10225 CLEVELAND RD. CLAYTON, NC 27520

SCHOOL HVAC RENOVATION

PROJECT ISSUE & REVISION SCHEDULE

w Date Description

PROFESSIONAL STAMPS



SHEET INFORMATION

Issued Scale

02/17/2025 1/8" = 1'-0"

Project Status

BID SET

Drawn By Checked By

GLG MJP

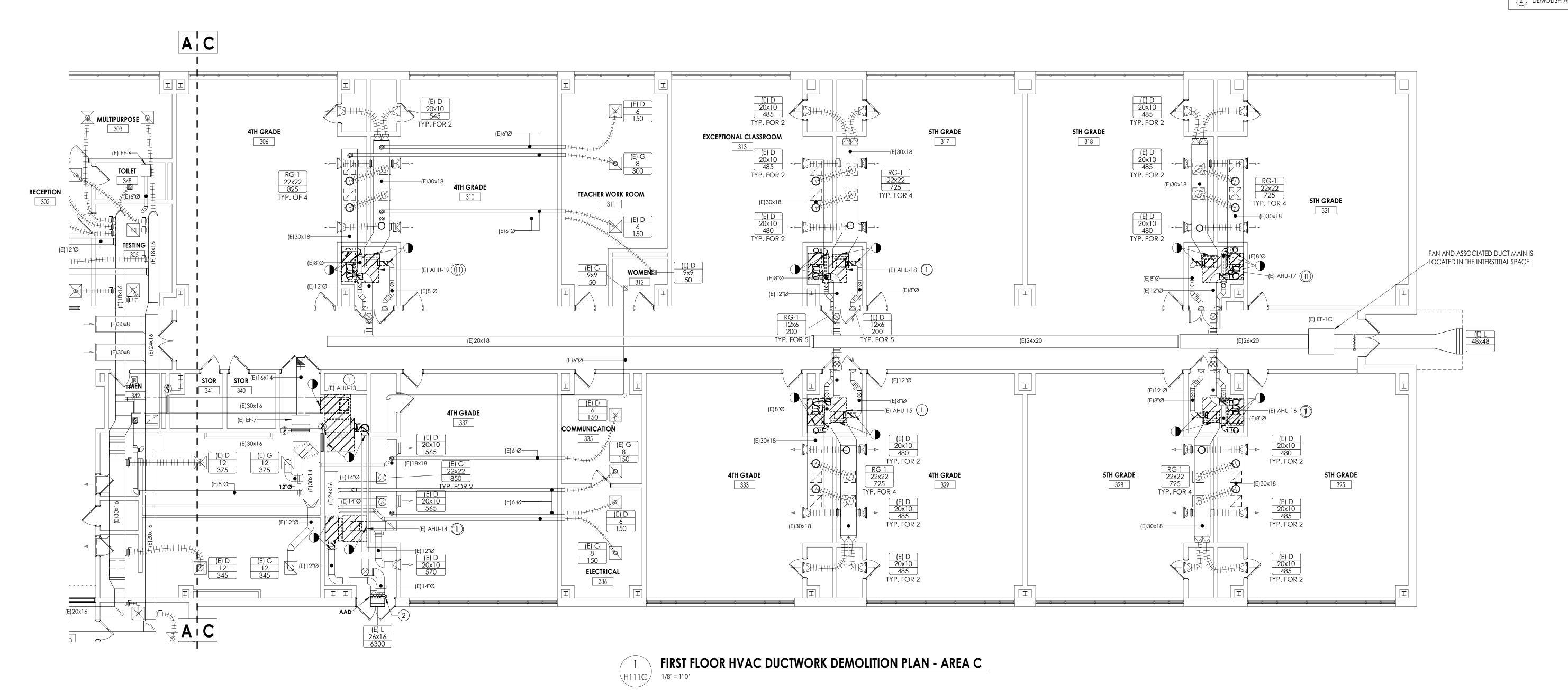
Drawing Title

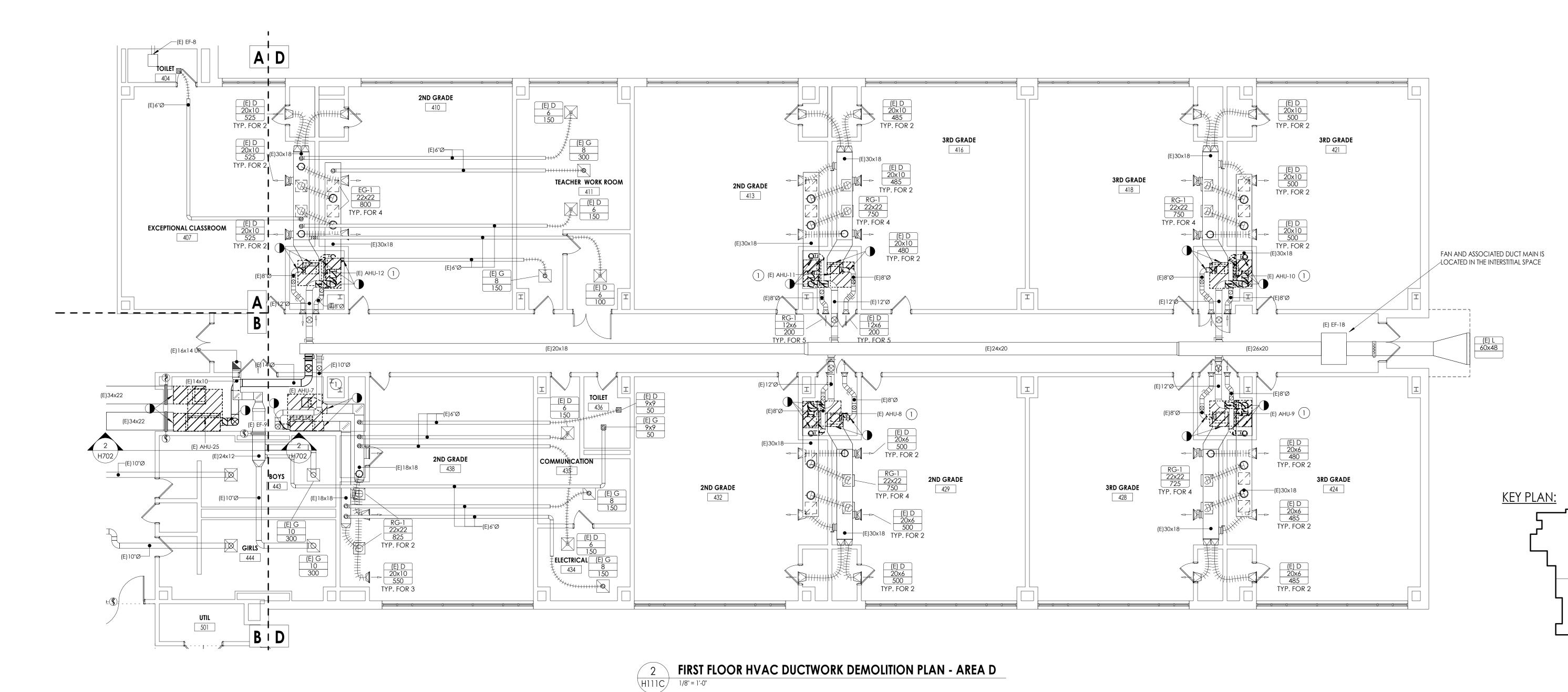
FIRST FLOOR HVAC DUCTWORK

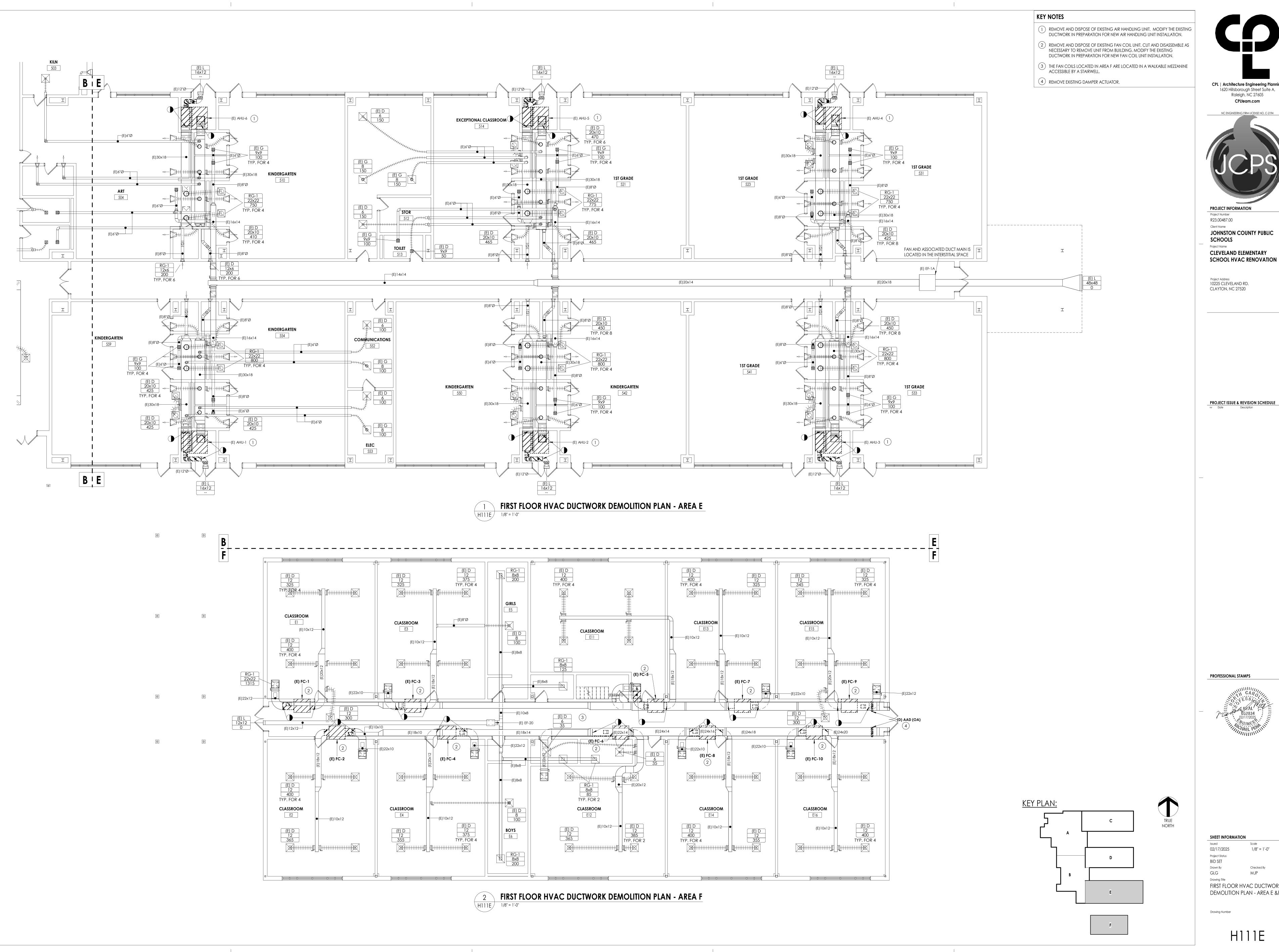
DEMOLITION PLAN - AREA C & D

Drawing Number

H111C







CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605

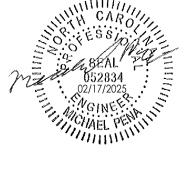
NC ENGINEERING FIRM LICENSE NO. C-2194

CPLteam.com

Project Number R23.00487.00 JOHNSTON COUNTY PUBLIC **SCHOOLS** Project Name CLEVELAND ELEMENTARY

Project Address 10225 CLEVELAND RD. CLAYTON, NC 27520

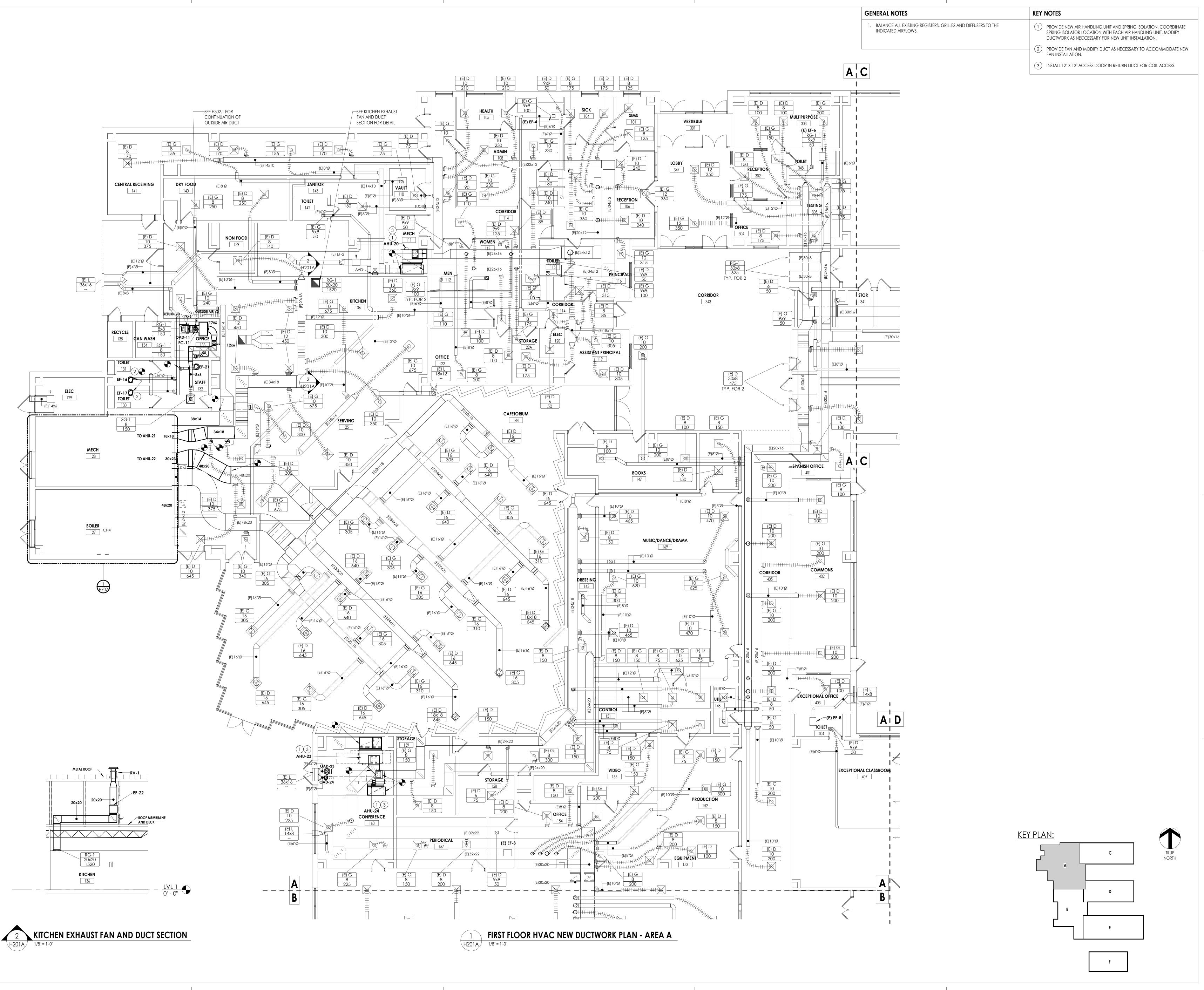
PROFESSIONAL STAMPS



SHEET INFORMATION 1/8" = 1'-0" 02/17/2025 Project Status Drawing Title FIRST FLOOR HVAC DUCTWORK DEMOLITION PLAN - AREA E &F

Drawing Number

H111E



CPLteam.com

CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605

NC ENGINEERING FIRM LICENSE NO. C-2194

PROJECT INFORMATION

Project Number
R23.00487.00

Client Name
JOHNSTON COUNTY PUBLIC

**SCHOOLS** 

Project Name

CLEVELAND ELEMENTARY

SCHOOL HVAC RENOVATION

Project Address 10225 CLEVELAND RD. CLAYTON, NC 27520

PROJECT ISSUE & REVISION SCHEDULE

w Date Description

PROFESSIONAL STAMPS



SHEET INFORMATION

Issued Scale
02/17/2025 1/8" = 1'-0"

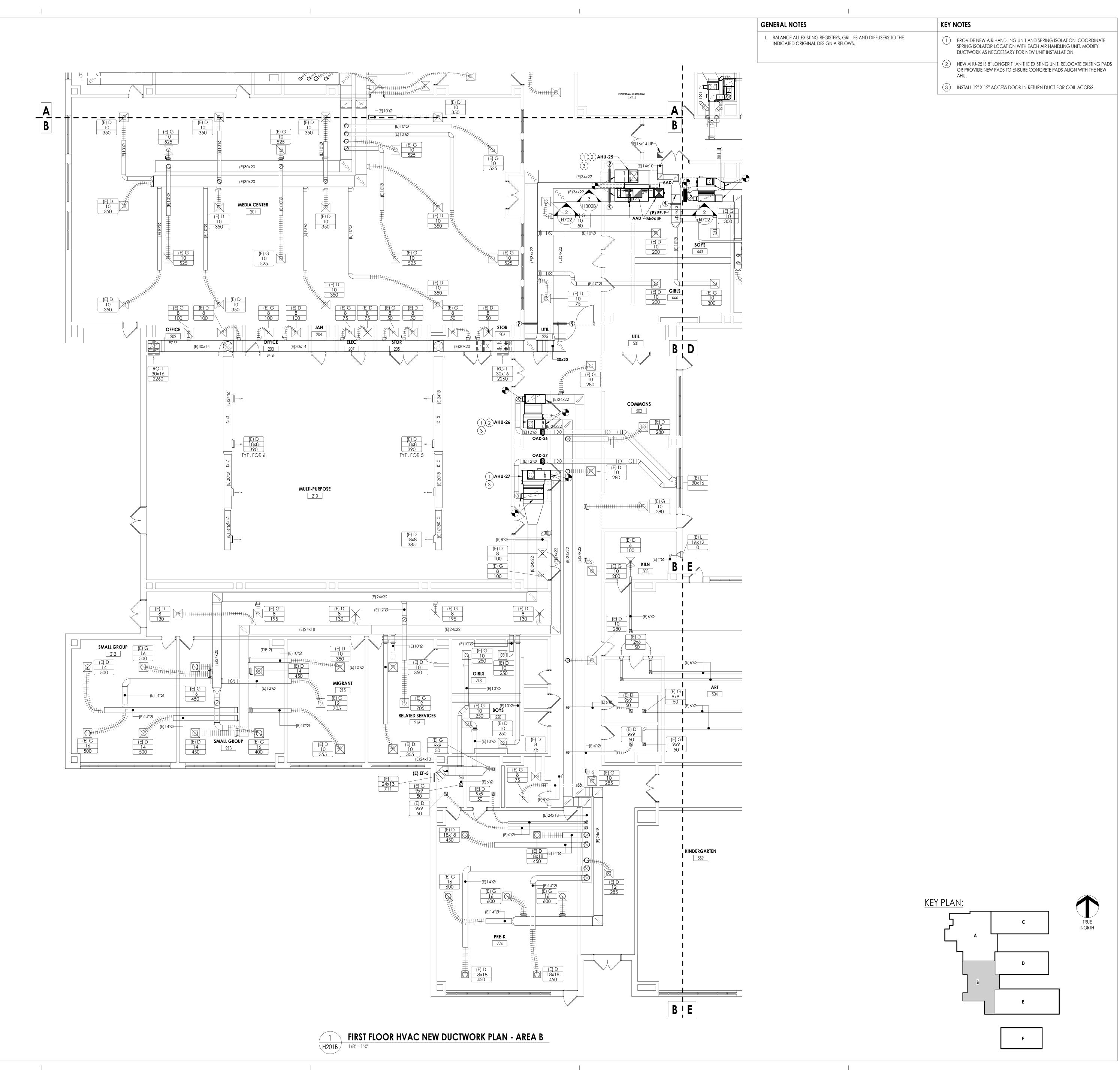
Project Status
BID SET
Drawn By Checked By
GLG MJP

Drawing Title

FIRST FLOOR HVAC NEW
DUCTWORK PLAN - AREA A

Drawing Number

H201A



CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605 CPLteam.com



PROJECT INFORMATION

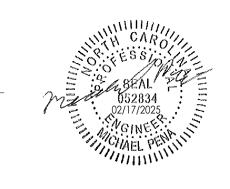
Project Number
R23.00487.00
Client Name
JOHNSTON COUNTY PUBLIC
SCHOOLS
Project Name
CLEVELAND ELEMENTARY

Project Address 10225 CLEVELAND RD. CLAYTON, NC 27520

SCHOOL HVAC RENOVATION

PROJECT ISSUE & REVISION SCHEDULE

PROFESSIONAL STAMPS



SHEET INFORMATION

Issued Scale

02/17/2025 1/8" = 1'-0"

Project Status

BID SET

Drawn By Checked By

GLG MJP

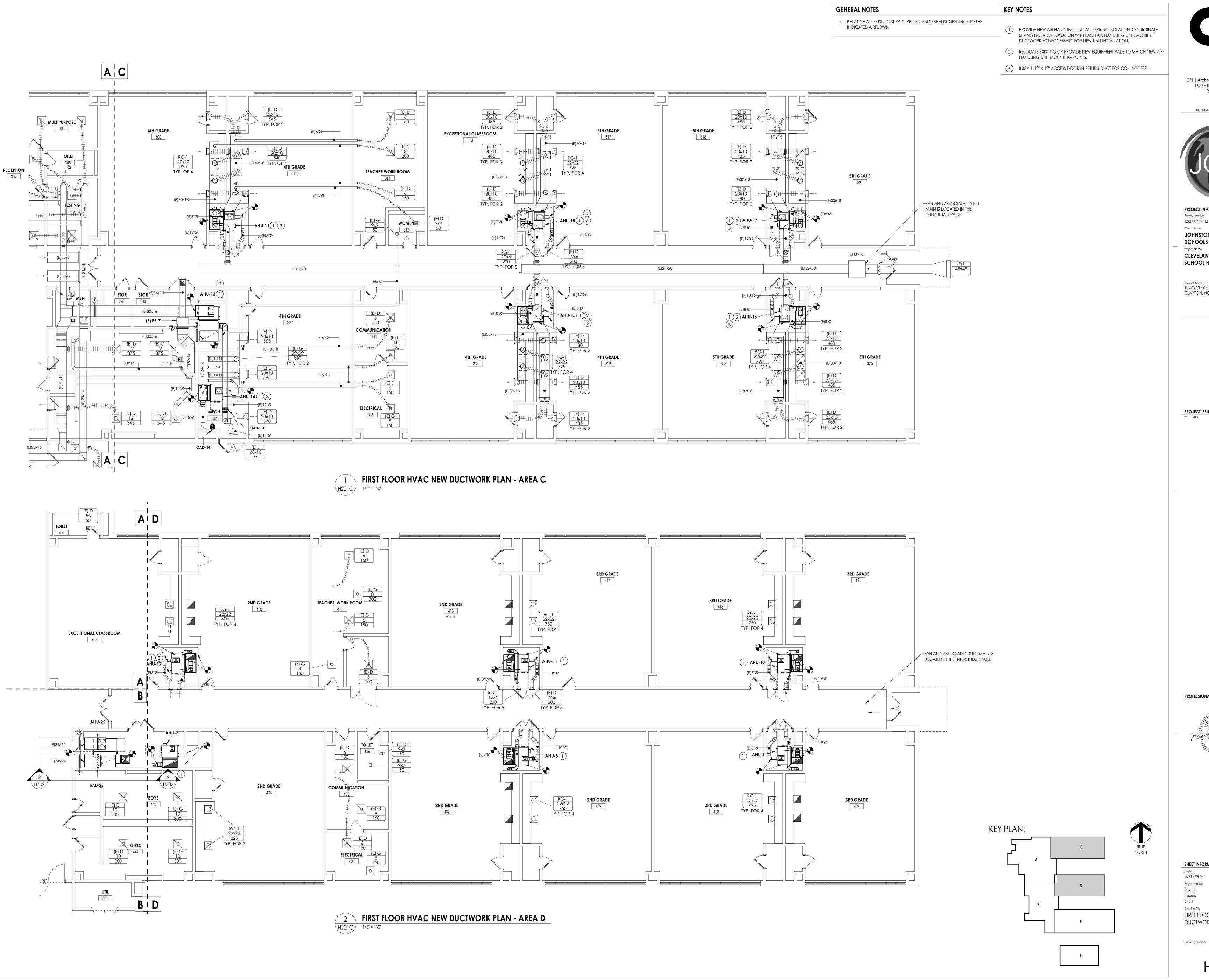
Drawing Title

FIRST FLOOR HVAC NEW

DUCTWORK PLAN - AREA B

Drawing Number

H201B



CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605 CPLteam.com



PROJECT INFORMATION Project Number R23.00487.00 JOHNSTON COUNTY PUBLIC **SCHOOLS** CLEVELAND ELEMENTARY SCHOOL HVAC RENOVATION

Project Address 10225 CLEVELAND RD. CLAYTON, NC 27520

PROJECT ISSUE & REVISION SCHEDULE

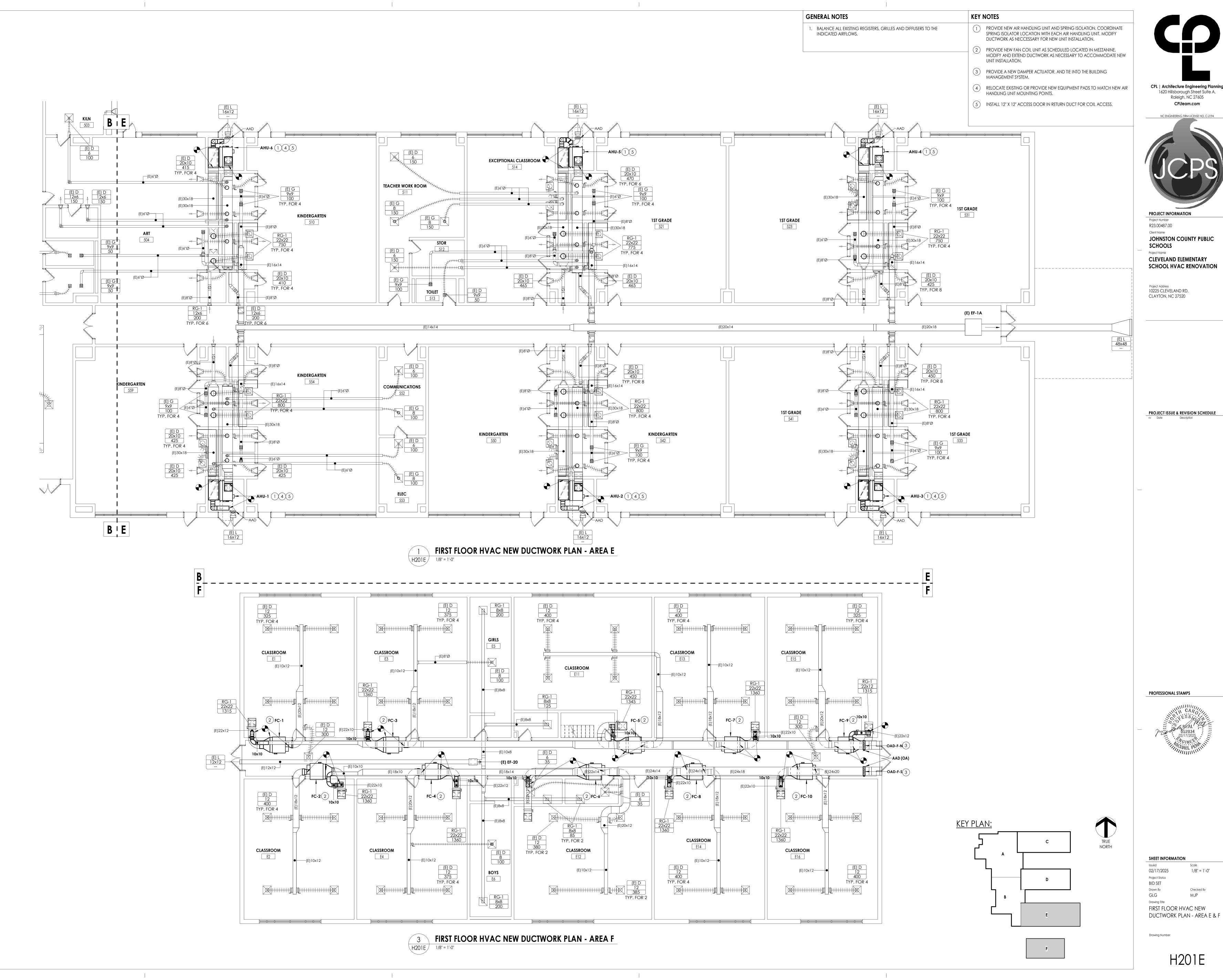
w Date Description

PROFESSIONAL STAMPS



SHEET INFORMATION 02/17/2025 1/8" = 1'-0" Project Status BID SET Drawing Title
FIRST FLOOR HVAC NEW DUCTWORK PLAN - AREA C & D

H201C



CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605



PROJECT INFORMATION JOHNSTON COUNTY PUBLIC

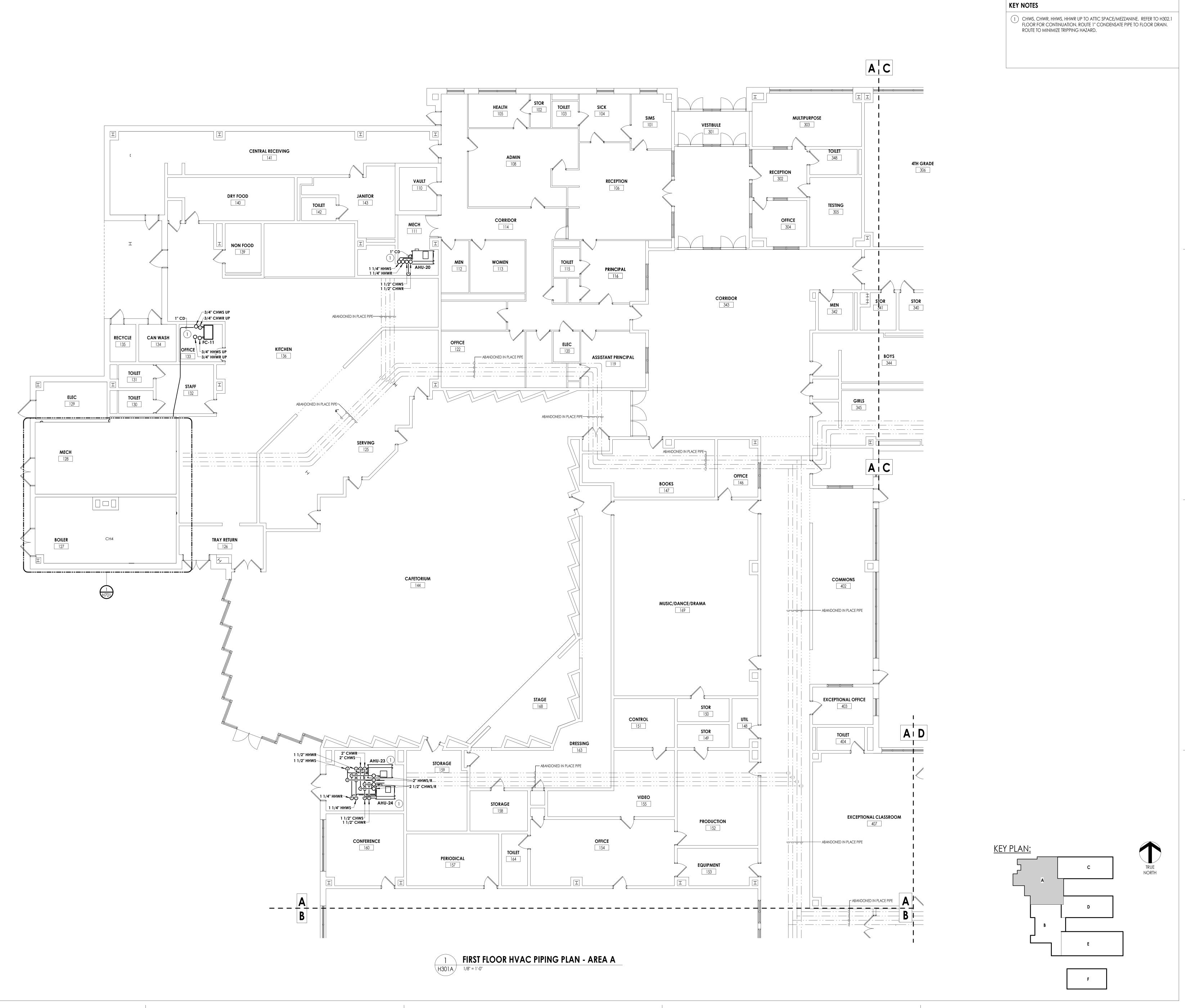
CLEVELAND ELEMENTARY

PROJECT ISSUE & REVISION SCHEDULE

w Date Description



SHEET INFORMATION 1/8" = 1'-0"



CPL | Architecture Engineering Planning
1620 Hillsborough Street Suite A,
Raleigh, NC 27605
CPLteam.com

NC ENGINEERING FIRM LICENSE NO. C-2194



PROJECT INFORMATION

Project Number
R23.00487.00

Client Name
JOHNSTON COUNTY PUBLIC

SCHOOLS
Project Name
CLEVELAND ELEMENTARY

SCHOOL HVAC RENOVATION

Project Address 10225 CLEVELAND RD. CLAYTON, NC 27520

PROJECT ISSUE & REVISION SCHEDULE

PROFESSIONAL STAMPS



SHEET INFORMATION

Issued Scale

02/17/2025 1/8" = 1'-0"

Project Status

BID SET

Drawn By Checked By

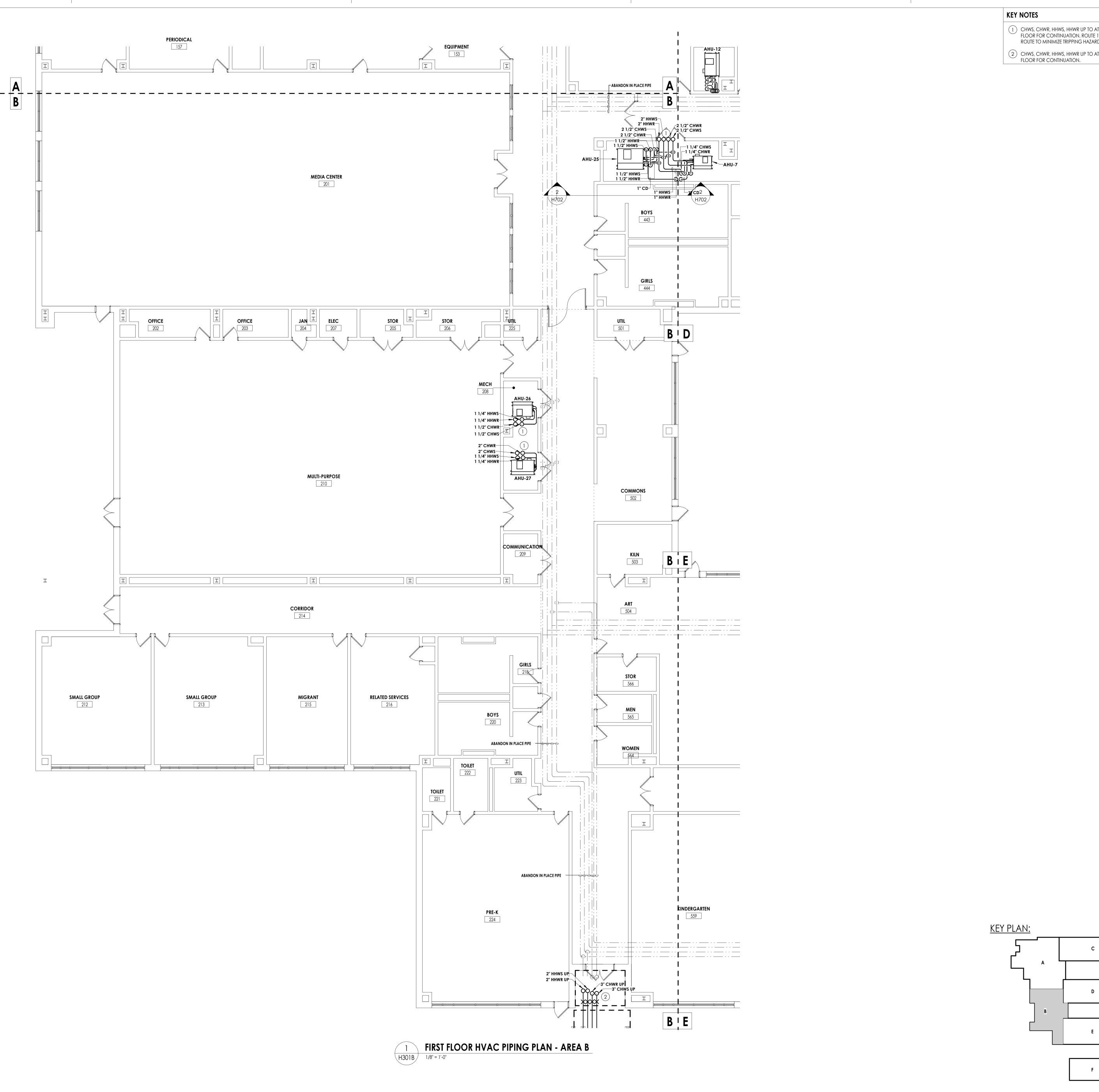
GLG MJP

Drawing Title

FIRST FLOOR HVAC PIPING PLAN AREA A

Drawing Number

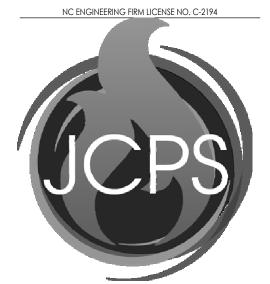
H301A



1 CHWS, CHWR, HHWS, HHWR UP TO ATTIC SPACE/MEZZANINE. REFER TO H302.2 FLOOR FOR CONTINUATION. ROUTE 1" CONDENSATE PIPE TO FLOOR DRAIN. ROUTE TO MINIMIZE TRIPPING HAZARD.

2 CHWS, CHWR, HHWS, HHWR UP TO ATTIC SPACE/MEZZANINE. REFER TO H302.2 FLOOR FOR CONTINUATION.

CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605 CPLteam.com



PROJECT INFORMATION Project Number R23.00487.00 JOHNSTON COUNTY PUBLIC SCHOOLS

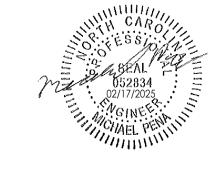
Project Name **CLEVELAND ELEMENTARY** SCHOOL HVAC RENOVATION

Project Address 10225 CLEVELAND RD. CLAYTON, NC 27520

PROJECT ISSUE & REVISION SCHEDULE

w Date Description

PROFESSIONAL STAMPS



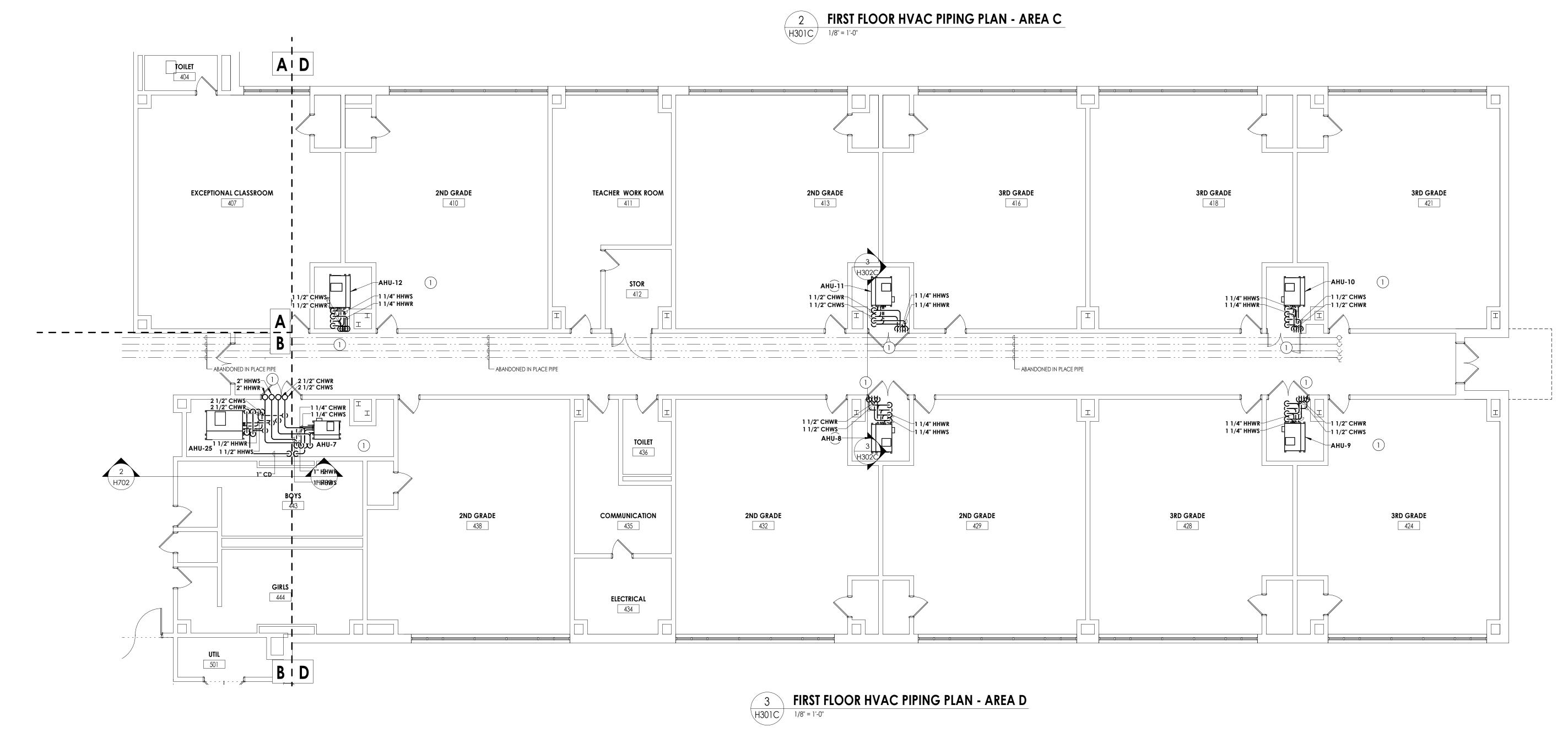
SHEET INFORMATION 1/8" = 1'-0" 02/17/2025 Project Status BID SET Drawn By Checked By GLG Drawing Title FIRST FLOOR HVAC PIPING PLAN -AREA B

Drawing Number

TRUE NORTH

H301B





EXCEPTIONAL CLASSROOM

313

1 1/4" HHWR

1 1/4" HHWS

1 1/4" HHWR AHU-15

4TH GRADE

1 1/2" CHWR

TEACHER WORK ROOM

311

COMMUNICATION

335

ELECTRICAL 336

4TH GRADE

310

ABANDONED IN PLACE PIPE

4TH GRADE

**5TH GRADE** 318

AHU-17 1 1/4" HHWS

1 1/4" HHWR 1 1/4" HHWS AHU-16

1 1/2" CHWS 1 1/2" CHWR

1 1/4" HHWR

5TH GRADE

321

5TH GRADE

**5TH GRADE** 317

**4TH GRADE** 329

— ABANDONED IN PLACE PIPE

MULTIPURPOSE
303

305

RECEPTION 302

OFFICE 304

4TH GRADE

2" CHWS— 2" CHWR— 1 1/2" HHWS— 1 1/2" HHWR—

1 1/4" HHWR-

2" CHWS— 2" CHWR

1" HHWR

ABANDONED IN PLACE PIPE + + + + +

BELOW DUCTWORK -

1 1/2" CHWR 1 1/2" CHWS

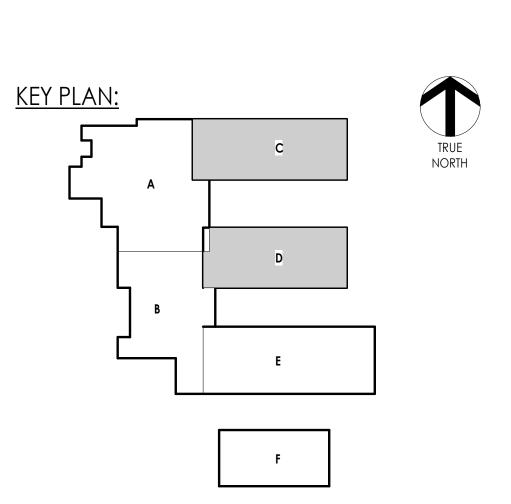
FROM UP HIGH TO BELOW DUCTWORK

ABOVE AHU-13 DUCT MAINS TO BELOW

AHU-14 DUCT MAINS

BETWEEN AHU-14 DUCT MAINS

1 1/4" CHWS



SHEET INFORMATION

Issued Scale
02/17/2025 1/8" = 1'-0"

Project Status
BID SET
Drawn By Checked By
GLG MJP

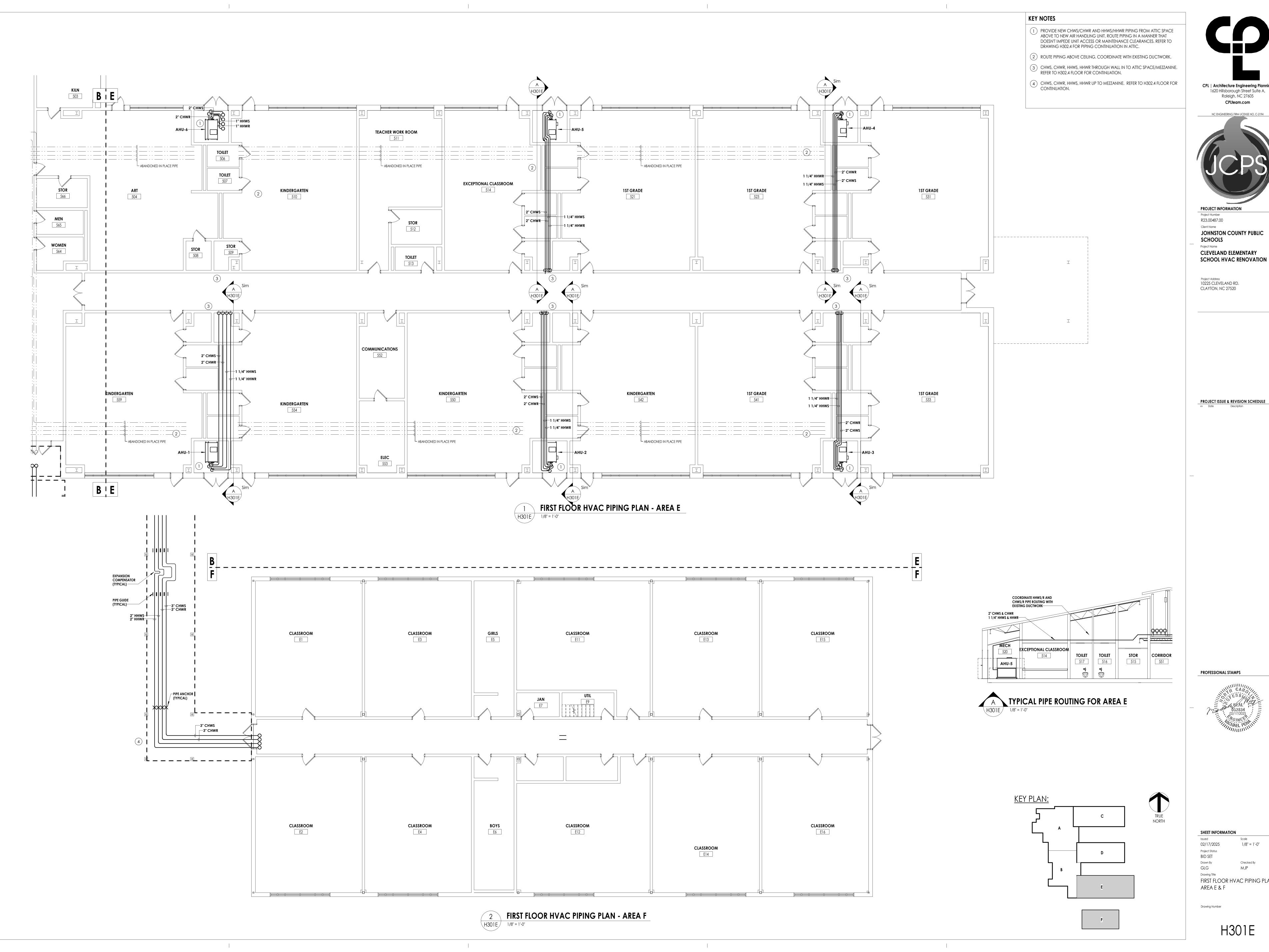
Drawing Title

FIRST FLOOR HVAC PIPING PLAN AREA C & D

PROFESSIONAL STAMPS

Drawing Number

H301C



CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605 CPLteam.com

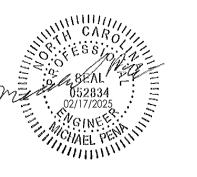


Project Number R23.00487.00 JOHNSTON COUNTY PUBLIC **SCHOOLS** 

PROJECT ISSUE & REVISION SCHEDULE

w Date Description

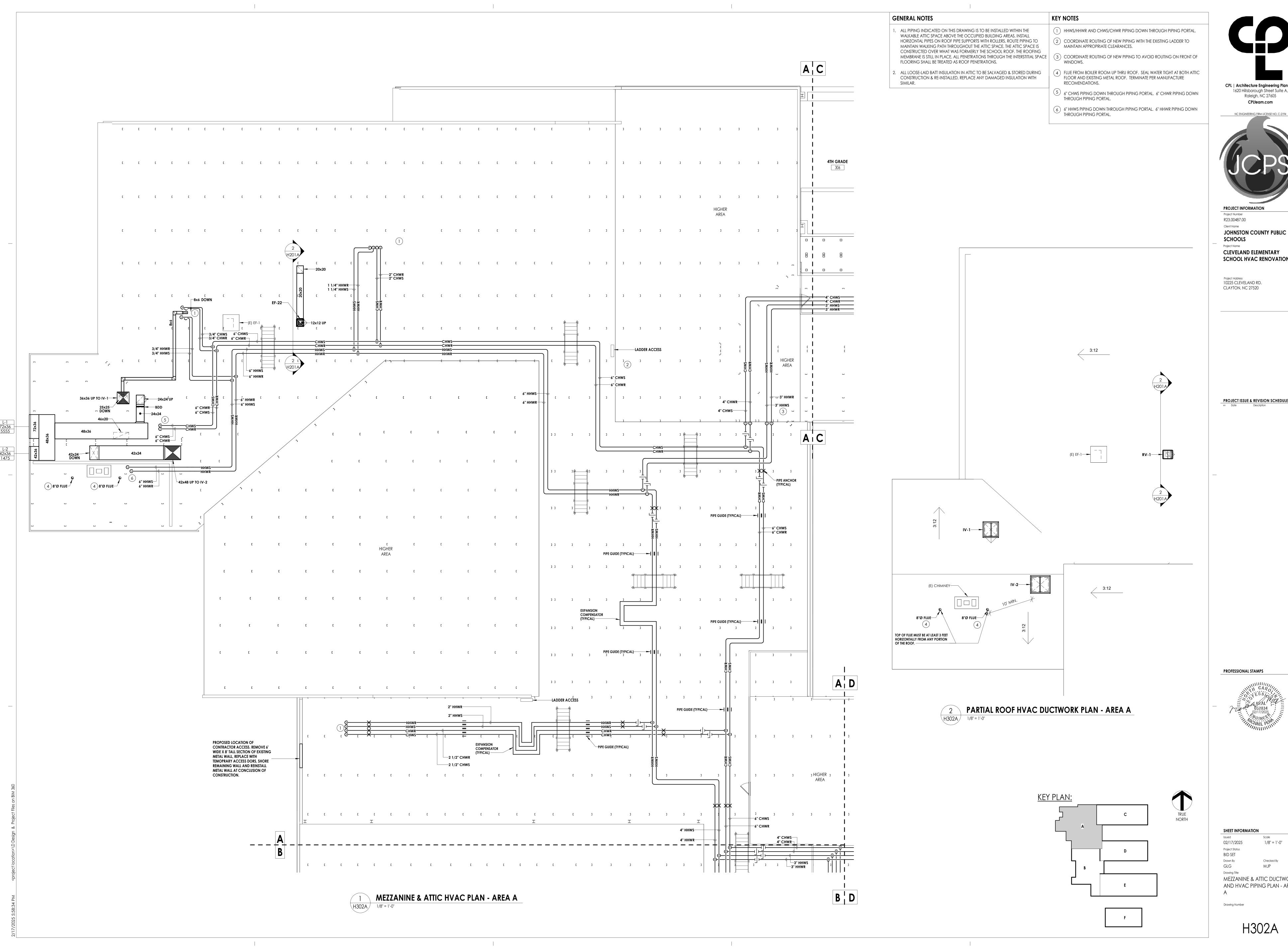
PROFESSIONAL STAMPS



SHEET INFORMATION 1/8" = 1'-0" 02/17/2025 Project Status BID SET Drawn By GLG Drawing Title FIRST FLOOR HVAC PIPING PLAN -

Drawing Number

H301E



CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605

NC ENGINEERING FIRM LICENSE NO. C-2194



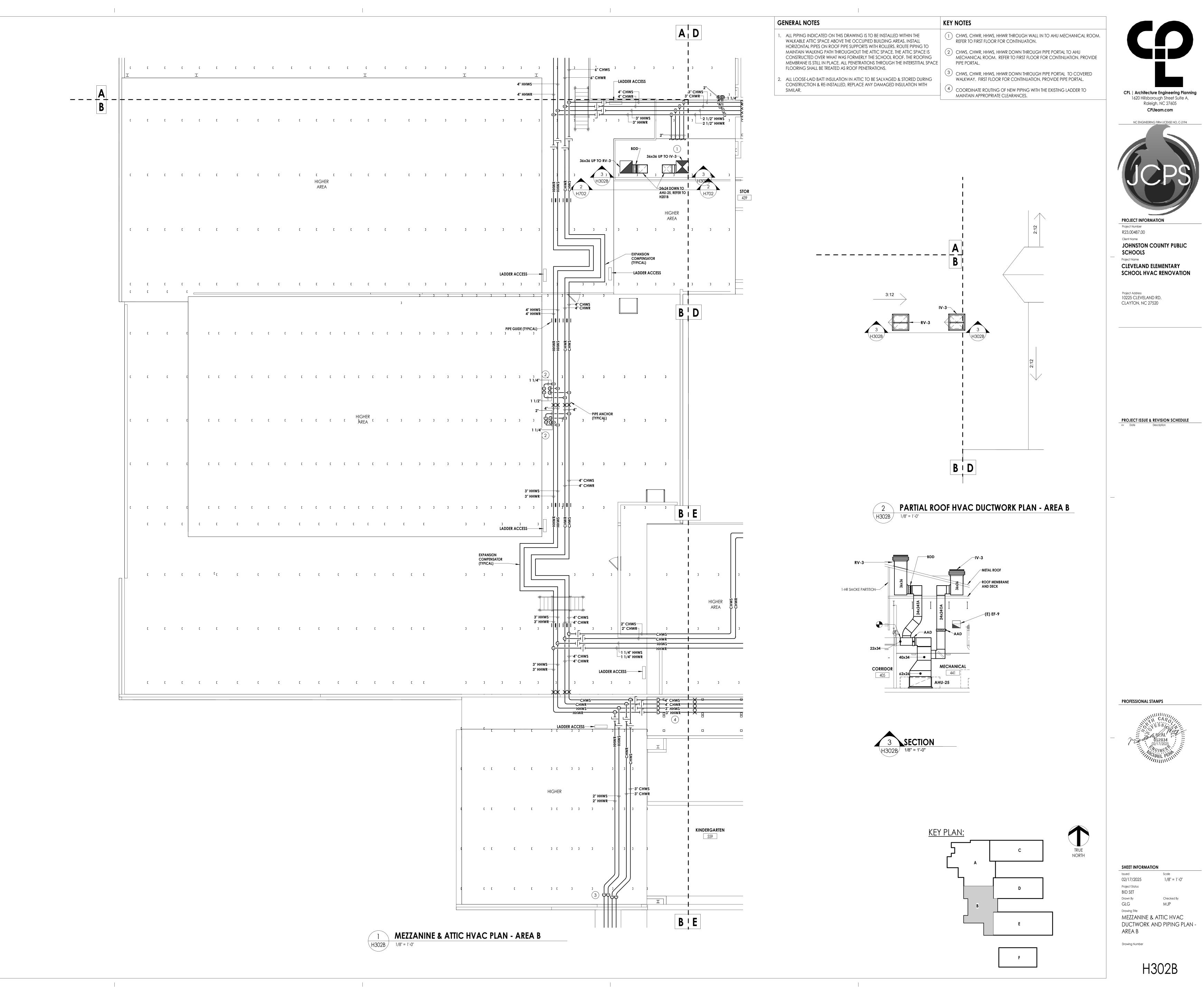
PROJECT INFORMATION

SCHOOL HVAC RENOVATION

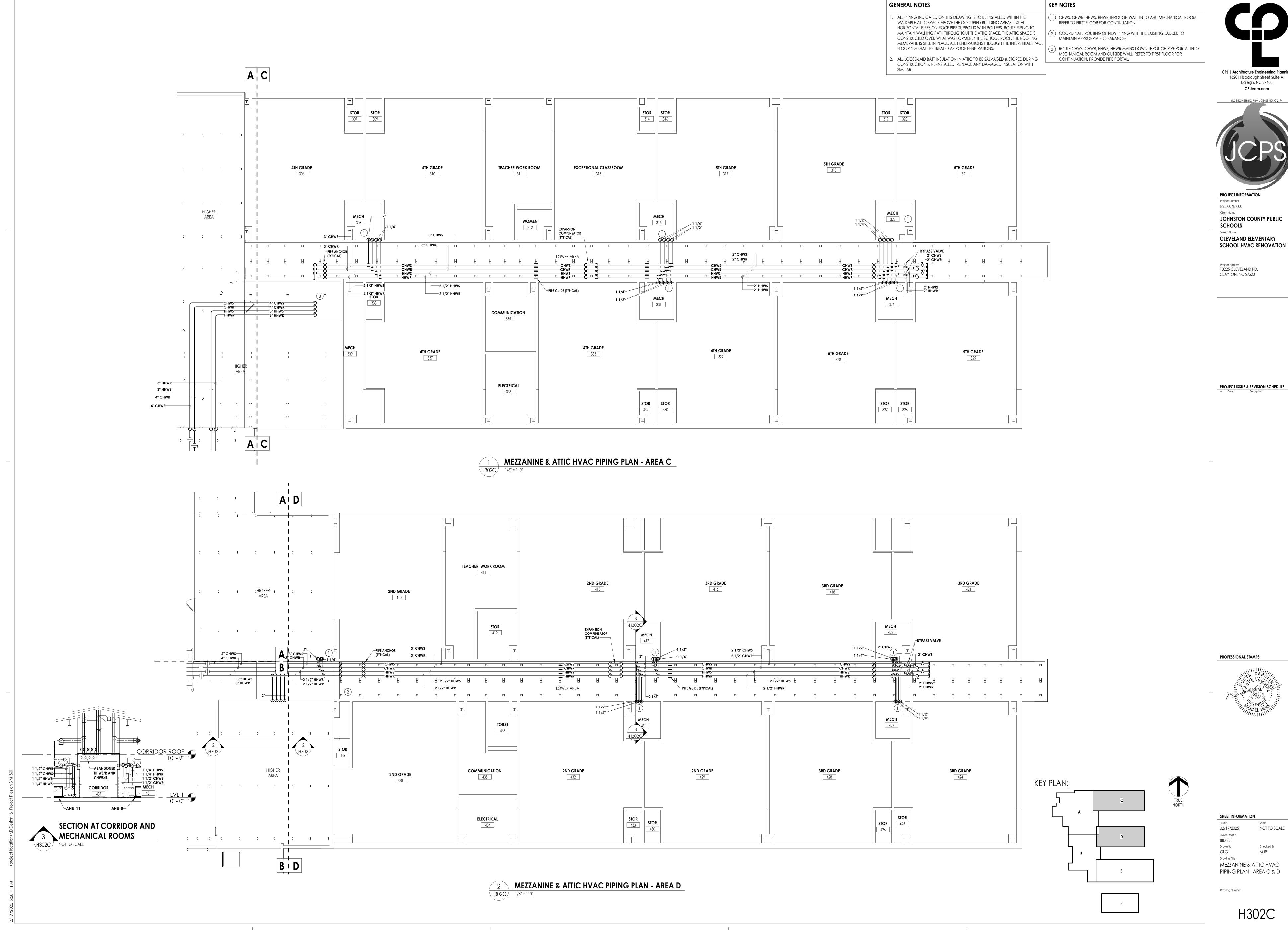


1/8" = 1'-0"

MEZZANINE & ATTIC DUCTWORK AND HVAC PIPING PLAN - AREA



1/8" = 1'-0"



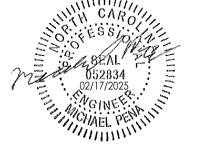
CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605

CPLteam.com

NC ENGINEERING FIRM LICENSE NO. C-2194

R23.00487.00 JOHNSTON COUNTY PUBLIC **SCHOOLS** Project Name

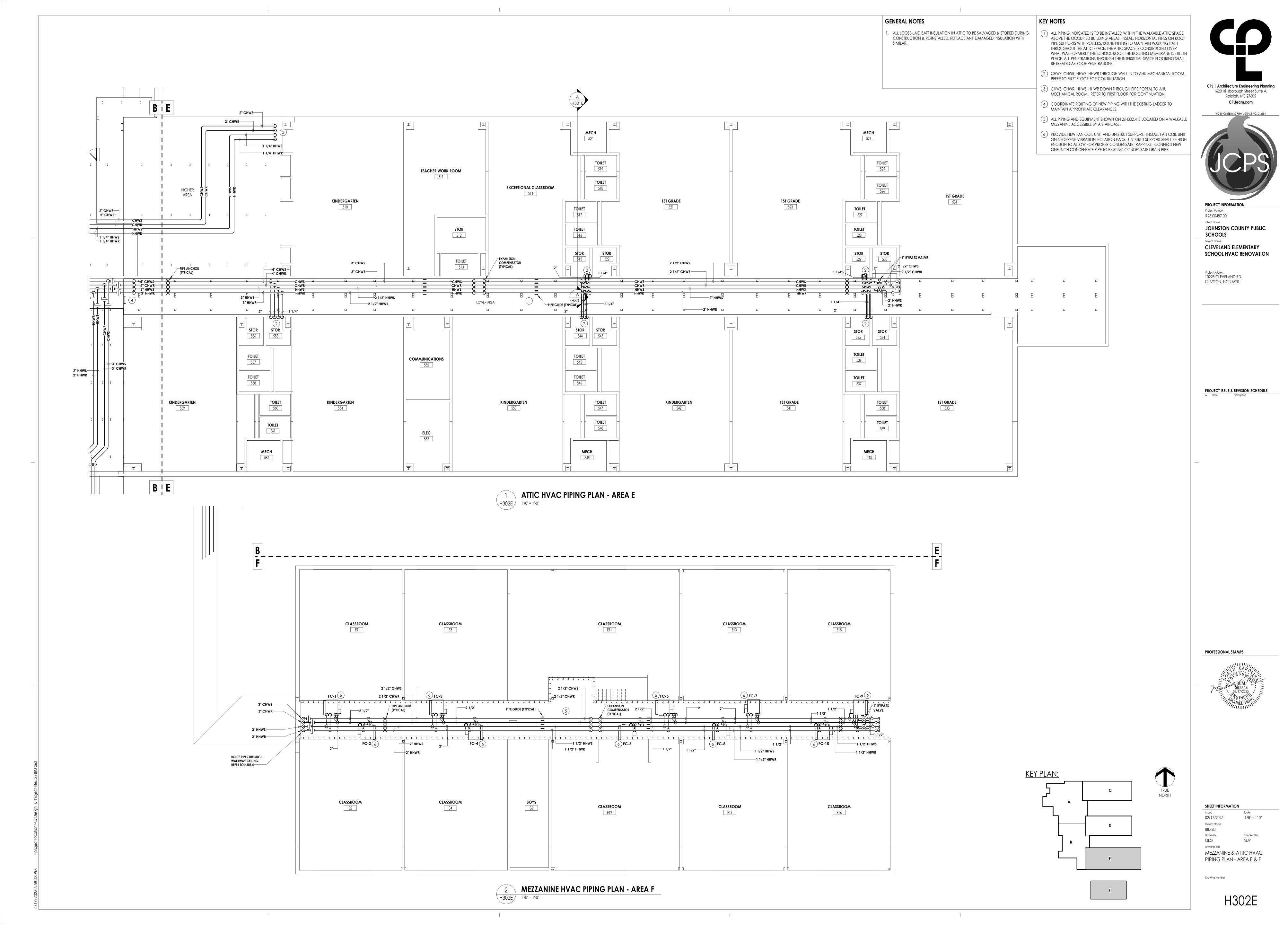
PROFESSIONAL STAMPS



SHEET INFORMATION 02/17/2025 NOT TO SCALE Project Status **BID SET** Drawn By GLG Drawing Title MEZZANINE & ATTIC HVAC PIPING PLAN - AREA C & D

Drawing Number

H302C



GENERAL NOTES

1. PROVIDE NETWORK COMMUNICATION BUS THROUGHOUT BUILDING TO CONNECT ALL NEW DEVICE CONTROLLERS TO NETWORK PANELS.

CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605

CPLteam.com

NC ENGINEERING FIRM LICENSE NO. C-2194

PROJECT INFORMATION Project Number R23.00487.00

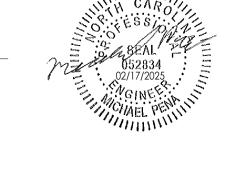
JOHNSTON COUNTY PUBLIC SCHOOLS Project Name

**CLEVELAND ELEMENTARY** SCHOOL HVAC RENOVATION

Project Address 10225 CLEVELAND RD. CLAYTON, NC 27520

PROJECT ISSUE & REVISION SCHEDULE
w Date Description

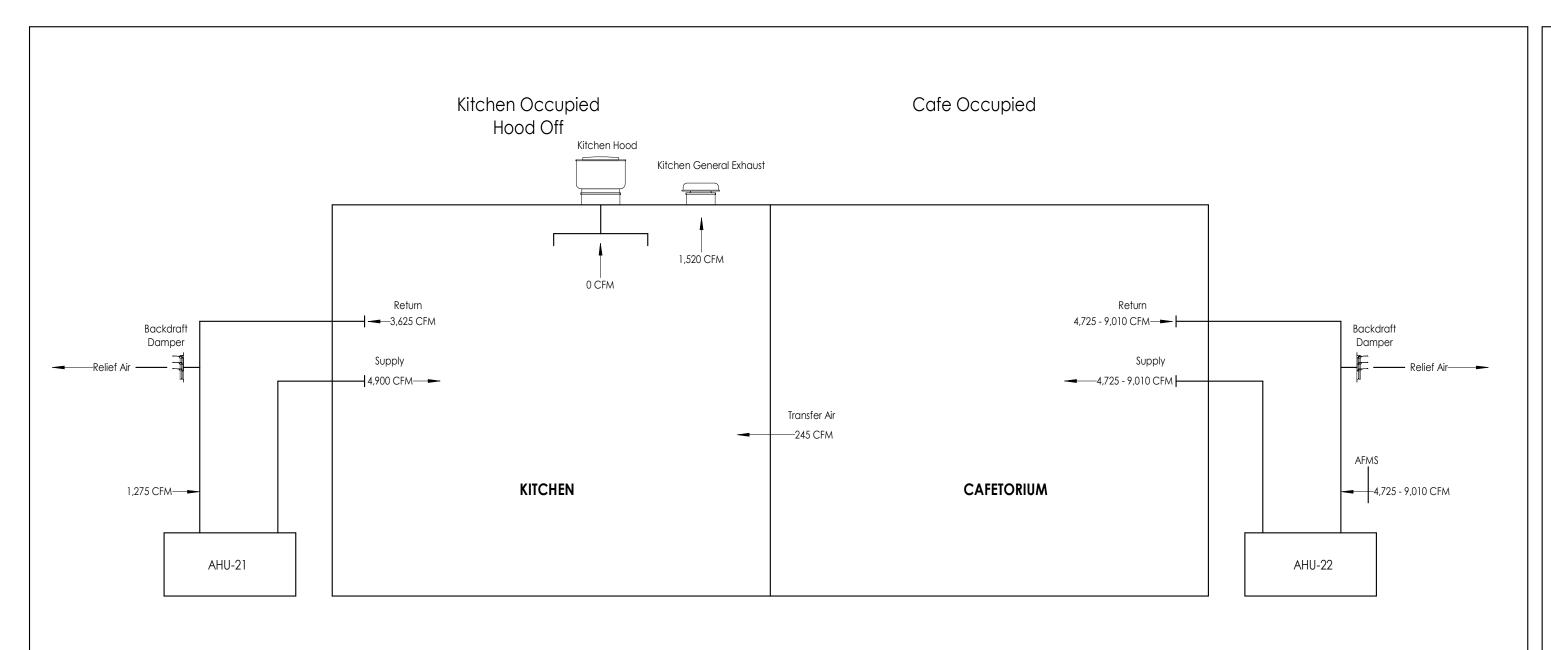
PROFESSIONAL STAMPS

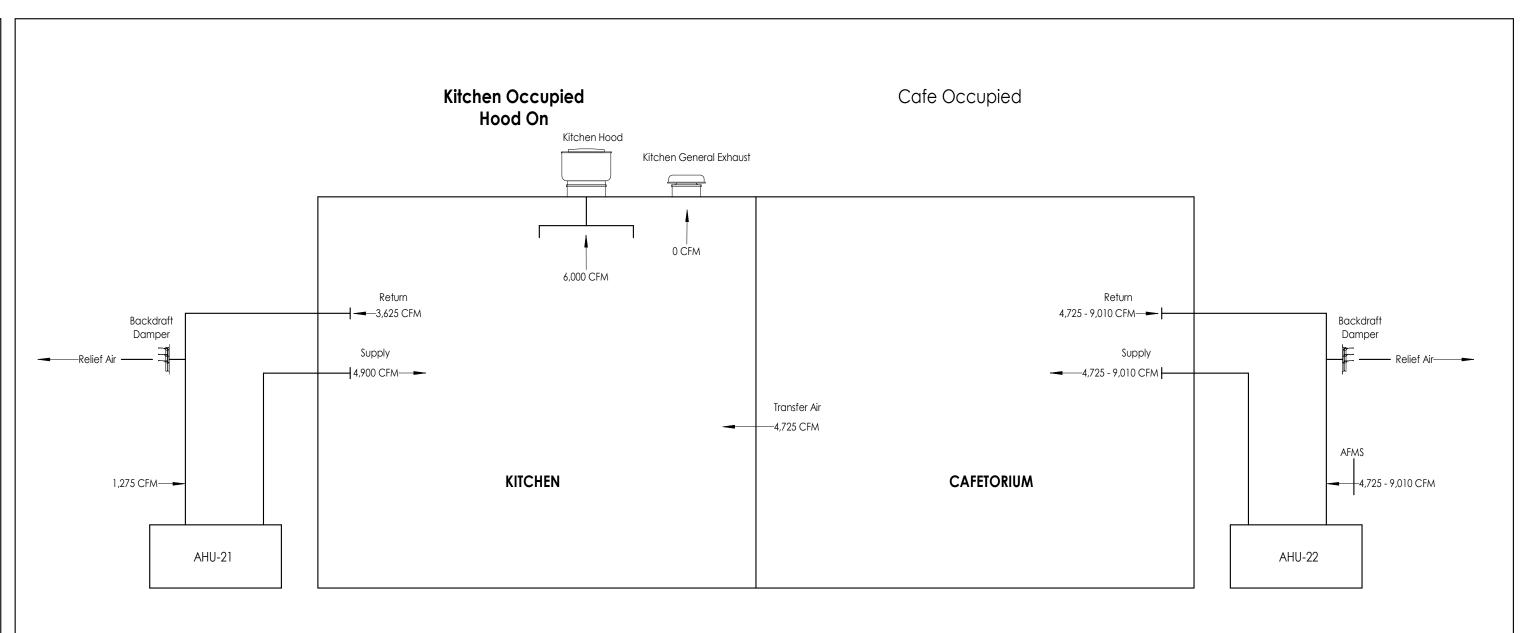


SHEET INFORMATION

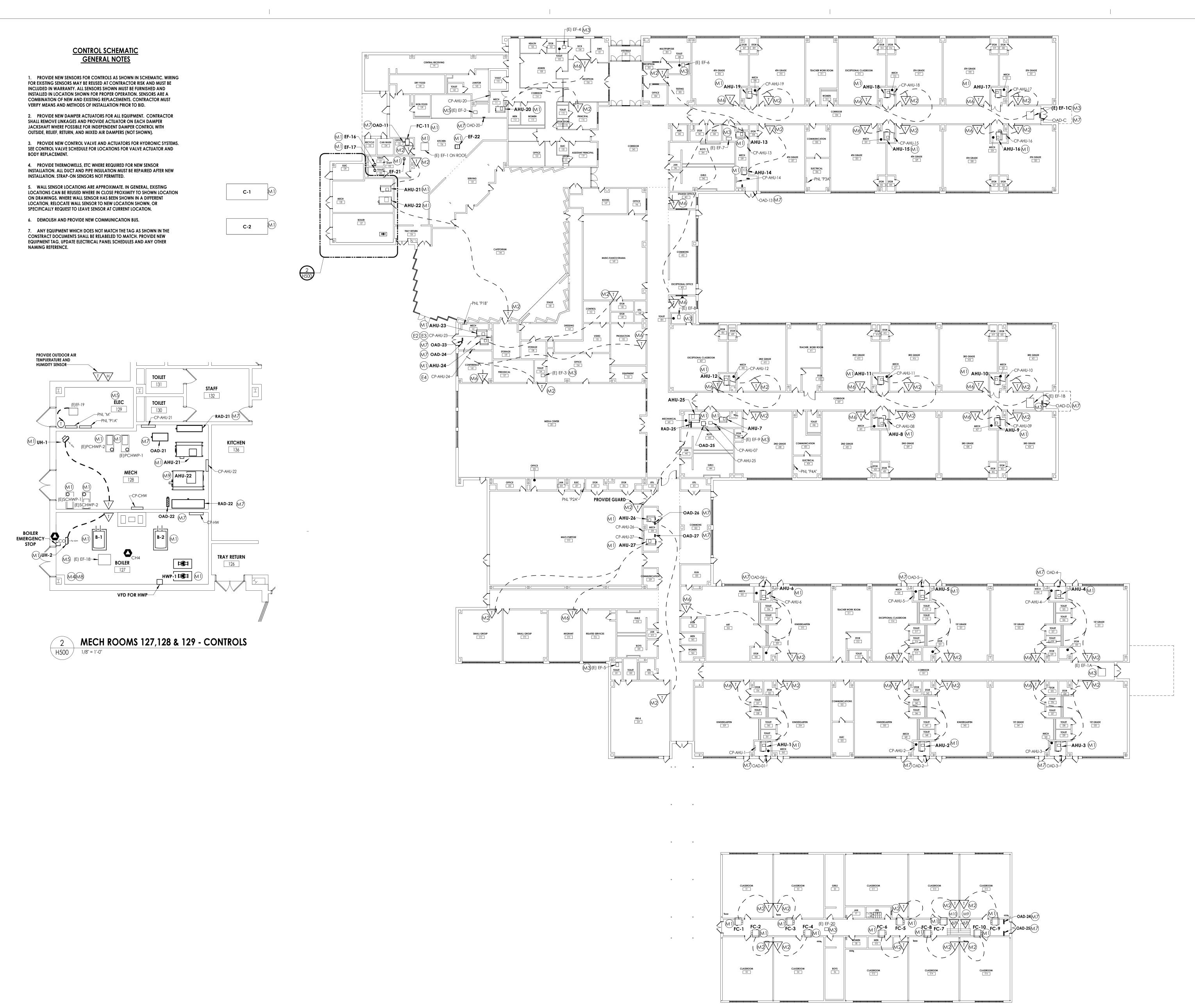
Project Status BID SET

Drawn By GLG Drawing Title
KITCHEN AND CAFETORIUM AIR





1 KITCHEN AND CAFETORIUM AIR BALANCE
1/8" = 1'-0"



GENERAL NOTES

1. PROVIDE NETWORK COMMUNICATION BUS THROUGHOUT BUILDING TO CONNECT ALL NEW DEVICE CONTROLLERS TO NETWORK PANELS.

### MECHANICAL KEY NOTES

- PROVIDE DEVICE CONTROLLER AND INTEGRATE INTO BUILDING AUTOMATION SYSTEM. SEE SCHEMATIC AND SCHEDULE FOR ADDITIONAL INFORMATION.
  PROVIDE NEW CONTROL POWER, PANEL AND ANY NEEDED ACCESSORIES FOR CONTROL PANEL OPERATION.
- PROVIDE NEW CONTROL POWER, PANEL AND ANY NEEDED ACCESSORIES FOR CONTROL PANEL OPERATION.

  (M2) PROVIDE NEW WALL MODULE INDICATED AT 48" AFF, FOR DEVICE CONTROLLER.

REUSE EXISTING CABLE PATH OR PROVIDE NEW WIRE-MOLD FOR CABLE FROM

(M3) PROVIDE NEW CONTROL POINTS TIED INTO ASSOCIATED AHU CONTROLLER.

ABOVE CEILING TO MOUNTING HEIGHT AT LOCATION SHOWN,

- PROVIDE NEW WATER METER, ONICON FM-3200, OR EQUAL, IN EXISTING WATER PIPING UPSTREAM OF ALL BRANCH CON5 / H503NS. METER SHALL BE MONITORED BY BAS AND PROVIDE ALARM OF HIGH WATER FLOW UNDER UNOCCUPIED MODE. REFER TO DETAIL
- EXISTING FAN HARDWIRED TO THERMOSTAT OR SWITCH, NOT INCLUDED IN BAS
- PROVIDE WALL PLATE AVERAGING MODULE IN LOCATION SHOWN. PROVIDE NEW WIRE MOLD FOR CABLE COMING ABOVE CEILING TO MOUNTING HEIGHT.
- (M7) REFERENCE SCHEDULES FOR EQUIPMENT SERVED BY THIS DAMPER.
- REPLACE EXISTING PLANT CONTROLLER TO MEET BID DOCUMENTS SCHEMATIC AND SEQUENCE REQUIREMENTS. PLANT CONTROLLER RECENTLY REPLACED DURING MECHANICAL EQUIPMENT REPLACEMENT BY CCAC AND ABILITY TO MODIFY CONTROL SYSTEM WOULD LIMIT CONTRACTOR SOURCING. ENGINEER WILL ALLOW BIDDING CONTRACTOR TO UTILIZE CCAC TO MODIFY EXISTING CONTROLLER ONLY IF IT WILL MEET BID DOCUMENT SCHEMATIC AND SEQUENCE REQUIREMENTS. CONTRACTOR SHALL BE RESPONSIBLE FOR WARRANTY OF PLANT CONTROLLER IN EITHER SOLUTION.
- PROVIDE HYDRONIC DIFFERENTIAL PRESSURE SENSOR WITH LCD READOUT, VALVE LOCK ASSEMBLY, AND ANALOG SIGNAL FOR PUMP CONTROL.
- PROVIDE HYDRONIC DIFFERENTIAL PRESSURE SENSOR WITH LCD READOUT, VALVE LOCK ASSEMBLY, AND ANALOG SIGNAL FOR PUMP CONTROL. PROGRAM TO HOT WATER PUMP VFD SPEED CONTROL.

CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605 CPLteam.com



PROJECT INFORMATION

Project Number

R23.00487.00 Client Name

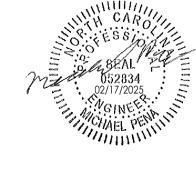
JOHNSTON COUNTY PUBLIC SCHOOLS
Project Name

CLEVELAND ELEMENTARY SCHOOL HVAC RENOVATION

10225 CLEVELAND RD. CLAYTON, NC 27520

w Date Description

PROFESSIONAL STAMPS

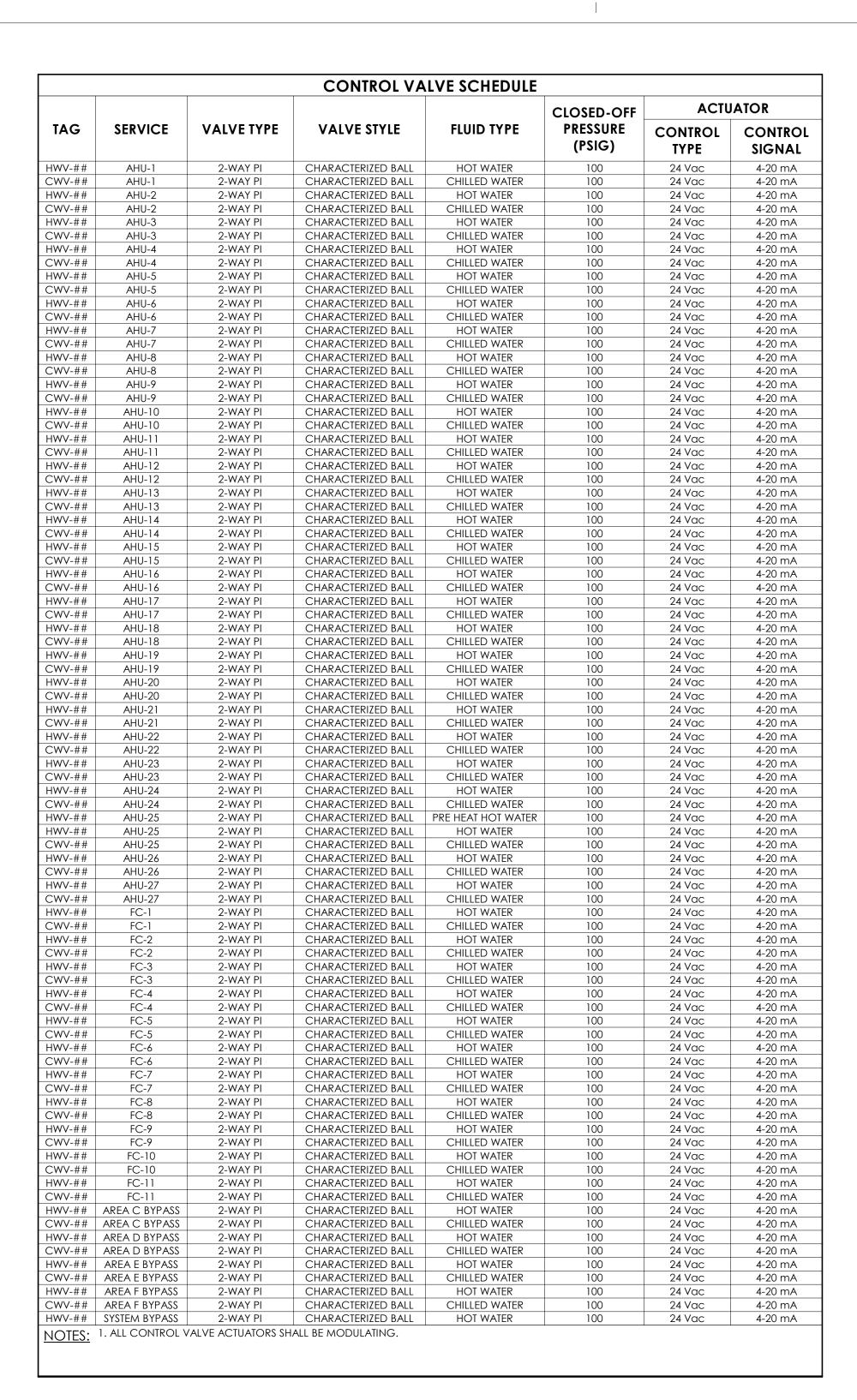


Issued Scale
02/17/2025 As indicated
Project Status
BID SET
Drawn By Checked By

GLG MJP
Drawing Title
CONTROLS PLANS

Drawing Number

500



		HYDRONIC	C SYSTEM SCHEDULE - CONTROLS		
TAG	TYPE	LOCATION	SERVICE	FLOW (GPM)	NOTES
B-1	BOILER	BOILER ROOM 127	BUILDING HEATING HOT WATER	250	1, 2, 3
B-2	BOILER	BOILER ROOM 127	BUILDING HEATING HOT WATER	250	1, 2, 3
C-1	ACC	AT GRADE	BUILDING CHILLED WATER	274.5	1, 2
C-2	ACC	AT GRADE	BUILDING CHILLED WATER	274.5	1, 2
HWP-1	PUMP	BOILER ROOM	BUILDING HEATING HOT WATER	333	1, 4
HWP-2	PUMP	BOILER ROOM	BUILDING HEATING HOT WATER	333	1, 4
PCHWP-1	PUMP	MECH 128	CHILLER CH-1	275	1, 5
PCHWP-2	PUMP	MECH 128	CHILLER CH-2	275	1, 5
SCHWP-1	PUMP	MECH 128	BUILDING CHILLED WATER	662	1, 5
SCHWP-2	PUMP	MECH 128	BUILDING CHILLED WATER	662	1, 5

HYDRONIC SYSTEM NOTES:

1. PROVIDE NEW EQUIPMENT CONTROLLER AND/OR MODIFY AND INTEGRATE TO EXISTING SYSTEM (WITH COORDINATION OF CCAC). SEE SCHEMATIC FOR POINTS 2. REFER TO CONTROL VALVE SCHEDULE FOR NEW SECONDARY PLANT CONTROL VALVE. 3. REFER TO BOILER SCHEDULE ON H900.

4. REFER TO PUMP SCHEDULE SCHEDULE ON H900. 5. PROVIDE NEW EQUIPMENT LABELS FOR EQUIPMENT, MOTOR STARTER/DISCONNECTS, VARIABLE FREQUENCY DRIVES, AND ELECTRICAL PANELS.

		WATER FLOW A	METER SCHEDULE		
TAG	PIPE SIZE	SERVICE	MANUFACTURER	MODEL	NOTES
HHW-FLOW	6	HEATING HOT WATER	ONICON	F-3500	1
CHW-FLOW	6	CHILLED WATER	ONICON	F-3500	1
DOM-FLOW	3	DOMESTIC WATER	ONICON	F-3200	1
NOTES:	1. REFER TO PLA	NS FOR ADDITIONAL REC	QUIREMENTS.		

		F/	AN SCHEDULE	
TAG	LOCATION	AIR FLOW (CFM)	SERVICE	NOTE
(E) EF-1	ROOF	~5000	AHU-21 / KITCHEN HOOD	1
(E) EF-1A	ATTIC	2400	AHU-6 / WOMEN 564, MEN 565, ART 504, TLT 506, TLT 507 AHU-5 / TLT 519, TLT 518, TLT 516, TLT 517, TLT 513 AHU-4 / TLT 525, TLT 526, TLT 527, TLT 528 AHU-13 / TLT 536, TLT 537, TLT 538, TLT 539 AHU-2 / TLT 547, TLT 548, TLT 545, TLT 546 AHU-1 / TLT 557, TLT 558, TLT 560, TLT 561	1
(E) EF-1B	ATTIC	4015	OA FOR AHU-7, AHU-8, AHU-9, AHU-10, AHU-11, AHU-12, AHU-25	1
(E) EF-1C	ATTIC	2625	OA FOR AHU-15, AHU-16, AHU-17, AHU-18, AHU-19	1
(E) EF-2	ROOM 111	711	AHU-20 / MECH 113, PRINCIPAL 119, TLT 142	1
(E) EF-3	TLT 164	159	AHU-23 / TLT 164	1
(E) EF-4	ROOM 103	100	AHU-20 / TLT 103	1
(E) EF-5	TLT 221	711	AHU-26 / GIRLS 218, BOYS 220, TLT 221, TLT 222	1
(E) EF-6	TLT 348	100	AHU-13 / TLT 348	1
(E) EF-7	MECH 339	1000	AHU-13 / ROOM 312, BOYS 334 GIRLS 345, MENS 342, WOMENS 312, EF-6	1
(E) EF-8	ROOM 404	100	AHU-12 / TLT 404	1
(E) EF-9	ROOM 411	1000	AHU-7 / BOYS 443, GIRLS 444, TLT 436	1
(E) EF-18	ROOM 127	1605	AHU-22 / MECH 128	1
(E) EF-20	MEZZANINE	107	WING F / TLT E5, TLT E6	1
EF-16	131	70	FCU-11/TLT 131	2
EF-17	130	70	FCU-11/TLT 130	2
EF-21	132	50	FCU-11/STAFF 132	2
EF-22	ATTIC	1,520	AHU-21/KITCHEN	2

TAG	TYPE	LOCATION	SERVICE	MAX AIR FLOW (CFM)	CONTROLS SCHEMATIC NUMBER	NOT
OAD-01	OUTSIDE AIR DAMPER	MECH 562	AHU-1	3700	1/H503	1
OAD-02	OUTSIDE AIR DAMPER	MECH 549	AHU-2	3800	1/H503	1
OAD-03	OUTSIDE AIR DAMPER	MECH 540	AHU-3	3800	1/H503	1
OAD-04	OUTSIDE AIR DAMPER	MECH 524	AHU-4	3800	1/H503	1
OAD-05	OUTSIDE AIR DAMPER	MECH 520	AHU-5	4300	1/H503	1
OAD-06	OUTSIDE AIR DAMPER	MECH 503	AHU-6	3800	1/H503	1
OAD-11	OUTSIDE AIR DAMPER	OFFICE 133	FC-11	150	4/H503	1
OAD-13	OUTSIDE AIR DAMPER	MECH 339	AHU-13	4300	1/H503	2
OAD-14	OUTSIDE AIR DAMPER	MECH 339	AHU-14	2000	1/H503	2
OAD-20	OUTSIDE AIR DAMPER	MECH 111	AHU-20	4000	1/H503	1
OAD-21	OUTSIDE AIR DAMPER	MECH 128	AHU-21	4900	1/H504	1
OAD-22	OUTSIDE AIR DAMPER	MECH 128	AHU-22	9010	1/H504	1
OAD-23	OUTSIDE AIR DAMPER	MECH 161	AHU-23	5700	1/H503	1
OAD-24	OUTSIDE AIR DAMPER	MECH 161	AHU-24	3145	1/H503	1
OAD-25	OUTSIDE AIR DAMPER	MECH 441	AHU-25	5475	2/H504	1
OAD-26	OUTSIDE AIR DAMPER	MECH 208	AHU-26	3200	1/H503	1
OAD-27	OUTSIDE AIR DAMPER	MECH 208	AHU-27	4300	1/H503	1
OAD-C	OUTSIDE AIR DAMPER	AREA C MEZZ.	AHU-15 THRU 19	16200	1/H503	1
OAD-D	OUTSIDE AIR DAMPER	AREA D MEZZ.	AHU-7 THRU 12	18400	1/H503	1
OAD-F-N	OUTSIDE AIR DAMPER	AREA F MEZZ.	FC-1, FC-3, FC-5, FC-7, FC-9	1305	4/H503	1
OAD-F-S	OUTSIDE AIR DAMPER	AREA F MEZZ.	FC-2, FC-4, FC-6, FC-8, FC-10	1215	4/H503	1
RAD-21	RETURN AIR DAMPER	MECH 128	AHU-21	4900	1/H504	2
RAD-22	RETURN AIR DAMPER	MECH 128	AHU-22	9010	1/H504	2
RAD-25	RETURN AIR DAMPER	MECH 441	AHU-25	5475	2/H504	2

CPL | Architecture Engineering Planning

CPLteam.com NC ENGINEERING FIRM LICENSE NO. C-2194

1620 Hillsborough Street Suite A,

Raleigh, NC 27605



PROJECT INFORMATION Project Number R23.00487.00

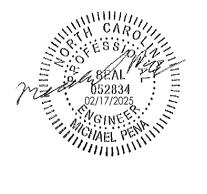
JOHNSTON COUNTY PUBLIC SCHOOLS Project Name

CLEVELAND ELEMENTARY SCHOOL HVAC RENOVATION

10225 CLEVELAND RD. CLAYTON, NC 27520

PROJECT ISSUE & REVISION SCHEDULE

PROFESSIONAL STAMPS



SHEET INFORMATION 02/17/2025 Project Status BID SET Drawn By GLG Drawing Title

CONTROLS

COORDINATE WITH OWNER ON DESIRED USER CLASSES.

A. SEQUENCES SPECIFIED HEREIN INDICATE THE FUNCTIONAL INTENT OF THE SYSTEM'S OPERATION AND MAY NOT FULLY DETAIL EVERY ASPECT OF THE PROGRAMMING THAT MAY BE REQUIRED TO OBTAIN THE INDICATED OPERATION. CONTRACTOR SHALL PROVIDE ALL PROGRAMMING NECESSARY TO OBTAIN THE SEQUENCES/SYSTEM OPERATION INDICATED. THIS INCLUDES BUT IS NOT LIMITED TO DELAYS, INTERLOCKS, LIMITERS, ETC. B. POINTS SHOWN ON SCHEMATIC SHALL BE HARDWIRED FROM THE CONTROLLER OF PROGRAMMING ORIGIN AND DIRECTLY TO SENSOR OR DEVICE. POINT SHALL NOT BE "VIRTUAL" OR "NETWORK" UNLESS SPECIFICALLY STATED

ON SCHEMATIC. C. POINTS WITH SEQUENCE REQUIRED FOR OPERATION AND/OR GRAPHICS MAY BE VIRTUAL OR NETWORK, AS REQUIRED. CONTRACTOR SHALL PROVIDE TESTING DOCUMENTATION OF ALL SEQUENCES PRIOR TO PROJECT COMPLETION. REFER TO SPECIFICATIONS FOR REQUIREMENTS.

1. ALL POINTS BEING CONTROLLED TO A SETPOINT SHALL ALARM WHEN OUT OF RANGE. PROVIDE BOTH A HIGH AND LOW ALARM THRESHOLD SETPOINT FOR EACH POINT. ALARM ALL SAFETIES. ALARM ALL STATUS VS COMMAND MISMATCHES. REQUIREMENTS SHALL BE TRUE FOR ALL POINTS IN THE SEQUENCE OF OPERATION 2. ALL ALARMS SHALL BE SENT TO A FRONT-END ALARM CONSOLE. COORDINATE WITH OWNER ON ALARM CLASSES AND PRIORITIES. COORDINATE WITH OWNER REGARDING STAFF RECEIVING ALARM VIA EMAIL,

3. ALARMS SHALL BE DEACTIVATED WHEN ASSOCIATED EQUIPMENT IS OFF (I.E., WHEN THE CHW PLANT IS OFF A HIGH CHW TEMPERATURE ALARM WILL NOT BE GENERATED). 4. ALARMS SHALL BE INTERLOCKED TO NOT GENERATE DUPLICITOUS ALARMS (I.E., WHEN THE CHW PLANT FAILS, AHU DISCHARGE TEMPERATURE ALARMS WILL NOT BE GENERATED). 5. ALL ALARMS HIGH/LOW LIMIT SHALL BE EDITABLE ON A SERVICE GRAPHICS PAGE.

TRENDING — TREND ALL POINTS AND ALARMS. DIGITAL INPUTS AND OUTPUTS SHALL BE TRENDED ON CHANGE OF VALUE (COV). ANALOG INPUTS AND OUTPUTS SHALL BE TRENDED ON 15 MINUTE INTERVALS. SETPOINTS SHALL BE TRENDED ON COV. UNLESS NOTED OTHERWISE. F. OVERRIDES — PROVIDE MEANS TO OVERRIDE VARIABLES AND OUTPUTS TO CONTROL EQUIPMENT MANUALLY. USER SHALL BE ABLE TO OVERRIDE, SET, AND AUTO. EMERGENCY OVERRIDE, EMERGENCY SET, AND EMERGENCY AUTO SHALL NOT BE PROVIDED. G. USERS — PROVIDE USER CLASSES (I.E., READ, WRITE, SCHEDULE) AND A TEMPLATE FOR EACH USER CLASS.

H. CONTROLS SHALL BE BACNET. INTEGRATE WITH EXISTING SYSTEM. I. PROVIDE LINK TO LON/BACNET/MODBUS EQUIPMENT GRAPHIC TO DISPLAY ALL AVAILABLE POINTS FOR TROUBLESHOOTING EQUIPMENT. PROVIDE BAS NETWORK TO ALL CAPABLE SYSTEMS, INCLUDING BUT NOT LIMITED TO VFDS, AIR FLOW STATIONS, ROOM PRESSURE MONITORS, FACTORY CONTROLS FOR AHUS OR SKID PACKAGES,

J. ALL BAS SYSTEMS SHALL USE DIRECT, 4-20 MA SIGNALS FOR ANALOG INPUTS FROM HUMIDITY, PRESSURE, AND OTHER DEVICES (WHERE POSSIBLE). WHERE A SIGNAL LESS THAN 4 MA WILL GENERATE A FAIL STATE. RESISTIVE INPUTS (TEMPERATURE, ETC.) SHALL HAVE A LOW LIMIT AND HIGH LIMIT RESISTIVITY SETPOINT FOR FAIL STATE. ANALOG OUTPUTS SHALL USE DIRECT, 4-20 MA SIGNALS FOR ANALOG OUTPUTS TO VFDS (SPEED COMMAND). DAMPERS, VALVES AND OTHER DEVICES (WHERE POSSIBLE), WHERE A SIGNAL LESS THAN 4 MA WILL GENERATE A FAIL STATE. INSTALL A RESISTOR AT THE END DEVICE TO CONVERT CURRENT TO VOLTAGE ,AS REQUIRED. K. WHEN A UNIT IS NOT IN OPERATION. CONTROL DEVICES SHALL REMAIN IN THEIR "OFF' POSITIONS. "OFF' POSITIONS MAY DIFFER FROM THE "FAILED" OR "SPRING-RETURNED" POSITION. EXCEPT AS SPECIFIED OTHERWISE "OFF AND "FAILED" POSITIONS OF CONTROL DEVICES SHALL BE AS FOLLOWS (FAILED POSITION NOT APPLICABLE FOR NON-SPRING RETURN ACTUATORS):

<u>DEVICE</u>	OFF POSITION	FAILED POSITION
HEATING HOT WATER COIL VALVE	CLOSED	OPEN
COOLING COIL VALVES	CLOSED	CLOSED
OUTSIDE AIR DAMPERS	CLOSED	CLOSED
RETURN AIR DAMPERS	OPEN	OPEN
RELIEF AIR DAMPERS	CLOSED	CLOSED

1. OCCUPIED PERIOD: GENERALLY, SYSTEMS SHALL BE FULLY OPERATIONAL THROUGHOUT THIS PERIOD AND VENTILATION AIR SHALL BE CONTINUOUSLY INTRODUCED. SPACE TEMPERATURE SETPOINTS WILL GENERALLY BE IN THE "NORMAL" RANGE OF 69°-77°F. 2. UNOCCUPIED PERIOD: PERIOD OF TIME WHEN THE BUILDING OR ZONE IS NOT IN USE AND UNOCCUPIED. VENTILATION AIR SHALL NOT BE INTRODUCED. 3. PREOCCUPANCY PERIOD: TIME PRIOR TO THE OCCUPIED PERIOD WHEN THE SYSTEMS ARE RETURNING THE SPACE TEMPERATURES FROM SETBACK TO "NORMAL" OR OCCUPIED SETPOINTS (MORNING WARM-UP AND COOL-DOWN). TIME PERIOD SHALL BE DETERMINED BY AN OPTIMUM START STRATEGY UNLESS OTHERWISE SPECIFIED. IN GENERAL, PREOCCUPANCY PERIOD WILL KEEP VENTILATION REQUIREMENTS OFF UNLESS OUTSIDE 4. STANDBY PERIOD: PERIOD OF TIME WHEN THE BUILDING IS IN USE, BUT A PARTICULAR ZONE(S) IS UNOCCUPIED. SPACE TEMPERATURE SETPOINTS ARE ADJUSTED UP/DOWN TO REDUCE ENERGY USAGE UNTIL THE ZONE IS REOCCUPIED.

1. PREOCCUPANCY AND STANDBY SCHEDULES ARE BASED ON THE SEQUENCE OF OPERATION AND WILL OCCUR AUTOMATICALLY WITHOUT OWNER SCHEDULING. 2. COORDINATE SCHEDULE AND HOLIDAYS WITH OWNER.

0.3. GRAPHICAL INTERFACE

A. ALL GRAPHIC SCREENS SHALL INDICATE DATE, TIME, AND OUTSIDE AIR TEMPERATURE, RELATIVE HUMIDITY, AND B. PROVIDE A GRAPHICAL DISPLAY FOR EACH SYSTEM, WITH A SCHEMATIC OF THE UNIT AND THE FOLLOWING

 ALL POINTS CALLED FOR ON THE SCHEMATIC AND/OR IN THE SEQUENCE. ADDITIONAL POINTS REQUESTED BY OWNER/ENGINEER.

 ALL VALVES AND DAMPERS SHALL SHOW POSITION AS % OPEN. WHERE THE MAIN GRAPHIC SCREEN BECOMES CLUTTERED, PROVIDE SUMMARY SCREENS FOR CLARITY (EX: VFD SUMMARY SCREEN, FAN ARRAY AIRFLOW SUMMARY SCREEN, ETC). GROUP SETPOINTS INTO A SINGLE LOCATION ON GRAPHIC, PROVIDE ICON BESIDE SETPOINTS TO INDICATE POINT IS CHANGEABLE. PROVIDE ICON BESIDE COMMANDABLE POINTS TO INDICATE POINT IS COMMANDABLE. ALL OUTPUTS SHALL BE OVER-RIDABLE (IF USER HAS SUFFICIENT PRIVILEGES) FROM MAIN

GRAPHIC SCREEN UNLESS OTHERWISE NOTED.

A. PROVIDE WALL MODULE(S) AT LOCATIONS SHOWN ON CONTRACT DOCUMENTS. B. COMMON AREAS

 COMMON AREAS ARE DEFINED AS, INCLUDING BUT NOT LIMITED TO, LOCKER ROOMS, HALLWAYS. GYMNASIUMS, AUDITORIUMS, OR OTHER LOCATIONS SPECIFIED. 2. PROVIDE STAINLESS-STEEL FLAT PLATE TEMPERATURE SENSOR (NO OCCUPANCY OVERRIDE, DISPLAY, OR SETPOINT ADJUSTMENT). 3. WHERE HUMIDITY AND/OR CARBON DIOXIDE (CO2) SENSORS ARE REQUIRED, PROVIDE WITH STEEL

C. ALL OTHER LOCATIONS 1. WALL MODULE WILL ALLOW FOR USER SETPOINT ADJUSTMENT. THE BAS SHALL ALLOW MAXIMUM AND MINIMUM LIMITS TO BE SET FOR THE USER SETPOINT. 2. WALL MODULE WILL ALLOW FOR USER OCCUPANCY OVERRIDE. OCCUPANCY OVERRIDE SHALL PLACE

SYSTEM INTO OCCUPIED MODE FOR TWO HOURS (ADJ). 3. WALL MODULE SHALL INCLUDE A DISPLAY. 4. PROVIDE HUMIDITY SENSING WHERE SPECIFIED ON THE PLANS. PROVIDE COMBINATION TEMP/HUMIDITY SENSOR/WALL MODULE WHERE SENSORS ARE AT SAME LOCATION. 5. PROVIDE CARBON DIOXIDE (CO2) SENSING WHERE SPECIFIED ON THE PLANS, PROVIDE COMBINATION TEMP/CO2 SENSOR/WALL MODULE WHERE SENSORS ARE AT SAME LOCATION.

REMOTELY MOUNTED WALL MODULES 1. WHERE THE WALL MODULE IS CALLED TO BE MOUNTED REMOTELY IN AN AREA OUTSIDE THE ZONE BEING SERVED BY THE EQUIPMENT, USE RETURN TEMPERATURE/HUMIDITY/C02 AS CONTROL POINT FOR

LABEL WALL MODULE TO CLEARLY INDICATE WHAT WALL MODULE SERVES (I.E., MAIN GYM). WHERE RETURN CONTROL CANNOT BE USED (I.E., FOR A VAV SYSTEM WITH A COMMON RETURN), PROVIDE TEMPERATURE/HUMIDITY/CO2 SENSOR(S) IN ZONE AND MOUNT WALL MODULE WITH SETPOINT ADJUSTMENT/OCCUPANCY OVERRIDE/DISPLAY IN REMOTE LOCATION.

MULTIPLE EQUIPMENT IN SAME ZONE 1. EQUIPMENT A AND B SERVE THE SAME ZONE, EQUIPMENT A (MASTER) SHALL BE PROVIDED WITH WALL MODULE (WITH OPTIONS ABOVE) AND EQUIPMENT B (SLAVE) SHALL BE PROVIDED WITH A FLAT PLATE SENSOR. THE MASTER SHALL PROVIDE OVERRIDE AND TEMPERATURE SETPOINTS TO SLAVE(S). THE MASTER AND SLAVE

EQUIPMENT WILL OTHERWISE OPERATE INDEPENDENTLY TO MAINTAIN SPACE CONDITIONS. MULTIPLE WALL MODULES PER EQUIPMENT WHERE A SINGLE PIECE OF EQUIPMENT SERVES MULTIPLE SPACES WITH DIFFERENT USAGES, EACH SPACE SHALL BE EQUIPPED WITH A WALL MODULE (WITH OPTIONS ABOVE, SEE CONTRACT DOCUMENTS FOR LOCATION(S)). VIA GRAPHIC, USER SHALL BE ABLE TO:

A. ADJUST TO WHAT TEMPERATURE THE EQUIPMENT CONTROLS TO. USER SELECTION OF THE CONTROL METHOD WILL INCLUDE CONTROLLING TO A SPECIFIC WALL MODULE TEMPERATURE, AN AVERAGE OF ALL TEMPERATURES. THE HIGHEST TEMPERATURE. OR THE LOWEST TEMPERATURE. B. ADJUST TO WHAT TEMPERATURE SETPOINT THE EQUIPMENT OPERATES AT. IF EACH WALL MODULE HAS SETPOINT ADJUST, EACH WALL MODULE MAY BE CONFIGURED UP/DOWN FROM THE "MASTER SETPOINT." AND AS SUCH THE EQUIPMENT WILL NEED TO KNOW WHAT TEMPERATURE SETPOINT TO CONTROL TO. USER SELECTION OF THE CONTROL METHOD WILL INCLUDE CONTROLLING TO A SPECIFIC WALL MODULE TEMPERATURE SETPOINT, AN AVERAGE OF ALL TEMPERATURE SETPOINTS, THE HIGHEST TEMPERATURE SETPOINT. OR THE LOWEST TEMPERATURE SETPOINT. USER SHALL BE ABLE TO IGNORE WALL MODULE TEMPERATURE SETPOINTS FROM SPECIFIC WALL MODULES, SUCH THAT THEY ARE EXCLUDED FROM THE

CONTROL POSSIBILITIES LISTED ABOVE. PROVIDE A GRAPHICAL DISPLAY AS PART OF THE ASSOCIATED EQUIPMENT GRAPHIC, WITH THE FOLLOWING POINTS:

 INCLUDED/IGNORED WALL MODULE(S) AVERAGE, HIGHEST, LOWEST TEMPERATURE MODE

0.5. MOTOR STATUS CALCULATION

A. MOTOR STATUS SHALL BE DETERMINED USING AMP DRAW. S. FOR CONSTANT SPEED MOTORS, RECORD AMPS AT NORMAL RUNNING CONDITION, INITIALLY, 80% OF THE NORMAL AMP DRAW SHALL BE USED FOR THE MOTOR STATUS TRIP POINT. IF THE AMPS DROP BELOW THE TRIP POINT FOR FIVE MINUTES (ADJ), GENERATE AN ALARM. ADJUST TRIP POINT TO AVOID NUISANCE ALARMS. AMP DROP SHALL BE A PROXY FOR MOTOR FAILURE OR BROKEN BELT (WHERE APPLICABLE).

C. FOR VARIABLE SPEED MOTORS, RECORD AMPS AT NORMAL RUNNING CONDITION FOR 0% (MINIMUM SPEED). 20%, 40%, 60%, 80%, AND 100% (MAXIMUM SPEED), INITIALLY, 80% OF EACH RECORDED AMP DRAW AT EACH SPEED SHALL BE USED FOR THE MOTOR STATUS TRIP POINT. WHEN THE MOTOR IS COMMANDED TO RUN A SPECIFIC SPEED, LINEARLY INTERPOLATE BETWEEN RECORDED AMPS AT THAT SPEED. IF THE AMPS DROP BELOW THE TRIP POINT FOR FIVE MINUTES (ADJ), GENERATE AN ALARM, ADJUST TRIP POINT TO AVOID NUISANCE ALARMS. 1. ALTERNATIVELY, USE CURRENT SWITCH WITH AUTO-CALIBRATION SEQUENCE DESIGNED FOR ECM OR VFD USE. AMPS CAN BE OBTAINED OVER THE BAS NETWORK FOR INFORMATION-ONLY PURPOSES. ALTERNATIVELY, ON-BOARD VFD STATUS CONTACTS CAN BE USED. PROVIDE DOCUMENTATION OF VFD' CAPABILITY TO PROVIDE A TRUE MEASURED STATUS. VFDS WHICH SIMPLY REPLICATE THE RUN COMMAND AS A

STATUS SIGNAL WILL REQUIRE AN ALTERNATIVE STATUS METHOD. 0.6. ZONE TERMINAL LOAD CALCULATION A. EACH ZONE SHALL HAVE A HEATING AND COOLING SETPOINT SEPARATED BY A DEADBAND. SPACE TEMPERATURE DISTANCE FROM THIS SETPOINT WILL BE FED INTO TWO SEPARATE PID LOOPS TO CALCULATE AND OUTPUT A PERCENTAGE FOR HEATING AND COOLING LOAD. THESE TWO LOAD PERCENTAGES WILL BE USED TO PRODUCE A RELATIONSHIP OF ACTIVE ZONE TERMINAL LOAD FOR HEATING AND COOLING RANGING FROM -100.

AT MAX HEAT LOAD, TO 100, AT MAX COOL LOAD. ZERO PERCENT TERMINAL LOAD WILL IMPLY THE ZONE SETPOINTS

ARE SATISFIED. B. TO PREVENT FREQUENT MODE CHANGES, FOR EQUIPMENT THAT CAN HEAT OR COOL, A MINIMUM CHANGEOVER DELAY OF 5 MINUTES (ADJ.) SHALL BE IMPLEMENTED. C. TERMINAL LOAD SHALL BE USED FOR A VARIETY OF EQUIPMENT ENABLES, RESETS, AND OTHER CONTROL LOGIC. TERMINAL LOAD FOR EQUIPMENT SHALL BE TUNED BASED ON THE CRITICALITY OF THE EQUIPMENT (EX: A LARGE AHU WILL CREATE A 100% TERMINAL LOAD FASTER THAN A FCO SERVING A JANITORIAL SPACE). PROVIDE A SYSTEM TERMINAL GRAPHIC DISPLAYING EACH PIECE OF EQUIPMENT. THE VALVE POSITION, TERMINAL LOAD. DEHUMIDIFICATION STATUS, AND CRITICALITY RANKING.

1- ENERGY CONSERVATION MEASURES (ECMS)

A. THE FOLLOWING SEQUENCES ARE FOR ENERGY CONSERVATION MEASURES (ECMS) THAT REQUIRE INTERACTION OF MULTIPLE DEVICE/EQUIPMENT LEVEL CONTROLLERS. THEY ARE WRITTEN SEPARATELY (VS WITH A PIECE OF EQUIPMENT) TO PROPERLY DESCRIBE THE INTERACTION BETWEEN THOSE CONTROLLERS AND THE BAS REQUIREMENTS. ECMS THAT ARE EQUIPMENT SPECIFIC (FOR EXAMPLE, DISCHARGE AIR TEMPERATURE RESETS), ARE WITH THAT PARTICULAR PIECE OF EQUIPMENT. EACH RESET CAN BE LOCKED OUT IF ONE (OR MORE) ALARMS OCCUR DUE TO RESET LOGIC.

PROVIDE A PRIORITY ARRAY FOR IMPACTED EQUIPMENT FOR EACH RESET. EACH PIECE OF EQUIPMENT SHALL HAVE AN IMPORTANCE MULTIPLIER FOR ITS ASSOCIATED ALARM. a. AN IMPORTANCE MULTIPLIER OF ZERO NEGATES THE EQUIPMENT'S ALARM IMPACT ON THE RESET

b. AN IMPORTANCE MULTIPLIER OF ONE OR GREATER INCREASES THE EQUIPMENT'S ALARM IMPACT ON THE RESET LOGIC 1.1. HW/CHW PLANT DIFFERENTIAL PRESSURE (DP) RESET

AND DOWN BASED ON EQUIPMENT UTILIZING HW/CHW VALVE POSITION. THE BAS SHALL PERFORM ALL

FUNCTIONS OF THE PLANT DP RESET SEQUENCE BELOW AND WRITE THE DP SETPOINT RESET TO THE PLANT 2. THE RESET LOGIC BELOW IS WRITTEN FOR CHW BUT SHALL BE REPLICATED FOR HW AS WELL.

THE DP RESET SHALL BE ENABLED SO LONG AS: a. ACTIVE TEMPERATURE AND/OR HUMIDITY ALARMS FOR THE SPACES ASSOCIATED WITH THE CHW PLANT PER THE PRIORITY ARRAY DO NOT TOTAL TO MORE THAN 10 (AD]). b. NETWORK ISSUES PREVENT POLLING OF THE EQUIPMENT UTILIZING CHW. THE DP RESET SHALL BE ADDED TO THE CHW PLANT DP SETPOINT DETERMINED BY TAB. THE TAB SETPOINT SHALL NOT BE LOST IN THE

RESET PROCESS. UPON A DISABLE OF THE RESET THE SETPOINT SHALL RETURN TO THE TAB SETPOINT. THE BAS SHALL POLL ALL EQUIPMENT UTILIZING CHW EVERY 15 MINUTES (ADJ). a. IF ANY CHW VALVE IS MORE THAN 95% OPEN (ADJ), THE BAS SHALL RESET THE CHW PLANT DP SETPOINT UP 1 PSI (ADJ). b. IF ALL CHW VALVES ARE LESS THAN 85% OPEN (ADJ), THE BAS SHALL RESET THE CHW PLANT DP

THE RESET SHALL ACCUMULATE TO A MAXIMUM SETPOINT OFFSET OF O PSI (ADJ) AND A MINIMUM SETPOINT OFFSET OF -10 PSI (I.E. DOWNWARD) (ADJ). RESET SHALL BE ADDED TO TAB SETPOINT TO CALCULATE THE EFFECTIVE DP SETPOINT. (TAB SETPOINT + RESET = EFFECTIVE DP SETPOINT).

1. PROVIDE A GRAPHICAL DISPLAY FOR THE HW AND CHW PLANT DP RESET AND THE FOLLOWING POINTS. GROUP GRAPHICS WITH THE ASSOCIATED AHU. • PRIORITY ARRAY TABLE, ACTIVE TEMPERATURE AND/OR HUMIDITY ALARMS, AND IMPORTANCE

 ENABLE/DISABLE DP RESET SEQUENCE AND REASON FOR DISABLE TAB DP SETPOINT, RESET, AND EFFECTIVE DP SETPOINT

SETPOINT DOWN 1 PSI (ADJ).

VALVE POSITION THRESHOLDS HIGH/LOW AND DP RESET INCREMENT AMOUNT UP/DOWN

A. EACH DEVICE CONTROLLER'S HEALTH SHALL BE MONITORED BY THE ASSOCIATED BUILDING CONTROLLER AND DISPLAYED ON ITS ASSOCIATED GRAPHIC. PROVIDE THE CONTROLLER STATUS (OKAY, UP, DOWN, ETC) AND THE LAST TIME OF SUCCESSFUL COMMUNICATION WITH CONTROLLER.

A. EACH BUILDING CONTROLLER'S HEALTH SHALL BE MONITORED BY THE ASSOCIATED SUPERVISOR AND DISPLAYED ON THE MAIN SCREEN FOR THE OWNER'S CAMPUS. PROVIDE THE CONTROLLER STATUS (OKAY, UP, DOWN, ETC) AND THE LAST TIME OF SUCCESSFUL COMMUNICATION WITH CONTROLLER.

A. TREND NETWORK(S) BUSY PERCENTAGE ON A 30 MINUTE INTERVAL.

3 - CHILLED WATER (CHW) PLANT, 2 AIR-COOLED CHILLERS WITH DEDICATED PRIMARY PUMP (VFD). 2 SECONDARY

3.2. OPERATION A. PRIMARY CHW PUMPS (PCHWP) THE BAS SHALL INDEPENDENTLY RESET THE HW AND CHW PLANTS DIFFERENTIAL PRESSURE (DP) SETPOINT UP

1. THE BAS SHALL CONTROL PRIMARY CHILLED WATER PUMPS. UPON CHILLER ENABLE COMMAND, THE BAS SHALL START PUMP AND PROVE FLOW FOR 5 MINUTES (ADJ) PRIOR TO ENABLING THE CHILLER. UPON CHILLER DISABLE COMMAND, CHILLER SHALL STOP, AND PUMP SHALL CONTINUE TO RUN UNTIL TEMPERATURES/PRESSURES INSIDE CHILLER HAVE STABILIZED (5 MINUTES, ADJ) PRIOR TO STOPPING PUMP. DETERMINE PUMP STATUS THROUGH A CURRENT SENSOR. IF A PUMP FAILS TO START AS COMMANDED, GENERATE AN ALARM. ENABLE COMMAND FOR CHILLER WILL BE USED AS PROXY FOR THE CHW PUMP START. PROVIDE DELAY TO PREVENT NUISANCE ALARMS. 3. TEST AND BALANCE CONTRACTOR TO PROVIDE FIXED SPEED SETPOINT FOR PRIMARY PUMP VFD PROGRAMMING AND OPERATION.

THERE ARE THREE (ADJ) TERMINAL LOAD CALLS FOR CHW FROM THE HVAC SYSTEM. THEN,

A. THE CHW PLANT SHALL OPERATE:

B. CHILLERS

C. CALCULATE CHILLER PERCENT CAPACITY.

D. CALCULATE BUILDING CAPACITY (IN TONS).

. WHEN THE TEMPERATURE OUTSIDE IS ABOVE 60°F (ADJ), OR

3. ENABLE LEAD CHILLER AND LEAD PRIMARY AND SECONDARY CHW PUMPS.

REFERENCE "ENERGY CONSERVATION MEASURES" FOR ADDITIONAL REQUIREMENTS.

REFERENCE THE MODES BELOW FOR ADDITIONAL DETAILS.

A. CHILLER HAS FACTORY CONTROLS. FACTORY CONTROLS ARE SUFFICIENT AND ROBUST ENOUGH TO ALLOW CHILLER TO OPERATE NEARLY INDEPENDENTLY FROM THE BAS. IN GENERAL, FACTORY CONTROLS WILL STAGE/MODULATE COMPRESSORS, STAGE/MODULATE FANS, AND ADJUST CAPACITY CONTROL TO MAINTAIN CHW SETPOINT. SEQUENCES AS DESCRIBED BELOW ARE FOR THE INTERFACE BETWEEN THE BAS AND FACTORY CONTROLS AND NOT INTENDED TO FULLY DESCRIBE THE CHILLER OPERATION. SAFETIES (HIGH/LOW PRESSURE SAFETIES, FLOW SAFETIES, FREEZE PROTECTION, ETC) TO PROTECT EQUIPMENT SHALL BE PROVIDED BY FACTORY AS REQUIRED, IN ADDITION TO SAFETIES LISTED BELOW. FACTORY CONTROLS WILL BE TO ACHIEVE THE SEQUENCE AS WRITTEN BELOW. UNLESS EXPLICITLY STATED OTHERWISE, FACTORY WILL PROVIDE ALL CONTROL POINTS, BOTH HARDWARE AND SOFTWARE, AS SHOWN ON THE ACCOMPANYING SCHEMATIC OR CALLED FOR IN SEQUENCE, AND WIRE POINTS BACK TO FACTORY CONTROLS. THE BAS

CONTRACTOR WILL INTERFACE WITH THE CHILLER TO OBTAIN DATA FOR TRENDING, ALARMING, AND GRAPHICS PURPOSES. A) PROVIDE WITH CONNECTION TO BAS NETWORK AS DESCRIBED HEREIN. B) PROVIDE WITH CHILLER ENTERING WATER (EWT) AND LEAVING WATER TEMPERATURES (LWT) AND COMMUNICATE VALUES OVER BAS NETWORK C) PROVIDE WITH CHILLER CAPACITY (IN PERCENT) AND COMMUNICATE VALUE OVER BAS

D) PROVIDE WITH WRITABLE POINT FOR CHW SETPOINT HARDWIRED OR COMMUNICATED OVER E) PROVIDE WITH HARDWIRED CHILLER ENABLE/DISABLE. 2. STAGING (PERCENT CAPACITY)

a. FOR REFERENCE, CHILLER CAN TURN DOWN TO 30% CAPACITY. b. CHILLERS SHALL OPERATE IN A LEAD/LAG FASHION. A) THE LEAD CHILLER SHALL REMAIN ENABLED SO LONG AS THE CHW PLANT IS ENABLED. . STAGE ON THE NEXT LAG CHILLER IF: A) THE LEAD CHILLER RUNS FOR 30 MINUTES (ADJ) ABOVE 95% CAPACITY (ADJ) PER INTERNAL

B) THE LEAD CHILLER RUNS FOR 30 MINUTES (ADJ) ABOVE 95% CAPACITY (ADJ) PER CALCULATED C) THE CHWS TEMPERATURE TO IS 2°F (ADJ) ABOVE SETPOINT FOR 30 MINUTES (ADJ). CHILLER WILL VIA INTERNAL CONTROLS REACH CHW SETPOINT. FLUCTUATIONS IN CHWS TEMPERATURE TO BUILDING WILL NOT EXCEED 15 MINUTES.

. STAGE OFF LAG CHILLER IF: A) IF THE LEAD AND LAG CHILLER RUN FOR 30 MINUTES (ADJ) BELOW 40% CAPACITY (ADJ) PER INTERNAL CONTROLS, B) IF THE LEAD AND LAG CHILLER RUN FOR 30 MINUTES (ADJ) BELOW 40% CAPACITY (ADJ) PER CHILLER WILL RAMP DOWN AND TURN OFF VIA INTERNAL CONTROLS. FLUCTUATIONS IN CHWS TEMPERATURE TO BUILDING WILL NOT EXCEED 15 MINUTES, LAG CHILLER SHALL REMAIN OFF FOR 30 MINUTES (ADJ) PRIOR TO STAGING ON AGAIN.

A) IF EITHER THE LEAD OR LAG CHILLER FAIL, GENERATE AN ALARM. DISABLE FAILED CHILLER AND ENABLE LAG CHILLER. LAG CHILLER SHALL ASSUME POSITION OF THE FAILED CHILLER (EX: IF FAILED CHILLER WAS LEAD, LAG CHILLER IS NOW LEAD). OPERATION SHALL CONTINUE AS DESCRIBED B) FAILED CHILLER SHALL REMAIN OFF UNTIL ALARM IS MANUALLY CLEARED. CHILLER SHALL REMAIN IN STANDBY POSITION UNTIL NEXT ROTATION.

a. CHILLER SHALL ROTATE WEEKLY AUTOMATICALLY. VIA GRAPHICS, USER SHALL BE ABLE TO: A) SELECT WHICH CHILLER SHALL BE LEAD, AND LAG ON THE NEXT ROTATION. B) SCHEDULE THE DAY OF WEEK AND HOUR OF DAY TO ROTATE CHILLER. C) OVERRIDE ROTATION AND KEEP LEAD/LAG AS-IS.

E) ABILITY TO "LOCKOUT" CHILLER FOR SERVICING, TO PREVENT ROTATION TO THAT CHILLER.

a. SECONDARY PUMP(S) SHALL RUN WHEN CHW PLANT IS ENABLED TO PROVIDE CHW TO BUILDING. DETERMINE PUMP(S) STATUS THROUGH A CURRENT SENSOR. IF A PUMP(S) FAILS TO START AS COMMANDED, GENERATE AN ALARM. THE PUMP(S) SPEED SHALL MODULATE TO MAINTAIN DIFFERENTIAL PRESSURE (DP) SETPOINT. ALL **ENABLED PUMPS SHALL OPERATE AT THE SAME SPEED** A) SINGLE DP SENSOR PLANTS: THE BAS SHALL MODULATE PUMP SPEED TO SATISFY THE DP SENSOR SETPOINT (TO BE DETERMINED BY TAB, INITIALLY 10 PSIG, ADJ). IF DP SENSOR SIGNAL GOES TO ZERO

OR INFINITY, GENERATE AN ALARM AND PUMP SPEED SHALL FAIL TO LAST KNOWN SPEED.

1) NOTE TO TAB CONTRACTOR: FINAL DP SETPOINT SHALL BE SUFFICIENT TO KEEP CRITICAL CIRCUIT CHW COIL VALVE BETWEEN 85 AND 95% OPEN. B) REFERENCE THE FLOOR PLANS FOR DP SENSOR LOCATION(S). C) PROVIDE PLANT SECONDARY MINIMUM FLOW BYPASS CONTROL VALVE, VALVE SHALL BE FULLY CLOSED DURING NORMAL OPERATION. VALVE PID SHALL SLOWLY MODULATE OPEN TO LOWER DIFFERENTIAL PRESSURE WHEN — 1 PUMP IS IN OPERATION, PUMP HAS REACHED MINIMUM SPEED (20%), AND DIFFERENTIAL PRESSURE EXCEEDS 5 PSIG. ADJ. ABOVE SCHWP DP SETPOINT.

C. IF ANY DP SENSOR IS 2 PSI (ADJ) BELOW SETPOINT FOR 20 MINUTES (ADJ), GENERATE AN ALARM. q. PUMPS SHALL OPERATE IN A LEAD/LAG FASHION. LIMIT PUMP RAMP SPEEDS (UP AND DOWN) TO PREVENT PRESSURE BLIPS DURING STAGING ON AND c. IF THE LEAD PUMP RUNS FOR 15 MINUTES (ADJ) ABOVE 95% SPEED (ADJ), STAGE ON LAG PUMP.

PUMP SPEEDS SHOULD SYNCHRONIZE AFTER APPROXIMATELY FIVE MINUTES. d. IF THE LEAD AND LAG PUMP RUN FOR 15 MINUTES (ADJ) BELOW 40% SPEED (ADJ), STAGE OFF LAG PUMP. RAMP LAG PUMP SPEED TO MINIMUM SPEED (0%) BEFORE STOPPING. 3. ROTATION AND STANDBY a. PUMP SHALL ROTATE WEEKLY AUTOMATICALLY, VIA GRAPHICS, USER SHALL BE ABLE TO: A) SELECT WHICH PUMP SHALL BE LEAD, AND LAG ON THE NEXT ROTATION. B) SCHEDULE THE DAY OF WEEK AND HOUR OF DAY TO ROTATE PUMP.

C) OVERRIDE ROTATION AND KEEP LEAD/LAG AS-IS. D) ROTATE PUMPS IMMEDIATELY. E) ABILITY TO "LOCKOUT' PUMP FOR SERVICING, TO PREVENT ROTATION TO THAT PUMP. A) IF EITHER THE LEAD OR LAG PUMP FAIL, GENERATE AN ALARM. DISABLE FAILED PUMP AND START LAG PUMP, LAG PUMP SHALL ASSUME POSITION OF THE FAILED PUMP (EX: IF FAILED PUMP WAS LEAD, LAG PUMP IS NOW LEAD). OPERATION SHALL CONTINUE AS DESCRIBED ABOVE.

B) FAILED PUMP SHALL REMAIN OFF UNTIL ALARM IS MANUALLY CLEARED (VIA GRAPHIC). FAILED PUMP SHALL REMAIN IN STANDBY POSITION UNTIL NEXT ROTATION. D. CHWS TEMPERATURE EFFECTIVE SETPOINT . THE FOLLOWING ITEMS WILL CONTROL THE CHWS TEMPERATURE EFFECTIVE SETPOINT, IN ORDER OF

**DECREASING PRIORITY:** a. OPERATOR OVERRIDE b. DEHUMIDIFICATION (FIXED SETPOINT) c. ENERGY SAVINGS (CALCULATED SETPOINT)

2. THE CHWS TEMPERATURE EFFECTIVE SETPOINT SHALL BE COMMUNICATED TO THE CHILLER'S FACTORY CONTROLS. IF THE CHWS TEMPERATURE IS +1-20F (ADJ) FROM EFFECTIVE SETPOINT FOR 15 MINUTES (ADJ), GENERATE AN ALARM. DISABLE CHWS TEMPERATURE ALARM WHEN STAGING CHILLERS. 3. DEHUMIDIFICATION a. ON A CALL FOR DEHUMIDIFICATION FROM ANY PIECE OF EQUIPMENT UTILIZING CHW, CHW PLANT SHALL ENTER DEHUMIDIFICATION MODE. b. CHWS TEMPERATURE SETPOINT SHALL BE 42°F (ADJ).

30 MINUTES, CHW PLANT SHALL LEAVE DEHUMIDIFICATION MODE. 4. ENERGY SAVINGS a. RESET CHW TEMPERATURE SETPOINT FROM 42°F TO 54°F (ADJ) AS THE OUTSIDE AIR TEMPERATURE (OAT) FALLS FROM 70°F TO 55°F (ADJ).

C. IF THERE IS NO CALL FOR DEHUMIDIFICATION FROM ANY PIECE OF EQUIPMENT UTILIZING CHW FOR

CHILLERS SHALL REMAIN OFF. 3.3. GRAPHICAL INTERFACE A. PROVIDE A GRAPHICAL DISPLAY FOR THE CHW PLANT, WITH A SCHEMATIC OF THE PLANT AND THE FOLLOWING POINTS:

1. ON A FREEZESTAT TRIP FOR ANY PIECE OF EQUIPMENT UTILIZING CHW, ENABLE SCHWP OPERATION.

 SYSTEM ON/OFF • PUMP STATUS, ON/OFF/ALARM, SPEED COMMAND, SPEED FEEDBACK, FAULT AND FAULT TEXT (EACH CURRENT LEAD/LAG/STANDBY PUMP, NEXT ROTATION TIME, NEXT LEAD/LAG/STANDBY PUMP

 PUMP ACCUMULATED RUNTIME AND RUNTIME RESET (EACH PUMP) CHILLER ENABLE/DISABLE CHILLER ALARM STATUS CHILLER EWT AND LWT (EACH CHILLER) CHILLER PERCENT CAPACITY (EACH CHILLER, CALCULATED) CHILLER CHW SETPOINT (EACH CHILLER)

(UPCOMING ROTATION) AND ABILITY TO ADJUST ALL.

(UPCOMING ROTATION) AND ABILITY TO ADJUST ALL. CHILLER ACCUMULATED RUNTIME AND RUNTIME RESET (EACH CHILLER) DIFFERENTIAL PRESSURE AND SETPOINT (EACH DP SENSOR) CHW SUPPLY AND RETURN TEMPERATURES TO BUILDING CHW SECONDARY FLOW

 CHW SECONDARY MINIMUM FLOW BYPASS VALVE POSITION AND SETPOINT EFFECTIVE CHWS TEMPERATURE SETPOINT AND ALARM DEHUMIDIFICATION CHWS TEMPERATURE SETPOINT CHART/TABLE FOR CHW OAT RESET, WITH FOUR POINTS SHOWN ON CHART **EQUIPMENT UTILIZING CHW FREEZE PROTECTION CALL** B. PROVIDE A GRAPHICAL TABLE FOR THE CHW SYSTEM TERMINAL LOAD, WITH THE FOLLOWING POINTS:

CURRENT LEAD/LAG/STANDBY CHILLER, NEXT ROTATION TIME, NEXT LEAD/LAG/STANDBY CHILLER

 EQUIPMENT NAME CHW VALVE POSITION TERMINAL LOAD DEHUMIDIFICATION STATUS

CRITICALITY RANKING

4 - BOILER SYSTEM CONTROL SEQUENCES

A. ENABLE BOILER SYSTEM WHEN a. THE OUTDOOR AIR TEMPERATURES BELOW 60°F (ADJ.), AND b. THERE ARE THREE (ADJ) CALLS FOR HW FROM THE HVAC SYSTEM (EITHER HEATING OR DEHUMIDIFICATION

c. THERE IS A FREEZESTAT TRIP FOR ANY PIECE OF EQUIPMENT UTILIZING HW. d. BOILERS SHALL NOT BE COMMANDED ON UNTIL BUILDING HEATING HOT WATER CIRCULATION PUMPS ARE

A. SAFETY DEVICES: SAFETIES SHALL BE IN OPERATION AT ALL TIMES (HW BOILER/PUMP IN AUTO, HAND, OVERRIDE a. REMOTE EMERGENCY POWER OFF (EPO) SHUTDOWN: WHEN THE EPO IS PRESSED, STOP BOILERS AND

b. GENERATE AN ALARM. SAFETY SHALL BE HARDWIRED TO BOILERS, NETWORKED TO PUMPS, AND REQUIRE AFTER ALL SAFETIES HAVE CLEARED, ALLOW HW PLANT OPERATION. a. SEND DEMAND SIGNAL TO MASTER BOILER TO MAINTAIN BUILDING SUPPLY WATER TEMPERATURE PER

RESET SCHEDULE BELOW. THE MINIMUM BOILER LOOP SUPPLY WATER TEMPERATURE SHALL BE 90°F. BOILER

SEQUENCING SHALL BE BY THE BOILER MANAGEMENT SYSTEM. **BUILDING SUPPLY WATER RESET ADJUSTABLE** OCCUPIED MODES UNOCCUPIED MODES

1) UTILIZE OPTIMUM START PROGRAM TO REACH THE ABOVE TEMPERATURES FIVE-MINUTES PRIOR TO ANY BUILDING EQUIPMENT WARM-UP MODES OR UNOCCUPIED MODE. 2) PROVIDE MANUAL OVERRIDE FOR BUILDING SUPPLY WATER TEMPERATURE SET POINT. OVERRIDE

SHALL BE MAINTAINED FOR A PERIOD OF 24-HOURS PRIOR TO AUTOMATICALLY RESUMING RESET b. BOILER CONTROL SYSTEM OPENS THE ASSOCIATED CONTROL VALVE(S). A MINIMUM OF ONE VALVE SHALL BE OPEN AT ALL TIMES TO PREVENT DEADHEADING THE CIRCULATION PUMPS.

2) HIGH CO OR CH4. SHUTDOWN IF EITHER OF THESE RISE TO UNSAFE LEVELS. HIGH/LOW BOILER DISCHARGE TEMP.

4) HIGH/LOW BUILDING SUPPLY TEMP.

C. BUILDING HEATING HOT WATER PUMPS (HWP) a. DO NOT ENABLE THE HEATING HOT WATER PUMPS UNLESS AT LEAST ONE BOILER ISOLATION CONTROL b. IF AT LEAST ONE BOILER ISOLATION CONTROL VALVE IS PROVED OPEN, ENABLE OPERATION SEQUENCE AT C. MODULATE THE PUMP TO MAINTAIN THE PRESSURE DIFFERENTIAL SET POINT AS DETERMINED BY BALANCER.

1) COORDINATE PUMP MINIMUM SPEED WITH THE MINIMUM FLOW THROUGH BOTH BOILERS. d. ALARMS EQUIPMENT FAILURE. VFD ALARM.

D. HEATING HOT WATER BYPASS a. IF THE PUMP IS RUNNING AT MINIMUM SPEED AND THE PUMP DP SENSOR CONTINUES TO RISE, 1) MODULATE THE HW BYPASS VALVE TO MAINTAIN DP SETPOINT. PROVIDE SEPARATE PID FOR TUNING

2) INTERLOCK PUMP SPEED PID WITH BYPASS VALVE PID TO ENSURE PUMP REMAINS AT MINIMUM SPEED WHEN BYPASS VALVE IS OPEN. VALVE SHALL BE FULLY CLOSED DURING NORMAL OPERATION.

a. IF THE TEMPERATURE OF THE HEATING HOT WATER IN THE ATTIC IS SENSED TO DROP BELOW 40°F, PROVIDE ALARM, ENABLE THE PUMP TO A MINIMUM OF 50% AND OPEN ALL OF THE AHU AND FCU HEATING HOT WATER CONTROL VALVES TO A MINIMUM POSITION OF 50% OPEN.

A. PROVIDE A GRAPHICAL DISPLAY FOR THE HW PLANT, WITH A SCHEMATIC OF THE PLANT AND THE FOLLOWING

 a. SYSTEM ON/OFF b. NUMBER OF HW CALLS REQUIRED FOR ENABLE SETPOINT c. PUMP STATUS, ON/OFF/ALARM, SPEED COMMAND, SPEED FEEDBACK, FAULT AND FAULT TEXT (EACH

d. PUMP ACCUMULATED RUNTIME AND RUNTIME RESET e. HW BOILER ENABLE/DISABLE

f. HW BOILER EWT AND LWT (EACH HW BOILER) g. HW BOILER PERCENT CAPACITY (EACH HW BOILER, VIA HARDWIRED OR BAS NETWORK CONNECTION) h. HW BOILER HW SETPOINT i. HW BOILER TEMPERATURES, ALARMS, AND OTHER DATA VIA BAS NETWORK CONNECTION (EACH HW

DIFFERENTIAL PRESSURE AND SETPOINT (EACH DP SENSOR) k. HW SUPPLY AND RETURN TEMPERATURES TO BUILDING I. HW SUPPLY TEMPERATURE SETPOINT AND ALARM

m. CHART FOR HW OAT RESET, WITH FOUR POINTS SHOWN ON CHART n. PROVIDE A GRAPHICAL TABLE FOR THE HW SYSTEM TERMINAL LOAD, WITH THE FOLLOWING POINTS: 1) EQUIPMENT NAME

2) DEHUMIDIFICATION STATUS/CALL FREEZE PROTECTION STATUS/CALL 4) CRITICALITY RANKING o. ATTIC HEATING HOT WATER TEMPERATURE. PROVIDE ALARM IF THE WATER IN THE ATTIC PIPES DROPS

CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605 CPLteam.com



PROJECT INFORMATION R23.00487.00

JOHNSTON COUNTY PUBLIC **SCHOOLS** 

CLEVELAND ELEMENTARY SCHOOL HVAC RENOVATION

10225 CLEVELAND RD. CLAYTON, NC 27520

PROJECT ISSUE & REVISION SCHEDULE

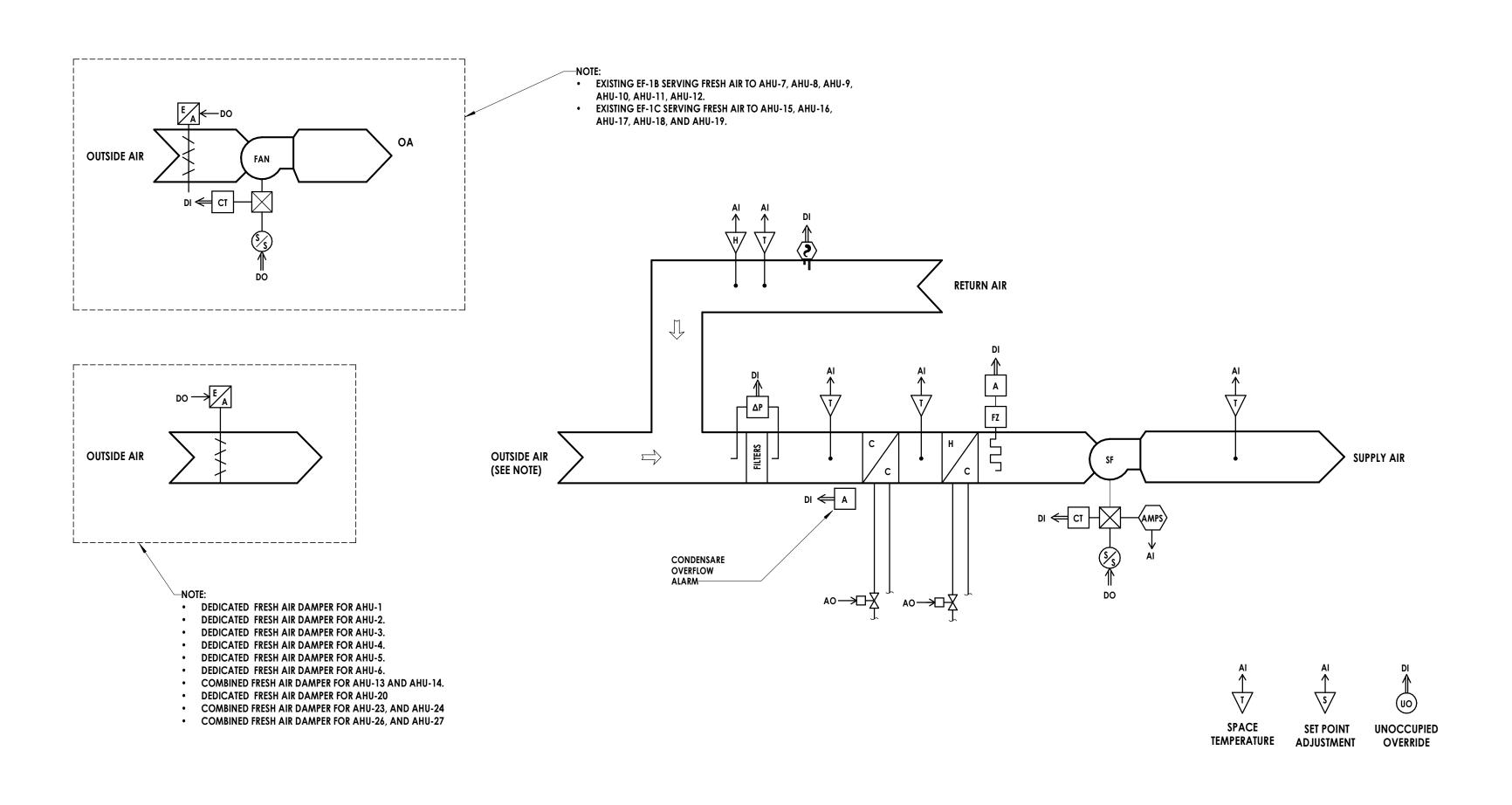
PROFESSIONAL STAMPS



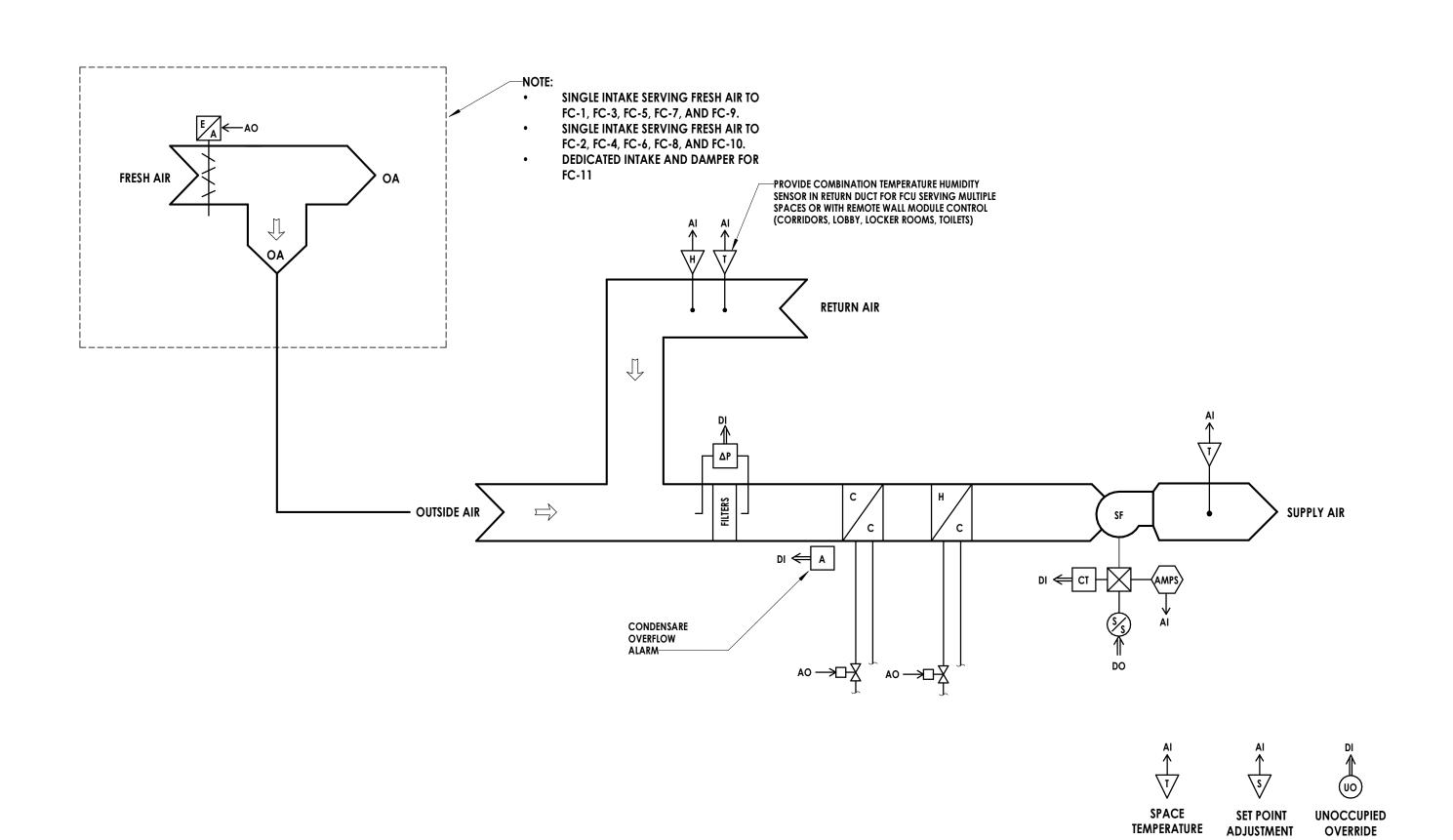
SHEET INFORMATION 02/17/2025 1" = 1'-0" Proiect Status **BID SET** Drawn By Checked By GLG

Drawing Number

Drawing Title CONTROLS



## AHU-1 THRU -20, AHU-23, AHU-24, AHU-26 & AHU-27 **AHU CONTROLS SCHEMATIC** NOT TO SCALE





# COMMON OA DAMPER 0.1. OPERATION

A. SAFETY DEVICES: SAFETIES SHALL BE IN OPERATION AT ALL TIMES. 1. FREEZE PROTECTION

a. IF ASSOCIATED AIR HANDLING UNIT SHUTS DOWN ON FREEZE PROTECTION, CLOSE COMMON OA

b. FAN COIL UNITS WITH COMMON OUTDOOR AIR DUCTWORK DO NOT HAVE PHYSICAL FREEZE PROTECTION DEVICES. PROGRAMMED FREEZE PROTECTION WILL BE IMPLEMENTED. WHEN OUTDOOR AIR TEMPERATURE FALLS BELOW 20°F (ADJ.) DURING OCCUPIED TIMES THE COMMON OUTDOOR AIR DAMPERS FEEDING FAN COIL UNITS, BLOWER COIL UNITS, AND UNIT VENTILATORS SHALL BE

2. FIRE ALARM SHUTDOWN: WHEN THE FIRE ALARM IS ACTIVE, SET DAMPERS TO OFF POSITIONS. GENERATE AN AIARM.

B. COMMON OA DAMPERS GENERAL

COMMANDED CLOSED.

a. MONITOR ASSOCIATED AHUS STATUS. b. OPEN DAMPER FOR MINIMUM VENTILATION WHEN ANY OF THE ASSOCIATED AHUS GOES INTO

OCCUPIED MODE. 2. MINIMUM VENTILATION OPERATION

a. WHEN ANY AHU FAN IS RUNNING, THE OUTSIDE DAMPERS ARE INDEXED TO THE MINIMUM OUTSIDE AIR POSITION, INITIALLY 100% (ADJ.) OPEN, TO BE DETERMINED BY TAB.

A) NOTE TO TAB CONTRACTOR: THE VALUE FOR EACH DAMPER SHALL BE DETERMINED INDIVIDUALLY TO MAINTAIN THE DESIGN OA FLOW (SEE AHU SCHEDULE). 0.2. UNOCCUPIED & PREOCCUPIED MODE OPERATION

A. CLOSE COMMON OA DAMPER. 0.3. GRAPHICAL INTERFACE

A. PROVIDE A GRAPHICAL DISPLAY FOR THE COMMON OA DAMPER, WITH A SCHEMATIC OF THE UNIT AND THE

FOLLOWING POINTS. DAMPER POSITION AND SETPOINT ASSOCIATED AIR HANDLING UNITS & CALCULATED C02 VALUE

 OCCUPANCY STATUS FIRE ALARM STATUS

## SINGLE ZONE CV AIR HANDLING UNIT - W/ REHEAT AND NO ECONOMIZER

A. SAFETY DEVICES: SAFETIES SHALL BE IN OPERATION AT ALL TIMES (FAN/VFD IN AUTO, HAND, OVERRIDE, ETC). 1. FREEZESTAT: WHEN THE FREEZESTAT SENSES TEMPERATURE BELOW 35°F, STOP FAN, OPEN COOLING COIL VALVE, AND RETURN ALL OTHER VALVES AND DAMPERS TO FAILED POSITIONS. GENERATE AN ALARM. SAFETY SHALL BE HARDWIRED AND REQUIRE MANUAL RESET. BAS SHALL ENABLE HW PLANT AND ENABLE CHW PUMPS FOR WATER CIRCULATION. A FREEZESTAT TRIP SHALL OVERRIDE VALVE COMMANDS FOR ALL OTHER SAFETIES (I.E., DURING SIMULTANEOUS SAFETY TRIPS, THE FREEZESTAT VALVE OPERATION SHALL

TAKE PRECEDENT). 2. FLOAT SWITCH (WHERE APPLICABLE): WHEN THE COOLING DRAIN PAN FLOAT SWITCH IS ACTIVE, STOP FAN AND RETURN VALVES AND DAMPERS TO OFF POSITIONS. GENERATE AN ALARM. SAFETY SHALL BE

HARDWIRED AND REQUIRE MANUAL RESET (VIA GRAPHIC). 3. FIRE ALARM SHUTDOWN: WHEN THE FIRE ALARM IS ACTIVE STOP FAN AND RETURN VALVES AND DAMPERS TO OFF POSITIONS. GENERATE AN ALARM. SAFETY SHALL BE HARDWIRED AND REQUIRE MANUAL RESET (VIA FIRE ALARM SYSTEM CONTROL PANEL).

4. AFTER ALL SAFETIES HAVE CLEARED, ALLOW AHU OPERATION. B. SUPPLY FAN 1. THE FAN SHALL RUN CONTINUOUSLY DURING OCCUPIED TIMES. DETERMINE FAN STATUS THROUGH A

CURRENT SENSOR. IF A FAN FAILS TO START AS COMMANDED, GENERATE AN ALARM. C. OUTSIDE AIR FANS EF-1B AND EF-1C

 OCCUPIED MODES a. OPEN THE ASSOCIATED DAMPER b. ENABLE FAN

 a. DISABLE FAN b. CLOSE THE ASSOCIATED DAMPER

2. UNOCCUPIED MODES

ALARM a. FAN START/STOP FAILURE

D. OUTSIDE AIR DAMPERS 1. OPEN IN OCCUPIED MODES TO THE POSITION AS DETERMINED BY THE BALANCER. a. NOTE TO TAB CONTRACTOR: THE POSITION OF EACH DAMPER SHALL BE DETERMINED INDIVIDUALLY TO MAINTAIN THE DESIGN OA FLOW (SEE AHU SCHEDULE). RECORD POSITION AND PROVIDE TO BAS CONTRACTOR FOR BALANCE POINT IN PROGRAMMING (NON-ADJ). DO NOT USE ACTUATOR END-STOPS FOR BALANCING. 2. CLOSE IN UNOCCUPIED MODES.

E. HEATING (HW)/COOLING COIL (CHW) WHEN THE FAN IS RUNNING, THE COOLING VALVE SHALL MODULATE TO MAINTAIN THE SPACE AT THE

COOLING SETPOINT (74°F, ADJ). 2. WHEN THE FAN IS RUNNING, THE HEATING VALVE SHALL MODULATE TO MAINTAIN THE SPACE AT THE HEATING SETPOINT (68°F, ADJ).

3. PROVIDE A MINIMUM 5°F (NON-ADJ) DEADBAND BETWEEN COOLING AND HEATING SETPOINTS. DEHUMIDIFICATION (WHERE HEATING COIL IS IN REHEAT POSITION) 1. IF THE RELATIVE HUMIDITY IN THE SPACE RISES ABOVE 60% (ADJ), TURN ON FAN, OPEN THE COOLING COIL VALVE TO 100%, AND MODULATE REHEAT VALVE TO MAINTAIN THE SPACE AT THE COOLING SETPOINT. THE UNIT SHALL RETURN TO NORMAL OPERATION WHEN THE SPACE RELATIVE HUMIDITY FALLS

BELOW 55% (ADJ). 2. IF SPACE HUMIDITY REMAINS ABOVE 65% (ADJ) FOR 15 MINUTES (ADJ), GENERATE AN ALARM.

G. ADDITIONAL CONTROL REQUIREMENTS PROVIDE WITH WALL MODULE (SEE "WALL MODULE REQUIREMENTS").

H. BELT (WHERE APPLICABLE) 1. GENERATE AN ALARM FOR BELT CHANGE WHEN FAN RUNTIME EXCEEDS USER INPUT MAXIMUM (8,000

HOURS, ADJ).

0.2. UNOCCUPIED MODE OPERATION A. UNIT SHALL OPERATE AS DESCRIBED ABOVE. EXCEPT: FAN SHALL BE OFF, AND VALVES AND DAMPERS SHALL BE IN OFF POSITIONS.

INCREASE COOLING SETPOINT TO 78°F (UNOCCUPIED COOLING SETPOINT, ADJ) AND DECREASE HEATING SETPOINT TO 62°F (UNOCCUPIED HEATING SETPOINT, ADJ). 3. IF THE OCCUPANCY OVERRIDE IS PRESSED, OR THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED COOLING SETPOINT, OR FALLS BELOW THE UNOCCUPIED HEATING SETPOINT, PLACE THE UNIT INTO

PREOCCUPANCY MODE. THE UNIT SHALL CONTROL TO THE OCCUPIED SETPOINTS. 4. THE UNIT SHALL RETURN TO UNOCCUPIED OPERATION WHEN OCCUPIED SETPOINTS ARE REACHED, THE MINIMUM RUNTIME OF 30 MINUTES (ADJ) HAS BEEN MET, AND THE OCCUPANCY OVERRIDE EXPIRES.

0.3. PREOCCUPANCY MODE OPERATION A. UNIT SHALL ENTER PREOCCUPANCY PERIOD PRIOR TO OCCUPIED PERIOD IN ACCORDANCE WITH OPTIMUM

B. UNIT SHALL OPERATE AS DESCRIBED ABOVE, EXCEPT: 1. DAMPERS SHALL BE IN OFF POSITION. MINIMUM OUTSIDE AIR SHALL NOT BE INTRODUCED.

0.4. GRAPHICAL INTERFACE A. PROVIDE A GRAPHICAL DISPLAY FOR THE AHU, WITH A SCHEMATIC OF THE UNIT AND THE FOLLOWING POINTS. SYSTEM ON/OFF

 FLOAT SWITCH(ES), FREEZESTAT, AND FIRE ALARMS SUPPLY FAN STATUS, ON/OFF/ALARM OUTSIDE AIR DAMPER COMMANDS

OCCUPANCY STATUS

 HW/CHW COIL VALVE COMMANDS BELT RUNTIME AND TIME TO NEXT CHANGE

 SPACE/RETURN TEMPERATURE AND HEATING/COOLING SETPOINTS SPACE/RETURN TEMPERATURE SETPOINT MAX AND MIN LIMITS SPACE OVERRIDE STATUS

SPACE/RETURN HUMIDITY, ALARM, AND ALARM SETPOINT (WHERE APPLICABLE)

 SUPPLY AIR TEMPERATURE FILTER DIFFERENTIAL PRESSURE

# SINGLE ZONE CV FAN COIL UNIT REHEAT (NO ECONOMIZER W/ COMMON OAD)

A. SAFETY DEVICES: SAFETIES SHALL BE IN OPERATION AT ALL TIMES (FAN STARTER/VFD IN AUTO, HAND,

 FLOAT SWITCH (WHERE APPLICABLE): WHEN THE COOLING DRAIN PAN FLOAT SWITCH IS ACTIVE, STOP FAN AND COMMAND VALVES AND DAMPERS TO OFF POSITIONS. GENERATE AN ALARM. SAFETY SHALL BE HARDWIRED AND REQUIRE MANUAL RESET (VIA GRAPHIC).

B. SUPPLY FAN 1. THE FAN SHALL EITHER

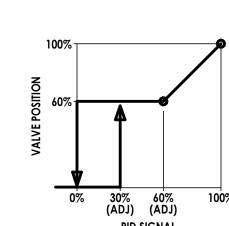
a. RUN CONTINUOUSLY, OR b. CYCLE WITH HEATING AND COOLING, WITHOUT CIRCULATION, OR c. CYCLE WITH HEATING AND COOLING, PLUS CIRCULATION. IF THE FAN DOES NOT RUN FOR 30 MINUTES (ADJ) DUE TO HEATING OR COOLING, ENABLE FAN TO RUN FOR 5 MINUTES (ADJ). THE

TIMER SHALL BE RESET AFTER EVERY CIRCULATION, HEATING, OR COOLING CYCLE, REGARDLESS OF FAN ELAPSED RUNTIME. PROVIDE DROPDOWN ON FRONT-END FOR USER SELECTION. INITIAL CONFIGURATION SHALL BE RUN CONTINUOUSLY. DETERMINE FAN STATUS THROUGH A CURRENT SENSOR. IF A FAN FAILS TO START AS COMMANDED

GENERATE AN ALARM. C. OUTSIDE DAMPER AND EXHAUST FAN INTERLOCK (WHERE APPLICABLE) 1. SEE SCHEDULES AND PLANS FOR LOCATIONS WITH DETAILS.

AFTER ALL SAFETIES HAVE CLEARED, ALLOW FCU OPERATION.

D. HEATING (HW)/COOLING COIL (CHW) — NEW MODULATING VALVE ACTUATORS WHEN THE FAN IS RUNNING, THE COOLING VALVE SHALL OPEN/CLOSE/MODULATE TO MAINTAIN THE SPACE AT THE COOLING SETPOINT (73°F, ADJ), IN ACCORDANCE WITH THE PID CHART BELOW.



WHEN THE FAN IS RUNNING, THE HEATING VALVE SHALL MODULATE TO MAINTAIN THE SPACE AT THE 3. PROVIDE A MINIMUM 5°F (NON-ADJ) DEADBAND BETWEEN COOLING AND HEATING SETPOINTS. DEHUMIDIFICATION (WHERE HEATING COIL IS IN REHEAT POSITION) 1. IF THE RELATIVE HUMIDITY IN THE SPACE RISES ABOVE 60% (ADJ), TURN ON FAN, OPEN THE COOLING COIL VALVE TO 100%, AND MODULATE REHEAT VALVE TO MAINTAIN THE SPACE AT THE COOLING SETPOINT. THE UNIT SHALL RETURN TO NORMAL OPERATION WHEN THE SPACE RELATIVE HUMIDITY FALLS

2. IF SPACE HUMIDITY REMAINS ABOVE 65% (ADJ) FOR 15 MINUTES (ADJ), GENERATE AN ALARM. F. ADDITIONAL CONTROL REQUIREMENTS

1. PROVIDE WITH WALL MODULE (SEE "WALL MODULE REQUIREMENTS"). 2. WHEN THE SPACE CO2 RISES ABOVE 1,200 PPM (ADJ), GENERATE AN ALARM. G. BELT (WHERE APPLICABLE)

GENERATE AN ALARM FOR BELT CHANGE WHEN FAN RUNTIME EXCEEDS USER INPUT MAXIMUM (8,000 HOURS, ADJ).

0.2. UNOCCUPIED MODE OPERATION A. A. UNIT SHALL OPERATE AS DESCRIBED ABOVE, EXCEPT:

FAN SHALL BE OFF, AND VALVES AND DAMPERS SHALL BE IN OFF POSITIONS. 2. INCREASE COOLING SETPOINT TO 78°F (UNOCCUPIED COOLING SETPOINT, ADJ) AND DECREASE HEATING SETPOINT TO 62°F (UNOCCUPIED HEATING SETPOINT, ADJ). 3. IF THE OCCUPANCY OVERRIDE IS PRESSED, OR THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED

SETPOINT, OR FALLS BELOW THE UNOCCUPIED HEATING SETPOINT, PLACE THE UNIT INTO PREOCCUPANCY MODE. THE UNIT SHALL CONTROL TO THE OCCUPIED SETPOINTS.

4. THE UNIT SHALL RETURN TO UNOCCUPIED OPERATION WHEN OCCUPIED SETPOINTS ARE REACHED, THE MINIMUM RUNTIME OF 30 MINUTES (ADJ) HAS BEEN MET, AND THE OCCUPANCY OVERRIDE EXPIRES. 0.3. PREOCCUPANCY MODE OPERATION A. UNIT SHALL ENTER PREOCCUPANCY PERIOD PRIOR TO OCCUPIED PERIOD IN ACCORDANCE WITH OPTIMUM

0.4. GRAPHICAL INTERFACE A. PROVIDE A GRAPHICAL DISPLAY FOR THE AHU, WITH A SCHEMATIC OF THE UNIT AND THE FOLLOWING

 SYSTEM ON/OFF OCCUPANCY STATUS FREEZE PROTECTION AND ALARM SETPOINT

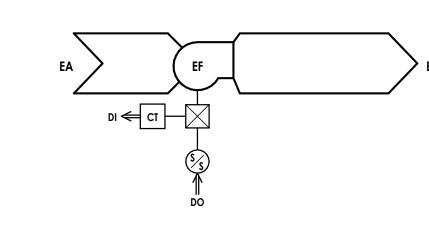
 FLOAT SWITCH(ES) ALARMS SUPPLY FAN STATUS, ON/OFF/ALARM COMMON OUTSIDE DAMPER COMMANDS (WHERE APPLICABLE) EXHAUST FAN COMMANDS (WHERE APPLICABLE)

 HW/CHW COIL VALVE COMMANDS BELT RUNTIME AND TIME TO NEXT CHANGE SPACE/RETURN TEMPERATURE AND HEATING/COOLING SETPOINTS SPACE/RETURN TEMPERATURE SETPOINT MAX AND MIN LIMITS

 SPACE OVERRIDE STATUS SPACE/RETURN HUMIDITY, ALARM, AND ALARM SETPOINT (WHERE APPLICABLE) SPACE/RETURN C02 LEVEL, ALARM, AND ALARM SETPOINT (WHERE APPLICABLE)

 SUPPLY AIR TEMPERATURE FILTER DIFFERENTIAL PRESSURE

START/STOP STRATEGY.



## GENERAL EXHAUST FANS, CONSTANT VOLUME, BAS CONTROLLED

A. SAFETY DEVICES: SAFETIES SHALL BE IN OPERATION AT ALL TIMES (MSD IN AUTO, HAND, OVERRIDE, ETC). 1. HARDWIRE LOW LIMIT PRESSURE SAFETY WITH MANUAL RESET FOR EXHAUST FAN.

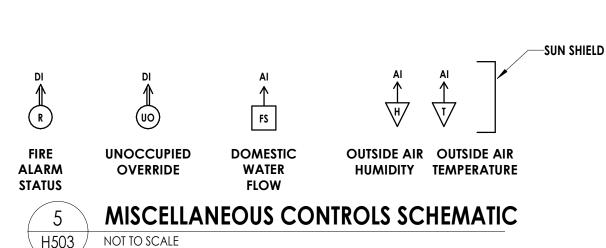
B. START/STOP 1. ENABLE EXHAUST FANS WHEN ANY OF THE ASSOCIATED AIR HANDLING/FAN COIL UNITS ARE IN OCCUPIED MODE

2. DETERMINE FAN STATUS THROUGH AN ADJUSTABLE CURRENT SENSOR. SET CURRENT SENSOR TO IDENTIFY BROKEN BELTS. 3. FOR FANS WITH MOTORIZED DAMPERS, PROVIDE LOGIC TO ENSURE DAMPER IS OPEN PRIOR TO STARTING THE EXHAUST FAN. 0.2. GRAPHICAL INTERFACE

A. PROVIDE A TABULAR GRAPHICAL DISPLAY FOR ALL EXHAUST FANS WITH THE FOLLOWING POINTS: . EXHAUST FAN SERVICE AND LOCATION (EX: WING-A GENERAL, BATHROOM-203, ETC.) 2. EXHAUST FAN STATUS ON/OFF/ALARM. 3. ASSOCIATED AHU/FCU

0.3. KITCHEN EXHAUST: A. KITCHEN GENERAL EXHAUST FAN (EF-22) SHALL RUN CONTINUOUSLY DURING OCCUPIED MODE. B. WHEN RANGE HOOD EF-1 IS ENABLED, DISABLE KITCHEN GENERAL EXHAUST FAN EF-22. 0.4 ALARM A. FAN START/STOP FAILURE

**EF CONTROLS SCHEMATIC** 



# **0 - OUTSIDE AIR TEMPERATURE AND HUMIDITY**

A. PROVIDE COMBINATION OUTSIDE AIR TEMPERATURE AND HUMIDITY COMBINATION SENSOR ON NORTH WALL OF BUILDING. LOCATE AWAY FROM ANY BUILDING CORNERS OR VORTICES. LOCATE AWAY FROM SOURCES WHICH WILL IMPACT READINGS (SUN, EXHAUST, WIND, ETC).

B. ECONOMIZER OPERATION FOR ALL EQUIPMENT SHALL BE BASED OFF THE LOCAL OUTSIDE AIR SENSOR. NETWORKED WEATHER SHALL BE DISPLAYED ON THE MAIN GRAPHICS PAGE FOR THE BUILDING. D. WHEN OUTSIDE AIR TEMPERATURE AND/OR HUMIDITY IS DISPLAYED ON A GRAPHIC, INDICATE WHICH SENSOR THE READING IS COMING FROM (LOCAL, NETWORKED, ETC).

0.2. GRAPHICAL INTERFACE A. PROVIDE A GRAPHICAL DISPLAY FOR THE OUTSIDE AIR TEMPERATURE AND HUMIDITY SENSOR, WITH THE FOLLOWING POINTS: OUTSIDE AIR TEMPERATURE AND HUMIDITY

# 1 - FIRE ALARM CONTROL PANEL, BAS MONITORING ONLY

A. FIRE ALARM CONTROL PANEL WILL OPERATE INDEPENDENTLY FROM THE BAS. B. MONITOR FIRE ALARM CONTROL PANEL AUXILIARY CONTACTS. WHEN ALARM CONTACT CLOSES, GENERATE 1.2. GRAPHICAL INTERFACE

A. PROVIDE A GRAPHICAL DISPLAY FOR THE FIRE ALARM CONTROL PANEL, WITH THE FOLLOWING POINTS: FIRE ALARM CONTROL PANEL ALARM

# 2 - UNOCCUPANIED OVERRIDE SCHEDULE TIMER SWITCH

A. PROVIDE WALL MOUNTED SPRING WOUND COUNTDOWN TIMER SWITCH FOR OCCUPANCY OVERRIDE FOR EACH ADMIN AND GYMNASIUM AREA LOCATED IN PRINCIPAL AND ATHLETIC DIRECTOR / COACH OFFICE. . WIRE TO NEAREST CONTROLLER.

C. OVERRIDE OCCUPANCY SCHEDULE FOR ASSOCIATED EQUIPMENT TO OCCUPIED WHILE TIMER IS ACTIVE. 2.2. GRAPHICAL INTERFACE A. PROVIDE A GRAPHICAL DISPLAY WITH THE TIMER STATUS AND A LIST OF THE ASSOCIATED EQUIPMENT WITH THE FOLLOWING POINTS:

 ADMIN TIMER SWITCH STATUS GYMNASIUM TIMER SWITCH STATUS

# 3- DOMESTIC WATER MONITORING AND UNOCCUPIED LEAKAGE ALARM

A. ELECTROMAGNETIC FLOW METERS SHALL MEASURE DOMESTIC WATER FLOW IN GALLONS PER MINUTE. THIS FLOW RATE WILL BE MONITORED DURING UNOCCUPIED TIMES TO ALARM ABOVE A USER DEFINABLE THRESHOLD. GENERATE AN ALARM AT THE BAS IF ALL SYSTEMS ARE UNOCCUPIED AND INSTANTANEOUS DOMESTIC WATER FLOW RISES ABOVE AN ADJUSTABLE LEAK DETECTION SETPOINT (INITIALLY 10 GPM). BAS SHALL ALSO TOTALIZE DOMESTIC WATER FLOW AND RESET MONTHLY.

3.2 GRAPHICAL INTERFACE A. PROVIDE A GRAPHICAL DISPLAY WITH THE FOLLOWING POINTS:

INSTANTANEOUS DOMESTIC WATER FLOW

DOMESTIC WATER UNOCCUPIED LEAKAGE ALARM AND SETPOINTS

SHEET INFORMATION

PROFESSIONAL STAMPS

02/17/2025 NOT TO SCALE Project Status **BID SET** Drawn By Checked By GLG MJP

CONTROL SCHEMATICS

CPL | Architecture Engineering Planning

1620 Hillsborough Street Suite A,

Raleigh, NC 27605

CPLteam.com

NC ENGINEERING FIRM LICENSE NO. C-2194

PROJECT INFORMATION

JOHNSTON COUNTY PUBLIC

CLEVELAND ELEMENTARY

10225 CLEVELAND RD.

CLAYTON, NC 27520

SCHOOL HVAC RENOVATION

PROJECT ISSUE & REVISION SCHEDULE

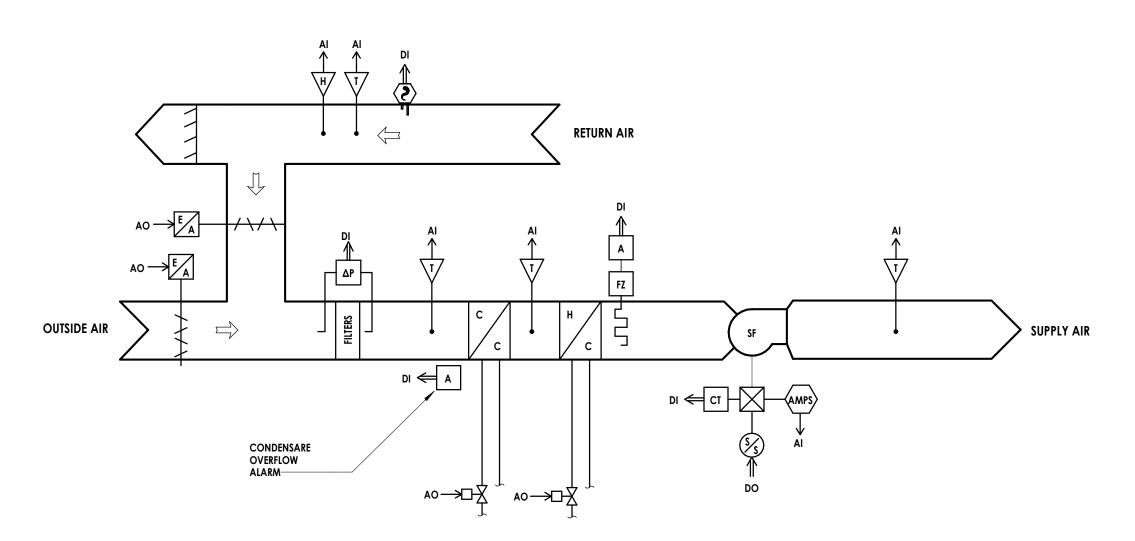
Project Number

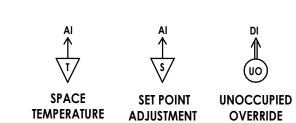
R23.00487.00

**SCHOOLS** 

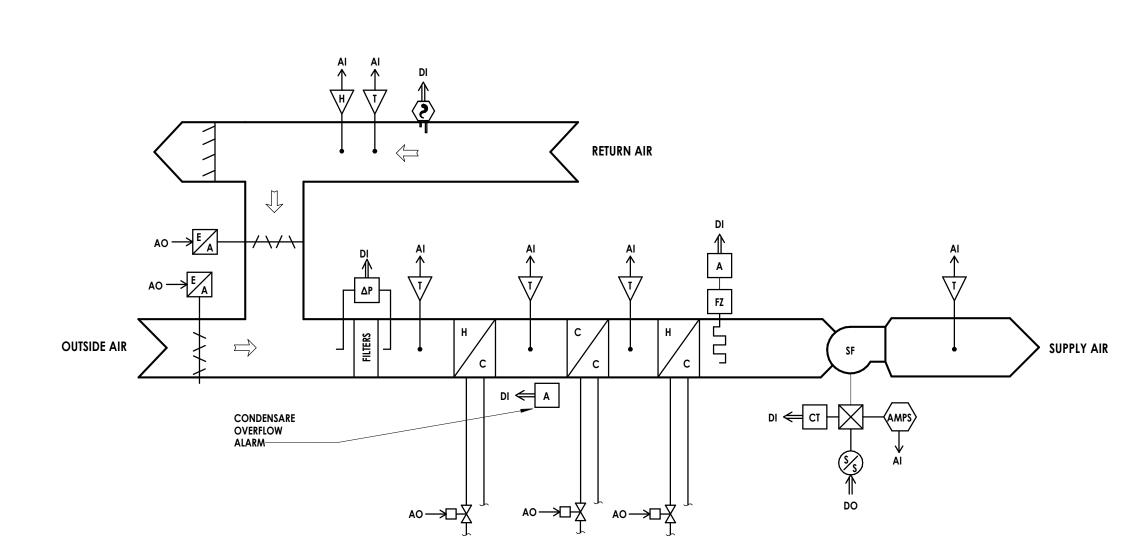
Project Name

Drawing Title









SPACE SET POINT TEMPERATURE ADJUSTMENT OVERRIDE

# SINGLE ZONE CV AIR HANDLING UNIT - W/ REHEAT AND ECONOMIZER

- A. SAFETY DEVICES: SAFETIES SHALL BE IN OPERATION AT ALL TIMES (FAN/VFD IN AUTO, HAND, OVERRIDE, ETC). 1. FREEZESTAT: WHEN THE FREEZESTAT SENSES TEMPERATURE BELOW 35°F, STOP FAN, OPEN COOLING COIL VALVE, AND RETURN ALL OTHER VALVES AND DAMPERS TO FAILED POSITIONS. GENERATE AN ALARM. SAFETY SHALL BE HARDWIRED AND REQUIRE MANUAL RESET. BAS SHALL ENABLE HW PLANT AND ENABLE CHW PUMPS FOR WATER CIRCULATION. A FREEZESTAT TRIP SHALL OVERRIDE VALVE COMMANDS FOR ALL OTHER SAFETIES (I.E., DURING SIMULTANEOUS SAFETY TRIPS, THE FREEZESTAT VALVE OPERATION SHALL
- 2. FLOAT SWITCH (WHERE APPLICABLE): WHEN THE COOLING DRAIN PAN FLOAT SWITCH IS ACTIVE, STOP FAN AND RETURN VALVES AND DAMPERS TO OFF POSITIONS. GENERATE AN ALARM. SAFETY SHALL BE HARDWIRED AND REQUIRE MANUAL RESET (VIA GRAPHIC).
- 3. FIRE ALARM SHUTDOWN: WHEN THE FIRE ALARM IS ACTIVE STOP FAN AND RETURN VALVES AND DAMPERS TO OFF POSITIONS. GENERATE AN ALARM. SAFETY SHALL BE HARDWIRED AND REQUIRE MANUAL RESET (VIA FIRE ALARM SYSTEM CONTROL PANEL). 4. AFTER ALL SAFETIES HAVE CLEARED, ALLOW AHU OPERATION.
- 1. THE FAN SHALL RUN CONTINUOUSLY DURING OCCUPIED TIMES. DETERMINE FAN STATUS THROUGH A CURRENT SENSOR. IF A FAN FAILS TO START AS COMMANDED, GENERATE AN ALARM. C. OUTSIDE AIR DAMPERS
- 1. OPEN IN OCCUPIED MODES TO THE POSITION AS DETERMINED BY THE BALANCER. a. NOTE TO TAB CONTRACTOR: THE POSITION OF EACH DAMPER SHALL BE DETERMINED INDIVIDUALLY TO MAINTAIN THE DESIGN OA FLOW (SEE AHU SCHEDULE). RECORD POSITION AND PROVIDE TO BAS CONTRACTOR FOR BALANCE POINT IN PROGRAMMING (NON-ADJ). DO NOT USE ACTUATOR END-STOPS FOR BALANCING.
- 2. CLOSE IN UNOCCUPIED MODES. 3. ECONOMIZER MODE a. ENABLE ECONOMIZER MODE WHEN THE UNIT IS IN COOLING MODE, THE OUTDOOR AIR TEMPERATURE IS BELOW 70-DEGREES AND THE OUTSIDE AIR ENTHALPY IS LOWER THAN THE RETURN AIR ENTHALPY.
- b. MODULATE THE OUTDOOR AIR DAMPER BEYOND THE BALANCED MINIMUM TO MAINTAIN THE SPACE TEMPERATURE SET POINT. D. RETURN AIR DAMPER 1. RETURN AIR DAMPER SHALL MODULATE INVERSELY WITH THE OUTDOOR AIR DAMPER.
- HEATING (HW)/COOLING COIL (CHW) NEW MODULATING VALVE ACTUATORS 1. WHEN THE FAN IS RUNNING, THE COOLING VALVE SHALL MODULATE TO MAINTAIN THE SPACE AT THE COOLING SETPOINT (74°F, ADJ). 2. WHEN THE FAN IS RUNNING, THE HEATING VALVE SHALL MODULATE TO MAINTAIN THE SPACE AT THE
- HEATING SETPOINT (68°F, ADJ). 3. PROVIDE A MINIMUM 5°F (NON-ADJ) DEADBAND BETWEEN COOLING AND HEATING SETPOINTS. DEHUMIDIFICATION (WHERE HEATING COIL IS IN REHEAT POSITION) 1. IF THE RELATIVE HUMIDITY IN THE SPACE RISES ABOVE 60% (ADJ), TURN ON FAN, OPEN THE COOLING COIL VALVE TO 100%, AND MODULATE REHEAT VALVE TO MAINTAIN THE SPACE AT THE COOLING
- SETPOINT. THE UNIT SHALL RETURN TO NORMAL OPERATION WHEN THE SPACE RELATIVE HUMIDITY FALLS BELOW 55% (ADJ). 2. IF SPACE HUMIDITY REMAINS ABOVE 65% (ADJ) FOR 15 MINUTES (ADJ), GENERATE AN ALARM.
- G. ADDITIONAL CONTROL REQUIREMENTS 1. PROVIDE WITH WALL MODULE (SEE "WALL MODULE REQUIREMENTS").
- H. BELT (WHERE APPLICABLE) 1. GENERATE AN ALARM FOR BELT CHANGE WHEN FAN RUNTIME EXCEEDS USER INPUT MAXIMUM (8,000 HOURS, ADJ).
- 0.2. UNOCCUPIED MODE OPERATION A. UNIT SHALL OPERATE AS DESCRIBED ABOVE, EXCEPT: 1. FAN SHALL BE OFF, OUTSIDE AIR DAMPERS SHALL BE IN THE FULL CLOSED POSITION. RETURN AIR DAMPER
- SHALL BE IN THE FULL OPEN POSITION. UNIT SHALL NOT RUN UNLESS THE RETURN AIR DAMPER IS IN THE FULL OPEN POSITION. 2. INCREASE COOLING SETPOINT TO 78°F (UNOCCUPIED COOLING SETPOINT, ADJ) AND DECREASE HEATING SETPOINT TO 62°F (UNOCCUPIED HEATING SETPOINT, ADJ). 3. IF THE OCCUPANCY OVERRIDE IS PRESSED, OR THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED
- COOLING SETPOINT, OR FALLS BELOW THE UNOCCUPIED HEATING SETPOINT, PLACE THE UNIT INTO PREOCCUPANCY MODE. THE UNIT SHALL CONTROL TO THE OCCUPIED SETPOINTS. 4. THE UNIT SHALL RETURN TO UNOCCUPIED OPERATION WHEN OCCUPIED SETPOINTS ARE REACHED, THE MINIMUM RUNTIME OF 30 MINUTES (ADJ) HAS BEEN MET, AND THE OCCUPANCY OVERRIDE EXPIRES.
- 0.3. PREOCCUPANCY MODE OPERATION A. UNIT SHALL ENTER PREOCCUPANCY PERIOD PRIOR TO OCCUPIED PERIOD IN ACCORDANCE WITH OPTIMUM
- START/STOP STRATEGY. B. UNIT SHALL OPERATE AS DESCRIBED ABOVE, EXCEPT: 1. DAMPERS SHALL BE IN UNOCCUPIED MODE POSITIONS. MINIMUM OUTSIDE AIR SHALL NOT BE

# INTRODUCED.

- A. PROVIDE A GRAPHICAL DISPLAY FOR THE AHU, WITH A SCHEMATIC OF THE UNIT AND THE FOLLOWING POINTS. SYSTEM ON/OFF OCCUPANCY STATUS
  - FLOAT SWITCH(ES), FREEZESTAT, AND FIRE ALARMS SUPPLY FAN STATUS, ON/OFF/ALARM OUTSIDE AIR DAMPER COMMANDS
  - HW/CHW COIL VALVE COMMANDS BELT RUNTIME AND TIME TO NEXT CHANGE
  - SPACE/RETURN TEMPERATURE AND HEATING/COOLING SETPOINTS SPACE/RETURN TEMPERATURE SETPOINT MAX AND MIN LIMITS
  - SPACE OVERRIDE STATUS SPACE/RETURN HUMIDITY, ALARM, AND ALARM SETPOINT (WHERE APPLICABLE)
  - SUPPLY AIR TEMPERATURE FILTER DIFFERENTIAL PRESSURE

## SINGLE ZONE CV AIR HANDLING UNIT - W/ PREHEAT, REHEAT AND ECONOMIZER

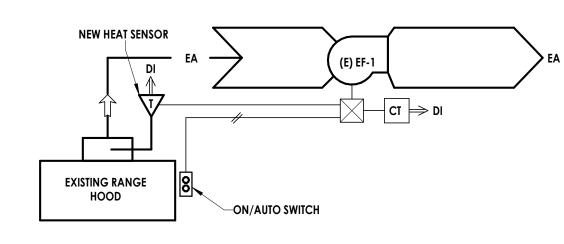
- A. SAFETY DEVICES: SAFETIES SHALL BE IN OPERATION AT ALL TIMES (FAN/VFD IN AUTO, HAND, OVERRIDE, ETC). 1. FREEZESTAT: WHEN THE FREEZESTAT SENSES TEMPERATURE BELOW 35°F, STOP FAN, OPEN COOLING COIL VALVE, AND RETURN ALL OTHER VALVES AND DAMPERS TO FAILED POSITIONS. GENERATE AN ALARM. SAFETY SHALL BE HARDWIRED AND REQUIRE MANUAL RESET. BAS SHALL ENABLE HW PLANT AND ENABLE CHW PUMPS FOR WATER CIRCULATION. A FREEZESTAT TRIP SHALL OVERRIDE VALVE COMMANDS FOR ALL
- OTHER SAFETIES (I.E., DURING SIMULTANEOUS SAFETY TRIPS, THE FREEZESTAT VALVE OPERATION SHALL 2. FLOAT SWITCH (WHERE APPLICABLE): WHEN THE COOLING DRAIN PAN FLOAT SWITCH IS ACTIVE, STOP
- FAN AND RETURN VALVES AND DAMPERS TO OFF POSITIONS. GENERATE AN ALARM. SAFETY SHALL BE HARDWIRED AND REQUIRE MANUAL RESET (VIA GRAPHIC). 3. FIRE ALARM SHUTDOWN: WHEN THE FIRE ALARM IS ACTIVE STOP FAN AND RETURN VALVES AND DAMPERS TO OFF POSITIONS. GENERATE AN ALARM. SAFETY SHALL BE HARDWIRED AND REQUIRE MANUAL RESET (VIA FIRE ALARM SYSTEM CONTROL PANEL).
- 4. AFTER ALL SAFETIES HAVE CLEARED, ALLOW AHU OPERATION. 1. THE FAN SHALL RUN CONTINUOUSLY DURING OCCUPIED TIMES. DETERMINE FAN STATUS THROUGH A CURRENT SENSOR. IF A FAN FAILS TO START AS COMMANDED, GENERATE AN ALARM.
- 1. OPEN IN OCCUPIED MODES TO THE POSITION AS DETERMINED BY THE BALANCER. NOTE TO TAB CONTRACTOR: THE POSITION OF EACH DAMPER SHALL BE DETERMINED INDIVIDUALLY TO MAINTAIN THE DESIGN OA FLOW (SEE AHU SCHEDULE). RECORD POSITION AND PROVIDE TO BAS CONTRACTOR FOR BALANCE POINT IN PROGRAMMING (NON-ADJ). DO NOT USE ACTUATOR END-STOPS FOR BALANCING.
- . CLOSE IN UNOCCUPIED MODES. 3. ECONOMIZER MODE a. ENABLE ECONOMIZER MODE WHEN THE UNIT IS IN COOLING MODE, THE OUTDOOR AIR TEMPERATURE IS BELOW 70-DEGREES AND THE OUTSIDE AIR ENTHALPY IS LOWER THAN THE RETURN AIR ENTHALPY.
- b. MODULATE THE OUTDOOR AIR DAMPER BEYOND THE BALANCED MINIMUM TO MAINTAIN THE SPACE TEMPERATURE SET POINT. 1. RETURN AIR DAMPER SHALL MODULATE INVERSELY WITH THE OUTDOOR AIR DAMPER.
- E. HEATING (HW)/COOLING COIL (CHW) NEW MODULATING VALVE ACTUATORS 1. WHEN THE FAN IS RUNNING, THE COOLING VALVE SHALL MODULATE TO MAINTAIN THE SPACE AT THE
- COOLING SETPOINT (74°F, ADJ). 2. WHEN THE FAN IS RUNNING, THE PRE-HEATING VALVE SHALL MODULATE TO MAINTAIN THE COIL DISCHARGE TEMPERATURE AT THE HEATING SETPOINT (55°F, ADJ). 3. WHEN THE FAN IS RUNNING, THE RE-HEATING VALVE SHALL MODULATE TO MAINTAIN THE SPACE AT THE
- HEATING SETPOINT (68°F, ADJ). 4. PROVIDE A MINIMUM 5°F (NON-ADJ) DEADBAND BETWEEN COOLING AND HEATING SETPOINTS. F. DEHUMIDIFICATION (WHERE HEATING COIL IS IN REHEAT POSITION) 1. IF THE RELATIVE HUMIDITY IN THE SPACE RISES ABOVE 60% (ADJ), TURN ON FAN, OPEN THE COOLING
- COIL VALVE TO 100%, AND MODULATE REHEAT VALVE TO MAINTAIN THE SPACE AT THE COOLING SETPOINT. THE UNIT SHALL RETURN TO NORMAL OPERATION WHEN THE SPACE RELATIVE HUMIDITY FALLS 2. IF SPACE HUMIDITY REMAINS ABOVE 65% (ADJ) FOR 15 MINUTES (ADJ), GENERATE AN ALARM.
- 1. PROVIDE WITH WALL MODULE (SEE "WALL MODULE REQUIREMENTS"). H. BELT (WHERE APPLICABLE) 1. GENERATE AN ALARM FOR BELT CHANGE WHEN FAN RUNTIME EXCEEDS USER INPUT MAXIMUM (8,000
- 0.2. UNOCCUPIED MODE OPERATION
- A. UNIT SHALL OPERATE AS DESCRIBED ABOVE, EXCEPT: 1. FAN SHALL BE OFF, OUTSIDE AIR DAMPERS SHALL BE IN THE FULL CLOSED POSITION. RETURN AIR DAMPER
- SHALL BE IN THE FULL OPEN POSITION. UNIT SHALL NOT RUN UNLESS THE RETURN AIR DAMPER IS IN THE FULL OPEN POSITION. 2. INCREASE COOLING SETPOINT TO 78°F (UNOCCUPIED COOLING SETPOINT, ADJ) AND DECREASE
- HEATING SETPOINT TO 62°F (UNOCCUPIED HEATING SETPOINT, ADJ). 3. IF THE OCCUPANCY OVERRIDE IS PRESSED, OR THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED COOLING SETPOINT, OR FALLS BELOW THE UNOCCUPIED HEATING SETPOINT, PLACE THE UNIT INTO

MINIMUM RUNTIME OF 30 MINUTES (ADJ) HAS BEEN MET, AND THE OCCUPANCY OVERRIDE EXPIRES.

- PREOCCUPANCY MODE. THE UNIT SHALL CONTROL TO THE OCCUPIED SETPOINTS. 4. THE UNIT SHALL RETURN TO UNOCCUPIED OPERATION WHEN OCCUPIED SETPOINTS ARE REACHED, THE
- 0.3. PREOCCUPANCY MODE OPERATION A. UNIT SHALL ENTER PREOCCUPANCY PERIOD PRIOR TO OCCUPIED PERIOD IN ACCORDANCE WITH OPTIMUM START/STOP STRATEGY.
- B. UNIT SHALL OPERATE AS DESCRIBED ABOVE, EXCEPT: 1. DAMPERS SHALL BE IN UNOCCUPIED MODE POSITION. MINIMUM OUTSIDE AIR SHALL NOT BE
- 0.4. GRAPHICAL INTERFACE A. PROVIDE A GRAPHICAL DISPLAY FOR THE AHU, WITH A SCHEMATIC OF THE UNIT AND THE FOLLOWING POINTS.
- SYSTEM ON/OFF OCCUPANCY STATUS
- FLOAT SWITCH(ES), FREEZESTAT, AND FIRE ALARMS
- SUPPLY FAN STATUS, ON/OFF/ALARM OUTSIDE AIR DAMPER COMMANDS

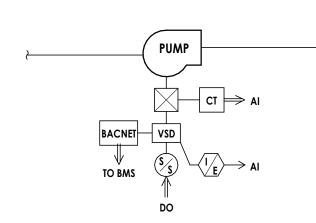
G. ADDITIONAL CONTROL REQUIREMENTS

- HW/CHW COIL VALVE COMMANDS BELT RUNTIME AND TIME TO NEXT CHANGE
- SPACE/RETURN TEMPERATURE AND HEATING/COOLING SETPOINTS SPACE/RETURN TEMPERATURE SETPOINT MAX AND MIN LIMITS
- SPACE OVERRIDE STATUS SPACE/RETURN HUMIDITY, ALARM, AND ALARM SETPOINT (WHERE APPLICABLE)
- SUPPLY AIR TEMPERATURE FILTER DIFFERENTIAL PRESSURE



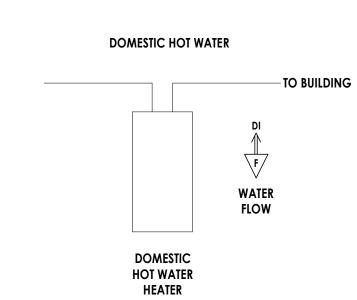
PROVIDE NEW HEAT SENSOR AND CURRENT TRANSDUCER. TIE INTO NEW BUILDING MANAGEMENT SYSTEM PER THE SEQUENCE OF OPERATIONS.

KITCHEN RANGE HOOD CONTROLS SCHEMATIC



4 TYPICAL PUMP CONTROLS

H504 NOT TO SCALE



TYPICAL HOT WATER UNIT HEATER CONTROLS

CPL | Architecture Engineering Planning

Raleigh, NC 27605 CPLteam.com NC ENGINEERING FIRM LICENSE NO. C-2194

1620 Hillsborough Street Suite A,

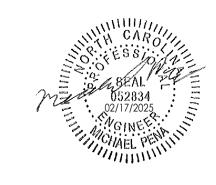
PROJECT INFORMATION Project Number R23.00487.00 JOHNSTON COUNTY PUBLIC **SCHOOLS** 

> Project Name CLEVELAND ELEMENTARY SCHOOL HVAC RENOVATION

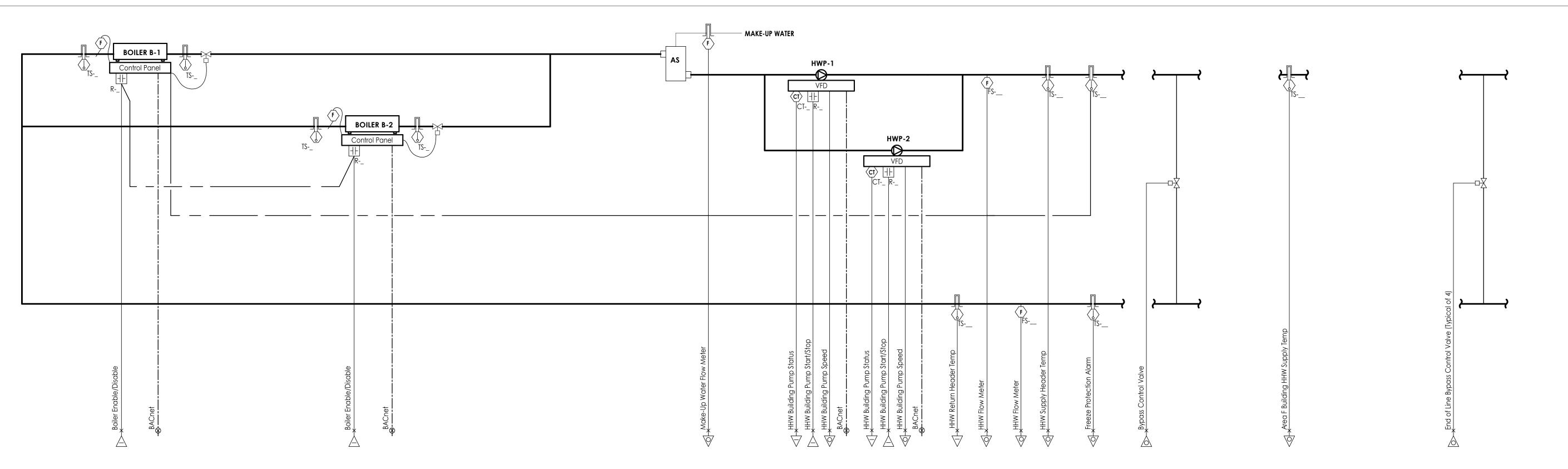
10225 CLEVELAND RD. CLAYTON, NC 27520

PROJECT ISSUE & REVISION SCHEDULE

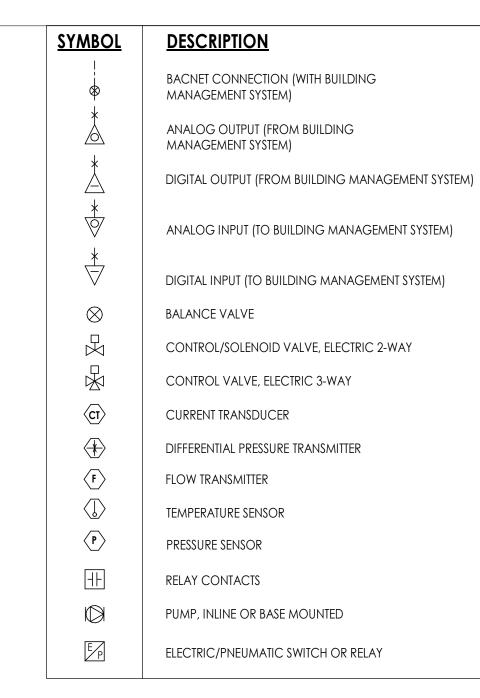
PROFESSIONAL STAMPS



SHEET INFORMATION 02/17/2025 As indicated Project Status **BID SET** Drawn By Checked By GLG MJP Drawing Title CONTROL SCHEMATICS



1 HEATING HOT WATER CONTROLS SCHEMATIC - NEW WORK



CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605 CPLteam.com NC ENGINEERING FIRM LICENSE NO. C-2194

PROJECT INFORMATION Project Number R23.00487.00

JOHNSTON COUNTY PUBLIC **SCHOOLS** CLEVELAND ELEMENTARY

SCHOOL HVAC RENOVATION

Project Address 10225 CLEVELAND RD.

CLAYTON, NC 27520

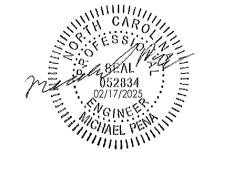
PROJECT ISSUE & REVISION SCHEDULE

w Date Description

2 1/2" BYPASS **2 1/2**" BYPASS CONTROL VALVE **KEY NOTES:** HIGH CAPACITY FLOAT-TYPE AIR VENT (TYPICAL) 1) INSTALL SHUT-OFF VALVE NO MORE THAN 6'-0" ABOVE BOILER ROOM FLOOR. ─ RPZ BACKFLOW PREVENTER \_1" COLD WATER PROVIDE INLINE MAKE-UP UNION (TYPICAL) -MAKE-UP WATER METER WITH ANALOG
DISPLAY AND CONNECTION
TO BMS.

PRESSURE REDUCING VALVE
SET AT 4 PSIG HIGHER THAN
PRESSURE AT HIGH POINT - CONNECT TO SIDE OF MAIN 6"\_\_ 3/4" DRAIN VALVE WITH HOSE CONNECTION— PROVIDE BOILER MANUFACTURER'S CONTROL VALVE AND INTERLOCK WITH BOILER OPERATION THROUGH THE BOILER'S CONTROL SYSTEM. A MINIMUM OF ONE VALVE SHALL BE OPEN AT ALL TIME TO PROTECT PUMPS - INCLUDING WHEN BOILERS ARE DISABLED. TYPICAL. PRESSURE GAUGE AIR VENT (TYPICAL) — AUTO FLOW CONTROL VALVE (5 GPM) TYPICAL MAGNETIC CARTRIDGE FILTER AND CHEMICAL SECONDARY LOW WATER CUT-OFF LOCK SHIELD BALL VALVE POT FEEDER **WITH MANUAL** RESET TYPICAL THERMOMETER TYPICAL --4"Ø PIGTAIL TRAP. ROUTE - 3/4" DRAIN VALVE TO CONDENSATE WITH HOSE 3/4" ROUTE TO DRAIN **NEUTRALIZATION KIT.** CONNECTION TYPICAL. NON-SLAM TYPE CHECK VALVE, TYPICAL — ROUTE THE CONDENSATE DRAINS FROM THE EACH BOILERS THROUGH CONDENSATE NEUTRALIZATION KIT TO THE FLOOR DRAIN.

PROFESSIONAL STAMPS



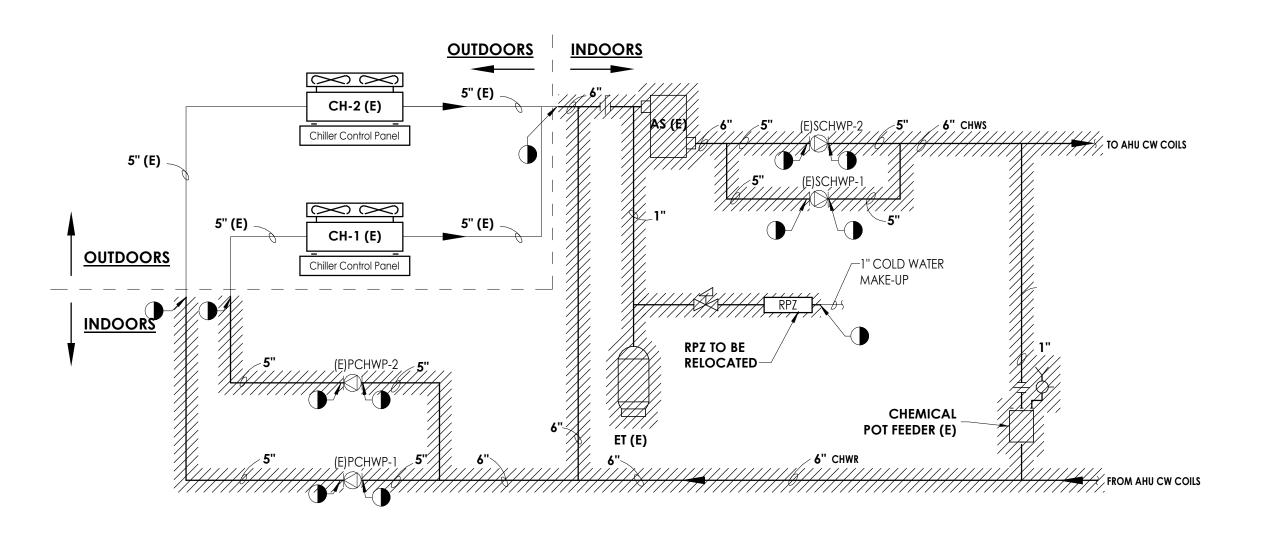
SHEET INFORMATION

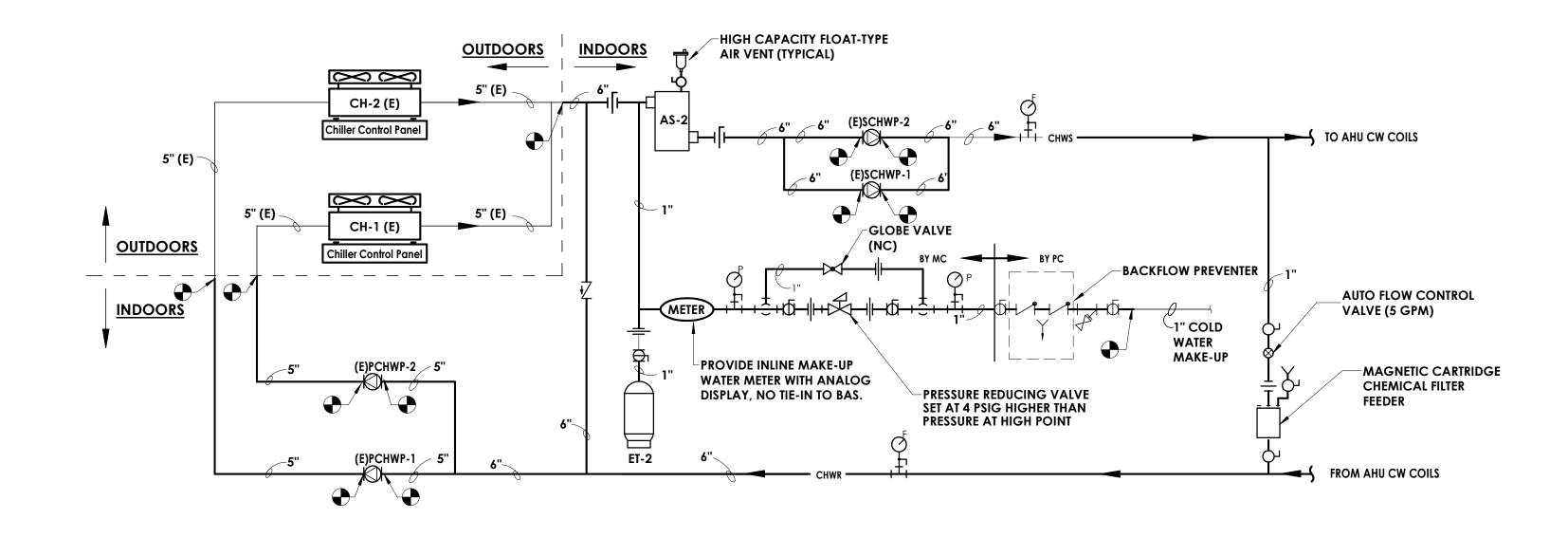
02/17/2025 NOT TO SCALE Project Status BID SET Drawn By Checked By GLG Drawing Title

BOILER PIPING AND CONTROLS SCHEMATICS

Drawing Number

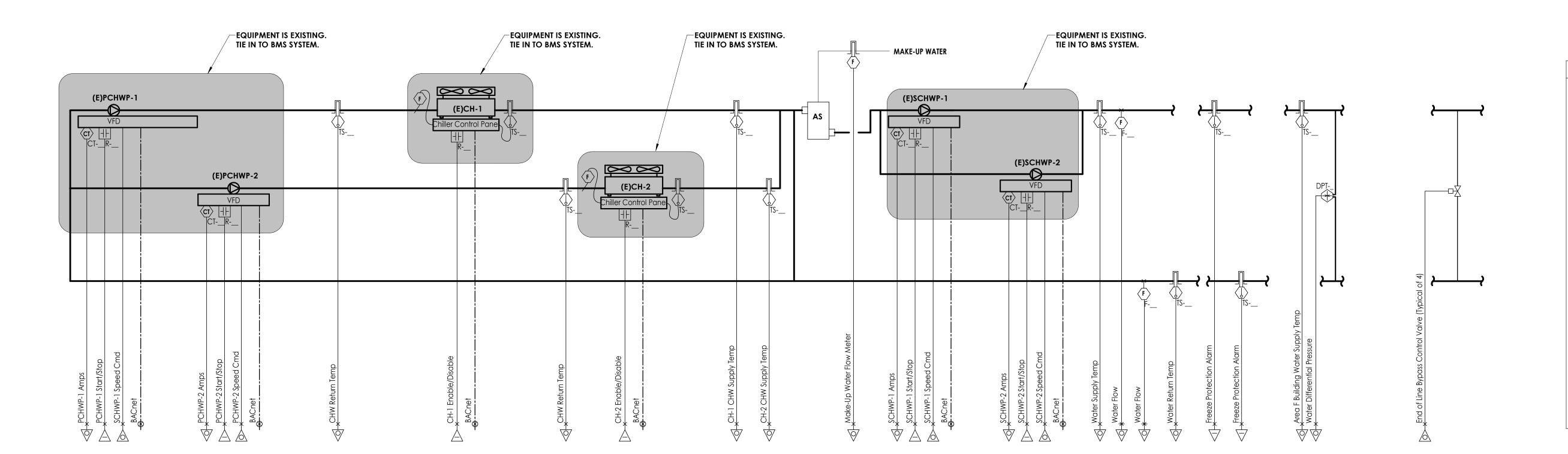
HEATING HOT WATER PIPING SCHEMATIC - NEW WORK





2 CHILLED WATER PIPING SCHEMATIC - DEMOLITION
NTS

CHILLED WATER PIPING SCHEMATIC - NEW WORK



SYMBOL	DESCRIPTION
*	BACNET CONNECTION (WITH BUILDING MANAGEMENT SYSTEM)
*	ANALOG OUTPUT (FROM BUILDING MANAGEMENT SYSTEM)
*	DIGITAL OUTPUT (FROM BUILDING MANAGEMENT SYSTEM)
*	ANALOG INPUT (TO BUILDING MANAGEMENT SYSTEM)
	DIGITAL INPUT (TO BUILDING MANAGEMENT SYSTEM)
$\otimes$	BALANCE VALVE
又	CONTROL/SOLENOIND VALVE, ELECTRIC 2-WAY
	CONTROL VALVE, ELECTRIC 3-WAY
<b>(</b> □ <b>7</b>	CURRENT TRANSDUCER
*	DIFFERENTIAL PRESSURE TRANSMITTER
F	FLOW TRANSMITTER
	TEMPERATURE SENSOR
HF	relay contacts
	PUMP, INLINE OR BASE MOUNTED

3 CHILLED WATER CONTROLS SCHEMATIC - NEW WORK
NOT TO SCALE

CPL | Architecture Engineering Planning
1620 Hillsborough Street Suite A,
Raleigh, NC 27605
CPLteam.com



PROJECT INFORMATION

Project Number
R23.00487.00
Client Name
JOHNSTON COUNTY PUBLIC
SCHOOLS
Project Name
CLEVELAND ELEMENTARY

SCHOOL HVAC RENOVATION

Project Address 10225 CLEVELAND RD. CLAYTON, NC 27520

PROJECT ISSUE & REVISION SCHEDULE

w Date Description

PROFESSIONAL STAMPS

CARO

CARO

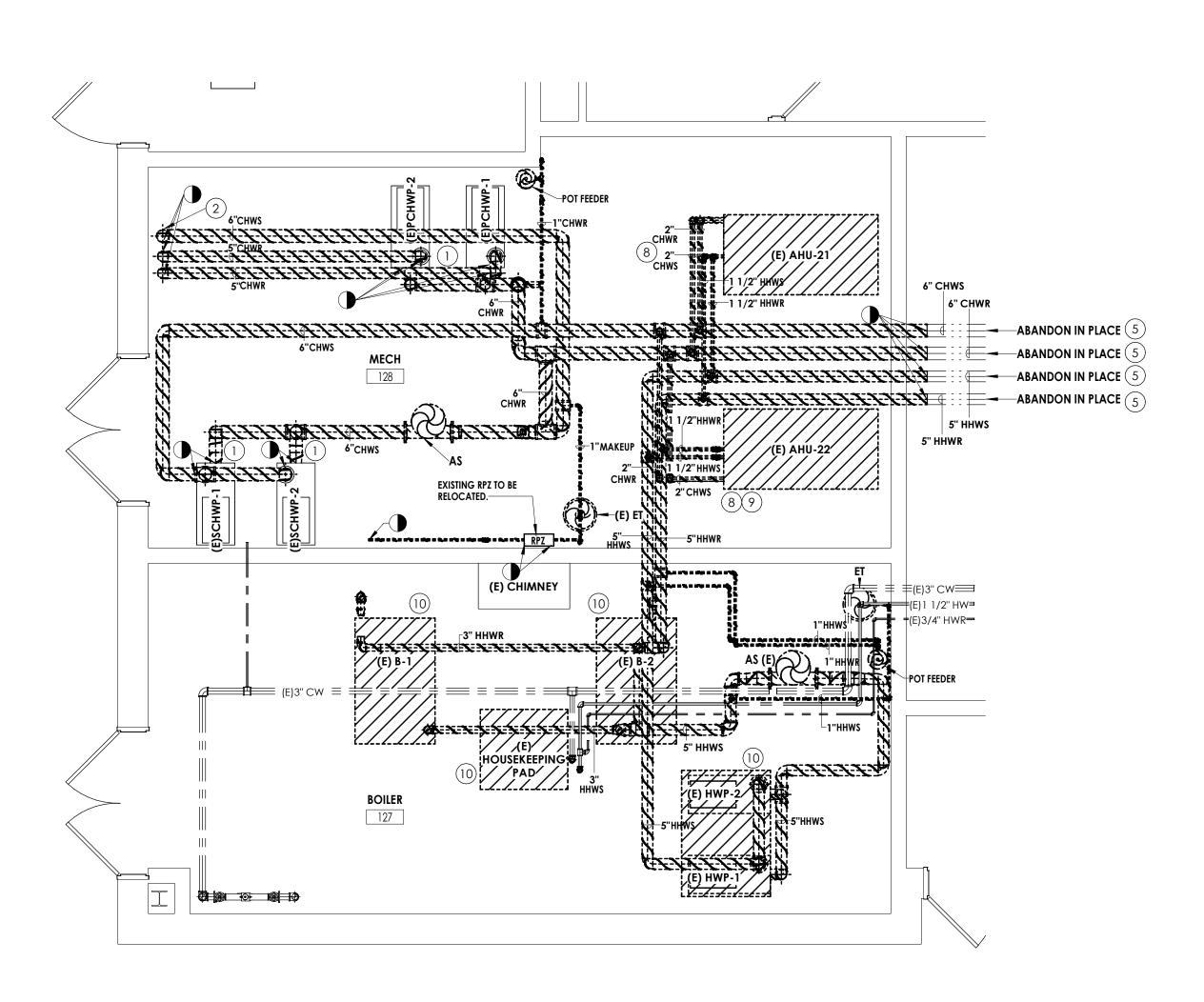
SEESS

OS2834

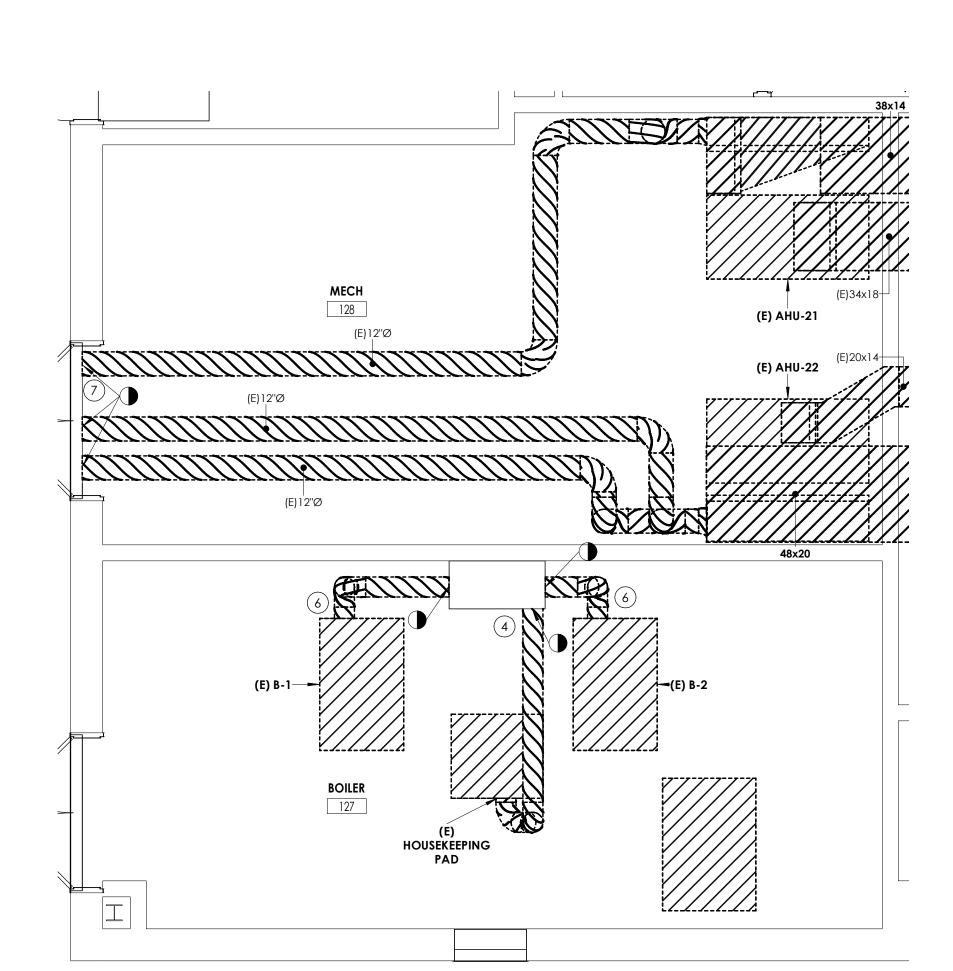
OS2/17/2025

VOINTER

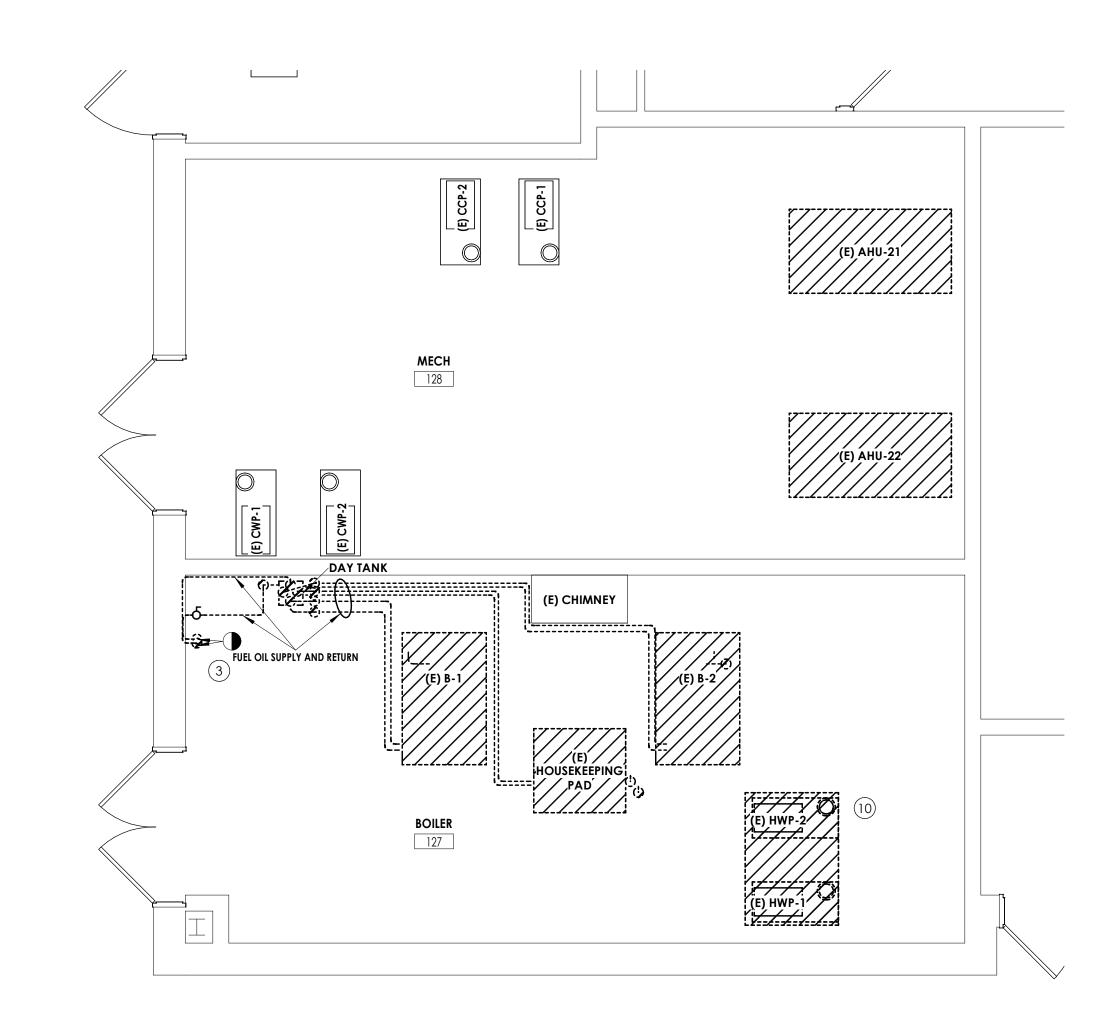
Issued Scale
02/17/2025 As indicated
Project Status
BID SET
Drawn By Checked By
GLG MJP
Drawing Title
CHILLED WATER DEMOLITION
AND NEW WORK



1 ENLARGED MECHANICAL ROOM PIPING DEMOLITION PLAN



3 ENLARGED MECHANICAL ROOM DUCTWORK DEMOLITION PLAN
1/4" = 1'-0"



2 ENLARGED MECHANICAL ROOM FUEL OIL PIPING DEMOLITION PLAN
1/4" = 1'-0"

## KEY NOTES

- 1 REMOVE PUMP PIPING ACCESSORIES AND PREPARE FOR NEW ACCESSORIES.
- 2 EXISTING CHILLED WATER PIPE HANGERS AND SUPPORTS IN 128-MECH SHALL REMAIN FOR REUSE WITH NEW CHILLED WATER PIPING.
- REMOVE AND DISPOSE OF FUEL OIL PIPING, SUPPORTS AND METAL PLATE COVERS IN THE BOILER ROOM. CAP PIPING FROM OUTSIDE TANK AT FLOOR
- 4 REMOVE AND DISPOSE OF ABANDONED FUEL OIL WATER HEATER AND FLUE
- DUCT TO THE CHIMNEY. SEAL AND CAP CONNECTION AT CHIMNEY.

  (5) CHWS. CHWR. HHWS. HHWR. MAINS TO BE ARANDONED AROVE EXISTING.
- 5 CHWS, CHWR, HHWS, HHWR MAINS TO BE ABANDONED ABOVE EXISTING CEILINGS. DRAIN FLUID. CAP WHERE CUT. TAG AS ABANDONED AT ACCESSIBLE LOCATION.

(6) REMOVE AND DISPOSE OF EXISTING FUEL OIL BOILERS AND EXHAUST DUCT. CAP

- AND SEAL THE ABANDONED CHIMNEYCONNECTION.

  (7) EXISTING LOUVER TO REMAIN. PATCH OPENING BEHIND LOUVER WITH TWO INCHES OF POLYISOCYANURATE INSULATION BETWEEN TWO LAYERS OF 22-
- GAUGE SHEETMETAL. SEAL WEATHER TIGHT WITH SILICONE CAULK.

  8 REMOVE AND DISPOSE OF AIR HANDLING UNIT PIPING AND ACCESSORIES. EXISTING CONCRETE PADS TO REMAIN FOR REUSE WITH NEW AIR HANDLING
- (9) CUT AND DISASSEMBLE AS NECESSARY TO REMOVE UNIT FROM BUILDING.
- (10) REMOVE HOUSEKEEPING PAD, PATCH TO MATCH EXISTING MATERIALS AND MAKE SURFACE LEVEL TO EXISTING FLOOR.

NC ENGINEERING FIRM LICENSE NO. C-2194

CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605

CPLteam.com

PROJECT INFORMATION
Project Number
R23.00487.00

JOHNSTON COUNTY PUBLIC SCHOOLS

SCHOOLS

Project Name

CLEVELAND ELEMENTARY

SCHOOL HVAC RENOVATION

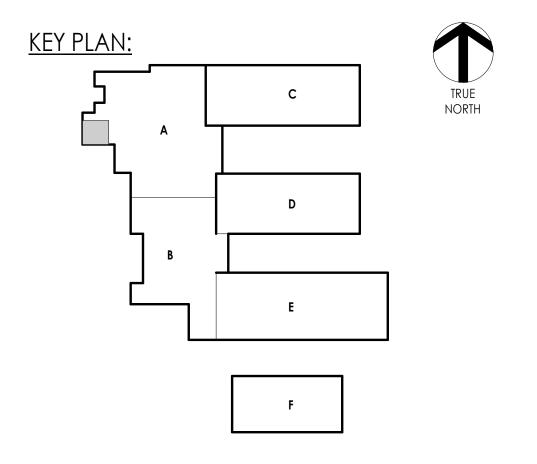
Project Address 10225 CLEVELAND RD.

CLAYTON, NC 27520

w Date Description

PROFESSIONAL STAMP





SHEET INFORMATION

Issued Scale
02/17/2025 As indicated

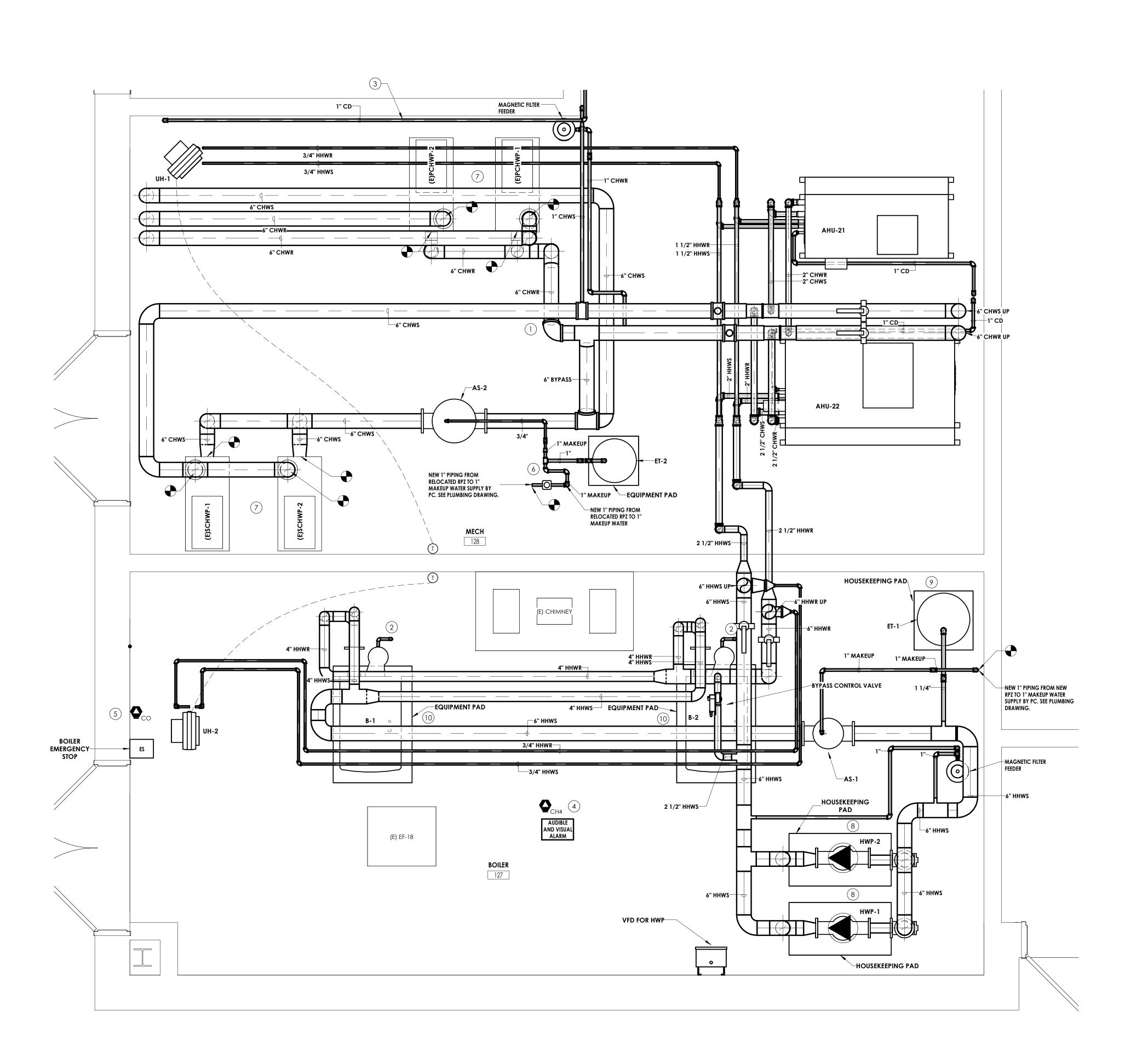
Project Status
BID SET
Drawn By Checked By
GLG MJP

Drawing Title

ENLARGED MECHANICAL
DEMOLITION PLANS

Drawing Number

1700



ENLARGED MECHANICAL ROOM PIPING NEW WORK PLAN

## KEY NOTES

- 1) NEW CHILLED WATER PIPING IN 128-MECH SHALL FOLLOW THE ROUTING OF THE DEMOLISHED PIPING. MODIFY AND REUSE EXISTING PIPING SUPPORTS AS NECESSARY.
- (2) ROUTE CONDENSATE TO FLOOR DRAIN. PROVIDE MANUFACTURER'S RECOMMENDED CONDENSATE NEUTRALIZER.
- (3) FC-11 1-INCH CONDENSATE PIPE DOWN TO EXISTING FLOOR DRAIN.
- MOUNT CH4 (METHANE) DETECTOR 6 INCHES BELOW CEILING. DETECTOR SHALL TRIGGER AUDIBLE AND VISUAL ALARM INSIDE THE BOILER ROOM AS WELL AS SEND ALARM SIGNAL TO THE BAS.
- (5) MOUNT CO (CARBON MONOXIDE) DETECTOR 60 INCHES A.F.F. DETECTOR SHALL TRIGGER AUDIBLE AND VISUAL ALARM INSIDE AND OUTSIDE OF THE BOILER ROOM AS WELL AS SEND ALARM SIGNAL TO THE BAS.
- (6) RELOCATE EXISTING RPZ TO ACCOMONDATE NEW DUCTWORK. EXTEND COLD WATER PIPING TO NEW LOCATION.
- 7) PROVIDE NEW VALVES AND ACCESSORIES FOR THE EXISTING PUMPS PER THE BASE MOUNTED PUMP DETAIL 10 / H801.
- (8) INDEPENDENTLY SUPPORT NEW INLINE PUMPS ON NEW REINFORCED
- 9) SUPPORT NEW EXPANSTION TANK ON NEW REINFORCED CONCRETE HOUSEKEEPING PAD.

CONCRETE HOUSEKEEPING PAD.

(10) SUPPORT NEW BOILER ON NEW REINFORCED CONCRETE HOUSEKEEPING PAD.



CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A,

Raleigh, NC 27605

CPLteam.com

PROJECT INFORMATION Project Number

R23.00487.00

JOHNSTON COUNTY PUBLIC SCHOOLS Project Name

CLEVELAND ELEMENTARY SCHOOL HVAC RENOVATION

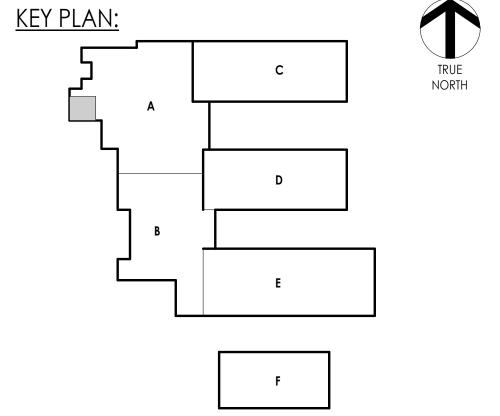
Project Address 10225 CLEVELAND RD. CLAYTON, NC 27520

PROJECT ISSUE & REVISION SCHEDULE

w Date Description

PROFESSIONAL STAMPS

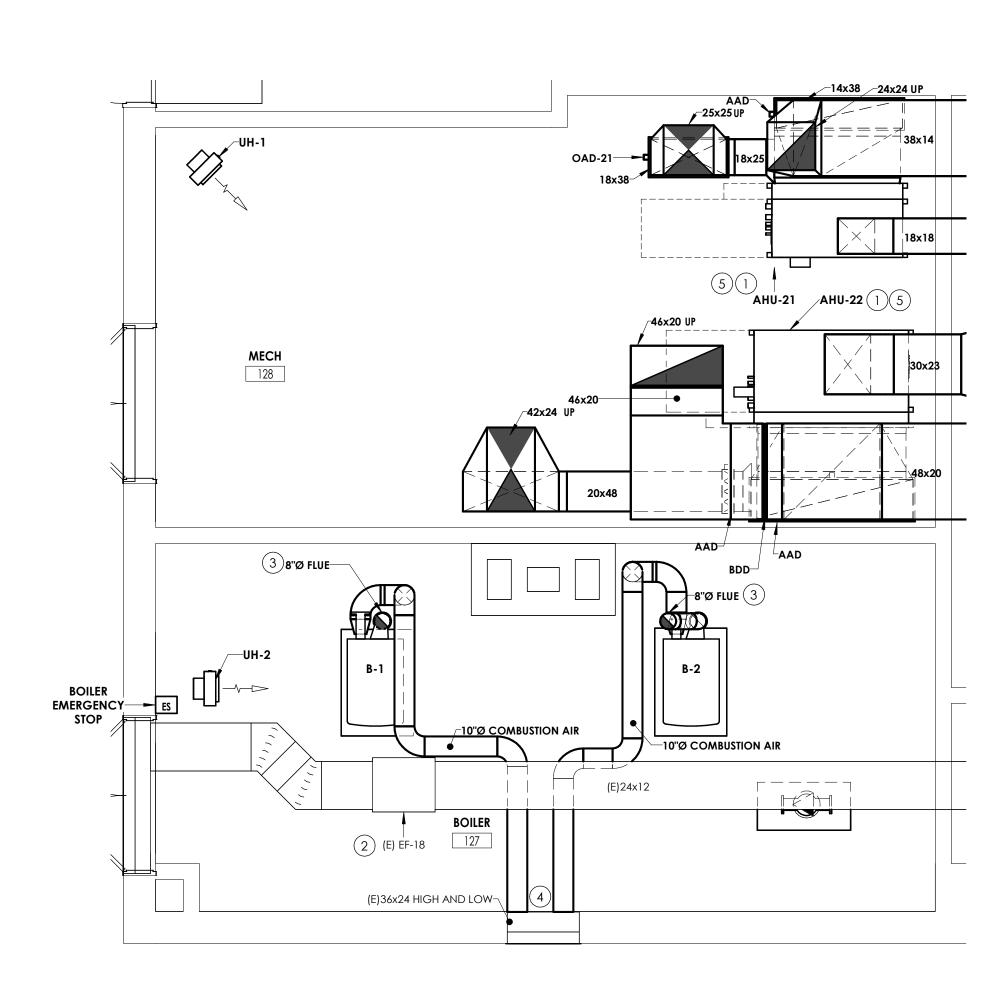




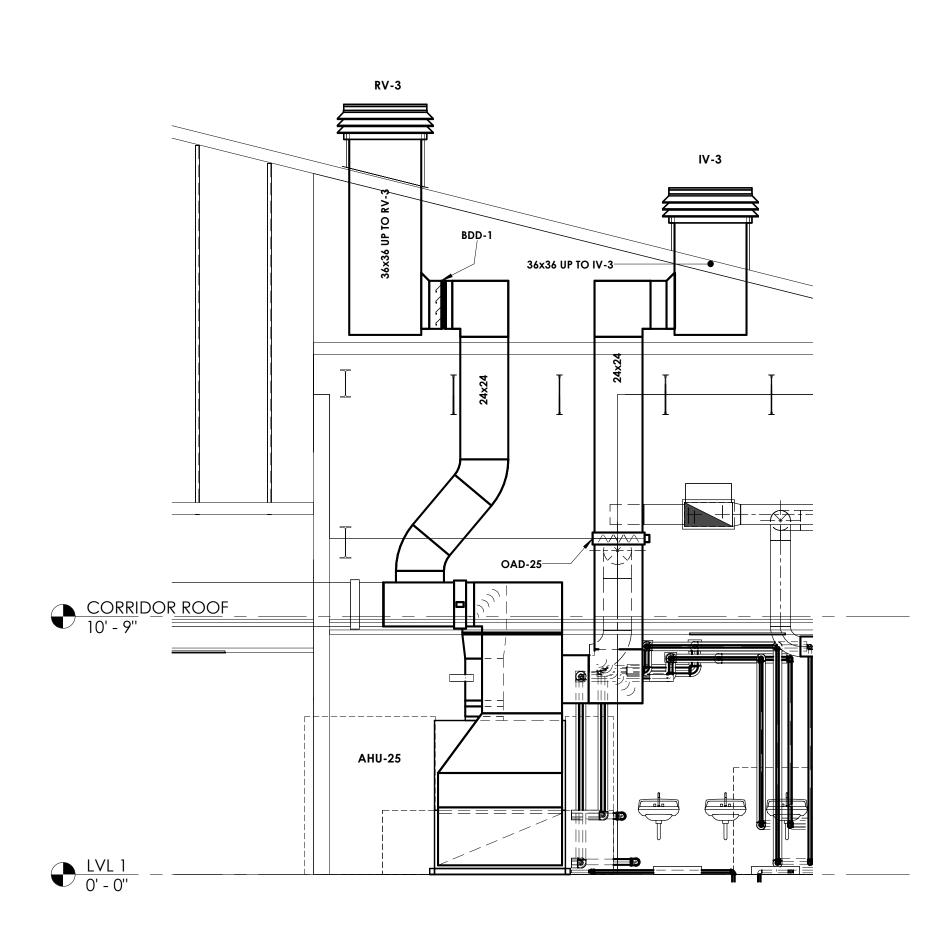
SHEET INFORMATION 02/17/2025 As indicated Project Status

BID SET

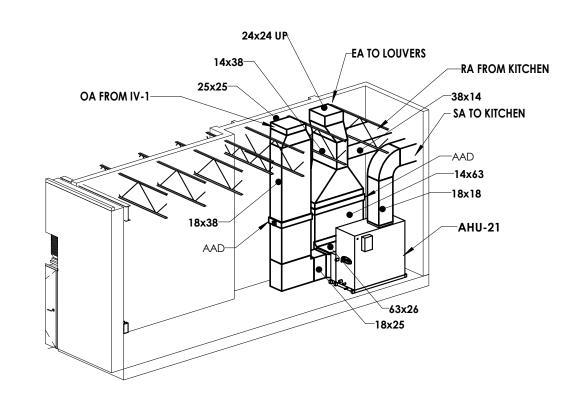
ENLARGED MECHANICAL ROOM PIPING NEW WORK PLAN



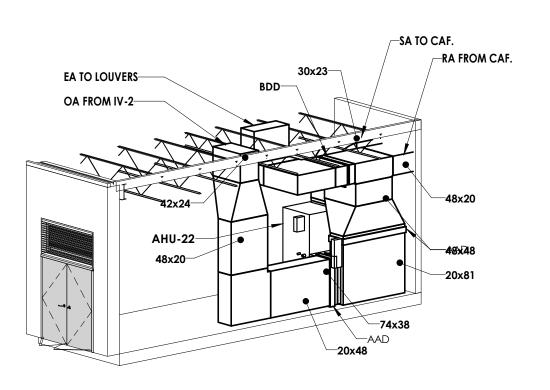
1 ENLARGED MECHANICAL ROOM DUCTWORK NEW WORK PLAN



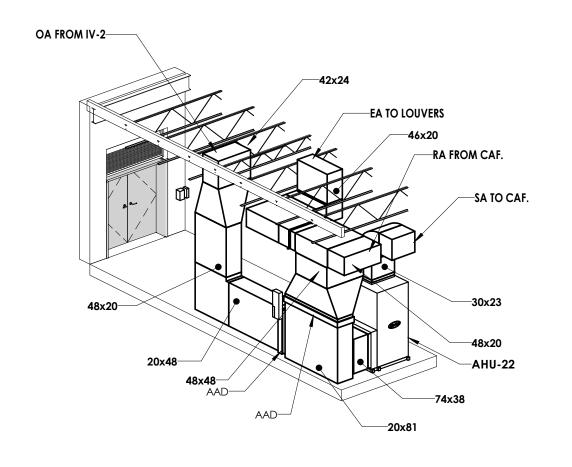
2 AHU-25 SECTION VIEW
H702 1/4" = 1'-0"



3 AHU-21 DUCTWORK NORTH SIDE OF MECH ROOM 127



4 AHU-22 DUCTWORK - SOUTH SIDE OF ROOM 127



5 AHU-22 DUCTWORK SOUTH SIDE OF ROOM 127

## KEY NOTES

- PROVIDE NEW AIR HANDLING UNIT AND SPRING ISOLATION. COORDINATE SPRING ISOLATOR LOCATION WITH EXISTING CONCRETE PAD. MODIFY DUCTWORK AS NECESSARY FOR NEW UNIT INSTALLATION.
- 2 PROVIDE EQUIPMENT CONTROLLER AND INTEGRATE INTO NEW BUILDING AUTOMATION SYSTEM.
- 8" FLUE UP THROUGH ROOF. SEAL WATER TIGHT AT BOTH ATTIC FLOOR AND EXISTING METAL ROOF.
- EXISTING LOUVERS TO REMAIN. PATCH BEHIND LOWER LOUVER WITH 22-GAUGE SHEET METAL. SEAL WEATHER TIGHT WITH SILICONE CAULK. PATCH BEHIND THE UPPER LOUVER WITH THE SAME MATERIALS DESCRIBED ABOVE LEAVING AN EIGHT-INCH DEEP PLENUM. CONNECT COMBUSTION AIR INTAKES TO THE UPPER PLENUM.
- (5) INSTALL 12" X 12" ACCESS DOOR IN RETURN DUCT FOR COIL ACCESS.





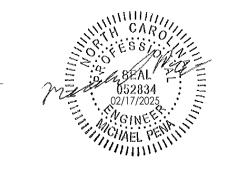
PROJECT INFORMATION
Project Number
R23.00487.00

JOHNSTON COUNTY PUBLIC
SCHOOLS
Project Name

CLEVELAND ELEMENTARY SCHOOL HVAC RENOVATION

Project Address 10225 CLEVELAND RD. CLAYTON, NC 27520

PROFESSIONAL STAM



KEY PLAN:

C

TRUE

NORTH

F

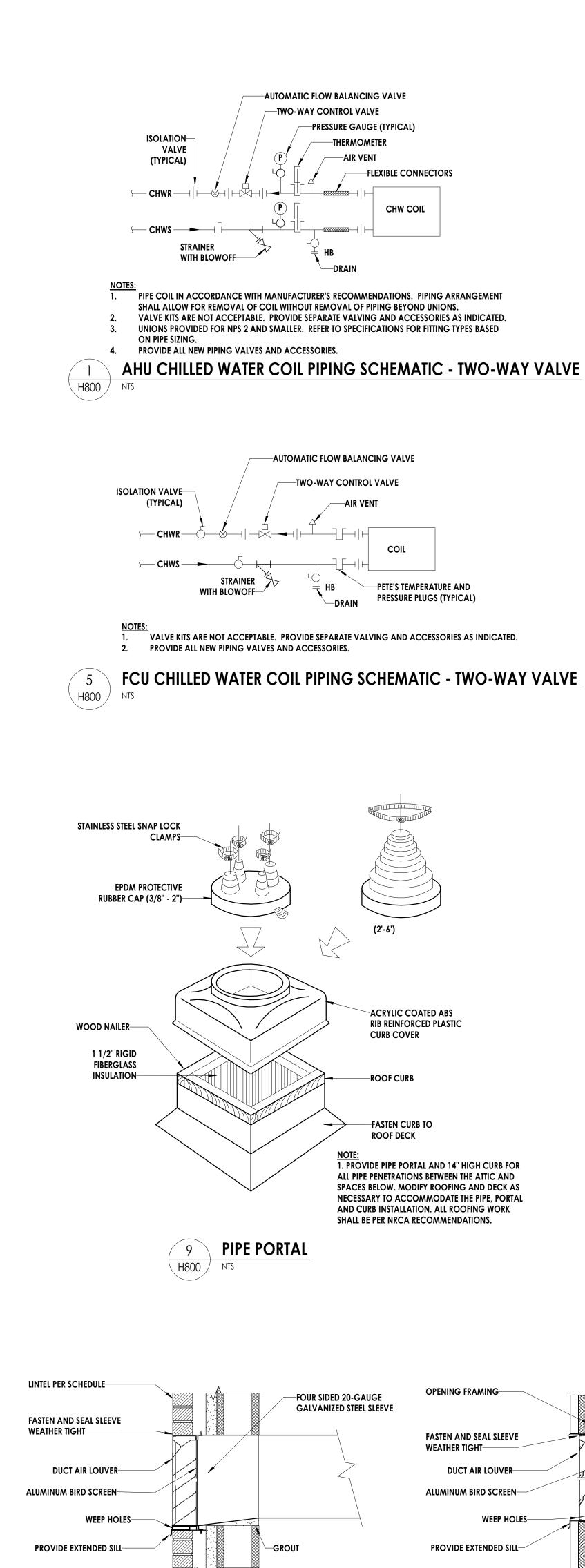
SHEET INFORMATION

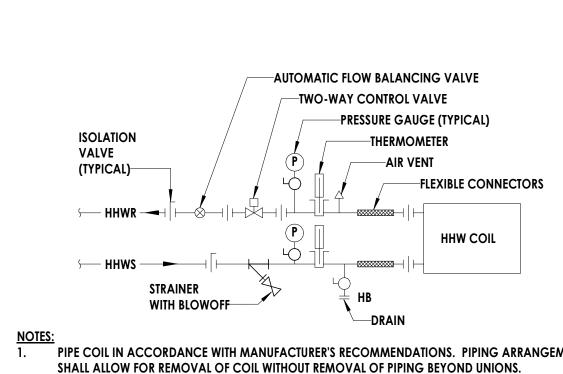
Issued Scale
02/17/2025 As indicated
Project Status
BID SET

GLG MJP
Drawing Title
ENLARGED MECHANICAL ROOM
DUCTWORK NEW WORK PLAN

Drawing Number

H702





PIPE COIL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. PIPING ARRANGEMENT SHALL ALLOW FOR REMOVAL OF COIL WITHOUT REMOVAL OF PIPING BEYOND UNIONS. VALVE KITS ARE NOT ACCEPTABLE. PROVIDE SEPARATE VALVING AND ACCESSORIES AS INDICATED. UNIONS PROVIDED FOR NPS 2 AND SMALLER. REFER TO SPECIFICATIONS FOR FITTING TYPES BASED ON

PROVIDE ALL NEW PIPING VALVES AND ACCESSORIES. AHU HOT WATER COIL PIPING SCHEMATIC - TWO-WAY VALVE

NOTES:

1. VALVE KITS ARE NOT ACCEPTABLE. PROVIDE SEPARATE VALVING AND ACCESSORIES AS INDICATED.

FCU HOT WATER COIL PIPING SCHEMATIC - TWO-WAY VALVE

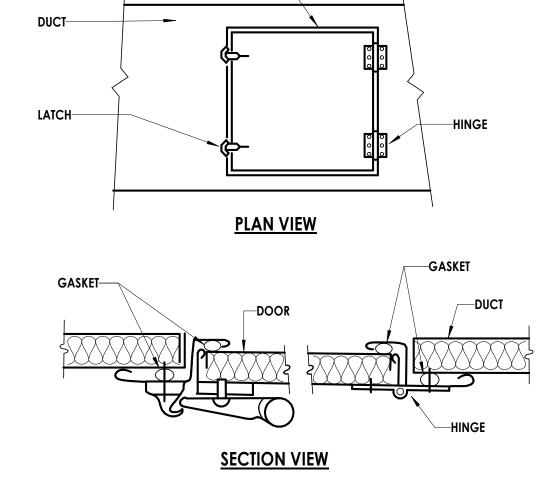
—AUTOMATIC FLOW BALANCING VALVE

TWO-WAY CONTROL VALVE

COIL

—PETE'S TEMPERATURE AND

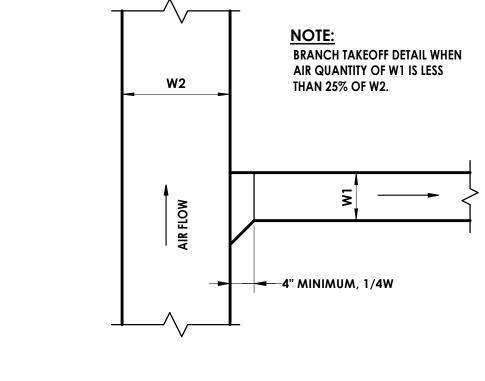
PRESSURE PLUGS (TYPICAL)



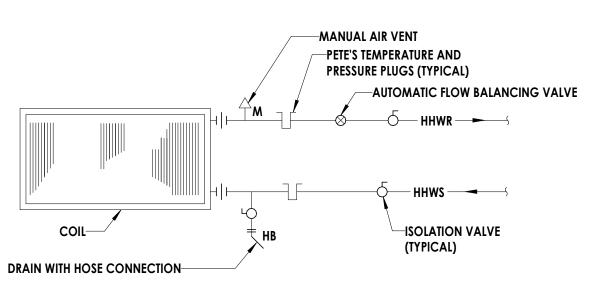
**ACCESS DOOR DETAIL** 

H800 NOT TO SCALE

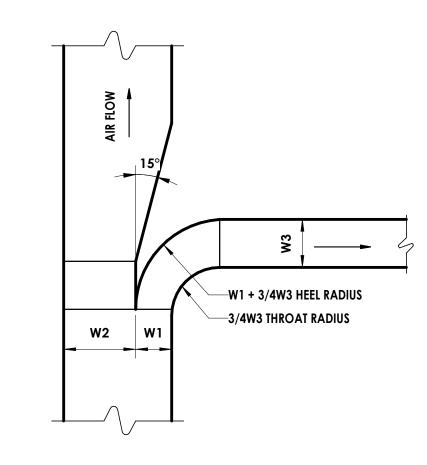
GASKETED-



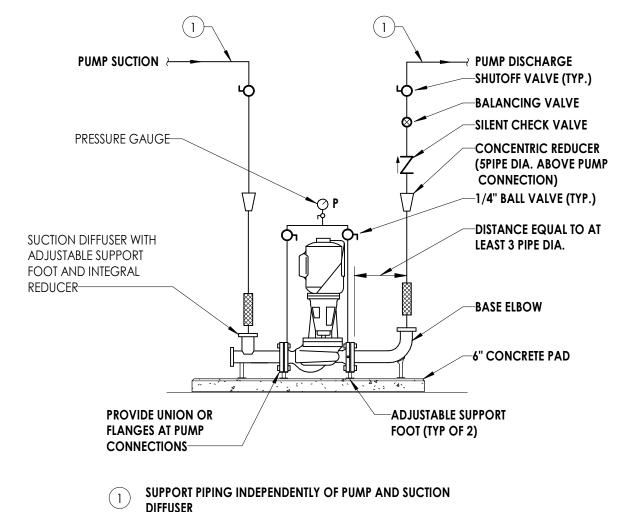
**BRANCH TAKE-OFF DETAIL** H800 NOT TO SCALE



UNIT HEATER/CABINET UNIT HEATER PIPING SCHEMATIC H800



MAIN BRANCH TAKE-OFF DETAIL H800 NOT TO SCALE



ISOLATION VALVE—

(TYPICAL)

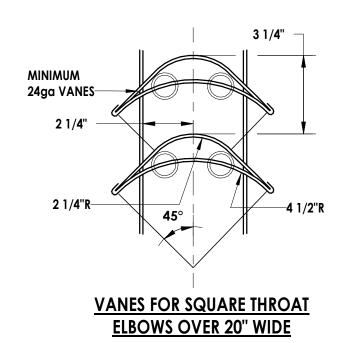
WITH BLOWOFF

2. PROVIDE ALL NEW PIPING VALVES AND ACCESSORIES.

GENERIC SYMBOLS USED TO SHOW VALVE LOCATION(S) REFER TO SPECIFICATION FOR EXACT VALVE TYPE.

NOT TO SCALE

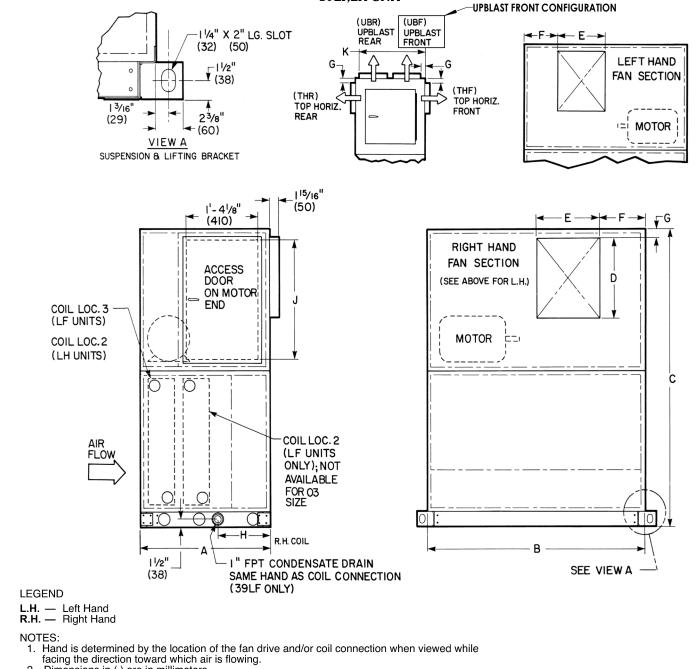
FLOOR MOUNTED INLINE PUMP



24ga VANES VANES FOR SQUARE THROAT **ELBOWS THRU 20" WIDE** 

**— 2 1/8**"

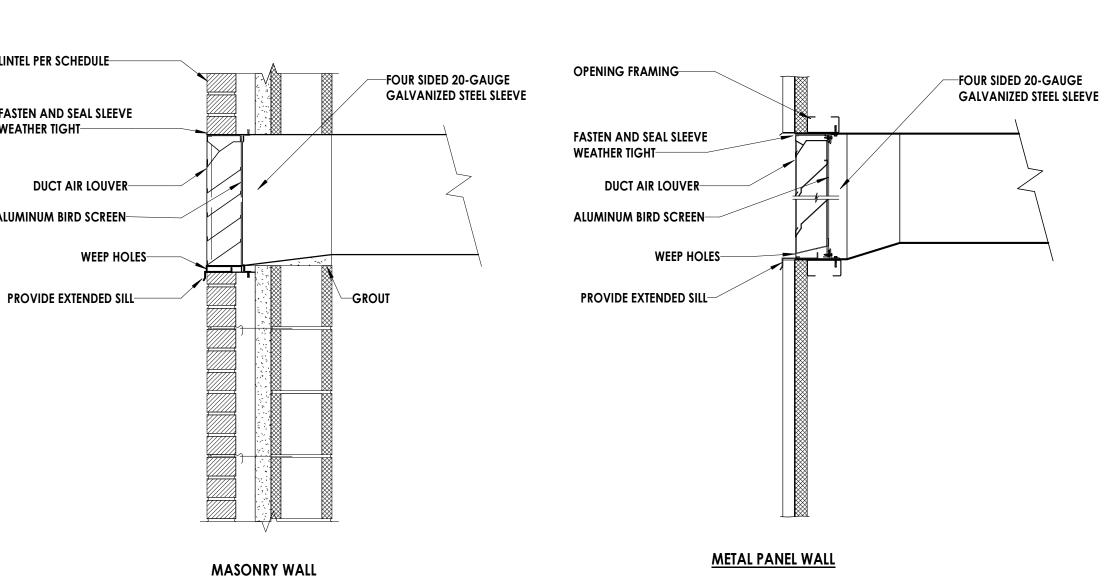
TYPICAL TURNING VANE DETAIL NOT TO SCALE



39LF,LH UNIT

facing	the direction		h air is flowin		coil connection	when viewed	while			
Z. Dilliel	1310113 111 ( ) 6		iers.	DI	MENSIONS	(ft-in.)				
UNIT 39LF,LH	Α	В	С	D	Е	F	G	н	J	ŀ
03	1-91/4	3-1 <sup>7</sup> / <sub>8</sub>	3-91/2	1-23/16	0- 93/8	0- 79/16	0-13/4	0- 313/16	1-43/4	1- 7
06	2-1 <sup>3</sup> / <sub>16</sub>	3-93/4	4-5 <sup>5</sup> / <sub>16</sub>	1-313/16	1- 05/16	1-10	0-13/4	0- 73/4	1-811/16	1-11
08	2-5 <sup>1</sup> / <sub>8</sub>	4-111/16	5-11/4	1-41/2	1- 2	0-101/4	0-13/4	0-1111/16	2-05/8	2- 3
10	2-5 <sup>1</sup> / <sub>8</sub>	4-9 <sup>9</sup> / <sub>16</sub>	5-1 <sup>1</sup> / <sub>4</sub>	1-81/2	1- 29/16	1- 13/4	0-13/4	0-11 <sup>11</sup> / <sub>16</sub>	2-0 <sup>5</sup> / <sub>8</sub>	2- 3
12	2-5 <sup>1</sup> / <sub>8</sub>	5-5 <sup>1</sup> / <sub>16</sub>	5-1 <sup>1</sup> / <sub>4</sub>	1-53/4	1- 61/2	1- 2	0-13/4	0-1111/16	2-0 <sup>5</sup> / <sub>8</sub>	2- 3
15	3-1	5-5 <sup>1</sup> / <sub>16</sub>	6-4 <sup>15</sup> / <sub>16</sub>	2-01/2	1- 615/16	1- 3 <sup>3</sup> / <sub>8</sub>	0-21/4	0- 313/16	2-8 <sup>1</sup> / <sub>2</sub>	2-10
18	3-4 <sup>15</sup> / <sub>16</sub>	5-5 <sup>1</sup> / <sub>16</sub>	7-0 <sup>13</sup> / <sub>16</sub>	2-5 <sup>5</sup> / <sub>8</sub>	1- 63/8	1- 35/8	0-21/4	0- 313/16	3-0 <sup>7</sup> / <sub>16</sub>	3- 2
21	3-4 <sup>15</sup> / <sub>16</sub>	6-51/4	7-0 <sup>13</sup> / <sub>16</sub>	2-5 <sup>5</sup> / <sub>8</sub>	1-105/8	1- 65/8	0-21/4	0- 313/16	3-0 <sup>7</sup> / <sub>16</sub>	3- 2
25	4-0 <sup>13</sup> / <sub>16</sub>	6-5 <sup>1</sup> / <sub>4</sub>	8-4 <sup>5</sup> / <sub>8</sub>	3-01/2	1- 93/8	1- 6 <sup>13</sup> / <sub>16</sub>	0-23/4	2-7 <sup>3</sup> / <sub>8</sub>	3-8 <sup>5</sup> / <sub>16</sub>	3-10

14 AHU DIMENSIONS H800 NOT TO SCALE



FLEXIBLE CONNECTORS

**CHW COIL** 

COIL

PRESSURE PLUGS (TYPICAL)

ACRYLIC COATED ABS RIB REINFORCED PLASTIC

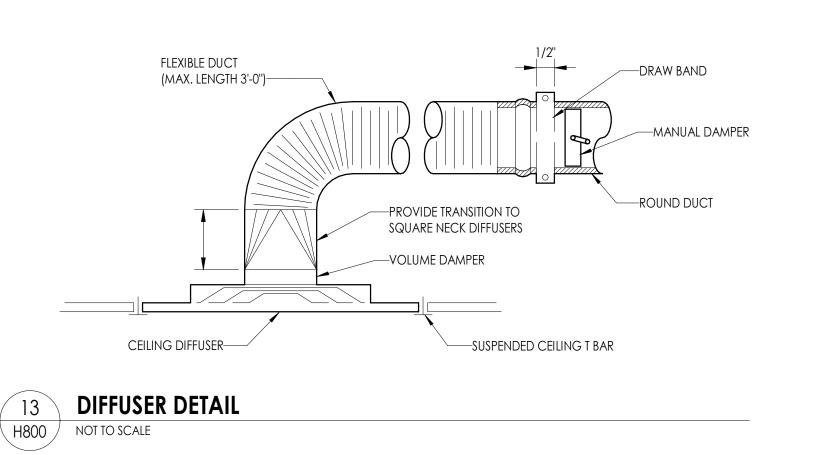
CURB COVER

-ROOF CURB

FASTEN CURB TO **ROOF DECK** 

1. PROVIDE PIPE PORTAL AND 14" HIGH CURB FOR

ALL PIPE PENETRATIONS BETWEEN THE ATTIC AND



12 LOUVER THROUGH WALL SECTION H800 NOT TO SCALE

H800

CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605 CPLteam.com NC ENGINEERING FIRM LICENSE NO. C-2194

PROJECT INFORMATION Project Number R23.00487.00 JOHNSTON COUNTY PUBLIC SCHOOLS

10225 CLEVELAND RD.

CLAYTON, NC 27520

CLEVELAND ELEMENTARY

SCHOOL HVAC RENOVATION

Project Name

PROJECT ISSUE & REVISION SCHEDULE

PROFESSIONAL STAMPS

SHEET INFORMATION 02/17/2025 As indicated Project Status **BID SET** Drawn By Checked By GLG Drawing Title

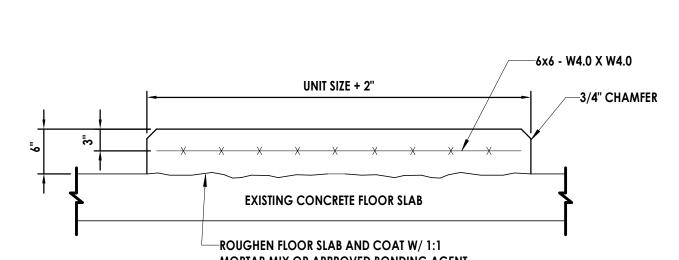
Drawing Number

DETAILS 1

**SCHEDULE NOTES:** 1. PROVIDE LINTELS OVER ALL MASONRY OPENINGS AS SCHEDULED UNLESS NOTED OTHERWISE ON THE DRAWINGS.

- 2. MINIMUM BEARING FOR ALL LINTELS SHALL BE 8" EACH END. 3. GROUT SOLID AREA 16" W x 24" H BELOW BEARING UNLESS NOTED OTHERWISE ON
- THE DRAWINGS. 4. COORDINATE MASONRY OPENING SIZES AND LOCATIONS WITH ARCHITECTURAL, MECHANICAL AND PLUMBING DRAWINGS.
- 5. CONTRACTOR SHALL PROVIDE AN ADDITIONAL 50 FEET OF L5x3-1/2x5/16 ANGLE. 6. FOR MASONRY OPENING SPANS GREATER THAN 6'-0", BOLT ASSEMBLIES
- TOGETHER AT 1/3 POINTS. 7. FOR ALL W AND WT SHAPE LINTELS, PROVIDE A 1/2x5x7 BEARING PLATE WITH (2)
- 1/2" DIAMETER x 6" LONG HEADED STUDS, EACH END. 8. STEEL LINTELS EXPOSED TO THE EXTERIOR SHALL BE GALVANIZED UNLESS NOTED OTHERWISE.

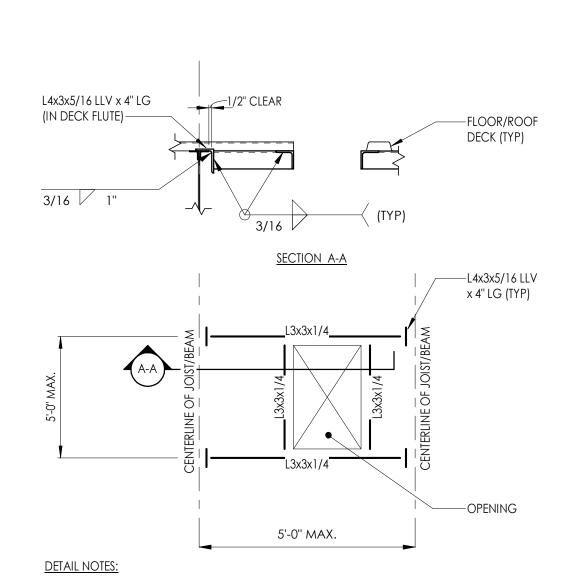




MORTAR MIX OR APPROVED BONDING AGENT INTERIOR PAD DETAIL FOR LOCATION ON EXISTING CONCRETE FLOOR

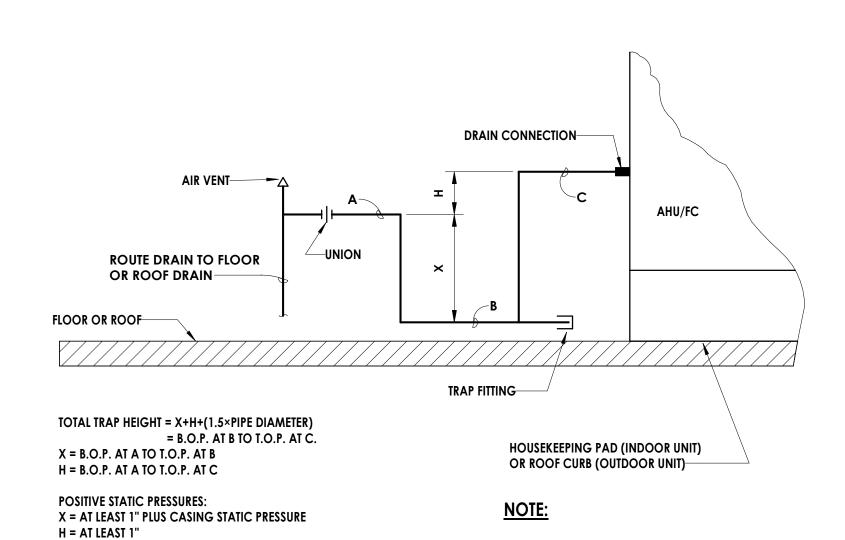
COORDINATE UNIT SIZE WITH EQUIPMENT SELECTED. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI.

HOUSEKEEPING PAD



1. THE ABOVE STEEL SIZES SHALL BE USED UNLESS NOTED OTHERWISE ON THE PLANS. 2. CONTRACTOR TO COORDINATE EQUIPMENT AND OPENING SUPPORTS WITH MECHANICAL CONTRACTOR AND FINAL APPROVED EQUIPMENT SUBMITTAL.

**ROOF OPENING SUPPORT DETAIL** 



TYPICAL AHU/FC CONDENSATE DRAIN DETAIL

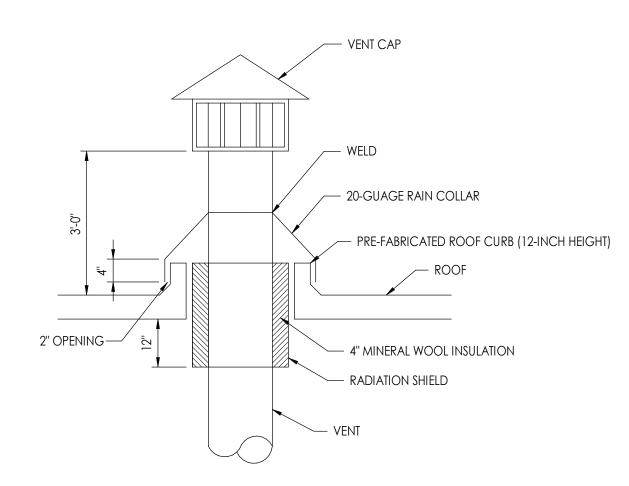
DRAIN PIPING SHALL BE MINIMUM UNIT CONNECTION

SIZE. UNITS 25 TONS AND LARGER SHALL HAVE DRAIN

SLOPE 1/8" PER FOOT

PVC PIPING (ON ROOF)

SIZE ONE PIPE SIZE LARGER THAN DRAIN CONNECTION.



**EXISTING ROOF NOTES:** 

1. ALL BOILER VENT ROOF PENETRATIONS SHALL HAVE CURB AS SHOWN.

**NEGATIVE STATIC PRESSURES:** 

B.O.P. = BOTTOM OF PIPE

T.O.P. = TOP OF PIPE

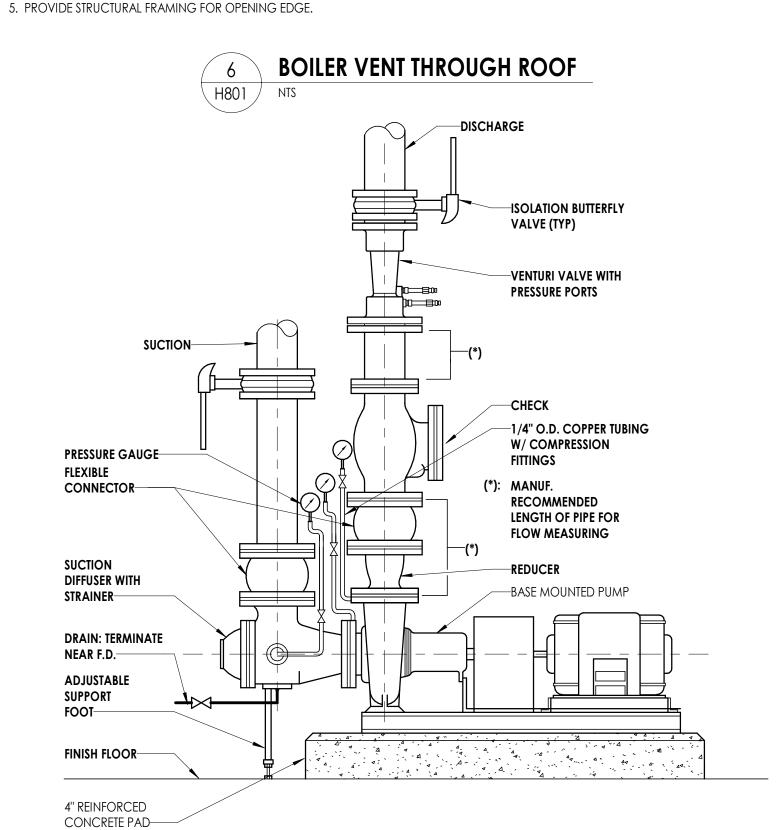
H = AT LEAST 1" PLUS CASING STATIC PRESSURE

- 2. MODIFY THE EXISTING ROOFING AS NECESSARY PER NRCA RECOMMENDATIONS. COORDINATE WITH OWNER AND EXISTING ROOFING MANUFACTURER TO 3. REMOVE EXISTING ROOFING AND ROOF INSULATION DOWN TO EXISTING ROOF DECK AS NECESSARY FOR INSTALLATION OF HVAC CURB. CUT OPENING IN EXISTING ROOF DECK AS NECESSARY FOR INSTALLATION OF HVAC EQUIPMENT CURB AND VENT.
- 4. CRICKET ROOFING AWAY FROM CURB. 5. INSTALLATION OF ALL ROOF MOUNTED MECHANICAL COMPONENTS SHALL CONFORM TO THE STATE BUILDING CODE AND WIND RESTRAINT REQUIREMENTS 6. PROVIDE STRUCTURAL FRAMING FOR OPENING EDGE.

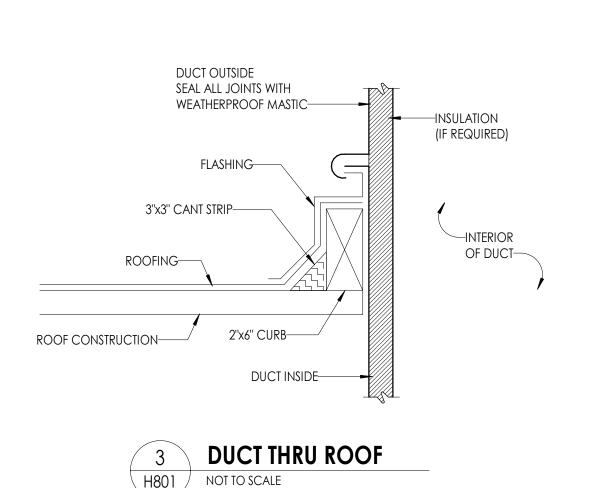
**NEW ROOF NOTES:** 1. ALL BOILER VENT ROOF PENETRATIONS SHALL HAVE CURB AS SHOWN.

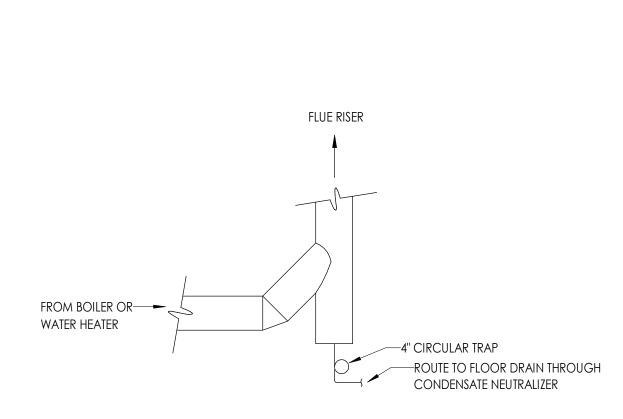
2. INSTALL ROOFING PER NRCA RECOMMENDATIONS. 3. CRICKET AWAY FROM CURB FOR DRAINAGE.

4. INSTALLATION OF ALL ROOF MOUNTED MECHANICAL COMPONENTS SHALL CONFORM TO THE STATE BUILDING CODE AND THE WIND RESTRAINT REQUIREMENTS OF THIS PROJECT.



**EXISTING BASE MOUNTED PUMP** NOT TO SCALE





UNI-STRUT TRANSVERSING AND

TYPICAL 2 PLACES

TYPICAL 4 PLACES

- MECHANICAL EQUIPMENT

INDOOR UNIT SUPPORT INSTALLATION

ATTACHED TO STRUCTURAL STEEL

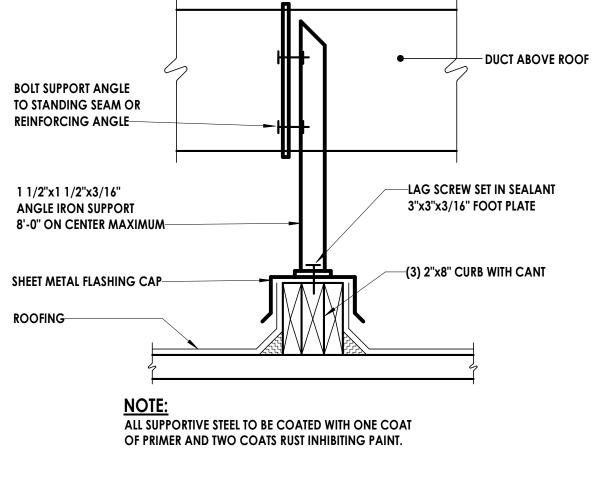
- VIBRATION ISOLATORS SIZED AS

PER UNIT WEIGHT DISTRIBUTION

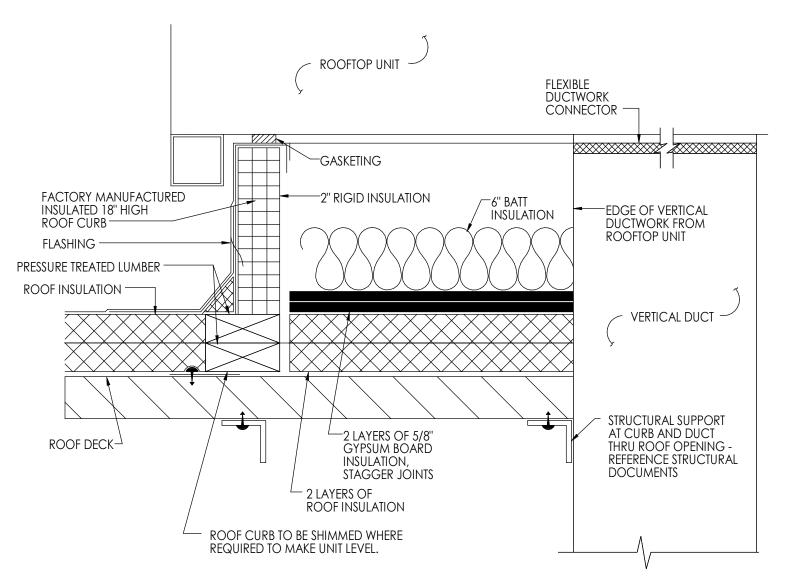
-3/4" THREADED ROD WITH WASHERS

AND DOUBLE NUTS, TYPICAL 4 PLACES

CONDENSING BOILER FLUE RISER DRAIN \ H801



**DUCT SUPPORT CURB** H801 / NOT TO SCALE



ALL ROOFTOP HVAC UNITS TO HAVE CURB AND CURB INTERIOR AS SHOWN. MODIFY ROOFING PER NRCA RECOMMENDATIONS. COORDINATE WITH OWNER AND EXISTING ROOFING MANUFACTURER TO MAINTAIN WARRANTY.
REMOVE EXISTING ROOFING AND ROOF INSULATION DOWN TO EXISTING ROOF DECK AS NECESSARY FOR INSTALLATION OF HVAC EQUIPMENT CURB. CUT OPENING IN EXISTING ROOF DECK AS NECEASSARY FOR INSTALLATION OF HVAC EQUIPMENT CURB, DUCT AND PIPING.

CRICKET ROOFING AWAY FROM CURB. SECURE EQUIPMENT TO CURB WITH CADMIUM PLATED HARDWARE. INSTALLATION OF ALL ROOF MOUNTED MECHANICAL COMPONENTS SHALL CONFORM TO THE STATE BUILDING CODE AND WIND RESTRAINT REQUIREMENTS OF THIS

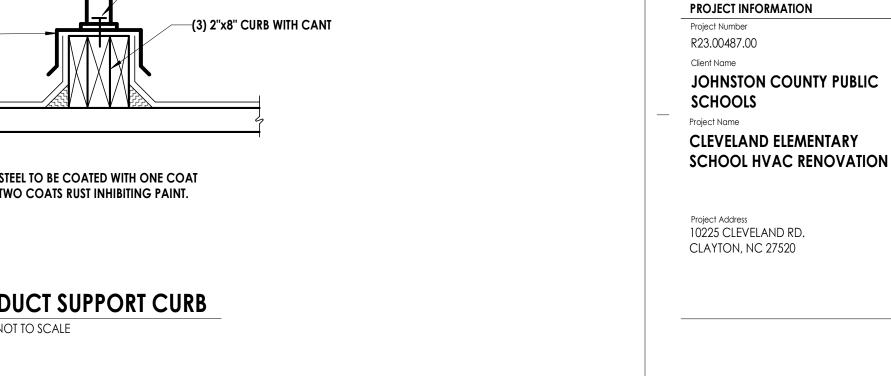
7. PROVIDE STRUCTURAL SUPPORT FOR MECHANICAL EQUIPMENT AND OPENING EDGE.

ALL ROOFTOP HVAC UNITS TO HAVE CURB AND CURB INTERIOR AS SHOWN.
INSTALL ROOFING PER NRCA RECOMMENDATIONS. CRICKET AWAY FROM CURB FOR DRAINAGE.

SECURE EQUIPMENT TO CURB WITH CADMIUM PLATED HARDWARE.
INSTALLATION OF ALL ROOF MOUNTED MECHANICAL COMPONENTS SHALL CONFORM TO THE STATE BUILDING CODE AND THE WIND RESTRAINT REQUIREMENTS OF

6. PROVIDE STRUCTURAL SUPPORT FOR MECHANICAL EQUIPMENT AND OPENING EDGE.

HVAC EQUIPMENT CURB ROOFING



PROJECT ISSUE & REVISION SCHEDULE

CPL | Architecture Engineering Planning

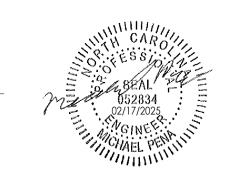
1620 Hillsborough Street Suite A,

Raleigh, NC 27605

CPLteam.com

NC ENGINEERING FIRM LICENSE NO. C-2194

PROFESSIONAL STAMPS



SHEET INFORMATION As indicated Checked By MJP DETAILS 2

Drawing Number

02/17/2025 Project Status **BID SET** Drawn By GLG Drawing Title

WHERE EQUIPMENT IS NOTED TO BE FURNISHED BY THE OWNER, THE CONTRACTOR SHALL RECEIVE (UNLOAD FROM TRUCK AND STORE) AND INSTALL THE LISTED EQUIPMENT. COORDINATE SCHEDULE, RECEIVING LOGISTICS AND STARTUP WITH THE OWNER AND EQUIPMENT MANUFACTURER'S REPRESENTATIVE. THE CONTRACTOR SHALL PROVIDE ALL CONTROLS AND ACCESSORIES TO MAKE A COMPLETE AND OPERABLE SYSTEM. THE CONTRACTOR SHALL RECEIVE, INSPECT, INSTALL OWNER PURCHASED EQUIPMENT AND SHALL BE RESPONSIBLE FOR COMPLYING WITH THE MANUFACTURER'S REQUIREMENTS TO MAINTAIN THE EQUIPMENT WARRANTY.

CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605 CPLteam.com

NC ENGINEERING FIRM LICENSE NO. C-2194

PROJECT INFORMATION R23.00487.00

JOHNSTON COUNTY PUBLIC **SCHOOLS** CLEVELAND ELEMENTARY

SCHOOL HVAC RENOVATION

10225 CLEVELAND RD.

CLAYTON, NC 27520

PROFESSIONAL STAMPS

SHEET INFORMATION 02/17/2025 12" = 1'-0" Project Status BID SET Drawn By Checked By GLG

> Drawing Title SCHEDULES

Drawing Number

															FAN	COIL	UNIT S	CHEDU	LE															
						S	UPPLY FA	N				Н	OT WA	TER HEATIN	G COIL							CHILLED	WATER COO	LING CO	OIL			FILTERS		ELE	CTRICA	AL		
						AIR			STANDARD									E	ΑT	L	AT	TOTAL	SENSIBLE											
						FLOW	ESP		MINIMUM	EAT	LAT	EWT	LWT	CAPACITY	FLUID		WPD	EDB	EWB	LDB	LWB	CAPACITY	CAPACITY	EWT	LWT	FLUID		WPD					WEIGHT	
TAG	LOCATION	SERVICE	MANUFACTURER	MODEL	TYPE	(CFM)	(IN.WG.)	DRIVE	OA (CFM)	(°F)	(°F)	(°F)	(°F)	(MBH)	TYPE	GPM	(FT.WG)	(°F)	(°F)	(°F)	(°F)	(MBH)	(MBH)	(°F)	(°F)	TYPE	GPM	(FT.WG) EFFICIENC	r V	PH	HZ	MCA FLA	(LBS)	NOTE
FC-1	MEZZANINE	E1, CORRIDOR	CARRIER	42DH	HORIZONTAL	1600	0.5	DIRECT	285	60.4	87.3	160	130	48.7	WATER	3.3	2.6	78.4	65.1	56.4	54.9	50.6	39.8	44	56	WATER	8.4	5.3 MERV 13	480	3	60	2.2 1.8	202	1,2,3
FC-2	MEZZANINE	E2	CARRIER	42DH	HORIZONTAL	1600	0.5	DIRECT	240	60.9	89.1	160	130	44.9	WATER	3.0	2.3	78.2	65.0	56.2	54.8	44.7	35.0	44	56	WATER	7.4	4.3 MERV 13	480	3	60	2.2 1.8	202	1,2,3
FC-3	MEZZANINE	E3, E3 GIRLS	CARRIER	42DH	HORIZONTAL	1600	0.5	DIRECT	240	60.9	89.1	160	130	44.9	WATER	3.0	2.3	78.2	65.0	56.2	54.8	44.7	35.0	44	56	WATER	7.4	4.3 MERV 13	480	3	60	2.2 1.8	202	1,2,3
FC-4	MEZZANINE	E4, E6 BOYS	CARRIER	42DH	HORIZONTAL	1600	0.5	DIRECT	240	61.6	88.6	160	130	46.6	WATER	3.1	2.4	78.0	64.8	56.2	54.7	47.5	37.6	44	56	WATER	7.9	4.8 MERV 13	480	3	60	2.2 1.8	202	1,2,3
FC-5	MEZZANINE	E11	CARRIER	42DH	HORIZONTAL	1600	0.5	DIRECT	255	59.4	89.2	160	130	43.3	WATER	2.9	2.2	78.7	65.4	56.3	54.9	42.2	32.5	44	56	WATER	7.0	4.0 MERV 13	480	3	60	2.2 1.8	202	1,2,3
FC-6	MEZZANINE	E12	CARRIER	42DH	HORIZONTAL	1600	0.5	DIRECT	255	60.7	88.4	160	130	46.3	WATER	3.1	2.4	78.3	65.0	56.2	54.8	46.8	36.8	44	56	WATER	7.7	4.7 MERV 13	480	3	60	2.2 1.8	202	1,2,3
FC-7	MEZZANINE	E13	CARRIER	42DH	HORIZONTAL	1600	0.5	DIRECT	240	59.7	89.7	160	130	42.5	WATER	2.9	2.1	78.6	65.3	56.3	54.8	40.9	31.6	44	56	WATER	6.8	3.8 MERV 13	480	3	60	2.2 1.8	202	1,2,3
FC-8	MEZZANINE	E14	CARRIER	42DH	HORIZONTAL	1600	0.5	DIRECT	240	60.6	89.2	160	130	44.3	WATER	3.0	2.2	78.3	65.1	56.2	54.8	43.8	34.1	44	56	WATER	7.2	4.2 MERV 13	480	3	60	2.2 1.8	202	1,2,3
FC-9	MEZZANINE	E15, CORRIDOR	CARRIER	42DH	HORIZONTAL	1600	0.5	DIRECT	285	60.6	87.3	160	130	49.0	WATER	3.3	2.6	78.3	65.1	56.4	55.0	51.2	40.2	44	56	WATER	8.5	5.4 MERV 13	480	3	60	2.2 1.8	202	1,2,3
FC-10	MEZZANINE	E16	CARRIER	42DH	HORIZONTAL	1600	0.5	DIRECT	240	61.1	88.9	160	130	45.4	WATER	3.1	2.3	78.1	65.0	56.2	54.8	45.6	35.6	44	56	WATER	7.5	4.5 MERV 13	480	3	60	2.2 1.8	202	1,2,3
FC-11	OFFICE 133	KITCHEN OFFICE	CARRIER	42CK	HORIZONTAL	300	0.25	DIRECT	150	43.4	85.5	160	130	7.7	WATER	0.5	0.3	84.8	69.7	56.5	55.1	7.8	5.2	44	56	WATER	1.3	6.2 MERV 8	120	1	60	2.9 2.3	202	1,2,3

EQUIPMENT IN THIS SCHEDULE IS TO BE FURNISHED BY THE OWNER AND INSTALLED IN THIS CONTRACT. REFER TO APPENDIX 1 - OWNER PROVIDED SUPPLEMENTAL INFORMATION FOR MANUFACTURER'S EQUIPMENT INFORMATION AND COORDINATE WITH OWNER'S REPRESENTATIVE FOR AN ADDITIONAL PRODUCT INFORMATION REQUIRED FOR INSTALLATION, TESTING AND STARTUP. FACTORY MOUNTED AND WIRED DISCONNECT. HEATING COIL SHALL BE IN THE REHEAT POSITION FOR DEHUMIDIFICATION CAPABILITY.

															AIR HANDLER SCH	IEDULE																		
								SUPPLY FA	N		MAX.		PRE HE	AT HEATING	G COIL			CHI	LLED WATE	R COOLIN	IG COIL					HOT WA	ATER REHEAT C	OIL		FILTERS		ELECTRICAL		
						AIR				STANDA						EAT	LAT	TO	TAL SE	NSIBLE														
					F	FLOW	ESP			MINIM	IM OA	EAT LA1	EWT LWT	CAPACITY	FLUID WPD	EDB EWE	B LDB L		I	PACITY	EWT LWT	FLUID	WPE	) EAT	LAT EW1	LWT	CAPACITY	FLUID	WPD					WEIGHT
TAG	LOCATION	SERVICE	MANUFACTURE	ER MODEL	SIZE (C	CFM) (II	N.WG.)	MOTOR HE	TYPE	RIVE OA (CF	M) (CFM)	(°F) (°F)	(°F) (°F)	(MBH)	TYPE GPM (FT.WG)	) (°F) (°F)	(°F)	°F) (M	BH) (/	MBH) (	(°F) (°F)	TYPE	GPM (FT.W	G) (°F)	(°F) (°F)	(°F)	(MBH)	TYPE GP/	M (FT.WG)	EFFICIENCY	V PH	HZ MCA I	LA MOC	P (LBS) NOTES
AHU-1	MECH 562	551, 552, 553, 554, 559	CARRIER	39L	10	3800	0.50	3	CENTRIFUGAL	BELT 670	-			-		78.4 65.2	53.6	53.2 13	31.2	100.1	44.0 56.0	WATER	21.8 2.5	60.3	98.3 160.0	130.0	160.4	WATER 10.9	9 1.5	MERV 13	460 3	60 10.8	8.6 15	1044 1,3,4,5,6
AHU-2	MECH 549	542, 550, 551	CARRIER	39L	10	3800	0.50	3	CENTRIFUGAL	BELT 640	-			-		78.4 65.2	53.6	53.2 13	31.2	100.1	44.0 56.0	WATER	21.8 2.5	60.3	98.3 160.0	130.0	160.4	WATER 10.9	9 1.5	MERV 13	460 3	60 10.8	3.6 15	1044 1,3,4,5,6
AHU-3	MECH 540	533, 541, 551	CARRIER	39L	10	3800	0.50	3	CENTRIFUGAL	BELT 640	-			-		78.4 65.2	53.6	53.2 13	31.2	100.1	44.0 56.0	WATER	21.8 2.5	60.3	98.3 160.0	130.0	160.4	WATER 10.9	9 1.5	MERV 13	460 3	60 10.8	8.6 15	1044 1,3,4,5,6
AHU-4	MECH 524	523, 531, 551	CARRIER	39L	08	3600	0.50	3	CENTRIFUGAL	BELT 640	-			-		78.4 65.2	54.9	54.3 11	4.0	90.0	44.0 56.0	WATER	18.9 1.8	60.2	95.2 160.0	130.0	140.0	WATER 9.5	5 1.1	MERV 13	460 3	60 10.8	8.6 15	922 1,3,4,5,6
AHU-5	MECH 520	511, 513, 514, 521, 551	CARRIER	39L	10	4100	0.50	3	CENTRIFUGAL	BELT 590	-			-		77.8 64.7	53.9	53.4 13	3.2	104.4	44.0 56.0	WATER	22.1 2.6	62.1	98.1 160.0	130.0	163.4	WATER 11.	1 1.5	MERV 13	460 3	60 10.8	3.6 15	1044 1,3,4,5,6
AHU-6	MECH 505	503, 504, 510, 551	CARRIER	39L	10	3700	0.50	2	CENTRIFUGAL	BELT 680	-			-		78.6 64.7	53.4	52.9 12	24.6	99.2	44.0 56.0	WATER	20.7 2.3	59.9	98.5 160.0	130.0	158.8	WATER 10.8	8 1.5	MERV 13	460 3	60 7.7	6.1 10	1030 1,3,4,5,6
AHU-7	MECH 441	434, 435, 436, 438	CARRIER	39L	06	2000	0.75	1.5	CENTRIFUGAL	BELT 285	-			-		77.8 64.7	54.4	54.0 61	1.9	49.8	44.0 56.0	WATER	10.3 0.9	62.1	93.3 160.0	130.0	69.2	WATER 4.7	7 0.1	MERV 13	460 3	60 5.8	4.6 10	658 1,3,4,5,6
AHU-8	MECH 431	429, 432, 437	CARRIER	39L	- 00	3200	0.50	3	CENTRIFUGAL	BELT 525	-			-		87.2 65.0	53.3	51.8 11	7.8	113.5	44.0 56.0	WATER	19.6 1.9	61.0	97.4 160.0	130.0	129.2	WATER 8.8	3 0.9	MERV 13	460 3	60 10.8	8.6 15	922 1,3,4,5,6
AHU-9	MECH 427	424, 428, 437	CARRIER	39L		3100	0.50	3	CENTRIFUGAL	BELT 260	-			-		78.3 65.1	0 1.0	53.9 10	01.0	79.1	44.0 56.0	WATER	16.8 1.4	60.7	92.8 160.0	130.0	110.4	WATER 7.5	5 0.2	MERV 13	460 3	60 10.8	8.6 15	922 1,3,4,5,6
AHU-10	MECH 422	418, 421, 437	CARRIER	39L		3200	0.50	3	CENTRIFUGAL		-			-		78.2 65.0	0 11 1		02.6	81.0	44.0 56.0	WATER	17.0 1.4	61.0	97.4 160.0	130.0	129.2	WATER 8.6	0.9	MERV 13	460 3	60 10.8	3.6 15	922 1,3,4,5,6
AHU-11	MECH 417	413, 416, 437	CARRIER	39L		3100	0.50	3	CENTRIFUGAL	3221 100	-			-		78.3 65.1	0 1.0		01.0	79.1	44.0 56.0	WATER	16.8 1.4	60.7	97.7 160.0	130.0	127.4	WATER 8.8	3 1.0	MERV 13	460 3	60 10.8	8.6 15	922 1,3,4,5,6
AHU-12	MECH 408	404, 407, 410, 411, 412, 437	CARRIER	39L	10	3800	0.50	3	CENTRIFUGAL	520	-			-		78.2 65.0	00.0		., ,=	99.5	44.0 56.0	WAIER	21.5 2.4	61.0	94.5 160.0	130.0	141.2	WATER 9.6	0.0	MERV 13	460 3	60 10.8	8.6 15	1044 1,3,4,5,6
AHU-13	MECH 339	138, 147, 148, 302, 303, 304, 305, 344, 345, 348, 401, 402, 403, 405	CARRIER	39L		4300	0.75	3	CENTRIFUGAL	BELT 480	-			-		77.2 64.2	0	53.4 13	52.7	106.4	44.0 56.0	WAIER	22.1 2.6	63.8	94.2 160.0	130.0	144.6	WATER 9.8		MERV 13	460 3	60 10.8	8.6 15	1044 1,3,4,5,6
AHU-14	MECH 339	335, 336, 337	CARRIER	39L 39I	00	3100	0.55	1.5	CENTRIFUGAL	BELI 2/0	-			-		77.6 64.6	53.5	53.2 65	5.6	51.5	44.0 56.0	WAIER	10.9 4.2	62.5	93.5 160.0	130.0	68.6	WATER 4.6	0.1	MERV 13	460 3		4.6 10	643 1,3,4,5,6
AHU-15	MECH 331	329, 333, 334	CARRIER	39L 39I		3100	0.50	2	CENTRIFUGAL	BELT 500 BELT 500	-			-		78.2 65.0	04.0	53.9 10	-	78.9	44.0 56.0	WAIER	16.6 1.4	56.8	95./ 160.0	130.0	134./	WATER 9.1	1.0	MERV 13	460 3	7.7	6.1 10	907 1,3,4,5,6
AHU-16	MECH 324	325, 328, 334	CARRIER	39L 39I	08	3100	0.50	2	CENTRIFUGAL	322.	-			-		78.1 65.0 78.2 65.0	34.0		0.0	78.5	44.0 56.0	WAIER	16.6 1.4	61.0	97.9 160.0	130.0	126.8	WATER 8.6	0.9	MERV 13	460 3	60 7.7	6.1 10	7 07 1707 17070
AHU-17 AHU-18	MECH 322 MECH 315	318, 321, 334 313, 317, 334	CARRIER CARRIER	39L 39I	00	3100	0.50	2	CENTRIFUGAL	BELT 300	-			-		78.2 65.0 78.1 65.0	04.0		00.1	78.9	44.0 56.0	WAIER	16.6 1.4	36.8	95./ 160.0	130.0	134./	WATER 9.1	1.0	MERV 13	460 3	60 7.7	6.1 10	907 1,3,4,5,6
AHU-19	MECH 313	306, 310, 311, 312, 334	CARRIER	37L 30I		3800	0.30	2	CENTRIFUGAL	REIT 545	-			<u>-</u>		77.8 64.7	0 1.0	54.6	1 0	70.3	44.0 56.0	WATER	10.0 1.4	61.0	95.0 140.0	130.0	120.0	WATER 9.4	0.7	MERV 13 MERV 13	460 3	60 7.7	6.1 10	995 1.3.4.5.6
AHU-20	MECH 306	101, 103, 104, 105, 106, 108, 110, 111, 112, 113, 114, 116, 119, 120,	CARRIER	37L 30I	10	4005	0.60	2	CENTRIFUGAL	BELT 343	-			-		76.8 63.9	33.1	71.0	9.0	92.9	44.0 56.0	WATER	10.0 1.3	62.1	95.8 160.0	130.0	136.7	WATER 9.4	0.0	MERV 13 MERV 13	460 3	00 7.7	3.6	1010 1,3,4,5,6
A110-20	MECHTI	122, 141, 143	CARRIER	3/L	10	4000	0.75	3	CLIVIKII OGAL	5/0	_			-		70.0 05.7	33.1	74.5	77.0	/2./	44.0 30.0	VVAILK	10.1	04.7	75.0 100.0	130.0	156.5	WAILK 7.5	, 0.5	MILKV 13	400   3	00   10.0	3.0	1010 1,3,4,3,6
AHU-21	MECH 128	125, 132, 136, 139, 140	CARRIER	39L	12	4900	0.75	5	CENTRIFUGAL	BELT 1275	_			-		80.0 66.4	53.8	53.4 18	35.8	136.1	44.0 56.0	WATER	30.9 5.2	55.8	91.5 160.0	130.0	195.9	WATER 13.3	3 0.7	MERV 13	460 3	60 17.9	4.3 30	1248 1,2,3,4,5,6
AHU-22	MECH 128	126, 144	CARRIER	39L	21	9010	0.75	7.5	CENTRIFUGAL	BELT 4725	-			-		85.3 70.0	55.2	54.9 41	3.6	284.8	44.0 56.0	WATER	68.7 10.4	42.2	88.5 160.0	130.0	477.3	WATER 32.3	3 7.2	MERV 13	460 3	60 26.0	0.8 45	1777 1,3,4,5,6
AHU-23	MECH 161	152, 153, 154, 155, 160, 164, 201	CARRIER	39L	15	5700	1.10	5	CENTRIFUGAL	BELT 2080	-			-		82.1 67.8	55.0	54.7 22	23.1	163.4	44.0 56.0	WATER	37.1 3.8	50.3	94.2 160.0	130.0	282.1	WATER 19.	1 3.0	MERV 13	460 3	60 17.9	4.3 30	1401 1,3,4,5,6
AHU-24	MECH 161	146, 149, 150, 151, 159, 163, 169	CARRIER	39L	08	3145	1.10	3	CENTRIFUGAL	BELT 735	-			-		79.2 53.6	54.4	2.29 82	2.6	82.6	44.0 56.0	WATER	13.7 4.7	58.0	96.1 160.0	130.0	133.6	WATER 9.0	1.0	MERV 13	460 3	60 10.8	8.6 15	889 1,3,4,5,6
AHU-25	MECH 441	145, 202, 203, 205, 206, 207, 210, 443, 444	CARRIER	39L	15	5475	1.00	5	CENTRIFUGAL	BELT 1000	3300	34.9 61.9	160.00 130.00	171.5	WATER 11.6 0.8	86.8 71.1	54.7	54.6 27	6.0	184.4	44.0 56.0	WATER	45.9 1.5	62.3	100.9 160.0	130.0	234.3	WATER 15.9	9 2.1	MERV 13	460 3	60 17.9	4.3 30	1596 1,2,3,4,5,6
AHU-26	MECH 208	214, 221, 222, 223, 224, 502, 564, 565	CARRIER	39L	08	3200	1.00	3	CENTRIFUGAL	BELT 445	-			-		77.7 64.6	54.4	53.9 99	9.3	79.6	44.0 56.0	WATER	16.5 1.3	62.3	98.0 160.0	130.0	126.8	WATER 8.6	0.9	MERV 13	460 3	60 10.8	8.6 15	922 1,3,4,5,6
AHU-27	MECH 208	209, 212, 213, 214, 215, 216, 218, 220	CARRIER	39L	10	4300	1.00	5	CENTRIFUGAL	BELT 590	-			-		77.7 64.6	54.1	53.5 13	66.8	108.2	44.0 56.0	WATER	22.7 2.7	62.3	97.5 160.0	130.0	167.5	WATER 11.3	3 1.6	MERV 13	460 3	60 17.9	4.3 30	1073 1,3,4,5,6

PROVIDE FACTORY MOUNTED AND WIRED DISCONNECT. SHIP IN MODULES TO FACILITATE ACCESS THROUGH EXTERIOR DOORS.

HEATING COIL SHALL BE IN THE REHEAT POSITION FOR DEHUMIDIFICATION CAPABILITY.

PROVIDE BASE RAIL HIGH ENOUGH TO ACCOMMODATE PROPER CONDENSATE TRAPING. PROVIDE VIBRATION ISOLATION FOR UNIT MOUNTING.

EQUIPMENT IN THIS SCHEDULE IS TO BE FURNISHED BY THE OWNER AND INSTALLED IN THIS CONTRACT. REFER TO APPENDIX 1 - OWNER PROVIDED SUPPLEMENTAL INFORMATION AND COORDINATE WITH OWNER'S REPRESENTATIVE FOR AN ADDITIONAL PRODUCT INFORMATION REQUIRED FOR INSTALLATION, TESTING AND STARTUP.

					AIR SEI	PARATOR SC	HEDULE						
TAG	LOCATION	SERVICE	MANUFACTURER	MODEL	TYPE	INLET/ OUTLET SIZE	FLOW (GPM)	PRESSURE DROP	FLUID	HEIGHT (IN.)	DIAMETER (IN.)	WEIGHT (LBS)	NOTES
AS-1	BOILER ROOM	HHW	TACO	4906ADR-125	AIR & DIRT	6"	333	1.99 FTWG	WATER	34	14	440.0	_
AS-2	MECH 128	CHW	TACO	4906ADHR-125	AIR & DIRT	6"	678	3.00 FTWG	WATER	57 1/2	20	600.0	_

					UNII HEA	MER SCHE	DULE (HYDRONIC	)							
				AIR FLOW		P.D	HEATING				ELECT	RICAL		WEIGHT	
TAG	LOCATION	MANUFACTURER	MODEL	(CFM)	FLOW GPM	(FT.WG.)	CAPACITY (MBH)	EWT (°F)	HP	V	PH	HZ	MCA	(LBS)	NOTES
UH-1	MECH 128	STERLING	HS-48	550	3.5	0.12	30,554	160	1/20	115	1	60	1.8	41	1,2
UH-2	BOILER ROOM 127	STERLING	HS-48	550	3.5	0.12	30,554	160	1/20	115	1	60	1.8	41	1,2

								BOILER	R SCHEDULE	(CONDEN	ISING)											
								MAX.		EFFICIENCY	GAS PR	RESSURE	MAX. WATER	MIN. WATER					ELECTI	RICAL		_
TAC	LOCATION	CEDVICE	AA A NIIIE A CTUDED	MODEL	FILE	MAX. INPUT	MIN. OUTPUT	OUTPUT	EFFICIENCY	80°F TO	AAINI	AAAV	FLOW	FLOW	ENAT (OE)	LIMT (OF)	ELLIE CIZE	V	DU	117	EL A	NOTES
TAG	LOCATION	SERVICE	MANUFACTURER	MODEL	FUEL	(MBH)	(MBH)	(MBH)	RANGE	180°F	MIN.	MAX.	(GPM)	(GPM)	EWT (°F)	LWT (°F)	FLUE SIZE	V	PH	ПД	FLA	NOTES
B-1	BOILER ROOM 127	BUILDING HEATING HOT WATER	AERCO	BMK 1500	NAT. GAS.	1500	70	1305 - 1440	87%-98%	94.6%	4	14	250	25	130	160	6''Ø	120	1	60	16	1-6
B-2	BOILER ROOM 127	BUILDING HEATING HOT WATER	AERCO	BMK 1500	NAT. GAS.	1500	70	1305 - 1440	87%-98%	94.6%	4	14	250	25	130	160	6''Ø	120	1	60	16	1-6
	•		·		•				•								•		•			-

VENTLESS GAS TRAIN.

BOILER MANUFACTURER TO PROVIDE AND CONTROL, FIELD INSTALLED, MOTORIZED ISOLATION VALVES ON EACH BOILER. PROVIDE WITH TWO SPST END SWITCHES TO VERIFY VALVE OPEN (ONE FOR BOILER CONTROL, ONE FOR CONTROLS CONTRACTOR).

BOILER SHALL BE EQUIPPED WITH COMBUSTION AIR TEMPERATURE COMPENSATION TO AUTOMATICALLY COMPENSATE FOR AIR DENSITY CHANGES BY ADJUSTING OXYGEN AND OPTIMIZE THE COMBUSTION EFFICIENCY UNDER ALL SEASONAL TEMPERATURE CHANGES.

LOW WATER CUTOFF WITH MANUAL RESET & TEST. PROVIDE MANUFACTURER'S CONDENSATE NETURALIZATION KIT.

INTEGRATED BACNET COMMUNICATION.

							PUMP SCH	IEDULE								
								HEAD		MOTOR			ELECTRICAL			
TAG	LOCATION	SERVICE	MANUFACTURER	MODEL	TYPE	FLUID	GPM	(FT.WG.)	RPM	HP	STARTER	V	PH	HZ	EFFICIENCY	<b>NOTES</b>
HWP-1	BOILER ROOM	BUILDING HEATING HOT WATER	TACO	SKS4011D	INLINE	WATER	333	75	1760	15	VFD	480	3	60	77%	1, 2, 3
HWP-2	BOILER ROOM	BUILDING HEATING HOT WATER	TACO	SKS4011D	INLINE	WATER	333	75	1760	15	VFD	480	3	60	77%	1 2 3

PROVIDE VARIABLE FREQUENCY DRIVE WITH INPUT AND OUTPUT VOLTAGE EQUAL TO THE PUMP'S MOTOR VOLTAGE REQUIREMENTS.

PROVIDE NON-OVERLOADING MOTOR RATED FOR VFD USE.

PROVIDE SUCTION DIFFUSER. THE CONTROL PLATFORM SHALL INCLUDE A SUBROUTINE EQUAL TO THE TACO SELF SENSING SERIES. PUMPS SHALL UTILIZE NFC IDENTIFICATION TECHNOLOGY TO PROVIDE ALL PUMP INFORMATION KNOWLEDGE BASES.

FURNISH DISCONNECT.

						FAN S	CHEDULE										
				MODEL		AIR FLOW	ESP			EL	ECTRIC	CAL D	ATA			WEIGHT	
TAG	LOCATION	SERVICE	MANUFACTURER	NO.	TYPE	(CFM)	(IN.WG.)	DRIVE	MHP	V	PH	HZ	FLA	MCA	MOCP	(LBS)	NOTES
EF-16	131	FCU-11/TLT 131	GREENHECK	SP-A50-90-VG	CEILING	70	0.1	DIRECT	1/60	115	1	60	0.3	0.4	15	12	1,2,4
EF-17	130	FCU-11/TLT 130	GREENHECK	SP-A50-90-VG	CEILING	70	0.1	DIRECT	1/60	115	1	60	0.3	0.4	15	12	1,2,4
EF-21	132	FCU-11/STAFF 132	GREENHECK	SP-A50-90-VG	CEILING	50	0.1	DIRECT	1/60	115	1	60	0.3	0.4	15	12	1,2,5
EF-22	ATTIC	AHU-21/KITCHEN	GREENHECK	SQ-140-VG	INLINE	1,520	0.35	DIRECT	0.75	115	1	60	10	13	20	90	1,3

BACKDRAFT DAMPER.

ELECTRICALLY COMMUTATED (EC) MOTOR. FAN TO OPERATE WHEN KITCHEN EXHAUST HOOD (E) EF-1 IS OFF. WHEN (E) EF-1 IS ACTIVATED ON, EF-22 WILL SHUT OFF. FAN TO BE CONTROLLED BY EXISTING LIGHT FIXTURE SWITCH. COORDINATE WITH ELECTRICAL CONTRACTOR.

FAN TO OPERATE CONTINUOUSLY.

		REGIS	STER GRILLES AND	DIFFUSERS :	SCHEDULE		
TAG	MANUFACTURER	MODEL	APPLICATION	MATERIAL	TYPE	FINISH	NOTES
RG-1	PRICE	535	RETURN/EXHAUST	STEEL	GRILLE	WHITE	1,2
SG-1	PRICE	SPD	SUPPLY	STEEL	PLAQUE FACE	WHITE	1

	ACCEPTANCE	TOTAL	DIMENSIONS					
MODEL	GALLONS	VOLUME	(IN.)	CONFIGURATION	TYPE	SHIPPING WEIGHT (LBS)	WATERLOGGED WEIGHT (LBS)	NOTES
CA450-125	119	119	20Ø × 78	VERTICAL	BLADDER	400	1391	1
CA215-125	57	57	16Ø × 59	VERTICAL	BLADDER	290	765	1

			GRA	AVITY VEN	TILATOR SCHEE	DULE			
TAG	LOCATION	SERVICE	MANUFACTURER	MODEL	THROAT AREA (SQ.FT.)	HOOD AREA (SQ.FT.)	AIR FLOW (CFM)	S.P. (IN.W.G.)	NOTES
IV-1	MECH 128 ROOF	AHU-21	COOK	TRE 36X36X4	9.0	9.9	5,050	0.122	1,2,3,4
IV-2	MECH 128 ROOF	AHU-22	COOK	TRE 42X48X6	14.0	14.9	9,010	0.133	1,2,3,4
IV-3	MECH 441 ROOF	AHU-25	COOK	TRE 36X36X4	9.0	9.9	5,475	0.122	1,2,3,4
RV-1	KITCHEN ROOF	KITCHEN	COOK	GR 12X12	1.0	4.7	1,520	0.030	1,2,3,4
RV-3	MECH 441 ROOF	AHU-25	COOK	TRE 36X36X4	9.0	9.9	5,475	0.122	1,2,3,4

PROVIDE 14" HIGH SLOPE COMPENSATED ROOF CURB WITH DAMPER TRAY. CURB AND MOUNTING MUST COMPLY WITH PROJECT WIND RESTRAINT REQUIREMENTS.

COLOR TO BE CHOSEN BY ARCHITECT FROM LOUVER MANUFACTURER'S FULL SELECTION OF COLORS AND FINISHES.

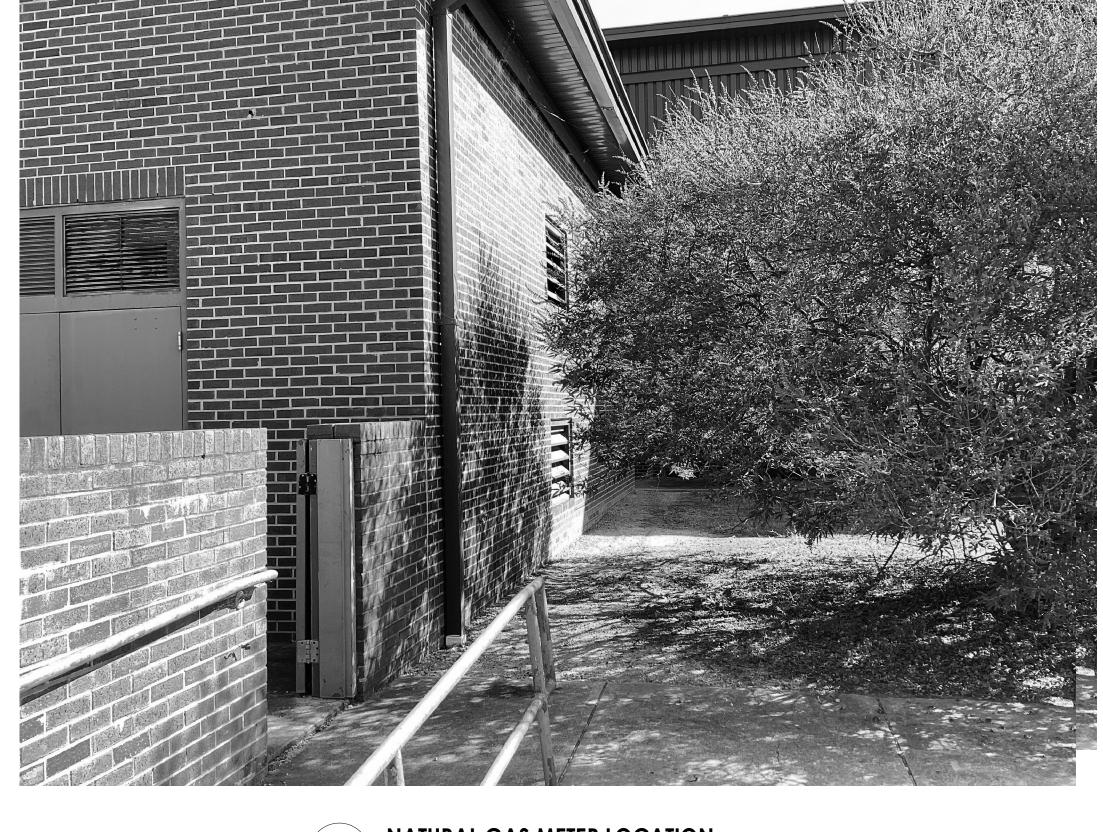
PROVIDE WALL MOUNTING BRACKET. INSTALL PER MANUFACTURER RECOMMENDATIONS AT MAXIMUM HEIGHT OF 9'-0" A.F.F.

CURB MOUNTED BACKDRAFT DAMPER. BIRDSCREEN. HINGED BASE KIT.

							LOUVER SCHEDULE													
		SI	ZE				PRESSURE													
MANUFACTURER	MODEL	WIDTH	HEIGHT	FREE AREA (SQ.FT.)	AIRFLOW (FPM)	VELOCITY (FPM)	DROP (IN.WG.)	NOTES												
RUSKIN	ELF375DX	72"	36"	9.2	8860 CFM	970	0.11	1,2												
RUSKIN	ELF375DX	42"	36"	5.4	5200 CFM	970	0.12	1,2												
٨	RUSKIN	RUSKIN ELF375DX	RUSKIN ELF375DX 72"	RUSKIN ELF375DX 72" 36"	ANUFACTURER MODEL WIDTH HEIGHT (SQ.FT.)  RUSKIN ELF375DX 72" 36" 9.2	ANUFACTURER         MODEL         WIDTH         HEIGHT         (SQ.FT.)         (FPM)           RUSKIN         ELF375DX         72"         36"         9.2         8860 CFM	ANUFACTURER         MODEL         WIDTH         HEIGHT         (SQ.FT.)         (FPM)         (FPM)           RUSKIN         ELF375DX         72"         36"         9.2         8860 CFM         970	ANUFACTURER         MODEL         WIDTH         HEIGHT         (SQ.FT.)         (FPM)         (FPM)         (IN.WG.)           RUSKIN         ELF375DX         72"         36"         9.2         8860 CFM         970         0.11												

1. LAY IN 24" X 24" CEILING GRID. 2. 1/2" BLADE SPACING. 45° BLADES.





REFER TO PHOTO

# PLUMBING SPECIFICATIONS

NATURAL GAS PIPING:
ALL 2" AND SMALLER SHALL BE SCHEDULE 40 BLACK STEEL ASTM A 53/A 53M , TYPE E OR S, GRADE B, MALLEABLE IRON THREADED FITTINGS PER ASTM B16.3, CLASS 150, STANDARD PATTERN. UNIONS SHALL BE ASME B16.39, CLASS 150, MALLEABLE IRON WITH BRASS TO IRON SEAT, GROUND JOINT, AND THREADED ENDS.

ALL 2-1/2" AND LARGER SHALL BE SCHEDULE 10 BLACK STEEL WITH WROUGHT-STEEL FITTINGS PER ASTM A 234/A 234M FOR BUTT WELDING AND SOCKET WELDING OR FORGED-STEEL FLANGES AND FLANGED FITTINGS PER ASME B16.5, MINIMUM CLASS 150.

PROVIDE APPLIANCE / EQUIPMENT FLEXIBLE CONNECTORS TO COMPLY WITH ANZI Z2.24.

MANUAL GAS SHUTOFF VALVES SHALL COMPLY WITH ASME B16.33

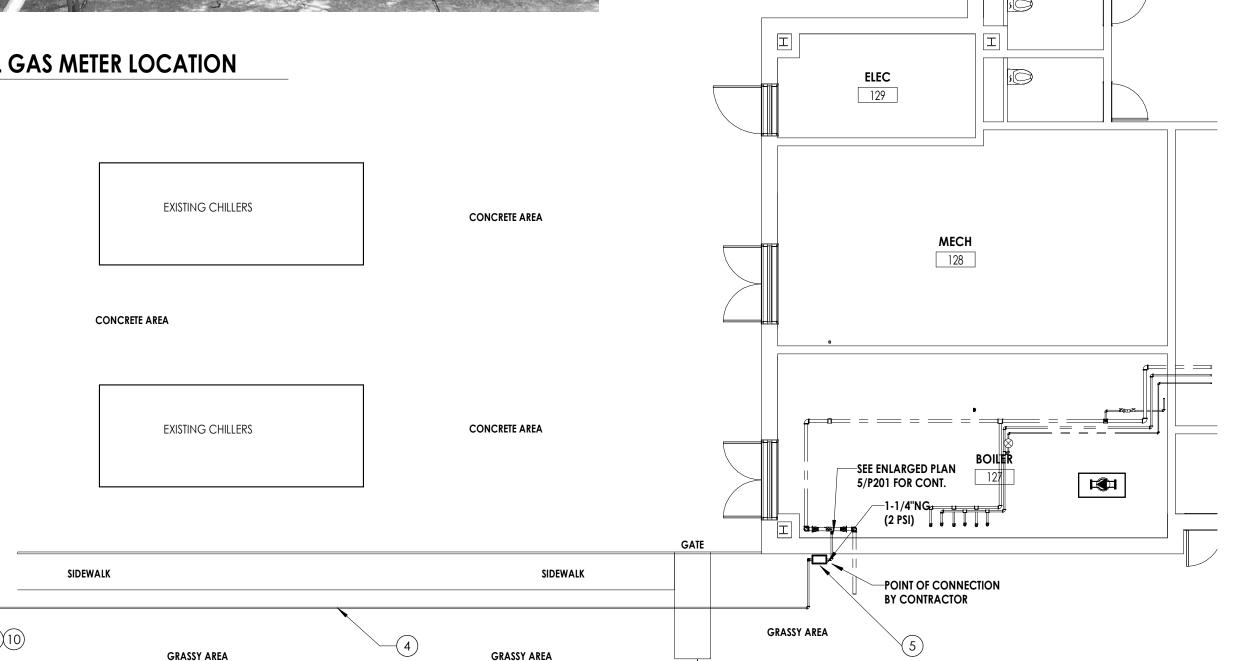
APPLIANCE PRESSURE REGULATORS SHALL COMPLY WITH ANSI Z21.18

HORIZONTAL LINES SHALL HAVE HANGERS AND RODS ADEQUATE FOR SIZE, MATERIAL, AND SERVICE, IN CONFORMANCE WITH PLUMBING CODE AND MANUFACTURER'S RECOMMENDATION, ALL HANGERS IN CONTACT WITH COPPER PIPING SHALL BE COPPER OR COPPER CLAD.

PIPE IDENTIFICATION:
PROVIDE PIPE MARKERS ON PIPING OF THE FOLLOWING PIPING SYSTEM(S). FOR EACH SYSTEM IDENTIFIED USE BOLD LETTERING A MINIMUM OF 1/2" HIGH. PIPE MARKERS SHALL MATCH THE EXISTING COLOR SCHEME AND WORDING

USED IN THE EXISTING BUILDING. IF A STANDARDIZED SYSTEM IS NOT UTILIZED, THEN THE FOLLOWING SHALL BE USED.

<u>LETTERING COLOR</u> BLACK (INDICATING PSI)



GENERAL NOTES

) ABANDON-IN-PLACE EXISTING 10,000 GALLON UNDERGROUND TANK & ALL ASSOCIATED ACCESSORIES INCLUDING ALL ELECTRICAL AND MONITORING CABLE. REFER TO NOTE 9. REFER TO SPECIFICATION SECTION 026500.

A. ALL WORK SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL (EPA)

MANAGEMENT - DATED MAY 17, 2021, & API RP 1604 CLOSURE OF

UNDERGROUND PETROLEUM STORAGE TANKS. REFER TO SPECIFICATION SECTION 026500

NATURAL GAS PIPING, PRV, & METERS TO THIS FACILITY.

GUIDELINES & REGULATIONS FOR ABANDON UNDERGROUND TANKS IN PLACE.

B. TANKS ABANDONED IN PLACE SHALL COMPLY WITH THE REQUIREMENTS OF 2018

CONTACT MARCUS THOMPSON WITH DUKE ENERGY TO COORDINATE THE NEW

NC FIRE CODE SECTION 5704.2.13, NFPA 31 SECTION 7.12 & 7.13, NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY - DIVISION OF WASTE

- ABANDON-N-PLACE EXISTING UNDERGROUND FUEL OIL PIPING IN PLACE & CAP BELOW GRADE AT THE STORAGE TANK LOCATION. REFER TO NOTE 9.
- ABANDON-IN-PLACE EXISTING UNDERGROUND FUEL OIL PIPING IN PLACE & CAP ABOVE SLAB IN THE MECHANICAL ROOM. REFER TO NOTE 9.
- (4) NEW NATURAL GAS PIPING TO MECHANICAL ROOM (BY GAS COMPANY)
- (5) NEW GAS PRV & METER BY GAS COMPANY.
- 6 EXTEND NEW NATURAL GAS SERVICE TO CONNECTION TO EXISTING GAS SERVICE AT THE ROAD. (BY GAS COMPANY)

PROVIDE 1/2" GAS PIPE CONNECTION TO NEW BOILERS GAS TRAIN.

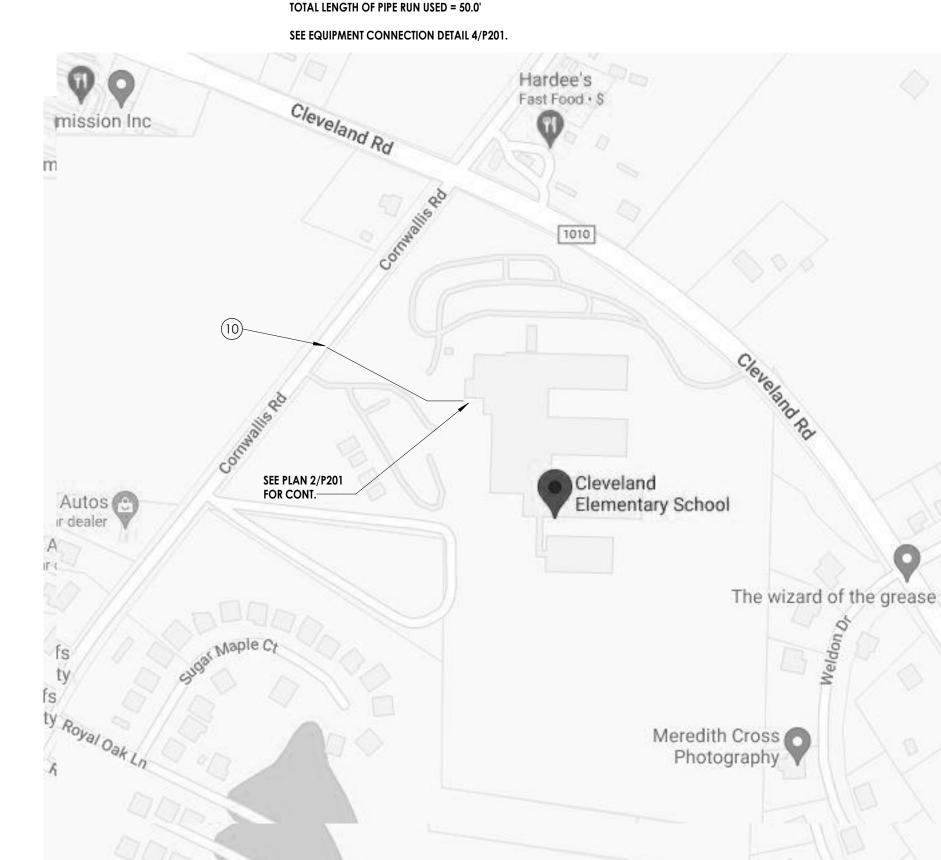
- GAS PRESSURE REQUIRED AT CONTROL INLET MIN. 4.40" W.C. MAX. 14" W.C. COORDINATE NEW NG CONNECTION WITH MECHANICAL CONTRACTOR.
- 8 EXTEND NG TO METER. SEE 4/P201 FOR CONTINUATION. (4" W.C. MIN TO 14" W.C. MAX.) EQUIPMENT PRESSURE REQUIRED. BASED ON 2018 NC FUEL GAS CODE TABLE 402.4 (1)
- (9) TANK ABANDONED-IN-PLACE SHALL BE AS FOLLOWS:
  - FLAMMABLE AND COMBUSTIBLE LIQUIDS SHALL BE REMOVED FROM THE TANK AND CONNECTING PIPING.
- THE SUCTION, INLET, GAUGE, VAPOR RETURN AND VAPOR LINES SHALL BE
- REMOVE ANY MONITORING & ELECTRICAL SOURCES, CABLE, & DEVICES RELATED TO THE UNDERGROUND STORAGE TANK
- THE TANK SHALL BE FILLED COMPLETELY WITH AN APPROVED INERT SOLID
- REMAINING UNDERGROUND PIPING SHALL BE CAPPED OR PLUGGED. A RECORD OF TANK SIZE, LOCATION AND DATE OF ABANDONMENT SHALL
- BE RETAINED. ALL EXTERIOR ABOVE-GRADE FILL PIPING SHALL BE ERRANTLY REMOVED.
- ALL MATERIALS, ELECTRICAL, MONITORING, & PIPING REMOVED SHALL BE LEGALLY DISPOSED OF OFF-SITE.
- PROPOSE ROUTING OF NATURAL GAS PIPING. COORDINATE EXACT ROUTING WITH LOCAL GAS COMPANY.

## PLUMBING / PIPING LEGEND

	NATURAL GAS PIPING (NG)
<del></del>	TEE OUTLET - UP
<del></del>	TEE OUTLET - DOWN
	CONNECTION - BOTTOM
<u> </u>	CONNECTION - TOP
Ŏ——	ELBOW - TURNED UP
C	ELBOW - TURNED DOWN
	DIDE CAD

		NAT	URAL GAS EQUIP <i>I</i>	MENT SCHEDUL	E	
SYM.	EQUIPMENT	LOCATION	PROVIDED & INSTALLED BY	GAS INPUT CFH/MBH	GAS PRES. @ UNIT	GAS PRV PROVIDED & INSTALLED BY (IF REQ.)
B-1	BOILER	BOILER ROOM 127	MECHANICAL	1500	4" - 14" W.C.	PLUMBING
B-2	BOILER	BOILER ROOM 127	MECHANICAL	1500	4" - 14" W.C.	PLUMBING
WH-1	WATER HEATER	BOILER ROOM 127	BY OWNER	200	4" - 14" W.C.	BY OWNER
WH-2	WATER HEATER	BOILER ROOM 127	BY OWNER	200	4" - 14" W.C.	BY OWNER
WH-3	WATER HEATER	BOILER ROOM 127	BY OWNER	200	4" - 14" W.C.	BY OWNER
$\times$			_		XXXX	

TOTAL CFH 3600 COORDINATE GAS METER & PRV STATION WITH LOCAL GAS COMPANY. PIPE SIZING BASED ON TABLE 402.4(5) 2 PSI TOTAL LENGTH OF PIPE RUN USED = 50.0'



The wizard of the grease

8 AREA OF WORK

PROFESSIONAL STAMPS

CPL | Architecture Engineering Planning

1620 Hillsborough Street Suite A,

Raleigh, NC 27605 CPLteam.com

NC ENGINEERING FIRM LICENSE NO. C-2194

PROJECT INFORMATION

JOHNSTON COUNTY PUBLIC

CLEVELAND ELEMENTARY

10225 CLEVELAND RD.

CLAYTON, NC 27520

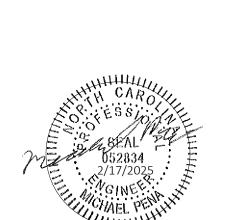
SCHOOL HVAC RENOVATION

PROJECT ISSUE & REVISION SCHEDULE

Project Number

R23.00487.00

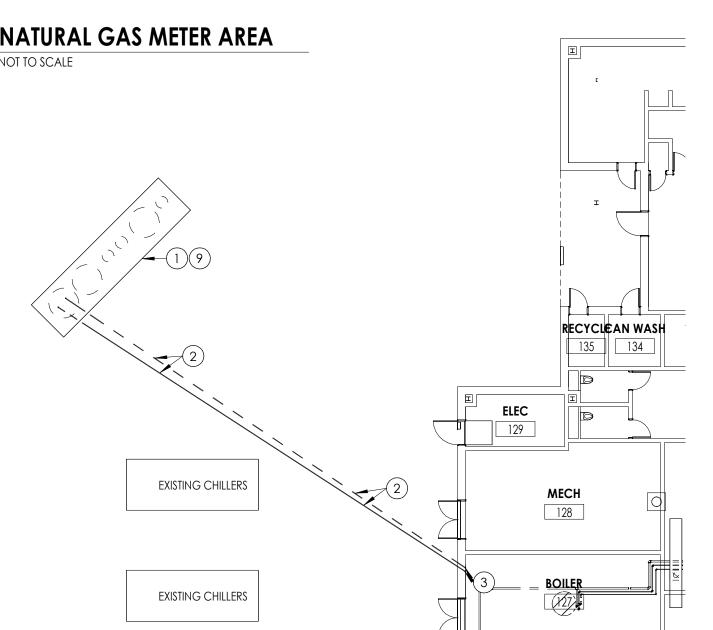
SCHOOLS



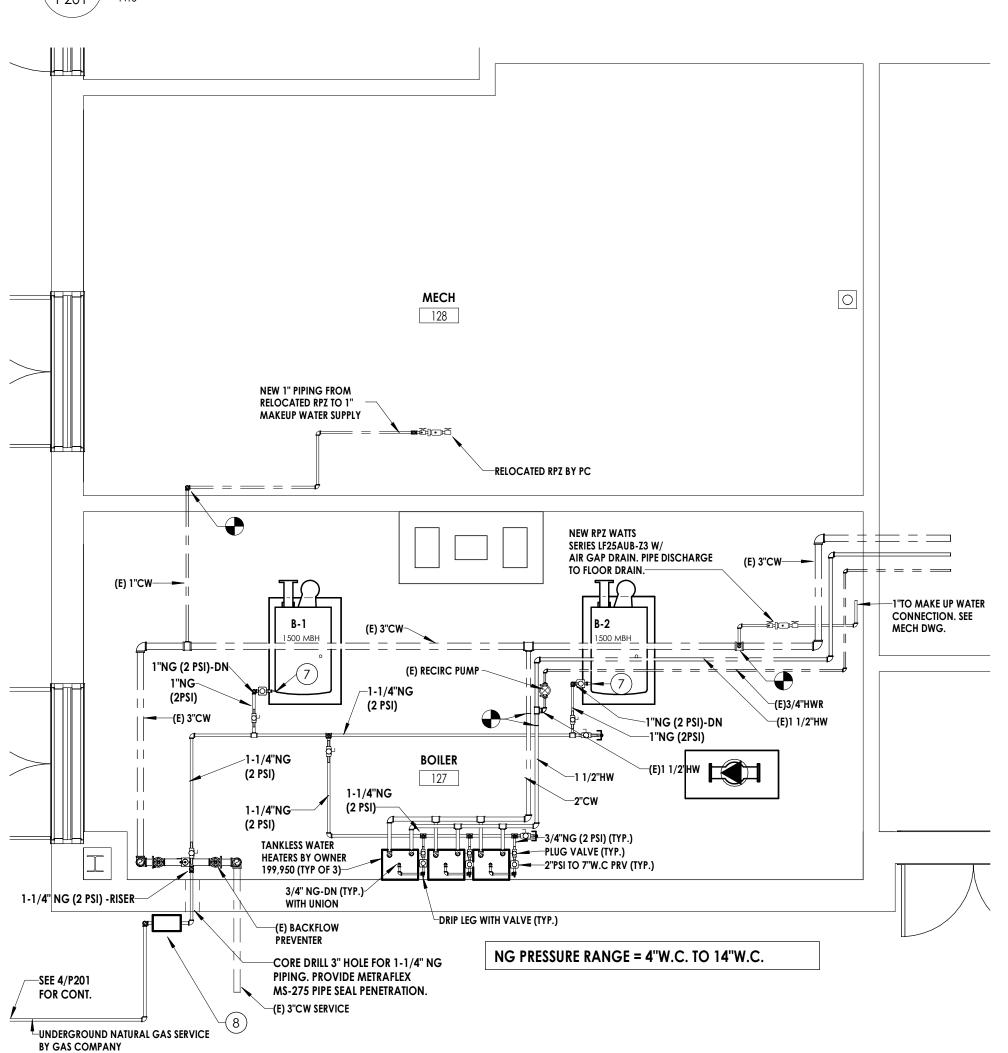
SHEET INFORMATION 02/17/2025 AS INDICATED Project Status BID SET Drawn By Drawing Title MECHANICAL ROOM NATURAL GAS UPGRADE

Drawing Number









ENLARGED MECHANICAL ROOM - NEW WORK √ P201 /

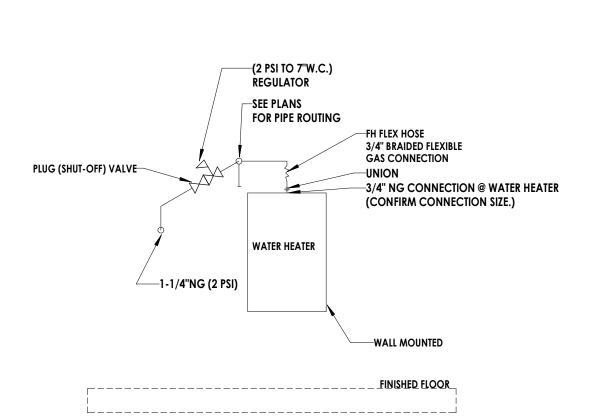
NATURAL GAS METER LOCATION

SEE PLANS

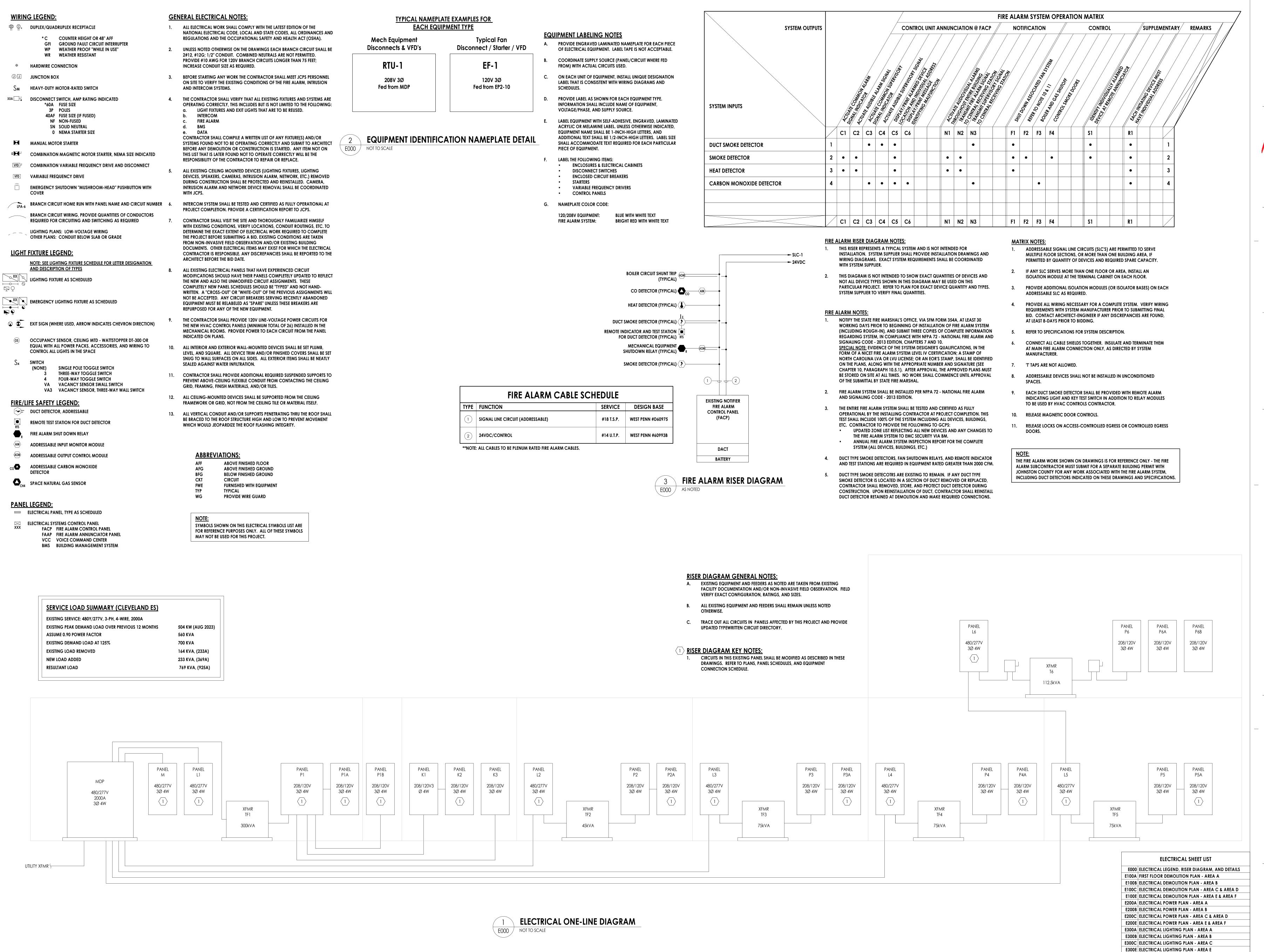
NATURAL GAS SERVICE TO MECHANICAL ROOM - NEW WORK

FOR PIPE ROUTING \_\_\_11/4"NG (2 PSI) **□1/2"NG CONNECTION @ BOILER** (CONFIRM CONNECTION SIZE.) /-(2 PSI TO 10"W.C.) BOILER (TYP.) PLUG (SHUT-OFF) VALVE —FH FLEX HOSE 1-1/4" BRAIDED FLEXIBLE GAS

GAS CONNECTIONS TO BOILER



GAS CONNECTIONS TO WATER HEATER



CPL | Architecture Engineering Planning

1620 Hillsborough Street Suite A, Raleigh, NC 27605 CPLteam.com

NC ENGINEERING FIRM LICENSE NO. C-2194 PROJECT INFORMATION

Project Number R23.00487.00 JOHNSTON COUNTY PUBLIC **SCHOOLS** 

Project Name CLEVELAND ELEMENTARY SCHOOL HVAC RENOVATION

10225 CLEVELAND RD. CLAYTON, NC 27520

PROJECT ISSUE & REVISION SCHEDULE

PROFESSIONAL STAMPS

SHEET INFORMATION

02/17/2025 As indicated Project Status **BID SET** Drawn By Checked By JMH

MSR Drawing Title ELECTRICAL LEGEND, RISER DIAGRAM, AND DETAILS

Drawing Number

E301A LIGHTING MEZZANINE & ATTIC PLAN E700 ELECTRICAL ENLARGED PLANS E900 ELECTRICAL SCHEDULES

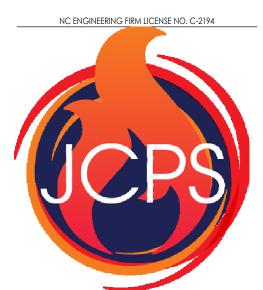


- A. FOR ALL EXISTING FIXTURES, DEVICES, ETC. INDICATED TO REMAIN, FIELD VERIFY THE EXISTING CIRCUIT, AND PROVIDE NEW LABEL ON DEVICE PLATE WITH CORRECT PANEL/CIRCUIT PER SPECIFICATIONS.
- B. FOR DEVICES, FIXTURES, ETC. TO BE REMOVED, THEY AND THEIR RELATED WIRING/CONDUIT SHALL BE REMOVED BACK TO THE SOURCE PANELBOARD, UNLESS OTHERWISE NOTED. ON CIRCUITS WHERE OTHER DEVICES, FIXTURES, ETC. ARE FOUND THAT MUST REMAIN, MAINTAIN CIRCUIT CONTINUITY BY PROVIDING ADDITIONAL WIRING TO FEED THROUGH TO THESE REMAINING ITEMS. RE-CIRCUIT ANY REMAINING DEVICES AS REQUIRED TO AVAILABLE PANELBOARD SPACE. RELOCATE ANY CIRCUITS THAT REMAIN TO AVOID CONFLICT WITH NEW CONSTRUCTION AS REQUIRED. PROPERLY TERMINATE ALL
- C. ITEMS TO BE REMOVED ARE INDICATED BY DASHED LINETYPE.
- REMOVE ALL EXISTING ELECTRICAL DEVICES AND EQUIPMENT IN THE RENOVATED AREA UNLESS OTHERWISE NOTED. REROUTING OF EXISTING CONDUCTORS MAY BE REQUIRED AT NEW OPENINGS IN EXISTING CONSTRUCTION OR AROUND NEW WORK. FOR DEVICES SHOWN, PROVIDE

• (ETR) DENOTES EXISTING DEVICES, FIXTURES, EQUIPMENT, ETC. ARE EXISTING TO REMAIN. THEY AND THEIR ASSOCIATED CIRCUITING, CABLING, AND RACEWAYS SHALL REMAIN.

- E. FOR FIRE ALARM DEVICES THAT ARE REMOVED, PERFORM ANY PROGRAMMING CHANGES AT FIRE ALARM CONTROL PANEL TO NOTE DEVICE HAS BEEN REMOVED. RECESSED, EMPTY BACK BOX AND CONDUIT MAY BE ABANDONED IN PLACE, UNLESS NOTED OTHERWISE.
- F. IN THE AREA OF RENOVATION ANY EXISTING FIRE ALARM SMOKE DETECTORS SHOWN TO REMAIN SHALL BE TEMPORARILY REPLACED WITH THERMAL DETECTORS. ALL SPACES WHERE EXISTING SMOKE DETECTORS ARE TO BE REMOVED SHALL BE PROVIDED WITH TEMPORARY THERMAL DETECTORS. NUMBER AND SPACING OF TEMPORARY DETECTORS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL AREAS OF RENOVATION SHALL BE TEMPORARILY COVERED BY FIRE ALARM THERMAL DETECTORS.
- H. ALL LOOSE WIRES AND CABLES SHALL BE SECURED ABOVE THE CEILING AS
- TEMPORARILY SUPPORT EXISTING CEILING MOUNTED ELECTRICAL WORK INCLUDING BUT NOT LIMITED TO LIGHTING FIXTURES, PA SPEAKERS, CAMERAS, INTRUSION ALARM, NETWORK, ETC. PROTECT DURING CONTSTRUCTION AND
- 1. DISCONNECT EXISTING AIR HANDLING UNIT (AHU) FOR REMOVAL BY OTHERS. REMOVE DISCONNECT/STARTER(S) AND RETAIN EXISTING CIRCUIT FOR
- 2. DISCONNECT EXISTING AIR HANDLING UNIT (AHU) FOR REMOVAL BY OTHERS. REMOVE CONDUIT AND WIRING BACK TO SOURCE ALONG WITH ASSOCIATED
- DISCONNECT/STARTER(S) AND RETAIN EXISTING CIRCUIT FOR RECONNECTION
- RETAIN EXISTING CIRCUIT FOR RECONNECTION TO CONTROL PANEL.
- 5. DUCT TYPE SMOKE DETECTORS ARE EXISTING TO REMAIN. IF ANY DUCT TYPE SMOKE DETECTOR IS LOCATED IN A SECTION OF DUCT REMOVED OR REPLACED, CONTRACTOR SHALL REMOVED, STORE, AND PROTECT DUCT
- RETAIN EXISTING CONDUIT AND WIRING FOR RECONNECTION TO NEW.

CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605 CPLteam.com



PROJECT INFORMATION

R23.00487.00

JOHNSTON COUNTY PUBLIC SCHOOLS

Project Name CLEVELAND ELEMENTARY SCHOOL HVAC RENOVATION

10225 CLEVELAND RD. CLAYTON, NC 27520

PROFESSIONAL STAMPS

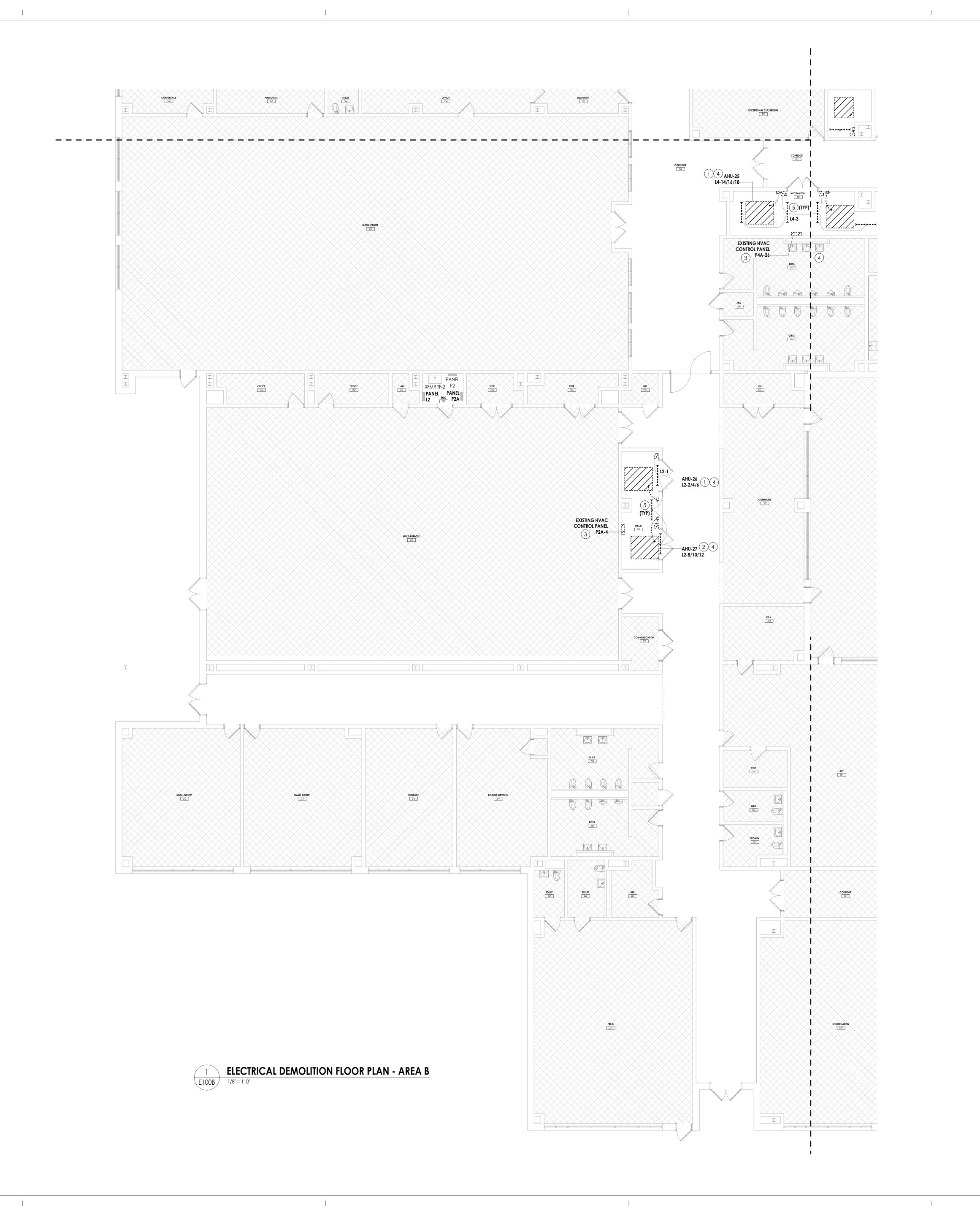


SHEET INFORMATION

02/17/2025 1/8" = 1'-0" Project Status **BID SET** 

FIRST FLOOR DEMOLITION PLAN -

E100A



## **GENERAL NOTES**

- A. FOR ALL EXISTING FIXTURES, DEVICES, ETC. INDICATED TO REMAIN, FIELD VERIFY THE EXISTING CIRCUIT, AND PROVIDE NEW LABEL ON DEVICE PLATE WITH CORRECT PANEL/CIRCUIT PER SPECIFICATIONS.
- B. FOR DEVICES, FIXTURES, ETC. TO BE REMOVED, THEY AND THEIR RELATED WIRING/CONDUIT SHALL BE REMOVED BACK TO THE SOURCE PANELBOARD, UNLESS OTHERWISE NOTED. ON CIRCUITS WHERE OTHER DEVICES, FIXTURES, ETC. ARE FOUND THAT MUST REMAIN, MAINTAIN CIRCUIT CONTINUITY BY PROVIDING ADDITIONAL WIRING TO FEED THROUGH TO THESE REMAINING ITEMS. RE-CIRCUIT ANY REMAINING DEVICES AS REQUIRED TO AVAILABLE PANELBOARD SPACE. RELOCATE ANY CIRCUITS THAT REMAIN TO AVOID CONFLICT WITH NEW CONSTRUCTION AS REQUIRED. PROPERLY TERMINATE ALL
- C. ITEMS TO BE REMOVED ARE INDICATED BY DASHED LINETYPE AND HATCHING.
- REMOVE ALL EXISTING ELECTRICAL DEVICES AND EQUIPMENT IN THE RENOVATED AREA UNLESS OTHERWISE NOTED. REROUTING OF EXISTING CONDUCTORS MAY BE REQUIRED AT NEW OPENINGS IN EXISTING CONSTRUCTION OR AROUND NEW WORK. FOR DEVICES SHOWN, PROVIDE WORK AS DENOTED BELOW:
  - (ETR) DENOTES EXISTING DEVICES, FIXTURES, EQUIPMENT, ETC. ARE EXISTING TO REMAIN. THEY AND THEIR ASSOCIATED CIRCUITING, CABLING, AND RACEWAYS SHALL REMAIN.
- E. FOR FIRE ALARM DEVICES THAT ARE REMOVED, PERFORM ANY PROGRAMMING CHANGES AT FIRE ALARM CONTROL PANEL TO NOTE DEVICE HAS BEEN REMOVED. RECESSED, EMPTY BACK BOX AND CONDUIT MAY BE ABANDONED IN PLACE, UNLESS NOTED OTHERWISE.
- F. IN THE AREA OF RENOVATION ANY EXISTING FIRE ALARM SMOKE DETECTORS SHOWN TO REMAIN SHALL BE TEMPORARILY REPLACED WITH THERMAL DETECTORS. ALL SPACES WHERE EXISTING SMOKE DETECTORS ARE TO BE REMOVED SHALL BE PROVIDED WITH TEMPORARY THERMAL DETECTORS. NUMBER AND SPACING OF TEMPORARY DETECTORS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL AREAS OF RENOVATION SHALL BE TEMPORARILY COVERED BY FIRE ALARM THERMAL DETECTORS.
- G. FIELD VERIFY ALL CIRCUITS.
- H. ALL LOOSE WIRES AND CABLES SHALL BE SECURED ABOVE THE CEILING AS THE EXISTING CEILING TILE AND GRID ARE REMOVED.
- TEMPORARILY SUPPORT EXISTING CEILING MOUNTED ELECTRICAL WORK INCLUDING BUT NOT LIMITED TO LIGHTING FIXTURES, PA SPEAKERS, CAMERAS, INTRUSION ALARM, NETWORK, ETC. PROTECT DURING CONTSTRUCTION AND REINSTALL IN CEILING TILE.

## X KEY NOTES:

- 1. DISCONNECT EXISTING AIR HANDLING UNIT (AHU) FOR REMOVAL BY OTHERS. REMOVE DISCONNECT/STARTER(S) AND RETAIN EXISTING CIRCUIT FOR RECONNECTION TO NEW UNIT.
- 2. DISCONNECT EXISTING AIR HANDLING UNIT (AHU) FOR REMOVAL BY OTHERS. REMOVE CONDUIT AND WIRING BACK TO SOURCE ALONG WITH ASSOCIATED DISCONNECT/STARTER(S).
- 3. DISCONNECT EXISTING HVAC CONTROL PANEL FOR REMOVAL BY OTHERS. RETAIN EXISTING CIRCUIT FOR RECONNECTION TO CONTROL PANEL.
- 4. DUCT TYPE SMOKE DETECTORS ARE EXISTING TO REMAIN. IF ANY DUCT TYPE SMOKE DETECTOR IS LOCATED IN A SECTION OF DUCT REMOVED OR REPLACED, CONTRACTOR SHALL REMOVED, STORE, AND PROTECT DUCT DETECTOR DURING CONSTRUCTION.
- 5. DISCONNECT AND REMOVE EXISTING ROOM LIGHTING AND CONTROLS. RETAIN EXISTING CONDUIT AND WIRING FOR RECONNECTION TO NEW.

CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605 CPLteam.com



PROJECT INFORMATION

R23.00487.00

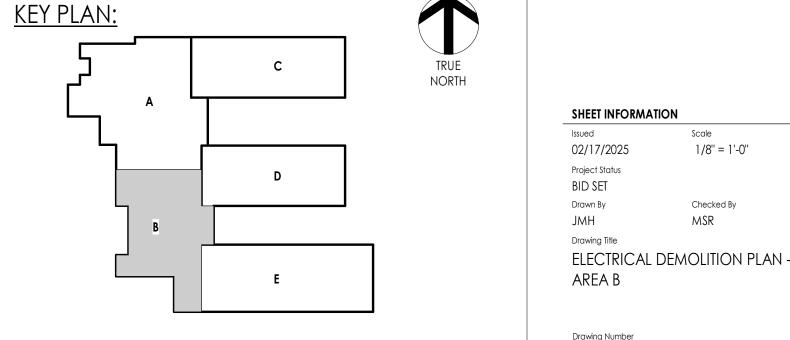
Project Name

JOHNSTON COUNTY PUBLIC **SCHOOLS** 

CLEVELAND ELEMENTARY SCHOOL HVAC RENOVATION

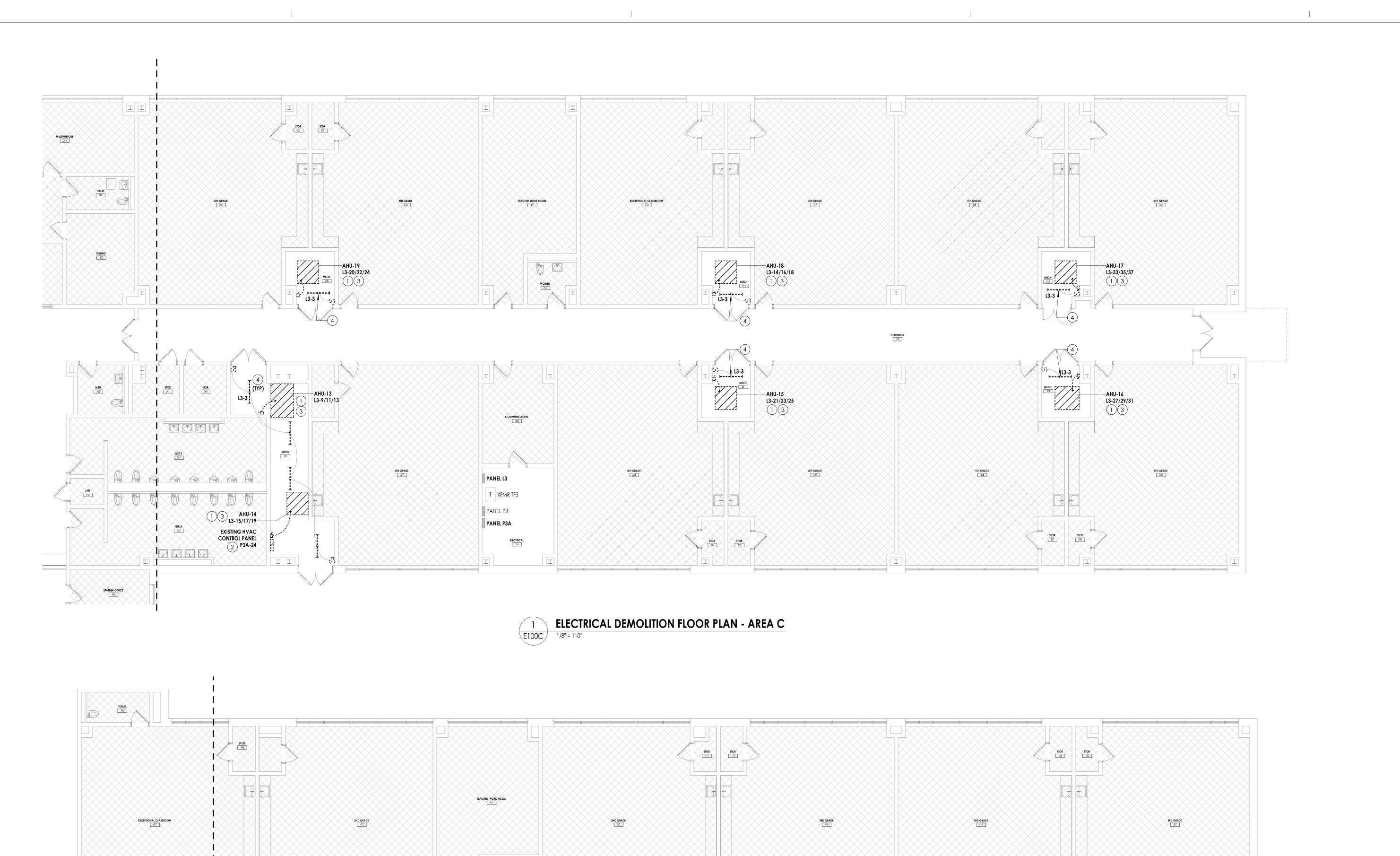
10225 CLEVELAND RD. CLAYTON, NC 27520





Drawing Number

1/8" = 1'-0"



CORRIDOR 405

—AHU-7 L4-7/9/11

PANEL L4

T XFMR TF4

E100C 1/8" = 1'-0"

2 ELECTRICAL DEMOLITION FLOOR PLAN - AREA D

PANEL P4A

# **GENERAL NOTES**

- A. FOR ALL EXISTING FIXTURES, DEVICES, ETC. INDICATED TO REMAIN, FIELD VERIFY THE EXISTING CIRCUIT, AND PROVIDE NEW LABEL ON DEVICE PLATE WITH CORRECT PANEL/CIRCUIT PER SPECIFICATIONS.
- B. FOR DEVICES, FIXTURES, ETC. TO BE REMOVED, THEY AND THEIR RELATED WIRING/CONDUIT SHALL BE REMOVED BACK TO THE SOURCE PANELBOARD, UNLESS OTHERWISE NOTED. ON CIRCUITS WHERE OTHER DEVICES, FIXTURES, ETC. ARE FOUND THAT MUST REMAIN, MAINTAIN CIRCUIT CONTINUITY BY PROVIDING ADDITIONAL WIRING TO FEED THROUGH TO THESE REMAINING ITEMS. RE-CIRCUIT ANY REMAINING DEVICES AS REQUIRED TO AVAILABLE PANELBOARD SPACE. RELOCATE ANY CIRCUITS THAT REMAIN TO AVOID CONFLICT WITH NEW CONSTRUCTION AS REQUIRED. PROPERLY TERMINATE ALL
- C. ITEMS TO BE REMOVED ARE INDICATED BY DASHED LINETYPE AND HATCHING.
- REMOVE ALL EXISTING ELECTRICAL DEVICES AND EQUIPMENT IN THE RENOVATED AREA UNLESS OTHERWISE NOTED. REROUTING OF EXISTING CONDUCTORS MAY BE REQUIRED AT NEW OPENINGS IN EXISTING CONSTRUCTION OR AROUND NEW WORK. FOR DEVICES SHOWN, PROVIDE WORK AS DENOTED BELOW:

• (ETR) DENOTES EXISTING DEVICES, FIXTURES, EQUIPMENT, ETC. ARE EXISTING TO REMAIN. THEY AND THEIR ASSOCIATED CIRCUITING, CABLING, AND RACEWAYS SHALL REMAIN.

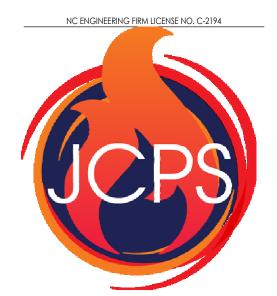
- E. FOR FIRE ALARM DEVICES THAT ARE REMOVED, PERFORM ANY PROGRAMMING CHANGES AT FIRE ALARM CONTROL PANEL TO NOTE DEVICE HAS BEEN REMOVED. RECESSED, EMPTY BACK BOX AND CONDUIT MAY BE ABANDONED IN PLACE, UNLESS NOTED OTHERWISE.
- F. IN THE AREA OF RENOVATION ANY EXISTING FIRE ALARM SMOKE DETECTORS SHOWN TO REMAIN SHALL BE TEMPORARILY REPLACED WITH THERMAL DETECTORS. ALL SPACES WHERE EXISTING SMOKE DETECTORS ARE TO BE REMOVED SHALL BE PROVIDED WITH TEMPORARY THERMAL DETECTORS. NUMBER AND SPACING OF TEMPORARY DETECTORS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL AREAS OF RENOVATION SHALL BE TEMPORARILY COVERED BY FIRE ALARM THERMAL DETECTORS.
- G. FIELD VERIFY ALL CIRCUITS.
- H. ALL LOOSE WIRES AND CABLES SHALL BE SECURED ABOVE THE CEILING AS THE EXISTING CEILING TILE AND GRID ARE REMOVED.

TEMPORARILY SUPPORT EXISTING CEILING MOUNTED ELECTRICAL WORK INCLUDING BUT NOT LIMITED TO LIGHTING FIXTURES, PA SPEAKERS, CAMERAS, INTRUSION ALARM, NETWORK, ETC. PROTECT DURING CONTSTRUCTION AND REINSTALL IN CEILING TILE.

## X KEY NOTES:

- 1. DISCONNECT EXISTING AIR HANDLING UNIT (AHU) FOR REMOVAL BY OTHERS. REMOVE DISCONNECT/STARTER(S) AND RETAIN EXISTING CIRCUIT FOR RECONNECTION TO NEW UNIT.
- 2. DISCONNECT EXISTING HVAC CONTROL PANEL FOR REMOVAL BY OTHERS. RETAIN EXISTING CIRCUIT FOR RECONNECTION TO CONTROL PANEL.
- 3. DUCT TYPE SMOKE DETECTORS ARE EXISTING TO REMAIN. IF ANY DUCT TYPE SMOKE DETECTOR IS LOCATED IN A SECTION OF DUCT REMOVED OR REPLACED, CONTRACTOR SHALL REMOVED, STORE, AND PROTECT DUCT DETECTOR DURING CONSTRUCTION.
- 4. DISCONNECT AND REMOVE EXISTING ROOM LIGHTING AND CONTROLS. RETAIN EXISTING CONDUIT AND WIRING FOR RECONNECTION TO NEW.

CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605 CPLteam.com



PROJECT INFORMATION

R23.00487.00

Project Name

JOHNSTON COUNTY PUBLIC SCHOOLS

CLEVELAND ELEMENTARY SCHOOL HVAC RENOVATION

10225 CLEVELAND RD.

CLAYTON, NC 27520

PROFESSIONAL STAMPS



\$10R \$10R \$25

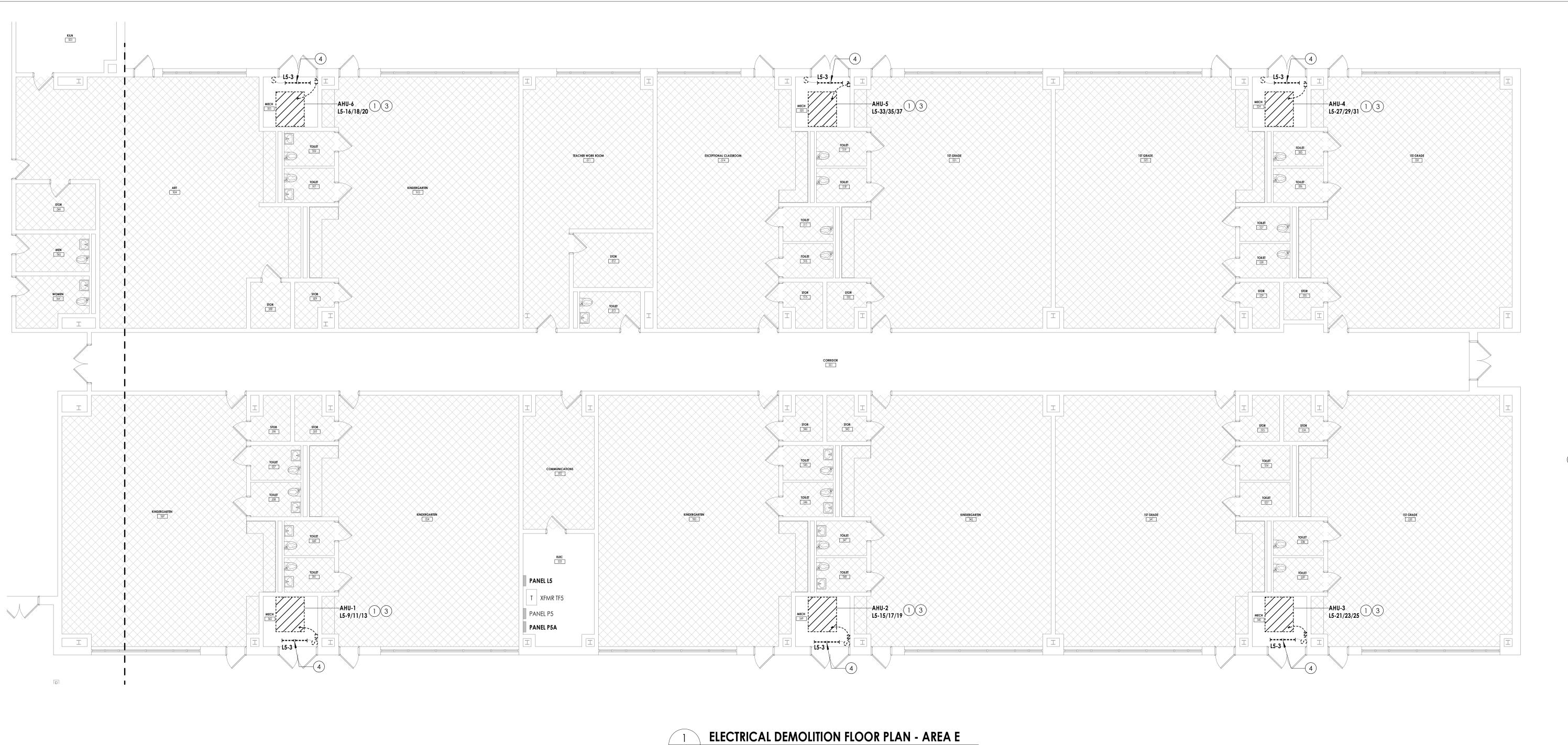
<u>KEY PLAN:</u>

SHEET INFORMATION 02/17/2025 1/8" = 1'-0" Project Status BID SET Drawing Title
ELECTRICAL DEMOLITION PLAN -

Drawing Number

AREA C & AREA D

E100C



**GENERAL NOTES** 

- A. FOR ALL EXISTING FIXTURES, DEVICES, ETC. INDICATED TO REMAIN, FIELD VERIFY THE EXISTING CIRCUIT, AND PROVIDE NEW LABEL ON DEVICE PLATE WITH CORRECT PANEL/CIRCUIT PER SPECIFICATIONS.
- B. FOR DEVICES, FIXTURES, ETC. TO BE REMOVED, THEY AND THEIR RELATED WIRING/CONDUIT SHALL BE REMOVED BACK TO THE SOURCE PANELBOARD, UNLESS OTHERWISE NOTED. ON CIRCUITS WHERE OTHER DEVICES, FIXTURES, ETC. ARE FOUND THAT MUST REMAIN, MAINTAIN CIRCUIT CONTINUITY BY PROVIDING ADDITIONAL WIRING TO FEED THROUGH TO THESE REMAINING ITEMS. RE-CIRCUIT ANY REMAINING DEVICES AS REQUIRED TO AVAILABLE PANELBOARD SPACE. RELOCATE ANY CIRCUITS THAT REMAIN TO AVOID CONFLICT WITH NEW CONSTRUCTION AS REQUIRED. PROPERLY TERMINATE ALL
- C. ITEMS TO BE REMOVED ARE INDICATED BY DASHED LINETYPE AND HATCHING.
- REMOVE ALL EXISTING ELECTRICAL DEVICES AND EQUIPMENT IN THE RENOVATED AREA UNLESS OTHERWISE NOTED. REPOUTING OF EXISTING CONDUCTORS MAY BE REQUIRED AT NEW OPENINGS IN EXISTING CONSTRUCTION OR AROUND NEW WORK. FOR DEVICES SHOWN, PROVIDE WORK AS DENOTED BELOW:
  - (ETR) DENOTES EXISTING DEVICES, FIXTURES, EQUIPMENT, ETC. ARE EXISTING TO REMAIN. THEY AND THEIR ASSOCIATED CIRCUITING, CABLING, AND RACEWAYS SHALL REMAIN.
- E. FOR FIRE ALARM DEVICES THAT ARE REMOVED, PERFORM ANY PROGRAMMING CHANGES AT FIRE ALARM CONTROL PANEL TO NOTE DEVICE HAS BEEN REMOVED. RECESSED, EMPTY BACK BOX AND CONDUIT MAY BE ABANDONED IN PLACE, UNLESS NOTED OTHERWISE.
- F. IN THE AREA OF RENOVATION ANY EXISTING FIRE ALARM SMOKE DETECTORS SHOWN TO REMAIN SHALL BE TEMPORARILY REPLACED WITH THERMAL DETECTORS. ALL SPACES WHERE EXISTING SMOKE DETECTORS ARE TO BE REMOVED SHALL BE PROVIDED WITH TEMPORARY THERMAL DETECTORS. NUMBER AND SPACING OF TEMPORARY DETECTORS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL AREAS OF RENOVATION SHALL BE TEMPORARILY COVERED BY FIRE ALARM THERMAL DETECTORS.
- G. FIELD VERIFY ALL CIRCUITS.
- H. ALL LOOSE WIRES AND CABLES SHALL BE SECURED ABOVE THE CEILING AS THE EXISTING CEILING TILE AND GRID ARE REMOVED.
- TEMPORARILY SUPPORT EXISTING CEILING MOUNTED ELECTRICAL WORK INCLUDING BUT NOT LIMITED TO LIGHTING FIXTURES, PA SPEAKERS, CAMERAS, INTRUSION ALARM, NETWORK, ETC. PROTECT DURING CONTSTRUCTION AND REINSTALL IN CEILING TILE.

X KEY NOTES:

<u>KEY PLAN:</u>

- 1. DISCONNECT EXISTING AIR HANDLING UNIT (AHU) FOR REMOVAL BY OTHERS. REMOVE DISCONNECT/STARTER(S) AND RETAIN EXISTING CIRCUIT FOR RECONNECTION TO NEW UNIT.
- DISCONNECT EXISTING FAN COIL UNIT (FC) FOR REMOVAL BY OTHERS. REMOVE DISCONNECT/STARTER(S) AND RETAIN EXISTING CIRCUIT FOR RECONNECTION TO NEW UNIT.
- 3. DUCT TYPE SMOKE DETECTORS ARE EXISTING TO REMAIN. IF ANY DUCT TYPE SMOKE DETECTOR IS LOCATED IN A SECTION OF DUCT REMOVED OR REPLACED, CONTRACTOR SHALL REMOVED, STORE, AND PROTECT DUCT DETECTOR DURING CONSTRUCTION.
- 4. DISCONNECT AND REMOVE EXISTING ROOM LIGHTING AND CONTROLS. RETAIN EXISTING CONDUIT AND WIRING FOR RECONNECTION TO NEW.

CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605 CPLteam.com NC ENGINEERING FIRM LICENSE NO. C-2194

PROJECT INFORMATION

Project Number R23.00487.00

JOHNSTON COUNTY PUBLIC SCHOOLS

Project Name CLEVELAND ELEMENTARY SCHOOL HVAC RENOVATION

10225 CLEVELAND RD. CLAYTON, NC 27520



SHEET INFORMATION

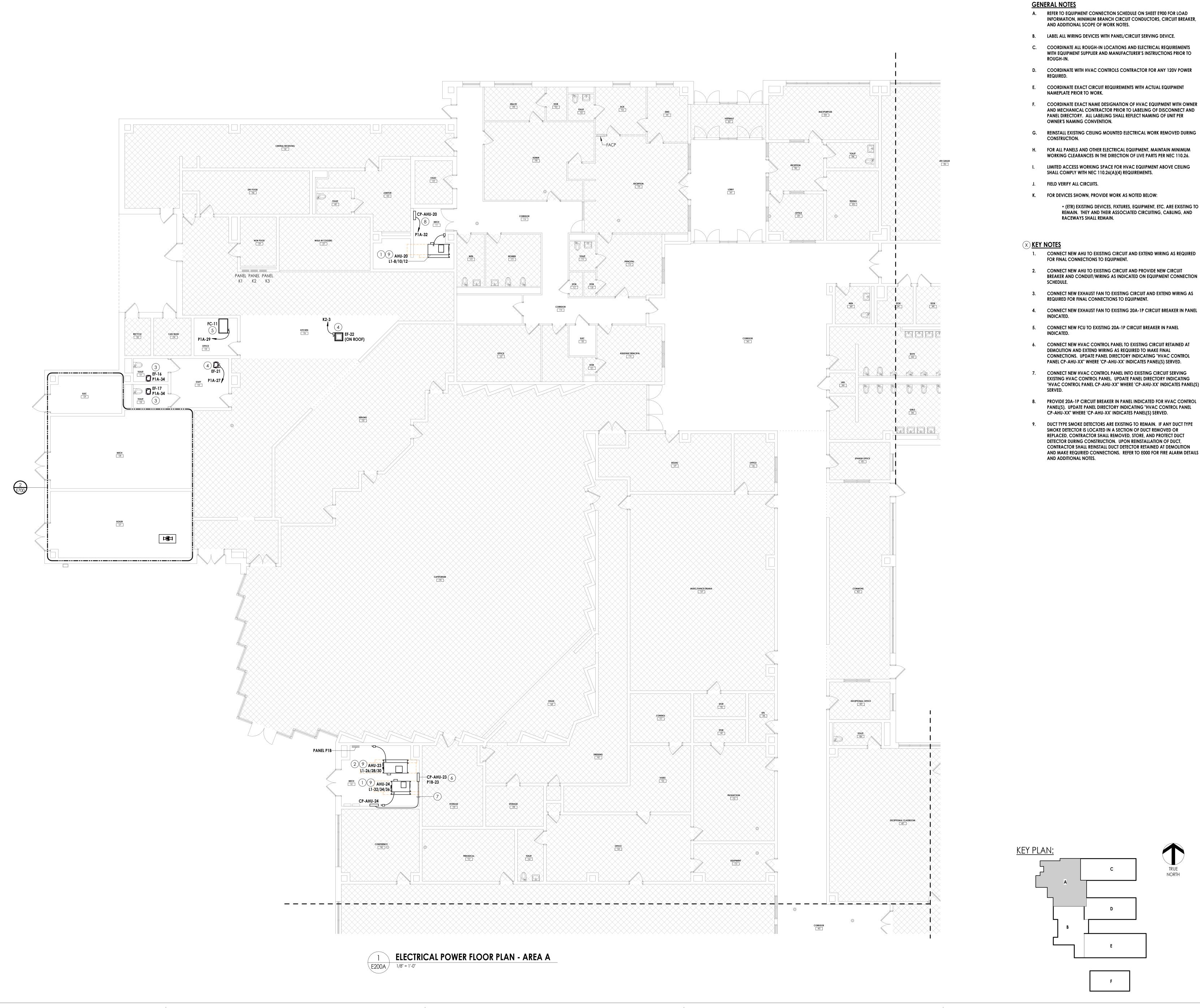
02/17/2025 1/8" = 1'-0" Project Status **BID SET** Drawn By

Drawing Title ELECTRICAL DEMOLITION PLAN -AREA E & AREA F

Drawing Number

E100E

**ELECTRICAL DEMOLITION FLOOR PLAN - AREA F** 



- INFORMATION, MINIMUM BRANCH CIRCUIT CONDUCTORS, CIRCUIT BREAKER,
- WITH EQUIPMENT SUPPLIER AND MANUFACTURER'S INSTRUCTIONS PRIOR TO
- D. COORDINATE WITH HVAC CONTROLS CONTRACTOR FOR ANY 120V POWER
- AND MECHANICAL CONTRACTOR PRIOR TO LABELING OF DISCONNECT AND PANEL DIRECTORY. ALL LABELING SHALL REFLECT NAMING OF UNIT PER
- WORKING CLEARANCES IN THE DIRECTION OF LIVE PARTS PER NEC 110.26.

• (ETR) EXISTING DEVICES, FIXTURES, EQUIPMENT, ETC. ARE EXISTING TO REMAIN. THEY AND THEIR ASSOCIATED CIRCUITING, CABLING, AND

- 1. CONNECT NEW AHU TO EXISTING CIRCUIT AND EXTEND WIRING AS REQUIRED
- 2. CONNECT NEW AHU TO EXISTING CIRCUIT AND PROVIDE NEW CIRCUIT BREAKER AND CONDUIT/WIRING AS INDICATED ON EQUIPMENT CONNECTION
- 4. CONNECT NEW EXHAUST FAN TO EXISTING 20A-1P CIRCUIT BREAKER IN PANEL
- CONNECTIONS. UPDATE PANEL DIRECTORY INDICATING "HVAC CONTROL PANEL CP-AHU-XX" WHERE 'CP-AHU-XX' INDICATES PANEL(S) SERVED.
- EXISTING HVAC CONTROL PANEL. UPDATE PANEL DIRECTORY INDICATING "HVAC CONTROL PANEL CP-AHU-XX" WHERE 'CP-AHU-XX' INDICATES PANEL(S)
- PANEL(S). UPDATE PANEL DIRECTORY INDICATING "HVAC CONTROL PANEL
  - SMOKE DETECTOR IS LOCATED IN A SECTION OF DUCT REMOVED OR REPLACED, CONTRACTOR SHALL REMOVED, STORE, AND PROTECT DUCT DETECTOR DURING CONSTRUCTION. UPON REINSTALLATION OF DUCT. CONTRACTOR SHALL REINSTALL DUCT DETECTOR RETAINED AT DEMOLITION AND MAKE REQURIED CONNECTIONS. REFER TO E000 FOR FIRE ALARM DETAILS

CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605 CPLteam.com



PROJECT INFORMATION

R23.00487.00 JOHNSTON COUNTY PUBLIC

SCHOOLS CLEVELAND ELEMENTARY SCHOOL HVAC RENOVATION

10225 CLEVELAND RD. CLAYTON, NC 27520

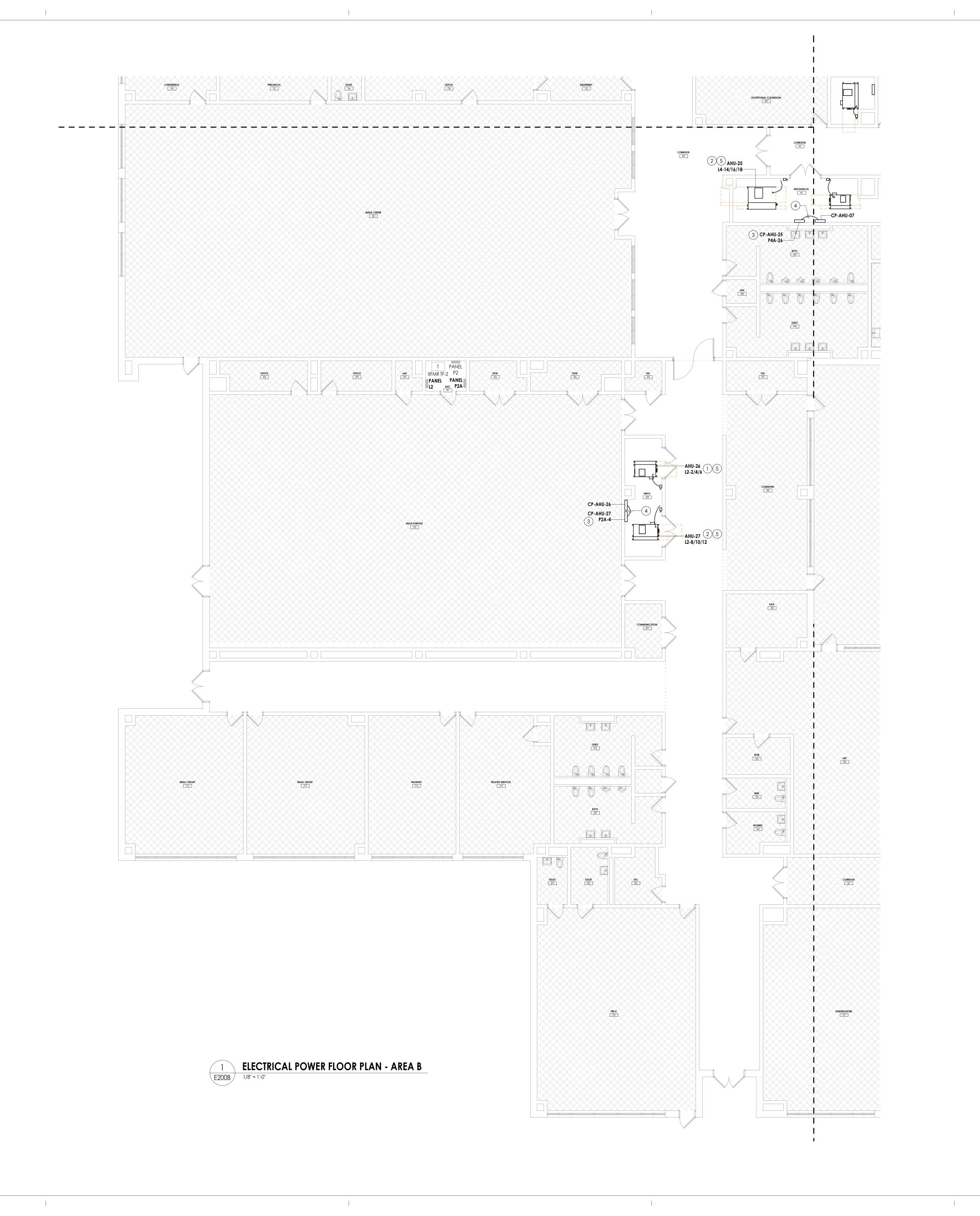
PROFESSIONAL STAMPS



SHEET INFORMATION 02/17/2025

ELECTRICAL POWER PLAN - AREA

E200A



## **GENERAL NOTES**

- A. REFER TO EQUIPMENT CONNECTION SCHEDULE ON SHEET E900 FOR LOAD INFORMATION, MINIMUM BRANCH CIRCUIT CONDUCTORS, CIRCUIT BREAKER, AND ADDITIONAL SCOPE OF WORK NOTES.
- B. LABEL ALL WIRING DEVICES WITH PANEL/CIRCUIT SERVING DEVICE.
- C. COORDINATE ALL ROUGH-IN LOCATIONS AND ELECTRICAL REQUIREMENTS WITH EQUIPMENT SUPPLIER AND MANUFACTURER'S INSTRUCTIONS PRIOR TO ROUGH-IN.
- D. COORDINATE WITH HVAC CONTROLS CONTRACTOR FOR ANY 120V POWER REQUIRED.
- E. COORDINATE EXACT CIRCUIT REQUIREMENTS WITH ACTUAL EQUIPMENT NAMEPLATE PRIOR TO WORK.
- F. COORDINATE EXACT NAME DESIGNATION OF HVAC EQUIPMENT WITH OWNER AND MECHANICAL CONTRACTOR PRIOR TO LABELING OF DISCONNECT AND PANEL DIRECTORY. ALL LABELING SHALL REFLECT NAMING OF UNIT PER OWNER'S NAMING CONVENTION.
- G. REINSTALL EXISTING CEILING MOUNTED ELECTRICAL WORK REMOVED DURING CONSTRUCTION.
- H. FOR ALL PANELS AND OTHER ELECTRICAL EQUIPMENT, MAINTAIN MINIMUM WORKING CLEARANCES IN THE DIRECTION OF LIVE PARTS PER NEC 110.26.
- LIMITED ACCESS WORKING SPACE FOR HVAC EQUIPMENT ABOVE CEILING SHALL COMPLY WITH NEC 110.26(A)(4) REQUIREMENTS.
- J. FIELD VERIFY ALL CIRCUITS.
- K. FOR DEVICES SHOWN, PROVIDE WORK AS NOTED BELOW:
- (ETR) EXISTING DEVICES, FIXTURES, EQUIPMENT, ETC. ARE EXISTING TO REMAIN. THEY AND THEIR ASSOCIATED CIRCUITING, CABLING, AND RACEWAYS SHALL REMAIN.

# × KEY NOTES

- CONNECT NEW AHU TO EXISTING CIRCUIT AND EXTEND WIRING AS REQUIRED FOR FINAL CONNECTIONS TO EQUIPMENT.
- 2. CONNECT NEW AHU TO EXISTING CIRCUIT AND PROVIDE NEW CIRCUIT BREAKER AND CONDUIT/WIRING AS INDICATED ON EQUIPMENT CONNECTION SCHEDULE.
- 3. CONNECT NEW HVAC CONTROL PANEL TO EXISTING CIRCUIT RETAINED AT DEMOLITION AND EXTEND WIRING AS REQUIRED TO MAKE FINAL CONNECTIONS. UPDATE PANEL DIRECTORY INDICATING "HVAC CONTROL PANEL CP-AHU-XX" WHERE 'CP-AHU-XX' INDICATES PANEL(S) SERVED.
- 4. CONNECT NEW HVAC CONTROL PANEL INTO EXISTING CIRCUIT SERVING EXISTING HVAC CONTROL PANEL. UPDATE PANEL DIRECTORY INDICATING "HVAC CONTROL PANEL CP-AHU-XX" WHERE 'CP-AHU-XX' INDICATES PANEL(S) SERVED.
- 5. DUCT TYPE SMOKE DETECTORS ARE EXISTING TO REMAIN. IF ANY DUCT TYPE SMOKE DETECTOR IS LOCATED IN A SECTION OF DUCT REMOVED OR REPLACED, CONTRACTOR SHALL REMOVED, STORE, AND PROTECT DUCT DETECTOR DURING CONSTRUCTION. UPON REINSTALLATION OF DUCT, CONTRACTOR SHALL REINSTALL DUCT DETECTOR RETAINED AT DEMOLITION AND MAKE REQURIED CONNECTIONS. REFER TO E000 FOR FIRE ALARM DETAILS AND ADDITIONAL NOTES.

CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605 CPLteam.com

NC ENGINEERING FIRM LICENSE NO. C-2194

PROJECT INFORMATION
Project Number

R23.00487.00
Client Name

JOHNSTON COUNTY PUBLIC SCHOOLS
Project Name

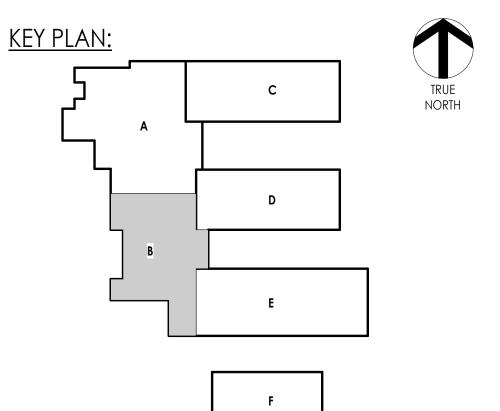
CLEVELAND ELEMENTARY
SCHOOL HVAC RENOVATION

Project Address 10225 CLEVELAND RD. CLAYTON, NC 27520

PROJECT ISSUE & REVISION SCHEDULE
w Date Description

PROFESSIONAL STAMPS



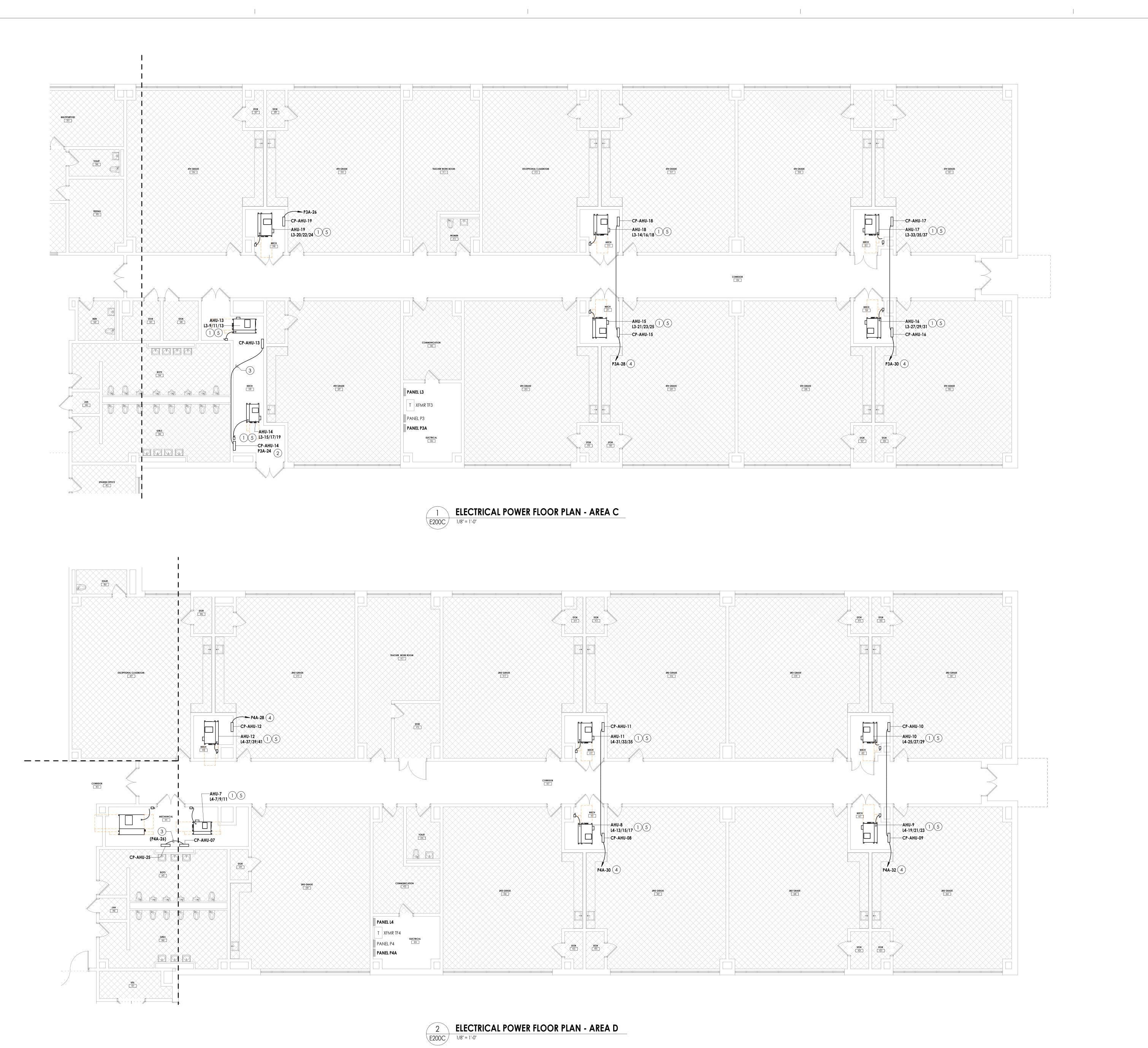


SHEET INFORMATION

ELECTRICAL POWER PLAN - AREA B

Drawing Number

200B



## **GENERAL NOTES**

- A. REFER TO EQUIPMENT CONNECTION SCHEDULE ON SHEET E900 FOR LOAD INFORMATION, MINIMUM BRANCH CIRCUIT CONDUCTORS, CIRCUIT BREAKER, AND ADDITIONAL SCOPE OF WORK NOTES.
- B. LABEL ALL WIRING DEVICES WITH PANEL/CIRCUIT SERVING DEVICE.
- C. COORDINATE ALL ROUGH-IN LOCATIONS AND ELECTRICAL REQUIREMENTS WITH EQUIPMENT SUPPLIER AND MANUFACTURER'S INSTRUCTIONS PRIOR TO ROUGH-IN.
- D. COORDINATE WITH HVAC CONTROLS CONTRACTOR FOR ANY 120V POWER
- E. COORDINATE EXACT CIRCUIT REQUIREMENTS WITH ACTUAL EQUIPMENT NAMEPLATE PRIOR TO WORK.
- F. COORDINATE EXACT NAME DESIGNATION OF HVAC EQUIPMENT WITH OWNER AND MECHANICAL CONTRACTOR PRIOR TO LABELING OF DISCONNECT AND PANEL DIRECTORY. ALL LABELING SHALL REFLECT NAMING OF UNIT PER OWNER'S NAMING CONVENTION.
- G. REINSTALL EXISTING CEILING MOUNTED ELECTRICAL WORK REMOVED DURING CONSTRUCTION.
- H. FOR ALL PANELS AND OTHER ELECTRICAL EQUIPMENT, MAINTAIN MINIMUM WORKING CLEARANCES IN THE DIRECTION OF LIVE PARTS PER NEC 110.26.
- I. LIMITED ACCESS WORKING SPACE FOR HVAC EQUIPMENT ABOVE CEILING SHALL COMPLY WITH NEC 110.26(A)(4) REQUIREMENTS.
- J. FIELD VERIFY ALL CIRCUITS.
- K. FOR DEVICES SHOWN, PROVIDE WORK AS NOTED BELOW:
- (ETR) EXISTING DEVICES, FIXTURES, EQUIPMENT, ETC. ARE EXISTING TO REMAIN. THEY AND THEIR ASSOCIATED CIRCUITING, CABLING, AND RACEWAYS SHALL REMAIN.

## X KEY NOTES

- CONNECT NEW AHU TO EXISTING CIRCUIT AND EXTEND WIRING AS REQUIRED FOR FINAL CONNECTIONS TO EQUIPMENT.
- 2. CONNECT NEW HVAC CONTROL PANEL TO EXISTING CIRCUIT RETAINED AT DEMOLITION AND EXTEND WIRING AS REQUIRED TO MAKE FINAL CONNECTIONS. UPDATE PANEL DIRECTORY INDICATING "HVAC CONTROL PANEL CP-AHU-XX" WHERE 'CP-AHU-XX' INDICATES PANEL(S) SERVED.
- 3. CONNECT NEW HVAC CONTROL PANEL INTO EXISTING CIRCUIT SERVING EXISTING HVAC CONTROL PANEL. UPDATE PANEL DIRECTORY INDICATING "HVAC CONTROL PANEL CP-AHU-XX" WHERE 'CP-AHU-XX' INDICATES PANEL(S)
- 4. PROVIDE 20A-1P CIRCUIT BREAKER IN PANEL INDICATED FOR HVAC CONTROL PANEL(S). UPDATE PANEL DIRECTORY INDICATING "HVAC CONTROL PANEL CP-AHU-XX" WHERE 'CP-AHU-XX' INDICATES PANEL(S) SERVED.
- 5. DUCT TYPE SMOKE DETECTORS ARE EXISTING TO REMAIN. IF ANY DUCT TYPE SMOKE DETECTOR IS LOCATED IN A SECTION OF DUCT REMOVED OR REPLACED, CONTRACTOR SHALL REMOVED, STORE, AND PROTECT DUCT DETECTOR DURING CONSTRUCTION. UPON REINSTALLATION OF DUCT, CONTRACTOR SHALL REINSTALL DUCT DETECTOR RETAINED AT DEMOLITION AND MAKE REQURIED CONNECTIONS. REFER TO E000 FOR FIRE ALARM DETAILS AND ADDITIONAL NOTES.

CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605 CPLteam.com

NC ENGINEERING FIRM LICENSE NO. C-2194

PROJECT INFORMATION

Project Number

Project Number R23.00487.00

JOHNSTON COUNTY PUBLIC SCHOOLS

Project Name

CLEVELAND ELEMENTARY

SCHOOL HVAC RENOVATION

CHOOL HVAC RENOVATION

10225 CLEVELAND RD. CLAYTON, NC 27520

PROJECT ISSUE & REVISION SCHEDULE

w Date Description

PROFESSIONAL STAMPS



KEY PLAN:

C
TRUE
NORTH

E

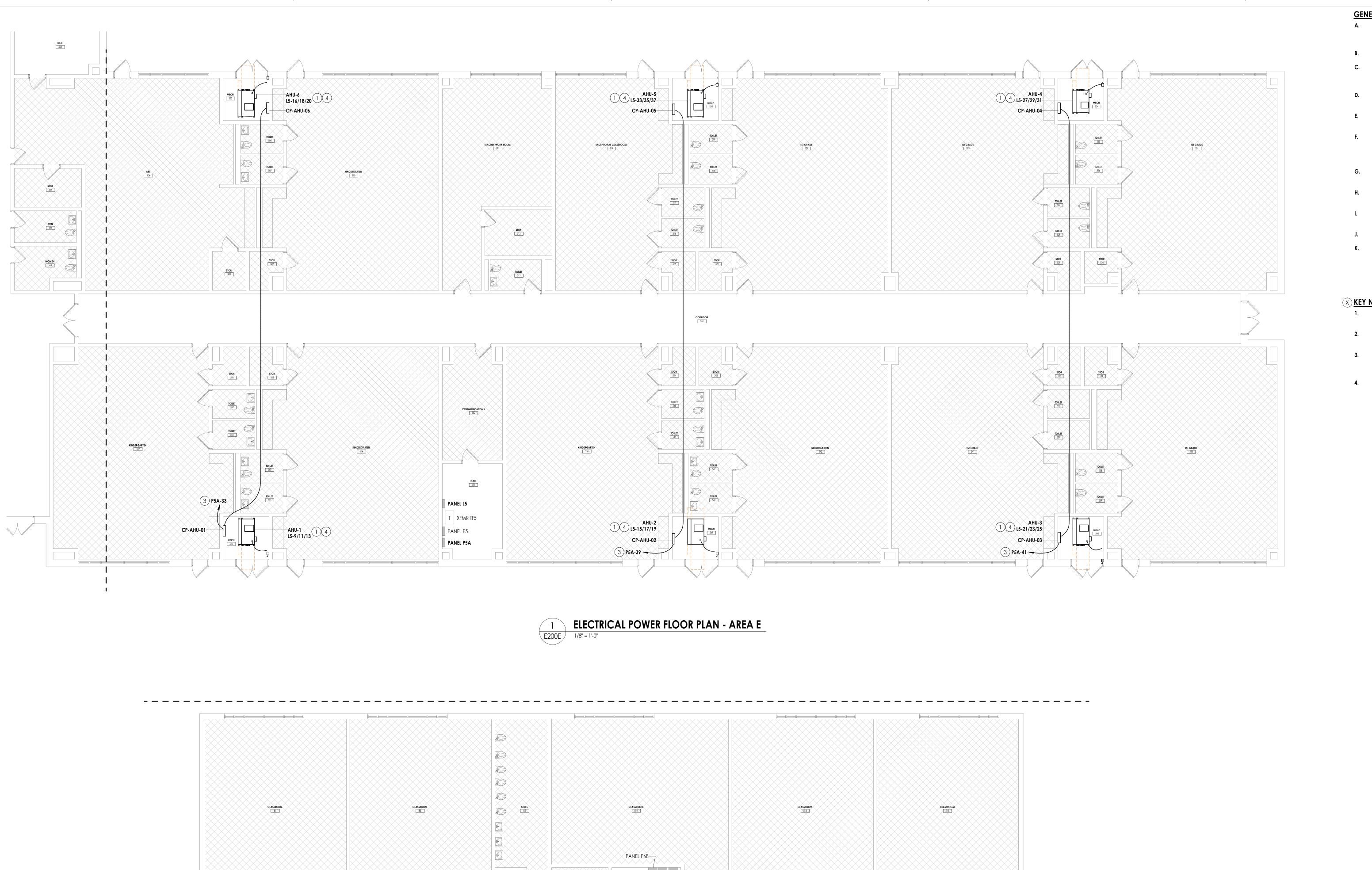
SHEET INFORMATION

Issued Scale
02/17/2025 AS NOTED
Project Status
BID SET
Drawn By Checked By
JMH MSR

Drawing Title
ELECTRICAL POWER PLAN - AREA
C & AREA D

Drawing Number

E200C



ELECTRICAL POWER FLOOR PLAN - AREA F

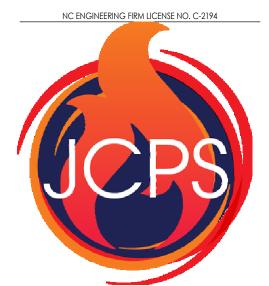
**GENERAL NOTES** 

- A. REFER TO EQUIPMENT CONNECTION SCHEDULE ON SHEET E900 FOR LOAD INFORMATION, MINIMUM BRANCH CIRCUIT CONDUCTORS, CIRCUIT BREAKER, AND ADDITIONAL SCOPE OF WORK NOTES.
- B. LABEL ALL WIRING DEVICES WITH PANEL/CIRCUIT SERVING DEVICE.
- C. COORDINATE ALL ROUGH-IN LOCATIONS AND ELECTRICAL REQUIREMENTS WITH EQUIPMENT SUPPLIER AND MANUFACTURER'S INSTRUCTIONS PRIOR TO
- D. COORDINATE WITH HVAC CONTROLS CONTRACTOR FOR ANY 120V POWER
- E. COORDINATE EXACT CIRCUIT REQUIREMENTS WITH ACTUAL EQUIPMENT NAMEPLATE PRIOR TO WORK.
- F. COORDINATE EXACT NAME DESIGNATION OF HVAC EQUIPMENT WITH OWNER AND MECHANICAL CONTRACTOR PRIOR TO LABELING OF DISCONNECT AND PANEL DIRECTORY. ALL LABELING SHALL REFLECT NAMING OF UNIT PER OWNER'S NAMING CONVENTION.
- G. REINSTALL EXISTING CEILING MOUNTED ELECTRICAL WORK REMOVED DURING CONSTRUCTION.
- H. FOR ALL PANELS AND OTHER ELECTRICAL EQUIPMENT, MAINTAIN MINIMUM WORKING CLEARANCES IN THE DIRECTION OF LIVE PARTS PER NEC 110.26.
- I. LIMITED ACCESS WORKING SPACE FOR HVAC EQUIPMENT ABOVE CEILING SHALL COMPLY WITH NEC 110.26(A)(4) REQUIREMENTS.
- J. FIELD VERIFY ALL CIRCUITS.
- K. FOR DEVICES SHOWN, PROVIDE WORK AS NOTED BELOW:
- (ETR) EXISTING DEVICES, FIXTURES, EQUIPMENT, ETC. ARE EXISTING TO REMAIN. THEY AND THEIR ASSOCIATED CIRCUITING, CABLING, AND RACEWAYS SHALL REMAIN.

# X KEY NOTES

- 1. CONNECT NEW AHU TO EXISTING CIRCUIT AND EXTEND WIRING AS REQUIRED FOR FINAL CONNECTIONS TO EQUIPMENT.
- 2. CONNECT NEW FCU TO EXISTING CIRCUIT AND EXTEND WIRING AS REQUIRED FOR FINAL CONNECTIONS TO EQUIPMENT.
- 3. PROVIDE 20A-1P CIRCUIT BREAKER IN PANEL INDICATED FOR HVAC CONTROL PANEL(S). UPDATE PANEL DIRECTORY INDICATING "HVAC CONTROL PANEL CP-AHU-XX" WHERE 'CP-AHU-XX' INDICATES PANEL(S) SERVED.
- 4. DUCT TYPE SMOKE DETECTORS ARE EXISTING TO REMAIN. IF ANY DUCT TYPE SMOKE DETECTOR IS LOCATED IN A SECTION OF DUCT REMOVED OR REPLACED, CONTRACTOR SHALL REMOVED, STORE, AND PROTECT DUCT DETECTOR DURING CONSTRUCTION. UPON REINSTALLATION OF DUCT, CONTRACTOR SHALL REINSTALL DUCT DETECTOR RETAINED AT DEMOLITION AND MAKE REQURIED CONNECTIONS. REFER TO E000 FOR FIRE ALARM DETAILS AND ADDITIONAL NOTES.

CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605 CPLteam.com



PROJECT INFORMATION

R23.00487.00

JOHNSTON COUNTY PUBLIC SCHOOLS

Project Name CLEVELAND ELEMENTARY SCHOOL HVAC RENOVATION

10225 CLEVELAND RD. CLAYTON, NC 27520

PROFESSIONAL STAMPS



<u>KEY PLAN:</u>

SHEET INFORMATION 02/17/2025 1/8" = 1'-0" Project Status **BID SET** 

Drawing Title
ELECTRICAL POWER PLAN - AREA E & AREA F

Drawing Number

E200E



Raleigh, NC 27605 CPLteam.com



PROJECT INFORMATION Project Number

JOHNSTON COUNTY PUBLIC SCHOOLS

CLEVELAND ELEMENTARY SCHOOL HVAC RENOVATION

Project Address 10225 CLEVELAND RD. CLAYTON, NC 27520



SHEET INFORMATION

AS NOTED 02/17/2025

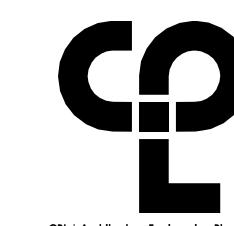
ELECTRICAL LIGHTING PLAN -AREA A

Drawing Number

E300A

× KEY NOTES:

1. INSTALL NEW FIXTURE AND CONTROLS IN EXISTING LOCATION AND RECONNECT TO EXISTING CONDUIT AND WIRING. EXTEND CONDUIT AND WIRING AS REQUIRED.



CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605 CPLteam.com



PROJECT INFORMATION
Project Number
R23.00487.00

Client Name

JOHNSTON COUNTY PUBLIC
SCHOOLS

Project Name

CLEVELAND ELEMENTARY

SCHOOL HVAC RENOVATION

Project Address 10225 CLEVELAND RD. CLAYTON, NC 27520

PROJECT ISSUE & REVISION SCHEDULE

w Date Description

PROFESSIONAL STAMP



SHEET INFORMATION

Issued
02/17/2025
Project Status
BID SET

Drawn By Checked By
JMH MSR

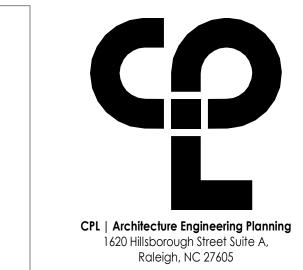
Drawing Title

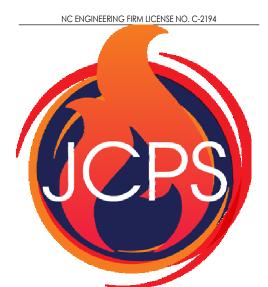
1/8" = 1'-0"

Drawing Title
ELECTRICAL LIGHTING PLAN AREA B

Drawing Number

300B





CPLteam.com

PROJECT INFORMATION
Project Number
R23.00487.00

JOHNSTON COUNTY PUBLIC SCHOOLS

Project Name

CLEVELAND ELEMENTARY SCHOOL HVAC RENOVATION

Project Address 10225 CLEVELAND RD. CLAYTON, NC 27520

PRO IECT ISSUE & REVISION SCHEDUIE

PROFESSIONAL STAMPS



SHEET INFORMATION

Issued Scale
02/17/2025 1/8" = 1'-0"

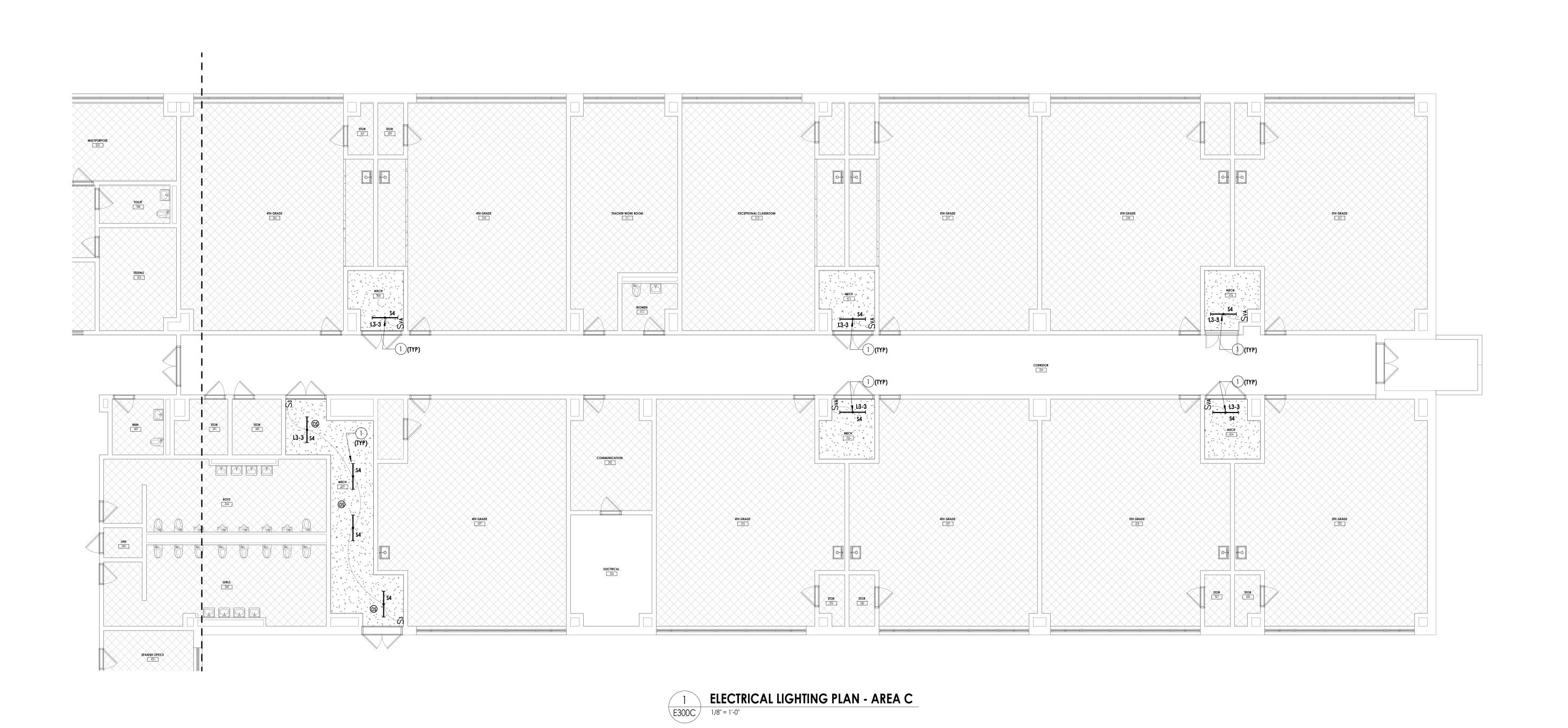
Project Status
BID SET
Drawn By Checked By
JMH MSR

Drawing Title

Drawing Title
ELECTRICAL LIGHTING PLAN AREA C

Drawing Number

E300C





KEY NOTES:
 1. INSTALL NEW FIXTURE AND CONTROLS IN EXISTING LOCATION AND RECONNECT TO EXISTING CONDUIT AND WIRING. EXTEND CONDUIT AND WIRING AS REQUIRED.





PROJECT INFORMATION

Project Number
R23.00487.00
Client Name
JOHNSTON COUNTY PUBLIC
SCHOOLS

Project Name

CLEVELAND ELEMENTARY

SCHOOL HVAC RENOVATION

Project Address 10225 CLEVELAND RD. CLAYTON, NC 27520

PROJECT ISSUE & REVISION SCHEDULE

PROFESSIONAL STAMPS



SHEET INFORMATION

Issued
02/17/2025
Project Status
BID SET

BID SET
Drawn By Checked By
JMH MSR
Drawing Title

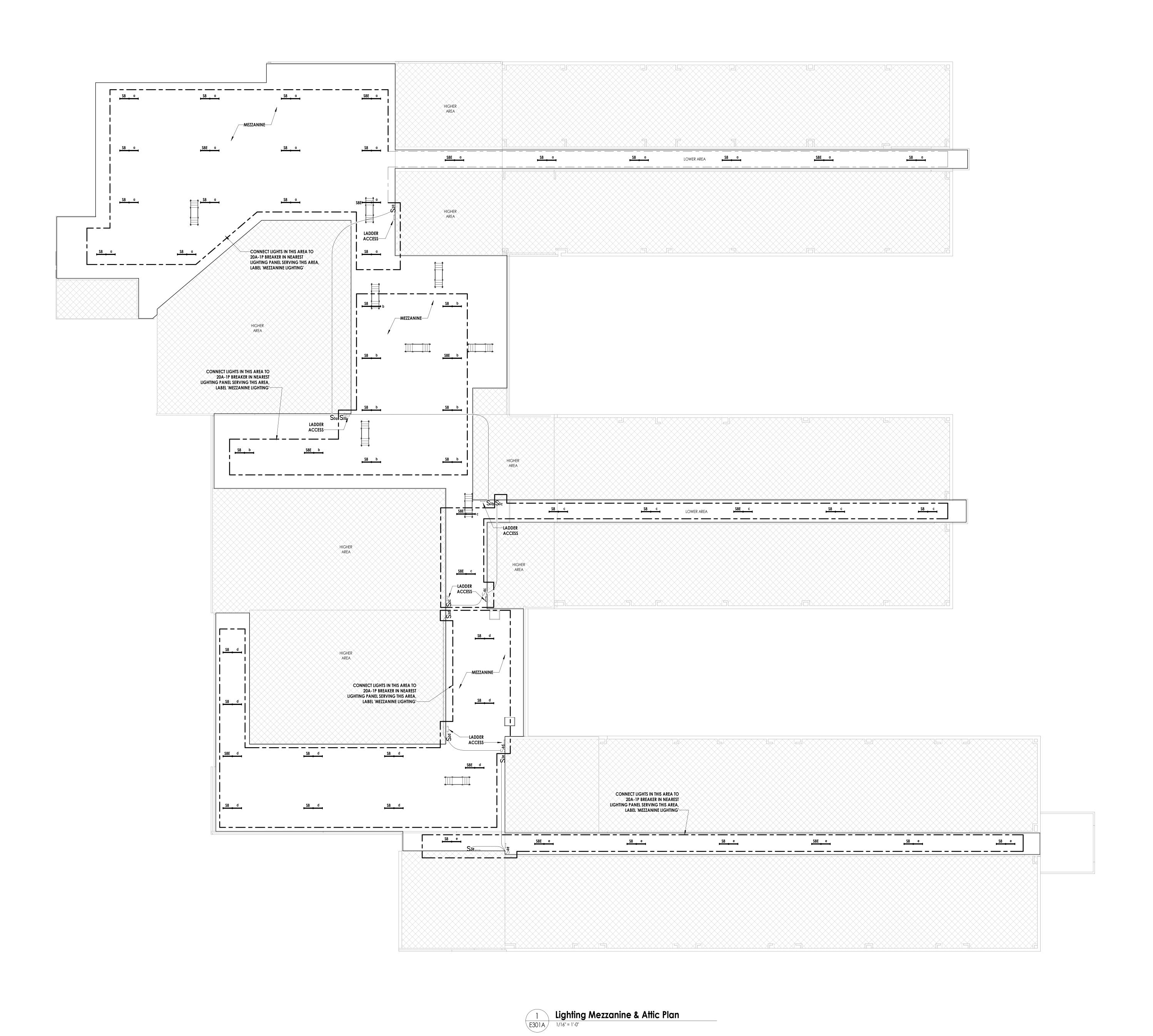
AS NOTED

Drawing Title
ELECTRICAL LIGHTING PLAN AREA E

Drawing Number

E300E









CPLteam.com

PROJECT INFORMATION Project Number R23.00487.00

JOHNSTON COUNTY PUBLIC SCHOOLS Project Name

**CLEVELAND ELEMENTARY** SCHOOL HVAC RENOVATION

Project Address 10225 CLEVELAND RD. CLAYTON, NC 27520

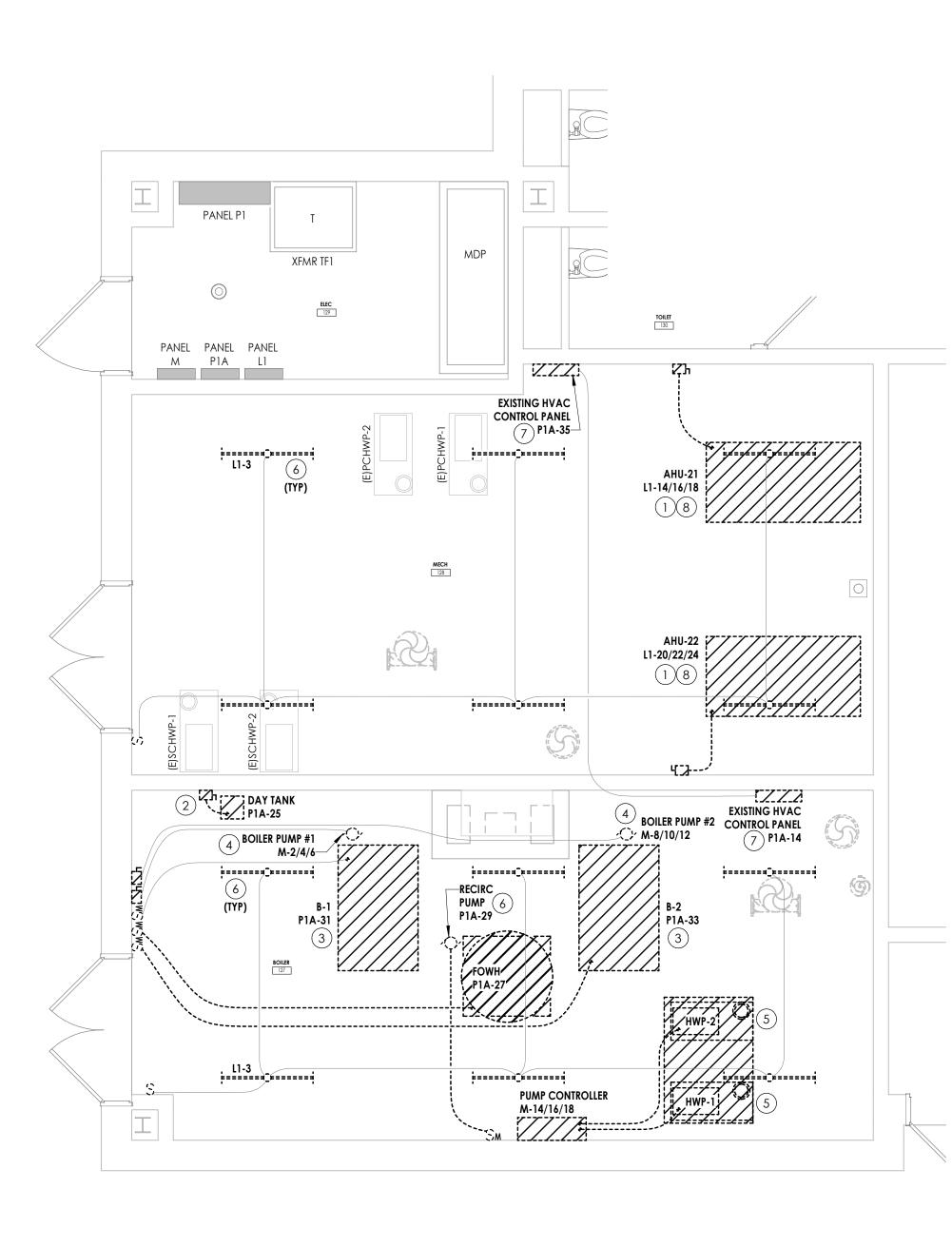
PROFESSIONAL STAMPS



SHEET INFORMATION 1/16" = 1'-0" 02/17/2025 Project Status BID SET

Drawn By Checked By

Drawing Title
LIGHTING MEZZANINE & ATTIC



1 ENLARGED ELECTRICAL DEMOLITION PLAN - MECH RMS & ELEC RM

# **DEMOLITION GENERAL NOTES:**

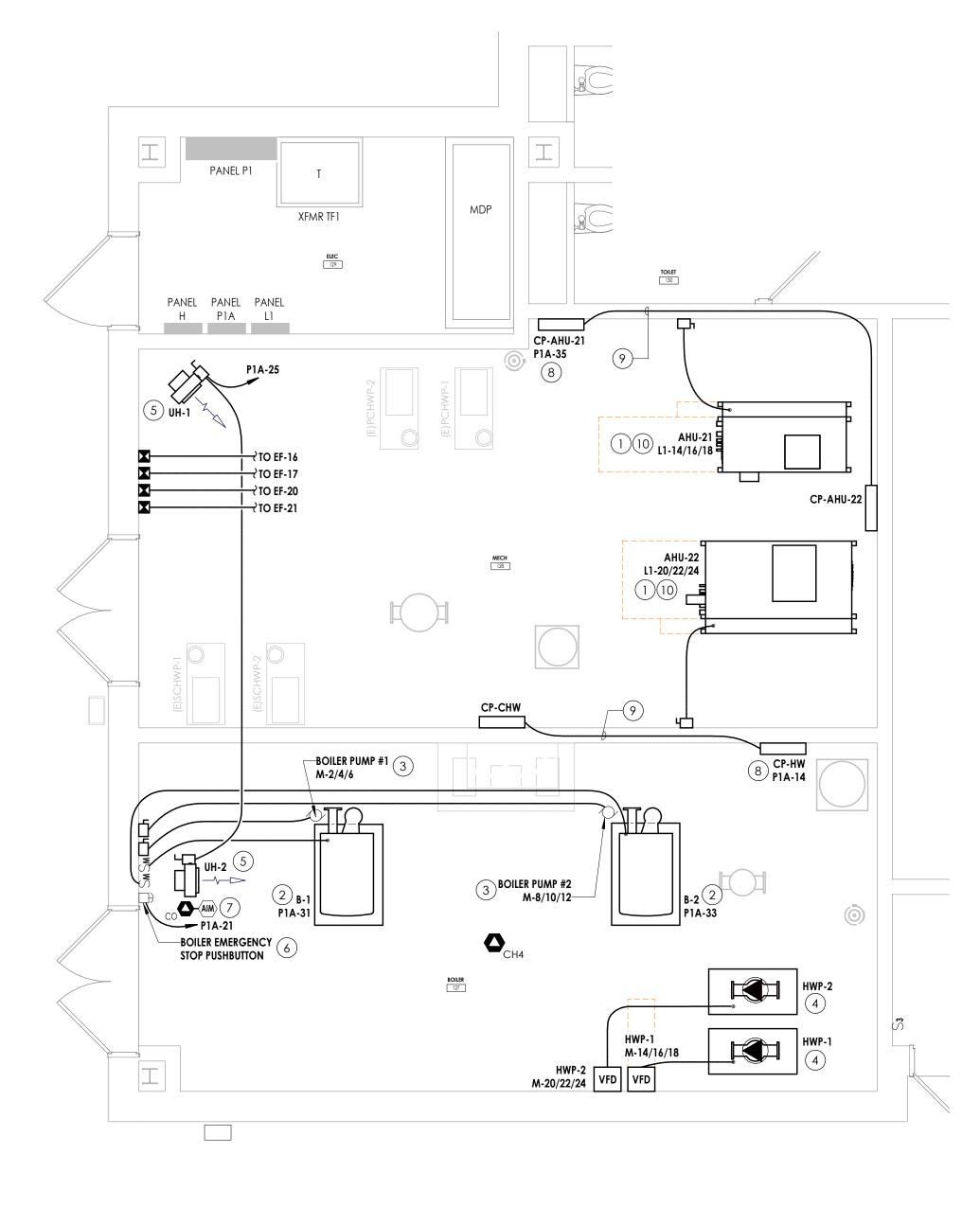
- A. FOR ALL EXISTING FIXTURES, DEVICES, ETC. INDICATED TO REMAIN, FIELD VERIFY THE EXISTING CIRCUIT, AND PROVIDE NEW LABEL ON DEVICE PLATE WITH CORRECT PANEL/CIRCUIT PER SPECIFICATIONS.
- B. FOR DEVICES, FIXTURES, ETC. TO BE REMOVED, THEY AND THEIR RELATED WIRING/CONDUIT SHALL BE REMOVED BACK TO THE SOURCE PANELBOARD, UNLESS OTHERWISE NOTED. ON CIRCUITS WHERE OTHER DEVICES, FIXTURES, ETC. ARE FOUND THAT MUST REMAIN, MAINTAIN CIRCUIT CONTINUITY BY PROVIDING ADDITIONAL WIRING TO FEED THROUGH TO THESE REMAINING ITEMS. RE-CIRCUIT ANY REMAINING DEVICES AS REQUIRED TO AVAILABLE PANELBOARD SPACE. RELOCATE ANY CIRCUITS THAT REMAIN TO AVOID CONFLICT WITH NEW CONSTRUCTION AS REQUIRED. PROPERLY TERMINATE ALL WIRING.
- C. ITEMS TO BE REMOVED ARE INDICATED BY DASHED LINETYPE AND HATCHING.
- D. REMOVE ALL EXISTING ELECTRICAL DEVICES AND EQUIPMENT IN THE RENOVATED AREA UNLESS OTHERWISE NOTED. REROUTING OF EXISTING CONDUCTORS MAY BE REQUIRED AT NEW OPENINGS IN EXISTING CONSTRUCTION OR AROUND NEW WORK. FOR DEVICES SHOWN, PROVIDE WORK AS DENOTED BELOW:

• (ETR) DENOTES EXISTING DEVICES, FIXTURES, EQUIPMENT, ETC. ARE EXISTING TO REMAIN. THEY AND THEIR ASSOCIATED CIRCUITING, CABLING, AND RACEWAYS SHALL REMAIN.

- E. FOR FIRE ALARM DEVICES THAT ARE REMOVED, PERFORM ANY PROGRAMMING CHANGES AT FIRE ALARM CONTROL PANEL TO NOTE DEVICE HAS BEEN REMOVED. RECESSED, EMPTY BACK BOX AND CONDUIT MAY BE ABANDONED IN PLACE, UNLESS NOTED OTHERWISE.
- F. IN THE AREA OF RENOVATION ANY EXISTING FIRE ALARM SMOKE DETECTORS SHOWN TO REMAIN SHALL BE TEMPORARILY REPLACED WITH THERMAL DETECTORS. ALL SPACES WHERE EXISTING SMOKE DETECTORS ARE TO BE REMOVED SHALL BE PROVIDED WITH TEMPORARY THERMAL DETECTORS. NUMBER AND SPACING OF TEMPORARY DETECTORS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL AREAS OF RENOVATION SHALL BE TEMPORARILY COVERED BY FIRE ALARM THERMAL DETECTORS.
- G. FIELD VERIFY ALL CIRCUITS.
- ALL LOOSE WIRES AND CABLES SHALL BE SECURED ABOVE THE CEILING AS THE EXISTING CEILING TILE AND GRID ARE REMOVED.
- I. TEMPORARILY SUPPORT EXISTING CEILING MOUNTED ELECTRICAL WORK INCLUDING BUT NOT LIMITED TO LIGHTING FIXTURES, PA SPEAKERS, CAMERAS, INTRUSION ALARM, NETWORK, ETC. PROTECT DURING CONTSTRUCTION AND REINSTALL IN CEILING TILE.

## X DEMOLITION KEY NOTES:

- DISCONNECT EXISTING AIR HANDLING UNIT (AHU) FOR REMOVAL BY OTHERS.
   REMOVE CONDUIT AND WIRING BACK TO SOURCE ALONG WITH ASSOCIATED DISCONNECT/STARTER(S).
- 2. DISCONNECT EXISTING DAY TANK FOR REMOVAL BY OTHERS. REMOVE CONDUIT AND WIRING BACK TO SOURCE ALONG WITH ASSOCIATED DISCONNECT/STARTER(S).
- 3. DISCONNECT EXISTING BOILER FOR REMOVAL BY OTHERS. REMOVE CONDUIT AND WIRING BACK TO SOURCE ALONG WITH ASSOCIATED DISCONNECT/STARTER(S).
- 4. DISCONNECT EXISTING BOILER PUMP FOR REMOVAL BY OTHERS. REMOVE DISCONNECT/STARTER(S) AND RETAIN EXISTING CIRCUIT FOR RECONNECTION TO NEW UNIT.
- 5. DISCONNECT EXISTING PUMP FOR REMOVAL BY OTHERS. REMOVE DISCONNECT/STARTER(S) AND RETAIN EXISTING CIRCUIT FOR RECONNECTION TO NEW UNIT.
- 6. DISCONNECT EXISTING WATER HEATER, ASSOCIATED PUMP AND CONTROLS FOR REMOVAL BY OTHERS. REMOVE CONDUIT AND WIRING BACK TO SOURCE ALONG WITH ASSOCIATED DISCONNECT/STARTER(S).
- 7. DISCONNECT EXISTING HVAC CONTROL PANEL FOR REMOVAL BY OTHERS. RETAIN EXISTING CIRCUIT FOR RECONNECTION TO CONTROL PANEL.
- 8. DUCT TYPE SMOKE DETECTORS ARE EXISTING TO REMAIN. IF ANY DUCT TYPE SMOKE DETECTOR IS LOCATED IN A SECTION OF DUCT REMOVED OR REPLACED, CONTRACTOR SHALL REMOVED, STORE, AND PROTECT DUCT DETECTOR DURING CONSTRUCTION.



2 ENLARGED ELECTRICAL PLAN - MECH RMS & ELEC RM
1/4" = 1'-0"

# EMERGENCY SHUTDOWN PUSHBUTTON BOILER B-1 SHUNT TRIP MECHANISM OF BRANCH CIRCUIT BREAKER (TYP) BOILER B-2 CO DETECTOR SHUNT TRIP COIL CLEARING

COIL (TYP)

FA INTERFACE

# **DETAIL NOTES:**

- WIRE EMERGENCY SHUTDOWN BUTTON (EPO) TO ACTIVATE SHUNT TRIP OF THE BOILER AND GAS SHUTOFF VALVE CIRCUIT BREAKERS IN PANEL WHEN EPO BUTTON IS PUSHED.
- 2. PROVIDE EACH BREAKER WITH A PADLOCK ATTACHMENT. REFER TO PANEL SCHEDULES FOR ADDITIONAL INFORMATION.
- 3. EPO SHALL BE PUSHBUTTON OPERATOR STATION, MAINTAINED (PUSH-PULL) LABELED "PULL-TO-RESET"

  40 MM RED MUSHROOM-HEAD PUSHBUTTON, YELLOW SURFACE MOUNT NEMA 4X ENCLOSURE, 120VAC, 20A CONTACT RATING, NORMALLY OPEN CONTACTS, HUB FOR 3/4"CONDUIT, CLEAR HINGED COVER, WITH FACTORY LEGEND "EMERGENCY BOILER SHUTDOWN", KELE ST120 SERIES OR EQUAL BY SIEMENS, ABB, PILLA, SQUARE D.
- 4. ALL WIRING SHALL BE #12 IN 3/4" CONDUIT MINIMUM.



CONTACT (TYP)

## **PROPOSED GENERAL NOTES:**

- A. REFER TO EQUIPMENT CONNECTION SCHEDULE ON SHEET E900 FOR LOAD INFORMATION, MINIMUM BRANCH CIRCUIT CONDUCTORS, CIRCUIT BREAKER, AND ADDITIONAL SCOPE OF WORK NOTES.
- B. LABEL ALL WIRING DEVICES WITH PANEL/CIRCUIT SERVING DEVICE.
- C. COORDINATE ALL ROUGH-IN LOCATIONS AND ELECTRICAL REQUIREMENTS
  WITH EQUIPMENT SUPPLIER AND MANUFACTURER'S INSTRUCTIONS PRIOR TO
- D. COORDINATE WITH HVAC CONTROLS CONTRACTOR FOR ANY 120V POWER
- E. COORDINATE EXACT CIRCUIT REQUIREMENTS WITH ACTUAL EQUIPMENT NAMEPLATE PRIOR TO WORK.
- F. COORDINATE EXACT NAME DESIGNATION OF HVAC EQUIPMENT WITH OWNER AND MECHANICAL CONTRACTOR PRIOR TO LABELING OF DISCONNECT AND PANEL DIRECTORY. ALL LABELING SHALL REFLECT NAMING OF UNIT PER OWNER'S NAMING CONVENTION.
- G. REINSTALL EXISTING CEILING MOUNTED ELECTRICAL WORK REMOVED DURING CONSTRUCTION.
- H. FOR ALL PANELS AND OTHER ELECTRICAL EQUIPMENT, MAINTAIN MINIMUM WORKING CLEARANCES IN THE DIRECTION OF LIVE PARTS PER NEC 110.26.
- I. LIMITED ACCESS WORKING SPACE FOR HVAC EQUIPMENT ABOVE CEILING SHALL COMPLY WITH NEC 110.26(A)(4) REQUIREMENTS.
- J. FIELD VERIFY ALL CIRCUITS.

INDICATED.

K. FOR DEVICES SHOWN, PROVIDE WORK AS NOTED BELOW:

• (ETR) EXISTING DEVICES, FIXTURES, EQUIPMENT, ETC. ARE EXISTING TO REMAIN. THEY AND THEIR ASSOCIATED CIRCUITING, CABLING, AND RACEWAYS SHALL REMAIN.

## X KEY NO

- CONNECT NEW AHU TO EXISTING CIRCUIT AND PROVIDE NEW CIRCUIT
   BREAKER AND CONDUIT/WIRING AS INDICATED ON EQUIPMENT CONNECTION
   CHEDIUE
- 2. CONNECT NEW BOILER TO EXISTING CIRCUIT AND PROVIDE NEW CIRCUIT
  BREAKER AND CONDUIT/WIRING AS INDICATED ON EQUIPMENT CONNECTION
  SCHEDULE
- CONNECT NEW BOILER PUMP TO EXISTING CIRCUIT AND EXTEND WIRING AS REQUIRED FOR FINAL CONNECTIONS TO EQUIPMENT.
- 4. CONNECT NEW PUMP TO EXISTING CIRCUIT AND EXTEND WIRING AS REQUIRED FOR FINAL CONNECTIONS TO EQUIPMENT.
- 5. CONNECT NEW UH TO EXISTING 20A-1P CIRCUIT BREAKER IN PANEL
- 6. CONNECT BOILER EMERGENCY STOP PUSHBUTTON TO EXISTING 20A-1P CIRCUIT BREAKER IN PANEL INDICATED.
- 7. PROVIDE ADDRESSABLE MONITOR MODULE FOR CARBON MONOXIDE.
  PROVIDE SEPARATE DISTINCT SIGNAL AS DESCRIBED IN NFPA 72. TEST SYSTEM
  AFTER ALL WORK IS COMPLETE PER NFPA 72.
- 8. CONNECT NEW HVAC CONTROL PANEL TO EXISTING CIRCUIT RETAINED AT DEMOLITION AND EXTEND WIRING AS REQUIRED TO MAKE FINAL CONNECTIONS.
- 9. CONNECT NEW HVAC CONTROL PANEL INTO EXISTING CIRCUIT SERVING EXISTING HVAC CONTROL PANEL.

AND ADDITIONAL NOTES.

10. DUCT TYPE SMOKE DETECTORS ARE EXISTING TO REMAIN. IF ANY DUCT TYPE SMOKE DETECTOR IS LOCATED IN A SECTION OF DUCT REMOVED OR REPLACED, CONTRACTOR SHALL REMOVED, STORE, AND PROTECT DUCT DETECTOR DURING CONSTRUCTION. UPON REINSTALLATION OF DUCT, CONTRACTOR SHALL REINSTALL DUCT DETECTOR RETAINED AT DEMOLITION AND MAKE REQURIED CONNECTIONS. REFER TO E000 FOR FIRE ALARM DETAILS

CPL | Architecture Engineering Planning 1620 Hillsborough Street Suite A, Raleigh, NC 27605 CPLteam.com



PROJECT INFORMATION

R23.00487.00
Client Name
JOHNSTON COUNTY PUBLIC
SCHOOLS

Project Name

CLEVELAND ELEMENTARY

SCHOOL HVAC RENOVATION

Project Address 10225 CLEVELAND RD.

CLAYTON, NC 27520

PROJECT ISSUE & REVISION SCHEDULE

PROFESSIONAL STAMPS



SHEET INFORMATION

Issued Scale

02/17/2025 As indicated

Project Status

BID SET

Drawn By Checked By

Drawing Title

ELECTRICAL ENLARGED PLANS

Drawing Number

700

		UNIT					LOA	D INFORMA	TION		SCOPE (
EXISTING TAG	NEW TAG	DESCRIPTION	LOCATION	POWER SOURCE	FLA	MCA	VOLTS	PHASE	MINIMUM BRANCH CIRCUIT CONDUCTORS	CIRCUIT Breaker	WORK REQUIRI
AHU-1	AHU-1	AIR HANDLING UNIT	MECHANICAL 562	L5-9/11/13	8.6	10.8	480	3	EXISTING 4#12, #12G; 3/4"C	3P-15A	1,10
AHU-2	AHU-2	AIR HANDLING UNIT	MECHANICAL 549	L5-15/17/19	8.6	10.8	480	3	EXISTING 4#12, #12G; 3/4"C	3P-15A	1,10
AHU-3	AHU-3	AIR HANDLING UNIT	MECHANICAL 540	L5-21/23/25	8.6	10.8	480	3	EXISTING 4#12, #12G; 3/4"C	3P-15A	1,10
AHU-4 AHU-5	AHU-4 AHU-5	AIR HANDLING UNIT AIR HANDLING UNIT	MECHANICAL 524 MECHANICAL 520	L5-27/29/31 L5-33/35/37	8.6	10.8	480 480	3	EXISTING 4#10, #10G; 3/4"C  EXISTING 4#12, #12G; 3/4"C	3P-15A 3P-15A	1,10
AHU-6	AHU-6	AIR HANDLING UNIT	MECHANICAL 505	L5-16/18/20	6.1	7.7	480	3	EXISTING 4#12, #12G; 3/4"C	3P-15A	1,10
AHU-7	AHU-7	AIR HANDLING UNIT	MECHANICAL 441	L4-7/9/11	4.6	5.8	480	3	EXISTING 4#12, #12G; 3/4"C	3P-15A	1,10
AHU-8	AHU-8	AIR HANDLING UNIT	MECHANICAL 431	L4-13/15/17	8.6	10.8	480	3	EXISTING 4#12, #12G; 3/4"C	3P-15A	1,10
AHU-9	AHU-9	AIR HANDLING UNIT	MECHANICAL 427	L4-19/21/23	8.6	10.8	480	3	EXISTING 4#12, #12G; 3/4"C	3P-15A	1,10
AHU-10	AHU-10	AIR HANDLING UNIT	MECHANICAL 422	L4-25/27/29	8.6	10.8	480 480	3	EXISTING 4#12, #12G; 3/4"C	3P-15A	1,10 1,10
AHU-11 AHU-12	AHU-11 AHU-12	AIR HANDLING UNIT AIR HANDLING UNIT	MECHANICAL 417 MECHANICAL 408	L4-31/33/35 L4-37/39/41	8.6	10.8	480	3	EXISTING 4#12, #12G; 3/4"C  EXISTING 4#12, #12G; 3/4"C	3P-15A 3P-15A	1,10
AHU-13	AHU-13	AIR HANDLING UNIT	MECHANICAL 339	L3-9/11/13	8.6	10.8	480	3	EXISTING 4#12, #12G; 1/2"C	3P-15A	1,10
AHU-14	AHU-14	AIR HANDLING UNIT	MECHANICAL 339	L3-15/17/19	4.6	5.8	480	3	EXISTING 4#12, #12G; 1/2"C	3P-15A	1,10
AHU-15	AHU-15	AIR HANDLING UNIT	MECHANICAL 331	L3-21/23/25	6.1	7.7	480	3	EXISTING 4#12, #12G; 1/2"C	3P-15A	1,10
AHU-16	AHU-16	AIR HANDLING UNIT	MECHANICAL 324	L3-27/29/31	6.1	7.7	480	3	EXISTING 4#12, #12G; 1/2"C	3P-15A	1,10
AHU-17	AHU-17	AIR HANDLING UNIT	MECHANICAL 322	L3-33/35/37	6.1	7.7	480	3	EXISTING 4#12, #12G; 1/2"C	3P-15A	1,10
AHU-18 AHU-19	AHU-18 AHU-19	AIR HANDLING UNIT  AIR HANDLING UNIT	MECHANICAL 315 MECHANICAL 308	L3-14/16/18 L3-20/22/24	6.1	7.7	480 480	3	EXISTING 4#12, #12G; 3/4"C EXISTING 4#12, #12G; 3/4"C	3P-15A 3P-15A	1,10 1,10
AHU-20	AHU-20	AIR HANDLING UNIT	MECHANICAL 111	L1-8/10/12	8.6	10.8	480	3	EXISTING 4#10, #10G; 3/4"C	3P-15A	1,10
AHU-21	AHU-21	AIR HANDLING UNIT	MECHANICAL 128	L1-14/16/18	14.3	17.9	480	3	3#10, #10G; 3/4"C	3P-30A	1,12
AHU-22	AHU-22	AIR HANDLING UNIT	MECHANICAL 128	L1-20/22/24	20.8	26.0	480	3	3#6, #10G; 1-1/4"C	3P-45A	1,12
AHU-23	AHU-23	AIR HANDLING UNIT	MECHANICAL 161	L1-26/28/30	14.3	17.9	480	3	EXISTING 3#10, #10G; 3/4"C	3P-30A	1,12
AHU-24 ΔΗΙΙ-25	AHU-24 AHU-25	AIR HANDLING UNIT AIR HANDLING UNIT	MECHANICAL 161	L1-32/334/36 L4-14/16/18	14.3	10.8 17.9	480 480	3	EXISTING 3#10, #10G; 3/4"C	3P-15A 3P-30A	1,10
AHU-25 AHU-26	AHU-25 AHU-26	AIR HANDLING UNIT	MECHANICAL 441 MECHANICAL 208	L4-14/16/18 L2-2/4/6	8.6	17.9	480	3	3#10, #10G; 3/4"C EXISTING 4#10, #10G; 3/4"C	3P-30A 3P-15A	1,12 1,10
AHU-27	AHU-27	AIR HANDLING UNIT	MECHANICAL 208	L2-8/10/12	14.3	17.9	480	3	EXISTING 4#10, #10G; 3/4"C	3P-30A	1,12
B-1	B-1	GAS FIRED BOILER	BOILER 127	P1A-31	16.0	20.0	120	1	2#12, #12G; 1/2"C	1P-25A	3,4,1
DILER PUMP #1	BP-1	BOILER PUMP	BOILER 127	M-2	1.5	2.0	480	3	3#12, #12G; 1/2"C	3P-20A	3,10
B-2	B-2	GAS FIRED BOILER	BOILER 127	P1A-33	16.0	20.0	120	1	2#12, #12G; 1/2"C	1P-25A	3,4,1
OILER PUMP #2	BP-2	BOILER PUMP	BOILER 127	M-8	1.5	2.0	480	3	3#12, #12G; 1/2"C	3P-20A	3,10
-	-	BOILER SHUTOFF CONTROLS  GAS SOLENOID VALVE	BOILER 127 BOILER 127	P1A-21 P1A-21	2.0	2.5	120 120	1	2#12, #12G; 1/2"C 2#12, #12G; 1/2"C	1P-20A 1P-20A	3,12 3,12
DAY TANK	-	DAY TANK	BOILER 127	P1A-25	-	-	120	1	2π12, π12G, 1/2 C	- II - ZUA	11
EF-16	EF-16	EXHAUST FAN	TOILET 131	P1A-34	0.3	0.4	120	1	2#12, #12G; 1/2"C	1P-20A	1,2,7,1
EF-17	EF-17	EXHAUST FAN	TOILET 130	P1A-34	0.3	0.4	120	1	2#12, #12G; 1/2"C	1P-20A	1,2,8,1
-	EF-21	EXHAUST FAN	STAFF 132	P1A-27	0.3	0.4	120	1	2#12, #12G; 1/2"C	1P-20A	1,2,9
-	EF-22	EXHAUST FAN	MEZZANINE ABOVE KITCHEN	K2-3	10.0	13.0	120	1	2#12, #12G; 1/2"C	1P-20A	1,2,6
FC-1	FC-1	FAN COIL UNIT	MEZZANINE	L6-1/3/5	1.8	2.2	480	3	3#12, #12G; 1/2"C	3P-20A	1,10
FC-2	FC-2	FAN COIL UNIT	MEZZANINE	L6-1/3/5	1.8	2.2	480	3	3#12, #12G; 1/2"C	3P-20A	1,10
FC-3 FC-4	FC-3 FC-4	FAN COIL UNIT FAN COIL UNIT	MEZZANINE MEZZANINE	L6-1/3/5 L6-1/3/5	1.8	2.2	480 480	3	3#12, #12G; 1/2"C 3#12, #12G; 1/2"C	3P-20A 3P-20A	1,10 1,10
FC-5	FC-5	FAN COIL UNIT	MEZZANINE	L6-7/9/11	1.8	2.2	480	3	3#12, #12G; 1/2"C	3P-20A	1,10
FC-6	FC-6	FAN COIL UNIT	MEZZANINE	L6-7/9/11	1.8	2.2	480	3	3#12, #12G; 1/2"C	3P-20A	1,10
FC-7	FC-7	FAN COIL UNIT	MEZZANINE	L6-7/9/11	1.8	2.2	480	3	3#12, #12G; 1/2"C	3P-20A	1,10
FC-8	FC-8	FAN COIL UNIT	MEZZANINE	L6-7/9/11	1.8	2.2	480	3	3#12, #12G; 1/2"C	3P-20A	1,10
FC-9	FC-9	FAN COIL UNIT	MEZZANINE	L6-13/15/17	1.8	2.2	480	3	3#12, #12G; 1/2"C	3P-20A	1,10
FC-10 FC-11	FC-10	FAN COIL UNIT FAN COIL UNIT	MEZZANINE OFFICE 133	L6-13/15/17 P1A-29	2.3	2.2	480 120	1	3#12, #12G; 1/2"C 2#12, #12G; 1/2"C	3P-20A 1P-20A	1,10 1,12
FOWH	-	WATER HEATER	BOILER 127	P1A-27	-	2.7	120	1	2#12, #12G, 1/2 C	- IF-20A	1,12
ECIRC PUMP	-	WATER HEATER RECIRC PUMP	BOILER 127	P1A-29		-	120	1	<u> </u>		11
	CP-HW	HOT WATER PUMP CONTROL PANEL	BOILER 127	P1A-14	2.0	2.5	120	1	2#12, #12G; 1/2"C	1P-20A	10
<u>-</u>	CP-CHW	COLD WATER PUMP CONTROL PANEL	BOILER 127	P1A-14	2.0	2.5	120	1	2#12, #12G; 1/2"C	1P-20A	10
-	CP-AHU-01	AHU CONTROL PANEL	MECHANICAL 562	P5A-33	2.0	2.5	120	1	2#12, #12G; 1/2"C	1P-20A	12
-	CP-AHU-02	AHU CONTROL PANEL	MECHANICAL 549	P5A-39	2.0	2.5	120	1	2#12, #12G; 1/2"C	1P-20A	12
-	CP-AHU-03 CP-AHU-04	AHU CONTROL PANEL AHU CONTROL PANEL	MECHANICAL 540 MECHANICAL 524	P5A-41 P5A-41	2.0	2.5	120 120	1	2#12, #12G; 1/2"C 2#12, #12G; 1/2"C	1P-20A 1P-20A	12
-	CP-AHU-04 CP-AHU-05	AHU CONTROL PANEL  AHU CONTROL PANEL	MECHANICAL 524 MECHANICAL 520	P5A-41	2.0	2.5	120	1	2#12, #12G; 1/2°C 2#12, #12G; 1/2°C	1P-20A 1P-20A	12
-	CP-AHU-06	AHU CONTROL PANEL	MECHANICAL 505	P5A-33	2.0	2.5	120	1	2#12, #12G; 1/2"C	1P-20A	12
-	CP-AHU-07	AHU CONTROL PANEL	MECHANICAL 441	P4A-26	2.0	2.5	120	1	2#12, #12G; 1/2"C	1P-20A	10
-	CP-AHU-08	AHU CONTROL PANEL	MECHANICAL 431	P4A-30	2.0	2.5	120	1	2#12, #12G; 1/2"C	1P-20A	12
-	CP-AHU-09	AHU CONTROL PANEL	MECHANICAL 427	P4A-32	2.0	2.5	120	1	2#12, #12G; 1/2"C	1P-20A	12
-	CP-AHU-10	AHU CONTROL PANEL	MECHANICAL 422	P4A-32 P4A-30	2.0	2.5	120	1	2#12, #12G; 1/2"C	1P-20A	12
-	CP-AHU-11 CP-AHU-12	AHU CONTROL PANEL AHU CONTROL PANEL	MECHANICAL 417 MECHANICAL 408	P4A-30 P4A-28	2.0	2.5	120 120	1	2#12, #12G; 1/2"C 2#12, #12G; 1/2"C	1P-20A 1P-20A	12
-	CP-AHU-13	AHU CONTROL PANEL	MECHANICAL 339	P3A-24	2.0	2.5	120	1	2#12, #12G; 1/2"C	1P-20A	10
-	CP-AHU-14	AHU CONTROL PANEL	MECHANICAL 339	P3A-24	2.0	2.5	120	1	2#12, #12G; 1/2"C	1P-20A	10
-	CP-AHU-15	AHU CONTROL PANEL	MECHANICAL 331	P3A-28	2.0	2.5	120	1	2#12, #12G; 1/2"C	1P-20A	12
-	CP-AHU-16	AHU CONTROL PANEL	MECHANICAL 324	P3A-30	2.0	2.5	120	1	2#12, #12G; 1/2"C	1P-20A	12
-	CP-AHU-17 CP-AHU-18	AHU CONTROL PANEL AHU CONTROL PANEL	MECHANICAL 322 MECHANICAL 315	P3A-30 P3A-28	2.0	2.5	120 120	1	2#12, #12G; 1/2"C	1P-20A	12
-	CP-AHU-18 CP-AHU-19	AHU CONTROL PANEL AHU CONTROL PANEL	MECHANICAL 315 MECHANICAL 308	P3A-28 P3A-26	2.0	2.5	120	1	2#12, #12G; 1/2"C 2#12, #12G; 1/2"C	1P-20A 1P-20A	12
-	CP-AHU-20	AHU CONTROL PANEL	MECHANICAL 111	P1A-32	2.0	2.5	120	1	2#12, #12G; 1/2"C	1P-20A	12
	CP-AHU-21	AHU CONTROL PANEL	MECHANICAL 128	P1A-35	2.0	2.5	120	1	2#12, #12G; 1/2"C	1P-20A	10
-	CP-AHU-22	AHU CONTROL PANEL	MECHANICAL 128	P1A-35	2.0	2.5	120	1	2#12, #12G; 1/2"C	1P-20A	10
-		AHU CONTROL PANEL	MECHANICAL 161	P1B-23	2.0	2.5	120	1	2#12, #12G; 1/2"C	1P-20A	10
- -	CP-AHU-23			1			100			45.004	
-	CP-AHU-24	AHU CONTROL PANEL	MECHANICAL 161	P1B-23	2.0	2.5	120	1	2#12, #12G; 1/2"C	1P-20A	
	CP-AHU-24 CP-AHU-25	AHU CONTROL PANEL AHU CONTROL PANEL	MECHANICAL 441	P4A-26	2.0	2.5	120	1	2#12, #12G; 1/2"C	1P-20A	10
-	CP-AHU-24	AHU CONTROL PANEL						-	2#12, #12G; 1/2"C 2#12, #12G; 1/2"C		10 10 10
- - - -	CP-AHU-24 CP-AHU-25 CP-AHU-26	AHU CONTROL PANEL AHU CONTROL PANEL AHU CONTROL PANEL	MECHANICAL 441 MECHANICAL 208	P4A-26 P2A-4	2.0	2.5 2.5	120 120	1 1	2#12, #12G; 1/2"C	1P-20A 1P-20A	10 10

1. DISCONNECT SWITCH FURNISHED WITH EQUIPMENT.

2. PROVIDE MANUAL MOTOR STARTING SWITCH WITH H-O-A SWITCH AND PILOT LIGHT.

**UNIT HEATER** 

3. PROVIDE SHUNT TRIP CIRCUIT BREAKER AND EMERGENCY POWER OFF PUSHBUTTON. 4. PROVIDE LOCAL DISCONNECT SWITCH.

5. VFD FURNISHED BY DIVISION 23 FOR INSTALLATION BY ELECTRICAL CONTRACTOR.

- UH-2

6. INTERLOCK WITH KITCHEN EXHAUST HOOD. EF-22 TO OPERATE WHEN EF-1 IS OFF. 7. INTERLOCK WITH EXISTING LIGHT SWITCH IN TOILET 131.

8. INTERLOCK WITH EXISTING LIGHT SWITCH IN TOILET 130. 9. FAN TO OPERATE CONTINUOUSLY.

12. PROVIDE NEW CIRCUIT BREAKER IN EXISTING PANELBOARD.

10. CONNECT NEW UNIT TO EXISTING CIRCUIT. 11. DISCONNECT EXISTING UNIT. REMOVE CONDUIT AND WIRING BACK TO PANEL.

**PANEL SCHEDULE NOTES:** 

P1A-25 1.4 1.8 120 1 2#12, #12G; 1/2"C 1P-20A 1,12

A. EXISTING CIRCUIT DATA SHOWN IS TAKEN FROM EXISTING FACILITY DOCUMENTATION AND/OR FIELD OBSERVATION. FIELD VERIFY ALL CIRCUITS.

B. VERIFY CIRCUITS ON EXISTING PANELS. ADJUST CIRCUITING AS REQUIRED TO MEET DESIGN INTENT OF DRAWINGS. TURN SPARE BREAKERS OFF.

C. CIRCUITS WITH DESCRIPTION "EXISTING LOAD (FIELD VERIFY)" FEED EXISTING LOADS OUTSIDE THE RENOVATED AREA THAT ARE REQUIRED TO REMAIN. FIELD DETERMINE LOAD AND

PROVIDE APPROPRIATE DESCRIPTION IN PANEL DIRECTORY. PROVIDE NEW TYPEWRITTEN PANEL DIRECTORY TO REFLECT NEW AND ALSO THE UNMODIFIED CONDITIONS UPON COMPLETION OF WORK DESCRIBED IN THESE DRAWINGS. A

HANDWRITTEN PANEL DIRECTORY OR CROSS-OUT OR WHITE-OUT OF EXISTING PANEL DIRECTORY IS NOT ACCEPTABLE.

E. REUSE EXISTING CIRCUIT BREAKERS WHERE POSSIBLE. PROVIDE NEW BREAKERS AS REQUIRED-TYPE, VOLTAGE RATING, AND AIC RATING TO MATCH EXISTING.

F. PANEL SCHEDULES REFLECT STATUS AFTER PROPOSED WORK IS COMPLETE.

**PANEL SCHEDULE NOTES:** E EXISTING CIRCUIT TO REMAIN

FA PROVIDE RED HANDLE

GFI PROVIDE GFCI CIRCUIT BREAKER

N PROVIDE NEW CIRCUIT BREAKER

R REUSE EXISTING CIRCUIT BREAKER FOR NEW LOAD OR DESCRIPTION INDICATED

LO PROVIDE HANDLE-LOCK FOR CIRCUIT BREAKER

			VOLTAGE:	480/277	3 PH 4W			AIC RATING:	65K	REMARKS:		
	PANEL	M	FEEDER AMP:	225	MAINS:	225	MLO	MOUNTING:	Surface			
		(Existing)	LUGS:			FEED:		ENCLOSURE:	NEMA 1			
BKR	NOTE	LOAD DESCRIPTION	N	VA	CKT	PHASE	CKT	VA	LOAD DESCRIP	TION	NOTE	BKR
20/3	Е	Chiller Pump #1		2027	1	Α	2	373	Boiler Pump #1		R	20/3
-	-	-		2027	3	В	4	373	-		-	-
-	-	-		2027	5	С	6	373	-		-	-
20/3	Е	Chiller Pump #2		2027	7	Α	8	373	Boiler Pump #2		R	20/
-	-	-		2027	9	В	10	373	-		-	-
-	-	-		2027	11	С	12	373	-		-	-
60/3	Е	Chilled Water Pump	1 & 2	8000	13	Α	14	7759	HWP-1 & HWP-2		R	40/3
-	-	-		8000	15	В	16	7759	-		-	-
-	-	-		8000	17	С	18	7759	-		-	-
60/3	Е	CWP 1 & 2		8000	19	Α	20	0	Spare		E	60/3
-	-	-		8000	21	В	22	0	-		-	-
-	-	-		8000	23	С	24	0	-		-	-
20/3	Е	Spare		0	25	Α	26	0	Space		Е	-
-	-	-		0	27	В	28	0	-		-	-
-	-	-		0	29	С	30	0	-		-	-
20/3	Е	Exhaust and Supply	Fan	1387	31	Α	32	0	Space		E	-
-	-	-		1387	33	В	34	0	-		-	-
-	-	-		1387	35	С	36	0	-		-	-
-	E	Space		0	37	Α	38	0	Space		E	-
-	-	-		0	39	В	40	0	-		-	-
-	-	-		0	41	С	42	0	-		-	-
		Connec	ted Load Per Phase	PH A:	29946	PH B:	29946	PH C:	29946			
		Lighting	HVAC	Motors	Recept.	Refrig	Kitchen	Misc		Total VA	Amps	
C	onnected VA	. 0	89838	0	0	0	0	0		89838	108.1	
De	mand Factor	1.25	1.00	1.00	NEC	1.00	1.00	1.00				
	Demand VA	. 0	89838	0	0	0	0	0		89838	108.1	

			VOLTAGE:	480/277	3 PH 4W			AIC RATING:	65k	REMARKS:		
	PANEL	L1	FEEDER AMP:	225	MAINS:	225	MLO	MOUNTING:	Surface			
		(Existing)	LUGS:			FEED:		ENCLOSURE:	NEMA 1			
BKR	NOTE	LOAD DESCRIPTION	ON	VA	CKT	PHASE	CKT	VA	LOAD DESCR	IPTION	NOTE	BKR
20/1	Е	Lights-Kitchen		3680	1	Α	2	2728	Lights-Stage Ran	np-DD5-D515-D516-D127	Е	20/1
20/1	Е	Lights-D510-D509-DD2-	-DD3-DD4-D511	2240	3	В	4	2960	Lights-D217-D2	16-D215-D212-D207	Е	20/1
20/1	Е	Lights-D508-D507-D502	2-D501-D116-D103	2640	5	С	6	2240	Lights-D214-D2	13-D206-D205	Е	20/1
20/1	Е	Lights-Kitchen		2096	7	Α	8	2383	AHU-20		R	20/3
20/1	E	Lights-D107-D109-D110	)-D111-D113-D114-Hall	2584	9	В	10	2383	-		-	-
20/1	E	Lights-D106-D101-D112	2-D104-D102-D103	3644	11	С	12	2383	-		-	-
20/1	Е	Lights-Cafetorium (E	M Café)	3696	13	Α	14	3963	AHU-21		N	30/3
20/1	E	Lights-Cafetorium (E	M Café)	2240	15	В	16	3963	-		-	-
20/1	Е	Lights-D202-D203		2320	17	С	18	3963	-		-	-
20/1	E	Exterior Building Ligh	nts-A-Wing	2000	19	Α	20	5764	AHU-22		N	45/3
20/1	Е	Exterior Building Lights-	-Cafetorium	1500	21	В	22	5764	-		-	-
20/1	Е	Exterior Building Ligh	nts-C-Wing	2500	23	С	24	5764	-		-	-
20/1	Е	Exterior Building Ligh	nts-B-Wing	1200	25	A	26	3963	AHU-23		N	30/3
20/1	Е	Ext Bldng Lts-Frnt Ent. L	oading Dock	2400	27	В	28	3963	-		-	-
20/1	E	Spare		0	29	С	30	3963	-		-	-
20/1	Е	Spare		0	31	A	32	2383	AHU-24		R	20/3
20/1	Е	Spare		0	33	В	34	2383	-		-	-
20/1	Е	Spare		0	35	С	36	2383	-		-	-
-	Е	Space		0	37	A	38	0	Space		Е	-
-	Е	Space		0	39	В	40	0	Space		Е	-
-	Е	Space		0	41	С	42	0	Space		Е	-
		Connec	ted Load Per Phase	PH A:	33856	PH B:	32380	PH C:	31800			
		Lighting	HVAC	Motors	Recept.	Refrig	Kitchen	Misc		Total VA	Amps	
C	onnected VA	42668	55368	0	0	0	0	0		98036	117.9	
De	mand Factor	1.25	1.00	1.00	NEC	1.00	1.00	1.00				
	Demand VA	53335	55368	0	0	0	0	0		108703	130.8	

			VOLTAGE:	480/277	3 PH 4W			AIC RATING:	18k	REMARKS:		
	PANEL	L2	FEEDER AMP:	225	MAINS:	225	МСВ	MOUNTING:	Surface			
		(Existing)	LUGS:			FEED:		ENCLOSURE:	NEMA 1			
BKR	NOTE	LOAD DESCRIPTION	ON	VA	СКТ	PHASE	CKT	VA	LOAD DESCRIPTI	ON	NOTE	BKR
20/1	Е	Lights		1920	1	Α	2	2383	AHU-26		R	20/3
20/1	Е	Lights		2880	3	В	4	2383	-		-	-
20/1	Е	Lights		2720	5	С	6	2383	-		-	-
20/1	Е	Lights		3630	7	A	8	3963	AHU-27		N	30/3
20/1	Е	Lights		2190	9	В	10	3963	-		-	-
20/1	Е	Spare		3630	11	c	12	3963	-		-	-
20/1	Е	Lights		3960	13	A	14	15000	Transformer TF2		E	60/3
20/1	Е	Lights		2560	15	В	16	15000	-		-	-
20/1	Е	Lights		3360	17	С	18	15000	-		-	-
20/1	Е	Spare		0	19	A	20	0	Space		E	-
20/1	Е	Spare		0	21	В	22	0	Space		E	-
20/1	Е	Spare		0	23	С	24	0	Space		E	-
20/1	Е	Spare		0	25	Α	26	0	Space		Е	-
20/1	Е	Spare		0	27	В	28	0	Space		E	-
20/1	Е	Spare		0	29	С	30	0	Space		E	-
20/1	Е	Spare		0	31	Α	32	0	Space		E	-
20/1	Е	Spare		0	33	В	34	0	Space		Е	-
-	Е	Space		0	35	С	36	0	Space		E	-
-	Е	Space		0	37	Α	38	0	Space		E	-
-	Е	Space		0	39	В	40	0	Space		E	-
-	Е	Space		0	41	С	42	0	Space		Е	-
		Connec	ted Load Per Phase	PH A:	30856	PH B:	28976	PH C:	31056			
		Lighting	HVAC	Motors	Recept.	Refrig	Kitchen	Misc		Total VA	Amps	
С	onnected VA	26850	19038	0	0	0	0	45000		90888	109.3	
De	emand Factor	1.25	1.00	1.00	NEC	1.00	1.00	1.00				
	Demand VA	33563	19038	0	0	0	0	45000		97601	117.4	

			VOLTAGE:	480/277	3 PH 4W			AIC RATING:	18k	REMARKS:		
	PANEL	L3	FEEDER AMP:	400	MAINS:	400	MCB	MOUNTING:	Surface			
		(Existing)	LUGS:		·	FEED:		ENCLOSURE:	NEMA 1			
BKR	NOTE	LOAD DESCRIPTI	ION	VA	CKT	PHASE	CKT	VA	LOAD DESCRIP	TION	NOTE	BKR
20/1	Е	Lights		1040	1	Α	2	3520	Lights		Е	20/1
20/1	Е	Lights		2340	3	В	4	3520	Lights		Е	20/1
20/1	Е	Lights		3528	5	c	6	3520	Lights		Е	20/1
20/1	Е	Lights		1920	7	A	8	3520	Lights		E	20/1
20/3	R	AHU-13		2383	9	В	10	3520	Lights		Е	20/1
-	-	-		2383	11	C	12	1760	Lights		Е	20/1
-	-	-		2383	13	Α	14	1690	AHU-18		R	20/3
20/3	R	AHU-14		1275	15	В	16	1690	-		-	-
-	-	-		1275	17	c	18	1690	-		-	-
-	-	-		1275	19	A	20	1690	AHU-19		R	20/3
20/3	R	AHU-15		1690	21	В	22	1690	-		-	-
-	-	-		1690	23	С	24	1690	-		-	-
-	-	-		1690	25	A	26	25000	Transformer TF3		Е	100/3
20/3	R	AHU-16		1690	27	В	28	25000	-		-	-
-	-	-		1690	29	c	30	25000	-		-	-
-	-	-		1690	31	A	32	0	Space		Е	-
20/3	R	AHU-17		1690	33	В	34	0	-		-	-
-	-	-		1690	35	С	36	0	-		-	-
-	-	-		1690	37	A	38	0	Space		Е	-
20/1	Е	Spare		0	39	В	40	0	Space		E	-
20/1	E	Spare		0	41	С	42	0	Space		E	-
		Connec	cted Load Per Phase	PH A:	47108	PH B:	46488	PH C:	45916			
		Lighting	HVAC	Motors	Recept.	Refrig	Kitchen	Misc		Total VA	Amps	
Co	nnected VA	28188	36324	0	0	0	0	75000		139512	167.8	
Der	mand Factor	1.25	1.00	1.00	NEC	1.00	1.00	1.00				
	Demand VA	35235	36324	0	0	0	0	75000		146559	176.3	

			VOLTAGE:	480/277	3 PH 4W			AIC RATING:	18k	REMARKS:		
	PANEL	L4	FEEDER AMP:	400	MAINS:	400	МСВ	MOUNTING:	Surface	1		
		(Existing)	LUGS:			FEED:		ENCLOSURE:	NEMA 1	1		
BKR	NOTE	LOAD DESCRIPTI	ON	VA	CKT	PHASE	CKT	VA	LOAD DESCRIPT	ION	NOTE	BKR
20/1	Е	Lights		2480	1	Α	2	3520	Lights		E	20/1
20/1	E	Lights		3380	3	В	4	3520	Lights		E	20/1
20/1	E	Lights		2000	5		6	3520	Lights		E	20/1
20/3	R	AHU-7		1275	7	Α	8	3360	Lights		E	20/1
-	-	-		1275	9	В	10	3520	Lights		Е	20/1
-		-		1275	11		12	1760	Lights		Е	20/1
20/3	R	AHU-8		2383	13	Α	14	3963	AHU-25		N	30/3
-	•	-		2383	15	В	16	3963	-		-	-
-	•	-		2383	17	C	18	3963	-		-	-
20/3	R	AHU-9		2383	19	Α	20	25000	Transformer TF4		E	100/3
-	-	-		2383	21	В	22	25000	-		-	-
-	-	-		2383	23		24	25000	-		-	-
20/3	R	AHU-10		2383	25	Α	26	0	100A 3-Pole Spac	e for Future	E	-
-	-	-		2383	27	В	28	0	-		-	-
-	-	-		2383	29			0	-		-	-
20/3	R	AHU-11		2383	31	Α	32	0	Spare		E	20/1
-	-	-		2383	33	В	34	0	Spare		E	20/1
-	-	-		2383	35		36	0	Spare		Е	20/1
20/3	R	AHU-12		2383	37	Α	38	0	Space		E	-
-	-	-		2383	39	В	40	0	Space		E	-
-	-	-		2383	41		42	0	Space		E	-
		Connec	cted Load Per Phase	PH A:	51513	PH B	: 52573	PH C:	49433			
		Lighting	HVAC	Motors	Recept.	Refrig	Kitchen	Misc		Total VA	Amps	
Co	onnected VA	27060	51459	0	0	0	0	75000		153519	184.7	
De	mand Factor	1.25	1.00	1.00	NEC	1.00	1.00	1.00				
	Demand VA	33825	51459	0	0	0	0	75000		160284	192.8	

			VOLTAGE:	480/277	3 PH 4W			AIC RATING:	18k	REMARKS:		
	PANEL	L5	FEEDER AMP:	400	MAINS:	400	MCB	MOUNTING:	Surface			
		(Existing)	LUGS:			FEED:		ENCLOSURE:	NEMA 1			
BKR	NOTE	LOAD DESCRIP	TION	VA	СКТ	PHASE	CKT	VA	LOAD DESCRI	PTION	NOTE	ВК
20/1	Е	Lights		3200	1	Α	2	2720	Lights		E	20,
20/1	Е	Lights		3680	3	В	4	2080	Lights		E	20,
20/1	Е	Lights		1760	5	c [	6	3520	Lights		E	20,
20/1	Е	Lights		1200	7	Α [	8	4160	Lights		Е	20,
20/3	R	AHU-1		2383	9	В	10	4160	Lights		Е	20,
-	-	-		2383	11	c	12	4160	Lights		E	20,
-	-	-		2383	13	Α [	14	4160	Lights		Е	20,
20/3	R	AHU-2		2383	15	В	16	1690	AHU-6		R	20,
-	-	-		2383	17	c	18	1690	-		-	-
-	-	-		2383	19	A	20	1690	-		-	-
20/3	R	AHU-3		2383	21	В	22	25000	Transformer TF5		E	100
-	-	-		2383	23	c	24	25000	-		-	-
-	-	-		2383	25	Α [	26	25000	-		-	-
20/3	R	AHU-4		2383	27	В	28	0	100A 3-Pole Spc	ce for Future	Е	-
-	-	-		2383	29	c	30	0	-		-	-
-	-	-		2383	31	A	32	0	-		-	-
20/3	R	AHU-5		2383	33	В	34	0	Space		Е	-
-	-	-		2383	35	c	36	0	Space		E	-
-	-	-		2383	37	Α [	38	42603	Panel L6		Е	250
20/1	Е	Spare		0	39	В	40	41463	-		-	-
20/1	Е	Spare		0	41	c [	42	41993	-		-	-
		Conne	ected Load Per Phase	PH A:	96648	PH B:	89988	PH C:	90038			
		Lighting	HVAC	Motors	Recept.	Refrig	Kitchen	Misc		Total VA	Amps	
Co	nnected VA	55895	55779	0	0	0	0	165000		276674	332.8	
Der	nand Factor	1.25	1.00	1.00	NEC	1.00	1.00	1.00				
	Demand VA	69869	55779	0	0	0	0	165000		290648	349.6	

			VOLTAGE:	480/277	3 PH 4W			AIC RATING:	18k	REMARKS:		
	PANEL	L6	FEEDER AMP:	250	MAINS:	250	MCB	MOUNTING:	Surface			
		(Existing)	LUGS:			FEED:		ENCLOSURE:	NEMA 1			
BKR	NOTE	LOAD DESCRIPTION		VA	CKT	PHASE	CKT	VA	LOAD DESCRIPT	ION	NOTE	BKR
20/3	R	Fan Coils 1-4 on Plat.		1995	1	Α	2	3000	Lights Rooms E1,	<b>E</b> 3	E	20/1
-	-	-		1995	3	В	4	1795	Lights Rooms E7, I	E9, E11	E	20/1
-	-	-		1995	5	С	6	3000	Lights Rooms E13,	E15	E	20/1
20/3	R	Fan Coils 5-8 on plat.		1995	7	A	8	765	Emergency/Nigh	t Lights	E	20/1
-	-	-		1995	9	В	10	3000	Lights Rooms E2,	<b>E</b> 4	E	20/1
	-	-		1995	11	C	12	2210	Lights E5, E6, E17		E	20/1
20/3	R	Fan coils 9 & 10 on pla	at.	998	13	A	14	3000	Lights Rooms E14,	E16	E	20/1
•	-	-		998	15	В	16	1680	Outside Lights		E	20/1
-	-	-		998	17	С	18	1795	Lights Rms. E8-10	& E12	E	20/1
-	Е	Space		0	19	A	20	850	Lts Mechanical P	atform	E	20/1
-	Е	Space		0	21	В	22	0	Spare		E	20/1
-	Е	Space		0	23	c	24	0	Spare		E	20/1
-	Е	Space		0	25	A	26	0	Space		Е	-
-	Е	Space		0	27	В	28	0	Space		Е	-
-	Е	Space		0	29	С	30	0	Space		E	-
-	Е	Space		0	31	A	32	0	Space		E	-
-	Е	Space		0	33	В	34	0	Space		E	-
-	Е	Space		0	35	c	36	0	Space		E	-
150/3	Е	Transformer T6		30000	37	A	38	0	Space		Е	-
-	-	-		30000	39	В	40	0	Space		Е	-
-	-	-		30000	41	С	42	0	Space		Е	-
		Connected	d Load Per Phase	PH A:	42603	PH B:	41463	PH C:	41993			
		Lighting	HVAC	Motors	Recept.	Refrig	Kitchen	Misc		Total VA	Amps	
Co	onnected V	<b>A</b> 21095	14964	0	0	0	0	90000		126059	151.6	
De	emand Facto	r 1.25	1.00	1.00	NEC	1.00	1.00	1.00				
	Demand VA	<b>A</b> 26369	14964	0	0	0	0	90000		131333	158.0	

			VOLTAGE:	208/120	3 PH 4W			AIC RATING:	Existing	REMARKS:		
	PANEL	<b>K2</b>	FEEDER AMP:	225	MAINS:	225	MLO	MOUNTING:	FLUSH			
		(Existing)	LUGS:			FEED:		ENCLOSURE:	NEMA 1			
BKR	NOTE	LOAD DESCRIPTIO	N	VA	CKT	PHASE	CKT	VA	LOAD DESCRI	PTION	NOTE	BKR
20/1	Е	Lights - Hood		200	1	Α	2	500	Hood Fire System	m	Е	20/1
20/1	R	EF-22 Kitchen 136		1200	3	В	4	0	Space		Е	-
20/1	Е	Spare		500	5	С	6	0	Space		Е	-
-	Е	Space		276	7	Α	8	0	Space		Е	-
20/2	Е	Existing Load		1200	9	В	10	3667	Single Oven		Е	40/3
-	-	-		1200	11	С	12	3667	-		-	-
20/1	Е	Receptacles		1000	13	Α	14	3667	-		-	-
20/1	Е	Receptacles, Buzzzer		900	15	В	16	600	EF-18		E	20/1
20/1	Е	Receptacles, Office		800	17	С	18	1200	Heat Tape		E	20/1
20/1	E	Receptacles		800	19	A	20	1200	Ice Cream Free	zer	E	20/1
20/1	Е	Receptacles		1200	21	В	22	1600	Fly Fan		E	20/1
20/1	Е	Slicer		1200	23	c	24	500	Food Processor		Е	20/1
20/1	Е	Proof Cabinet		2000	25	Α	26	900	Refrigerator		Е	20/1
20/1	Е	Hot Cabinet		2000	27	В	28	900	Refrigerator		Е	20/1
20/1	Е	Hot Cabinet		2000	29	c	30	1200	Existing Load		E	20/1
20/1	Е	Cooler Coil		900	31	A	32	1500	Washer		E	20/1
20/1	Е	Freezer Coil		900	33	В	34	2600	Dryer		Е	30/2
20/1	Е	Existing Load		1200	35	c	36	2600	-		-	-
20/2	Е	Cooler		750	37	Α	38	850	Mixer		Е	20/2
-	-	-		750	39	В	40	850	-		-	-
20/3	Е	Freezer		933	41	C	42	800	Ice Maker		E	20/2
-	-	-		933	43	A	44	800	-		-	-
-	-	-		933	45	В	46	0	Space		Е	-
	Е	Space		0	47	С	48	0	Space		Е	-
50/3	Е	Existing Load		4000	49	A	50	0	Space		E	-
-	-	-		4000	51	В	52	0	-		-	-
-	-	-		4000	53	c	54	0	-		-	-
'		Connecte	ed Load Per Phase	PH A:	20276	PH B:	23300	PH C:	21800			
		Lighting	HVAC	Motors	Recept.	Refrig	Kitchen	Misc		Total VA	Amps	-
Co	nnected V	<b>A</b> 200	5376	0	11400	6099	25001	17300		65376	181.5	
Der	nand Facto	r 1.25	1.00	1.00	NEC	1.00	1.00	1.00				
	Demand V	<b>A</b> 250	5376	0	10700	6099	25001	17300		64726	179.7	

			VOLTAGE:	208/120	3 PH 4W			AIC RATING:	18K	REMARKS:		
	PANEL	P1A	FEEDER AMP:	225	MAINS:	225	MLO	MOUNTING:	Surface			
		(Existing)	LUGS:			FEED:		ENCLOSURE:	NEMA 1			
BKR	NOTE	LOAD DESCRIPTION	N	VA	СКТ	PHASE	CKT	VA	LOAD DESCRI	PTION	NOTE	BKR
20/1	Е	Recept-D117-D502-	Roof	1000	1	Α	2	800	Recept-D110-D10	9-D101 & Door Pwr Sply	Е	20/1
20/1	Е	Spare		0	3	В	4	400	Recept D108		Е	20/1
20/1	Е	Recept D115-D112		1200	5	C	6	600	Recept D106		Е	20/1
20/1	E	Recept D112		400	7	Α	8	1000	Recept D107-Ho	all & Lobby	E	20/1
20/1	Е	Recept D102		600	9	В	10	800	Recept DD2-DD	3-DD4	Е	20/1
20/1	Е	Recept D104-D103-	D102	1200	11		12	600	Recept-D513-D5	514-DD4	Е	20/1
20/1	Е	Recept D104		400	13	Α	14	480	Control Panels	CP-CHW & CP-HW	R	20/1
20/2	Е	Fuel Pump		1200	15	В	16	200	Photocell-DD2		Е	20/1
-	-	-		1200	17	c	18	600	Heat Tape-Chille	ers	Е	20/1
20/1	Е	Recept D13-D14-D1	10	1200	19	Α	20	200	Lights-Corridor 8	k Toilets	Е	20/1
20/1	R	Boiler Emergency	Shutdown	480	21	В	22	400	Recept-D104-D	112	Е	20/1
20/1	Е	Security System Par	el	800	23		24	400	Recept-D104		Е	20/1
20/1	R	UH-1 & UH-2		336	25	Α	26	600	Building Floods		Е	20/1
20/1	R	EF-21 Staff 132		36	27	В	28	1200	Recept-D111		Е	20/1
20/1	R	FCU-11 Office 133		276	29		30	1200	Pump		Е	20/1
25/1	R	Boiler B-1		1920	31	Α	32	240	Control Panel C	CP-AHU-20	R	20/1
25/1	R	Boiler B-2		1920	33	В	34	72	Bathroom Fans	EF-16 & EF-17	R	20/1
20/1	R	Control Panels CP-Al	IU-21 & CP-AHU-22	480	35	c	36	400	Electrical Room	Fan DD2	Е	20/1
20/1	Е	Recept & Lights Sto	rage Shed	600	37	Α	38	0	Surge Protector		Е	60/3
30/2	E	Water Heater		2500	39	В	40	0	-		-	-
-	-	-		2500	41	c	42	0	-		-	-
		Connec	ted Load Per Phase	PH A:	9176	PH B	: 9808	PH C:	11456			
		Lighting	HVAC	Motors	Recept.	Refrig	Kitchen	Misc		Total VA	Amps	
С	onnected VA	1000	12960	0	12200	0	0	4280		30440	84.5	
De	mand Factor	1.25	1.00	1.00	NEC	1.00	1.00	1.00				
	Demand VA	1250	12960	0	11100	0	0	4280		29590	82.1	





PROJECT INFORMATION Project Number R23.00487.00

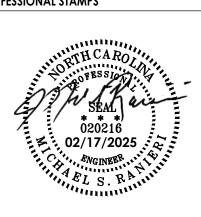
JOHNSTON COUNTY PUBLIC SCHOOLS Project Name **CLEVELAND ELEMENTARY** 

SCHOOL HVAC RENOVATION

Project Address 10225 CLEVELAND RD. CLAYTON, NC 27520

PROJECT ISSUE & REVISION SCHEDULE
w Date Description

PROFESSIONAL STAMPS



SHEET INFORMATION 02/17/2025 As indicated Project Status BID SET Drawn By Checked By JMH Drawing Title ELECTRICAL SCHEDULES