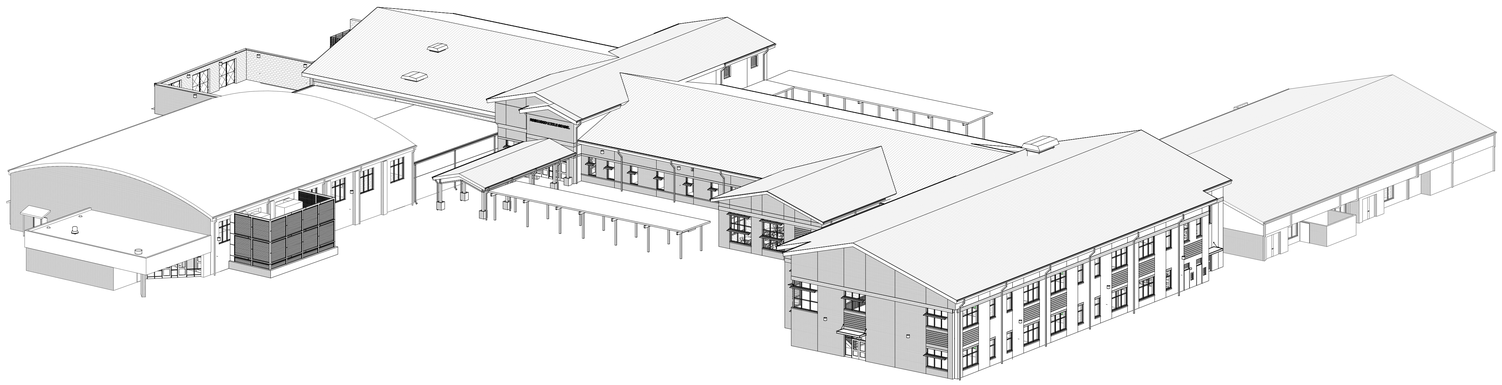
Rosewood Middle School Addition and Renovation

Wayne County Public Schools
541 North Carolina 581 S, Goldsboro, NC 27530



VOLUME 2

VICINITY MAP

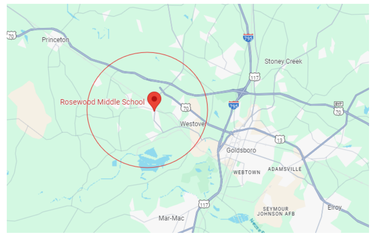


IMAGE REPRINTED FROM GOOGLE MAPS

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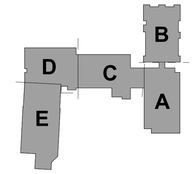
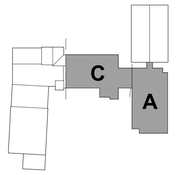
DRAWING AREA DIAGRAMS



KEY PLAN-1ST FLOOR
NTS



KEY PLAN - 2ND FLOOR
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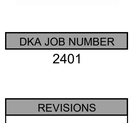

DKA JOB NUMBER
2401

REVISIONS

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DATE ISSUED

BID DOCUMENTS
01/10/2025

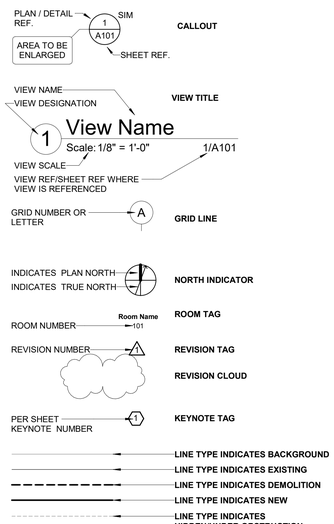
SHEET TITLE
COVER SHEET

G000

BID DOCUMENTS

Docusign Envelope ID: 1768B384-1F97-49A1-A4F0-AFA7ZE40D2B5

STANDARD DETAILING SYMBOLS



FIRE PROTECTION PIPING SYMBOLS

SYMBOL	DESCRIPTION
ABBV.	PIPE WITH SYSTEM ABBREVIATION.
	PENDENT SPRINKLER
	PENDENT SPRINKLER ON DROP
	PENDENT SPRINKLER ON DROP WITH GUARD
	PENDENT SPRINKLER WITH GUARD
	UPRIGHT SPRINKLER
	UPRIGHT SPRINKLER - 2
	UPRIGHT SPRINKLER ON SPRING
	UPRIGHT SPRINKLER ON SPRING WITH GUARD
	UPRIGHT SPRINKLER WITH GUARD
	WALL MOUNTED SPRINKLER
	WALL MOUNTED SPRINKLER EXTENDED COVERAGE
	WALL MOUNTED SPRINKLER EXTENDED COVERAGE - 2
	WALL MOUNTED SPRINKLER DRY TYPE
	WINDOW PENDENT SPRINKLER
	WINDOW PENDENT SPRINKLER - 2
	FLOW LIMITER
	FIRE VALVE
	BALL VALVE
	STOP VALVE (HANDLE OPTIONAL)
	3-WAY VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	PRESSURE REGULATING VALVE
	PIPE TURN UP
	PIPE TURN DOWN
	PIPE BOTTOM TAKE OFF
	PIPE TOP TAKE OFF
	PIPE CAP OR PLUG
	PIPE UNION
F	WATER FLOW SWITCH
SD 01 — SYSTEM / RISER #	RISER ID TAG
	FIRE DEPARTMENT CONNECTION 2-WAY BODY
	FIRE DEPARTMENT CONNECTION 3-WAY EXTENDED
	FIRE DEPARTMENT CONNECTION FLUSH OUTLET 2-WAY BODY
	FIRE DEPARTMENT CONNECTION FLUSH OUTLET 3-WAY BODY
	FIRE DEPARTMENT CONNECTION STAND ALONE DOUBLE
	FIRE HOSE VALVE CABINET
XX	HYDRAULIC REFERENCE NODE
F	FIRE ALARM BELL
H	HEAT DETECTOR

ABBREVIATIONS - FIRE PROTECTION

ABD	AUTOMATIC BALL DRIP
AD	AREA DRAIN
AFF	ABOVE FINISHED FLOOR
AFP	AUTOMATIC FIRE PUMP
ARCH	ARCHITECTURAL
ATS	AUTOMATIC TRANSFER SWITCH
BLDG	BUILDING
BOP	BOTTOM OF PIPE
CFM	CUBIC FEET PER MINUTE
CLG	CEILING
CONN	CONNECTION
CONT	CONTINUE/CONTINUATION
CV	CHECK VALVE
DCDA	DOUBLE CHECK DETECTOR ASSEMBLY BACKFLOW PREVENTER
DCV	DOUBLE CHECK VALVE BACKFLOW PREVENTER
DIA	DIAMETER
DN	DOWN (PENETRATES FLOOR SLAB)
DR	DRAIN
DWG	DRAWING
E	EXISTING
EL	ELEVATION
EXIST/EX	EXISTING
F	FIRE WATER PIPING
FCVA	FLOOR CONTROL VALVE ASSEMBLY
FD	FLOOR DRAIN
FDC	FIRE DEPARTEMENT CONNECTION
FHC	FIRE HOSE CABINET
FHR	FIRE HOSE RACK
FHV	FIRE HOSE VALVE
FL	FLOOR
FS	FLOW SWITCH
FSP	FIRE STANDPIPE
FT	FOOT/FEET
FVC	FIRE HOSE VALVE CABINET
G.C.	GENERAL CONTRACTOR
GAL	GALLONS
GPM	GALLONS PER MINUTE
GV	GATE VALVE
HCLG	HUNG CEILING
HD	HEAT DETECTOR
ID	INSIDE DIAMETER
IN.	INCH
INV	INVERT ELEVATION
JP	JOCKEY PUMP
MAX	MAXIMUM
MIN	MINIMUM
N.A.S.	NO AUTOMATIC SPRINKLERS
N.C.	NORMALLY CLOSED
N.I.C.	NOT IN CONTRACT
N.O.	NORMALLY OPEN
N.T.S.	NOT TO SCALE
N/A	NOT APPLICABLE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
OD	OUTSIDE DIAMETER
OS&Y	OUTSIDE SCREW & YOKE GATE VALVE
PC	PLUMBING CONTRACTOR
PRHV	PRESSURE REGULATING HOSE VALVE
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH (GAUGE)
PSI.A	POUNDS PER SQUARE INCH (ABSOLUTE)
RCV	RISER CONTROL VALVE
RPZ	REDUCED PRESSURE ZONE BACKFLOW PREVENTER
SD	SMOKE DETECTOR
SP	SPRINKLER OR SPRINKLER PIPING
SPDR	STANDPIPE DRAIN
SQFT	SQUARE FEET
T & D	TEST AND DRAIN CONNECTION
T.O.P.	TOP OF PIPE
T.O.S	TOP OF SLAB
T.T.B.	TIGHT TO BEAM
T.T.S.	TIGHT TO SLAB
TS	TAMPER SWITCH
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
UP	UP (PENETRATES FLOOR SLAB)
VIF	VERIFY IN FIELD
W/	WITH
WFS	WATER FLOW SWITCH
Z	ZONE

GENERAL NOTES - FIRE PROTECTION

1. THE SPRINKLER CONTRACTOR'S SCOPE OF WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING: DESIGN, FABRICATION, AND INSTALLATION OF NEW SPRINKLERS, NEW SPRINKLER PIPING, AND MODIFICATIONS TO THE EXISTING SPRINKLER SYSTEMS AT POINTS OF CONNECTION TO PROVIDE FULL COVERAGE SPRINKLER PROTECTION IN THE AREA. ALL WORK SHALL COMPLY WITH APPLICABLE NFPA STANDARDS, STATE BUILDING CODES, AND LOCAL AUTHORITY HAVING JURISDICTION.
2. WHENEVER THE WORD "PROVIDE" IS USED, IT SHALL MEAN FURNISH AND INSTALL COMPLETE AND READY FOR USE.
3. THE CONTRACTOR SHALL PAY ALL FEES REQUIRED TO OBTAIN ALL PERMITS AND INSPECTIONS.
4. PROVIDE OWNER WITH CERTIFICATES OF FINAL INSPECTION FROM THE LOCAL AUTHORITY HAVING JURISDICTION. PROVIDE AN AS-BUILT SET OF WORKING DRAWINGS AND HYDRAULIC CALCULATIONS WHICH INDICATE ALL CHANGES MADE DURING CONSTRUCTION.
5. THE CONTRACTOR SHALL WARRANTY ALL WORK AND MATERIAL FOR A PERIOD OF AT LEAST ONE (1) YEAR AFTER ACCEPTANCE BY THE OWNER.
6. THESE DRAWINGS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO CONVEY EXACT DIMENSIONS, SIZES, AND/OR LOCATIONS OF ALL NEW OR EXISTING ARCHITECTURAL, STRUCTURAL, FIRE PROTECTION, PLUMBING, MECHANICAL, OR ELECTRICAL EQUIPMENT OR FEATURES, EITHER SHOWN OR INFERRED. THE INFORMATION CONTAINED IN THESE DRAWINGS SHALL BE USED AS PART OF AN ENTIRE, INTACT SET OF CONTRACT DOCUMENTS, INCLUDING ANY SEPARATE WRITTEN SPECIFICATIONS.
7. ALL WORK SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO INSTALLATION. THE CONTRACTOR SHALL COORDINATE ROUTING OF ALL PIPING WITH EXISTING CONDITIONS AND OTHER TRADES' WORK AND SHALL PROVIDE ANY NECESSARY OFFSETS, RE-ROUTING, ETC. REQUIRED FOR A COMPLETE AND COORDINATED INSTALLATION. SYSTEMS SHALL BE NEATLY ARRANGED TO MAXIMIZE SPACE ABOVE CEILINGS AND WITHIN CHASES. MAINTAIN MINIMUM EQUIPMENT, DEVICE, AND VALVE CLEARANCES FOR PROPER OPERATION AND MAINTENANCE.
8. THE CONTRACTOR SHALL ROUTE PIPING AS CLOSE TO BUILDING STRUCTURE (FLOORS, WALLS, COLUMNS, AND BEAMS) AS POSSIBLE.
9. GAUGES SHALL BE ORIENTED FOR VIEW FROM FLOOR.
10. THE CONTRACTOR SHALL VERIFY LATEST ARCHITECTURAL LAYOUTS, INCLUDING CEILINGS, PRIOR TO INSTALLATION OF SYSTEM.
11. THE CONTRACTOR SHALL PROVIDE A FIRE FLOW TEST ON WHICH TO BASE THEIR CALCULATIONS. THE FLOW TEST UTILIZED SHALL BE IN ACCORDANCE WITH NFPA 291 AND UTILIZE AT LEAST TWO (2) HYDRANTS; A PRESSURE HYDRANT AND A FLOW HYDRANT. THESE TWO HYDRANTS SHALL BE ON EITHER SIDE OF THE POINT OF UTILITY CONNECTION. A COPY OF THIS FIRE FLOW TEST DATA SHALL BE PROVIDED WITH THE WORKING DRAWINGS SUBMITTAL.
12. PROVIDE A COMPLETE SET OF WORKING DRAWINGS AND PRODUCT DATA SUBMITTALS WHICH SHOW THE COMPLETE SPRINKLER SYSTEM DESIGN.
13. ONLY NEW MATERIALS AND EQUIPMENT ARE TO BE INSTALLED AND SHALL BE OF THE LATEST DESIGN FROM EACH MANUFACTURER, ONLY EQUIPMENT AND MATERIALS WHICH ARE UL LISTED AND/OR FM APPROVED ARE TO BE INSTALLED. ALL SPRINKLER SYSTEM COMPONENTS SHALL HAVE A WORKING PRESSURE SUITABLE FOR THE CONDITIONS OF THE SYSTEM IN WHICH THEY ARE INSTALLED.
14. ALL FIRE-RATED PENETRATIONS SHALL BE SEALED UTILIZING AN APPROVED UL LISTED SYSTEM, IN A MANNER THAT EQUALS THE RATING OF THE ASSEMBLY IN WHICH IT IS INSTALLED.
15. THE CONTRACTOR SHALL NOT PLACE ANY SHUTOFF VALVES ABOVE ANY INACCESSIBLE CEILINGS OR BEHIND WALLS. COORDINATE ANY REQUIRED ACCESS PANELS WITH THE GENERAL CONTRACTOR.
16. THE CONTRACTOR SHALL COORDINATE ANY CORE DRILLS WITH THE STRUCTURAL ENGINEER BEFORE DRILLING.
17. SPRINKLER LOCATIONS INDICATED ON DRAWINGS ARE APPROXIMATE AND INTENDED FOR COORDINATION ONLY. SPRINKLERS SHALL BE SPACED PER NFPA 13. SPRINKLERS SHALL BE INSTALLED IN CENTER OF LAY-IN CEILING TILES AND VISUALLY ALIGNED IN HARD CEILINGS AND AREAS WITHOUT CEILINGS.
18. PROVIDE CONCEALED OR RECESSED PENDENT SPRINKLERS IN AREAS WITH CEILINGS. PROVIDE UPRIGHT SPRINKLERS IN AREAS WITHOUT CEILINGS. PROVIDE SIDEWALL SPRINKLERS IN ACCORDANCE WITH NFPA 13 AND AS DIRECTED BY THE DRAWINGS. PROVIDE GUARDS ON ALL SPRINKLERS INSTALLED IN AREAS SUBJECT TO MECHANICAL DAMAGE. COORDINATE SPRINKLER AND ESCUTCHEON FINISHES WITH ADJACENT FINISHES AND EXPOSURES. REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION.
19. QUICK RESPONSE SPRINKLERS SHALL BE UTILIZED IN ALL LIGHT HAZARD OCCUPANCIES.
20. UTILIZE ARMOVERS CONNECTED TO THE TOP OF SPRINKLER PIPING ONLY. ALL ARMOVERS SHALL BE 1" IN SIZE. ARMOVERS EXCEEDING 2'-0" IN LENGTH SHALL BE SUPPORTED WITH HANGERS PER NFPA 13.
21. THE CONTRACTOR SHALL INSTALL A DRAIN AT ALL RISER LOCATIONS AS WELL AS ALL LOW POINTS IN THE SYSTEM. AN INSPECTOR'S TEST AND DRAIN ASSEMBLY SHALL BE INSTALLED ON THE SYSTEM. SPRINKLER PIPING SHALL SLOPE DOWN TO DRAIN LOCATIONS.
22. THE ENTIRE SPRINKLER SYSTEM SHALL BE TESTED AT TWO-HUNDRED (200) PSI FOR A MINIMUM OF TWO (2) HOURS UPON COMPLETION OF INSTALLATION. ALL LEAKS SHALL BE PROPERLY SEALED OR CORRECTED PRIOR TO TURNOVER TO OWNER.
23. ALL PIPING 1-1/2" AND SMALLER SHALL BE SCHEDULE 40 BLACK STEEL (ASTM A53) WITH 150# CLASS MALLEABLE IRON THREADED FITTINGS (ASME B16.3).
24. ALL PIPING 2" AND LARGER SHALL BE SCHEDULE 10 BLACK STEEL PIPING (ASTM A53) WITH ROLLED GROOVE JOINTED FITTINGS.

SPRINKLER DESIGN DATA

PROJECT NAME:	ROSEWOOD MIDDLE SCHOOL ADDITION			
PROJECT STREET ADDRESS:	541 NORTH CAROLINA 581 S, GOLDSBORO, NC 27530			
SUITE #:	N/A	FLOOR #:	2	CEILING HGT: VARIES
DESIGNED BY:	DEWBERRY	PHONE #:	919-746-9639	
GENERAL OCCUPANCY:	EDUCATION	HAZARD :	LIGHT, OH-I, OH-II	

DESIGN SUMMARY

	SYSTEM # 1	SYSTEM # 1	SYSTEM # 1	SYSTEM #3	SYSTEM #3
DESIGN METHOD:	DESIGN / AREA	DESIGN / AREA	DESIGN / AREA	DESIGN / AREA	DESIGN / AREA
LOCATION:	GYM #E117	KITCHEN / STORAGE	CONC. #E125	MECHANICAL #C200	SCIENCE #A213
TYPE OF SYSTEM:	WET	WET	WET	WET	WET
HAZARD CLASS:	LIGHT HAZARD	OH-II HAZARD	OH-II HAZARD	OH-II HAZARD	OH-I HAZARD
CRITERIA FROM:	NFPA 13, 2013ed	NFPA 13, 2013ed	NFPA 13, 2013ed	NFPA 13, 2013ed	NFPA 13, 2013ed
DESIGN DENSITY:	0.10 GPM/FT²	0.20 GPM/FT²	0.20 GPM/FT²	0.20 GPM/FT²	0.15 GPM/FT²
DESIGN AREA:	1,500 FT²	1,500 FT²	1,500 FT²	1,500 FT²	1,500 FT²
K-FACTOR:	5.6	5.6	5.6	5.6	5.6
SPACING OF HEADS:	6'-0" MIN. / 15'-0" MAX.	6'-0" MIN. / 15'-0" MAX.	6'-0" MIN. / 15'-0" MAX.	6'-0" MIN. / 15'-0" MAX.	6'-0" MIN. / 15'-0" MAX.
SPRINKLER AREA:	225 FT²	130 FT²	130 FT²	130 FT²	130 FT²
HOSE ALLOWANCE:	100 GPM	250 GPM	250 GPM	250 GPM	250 GPM
# SPRINKLER DESIGN:	BY CONTRACTOR	BY CONTRACTOR	BY CONTRACTOR	BY CONTRACTOR	BY CONTRACTOR
REQUIREMENTS @:	HYDRANT	HYDRANT	HYDRANT	HYDRANT	HYDRANT
GPM REQ'D:	BY CONTRACTOR	BY CONTRACTOR	BY CONTRACTOR	BY CONTRACTOR	BY CONTRACTOR
PSI REQ'D:	BY CONTRACTOR	BY CONTRACTOR	BY CONTRACTOR	BY CONTRACTOR	BY CONTRACTOR
SAFETY FACTOR @ NODE:	10 PSI MINIMUM	10 PSI MINIMUM	10 PSI MINIMUM	10 PSI MINIMUM	10 PSI MINIMUM

WATER SUPPLY INFORMATION

TESTED BY:	FORT TOWNSHIP SANITARY DISTRICT
DATE/TIME:	05/07/2024 @ 9:00 AM
GIS POINT:	# 620250
HYDRANT ELEV:	126.41'
LOCATION:	ROSEWOOD ROAD- ACROSS FROM FIRE DEPARTMENT
STATIC (PSI):	60 PSI
RESIDUAL (PSI):	47 PSI
FLOW (GPM):	1,008 GPM

IS COPY OF WATER TEST DATA INCLUDED WITH CALCULATIONS? ■ YES ☐ NO

IS STORAGE HEIGHT GREATER THAN 12 FEET? ☐ YES ■ NO

DRAWING LIST - FIRE PROTECTION

F00.01	FIRE PROTECTION SYMBOLS & NOTES
F01.01	FIRST FLOOR FIRE PROTECTION PIPING PLAN AREA A
F01.02	FIRST FLOOR FIRE PROTECTION PIPING PLAN AREA B
F01.03	FIRST FLOOR FIRE PROTECTION PIPING PLAN AREA C
F01.04	FIRST FLOOR FIRE PROTECTION PIPING PLAN AREA D
F01.05	FIRST FLOOR FIRE PROTECTION PIPING PLAN AREA E
F02.01	SECOND FLOOR FIRE PROTECTION PIPING PLAN AREA A
F02.03	SECOND FLOOR FIRE PROTECTION PIPING PLAN AREA C
F05.01	DETAILS

TOTAL SHEETS: 9

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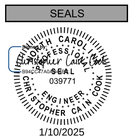
WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS



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DEWBERRY NUMBER
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SHEET TITLE

FIRE PROTECTION SYMBOLS & NOTES

F00.01

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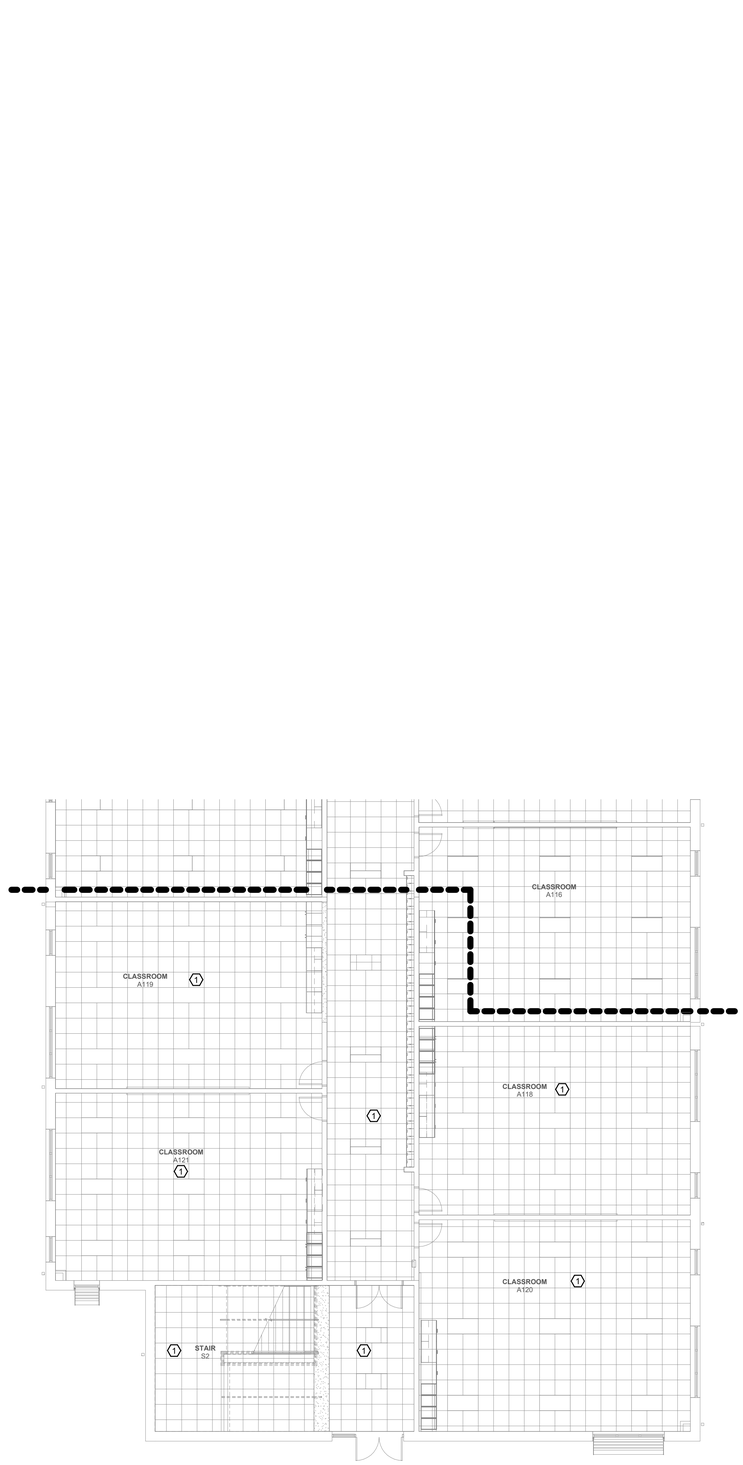

1 FIRST FLOOR FIRE PROTECTION PIPING PLAN AREA A - BID ALT. NO. 1
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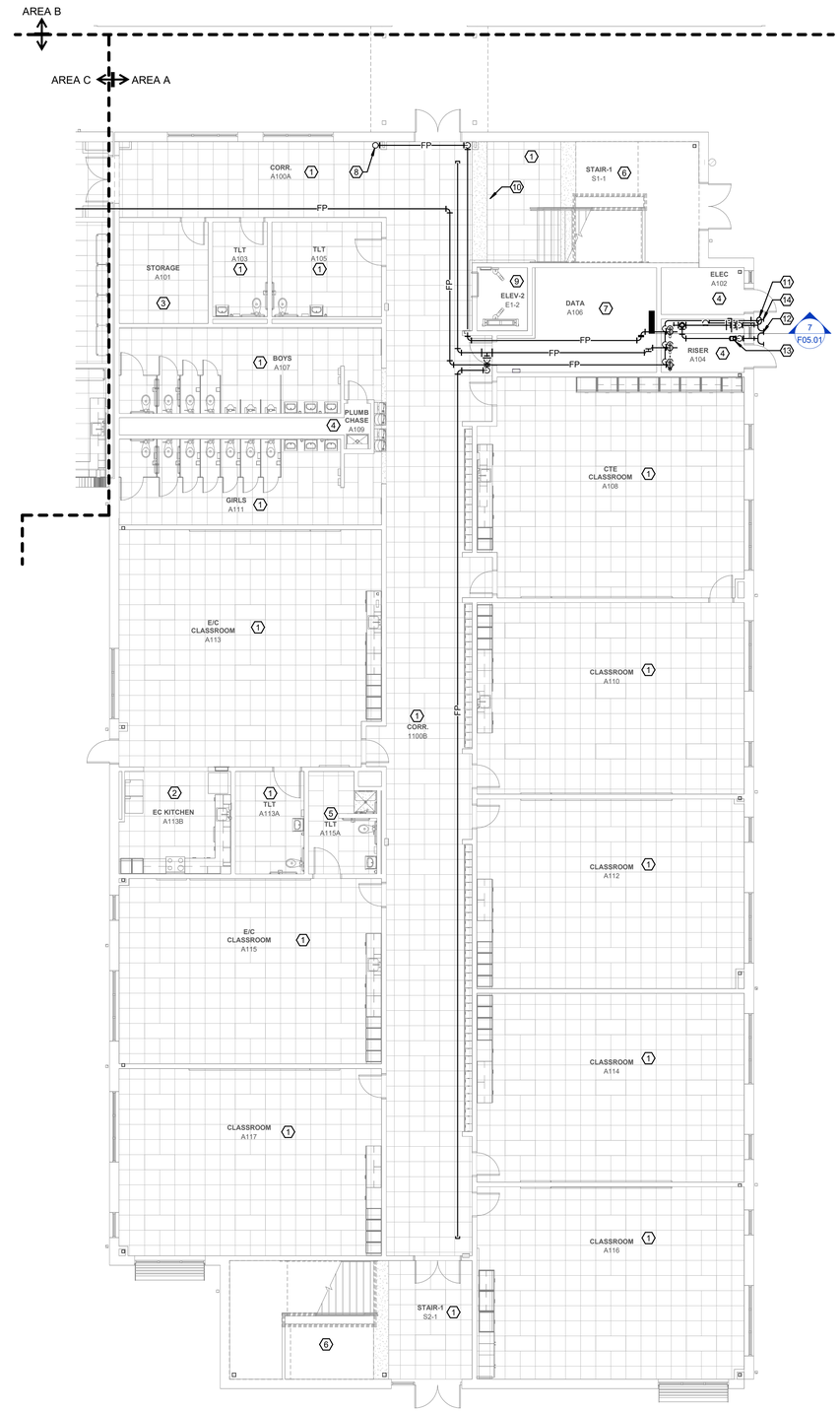


2 FIRST FLOOR FIRE PROTECTION PIPING PLAN AREA A
Scale: 1/8" = 1'-0"
0' 4' 8' 16'

GENERAL NOTES:

1. REFER TO F00.01 FOR GENERAL NOTES.

KEYNOTES:

1 PROVIDE NEW QUICK RESPONSE, WHITE, FLAT PLATE CONCEALED PENDENT SPRINKLERS PER NFPA 13 FOR LIGHT HAZARD OCCUPANCY W/ COVERAGE OF 225 FT² AT A DENSITY OF 0.10 GPM/FT².

2 PROVIDE NEW QUICK RESPONSE, WHITE, SEMI-RECESSED PENDENT SPRINKLERS PER NFPA 13 FOR OH-I HAZARD OCCUPANCY W/ COVERAGE OF 130 FT² AT A DENSITY OF 0.15 GPM/FT².

3 PROVIDE NEW QUICK RESPONSE, WHITE, SEMI-RECESSED PENDENT SPRINKLERS PER NFPA 13 FOR OH-II HAZARD OCCUPANCY W/ COVERAGE OF 130 FT² AT A DENSITY OF 0.20 GPM/FT².

4 PROVIDE NEW QUICK RESPONSE, BRASS UPRIGHT SPRINKLERS PER NFPA 13 FOR OH-I HAZARD OCCUPANCY W/ COVERAGE OF 130 FT² AT A DENSITY OF 0.15 GPM/FT².

5 PROVIDE NEW QUICK RESPONSE, ELECTROLESS NICKEL PTFE, PENDENT SPRINKLERS PER NFPA 13 FOR LIGHT HAZARD OCCUPANCY W/ COVERAGE OF 225 FT² AT A DENSITY OF 0.10 GPM/FT².

6 PROVIDE NEW QUICK RESPONSE, WHITE, UPRIGHT SPRINKLERS PER NFPA 13 FOR LIGHT HAZARD OCCUPANCY W/ COVERAGE OF 225 FT² AT A DENSITY OF 0.10 GPM/FT². PAINT EXPOSED SPRINKLER PIPE WHITE.

7 PROVIDE NEW QUICK RESPONSE, BRASS UPRIGHT SPRINKLERS PER NFPA 13 FOR OH-II HAZARD OCCUPANCY W/ COVERAGE OF 130 FT² AT A DENSITY OF 0.20 GPM/FT².

8 SPRINKLER MAIN UP TO SECOND FLOOR.

9 PROVIDE SIDEWALL SPRINKLER AT BOTTOM OF ELEVATOR PER NFPA 13-8.15.5.1.

10 PROVIDE WATER CURTAIN ON STAIR SIDE OF DRAFT STOP PER NFPA 13-8.15.4 AND HYDRAULICALLY CALCULATE PER NFPA 13- 11.3.3.

11 2" MAIN DRAIN (GALVANIZED).

12 FIRE DEPARTMENT CONNECTION (FDC) WITH AUTOMATIC BALL DRIP AND DRAIN TO DAYLIGHT.

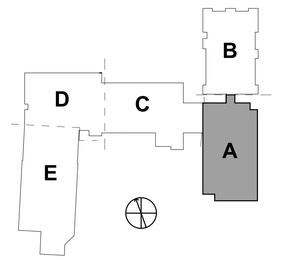
13 FDC CHECK VALVE.

14 TWO (2) BRASS HOSE VALVES W/ CAP AND CHAIN TO TEST BACKFLOW.

WALL RATING LEGEND:

1-HR RATED FIRE BARRIER
2-HR RATED FIRE BARRIER
3-HR RATED FIRE BARRIER
4-HR RATED FIRE BARRIER

KEYPLAN:



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PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039771 CHRISTOPHER LANE LOCKE 1/10/2025

DKA JOB NUMBER
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SHEET TITLE
FIRST FLOOR FIRE PROTECTION PIPING PLAN AREA A

F01.01

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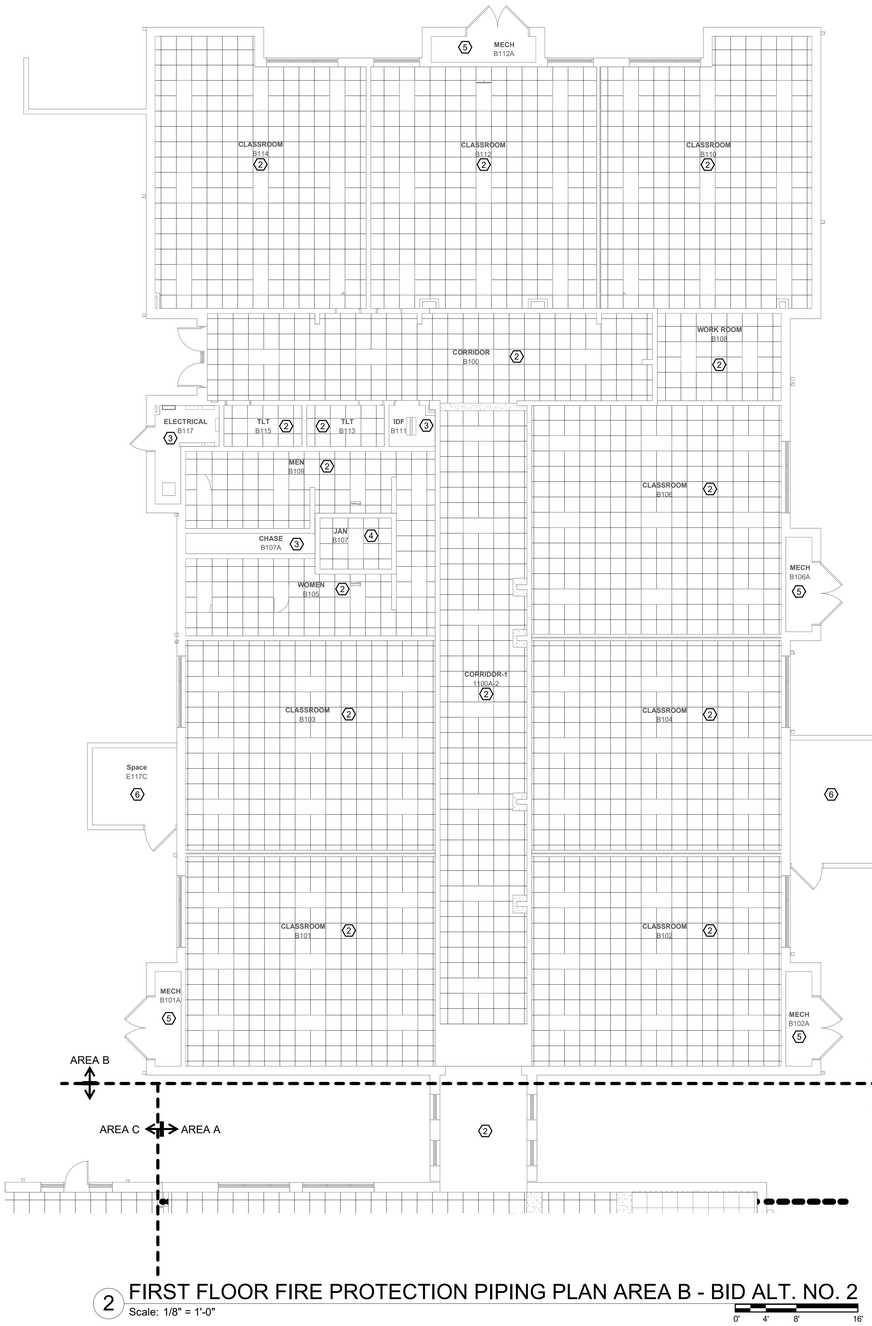

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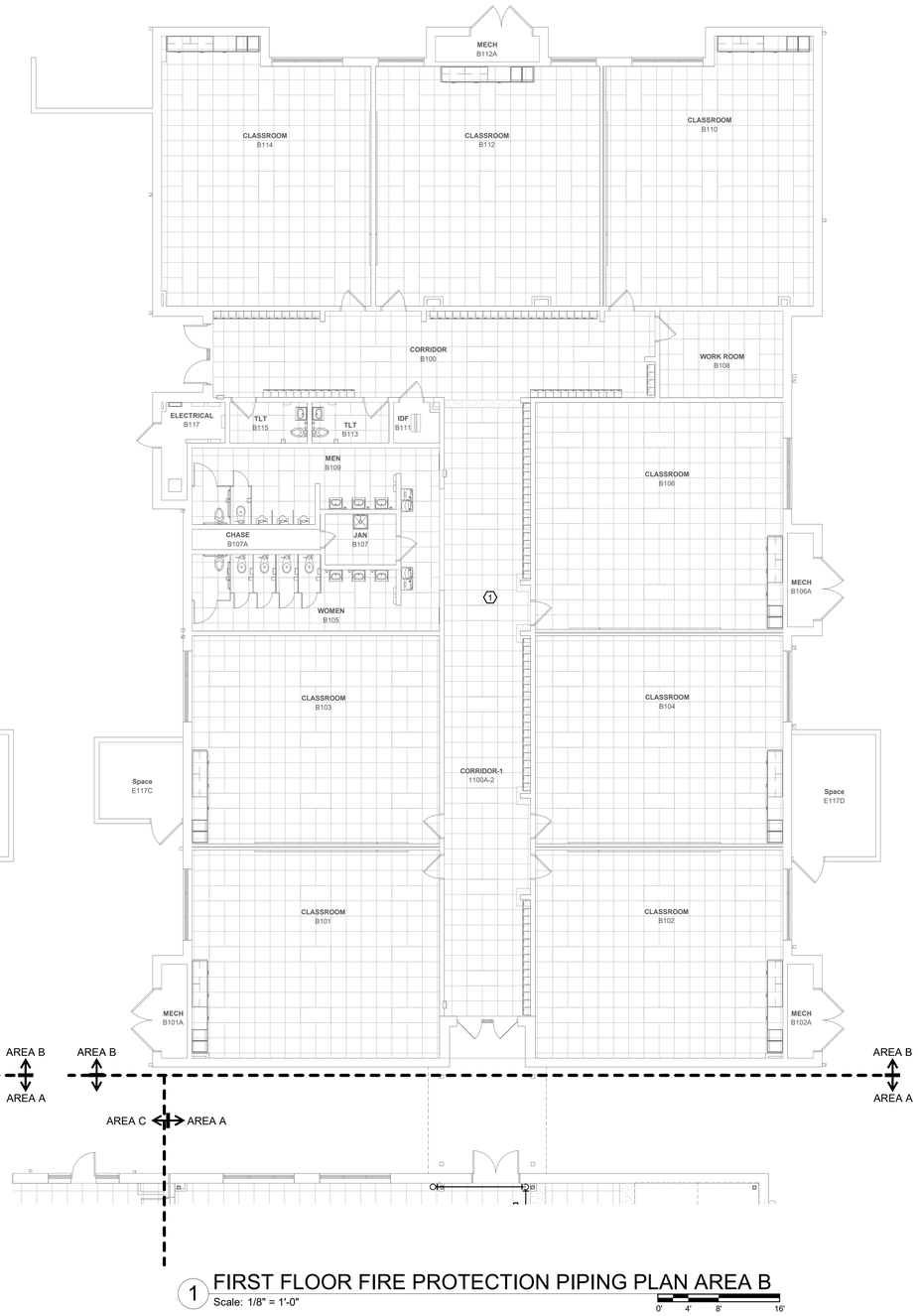


1 FIRST FLOOR FIRE PROTECTION PIPING PLAN AREA B
Scale: 1/8" = 1'-0"

GENERAL NOTES:

1. REFER TO F00.01 FOR GENERAL NOTES.

KEYNOTES:

1 EXISTING BUILDING. NO AUTOMATIC SPRINKLER PROTECTION.

2 PROVIDE NEW QUICK RESPONSE, WHITE, FLAT PLATE CONCEALED PENDENT SPRINKLERS PER NFPA 13 FOR LIGHT HAZARD OCCUPANCY W/ COVERAGE OF 225 FT² AT A DENSITY OF 0.10 GPM/FT².

3 PROVIDE NEW QUICK RESPONSE, BRASS UPRIGHT SPRINKLERS PER NFPA 13 FOR OH-I HAZARD OCCUPANCY W/ COVERAGE OF 130 FT² AT A DENSITY OF 0.15 GPM/FT².

4 PROVIDE NEW QUICK RESPONSE, WHITE, SEMI-RECESSED PENDENT SPRINKLERS PER NFPA 13 FOR OH-II HAZARD OCCUPANCY W/ COVERAGE OF 130 FT² AT A DENSITY OF 0.20 GPM/FT².

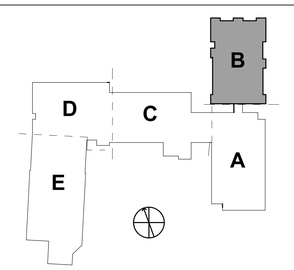
5 PROVIDE NEW QUICK RESPONSE, CHROME, DRY-BARREL, SIDEWALL SPRINKLERS PER NFPA 13 FOR OH-II HAZARD OCCUPANCY W/ COVERAGE OF 100FT² AT A DENSITY OF 0.20 GPM/FT². SIDEWALL SPRINKLERS SHALL BE SPACED NO MORE THAN 10' APART PER NFPA 13-TABLE 8.7.2.2.1.

6 PROVIDE NEW QUICK RESPONSE, EXTENDED COVERAGE, CHROME, DRY-BARREL, SIDEWALL SPRINKLERS PER NFPA 13 FOR OH-II HAZARD OCCUPANCY W/ COVERAGE OF 400FT² AT A DENSITY OF 0.20 GPM/FT².

WALL RATING LEGEND:

1-HR RATED FIRE BARRIER
2-HR RATED FIRE BARRIER
3-HR RATED FIRE BARRIER
4-HR RATED FIRE BARRIER

KEYPLAN:



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SHEET TITLE

FIRST FLOOR FIRE PROTECTION PIPING PLAN AREA B

F01.02

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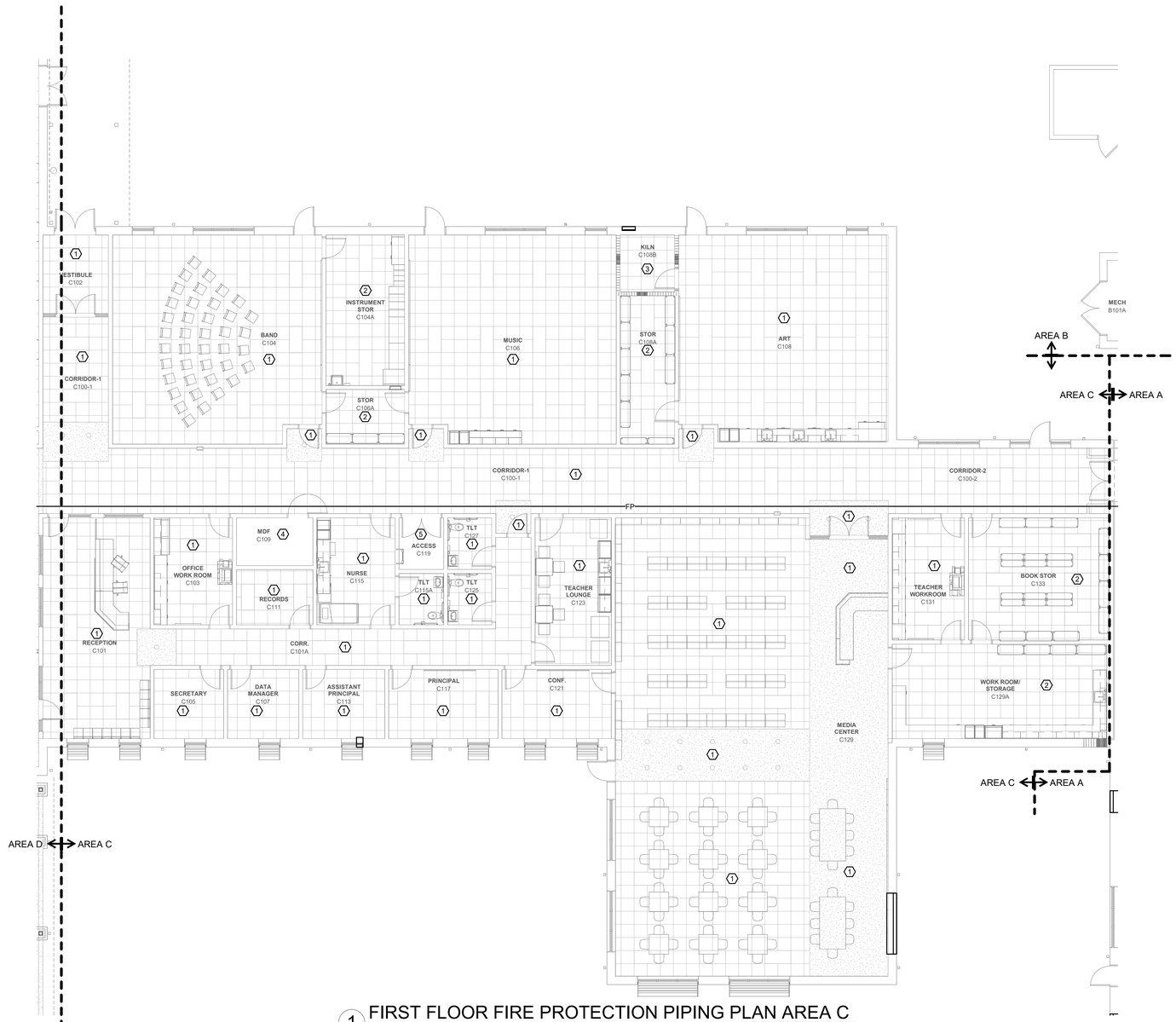


1 FIRST FLOOR FIRE PROTECTION PIPING PLAN AREA C

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

1. REFER TO F00.01 FOR GENERAL NOTES.

KEYNOTES:

1 PROVIDE NEW QUICK RESPONSE, WHITE, FLAT PLATE CONCEALED PENDENT SPRINKLERS PER NFPA 13 FOR LIGHT HAZARD OCCUPANCY W/ COVERAGE OF 225 FT² AT A DENSITY OF 0.10 GPM/FT².

2 PROVIDE NEW QUICK RESPONSE, WHITE, SEMI-RECESSED PENDENT SPRINKLERS PER NFPA 13 FOR OH-II HAZARD OCCUPANCY W/ COVERAGE OF 130 FT² AT A DENSITY OF 0.20 GPM/FT².

3 PROVIDE NEW QUICK RESPONSE, HIGH TEMERATURE, WHITE, SEMI-RECESSED PENDENT SPRINKLERS PER NFPA 13 FOR OH-II HAZARD OCCUPANCY W/ COVERAGE OF 130 FT² AT A DENSITY OF 0.20 GPM/FT².

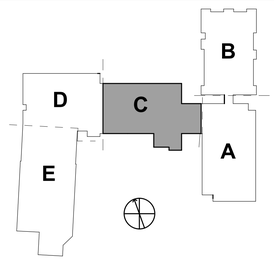
4 PROVIDE NEW QUICK RESPONSE, BRASS UPRIGHT SPRINKLERS PER NFPA 13 FOR OH-I HAZARD OCCUPANCY W/ COVERAGE OF 130 FT² AT A DENSITY OF 0.15 GPM/FT².

5 PROVIDE NEW QUICK RESPONSE, BRASS UPRIGHT SPRINKLERS PER NFPA 13 FOR OH-II HAZARD OCCUPANCY W/ COVERAGE OF 130 FT² AT A DENSITY OF 0.20 GPM/FT².

WALL RATING LEGEND:

1-HR RATED FIRE BARRIER
2-HR RATED FIRE BARRIER
3-HR RATED FIRE BARRIER
4-HR RATED FIRE BARRIER

KEYPLAN:



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SHEET TITLE

FIRST FLOOR FIRE PROTECTION PIPING PLAN AREA C

F01.03

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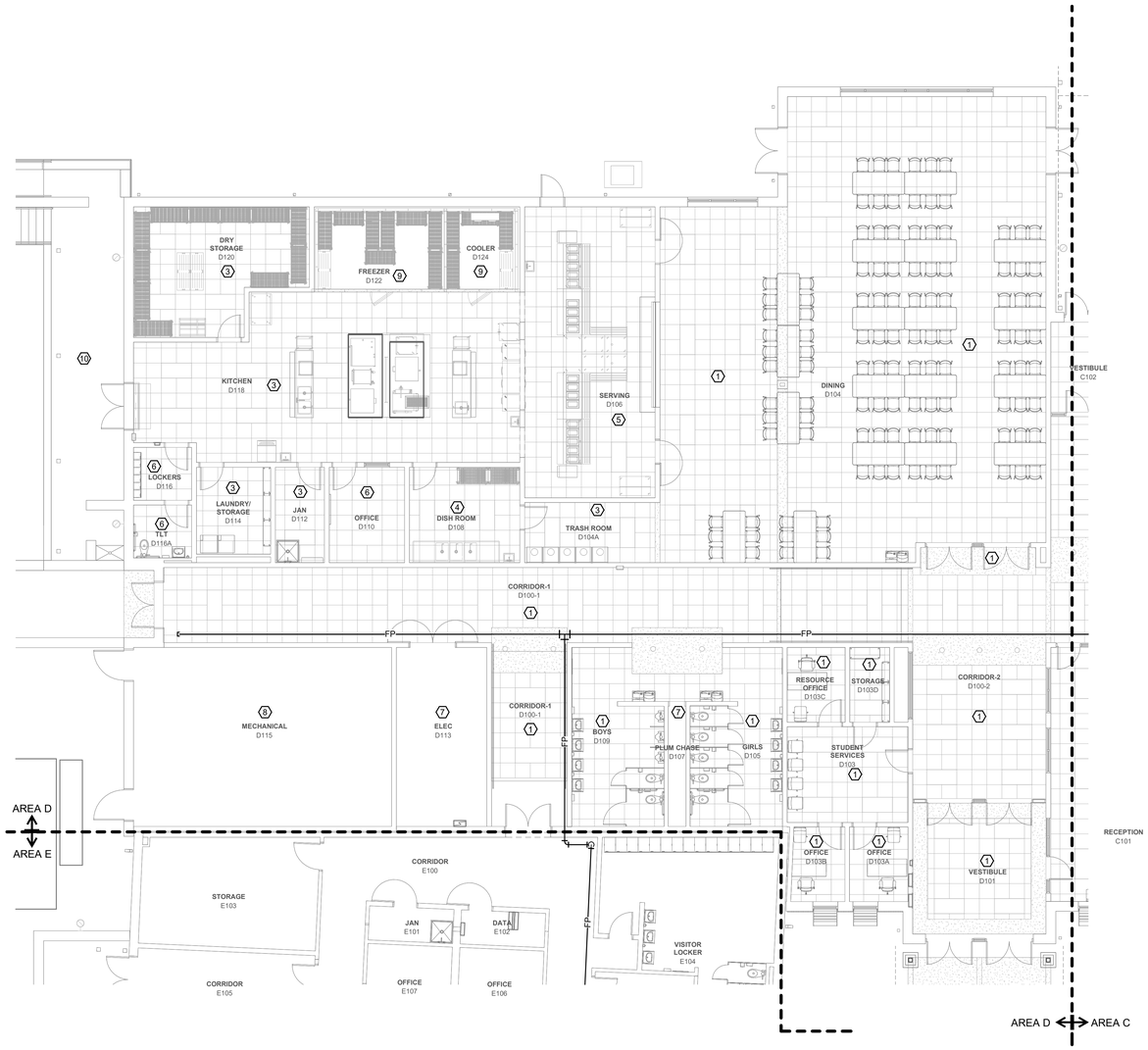


1 FIRST FLOOR FIRE PROTECTION PIPING PLAN AREA D
Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

1. REFER TO F00.01 FOR GENERAL NOTES.

KEYNOTES:

1 PROVIDE NEW QUICK RESPONSE, WHITE, FLAT PLATE CONCEALED PENDENT SPRINKLERS PER NFPA 13 FOR LIGHT HAZARD OCCUPANCY W/ COVERAGE OF 225 FT² AT A DENSITY OF 0.10 GPM/FT².

3 PROVIDE NEW QUICK RESPONSE, WHITE, SEMI-RECESSED PENDENT SPRINKLERS PER NFPA 13 FOR OH-II HAZARD OCCUPANCY W/ COVERAGE OF 130 FT² AT A DENSITY OF 0.20 GPM/FT².

4 PROVIDE NEW QUICK RESPONSE, HIGH TEMERATURE, WHITE, SEMI-RECESSED PENDENT SPRINKLERS PER NFPA 13 FOR OH-I HAZARD OCCUPANCY W/ COVERAGE OF 130 FT² AT A DENSITY OF 0.15 GPM/FT².

5 PROVIDE NEW QUICK RESPONSE, WHITE, FLAT PLATE CONCEALED PENDENT SPRINKLERS PER NFPA 13 FOR OH-I HAZARD OCCUPANCY W/ COVERAGE OF 130 FT² AT A DENSITY OF 0.15 GPM/FT².

6 PROVIDE NEW QUICK RESPONSE, WHITE, SEMI-RECESSED PENDENT SPRINKLERS PER NFPA 13 FOR LIGHT HAZARD OCCUPANCY W/ COVERAGE OF 225 FT² AT A DENSITY OF 0.10 GPM/FT².

7 PROVIDE NEW QUICK RESPONSE, BRASS UPRIGHT SPRINKLERS PER NFPA 13 FOR OH-I HAZARD OCCUPANCY W/ COVERAGE OF 130 FT² AT A DENSITY OF 0.15 GPM/FT².

8 PROVIDE NEW QUICK RESPONSE, BRASS UPRIGHT SPRINKLERS PER NFPA 13 FOR OH-II HAZARD OCCUPANCY W/ COVERAGE OF 130 FT² AT A DENSITY OF 0.20 GPM/FT².

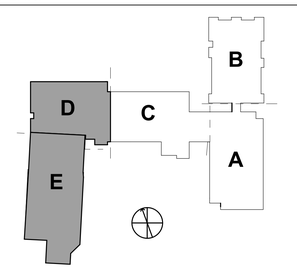
9 PROVIDE DRY-BARREL INTERMEDIATE TEMPERATURE, CHROME PENDENT SPRINKLERS TO PROTECT COOLER AND FREEZER. DRY BARREL LENGTHS SHALL BE IN ACCORDANCE WITH NFPA 13, TABLE 8.4.9.1(A). COORDINATE PENETRATIONS THROUGH COOLER AND FREEZER WITH EQUIPMENT SUPPLIER. PROVIDE INSULATION BOOT ASSEMBLY ON THE DRY BARREL.

10 PROVIDE NEW QUICK RESPONSE, CHROME, DRY-BARREL, SIDEWALL SPRINKLERS PER NFPA 13 FOR OH-II HAZARD OCCUPANCY W/ COVERAGE OF 100FT² AT A DENSITY OF 0.20 GPM/FT². SIDEWALL SPRINKLERS PROTECTING LOADING DOCK SHALL BE SPACED NO MORE THAN 10' APART PER NFPA 13-TABLE 8.7.2.2.1.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039771 CHRISTOPHER CALLOWAY CARR
1/10/2025

DKA JOB NUMBER
2401

DEWBERRY NUMBER
50171439

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BID DOCUMENTS
01/10/2025

SHEET TITLE

FIRST FLOOR FIRE PROTECTION PIPING PLAN AREA D

F01.04

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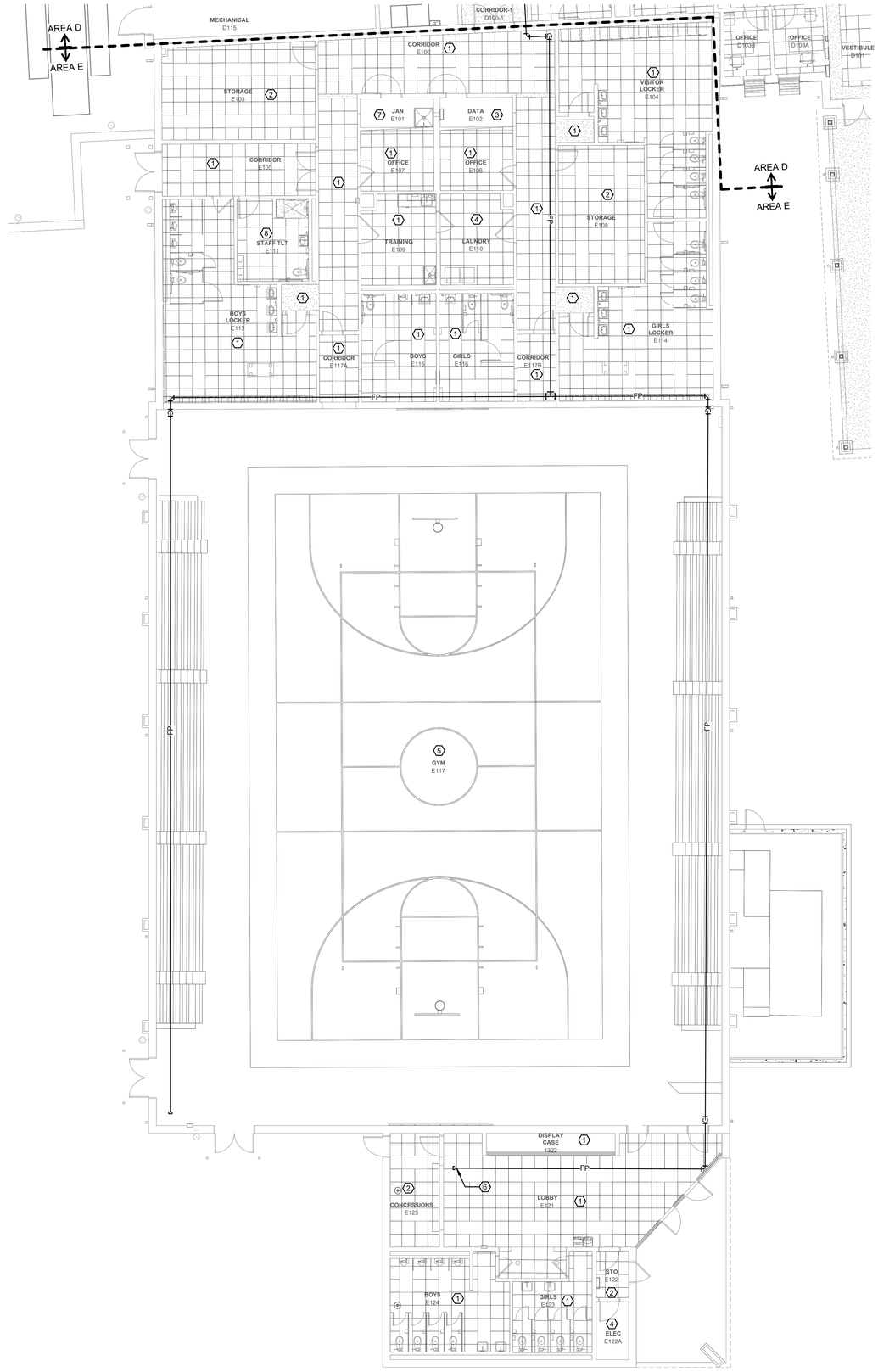


1 FIRST FLOOR FIRE PROTECTION PIPING PLAN AREA E

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

1. REFER TO F00.01 FOR GENERAL NOTES.

KEYNOTES:

1 PROVIDE NEW QUICK RESPONSE, WHITE, FLAT PLATE CONCEALED PENDENT SPRINKLERS PER NFPA 13 FOR LIGHT HAZARD OCCUPANCY W/ COVERAGE OF 225 FT² AT A DENSITY OF 0.10 GPM/FT².

2 PROVIDE NEW QUICK RESPONSE, WHITE, SEMI-RECESSED PENDENT SPRINKLERS PER NFPA 13 FOR OH-II HAZARD OCCUPANCY W/ COVERAGE OF 130 FT² AT A DENSITY OF 0.20 GPM/FT².

3 PROVIDE NEW QUICK RESPONSE, BRASS UPRIGHT SPRINKLERS PER NFPA 13 FOR OH-I HAZARD OCCUPANCY W/ COVERAGE OF 130 FT² AT A DENSITY OF 0.15 GPM/FT².

4 PROVIDE NEW QUICK RESPONSE, WHITE, SEMI-RECESSED PENDENT SPRINKLERS PER NFPA 13 FOR OH-I HAZARD OCCUPANCY W/ COVERAGE OF 130 FT² AT A DENSITY OF 0.15 GPM/FT².

5 PROVIDE NEW QUICK RESPONSE, WHITE, UPRIGHT SPRINKLERS WITH HEAD CAGES PER NFPA 13 FOR LIGHT HAZARD OCCUPANCY WITH COVERAGE OF 225 FT² AT A DENSITY OF 0.10 GPM/FT². PAINT EXPOSED FIRE SPRINKLER PIPE WHITE.

6 PROVIDE LOW POINT DRAIN AT BOTTOM OF MAIN PER NFPA 13- 8.16.2.5.2.1 WITH GLOBE VALVE, NIPPLE AND CAP.

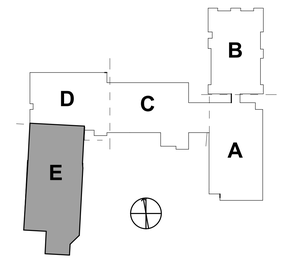
7 PROVIDE NEW QUICK RESPONSE, BRASS UPRIGHT SPRINKLERS PER NFPA 13 FOR OH-I HAZARD OCCUPANCY W/ COVERAGE OF 130 FT² AT A DENSITY OF 0.20 GPM/FT².

8 PROVIDE NEW QUICK RESPONSE, SEMI-RECESSED, ELECTROLESS NICKEL PTFE SPRINKLER PER NFPA 13 FOR LIGHT HAZARD OCCUPANCY W/ COVERAGE OF 225 FT² AT A DENSITY OF 0.10 GPM/FT².

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

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DEWBERRY NUMBER
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SHEET TITLE

FIRST FLOOR FIRE PROTECTION PIPING PLAN AREA E

F01.05

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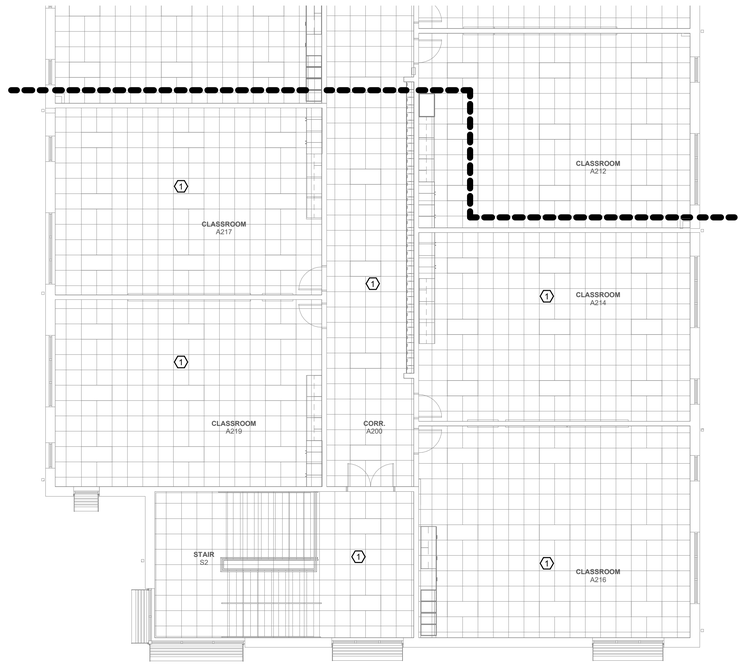

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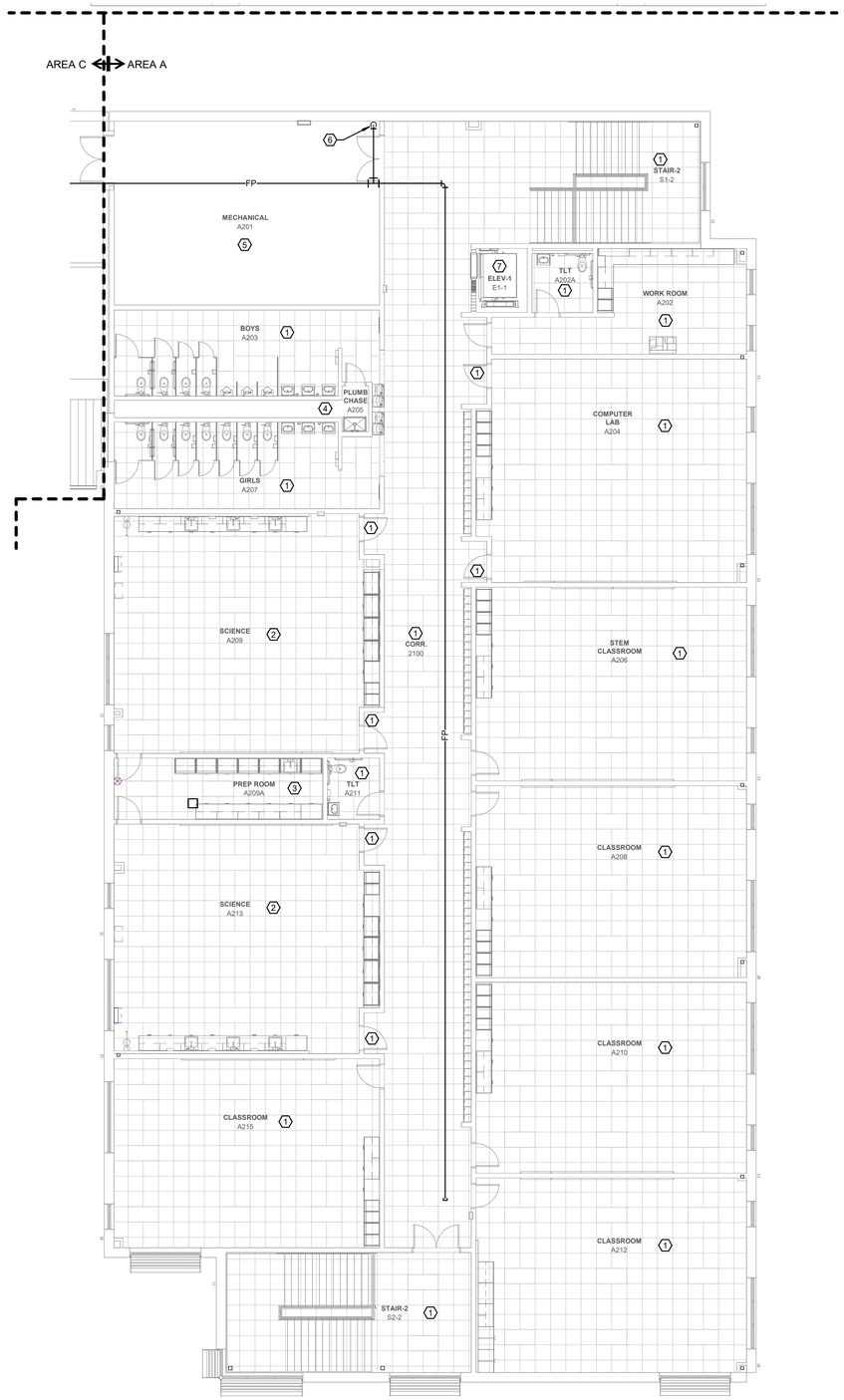
Scale: 1/8" = 1'-0"



2 SECOND FLOOR FIRE PROTECTION PIPING PLAN AREA A
Scale: 1/8" = 1'-0"

GENERAL NOTES:

1. REFER TO F00.01 FOR GENERAL NOTES.

KEYNOTES:

1 PROVIDE NEW QUICK RESPONSE, WHITE, FLAT PLATE CONCEALED PENDENT SPRINKLERS PER NFPA 13 FOR LIGHT HAZARD OCCUPANCY W/ COVERAGE OF 225 FT² AT A DENSITY OF 0.10 GPM/FT².

2 PROVIDE NEW QUICK RESPONSE, WHITE, FLAT PLATE CONCEALED PENDENT SPRINKLERS PER NFPA 13 FOR OH-I HAZARD OCCUPANCY W/ COVERAGE OF 130 FT² AT A DENSITY OF 0.15 GPM/FT².

3 PROVIDE NEW QUICK RESPONSE, WHITE, SEMI-RECESSED PENDENT SPRINKLERS PER NFPA 13 FOR OH-II HAZARD OCCUPANCY W/ COVERAGE OF 130 FT² AT A DENSITY OF 0.20 GPM/FT².

4 PROVIDE NEW QUICK RESPONSE, BRASS UPRIGHT SPRINKLERS PER NFPA 13 FOR OH-I HAZARD OCCUPANCY W/ COVERAGE OF 130 FT² AT A DENSITY OF 0.15 GPM/FT².

5 PROVIDE NEW QUICK RESPONSE, BRASS UPRIGHT SPRINKLERS PER NFPA 13 FOR OH-II HAZARD OCCUPANCY W/ COVERAGE OF 130 FT² AT A DENSITY OF 0.20 GPM/FT².

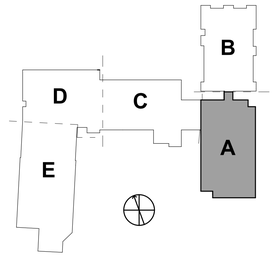
6 SPRINKLER MAIN DOWN TO FIRST FLOOR.

7 SPRINKLER PROTECTION AT TOP OF ELEVATOR MAY BE OMITTED PER NFPA 13- 8.15.5.6.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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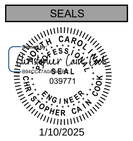
SEALS



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SECOND FLOOR FIRE PROTECTION PIPING PLAN AREA A

F02.01

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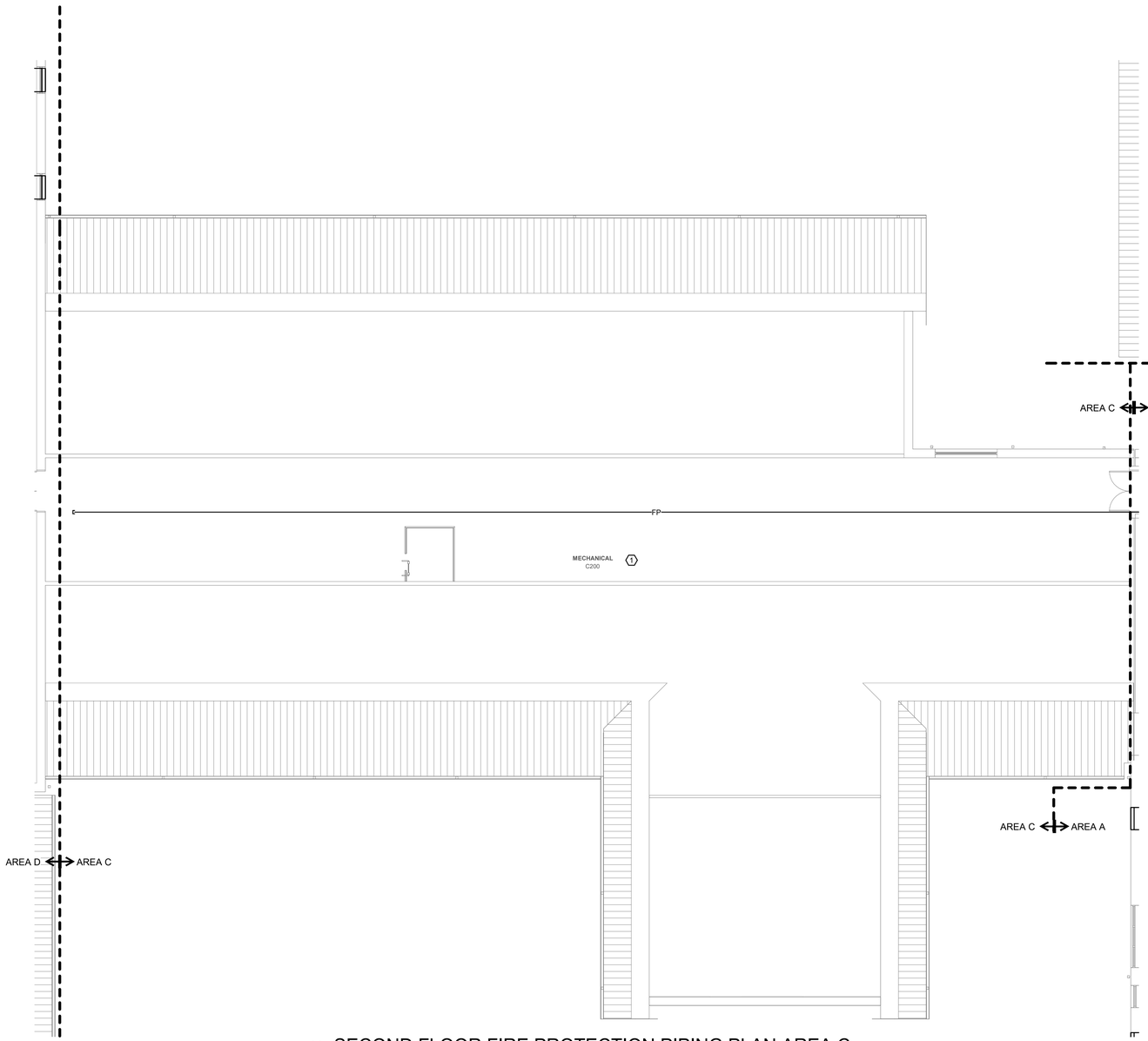


1 SECOND FLOOR FIRE PROTECTION PIPING PLAN AREA C
Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

1. REFER TO F00.01 FOR GENERAL NOTES.

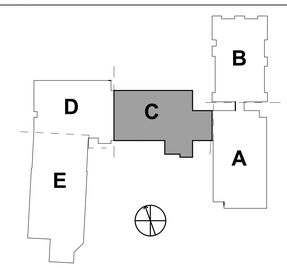
KEYNOTES:

1 PROVIDE NEW QUICK RESPONSE, BRASS UPRIGHT SPRINKLERS PER NFPA 13 FOR OH-II HAZARD OCCUPANCY W/ COVERAGE OF 130 FT² AT A DENSITY OF 0.20 GPM/FT².

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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PROJECT INFORMATION

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PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039771 CHRISTOPHER CAIN COOK

1/10/2025

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SECOND FLOOR FIRE PROTECTION PIPING PLAN AREA C

F02.03

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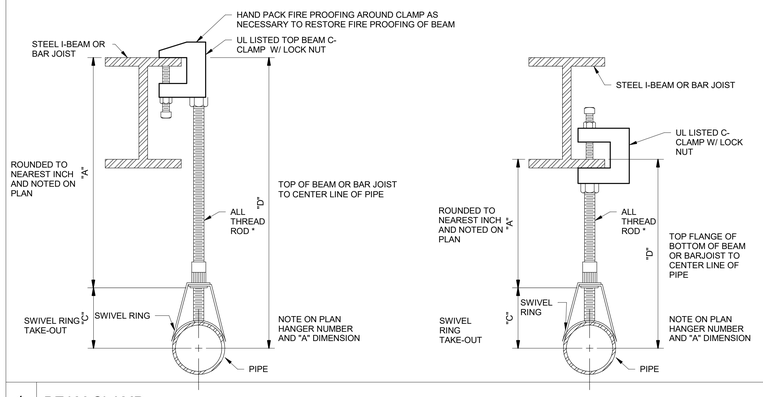


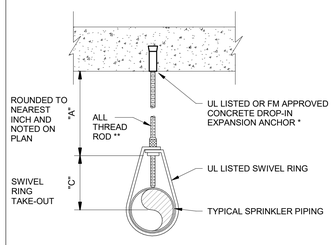
PIPE SIZE	ROD SIZE	MIN. 'C' DIM.	MAX. 'C' DIM.
3/4"	3/8"	1/2"	1-5/8"
1"		5/8"	1-3/4"
1-1/4"		13/16"	1-7/8"
1-1/2"		15/16"	2"
2"		1-3/16"	2-3/8"
2-1/2"		1-7/16"	2-3/4"
3"		1-3/4"	3-1/4"
3-1/2"		2"	3-5/8"
4"		2-1/4"	3-7/8"
5"	1/2"	2-3/4"	4-3/4
6"		3-5/16"	5-1/2"
8"		4-5/16"	6-3/4

HANGER SHALL MEET NFPA 13 REQUI-REMENTS

NOTE:

* EXTEND ALL THREAD ROD TO TOP OF PIPE WHEN PRESSURE EXCEEDS 100 PSI AND INSTALL WITHIN 12" OF THE LAST SPRINKLER DROP ON EACH BRANCH LINE.

1 BEAM CLAMP — SCALE: NTS — F063-20



PIPE SIZE	ROD SIZE	MIN. 'C' DIM.	MAX. 'C' DIM.
3/4"	3/8"	1/2"	1-5/8"
1"		5/8"	1-3/4"
1-1/4"		13/16"	1-7/8"
1-1/2"		15/16"	2"
2"		1-3/16"	2-3/8"
2-1/2"		1-7/16"	2-3/4"
3"		1-3/4"	3-1/4"
3-1/2"		2"	3-5/8"
4"		2-1/4"	3-7/8"
5"	1/2"	2-3/4"	4-3/4"
6"		3-5/16"	5-1/2"
8"		4-5/16"	6-3/4"

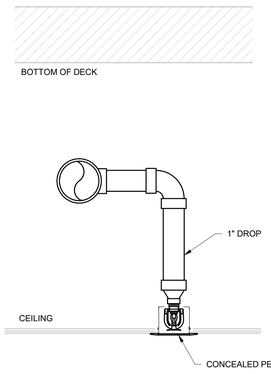
HANGER SHALL MEET NFPA 13 REQUIREMENTS

NOTES:

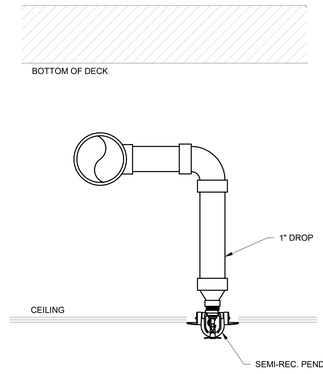
* SPACING SHALL NOT EXCEED 10'-0 BETWEEN HANGERS WHEN SUPPORTING PIPES LARGER THAN 4" IN DIAMETER. UNLESS AN EXCEPTION PER NFPA-13 2013 SECTION 9.1.3.5 CAN BE MET.

** EXTEND ALL THREAD ROD TO TOP OF PIPE WHEN PRESSURE EXCEEDS 100 PSI AND INSTALL WITHIN 12" OF THE LAST SPRINKLER DROP ON EACH BRANCH LINE.

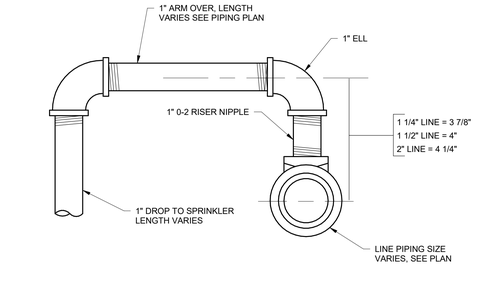
2 CONCRETE DROP-IN EXPANSION ANCHOR — SCALE: NTS — F063-17



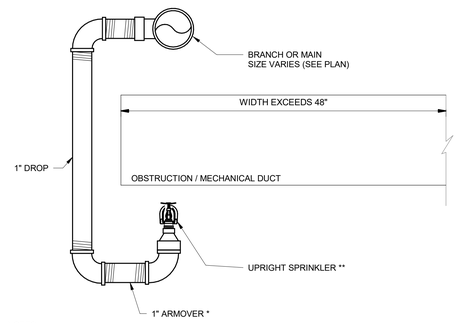
3 CONCEALED SPRINKLER — SCALE: NTS — F063-25



4 SEMI-RECESSED HEAD — SCALE: NTS — F063-26



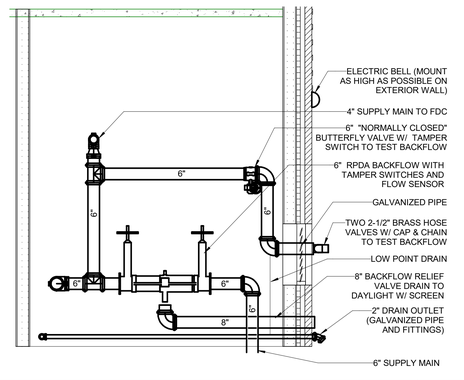
5 TYPICAL SPRINKLER RETURN BEND — SCALE: NTS — F063-28



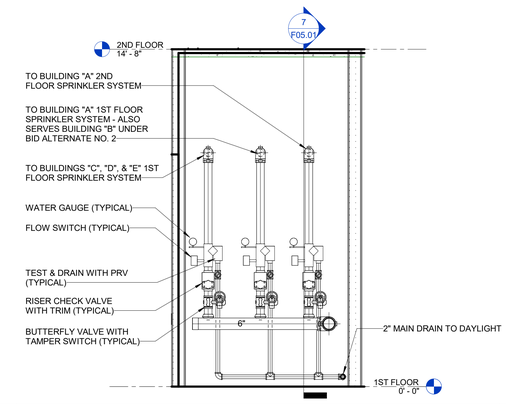
NOTES:

* UNSUPPORTED ARMOVERS SHALL NOT EXCEED 12" IN LENGTH.
** PROVIDE HEAD GUARDS ON ALL SPRINKLERS LOCATED 7'-6 OR LESS ABOVE FINISHED FLOOR.

6 SIDEWALL SPRINKLER BELOW DUCT — SCALE: NTS — F063-23



7 FIRE SPRINKLER BACKFLOW — SCALE: NTS — 2/F01.01



8 FIRE SPRINKLER RISERS — SCALE: NTS

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DETAILS

F05.01

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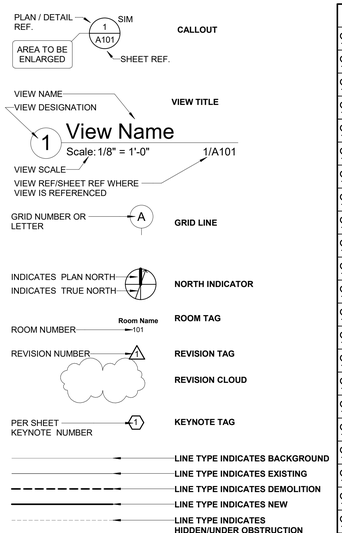
STANDARD DETAILING SYMBOLS



PLUMBING PIPING SYMBOLS

SYMBOL	DESCRIPTION
DCW	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
DHWR	DOMESTIC HOT WATER RETURN
140°DHW	140° DOMESTIC HOT WATER
140°DHWR	140° DOMESTIC HOT WATER RETURN
NG	NATURAL GAS
GW	GREASE WASTE
ORDL	OVERFLOW ROOF DRAIN LEADER
RDL	ROOF DRAIN LEADER
ST	STORM WATER
T	TEMPERED
V	VENT
W	WASTE
	BALL VALVE
	STOP VALVE
	3-WAY VALVE
	BALANCING VALVE
	BACKWATER VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	SOLENOID VALVE
	3-WAY CONTROL VALVE
	GATE VALVE
	GLOBE VALVE
RPZ	REDUCED PRESSURE ZONE
	OSY VALVE
	WATER HAMMER ARRESTER
	PRESSURE REGULATING VALVE
	PIPE TURN UP
	PIPE TURN DOWN
	PIPE BOTTOM TAKE OFF
	PIPE TOP TAKE OFF
	PIPE CAP OR PLUG
	PIPE UNION
	WYE STRAINER
	WYE WITH COMBINATION 8TH BEND
	SANITARY TEE
	WYE 45°
W .02 — SYSTEM, RISER #	RISER ID TAG

ABBREVIATIONS - PLUMBING

AD	AREA DRAIN
BFP	BACKFLOW PREVENTER VALVE
BP	BOOSTER PUMP
CD	CONDENSATE DRAIN
CO	CLEANOUT
CP	CIRCULATING PUMP
D	DRAIN LINE
DCW	COLD WATER
DF	DRINKING FOUNTAIN
DHW	HOT WATER
DHWR	HOT WATER RETURN
DN	DOWN
DWH	DOMESTIC WATER HEATER
FBO	FURNISHED BY OWNER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FS	FLOOR SINK
GI	GREASE INTERCEPTOR
GPR	GAS PRESSURE REGULATOR
HB	HOSE BIBB
INV	INVERT ELEVATION
NC	NORMALLY CLOSED
NG	NATURAL GAS
NIC	NOT IN CONTRACT
OFRD	OVERFLOW ROOF DRAIN
OI	OIL INTERCEPTOR
PD	PUMP DISCHARGE
PRV	PRESSURE REDUCING VALVE
RD	ROOF DRAIN
SP	SUMP PUMP
TD	TRENCH DRAIN
TMV	THERMOSTATIC MIXING VALVE
TW	TEMPERED WATER
TYP	TYPICAL
V	VENT
VTR	VENT THROUGH ROOF
W	WASTE
WCO	WALL CLEANOUT
YCO	YARD CLEANOUT

GENERAL DEMOLITION NOTES - PLUMBING

1. THE CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS FOR ALL AREAS OF WORK PRIOR TO BIDDING THE PROJECT.
2. THESE DRAWINGS ARE BASED ON EXISTING RECORD DOCUMENTS AND FIELD OBSERVATIONS. THE EXISTING CONDITIONS INDICATED WITHIN THESE DOCUMENTS ARE APPROXIMATE AND DO NOT INCLUDE EVERY COMPONENT. REPORT DISCREPANCIES TO THE ENGINEER BEFORE DISTURBING EXISTING INSTALLATION.
3. UNLESS OTHERWISE NOTED, PIPING SHOWN IS ABOVE THE CEILING, VERTICAL IN WALLS OR CHASES, OR UNDER SLAB.
4. REMOVE ALL EXISTING PLUMBING PIPING TO POINTS INDICATED. CAP (OR PLUG) EXISTING PLUMBING PIPING TO REMAIN WITHIN TWELVE (12) INCHES OF THE NEAREST ACTIVE MAIN TO WHICH IT CONNECTS, UNLESS NOTED OTHERWISE ON PLANS.
5. UNLESS NOTED OTHERWISE ALL PLUMBING FIXTURES INDICATED TO BE REMOVED SHALL ALSO HAVE ALL ASSOCIATED PIPING REMOVED BACK TO THE NEAREST HORIZONTAL MAIN, RISER, OR STACK CONNECTION AND BE CAPPED IN A CONCEALED LOCATION. UNDER NO CIRCUMSTANCE SHALL AN EXISTING PIPE BE LEFT OPEN.
6. NO PIPING, EQUIPMENT, OR ACCESSORIES SHALL BE ABANDONED IN PLACE.
7. ALL VOIDS LEFT IN FIRE-RATED WALLS, FLOORS, CEILINGS, OR ROOFS AS THE RESULT OF DEMOLITION SHALL BE PROPERLY FIRESTOPPED TO MAINTAIN REQUIRED RATING UTILIZING AN UNDERWRITERS LABORATORIES (UL) LISTED METHOD. ALL VOIDS LEFT IN NON-RATED WALLS, FLOORS, CEILINGS, OR ROOFS AS THE RESULT OF DEMOLITION SHALL BE REPAIRED IN A METHOD WHICH UTILIZES MATERIALS CONSISTENT WITH THE ADJACENT CONSTRUCTION. COORDINATE THIS WORK WITH THE GENERAL CONTRACTOR.
8. ALL DEMOLISHED MATERIALS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY.
9. WHERE AFFECTED BY THE DEMOLITION WORK THE CONTRACTOR SHALL RELOCATE ANY EXISTING PIPING, COMPONENTS, OR SYSTEMS THAT ARE REQUIRED TO REMAIN IN ORDER TO KEEP EXISTING SYSTEMS OPERATIVE.
10. THE CONTRACTOR SHALL RECONNECT ANY EXISTING FIXTURES TO REMAIN WHERE THE EXISTING PIPING IS AFFECTED BY THE DEMOLITION WORK.
11. THE CONTRACTOR SHALL INSTALL TEMPORARY CAPS AT TERMINATION POINTS OF EXISTING PIPING TO REMAIN DURING DEMOLITION PHASE.
12. THE CONTRACTOR SHALL COORDINATE EACH REQUIRED SHUTDOWN WITH THE OWNER NO LESS THAN FORTY-EIGHT (48) HOURS IN ADVANCE OF EACH SHUTDOWN.
13. IF ANY EXISTING MATERIAL IS SUSPECTED OF CONTAINING HAZARDOUS MATERIALS SUCH AS ASBESTOS, LEAD-BASED PAINT, OR POLYCHLORINATED BIPHENYLS (PCB), STOP WORK IMMEDIATELY IN THAT AREA AND NOTIFY THE OWNER AND ARCHITECT OR ENGINEER.

GENERAL NOTES - PLUMBING

1. PROVIDE ALL MATERIALS AND LABOR NECESSARY FOR COMPLETE PLUMBING SYSTEMS. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NORTH CAROLINA PLUMBING CODE.
2. WHENEVER THE WORD "PROVIDE" IS USED, IT SHALL MEAN FURNISH AND INSTALL COMPLETE AND READY FOR USE.
3. THE CONTRACTOR SHALL PAY ALL FEES REQUIRED TO OBTAIN ALL PERMITS AND INSPECTIONS.
4. PROVIDE OWNER WITH CERTIFICATES OF FINAL INSPECTION FROM THE LOCAL AUTHORITY HAVING JURISDICTION. PROVIDE AN AS-BUILT SET OF DRAWINGS WHICH INDICATE ALL CHANGES MADE DURING CONSTRUCTION.
5. THE CONTRACTOR SHALL WARRANTY ALL WORK AND MATERIAL FOR A PERIOD OF AT LEAST ONE (1) YEAR AFTER ACCEPTANCE BY THE OWNER.
6. THESE DRAWINGS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO CONVEY EXACT DIMENSIONS, SIZES, AND/OR LOCATIONS OF ALL NEW OR EXISTING ARCHITECTURAL, STRUCTURAL, FIRE PROTECTION, PLUMBING, MECHANICAL, OR ELECTRICAL EQUIPMENT OR FEATURES, EITHER SHOWN OR INFERRED. THE INFORMATION CONTAINED IN THESE DRAWINGS SHALL BE USED AS PART OF AN ENTIRE, INTACT SET OF CONTRACT DOCUMENTS, INCLUDING ANY SEPARATE WRITTEN SPECIFICATIONS.
7. ALL WORK SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO INSTALLATION. THE CONTRACTOR SHALL COORDINATE ROUTING OF ALL PIPING WITH EXISTING CONDITIONS AND OTHER TRADES' WORK AND SHALL PROVIDE ANY NECESSARY OFFSETS, RE-ROUTING, ETC. REQUIRED FOR A COMPLETE AND COORDINATED INSTALLATION. SYSTEMS SHALL BE NEATLY ARRANGED TO MAXIMIZE SPACE ABOVE CEILINGS AND WITHIN CHASES. MAINTAIN MINIMUM EQUIPMENT, DEVICE, AND VALVE CLEARANCES FOR PROPER OPERATION AND MAINTENANCE.
8. THE CONTRACTOR SHALL VERIFY LATEST ARCHITECTURAL LAYOUTS, INCLUDING CEILINGS, PRIOR TO INSTALLATION OF SYSTEM.
9. UNLESS OTHERWISE SHOWN OR NOTED, ALL PIPING SHALL BE ROUTED CONCEALED IN VERTICAL WALLS OR CHASES, ABOVE CEILINGS, AND/OR UNDER SLABS.
10. ALL SUSPENDED PIPING SHALL BE SUPPORTED FROM FLOOR AND/OR ROOF STRUCTURAL MEMBERS. IN NO CASE SHALL PIPING BE SUSPENDED FROM FLOOR OR ROOF DECKING.
11. ONLY NEW MATERIALS AND EQUIPMENT ARE TO BE INSTALLED AND SHALL BE OF THE LATEST DESIGN FROM EACH MANUFACTURER. ONLY MATERIALS AND EQUIPMENT MANUFACTURED WITHIN THE UNITED STATES SHALL BE INSTALLED.
12. ALL FIRE-RATED PENETRATIONS SHALL BE SEALED UTILIZING AN APPROVED UL LISTED SYSTEM, IN A MANNER THAT EQUALS THE RATING OF THE ASSEMBLY IN WHICH IT IS INSTALLED.
13. THE CONTRACTOR SHALL NOT PLACE ANY SHUTOFF VALVES ABOVE ANY INACCESSIBLE CEILINGS OR BEHIND WALLS. COORDINATE ANY REQUIRED ACCESS PANELS WITH THE GENERAL CONTRACTOR.
14. UNLESS OTHERWISE NOTED, THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING, CORE DRILLING, AND PATCHING REQUIRED TO INSTALL PLUMBING WORK. THE CONTRACTOR SHALL COORDINATE ANY CORE DRILLS WITH THE STRUCTURAL ENGINEER BEFORE DRILLING.
15. THE CONTRACTOR SHALL RUN CONDENSATE DRAINAGE, SANITARY WASTE, AND SANITARY VENT PIPING LOCATED ABOVE THE CEILING AS CLOSE AS POSSIBLE THE UNDERSIDE OF THE STRUCTURE.
16. PROVIDE A CLEANOUT AT THE BASE OF ALL CONDENSATE DRAINAGE, ROOF DRAINAGE, AND SANITARY WASTE STACKS, AFTER EVERY FOUR HORIZONTAL 45° BENDS IN SERIES, AND NO LESS THAN 100'-0" OF DEVELOPED LENGTH IN HORIZONTAL RUNS.
17. WHERE AFFECTED BY THE NEW WORK THE CONTRACTOR SHALL RELOCATE ANY EXISTING PIPING, COMPONENTS, OR SYSTEMS THAT ARE REQUIRED TO REMAIN IN ORDER TO KEEP EXISTING SYSTEMS OPERATIVE.
18. THE CONTRACTOR SHALL VERIFY EXACT LOCATION AND INVERT ELEVATION OF EXISTING SANITARY PIPING PRIOR TO CONSTRUCTION AND ENSURE THAT SANITARY PIPING CAN BE PROPERLY CONNECTED AND INSTALLED WITH MINIMUM SLOPE AS REQUIRED BY NORTH CAROLINA PLUMBING CODE.

LIFE-SAFETY PENETRATION SCHEDULE

	ASSEMBLY AND PENETRATION TYPE	F RATING (HR)	U. L. DETAIL SYSTEM NUMBER
CONCRETE FLOORS	INSULATED METAL PIPES	1 or 2	CAJ-5061, CAJ-5090, CAJ-5091, CAJ-5096, CAJ-5277
		3	CAJ-5061, CAJ-5090
	UNINSULATED METAL PIPES OR CONDUITS	1 or 2	CAJ-1226, CAJ-1155, CAJ-1380, CAJ-1575, FA-1028
		4	CBJ-1037
	UNINSULATED NON-METAL PIPES OR CONDUITS	1 or 2	CAJ-2109, CAJ-2407, CAJ-2567, CAJ-2831
	UNINSULATED METAL DUCTWORK WITHOUT DAMPERS	1 or 2	CAJ-7029, CAJ-7084
	CABLES	1 or 2	CAJ-3095, CAJ-3210, CAJ-3239
	CABLE TRAYS	1 or 2	CAJ-4034, CAJ-4035, CAJ-4083
		4	CAJ-4107
CONCRETE / MASONRY WALLS	INSULATED METAL PIPES	1 or 2	CAJ-5061, CAJ-5090, CAJ-5091, CAJ-5096, CAJ-5277
		4	WJ-5028
	UNINSULATED METAL PIPES OR CONDUITS	1 or 2	CAJ-1226, CAJ-1155, CAJ-1380, CAJ-1575
		4	CAJ-1630
	UNINSULATED NON-METAL PIPES OR CONDUITS	1 or 2	CAJ-2109, CAJ-2407, CAJ-2567, CAJ-2831
	INSULATED METAL DUCTWORK WITHOUT DAMPERS	1 or 2	CAJ-7145, WJ-7091, WJ-7112
	UNINSULATED METAL DUCTWORK WITHOUT DAMPERS	1 or 2	CAJ-7029, WJ-7109, WJ-7021
		3	CAJ-7192
	CABLES	1 or 2	CAJ-3095, CAJ-3180, WJ-3036
	CABLE TRAYS	1 or 2	CAJ-4034, CAJ-4035, CAJ-4083
		4	CAJ-4107
GYPSUM WALLBOARD	INSULATED METAL PIPES	1 or 2	WL-5046, WL-5047, WL-5096
		4	WL-5073
	UNINSULATED METAL PIPES OR CONDUITS	1 or 2	WL-1164, WL-1205, WL-1465
	UNINSULATED NON-METAL PIPES OR CONDUITS	1 or 2	WL-2084, WL-2341, WL-2649
	INSULATED METAL DUCTWORK WITHOUT DAMPERS	1 or 2	WL-7151, WL-7156
	UNINSULATED METAL DUCTWORK WITHOUT DAMPERS	1 or 2	WL-7155, WL-7213, WL-7250
	CABLES	1 or 2	WL-3065, WL-3111, WL-3161
	CABLE TRAYS	1 or 2	WL-4011, WL-4019, WL-4081

NOTES:
1. REFER TO SECTION 220500 FOR MORE INFORMATION.
2. HILTI PRODUCTS ARE REQUIRED FOR ALL PENETRATIONS
3. SELECT UL LISTED PENETRATION DETAIL MATCHING THE PENETRATION CONDITIONS.
4. SUBMIT AN APROPRIATE DETAIL FOR ENGINEER REVIEW IF THE PROJECT CONDITIONS ARE NOT REPRESENTED ABOVE.

PLUMBING LOAD SUMMARY

SYSTEM	FIXTURE UNITS	DEMAND	MIN. PIPE SIZE REQ'D	REMARKS
SANITARY WASTE	348 DFU	68 GPM	5"	BASED ON NC PLUMBING CODE, PIPE FLOWING HALF FULL AT 1/8" PER FOOT SLOPE
DOMESTIC COLD WATER SUPPLY	931 SFU	200 GPM	4"	BASED ON NC PLUMBING CODE, MAXIMUM VELOCITY OF 5 TO 8 FEET PER SECOND
DOMESTIC HOT WATER SUPPLY	120 SFU	48 GPM	2"	BASED ON NC PLUMBING CODE, MAXIMUM VELOCITY OF 3 TO 5 FEET PER SECOND
NATURAL GAS SUPPLY	-	5,279 MBH	2-1/2"	BASED ON NC FUEL GAS CODE, 2.0 PSI SERVICE 175 FEET DEVELOPED LENGTH OF RUN

DRAWING LIST - PLUMBING

P00.01 PLUMBING SYMBOLS & NOTES
PD1.02 FIRST FLOOR PLUMBING DEMOLITION PLAN AREA B
PD1.05 FIRST FLOOR PLUMBING DEMOLITION PLAN AREA E
P01.01 UNDERSLAB WASTE & VENT PLAN AREA A
P01.03 UNDERSLAB WASTE & VENT PLAN AREA C
P01.04 UNDERSLAB WASTE & VENT PLAN AREA D
P01.05 UNDERSLAB WASTE & VENT PLAN AREA E
P01.11 FIRST FLOOR WASTE & VENT PLAN AREA A
P01.12 FIRST FLOOR WASTE & VENT PLAN AREA B
P01.13 FIRST FLOOR WASTE & VENT PLAN AREA C
P01.14 FIRST FLOOR WASTE & VENT PLAN AREA D
P01.15 FIRST FLOOR WASTE & VENT PLAN AREA E
P01.21 FIRST FLOOR DOMESTIC WATER PLAN AREA A
P01.22 FIRST FLOOR DOMESTIC WATER PLAN AREA B
P01.23 FIRST FLOOR DOMESTIC WATER PLAN AREA C
P01.24 FIRST FLOOR DOMESTIC WATER PLAN AREA D
P01.25 FIRST FLOOR DOMESTIC WATER PLAN AREA E
P02.11 SECOND FLOOR WASTE & VENT PLAN AREA A
P02.13 SECOND FLOOR WASTE & VENT PLAN AREA C
P02.21 SECOND FLOOR DOMESTIC WATER PLAN AREA A
P02.23 SECOND FLOOR DOMESTIC WATER PLAN AREA C
P04.01 LARGE SCALE FLOOR PLANS
P04.02 LARGE SCALE FLOOR PLANS
P04.03 ENLARGED KITCHEN FLOOR PLANS
P05.01 DETAILS
P05.02 DETAILS
P05.03 DETAILS
P06.01 SCHEDULES
P09.01 RISER DIAGRAMS
P09.02 RISER DIAGRAMS
P09.03 RISER DIAGRAMS

TOTAL SHEETS: 31

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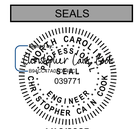
PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS



1/10/2025

DKA JOB NUMBER
2401

DEWBERRY NUMBER
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SHEET TITLE

PLUMBING SYMBOLS & NOTES

P00.01

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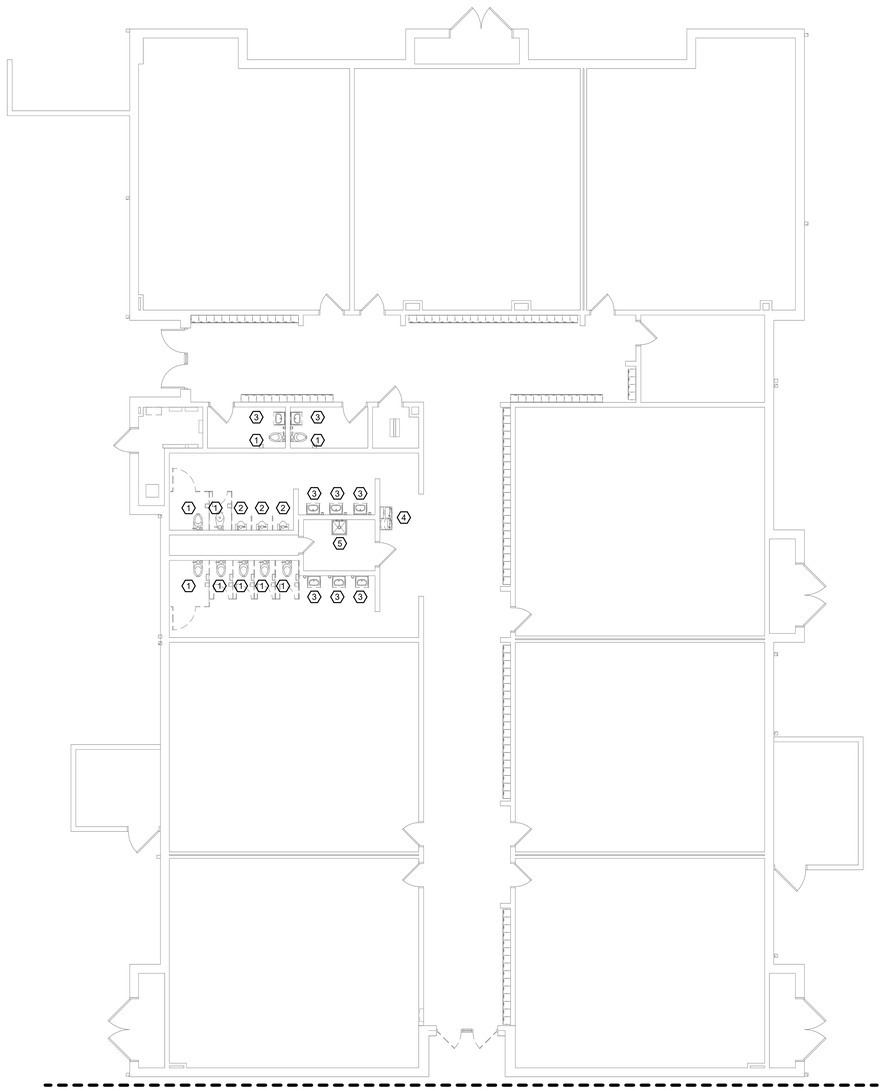


1 FIRST FLOOR PLUMBING DEMOLITION PLAN AREA B - BID ALT. NO. 2
Scale: 1/8" = 1'-0"
0' 4' 8' 16'

GENERAL NOTES:

1. REFER TO SHEET P-001 FOR ADDITIONAL GENERAL NOTES.

KEYNOTES:

1 REMOVE AND DISCARD WATER CLOSET AND FLUSH VALVE. PREPARE EXISTING CARRIER AND WATER ROUGH-IN PIPING FOR CONNECTION OF NEW FIXTURE. PATCH ALL PORTIONS OF AREA DISTURBED TO MATCH EXISTING CONDITIONS.

2 REMOVE AND DISCARD URINAL AND FLUSH VALVE. PREPARE EXISTING CARRIER AND WATER ROUGH-IN PIPING FOR CONNECTION OF NEW FIXTURE. PATCH ALL PORTIONS OF AREA DISTURBED TO MATCH EXISTING CONDITIONS.

3 REMOVE AND DISCARD LAVATORY. PREPARE EXISTING ROUGH-IN PIPING FOR CONNECTION OF NEW FIXTURE. PATCH ALL PORTIONS OF AREA DISTURBED TO MATCH EXISTING CONDITIONS.

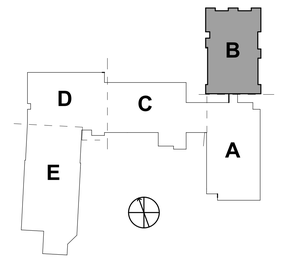
4 REMOVE AND DISCARD WATER COOLER. PREPARE EXISTING ROUGH-IN PIPING FOR CONNECTION OF NEW FIXTURE. PATCH ALL PORTIONS OF AREA DISTURBED TO MATCH EXISTING CONDITIONS.

5 REMOVE AND DISCARD MOP SINK AND FAUCET. PREPARE EXISTING ROUGH-IN PIPING FOR CONNECTION OF NEW FIXTURE. PATCH ALL PORTIONS OF AREA DISTURBED TO MATCH EXISTING CONDITIONS.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039771 CHRISTOPHER CAIN COOK

1/10/2025

DKA JOB NUMBER
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DEWBERRY NUMBER
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SHEET TITLE

FIRST FLOOR PLUMBING DEMOLITION PLAN AREA B

PD1.02

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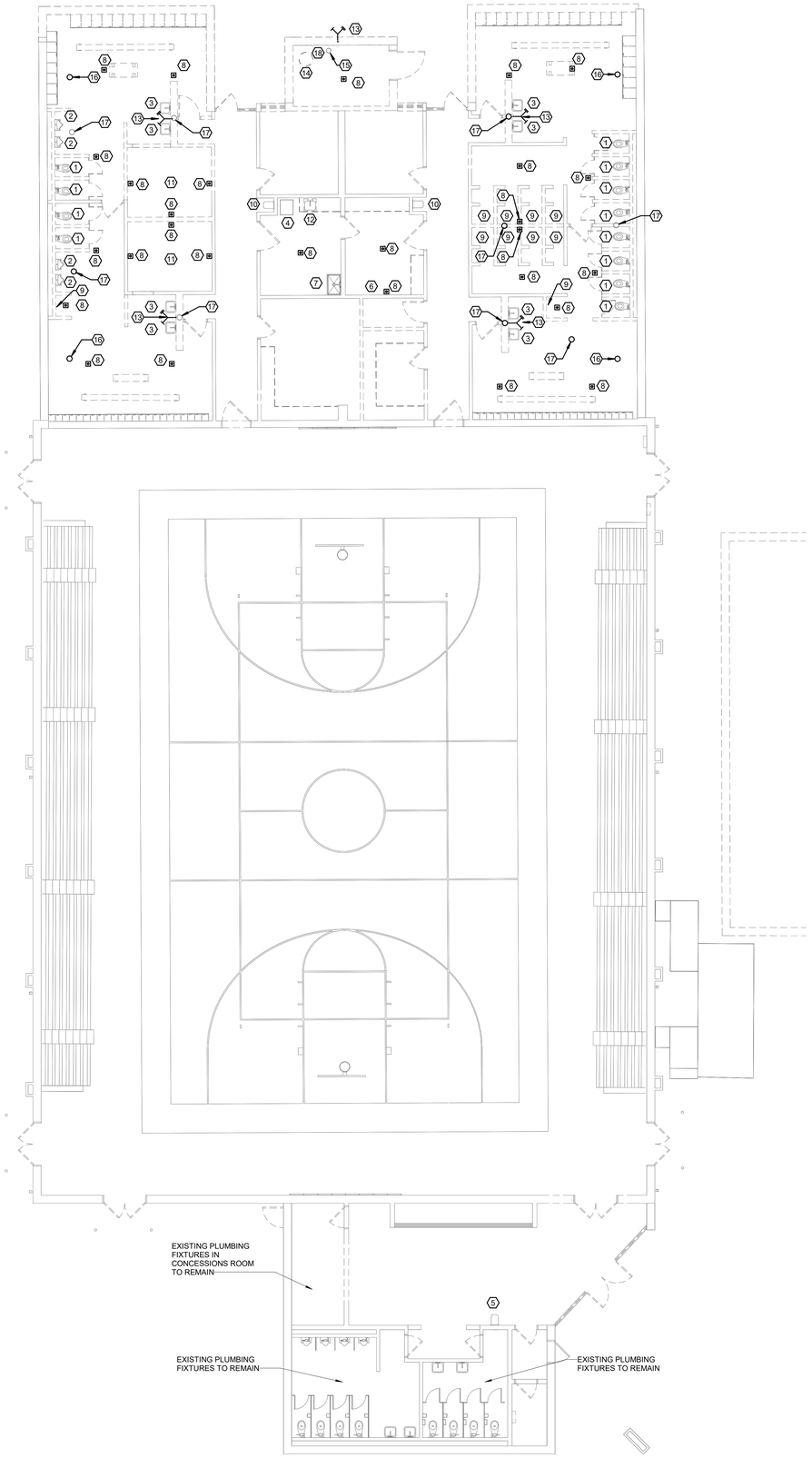


1 FIRST FLOOR PLUMBING DEMOLITION PLAN AREA E
Scale: 1/8" = 1'-0"

GENERAL NOTES:

1. REFER TO SHEET P-001 FOR ADDITIONAL GENERAL NOTES.
2. REMOVE AND DISCARD ALL EXISTING WATER PIPING AND ASSOCIATED FITTINGS, SUPPORTS, ETC.
3. REMOVE AND DISCARD ALL EXISTING WASTE/VENT PIPING AND ASSOCIATED FITTINGS, SUPPORTS, ETC.

(#) KEYNOTES:

1 REMOVE AND DISCARD WATER CLOSET AND ALL ASSOCIATED COMPONENTS. CAP AND ABANDON EXISTING ROUGH-IN PIPING IN WALL AND BELOW FLOOR SLAB. PATCH ALL PORTIONS OF AREA DISTURBED TO MATCH EXISTING CONDITIONS.

2 REMOVE AND DISCARD URINAL AND ALL ASSOCIATED COMPONENTS. CAP AND ABANDON EXISTING WASTE AND WATER ROUGH-IN PIPING IN WALL CAVITY. PATCH ALL PORTIONS OF AREA DISTURBED TO MATCH EXISTING CONDITIONS.

3 REMOVE AND DISCARD LAVATORY, COMPONENTS, AND ALL ASSOCIATED ROUGH-IN PIPING. CAP AND ABANDON EXISTING WASTE ROUGH-IN PIPING BELOW EXISTING FLOOR SLAB. PATCH ALL PORTIONS OF AREA DISTURBED TO MATCH EXISTING CONDITIONS.

4 REMOVE AND DISCARD EXISTING WATER ROUGH-IN FOR EXISTING ICE MACHINE. REMOVE AND STORE EXISTING WALL MOUNTED FILTER FOR INSTALLATION ALONG WITH EXISTING ICE MACHINE IN RENOVATION PHASE.

5 REMOVE AND DISCARD WATER COOLER AND ALL ASSOCIATED COMPONENTS. PREPARE EXISTING WASTE AND WATER ROUGH-IN PIPING TO CONNECT TO NEW FIXTURE. PATCH ALL PORTIONS OF AREA DISTURBED TO MATCH EXISTING CONDITIONS.

6 REMOVE AND DISCARD EXISTING WASHER UTILITY BOX, COMPONENTS, AND ALL ASSOCIATED ROUGH-IN PIPING. CAP AND ABANDON EXISTING WASTE ROUGH-IN PIPING BELOW EXISTING FLOOR SLAB. PATCH ALL PORTIONS OF AREA DISTURBED TO MATCH EXISTING CONDITIONS.

7 REMOVE AND DISCARD EXISTING MOP SINK FAUCET. CAP EXISTING WATER ROUGH-IN IN WALL CAVITY. REMOVE AND DISCARD EXISTING WASTE PIPING AS NEW WASTE PIPING IS INSTALLED FOR NEW FIXTURE. PATCH ALL PORTIONS OF AREA DISTURBED TO MATCH EXISTING CONDITIONS.

8 REMOVE AND DISCARD EXISTING FLOOR DRAIN AND WASTE PIPING AS NEW WASTE PIPING IS INSTALLED FOR NEW LAYOUT. ABANDON ANY EXISTING UNDERSLAB NOT EXPOSED DURING RENOVATION. PATCH ALL PORTIONS OF AREA DISTURBED TO MATCH EXISTING CONDITIONS.

9 REMOVE AND DISCARD EXISTING SHOWER UNIT AND ALL ASSOCIATED WATER ROUGH-IN PIPING. PATCH ALL PORTIONS OF AREA DISTURBED IF AREA IS REUSED FOR NEW RENOVATION.

10 REMOVE AND DISCARD EXISTING DRINKING FOUNTAIN. CAP AND ABANDON EXISITNG WATER AND WASTE/VENT PIPING WITHIN EXISTING WALL CAVITY. REMOVE AND DISCARD ANY VENT PIPING EXPOSED. PATCH ALL PORTIONS OF AREA DISTURBED TO MATCH EXISTING CONDITIONS.

11 REMOVE AND DISCARD EXISTING SHOWER UNITS (TYP OF 9 PER ROOM). REMOVE AND DISCARD ALL WATER PIPING WHERE EXPOSED DURING DEMOLITION AND RENOVATION. CAP AND ABANDON ANY EXISTING WATER PIPING WHERE EXISTING WALL WILL REMAIN DURING RENOVATION. PATCH ALL PORTIONS OF AREA DISTURBED TO MATCH EXISTING CONDITIONS.

12 REMOVE AND DISCARD EXISTING DROP-IN SINK AND ALL ASSOCIATED EXPOSED PIPING. EXISTING WATER AND WASTE/VENT PIPING IN WALL CAVITY TO REMAIN AND REUSED. PREPARE EXISTING PIPING IN WALL CAVITY FOR CONNECTION TO NEW FIXTURE. PATCH ALL PORTIONS OF AREA DISTURBED TO MATCH EXISTING CONDITIONS.

13 REMOVE AND DISCARD EXISTING WALL HYDRANT AND ALL ASSOCIATED ROUGH-IN WATER PIPING.

14 REMOVE AND DISCARD EXISTING WATER HEATER, ALL ASSOCIATED COMPONENTS AND ROUGH-IN WATER PIPING.

15 REMOVE AND DISCARD ALL EXISTING WATER PIPING FROM WATER SERVICE PIPING AT LOCATION SHOWN THROUGHOUT BUILDING.

16 REMOVE EXISTING ROOF DRAIN AND ASSOCIATED PIPING. CAP ROOF LEADER BELOW FLOOR AND ABANDON EXISTING STORM DRAIN IN PLACE, FIELD VERIFY EXACT LOCATIONS.

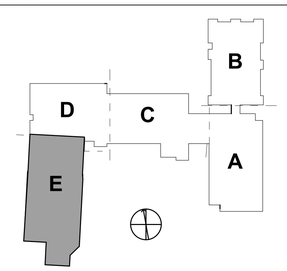
17 REMOVE EXISTING VENT THROUGH ROOF AND ASSOCIATED PIPING, FIELD VERIFY EXACT LOCATIONS.

18 REMOVE EXISTING EXHAUST FLUE THROUGH ROOF, FIELD VERIFY EXACT LOCATION.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039771 CHRISTOPHER CAIN
1/10/2025

DKA JOB NUMBER
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DEWBERRY NUMBER
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SHEET TITLE
FIRST FLOOR PLUMBING DEMOLITION PLAN - AREA E

PD1.05

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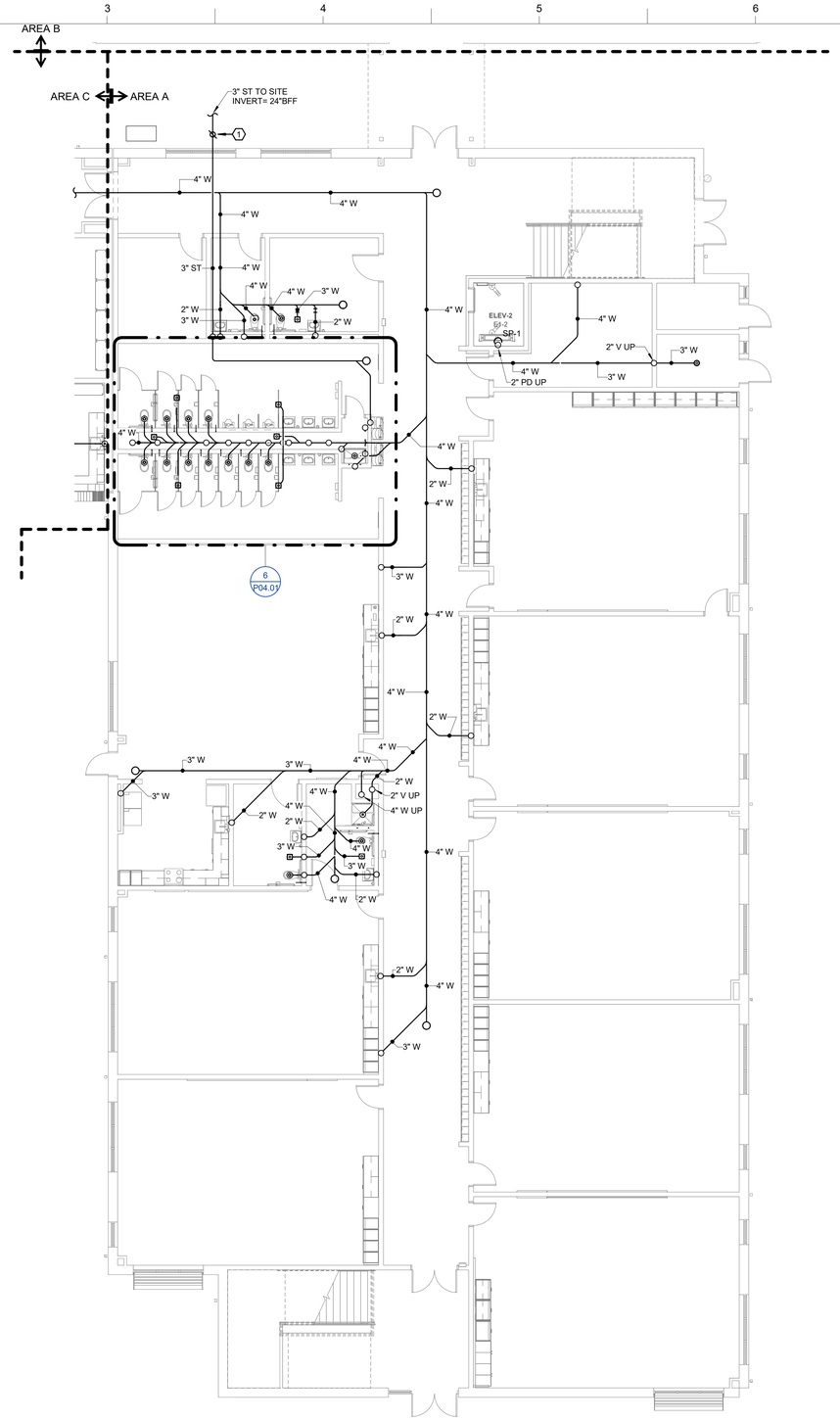


1 UNDERSLAB WASTE & VENT PLAN AREA A
Scale: 1/8" = 1'-0"
0' 4' 8' 16'

GENERAL NOTES:

1. REFER TO SHEET P-001 FOR ADDITIONAL GENERAL NOTES.

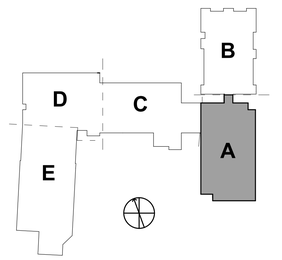
KEYNOTES:

1 PROVIDE HORIZONTAL INLINE BACKWATER VALVE; ZURN MODEL NO. Z1095-BV OR APPROVED EQUIVALENT. PROVIDE WITH CAST IRON PIPE EXTENSION TO GRADE AND GCO FOR ACCESS AT GRADE.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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SHEET TITLE
UNDERSLAB WASTE & VENT PLAN AREA A

P01.01

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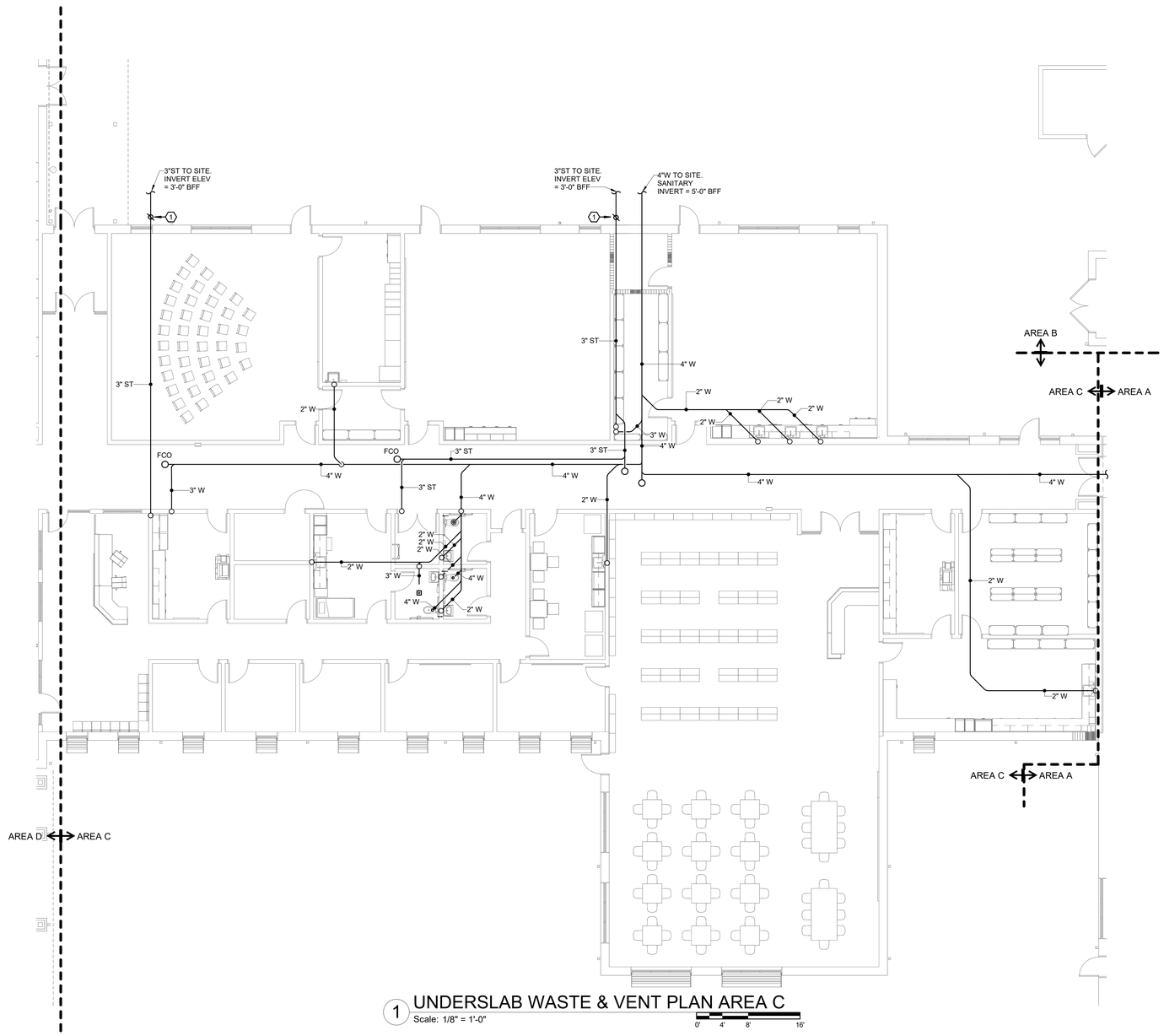


1 UNDERSLAB WASTE & VENT PLAN AREA C
Scale: 1/8" = 1'-0"
0' 4' 8' 16'

GENERAL NOTES:

1. REFER TO SHEET P-001 FOR ADDITIONAL GENERAL NOTES.

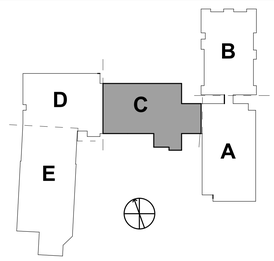
KEYNOTES:

1 PROVIDE HORIZONTAL INLINE BACKWATER VALVE; ZURN MODEL NO. Z1095-BV OR APPROVED EQUIVALENT. PROVIDE WITH CAST IRON PIPE EXTENSION TO GRADE AND GCO FOR ACCESS AT GRADE.

WALL RATING LEGEND:

1-HR RATED FIRE BARRIER
2-HR RATED FIRE BARRIER
3-HR RATED FIRE BARRIER
4-HR RATED FIRE BARRIER

KEYPLAN:



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PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039771 CHRISTOPHER J. COOK
Christopher John Cook
1/10/2025

DKA JOB NUMBER
2401

DEWBERRY NUMBER
50171439

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SHEET TITLE

UNDERSLAB WASTE & VENT PLAN AREA C

P01.03

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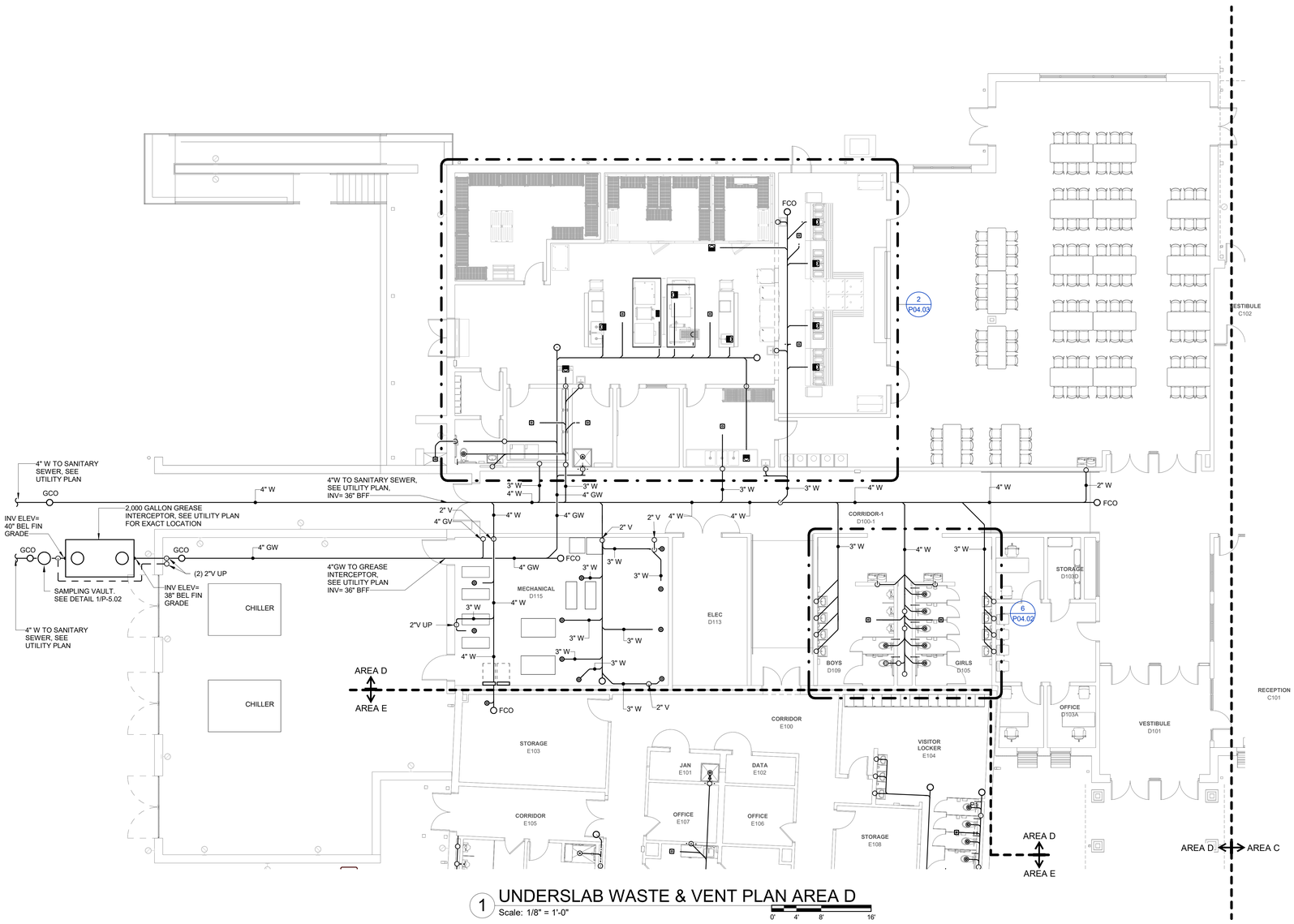


1 UNDERSLAB WASTE & VENT PLAN AREA D
Scale: 1/8" = 1'-0"

GENERAL NOTES:

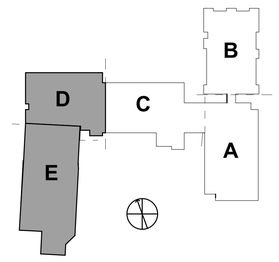
1. REFER TO SHEET P-001 FOR ADDITIONAL GENERAL NOTES.

KEYNOTES:

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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SEALS

NORTH CAROLINA PROFESSIONAL SEAL 039771 ENGINEER CHRISTOPHER CAIN COOK

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SHEET TITLE

UNDERSLAB WASTE & VENT PLAN AREA D

P01.04

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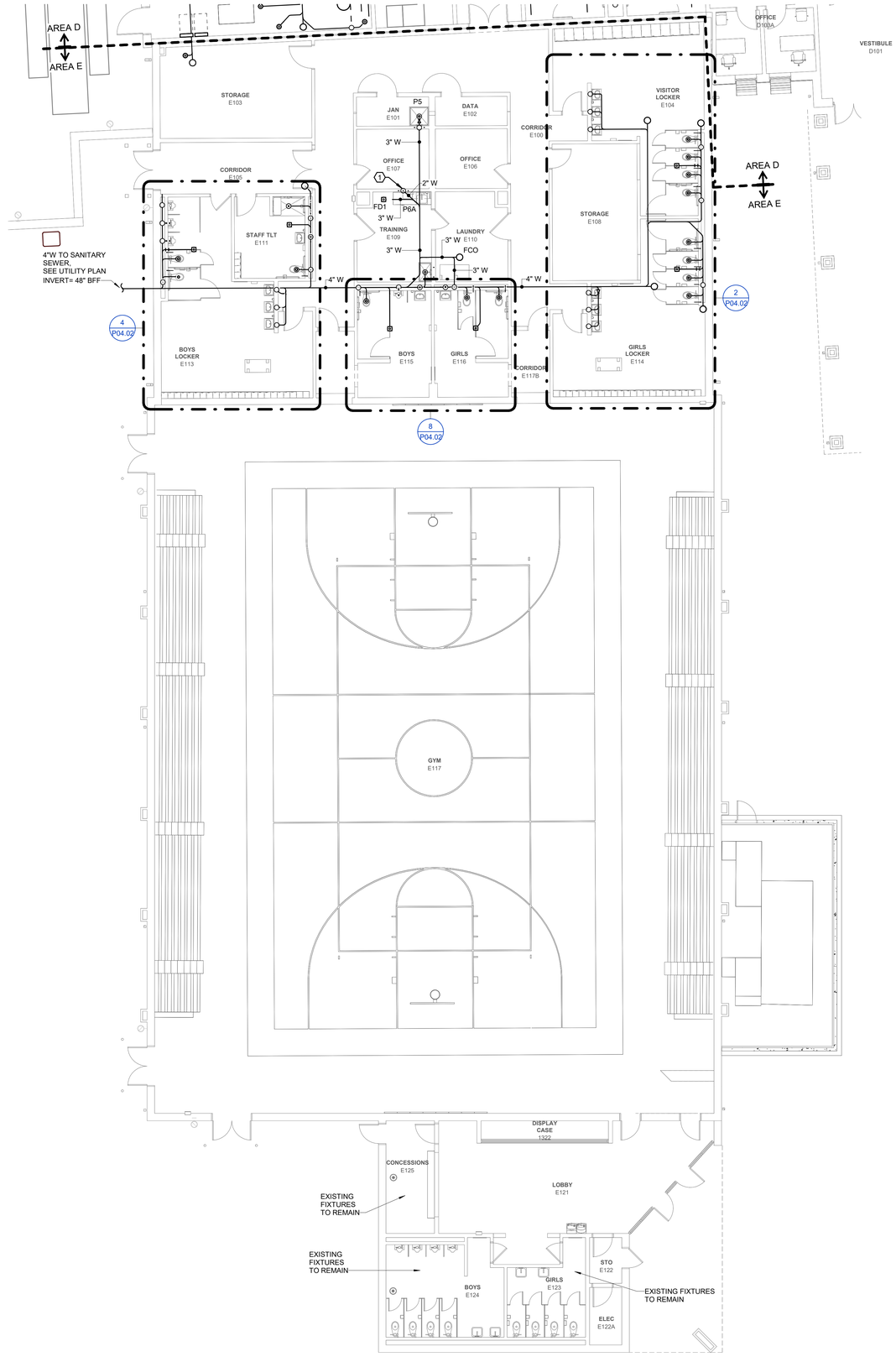


1 UNDERSLAB WASTE & VENT PLAN AREA E

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

1. REFER TO SHEET P-001 FOR ADDITIONAL GENERAL NOTES.

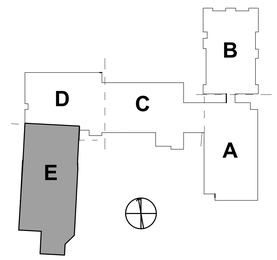
KEYNOTES:

1 CONNECT TO EXISTING WASTE VERTICAL PIPING LOCATED IN EXISTING WALL CAVITY. FIELD VERIFY EXACT LOCATION PRIOR TO PERFORMING WORK. PATCH ALL PORTIONS OF AREA DISTURBED TO MATCH EXISTING CONDITIONS.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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SHEET TITLE
UNDERSLAB WASTE & VENT PLAN AREA E

P01.05

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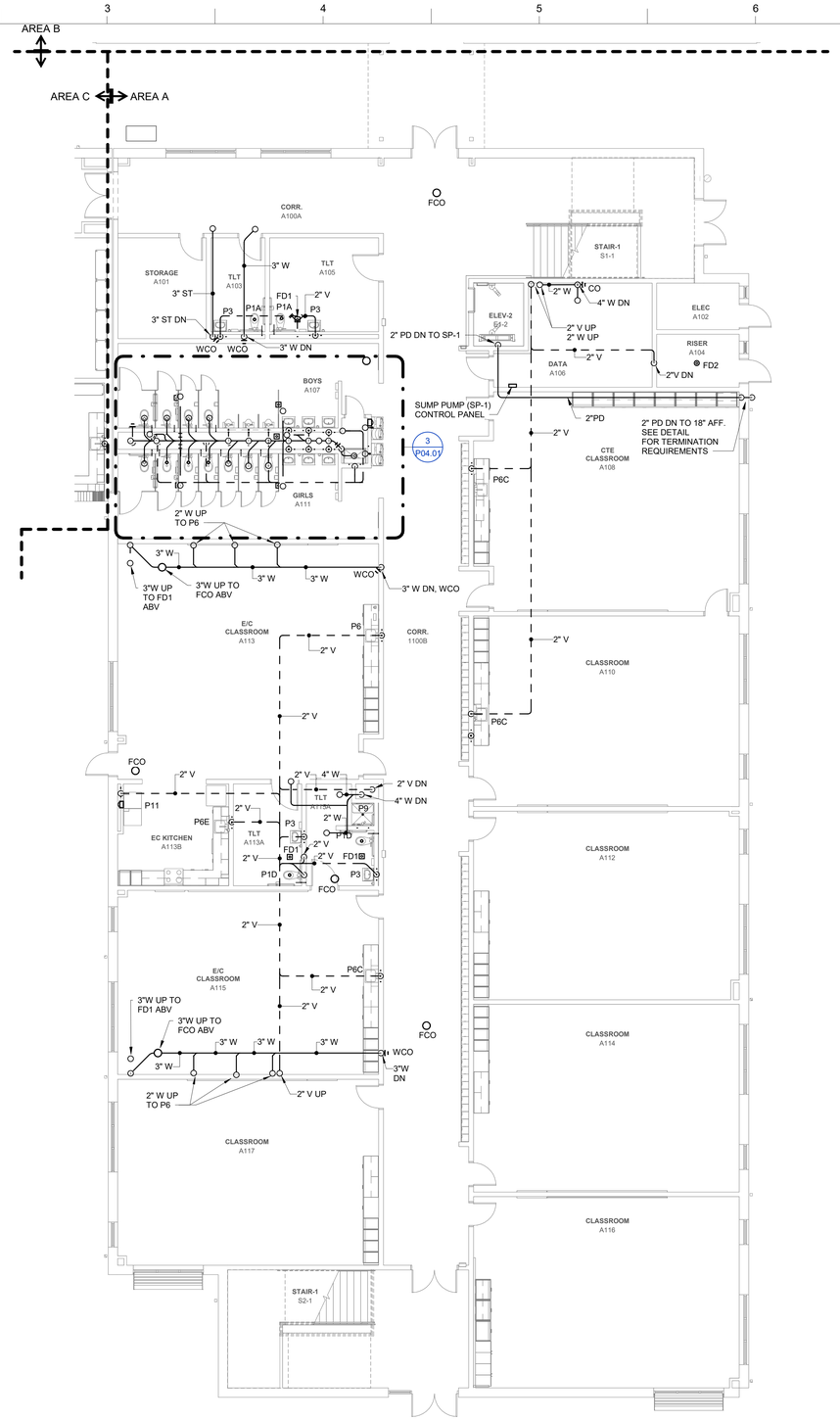


1 FIRST FLOOR WASTE & VENT PLAN AREA A

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

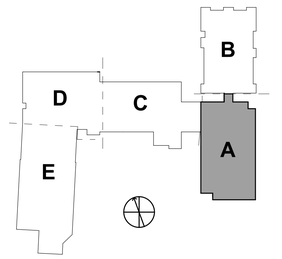
1. REFER TO SHEET P-001 FOR ADDITIONAL GENERAL NOTES.

KEYNOTES:

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

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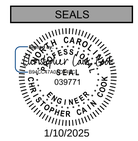

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SHEET TITLE

FIRST FLOOR WASTE & VENT PLAN AREA A

P01.11

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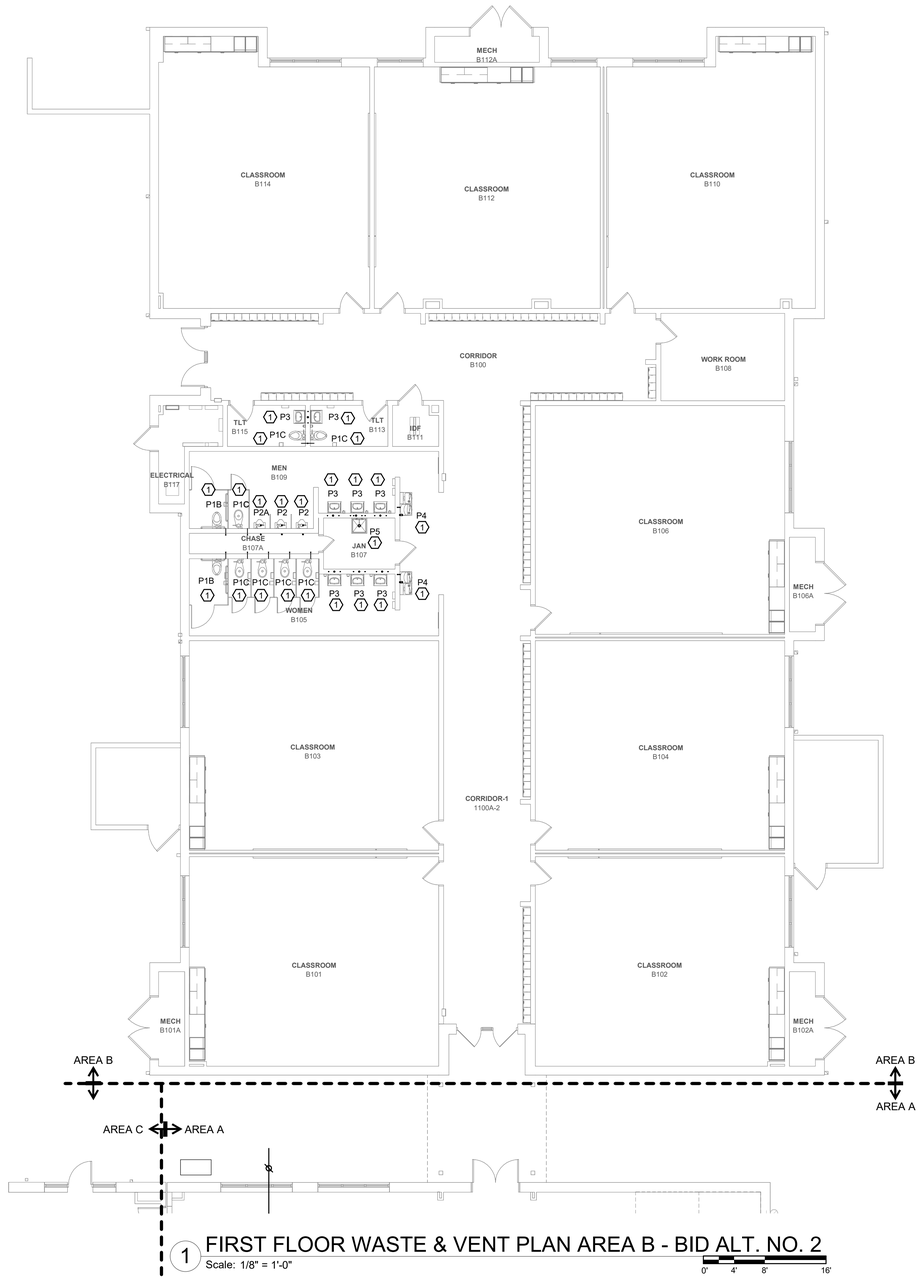


1 FIRST FLOOR WASTE & VENT PLAN AREA B - BID ALT. NO. 2
Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

1. REFER TO SHEET P-001 FOR ADDITIONAL GENERAL NOTES.

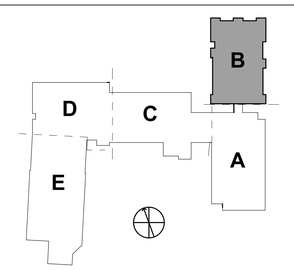
KEYNOTES:

1 INSTALL NEW FIXTURE. REUSE EXISTING ROUGH-IN PIPING FOR CONNECTION TO FIXTURE. MODIFY AS REQUIRED TO INSTALL.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039771 CHRISTOPHER CAIN COOK
1/10/2025

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SHEET TITLE

FIRST FLOOR WASTE & VENT PLAN AREA B

P01.12

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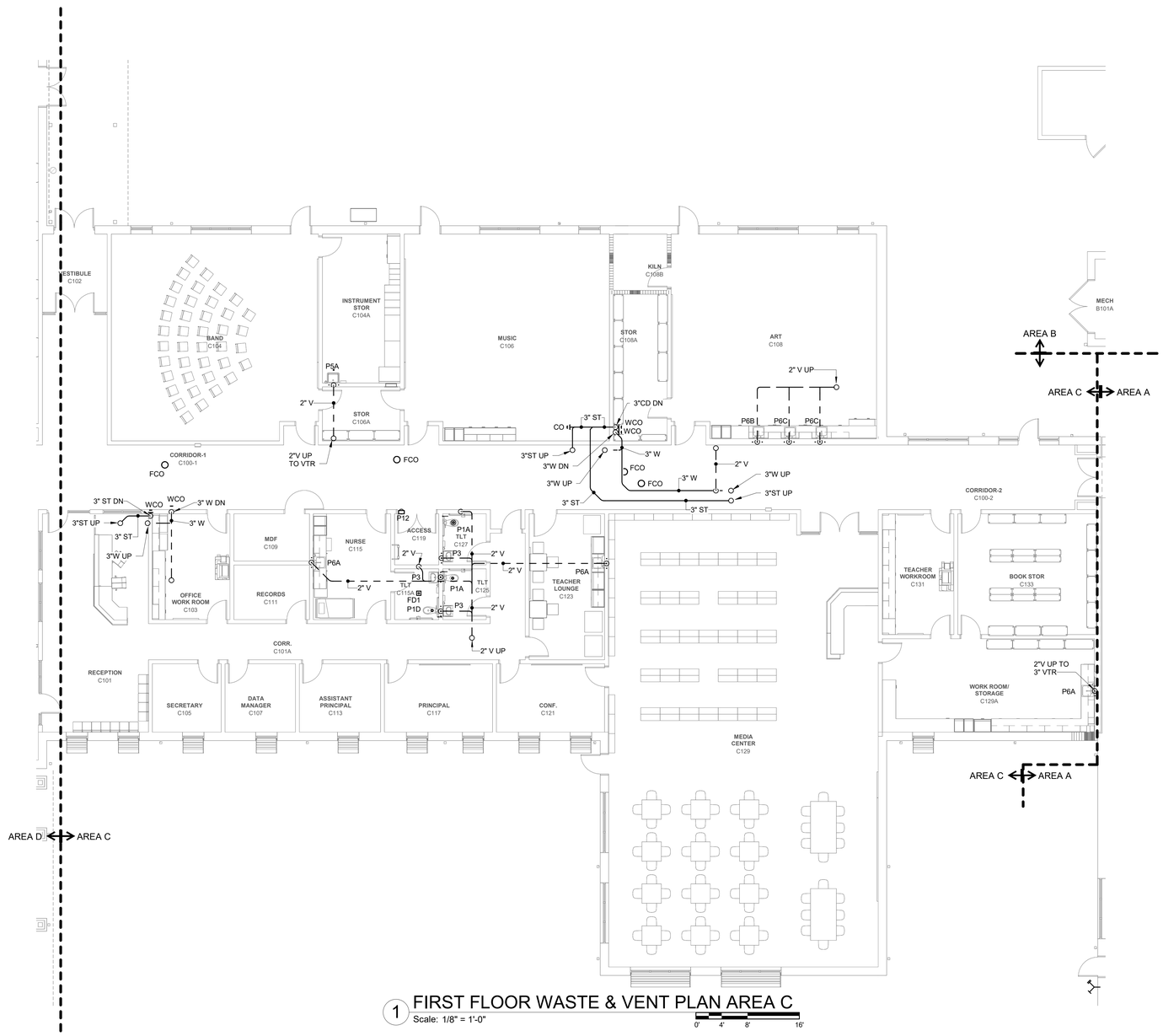


1 FIRST FLOOR WASTE & VENT PLAN AREA C

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

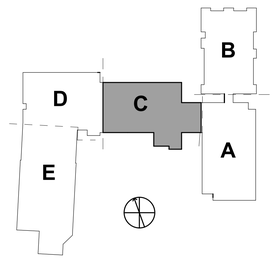
1. REFER TO SHEET P-001 FOR ADDITIONAL GENERAL NOTES.

KEYNOTES:

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

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SHEET TITLE

FIRST FLOOR WASTE & VENT PLAN AREA C

P01.13

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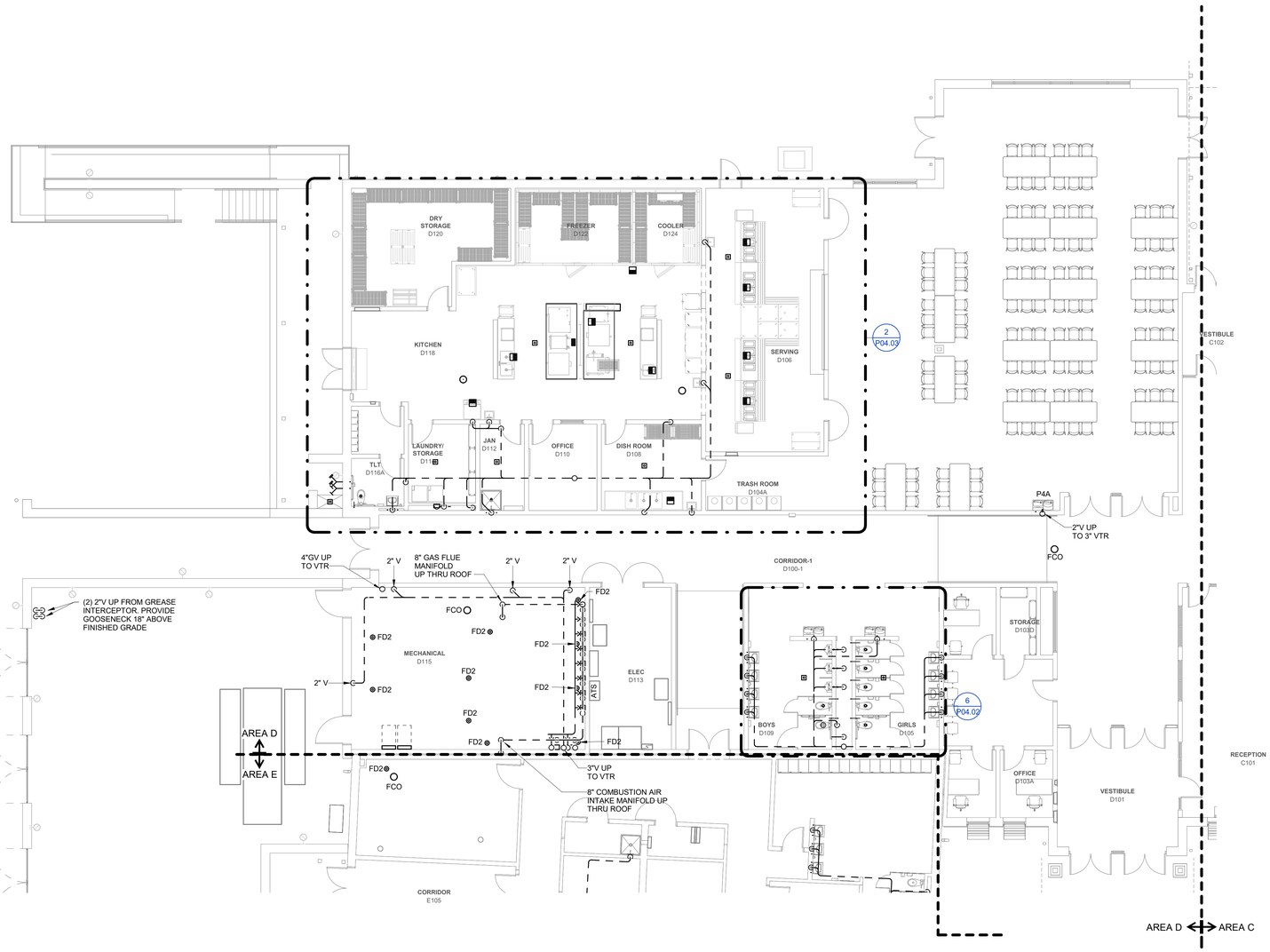


1 FIRST FLOOR WASTE & VENT PLAN AREA D

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

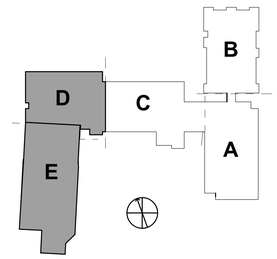
1. REFER TO SHEET P-001 FOR ADDITIONAL GENERAL NOTES.

KEYNOTES:

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

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SEALS

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT SEAL 039771 CHRISTOPHER T. PHILLIPS

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1	Revision 1	Date 1

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SHEET TITLE

FIRST FLOOR WASTE & VENT PLAN AREA D

P01.14

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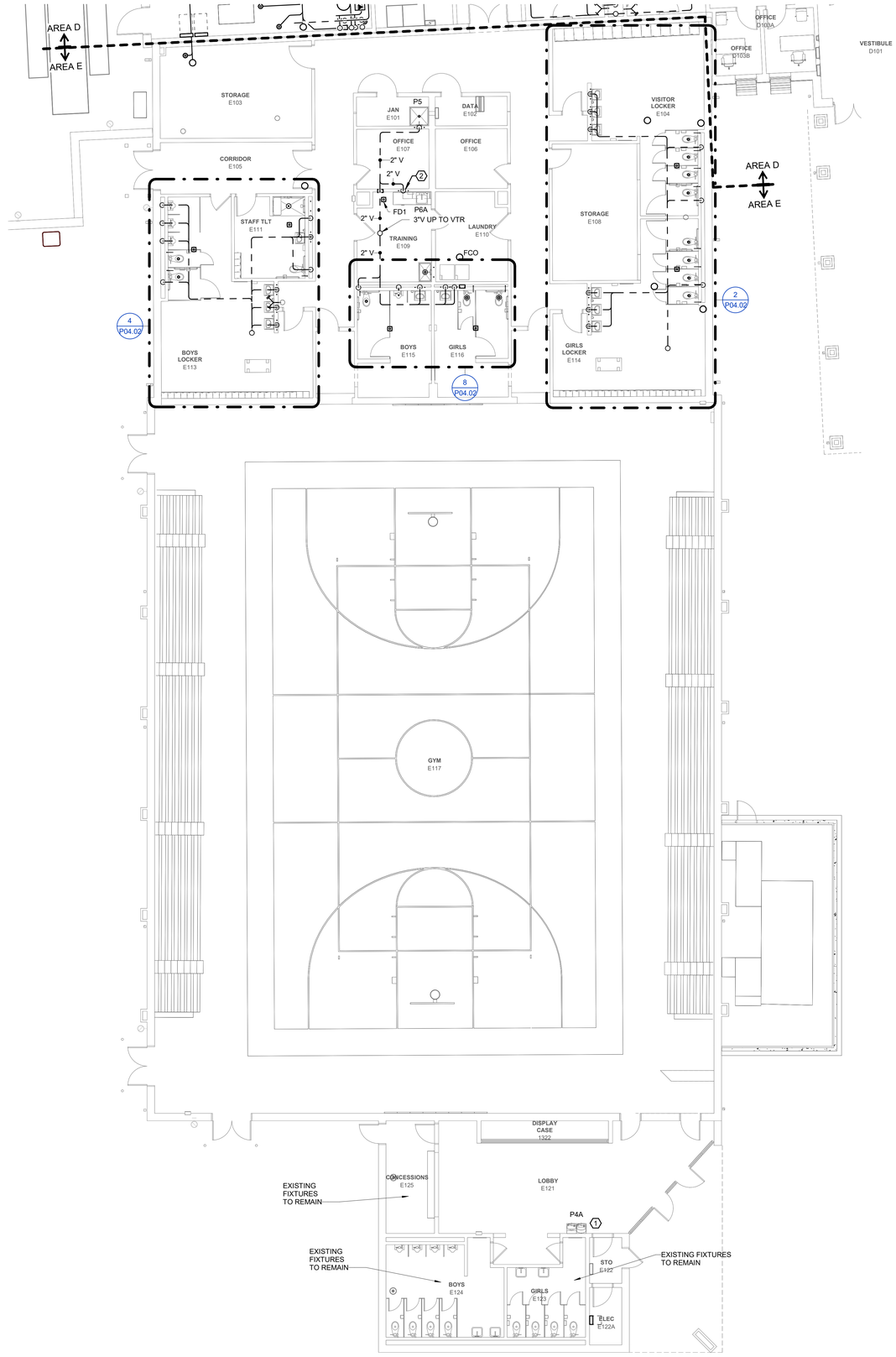


1 FIRST FLOOR WASTE & VENT PLAN AREA E

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

1. REFER TO SHEET P-001 FOR ADDITIONAL GENERAL NOTES.

KEYNOTES:

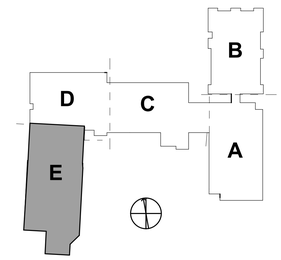
1 PROVIDE NEW WATER COOLER. CONNECT TO EXISTING WASTE/VENT AND WATER ROUGH-IN PIPING. PATCH TO MATCH EXISTING CONDITIONS.

2 CONNECT NEW VENT PIPING TO EXISTING VENT PIPING AT EXISTING WALL.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039771 CHRISTOPHER CAIN COOK

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SHEET TITLE

FIRST FLOOR WASTE & VENT PLAN AREA E

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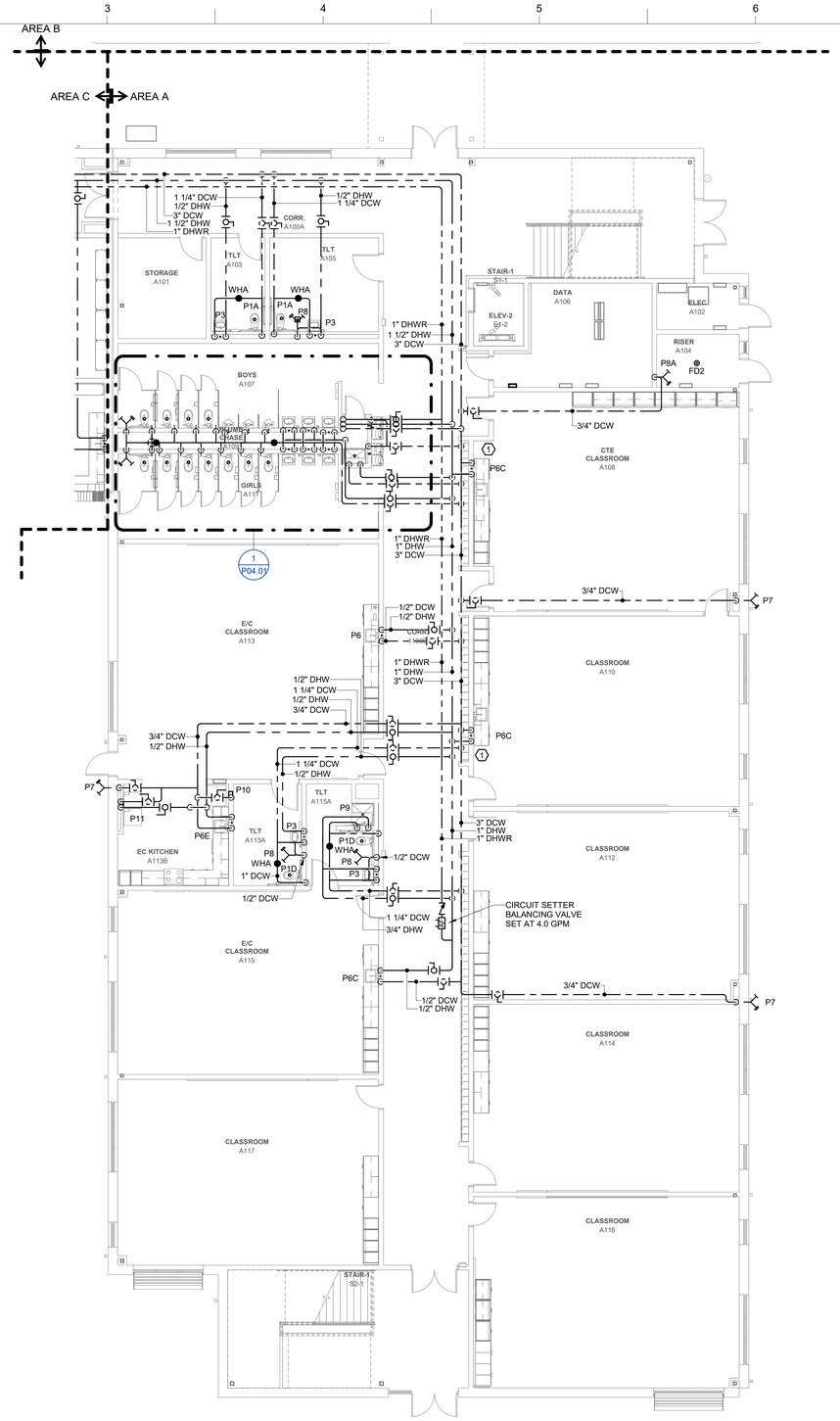


1 FIRST FLOOR DOMESTIC WATER PLAN AREA A

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

1. REFER TO SHEET P-001 FOR ADDITIONAL GENERAL NOTES.

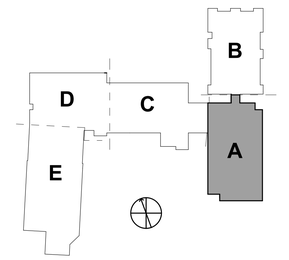
KEYNOTES:

1 PROVIDE 1/2" ISOLATION VALVES FOR DHW & DCW SUPPLY TO FIXTURE. VALVES NOT SHOWN FOR CLARITY.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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FIRST FLOOR DOMESTIC WATER PLAN AREA A

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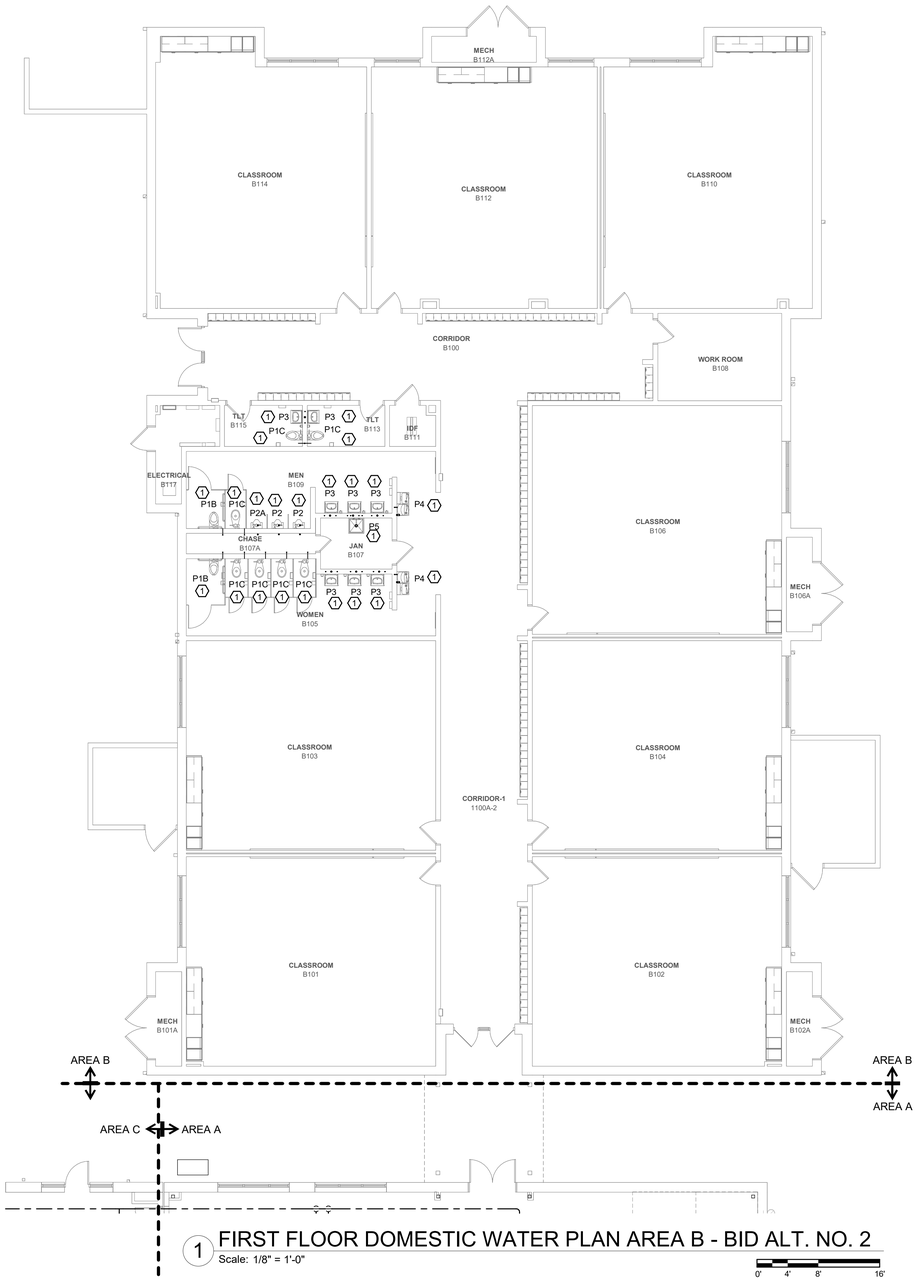


1 FIRST FLOOR DOMESTIC WATER PLAN AREA B - BID ALT. NO. 2

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

1. REFER TO SHEET P-001 FOR ADDITIONAL GENERAL NOTES.

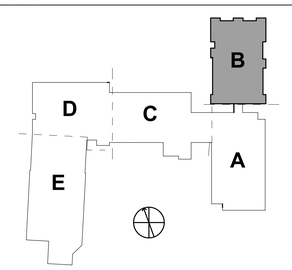
KEYNOTES:

1 INSTALL NEW FIXTURE. REUSE EXISTING ROUGH-IN PIPING FOR CONNECTION TO FIXTURE. MODIFY AS REQUIRED TO INSTALL.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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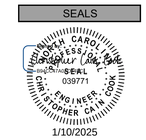
PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS



DKA JOB NUMBER
2401

DEWBERRY NUMBER
50171439

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BID DOCUMENTS
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SHEET TITLE

FIRST FLOOR DOMESTIC WATER PLAN AREA B

P01.22

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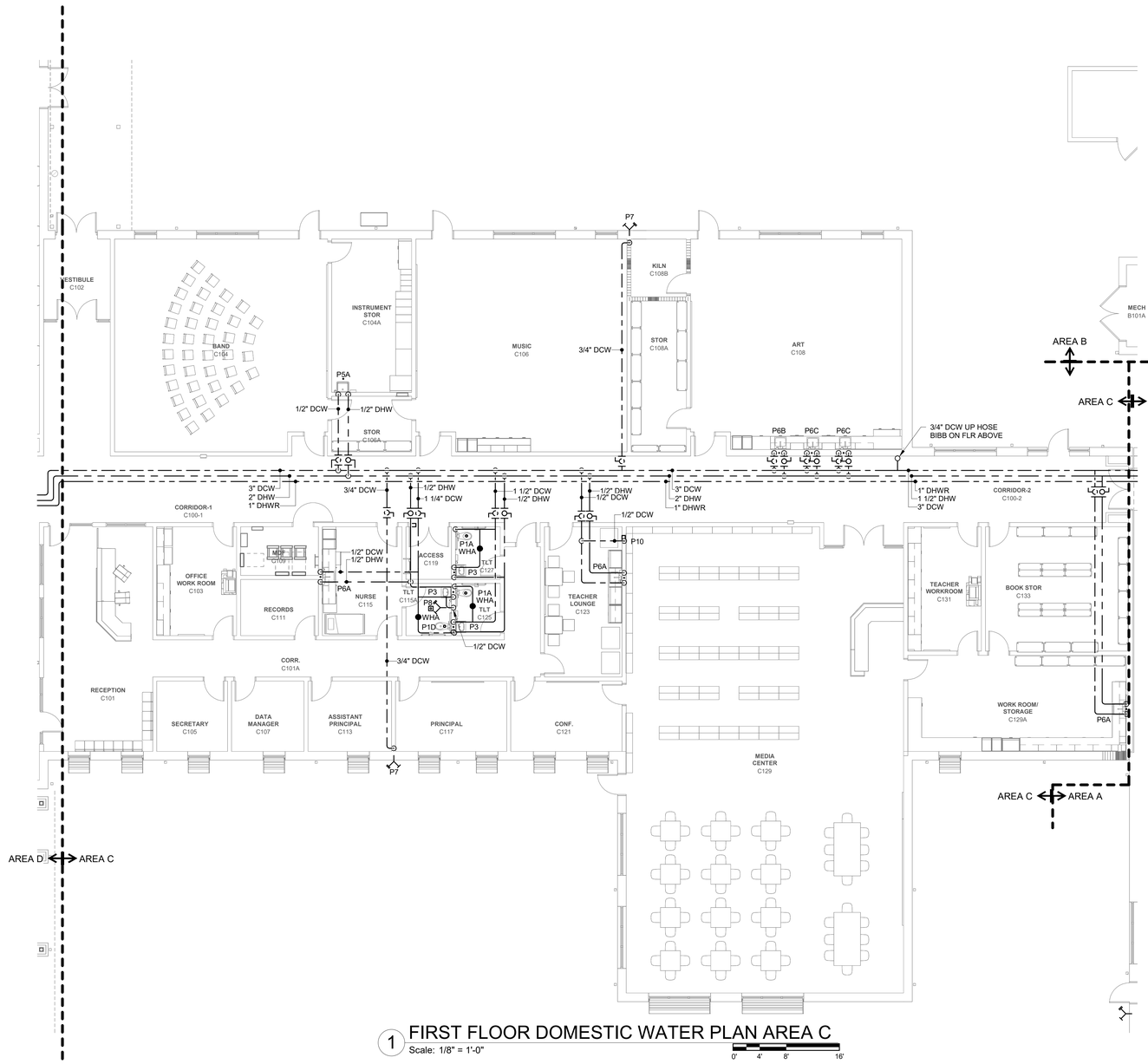


1 FIRST FLOOR DOMESTIC WATER PLAN AREA C

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

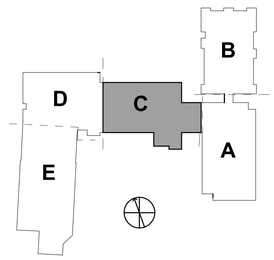
1. REFER TO SHEET P-001 FOR ADDITIONAL GENERAL NOTES.

KEYNOTES:

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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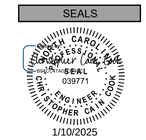
WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS



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SHEET TITLE

FIRST FLOOR DOMESTIC WATER PLAN AREA C

P01.23

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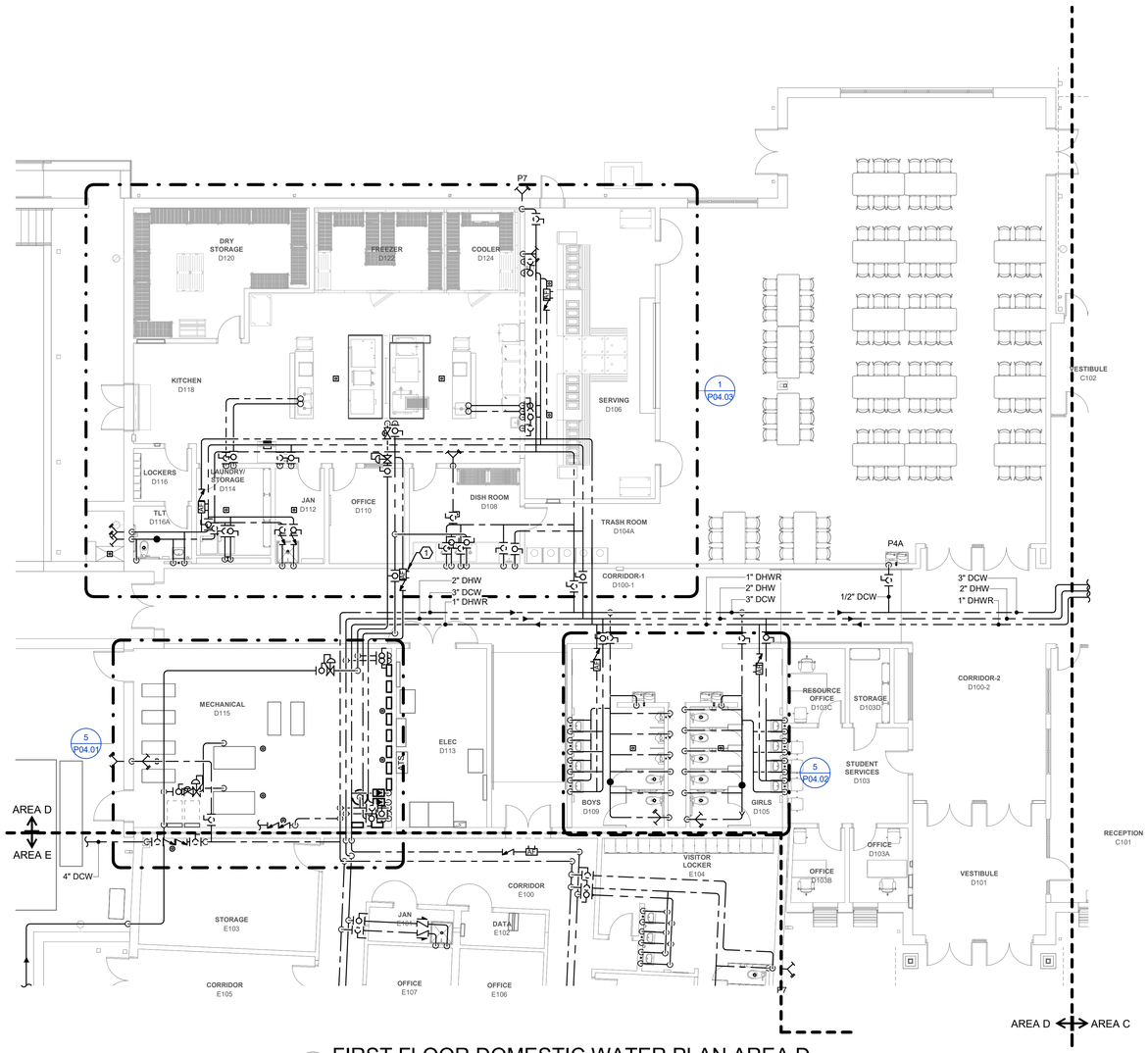


1 FIRST FLOOR DOMESTIC WATER PLAN AREA D

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

1. REFER TO SHEET P-001 FOR ADDITIONAL GENERAL NOTES.

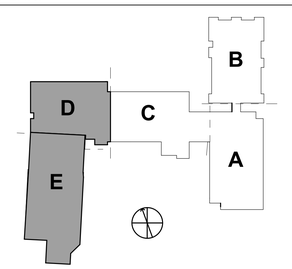
KEYNOTES:

1 THERMOSTATIC BALANCING VALVE. SET TEMPERATURE TO 140 DEG F. REFER TO DETAIL 6/P-501.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER SEAL 039771 CHRISTOPHER CAIN COOK

1/10/2025

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SHEET TITLE

FIRST FLOOR DOMESTIC WATER PLAN AREA D

P01.24

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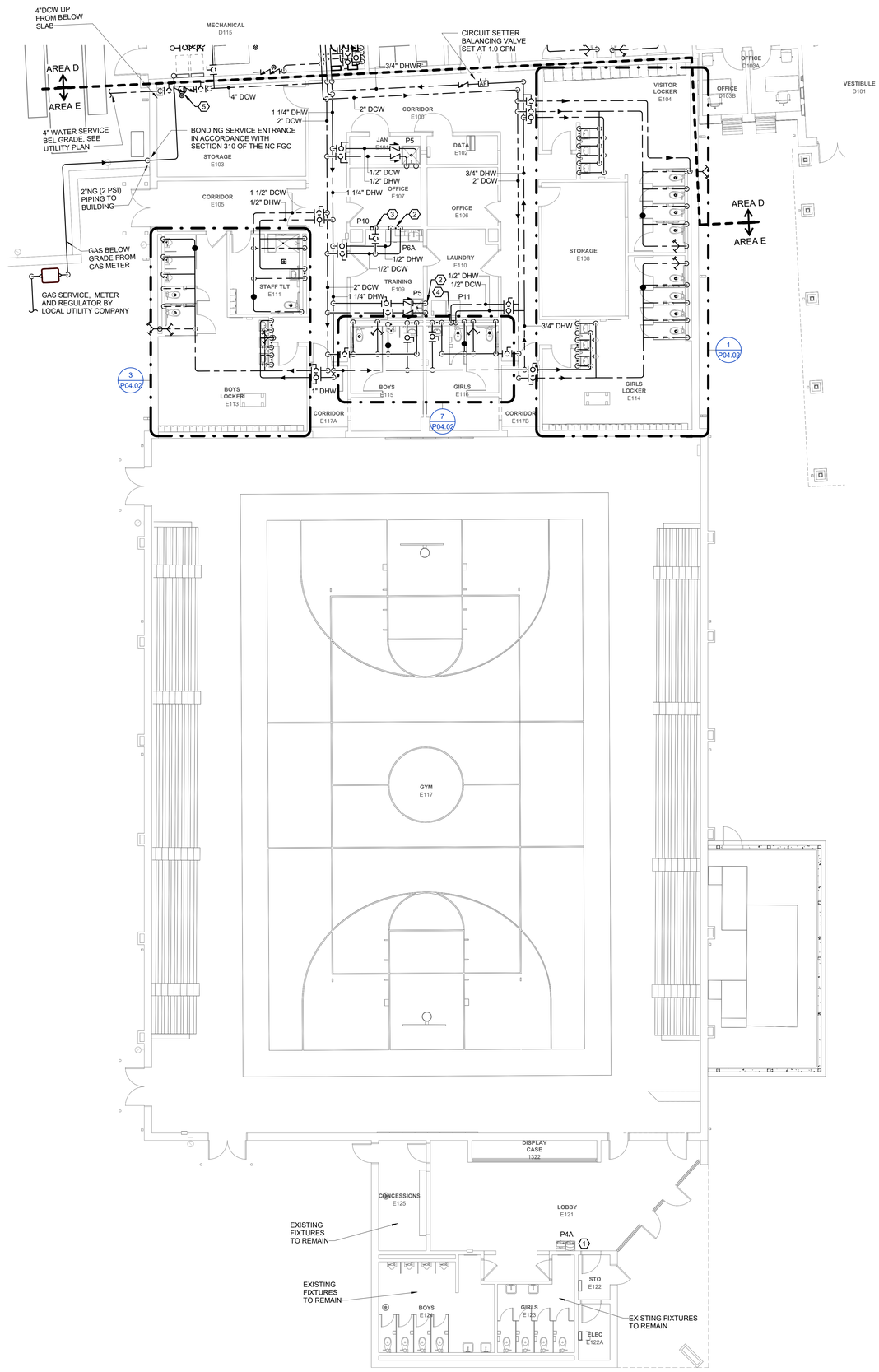


1 FIRST FLOOR DOMESTIC WATER PLAN AREA E

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

1. REFER TO SHEET P-001 FOR ADDITIONAL GENERAL NOTES.

KEYNOTES:

1 PROVIDE NEW WATER COOLER. CONNECT TO EXISTING WASTE/VENT AND WATER ROUGH-IN PIPING. PATCH TO MATCH EXISTING CONDITIONS.

2 CONNECT TO EXISTING WATER PIPING LOCATED IN THE WALL CAVITY.

3 PROVIDE NEW 1/2"DCW DOWN TO WATER CONNECTION BOX. SAWCUT EXISTING CMU WALL AS REQUIRED TO INSTALL NEW WATER CONNECTION BOX. PATCH ALL PORTIONS OF AREA DISTRUBED TO MATCH EXISTING.

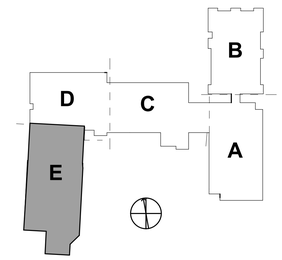
4 PROVIDE NEW WASHER BOX (P-5) IN EXISTING CMU WALL. SAWCUT AS REQUIRED TO REMOVE EXISTING WASHER BOX TO INSTALL NEW BOX. PIPING SHALL BE ROUTED IN NEWLY FORMED CHASE BEHIND EXISTING WALL AS MUCH AS POSSIBLE. PATCH ALL PORTIONS OF AREA DISTURBED TO MATCH EXISTING CONDITIONS.

5 DOMESTIC WATER SUBMETER FURNISHED BY MECHANICAL CONTRACTOR AND INSTALLED BY PLUMBING CONTRACTOR. REFER TO METER WITH BYPASS DETAIL FOR INSTALLATION REQUIREMENTS.

WALL RATING LEGEND:

1-HR RATED FIRE BARRIER
2-HR RATED FIRE BARRIER
3-HR RATED FIRE BARRIER
4-HR RATED FIRE BARRIER

KEYPLAN:



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ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

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SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039771 CHRISTOPHER CAIN COOK

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DEWBERRY NUMBER
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SHEET TITLE

FIRST FLOOR DOMESTIC WATER PLAN AREA E

P01.25

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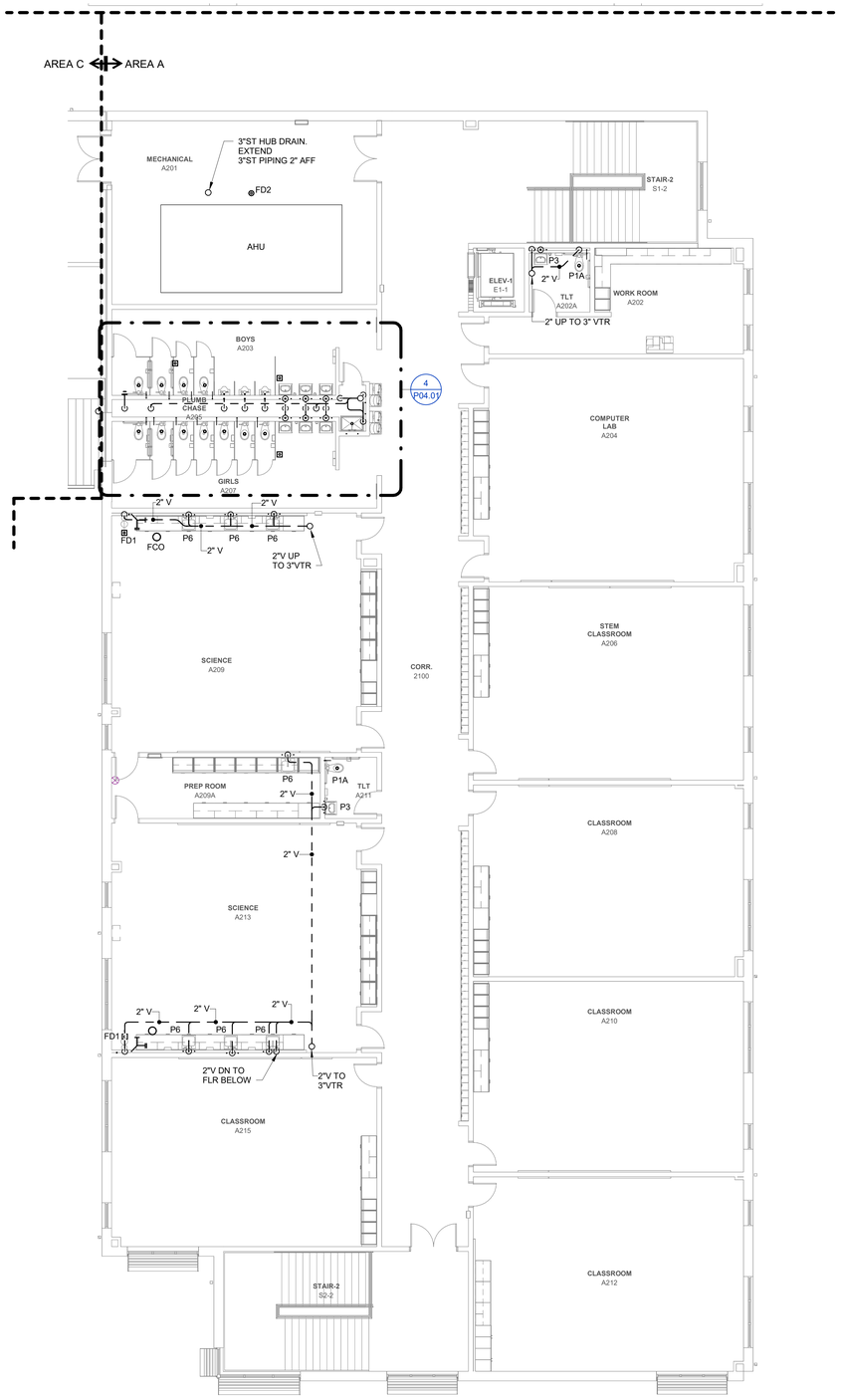


1 SECOND FLOOR WASTE & VENT PLAN AREA A
Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

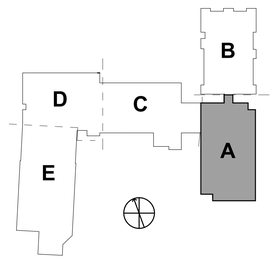
1. REFER TO SHEET P-001 FOR ADDITIONAL GENERAL NOTES.

KEYNOTES:

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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SHEET TITLE

SECOND FLOOR WASTE & VENT PLAN AREA A

P02.11

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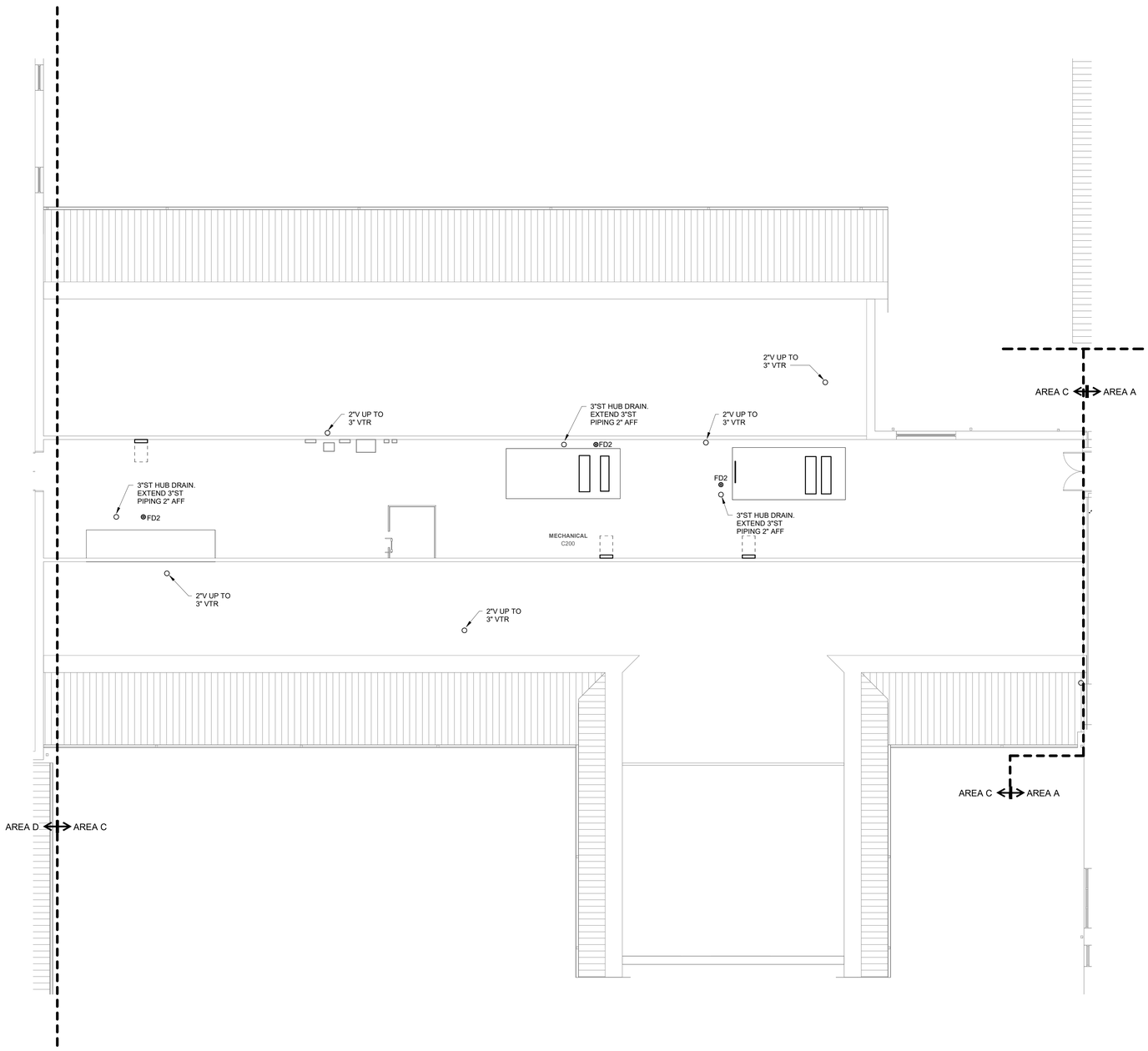


1 SECOND FLOOR WASTE & VENT PLAN AREA C
Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

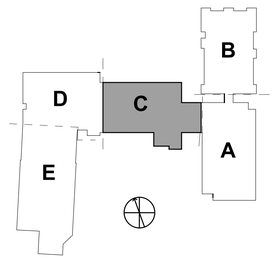
1. REFER TO SHEET P-001 FOR ADDITIONAL GENERAL NOTES.

KEYNOTES:

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

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SHEET TITLE

SECOND FLOOR WASTE & VENT PLAN AREA C

P02.13

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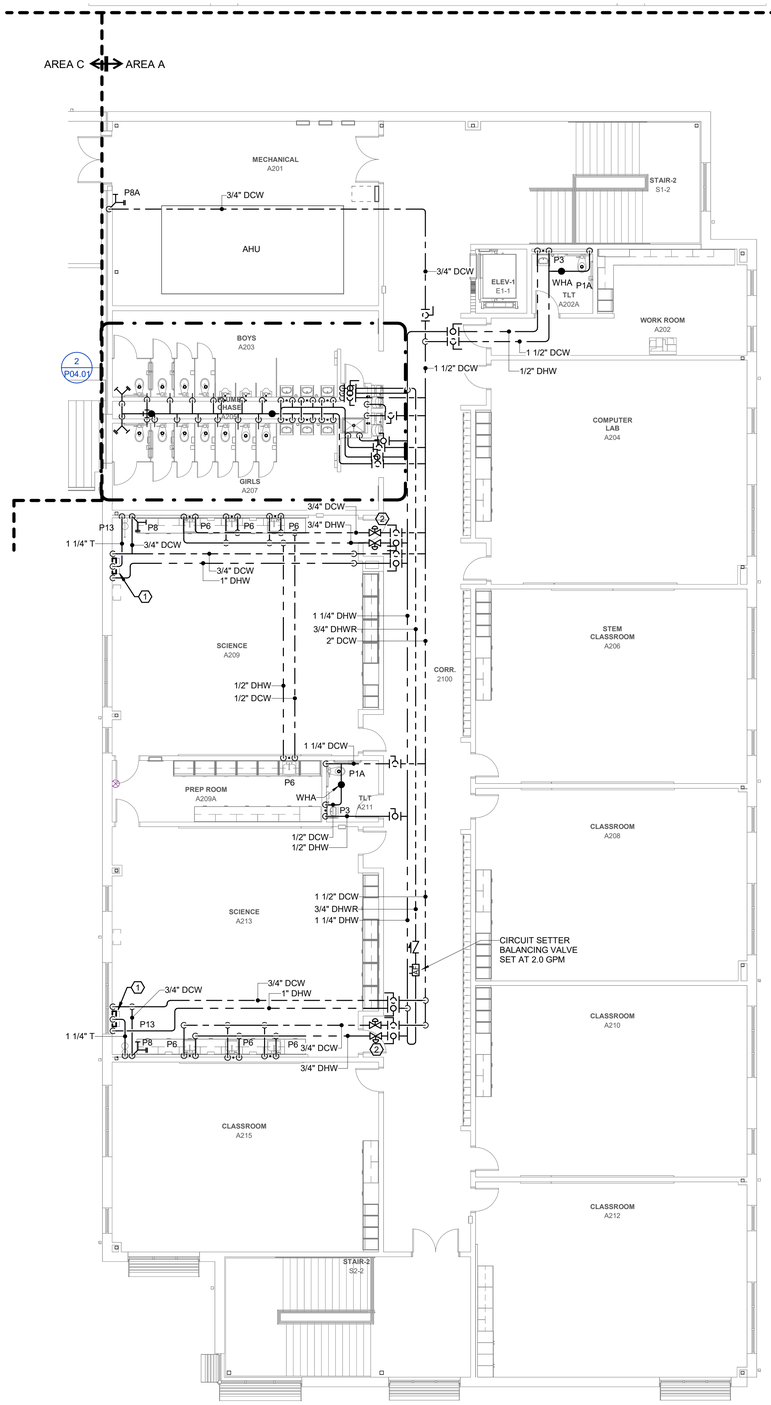


1 SECOND FLOOR DOMESTIC WATER PLAN AREA A
Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

1. REFER TO SHEET P-001 FOR ADDITIONAL GENERAL NOTES.

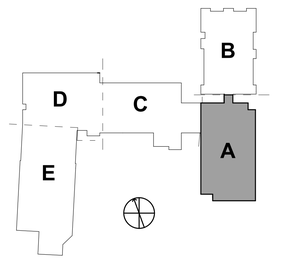
KEYNOTES:

1. PROVIDE THERMOSTATIC MIXING VALVE FOR EMERGENCY SHOWER UNIT ABOVE CEILING. SET MAX. TEMPERATURE TO 85 DEG F.
2. SOLENOID VALVES FOR DCW AND DHW SUPPLIES TO SCIENCE CLASSROOMS FURNISHED BY MECHANICAL CONTRACTOR AND INSTALLED BY PLUMBING CONTRACTOR.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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NORTH CAROLINA PROFESSIONAL SEAL 039771 ENGINEER CHRISTOPHER CAIN COOK

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SHEET TITLE

SECOND FLOOR DOMESTIC WATER PLAN AREA A

P02.21

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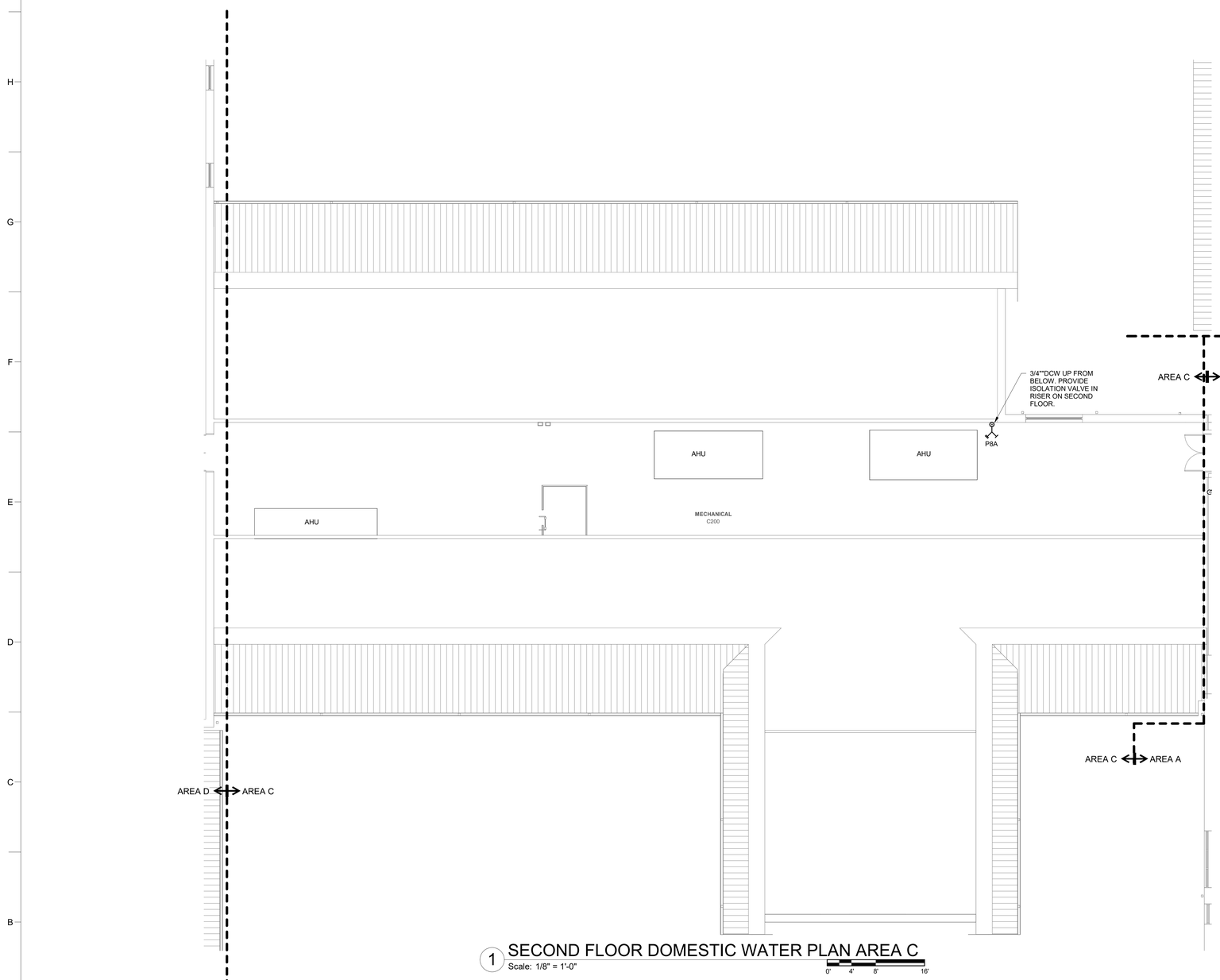


1 SECOND FLOOR DOMESTIC WATER PLAN AREA C
Scale: 1/8" = 1'-0"
0' 4' 8' 16'

GENERAL NOTES:

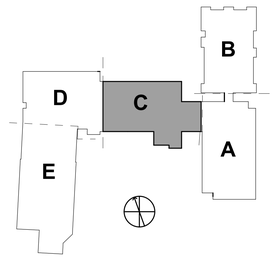
1. REFER TO SHEET P-001 FOR ADDITIONAL GENERAL NOTES.

(#) KEYNOTES:

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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SHEET TITLE
SECOND FLOOR DOMESTIC WATER PLAN AREA C

P02.23

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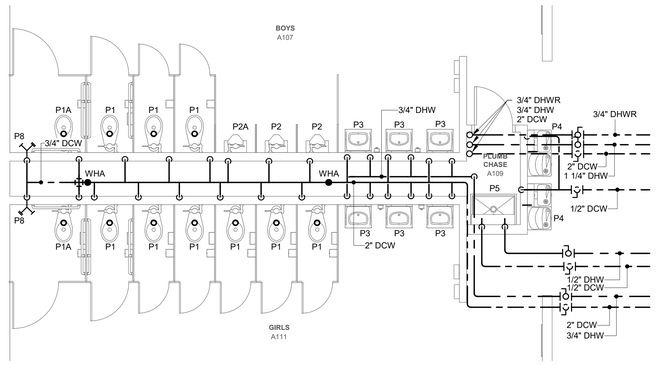
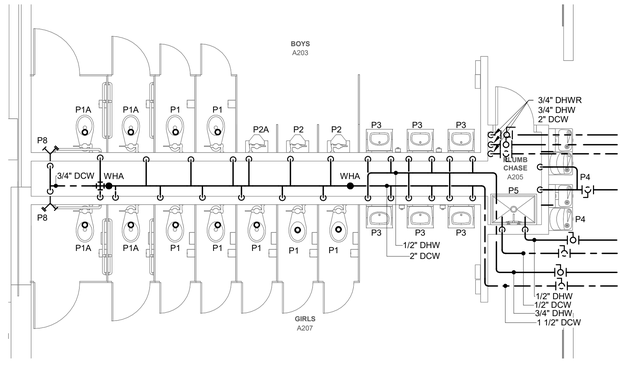


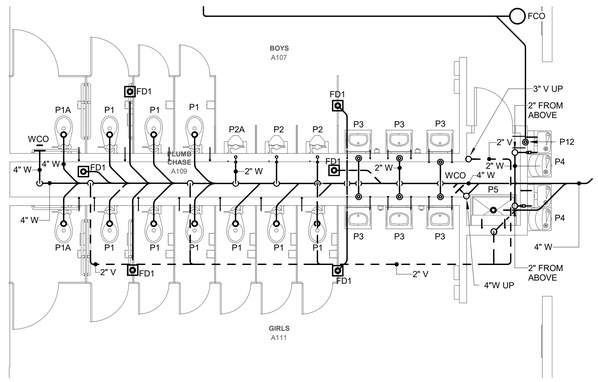
1 FIRST FLOOR DOMESTIC WATER PLAN AREA A - A107/111

Scale: 1/4" = 1'-0"



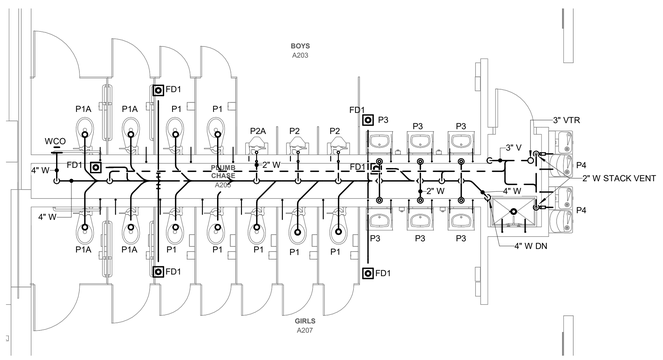
2 SECOND FLOOR DOMESTIC WATER PLAN AREA A - A203/207

Scale: 1/4" = 1'-0"



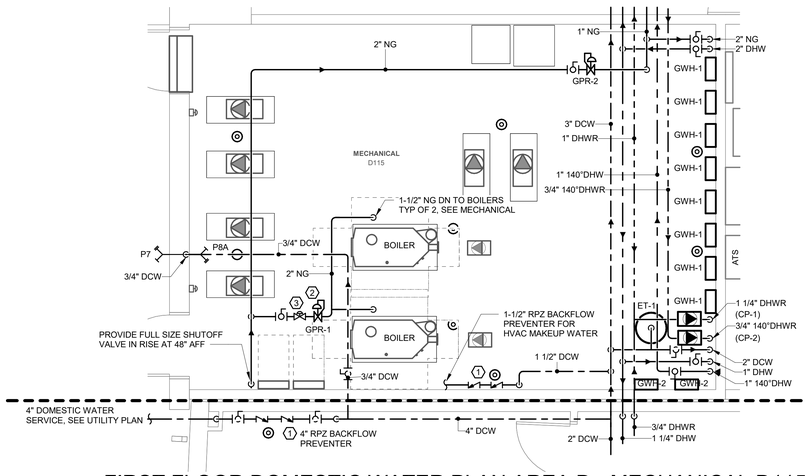
3 FIRST FLOOR WASTE & VENT PLAN AREA A - A107/111

Scale: 1/4" = 1'-0"



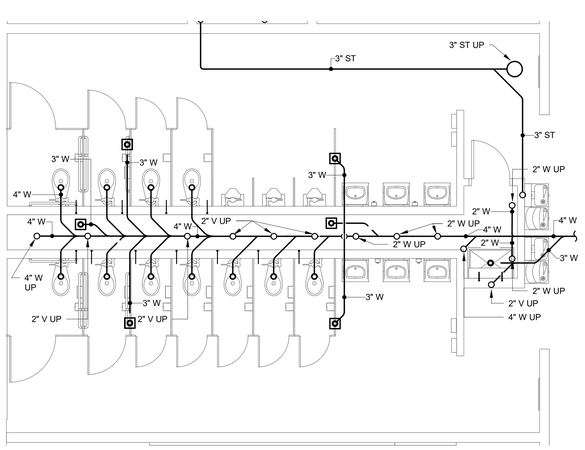
4 SECOND FLOOR WASTE & VENT PLAN AREA A - A203/207

Scale: 1/4" = 1'-0"



5 FIRST FLOOR DOMESTIC WATER PLAN AREA D - MECHANICAL D115

Scale: 1/4" = 1'-0"



6 UNDERSLAB WASTE & VENT PLAN AREA A - GROUP RESTROOMS

Scale: 1/4" = 1'-0"

GENERAL NOTES:

1. REFER TO SHEET P-001 FOR ADDITIONAL GENERAL NOTES.

KEYNOTES:

1 PROVIDE REDUCED-PRESSURE ZONE BACKFLOW PREVENTER. MOUNT UNIT AT 48" ABOVE FINISHED FLOOR. PROVIDE WITH AIR GAP FITTING PIPED FULL SIZE TO DISCHARGE ABOVE NEAREST FLOOR DRAIN WITH CODE MINIMUM REQUIRED AIR GAP.

2 PROVIDE GAS PRESSURE REGULATOR TO REDUCE FROM 2PSI TO GAS PRESSURE REQUIRED FOR BOILERS. VERIFY WITH BOILER MANUFACTURER FOR REQUIRED DISTANCES GAS REGULATORS SHALL BE INSTALLED AT BOILERS.

3 GAS SOLENOID VALVE FOR EMERGENCY BOILER SHUTDOWN FURNISHED BY MECHANICAL CONTRACTOR AND INSTALLED BY PLUMBING CONTRACTOR. REFER TO MECHANICAL PLANS FOR EMERGENCY STOP LOCATIONS AND CONNECTIONS.

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PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

1/10/2025

DKA JOB NUMBER
2401

DEWBERRY NUMBER
50171439

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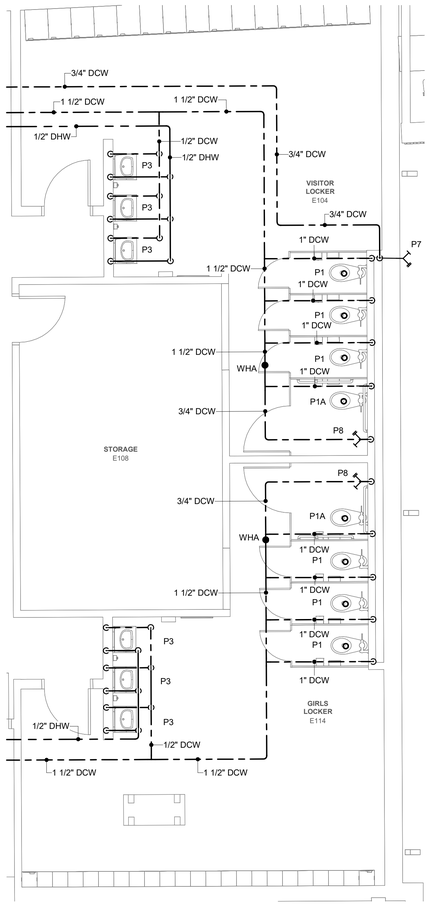
SHEET TITLE

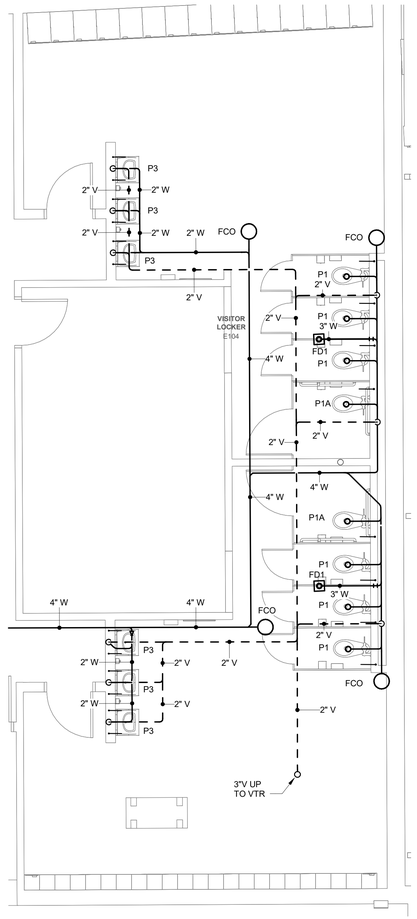
LARGE SCALE FLOOR PLANS

P04.01

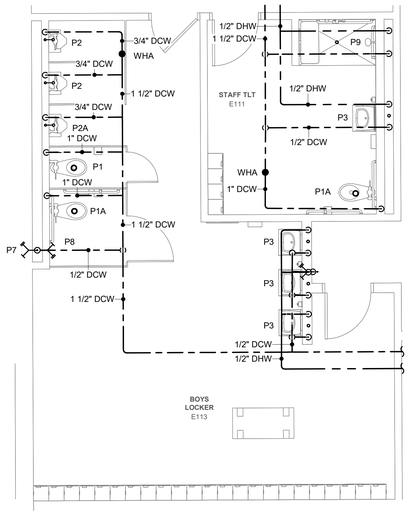
Docusign Envelope ID: 3A51D765-FCC0-4BBD-80F8-122B94177F88



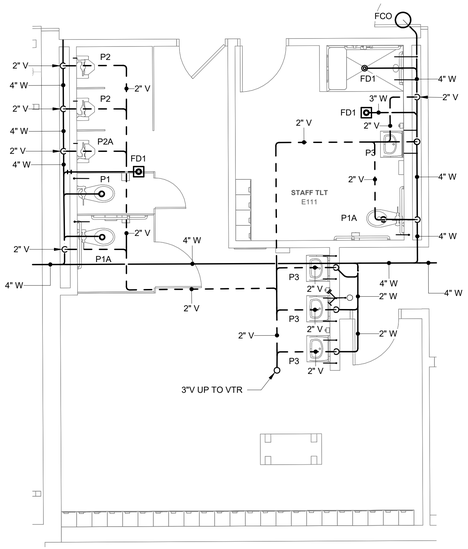
1 FIRST FLOOR DOMESTIC WATER PLAN AREA E - E104/114
Scale: 1/4" = 1'-0"



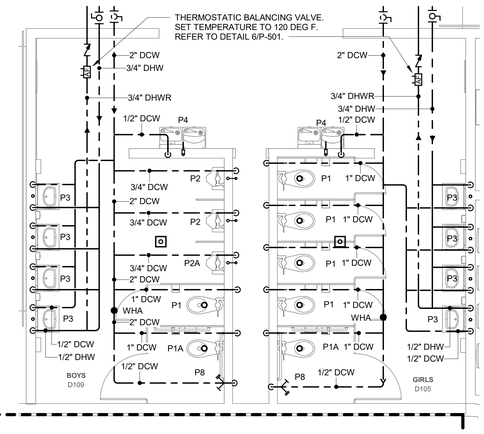
2 FIRST FLOOR WASTE & VENT PLAN AREA E - E104/114
Scale: 1/4" = 1'-0"



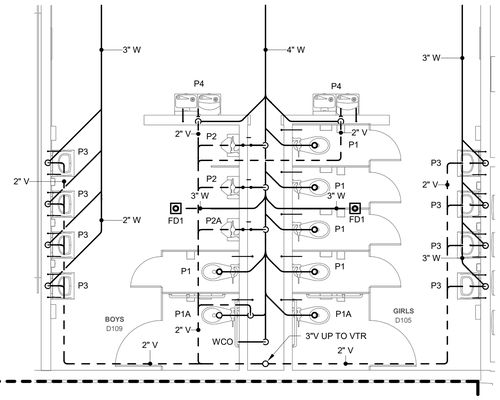
3 FIRST FLOOR DOMESTIC WATER PLAN AREA E - E113
Scale: 1/4" = 1'-0"



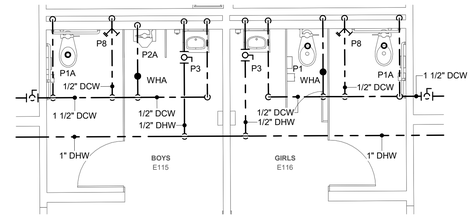
4 FIRST FLOOR WASTE & VENT PLAN AREA E - E113
Scale: 1/4" = 1'-0"



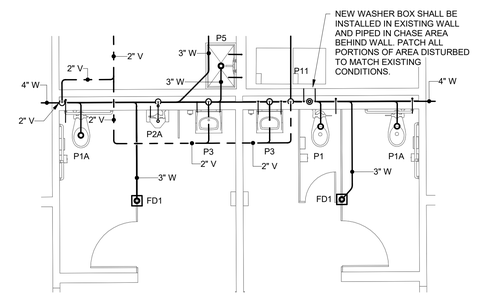
5 FIRST FLOOR DOMESTIC WATER PLAN AREA D - D105/109
Scale: 1/4" = 1'-0"



6 FIRST FLOOR WASTE & VENT PLAN AREA D - D105/109
Scale: 1/4" = 1'-0"



7 FIRST FLOOR DOMESTIC WATER PLAN AREA E - E115/116
Scale: 1/4" = 1'-0"



8 FIRST FLOOR WASTE & VENT PLAN AREA E - E115/116
Scale: 1/4" = 1'-0"

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SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039771 CHRISTOPHER CAIN COOK
1/10/2025

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SHEET TITLE
LARGE SCALE FLOOR PLANS

P04.02

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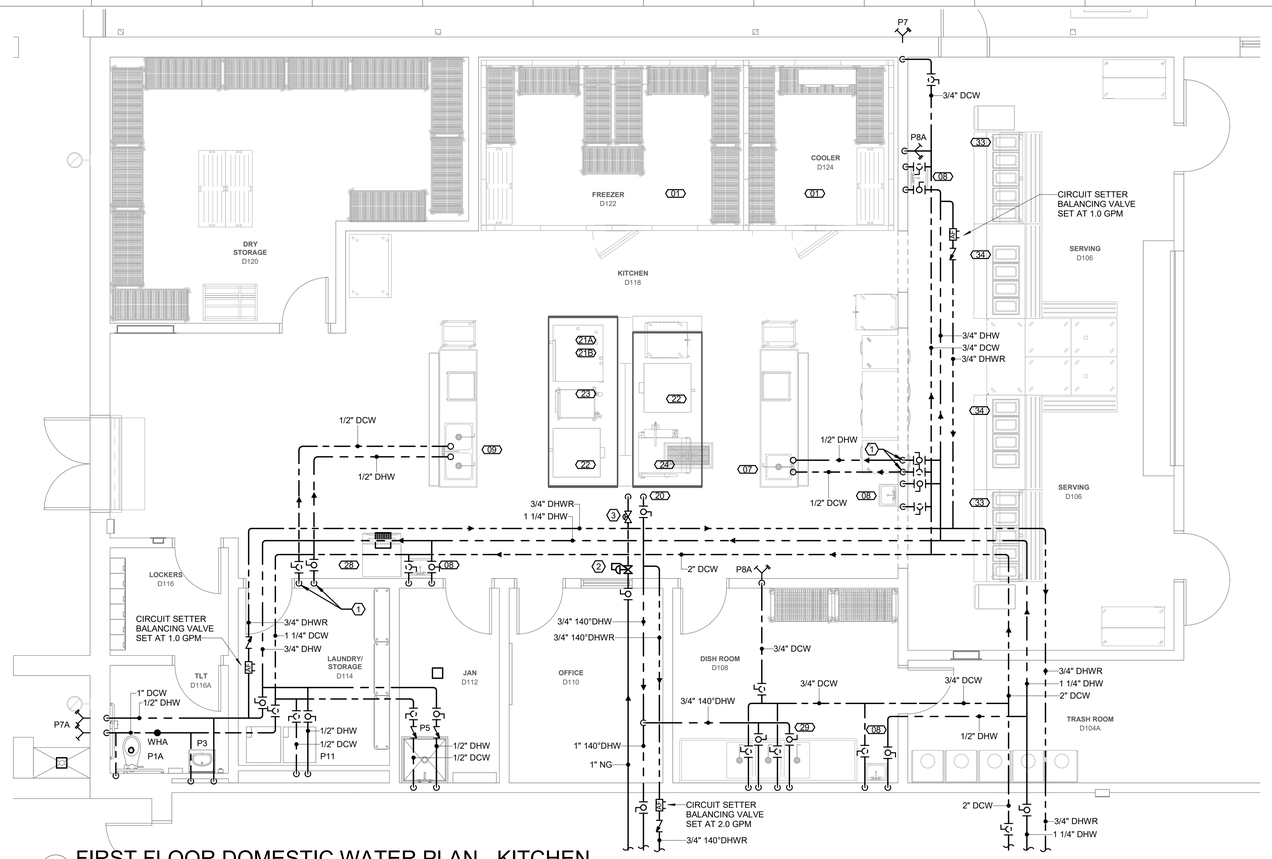
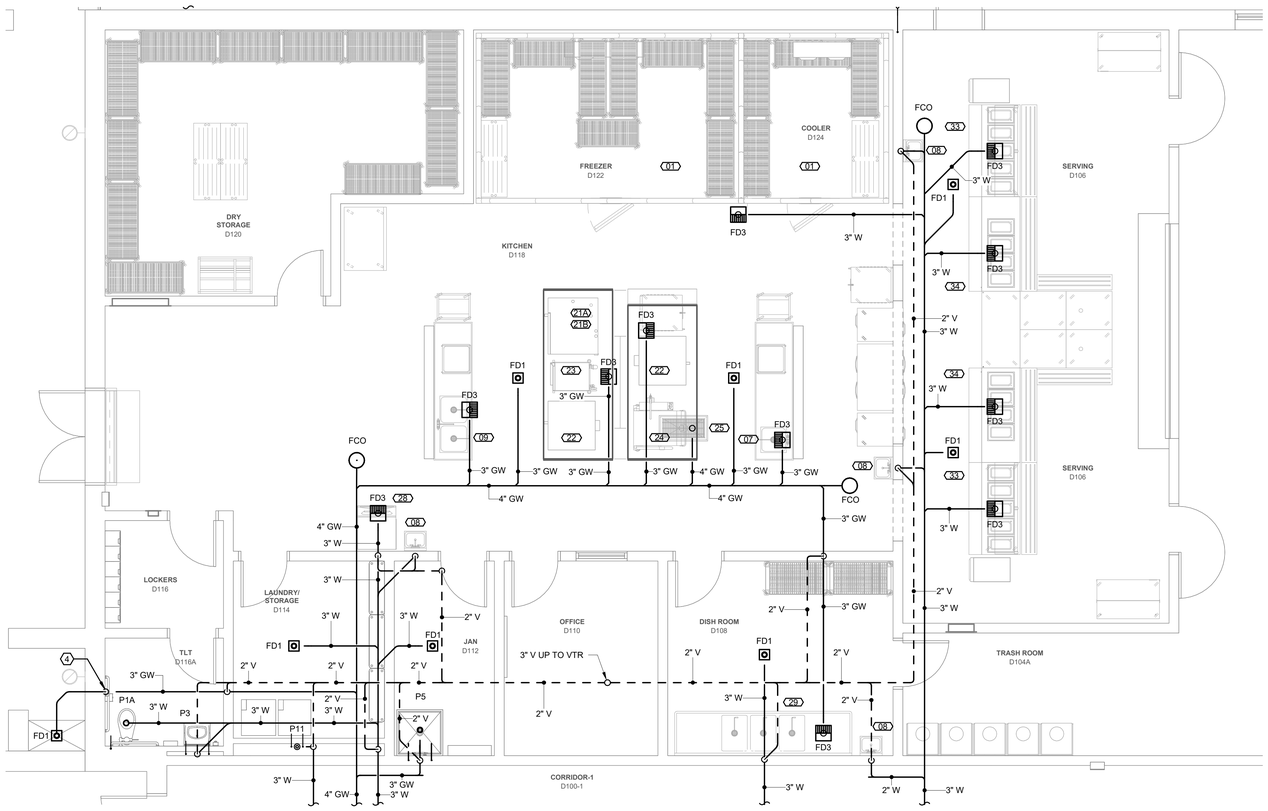


1 FIRST FLOOR DOMESTIC WATER PLAN - KITCHEN

Scale: 1/4" = 1'-0"



2 FIRST FLOOR WASTE & VENT PLAN - KITCHEN

Scale: 1/4" = 1'-0"

GENERAL NOTES:

KEYNOTES:

1. 1/2" DCW & DHW DOWN IN WALL, ROUTE PIPING BELOW SLAB TO PREP SINK AND STUB UP TO FAUCET.
2. PROVIDE GAS PRESSURE REGULATOR TO REDUCE PRESSURE DOWN TO PRESSURE REQUIRED AT EQUIPMENT.
3. INSTALL GAS SOLENOID VALVE FOR KITCHEN HOOD/EQUIPMENT GAS SUPPLY. GAS SOLENOID VALVE FURNISHED BY OTHERS.
4. 3" CONTINUOUS HORIZONTAL WASTE WASTE FROM FLOOR DRAIN OUTLET, ELBOW TO RUNNING P-TRAP INSIDE THE BUILDING FOOTPRINT TO PREVENT FREEZING.

WALL RATING LEGEND:

KEYPLAN:

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1	Revision 1	Date 1

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ENLARGED KITCHEN FLOOR PLANS

P04.03

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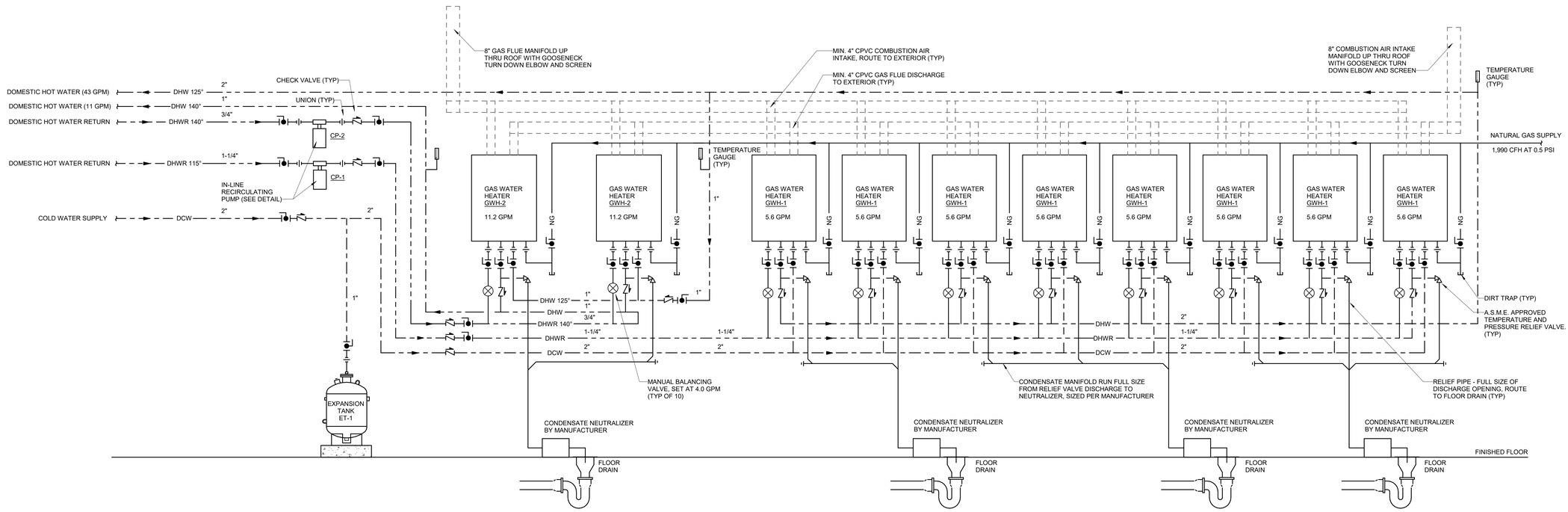
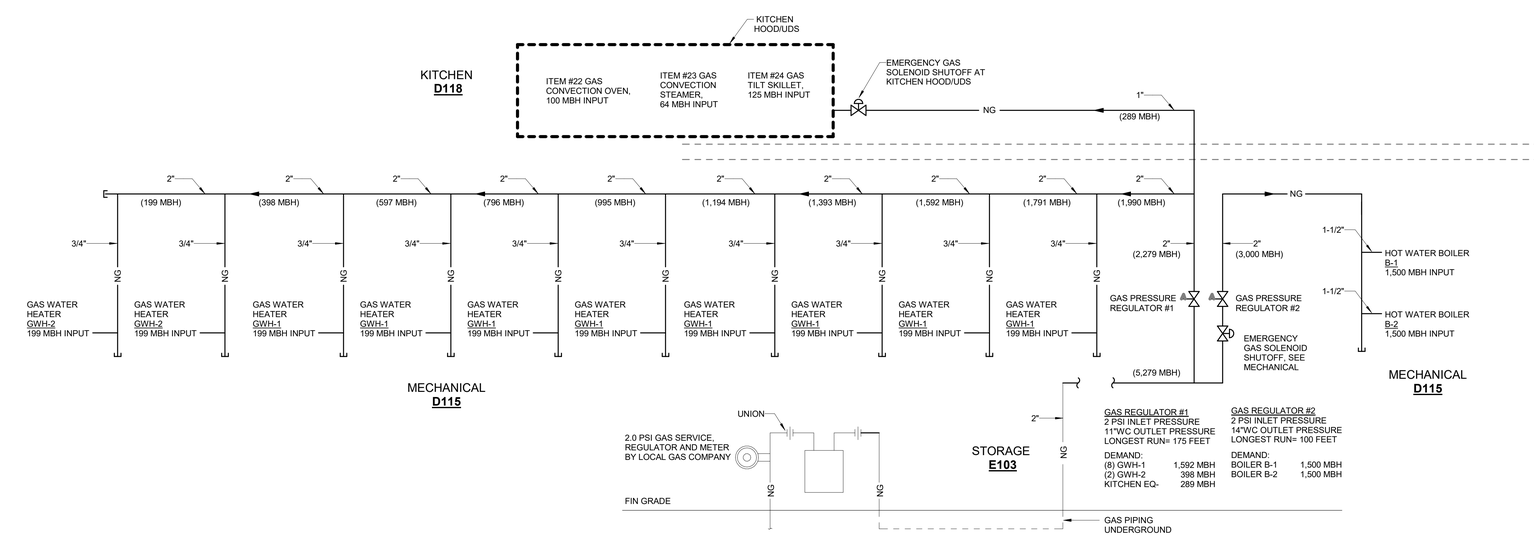
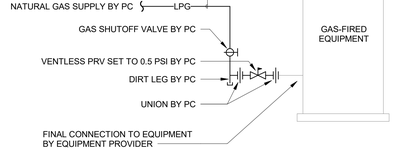


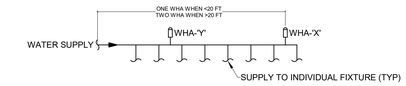
1 GAS WATER HEATER MANIFOLD CONNECTION DETAIL
Scale: N.T.S.



2 NATURAL GAS RISER DETAIL
Scale: N.T.S.



3 NATURAL GAS EQUIPMENT CONNECTION
Scale: NTS

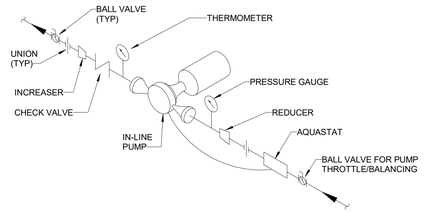


WHEN TWO WHA ARE REQUIRED, THE SUM OF WHA-'X' AND WHA-'Y' SHALL BE GREATER THAN OR EQUAL TO THE DEMAND OF THE BRANCHES.

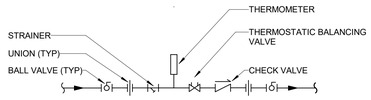
WHA SIZING TABLE		
MARK	WSFU	SIZE
A	1 - 11	1/2"
B	12 - 32	3/4"
C	33 - 60	1"
D	61 - 113	1"
E	114 - 154	1"
F	155 - 330	1"

BASIS OF DESIGN WATER HAMMER ARRESTER: WATTS SERIES LF15M2 OR APPROVED EQUIVALENT.

4 WATER HAMMER ARRESTERS
Scale: NTS

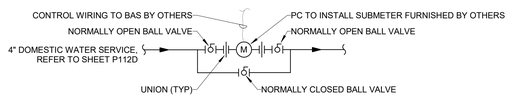


5 TYPICAL IN-LINE PUMP
Scale: N.T.S.



NOTES:
1. AUTOMATIC FLOW CONTROL VALVES ARE THERMOSTATIC.
2. REFER TO FLOOR PLANS FOR THE LOCATION(S) OF EACH TYPE.
3. REFER TO FLOOR PLANS FOR THE TEMPERATURE FOR EACH INDIVIDUAL AUTOMATIC FLOW CONTROL VALVE.

6 HOT WATER RETURN BALANCING VALVE ASSEMBLY
Scale: NTS



7 SUBMETER WITH BYPASS
Scale: N.T.S.

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DETAILS

P05.01

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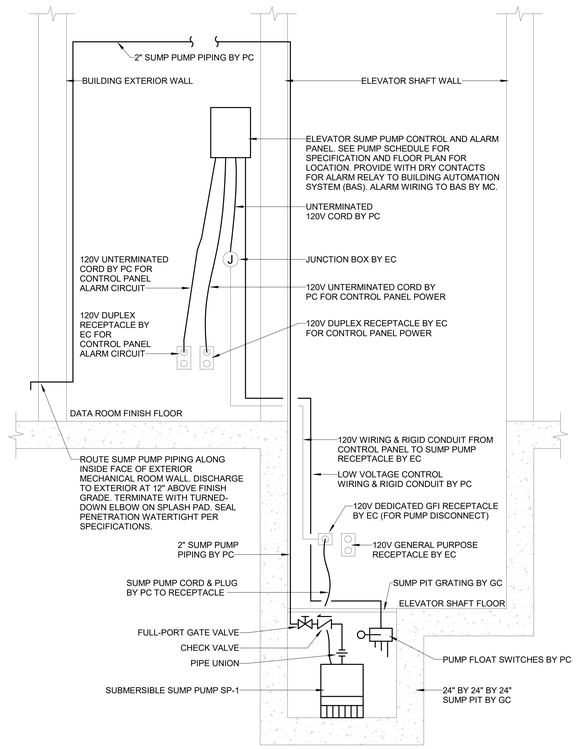
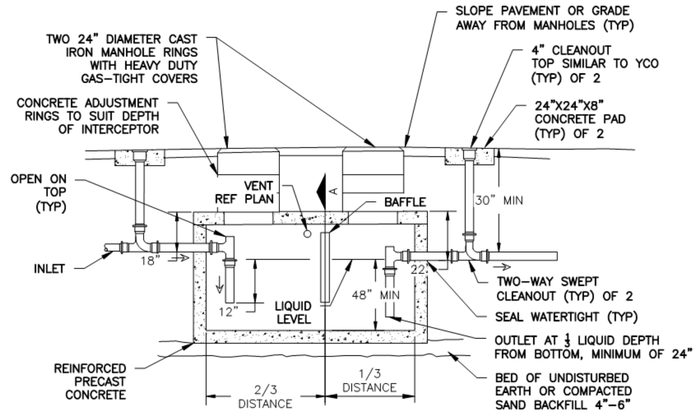


3 ELEVATOR SUMP PUMP SP-1
Scale: N.T.S.

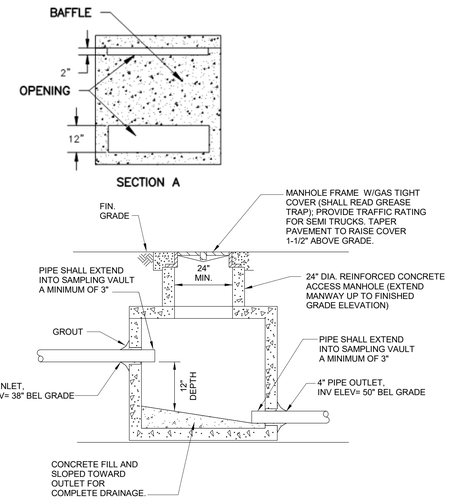


DETAIL SHOWS GENERAL SCHEMATIC REQUIRMENTS. CONTRACTOR SHALL SUBMIT PROPOSED INTERCEPTOR INSTALLATION PLANS AND SPECIFICATIONS TO TOHS INSPECTOR FOR APPROVAL BEFORE ACQUISITION OF INTERCEPTOR. PROVIDE INTERCEPTOR WITH ADEQUATE STRUCTURAL STRENGTH TO ACCOMODATE VEHICULAR TRAFFIC AT INSTALLATION LOCATION.

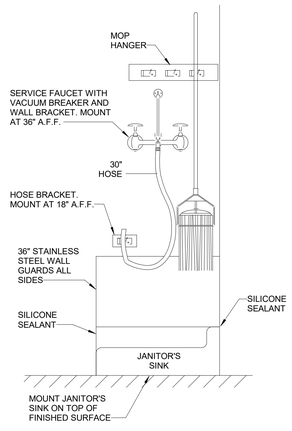
NOTES:

1. PROVIDE SAMPLING PORT DOWNSTREAM OF THE JUNCTION WITH THE WITH MAIN SANITARY SEWER.
2. REFER TO PLUMBING PLAN FOR PIPE SIZES.
3. CONTACT PUBLIC UTILITIES WITH QUESTIONS REGARDING GREASE TRAPS.
4. INTERCEPTOR TOP SHALL BE H-20 TRAFFIC RATED IN PAVED AREAS UNLESS PROPOSED TRAFFIC WARRANTS HEAVIER LOADING STANDARDS.

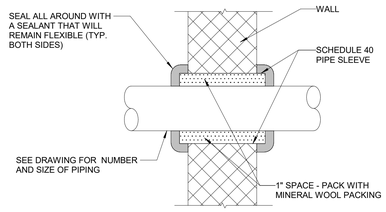
2 GREASE INTERCEPTOR DETAIL
Scale: N.T.S.



1 SAMPLING VAULT DETAIL
Scale: N.T.S.



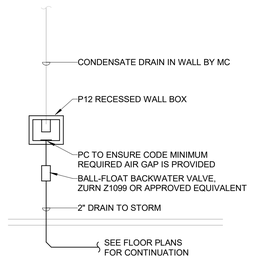
7 JANITOR'S SINK DETAIL
Scale: N.T.S.



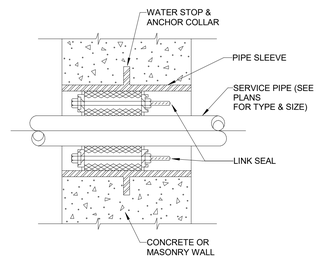
NOTES:

1. THE VOID BETWEEN FIBROUS PACKING AND SLEEVE SHALL BE FILLED WITH CAULKING MATERIAL
2. SEE FLOOR PLANS FOR LOCATION OF ALL RATED WALLS.
3. CHROME ESCUTCHEONS TO BE PROVIDED FOR ALL EXPOSED PENETRATIONS.

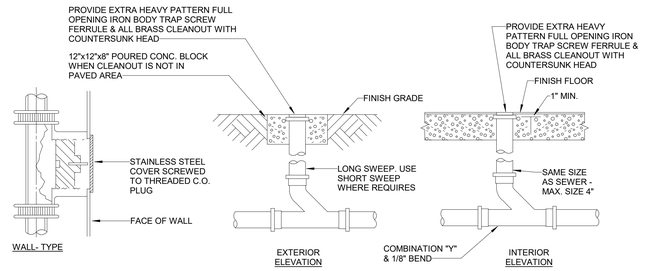
6 TYP. NON-RATED PIPE SLEEVE
Scale: N.T.S.



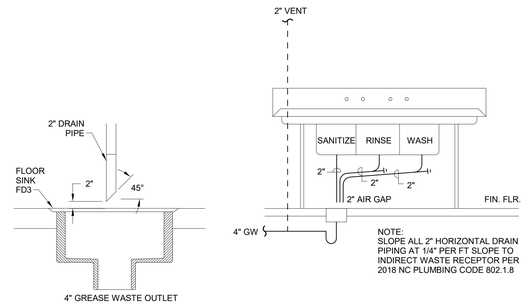
5 CONDENSATE HUB DRAIN DETAIL
Scale: NTS



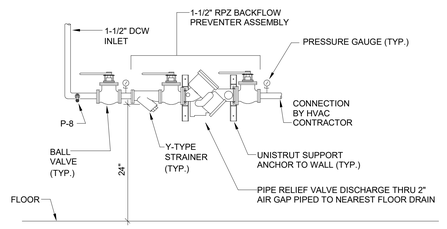
4 UNDERGROUND PIPING SLEEVE DETAIL
Scale: N.T.S.



10 TYPICAL CLEANOUT DETAIL
Scale: N.T.S.



9 INDIRECT WASTE CONNECTION DETAIL
Scale: N.T.S.



8 MECHANICAL MAKEUP WATER BFP DETAIL
Scale: N.T.S.

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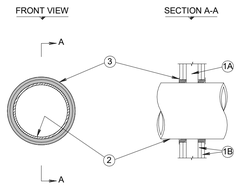
SHEET TITLE
DETAILS

P05.02

Docusign Envelope ID: 3A51D765-FCC0-4B8D-80F8-122B94177F88

U.L. SYSTEM NO. WL1054
METAL PIPE THROUGH 2-HR. GYPSUM WALL
F RATING = 2-HR.
T RATING = 0-HR.



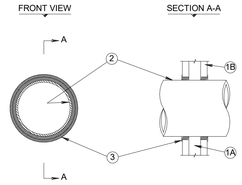
1. WALL ASSEMBLY--THE FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES WALL AND PARTIITION DESIGNS IN THE U.L. FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
   A. STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM. 2 BY 4 IN. LUMBER SPACED 16 IN. O.C. STEEL STUDS TO BE MIN. 2 1/2 IN. WIDE AND SPACED MAX. 24 IN. O.C.
   B. WALLBOARD, GYPSUM* - TWO LAYERS OF 5/8 IN. THICK GYPSUM WALLBOARD, AS SPECIFIED IN INDIVIDUAL WALL AND PARTITION DESIGN. MAX. DIAM. OF OPENING TO BE 12 1/2 IN.
2. THROUGH PENETRANTS - ONE METALLIC PIPE, CONDUIT OR TUBING TO BE INSTALLED WITHIN THE FIRESTOP SYSTEM. AN ANNULAR SPACE OF MIN. 1/4 IN. TO MAX. 1 1/4 IN. IS REQUIRED WITHIN FIRESTOP SYSTEM. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:
   A. STEEL PIPE - NOM. 10 IN. DIAM. (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
   B. CONDUIT - NOM. 4 IN. DIAM. (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR STEEL CONDUIT.
   C. COPPER TUBING - NOM. 4 IN. DIAM. (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
   D. COPPER PIPE - NOM. 4 IN. DIAM. (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
3. FILL, VOID OR CAVITY MATERIAL* - SEALANT - MIN. 1 1/4 IN. THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTH SURFACES OF WALL.

   HILTI CONSTRUCTION CHEMICALS, INC. - FS601 SEALANT

*BEARING THE U.L. CLASSIFICATION MARKING

3 WL1054
Scale: N.T.S.

U.L. SYSTEM NO. WL1052
METAL PIPE THROUGH 1-HR. GYPSUM WALL
F RATING = 1-HR.
T RATING = 0-HR.



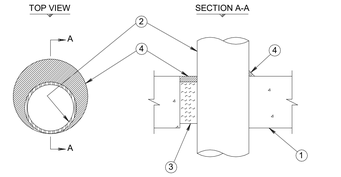
1. WALL ASSEMBLY--THE FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES WALL AND PARTITION DESIGNS IN THE U.L. FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
   A. STUDS--WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM. 2 BY 4 IN. LUMBER SPACED 16 IN. O.C. STEEL STUDS TO BE MIN. 2 1/2 IN. WIDE AND SPACED MAX. 24 IN. O.C.
   B. WALLBOARD, GYPSUM*--ONE LAYER OF 5/8 IN. THICK GYPSUM WALLBOARD, AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. MAX. DIAM. OF OPENING IS 12 IN.
2. THROUGH PENETRANTS-- ONE METALLIC PIPE, CONDUIT OR TUBING TO BE CENTERED WITHIN THE FIRESTOP SYSTEM. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. AN ANNULAR SPACE OF MIN. 1/4 IN. TO MAX. 1 1/4 IN. IS REQUIRED WITHIN FIRESTOP SYSTEM. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:
   A. STEEL PIPE--NOM 10 IN. DIAM. (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
   B. CONDUIT--NOM 4 IN. DIAM. (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR STEEL CONDUIT.
   C. COPPER TUBING--NOM 4 IN. DIAM. (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
   D. COPPER PIPE--NOM 4 IN. DIAM. (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
3. FILL, VOID OR CAVITY MATERIAL*--SEALANT--MIN 5/8 IN. THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTH SURFACES OF WALL.

   HILTI CONSTRUCTION CHEMICALS, INC.--FS601 SEALANT

*BEARING THE U.L. CLASSIFICATION MARKING

2 WL1052
Scale: N.T.S.

U.L. SYSTEM NO. CAJ1149
METAL PIPE THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL
F RATING = 2-HR.
T RATING = 0-HR.

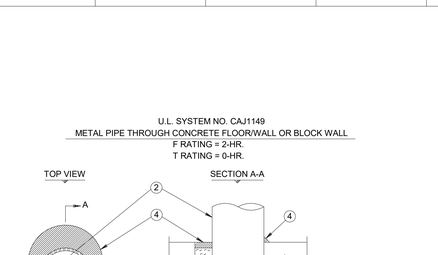


1. FLOOR OR WALL ASSEMBLY--MIN. 4 1/2 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY U.L. CLASSIFIED CONCRETE BLOCKS*. MAX. DIAM. OF OPENING IS 12 IN.
   SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURES.
2. THROUGH PENETRANTS-- ONE METALLIC PIPE, CONDUIT OR TUBING TO BE INSTALLED WITHIN THE FIRESTOP SYSTEM. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE ANNULAR SPACE SHALL BE 0 IN. (POINT CONTACT) TO MAX 1 1/4 IN. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:
   A. STEEL PIPE--NOM 10 IN. DIAM. (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
   B. CONDUIT--NOM 4 IN. DIAM. (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR STEEL CONDUIT.
   C. COPPER TUBING--NOM 4 IN. DIAM. (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
   D. COPPER PIPE--NOM 4 IN. DIAM. (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
3. PACKING MATERIAL--MIN. 3 IN. THICKNESS OF MIN. 4 PCF MINERAL WOOL BATT INSULATION FOR NOM 4 IN. DIAM. (AND SMALLER) PIPES, CONDUTS OR TUBINGS AND A MIN. 4 IN. THICKNESS OF MIN. 4 PCF MINERAL WOOL BATT INSULATION FOR PIPE GREATER THAN NOM. 4 IN. DIAM., FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.
4. FILL, VOID OR CAVITY MATERIAL*--SEALANT--MIN 1/2 IN. THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH THE TOP SURFACE OF FLOOR OF BOTH SURFACES OF WALL. AT THE POINT OF CONTACT LOCATION BETWEEN PIPE AND CONCRETE, A MIN. 1/2 IN. DIAM. BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE CONCRETE/PIPE INTERFACE ON THE TOP SURFACE OF FLOOR AND ON BOTH SURFACES OF WALL.

   HILTI CONSTRUCTION CHEMICALS, INC.--CP601S, CP606, FS601, FS604 OR FS-ONE SEALANT
   (NOTE: L RATINGS APPLY ONLY WHEN FS-ONE SEALANT IS USED).

*BEARING THE U.L. CLASSIFICATION MARKING

1 CAJ1149
Scale: N.T.S.



4 DOMESTIC WATER BACKFLOW PREVENTER ASSEMBLY
Scale: N.T.S.

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919.881.9039
NC License No. P-0809

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION
WAYNE COUNTY PUBLIC SCHOOLS
541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

DKA JOB NUMBER
2401

DEWBERRY NUMBER
50171439

REVISIONS

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PM: BK
Drawn By: SAT
Plot Date: 1/8/2025 2:13:17 PM

DATE ISSUED

BID DOCUMENTS
01/10/2025

SHEET TITLE
DETAILS

P05.03

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CLEANOUT SCHEDULE

WCO	WALL CLEANOUT	FIXTURE: ZURN MODEL ZS-1468-BP, GAS AND WATERTIGHT TAPERED THREADED BRONZE PLUG, SMOOTH STAINLESS STEEL ACCESS COVER WITH SECURING SCREW; INSTALL AT 12" ABOVE FINISH FLOOR; PROVIDE WITH CLEANOUT TEE WHEN INSTALLED IN VERTICAL PIPING. CLEANOUT SIZE SHALL MATCH PIPE SIZE UP TO 4".
FCO	FLOOR CLEANOUT EXTRA HEAVY DUTY	FIXTURE: ZURN MODEL ZS1400-BP, EPOXY-COATED CAST IRON BODY, GAS AND WATERTIGHT TAPERED THREADED BRONZE PLUG, ROUND SCORIATED STAINLESS STEEL EXTRA HEAVY DUTY ADJUSTABLE SECURED TOP. CLEANOUT SIZE SHALL MATCH PIPE SIZE UP TO 4".
GCO	GRADE CLEANOUT EXTRA HEAVY DUTY	FIXTURE: ZURN MODEL Z1400-BP, EPOXY-COATED CAST IRON BODY, GAS AND WATERTIGHT TAPERED THREADED BRONZE PLUG, ROUND SCORIATED CAST IRON EXTRA HEAVY DUTY ADJUSTABLE SECURED TOP. CLEANOUT SIZE SHALL MATCH PIPE SIZE UP TO 4".

GAS-FIRED INSTANTANEOUS WATER HEATER SCHEDULE

MARK	DESCRIPTION	TEMP RISE	RATING (GPM)	INPUT ENERGY	THERMAL EFFICIENCY	ELECTRICAL			SPECIFICATION
						V	PH	A	
GWH-1	GAS-FIRED TANKLESS WATER HEATER	67-DEG-F	5.6	199,000 BTU/H	90 %	120	1	15	NAVIEN MODEL #NPE-240A2, ENERGY STAR CERTIFIED, ASME CONSTRUCTION, WITH BACNET GATEWAY, CONDENSATE NEUTRALIZER KIT, MANIFOLD AIR INTAKE AND FLUE VENT KIT.
GWH-2	GAS-FIRED TANKLESS WATER HEATER	35-DEG-F	11.2	199,000 BTU/H	90 %	120	1	15	NAVIEN MODEL #NPE-240A2, ENERGY STAR CERTIFIED, ASME CONSTRUCTION, WITH BACNET GATEWAY, CONDENSATE NEUTRALIZER KIT, MANIFOLD AIR INTAKE AND FLUE VENT KIT.

NOTES:
1. FURNISH 120V, 20A DISCONNECT TO ELECTRICAL CONTRACTOR FOR INSTALLATION. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
2. PROVIDE COMMUNICATIONS LINK CABLING, CONNECT TO BUILDING AUTOMATION SYSTEM. REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
3. PROVIDE WITH COMMON VENTING COMBUSTION AIR INTAKE AND EXHAUST FLUE PIPING PER MANUFACTURER'S RECOMMENDATIONS AND AS ROUTED ON PLANS.
4. PROVIDE MANIFOLD KIT, MOUNTNG HARDWARE AND CONDENSATE NEUTRALIZATION KIT BY EQUIPMENT MANUFACTURER.

THERMAL EXPANSION TANK SCHEDULE

MARK	DESCRIPTION	TOTAL VOLUME	ACCEPT. VOLUME	WEIGHT	SPECIFICATION
ET-1	THERMAL EXPANSION TANK FOR WH-1 ASME-RATED, DIAPHRAGM	5.0 GAL	3.3 GAL	28.0 LB	WESSELS TTA-SERIES MODEL TTA-12; WELDED STEEL, ASME RATED, FIXED HEAVY-DUTY BUTYL BLADDER.

PUMP SCHEDULE

MARK	DESCRIPTION	DESIGN FLOW RATE	DESIGN HEAD	ELECTRICAL				SPECIFICATION
				HP	V	PH	HZ	
CP-1	INLINE CIRCULATION PUMP 125	9 GPM	18 FT	1/6	120	1	60	BELL AND GOSSETT PR SERIES, ALL BRONZE OR STAINLESS STEEL CONSTRUCTION. PROVIDE WITH AQUASTAT. REFER TO WATER HEATER DETAIL.
CP-2	INLINE CIRCULATION PUMP 140	2 GPM	5 FT	1/12	120	1	60	BELL AND GOSSETT 100 SERIES, ALL BRONZE OR STAINLESS STEEL CONSTRUCTION. PROVIDE WITH AQUASTAT. REFER TO WATER HEATER DETAIL.
SP-1	ELEVATOR SUMP PUMP	50 GPM	20 FT	3/4	120	1	60	LIBERTY #ELV200 WITH CONTROL AND ALARM PANEL. PROVIDE WITH DRY CONTACTS AND CONNECTIONS TO BUILDING AUTOMATION SYSTEMS.

NOTES:
1. DIVISION 22 SHALL PROVIDE SERVICE DISCONNECTS FOR PUMPS, DIVISION 26 SHALL INSTALL. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.

INTERCEPTOR SCHEDULE

MARK	DESCRIPTION	PIPE SIZES	TOTAL VOLUME	DIMENSIONS	SPECIFICATION
GW-1	GREASE INTERCEPTOR	4" INLET 4" OUTLET	2,000 GAL	11'- 0" LENGTH 6' WIDTH 7' DEPTH	OLDCASTLE PRECAST #GT-2000, INTEGRAL CONCRETE BAFFLE AND VENTED WIER WITH 4" INLET AND OUTLET BOOT CONNECTIONS, RAISED MANWAYS WITH MANHOLE H20 RATED.

FOOD SERVICE EQUIPMENT SCHEDULE

ITEM	QTY	DESCRIPTION	DHW SIZE	DCW SIZE	DIRECT WASTE SIZE	INDIRECT WASTE SIZE	GAS SIZE (MBTU/H)	
01	1	COLD STORAGE ASSEMBLY				3" FS		REMARKS
07	1	WORKTABLE WITH PREP SINK	1/2" (140)	1/2"		4" FS		PROVIDE TMV SET AT 125-DEG-F
08	4	HAND SINK, WALL MOUNT	1/2"	1/2"	2"			
09	1	TWO-COMPARTMENT PREP SINK	1/2 (140)	1/2"		4" FS		PROVIDE TMV SET AT 125-DEG-F
20	1	UTILITY DISTRIBUTION SYSTEM	3/4" (140)	3/4"				
21A	1	COMBI OVEN, GAS		2@ 1/2"		3" FS		
21B	1	COMBI OVEN, GAS		2@ 1/2"		3" FS		
22	2	CONVECTION OVEN, GAS		2@ 1/2"		3" FS	2@ 3/4" (100 MBH)	
23	1	CONVECTION STEAMER, GAS		2@ 1/2"		3" FS	2@ 1-1/4" (64 MBH)	
24	1	TILT SKILLET, GAS	1/2" (140)	1/2"		3" FS	3/4" (125 MBH)	TO FLOOR TROUGH ITEM #14
25	1	FLOOR TROUGH			4"			
28	1	ICE MAKER, CUBE STYLE		1/2"		3" FS		
28.1	1	ICE BIN		1/2"		3" FS		
29	1	THREE-COMPARTMENT SINK	2@ 1/2" (140)	2@ 1/2"		4" FS		
33	2	HOT SERVING COUNTER, DROP-IN				3" FS		
34	2	COLD SERVING COUNTER, DROP-IN				3"FS		

PLUMBING FOOD SERVICE EQUIPMENT NOTES:
1. THE PLUMBING CONTRACTOR SHALL COORDINATE THE FINAL SIZES, QUANTITIES, LOCATIONS, AND ROUGH-IN HEIGHTS OF ALL FOOD SERVICE EQUIPMENT PROVIDED BY THE FOOD SERVICE EQUIPMENT VENDOR PRIOR TO INSTALLATION OF PIPING WITHIN THE FOOD SERVICE SPACES. THIS INFORMATION SHALL BE OBTAINED BY THE PLUMBING CONTRACTOR FROM THE FINAL APPROVED FOOD SERVICE EQUIPMENT SUBMITTALS AND SHOP DRAWINGS.
2. THE PLUMBING CONTRACTOR SHALL PROVIDE ALL FINAL PLUMBING CONNECTIONS FROM PLUMBING SYSTEMS TO FOOD SERVICE EQUIPMENT. FINAL INSTALLATION SHALL INCLUDE ALL ACCESSORIES PROVIDED WITH FOOD SERVICE EQUIPMENT SUCH AS: WATER FILTERS, QUICK CONNECT FITTINGS, ETC.
3. WHERE ANY FOOD SERVICE EQUIPMENT HAS NOT BEEN EQUIPPED WITH AN INTEGRAL BACKFLOW PREVENTION DEVICE OR HAS NOT BEEN PROVIDED WITH A BACKFLOW PREVENTION DEVICE BY THE FOOD SERVICE EQUIPMENT VENDOR, AN APPROPRIATE BACKFLOW PREVENTION DEVICE SHALL BE PROVIDED BY THE PLUMBING CONTRACTOR AS REQUIRED BY THE NORTH CAROLINA PLUMBING CODE.
4. THE PLUMBING CONTRACTOR SHALL PROVIDE ALL INDIRECT WASTE PIPING ASSOCIATED WITH FOOD SERVICE EQUIPMENT TO WASTE RECEPTORS INDICATED ON THE PLUMBING PLANS. FINAL INSTALLATION SHALL INCLUDE ALL ACCESSORIES PROVIDED WITH FOOD EQUIPMENT SUCH AS: LEVER DRAINS, VALVES, FLOW CONTROL FITTINGS, ETC.
5. PROVIDE FIXTURE WITH A POINT-OF-USE THERMOSTATIC MIXING VALVE. BASIS-OF-DESIGN: LEONARD MODEL 170-LF-CP-BRKT; ASSE 1070 COMPLIANT, LEAD-FREE, CHROME-PLATED BRONZE, THERMOSTATIC, WITH WALL BRACKET. MOUNT MIXING VALVE ON WALL BENEATH FIXTURE. WHERE AN APRON OR SHROUD IS PROVIDED, COORDINATE THE INSTALLATION WITH SUCH A SHROUD SO THAT THE MIXING VALVE IS CONCEALED WITHIN THE APRON OR SHROUD ASSEMBLY.

Tankless Water Heater Sizing Calculator

Developed by the Plan Review Unit of the Environmental Health Section
NC Division of Public Health

Enter the quantity of each piece of equipment listed below.
For other equipment enter the description and gallon per minute (GPM) value.
Find dishmachine GPM on the "Dishmachine Specs" sheet below or on the manufacturer's spec sheet

Establishment Name:	Rosewood		
Address:			
Equipment	**Quantity**		**GPM Calculated**
Handwashing sink	5	.5 GPM each	2.5
Warewashing sink	1	2 GPM each	2
Prep sink	2	1 GPM each	2
Service sink	2	1 GPM each	2
Other equipment	**Description**	**GPM value**	
Other equipment	Skillet	0.5	0.5
Other equipment			0
Other equipment			0
Dishmachine Brand	**Dishmachine Model**	**Dishmachine GPM**	
			0
Pre-rinse Quantity	1	2 GPM each	2
Total Gallons per Minute (GPM) Needed:			11

PLUMBING FIXTURE SCHEDULE

ZF	DESCRIPTION	HW	CW	WASTE	VENT	REMARKS
FD1	FLOOR DRAIN (FINISHED AREAS)			3"	2"	ZURN MODEL #ZN415-P, PROVIDE WITH DEEP SEAL P-TRAP AND TYPE "S" SQUARE STRAINER AND PROSET TG-33 TRAPGUARD INSERT TO PREVENT SEWER GASAS FROM ESCAPING DRAIN
FD2	FLOOR DRAIN (MECHANICAL AREAS)			3"	2"	ZURN MODEL #ZN415-P. PROVIDE WITH DEEP SEAL P-TRAP AND TYPE "I" SQUARE STRAINER WITH LIP AND PROSET TG-33 TRAPGUARD INSERT TO PREVENT SEWER GASAS FROM ESCAPING DRAIN
FD3	FLOOR SINK			3"		ZURN MODEL #Z1902, 12"X12"X10" DEPTH, BOTTOM OUTLET WITH DEEP SEAL P-TRAP, INTEGRAL STAINLESS STEEL DOME STRAINER, AND REMOVABLE HALF GRATE. MOUNT TOP OF LIP FLUSH WITH FLOOR.
P1	WATER CLOSET (STANDARD) (FLOOR MOUNTED)		1"	4"	2"	FIXTURE: AMERICAN STANDARD #2234.001 MADERA, VITREOUS CHNA, 1.6 GPM TOP SPUD, 15" HEIGHT ELONGATED BOWL VALVE: SLOAN #111, POLISHED CHROME, 1.6 GPM DIAPHRAGM TYPE SEAT: CHURCH NO. 9500NSSC INSTITUTIONAL GRADE WATER CLOSET SEAT WITH SELF-SUSTAINING CHECK HINGES.
P1A	WATER CLOSET (ADA) (FLOOR MOUNTED)		1"	4"	2"	FIXTURE: AMERICAN STANDARD #3043.001 MADERA, VITREOUS CHINA, 1.6 GPM TOP SPUD, 16 1/2" HEIGHT ELONGATED BOWL VALVE: SLOAN #111, POLISHED CHROME, 1.6 GPM DIAPHRAGM TYPE SEAT: CHURCH NO. 9500NSSC INSTITUTIONAL GRADE WATER CLOSET SEAT WITH SELF-SUSTAINING CHECK HINGES. MOUNT FLUSH VALVE HANDLE ON WIDE SIDE OF STALL
P1B	WATER CLOSET (STANDARD HEIGHT) (WALL MOUNTED)		1"	4"	2"	FIXTURE: AMERICAN STANDARD #2257.101 AFWALL MILENNIUM, VITEROUS CHINA, 1.6 GPM TOP SPUD, 16 1/2" HEIGHT ELONGATED BOWL VALVE: SLOAN #111, POLISHED CHROME, 1.6 GPM DIAPHRAGM TYPE SEAT: CHURCH NO. 9500NSSC INSTITUTIONAL GRADE WATER CLOSET SEAT WITH SELF-SUSTAINING CHECK HINGES. CARRIER: WADE 330 NO-HUB VERTICAL, ADJUSTABLE. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHT
P1C	WATER CLOSET (ADA) (WALL MOUNTED)		1"	4"	2"	FIXTURE: AMERICAN STANDARD #2257.101 AFWALL MILENNIUM, VITEROUS CHINA, 1.6 GPM TOP SPUD, 16 1/2" HEIGHT ELONGATED BOWL VALVE: SLOAN #111, POLISHED CHROME, 1.6 GPM DIAPHRAGM TYPE SEAT: CHURCH NO. 9500NSSC INSTITUTIONAL GRADE WATER CLOSET SEAT WITH SELF-SUSTAINING CHECK HINGES. CARRIER: WADE 330 NO-HUB VERTICAL, ADJUSTABLE. MOUNT FLUSH VALVE HANDLE ON WIDE SIDE OF STALL. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHT
P1D	WATER CLOSET (ADA) (FLOOR MOUNTED)		1"	4"	2"	FIXTURE: AMERICAN STANDARD #3248.001 MADERA, VITREOUS CHINA, 1.6 GPM TOP SPUD, 16 1/2" HEIGHT ELONGATED BOWL, SLOTTED RIM FOR BEDPAN. VALVE: SLOAN #BPW 1000-1.6, POLISHED CHROME, 1.6 GPM DIAPHRAGM TYPE WITH BEDPAN WASHER. SEAT: CHURCH NO. 9500NSSC INSTITUTIONAL GRADE WATER CLOSET SEAT WITH SELF-SUSTAINING CHECK HINGES. MOUNT FLUSH VALVE HANDLE ON WIDE SIDE OF STALL
P2	URINAL (STANDARD HEIGHT)		3/4"	2"	1 1/2"	FIXTURE: AMERICAN STANDARD #6590.001 WASHBROOK, VITREOUS CHINA, 1.0 GPF, ELONGATED 14' RIM. VALVE: SLOAN #186, POLISHED CHROME, 1.0 GPF, DIAPHRAGM TYPE, 3/4" TOP SPUD REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHT
P2A	URINAL (ADA)		3/4"	2"	1 1/2"	FIXTURE: AMERICAN STANDARD #6590.001 WASHBROOK, VITREOUS CHINA, 1.0 GPF, ELONGATED 14' RIM. VALVE: SLOAN #186, POLISHED CHROME, 1.0 GPF, DIAPHRAGM TYPE, 3/4" TOP SPUD REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHT
P3	LAVATORY (ADA)	1/2"	1/2"	2"	1 1/2"	BOWL: AMERICAN STANDARD #4869.004 "REGLYN", WHITE ENAMELED CAST IRON FAUCET: DELTA #86T153, CHROME PLATED,VANDAL PROOF, 0.5 GPM AERATED METERING FAUCET TRIM: MCGUIRE 8902 P-TRAP, MCGUIRE 167 SUPPLIES WITH LOOSE KEY STOPS, MCGUIRE 155A STRAINER, CHROME PLATED BRASS TUBING TO WALL WITH ESCUTCHEON TMV: SYMMONS MODEL 7-225-CK-MS MIXING VALVE. SET SUPPLY TEMPERATURE AT 110 DEG F INSUL. COVER: MCGUIRE PW2000 INSULATION KIT FOR P-TRAP AND SUPPLIES REFER TO ARCHITECTURAL DRAWINGS FOR ADA MOUNTING REQUIREMENTS
P4	WATER COOLER (ADA)		1/2"	2"	1 1/2"	FIXTURE: ELKAY #LVRCGRNTL8WSK, STAINLESS STEEL, BUBBLER BUTTON, VANDAL RESISTANT COOLER AND BOTTLE FILLER, ADA COMPLIANT. TRIM: MCGUIRE 8912C/8902C P-TRAP, MCGUIRE 166 SUPPLIES REFER TO ARCHITECTURAL DRAWINGS FOR ADA MOUNTING REQUIREMENTS
P4A	WATER COOLER W/BOTTLE FILLER (ADA)		1/2"	2"	2"	FIXTURE: ELKAY #LVRCGRNTL8WSK; BI-LEVEL STAINLESS STEEL UNIT WITH BOTTLE-FILLING STATION, SURFACES UTILIZING ANTIMICROBIAL COMPOUNDS, PUSH BAR ACTIVATION WITH INFRARED SENSOR FOR BOTTLE-FILLING STATION, FLEXIBLE SAFETY SPOUT GUARD; 8.0 GPH OF 50 °F WATER CHILLING CAPACITY
P5	MOP SINK	1/2"	1/2"	3"	2"	FIXTURE: FIAT #MSB3636 36X36X10 MOP SINK BASIN WITH STAINLESS STEEL DRAIN W/ STRAINER FACUET: FIAT #830AA SERVICE FAUCET, WITH INTEGRAL STOPS, ADJUSTABLE WALLL BRACE, PAIL HOOK, AND 3/4" HOSE THREAD. ACCESSORIES: FIAT #832AA HOSE AND HOSE BRACKET, FIAT #889CC MOP HANGER, FIAT #MSG3624 STAINLESS STEEL WALL GUARD, FIAT #E88-AA STAINLESS STEEL BUMPER GUARD
P5A	UTILITY SINK	1/2"	1/2"	2"	2"	FIXTURE: FLORESTONE MODEL FL-1, FIBERGLASS SINK WITH (4) WHITE BAKED ENAMELED LEGS. FAUCET: FLORESTONE MODEL A-1 FAUCET SUPPLIES: MCGUIRE 167 WITH LOOSE TEE KEYS, CHROME PLATED BRASS TUBING TO WALL ESCUTCHEON P-TRAP: MCGUIRE 8902 STRAINER: FURNISHED WITH SINK BASIN
P6	SCIENCE SINK (ADA)	1/2"	1/2"	2"	2"	FIXTURE: FURNISHED WITH CASEWORK SUPPLIER. FAUCET: WATERSAVER #L414VB, 4-ARM HANDLES, DECK-MOUNTED, SINGLE HOLE, CHROME PLATED. INTEGRAL, 6" TUBULAR BRASS ARC SPOUT WITH VACUUM BREAKER. 1.5 GPM PRESSURE COMPENSATING, NON-AERATING, SERRATED HOSE END OUTLET. NEUTRALIZATION TANK STRIEM "LAB RAT" MODEL LB-2-ADA; ADA COMPLIANT, POLYETHYLENE, 2 GALLON, BUILT-IN SEWER GAS TRAP. TRIM: MCGUIRE 167 SUPPLIES. INSTALL ALL FAUCETS FURNISHED WITH CASEWORK. ALL PIPING BETWEEN SINK AND DILUTION TRAP SHALL BE ACID RESISTANT POLYPROPYLENE WITH MECHANICAL JOINTS. MOUNT DILUTION TRAP IN CASEWORK UNDER SINK.
P6A	SINK (ADA)	1/2"	1/2"	2"	2"	FIXTURE: ELKAY #LRAD191965PD, STAINLESS STEEL 19-1/2" X 19" X 6-1/2" SINGLE BOWL DROP-IN ADA SINK WITH PERFECT DRAIN, 18 GAUGE. FAUCET: DELTA #100-DST, SINGLE LEVER, DECK-MOUNTED WITH 8" FIXED CENTERS AND SIDE SPRAY, CHROME PLATED. INTEGRAL, TUBULAR BRASS SPOUT, 8" CENTER-TO-CENTER. 1.8 GPM AERATOR ON OUTLET TRIM: MCGUIRE 8912C/8902C P-TRAP, MCGUIRE 167 SUPPLIES WITH LOOSE KEY STOPS, MCGUIRE 155A STRAINER, CHROME PLATED BRASS TUBING TO WALL WITH ESCUTCHEON TMV: SYMMONS MODEL 7-225-CK-MS MIXING VALVE. SET SUPPLY TEMP AT 110 DEG. F INSUL. COVER: MCGUIRE PW2000 INSULATION KIT FOR P-TRAP AND SUPPLIES REFER TO ARCHITECTURAL DRAWINGS FOR ADA MOUNTING REQUIREMENTS
P6B	ART ROOM SINK (STANDARD)	1/2"	1/2"	2"	2"	FIXTURE: ELKAY #LRAD252110, STAINLESS STEEL 25" X 21-1/4" X 10" SINGLE BOWL DROP-IN ADA SINK, 18 GAUGE. FAUCET: DELTA 400-DST, SINGLE LEVER, DECK-MOUNTED, SINGLE HOLE, CHROME PLATED. INTEGRAL, TUBULAR BRASS GOOSENECK SPOUT. 1.5 GPM PRESSURE COMPENSATING, NON-AERATING, LAMINAR OUTLET, AND SPRAYER. TRIM: MCGUIRE 8902 P-TRAP, MCGUIRE 167 SUPPLIES WITH LOOSE KEY STOPS, MCGUIRE 151 STRAINER, CHROME PLATED BRASS TUBING TO WALL WITH ESCUTCHEON PROVIDE WITH J.R. SMITH 8710 SOLIDS INTERCEPTOR, ON-FLOOR TYPE.
P6C	ART ROOM SINK (ADA)	1/2"	1/2"	2"	2"	FIXTURE: ELKAY #LRAD252155, STAINLESS STEEL 25" X 21-1/4" X 5-1/2" SINGLE BOWL DROP-IN ADA SINK, 18 GAUGE. FAUCET: DELTA 400-DST, SINGLE LEVER, DECK-MOUNTED, SINGLE HOLE, CHROME PLATED. INTEGRAL, TUBULAR BRASS GOOSENECK SPOUT. 1.5 GPM PRESSURE COMPENSATING, NON-AERATING, LAMINAR OUTLET, AND SPRAYER. TRIM: MCGUIRE 8902 P-TRAP, MCGUIRE 167 SUPPLIES WITH LOOSE KEY STOPS, MCGUIRE 151 STRAINER, CHROME PLATED BRASS TUBING TO WALL WITH ESCUTCHEON PROVIDE WITH J.R. SMITH 8710 SOLIDS INTERCEPTOR, ON-FLOOR TYPE.
P6E	EC KITCHEN SINK (2-COMP)	1/2"	1/2"	2"	2"	FIXTURE: ELKAY #LRAD331965PD, STAINLESS STEEL 33" X 19" X 6-1/2" DOUBLE BOWL DROP-IN ADA SINK WITH PERFECT DRAIN, 18 GAUGE. FAUCET: DELTA #400-DST, SINGLE LEVER, DECK-MOUNTED WITH 8" FIXED CENTERS AND SIDE SPRAY, CHROME PLATED. INTEGRAL, TUBULAR BRASS SPOUT, 8" CENTER-TO-CENTER. 1.8 GPM AERATOR ON OUTLET TRIM: MCGUIRE 8902 P-TRAP, MCGUIRE 167 SUPPLIES WITH LOOSE KEY STOPS, MCGUIRE 151 STRAINERS, CONTINUOUS WASTE, CHROME PLATED BRASS TUBING TO WALL WITH ESCUTCHEON TMV: SYMMONS MODEL 7-225-CK-MS MIXING VALVE. SET SUPPLY TEMP AT 110 DEG. F INSUL. COVER: MCGUIRE PW2000 INSULATION KIT FOR P-TRAP AND SUPPLIES REFER TO ARCHITECTURAL DRAWINGS FOR ADA MOUNTING REQUIREMENTS
P7	WALL HYDRANT		3/4"			WOODFORD MODEL 65P-3/4; CHROME FINISH, WITH LOOSE TEE KEY; ASSE 1019 APPROVED, ANTI-SIPHON VACUUM BREAKER, 3/4" MALE HOSE THREAD OUTLET. MOUNTING HEIGHT: 18" ABOVE FINISHED GRADE.
P7A	EXTERIOR WALL HYDRANT (CAN WASH)		3/4"			FIXTURE: FIELD BUILT BASIN FAUCET: WOODFORD HCB67-CH, TWIN TEMP. RECESSED, CHROME PLATED. PROVIDE WITH TEE OPERATION; AUTOMATIC DRAINING; MOUNT AT 48" AFF TO CENTERLINE.
P8	INTERIOR HOSE BIBB (FINISHED AREAS)		1/2"			WOODFORD MODEL B24P-1/2; RECESSED WALL BOX, CHROME-PLATED FINISH, OPTIONAL METAL WHEEL HANDLE; ASSE 1011 APPROVED, ANTI-SIPHON, VACUUM BREAKER, 3/4" MALE HOSE THREAD OUTLET. MOUNTING HEIGHT: 12" ABOVE FINISHED FLOOR.
P8A	INTERIOR HOSE BIBB (MECHANICAL ROOMS)		3/4"			WOODFORD MODEL 24P-1/2 -ANTI-SIPHON WALL FAUCET WITH WHEEL HANDLE. MOUNTING HEIGHT: 12" ABOVE FINISHED FLOOR
P9	SHOWER VALVE (ADA)	1/2"	1/2"	2"	2"	FIXTURE: SYMMONS 96-500-B30-X-V-L, SHOWER VALVE WITH SHOWER HEAD AND HAND HELD SHOWER. PROVIDE WITH DIVERTER VALVE, INTEGRAL SERVICE STOPS, IN-LINE VACCUM BREAKER, 30" SLIDE BAR, AND LEVER HANDLE
P10	ICE MAKER BOX		1/2"			PRECISION PLUMBING PRODUCTS MODEL MM-500; 5-3/4"X5-1/4"X2-1/2" D; RECESSED; 1/4 TURN BRASS BALL VALVE. PROVIDE BUILT-IN WATER HAMMER ARRESTOR (ASSE 1010); MOUNT AT 12" AFF TO CENTERLINE.
P11	WASHER BOX	1/2"	1/2"	2"	2"	PRECISION PLUMBING PRODUCTS MODEL MM-500-PLBFR; 8-3/4"X7-1/16"X3-5/16" D. PROVIDE BUILT-IN WATER HAMMER ARRESTOR (ASSE 1010); MOUNT AT 48" AFF TO CENTERLINE
P12	CONDENSATE WALL BOX			2"		SIOUX CHIEF OX BOX 696-3 WITH 696-CF INDIRECT DRAINAGE FUNNEL. PROVIDE WITH LOUVERED FACE PLATE.
P13	COMBINATION EMERGENCY SHOWER AND EYEWASH UNIT	1 1/4"				BRADLEY MODEL S19314; PROVIDE STAINLESS STEEL BOWL WITH DUST COVER AND FOOT PEDAL OPERATOR; PROVIDE S19-2150 THERMOSTATIC MIXING VALVE ABOVE CEILING AND SET TO DELIVER 85 DEG F. TEMPERED WATER TO UNIT.

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PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

DKA JOB NUMBER
2401

DEWBERRY NUMBER
50171439

REVISIONS

1	Revision 1	Date 1

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SHEET TITLE
SCHEDULES

P06.01

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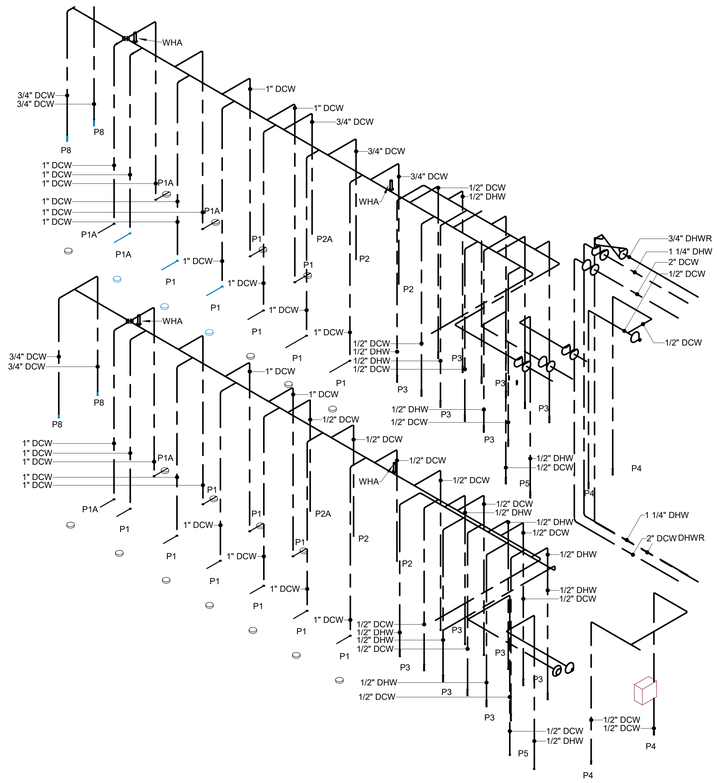

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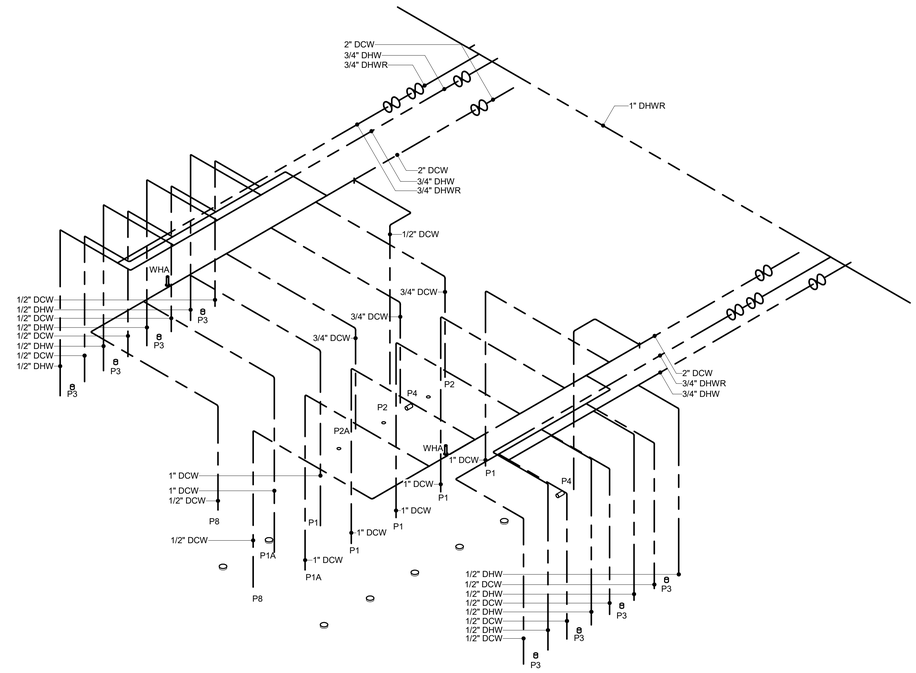

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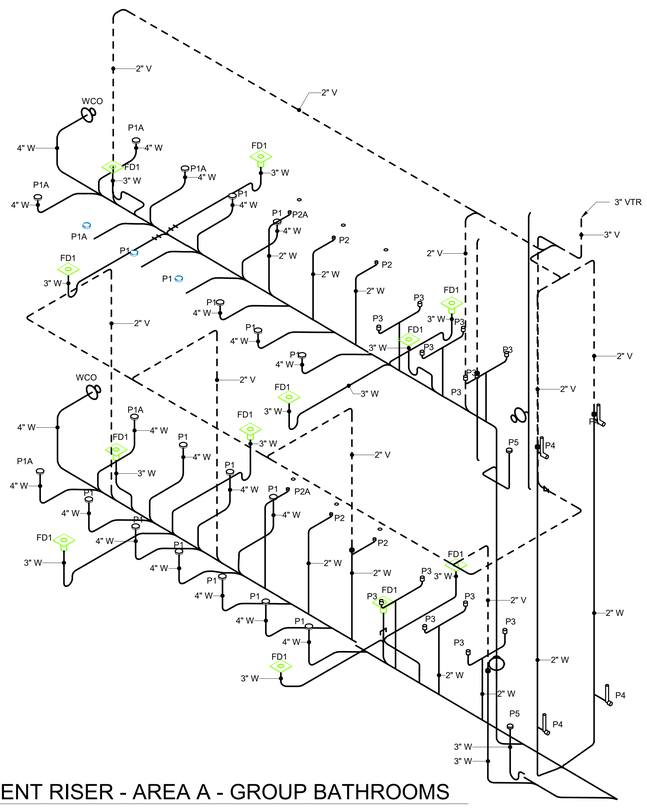
Scale: N.T.S.



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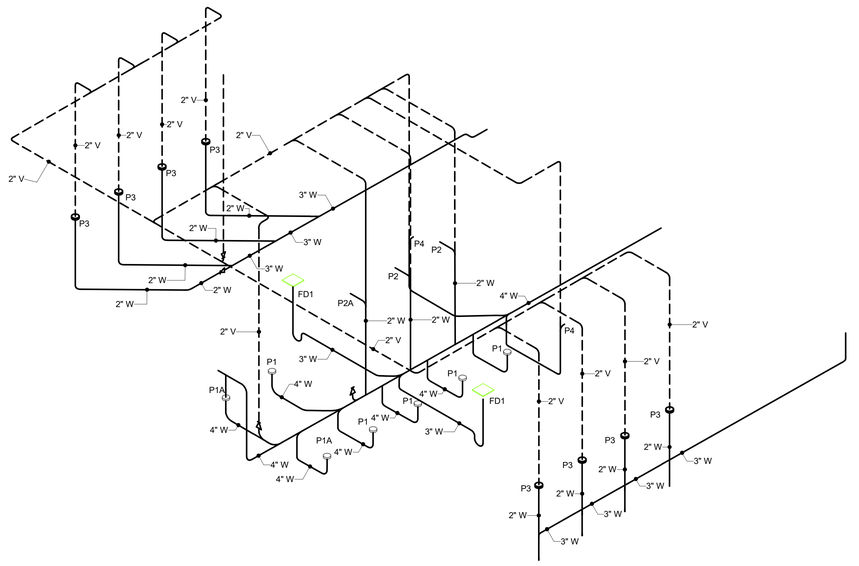
Scale: N.T.S.



4 WASTE AND VENT RISER - GROUP BATHROOMS - AREA D
Scale: N.T.S.

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PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

1/10/2025

DKA JOB NUMBER
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SHEET TITLE
RISER DIAGRAMS

P09.01

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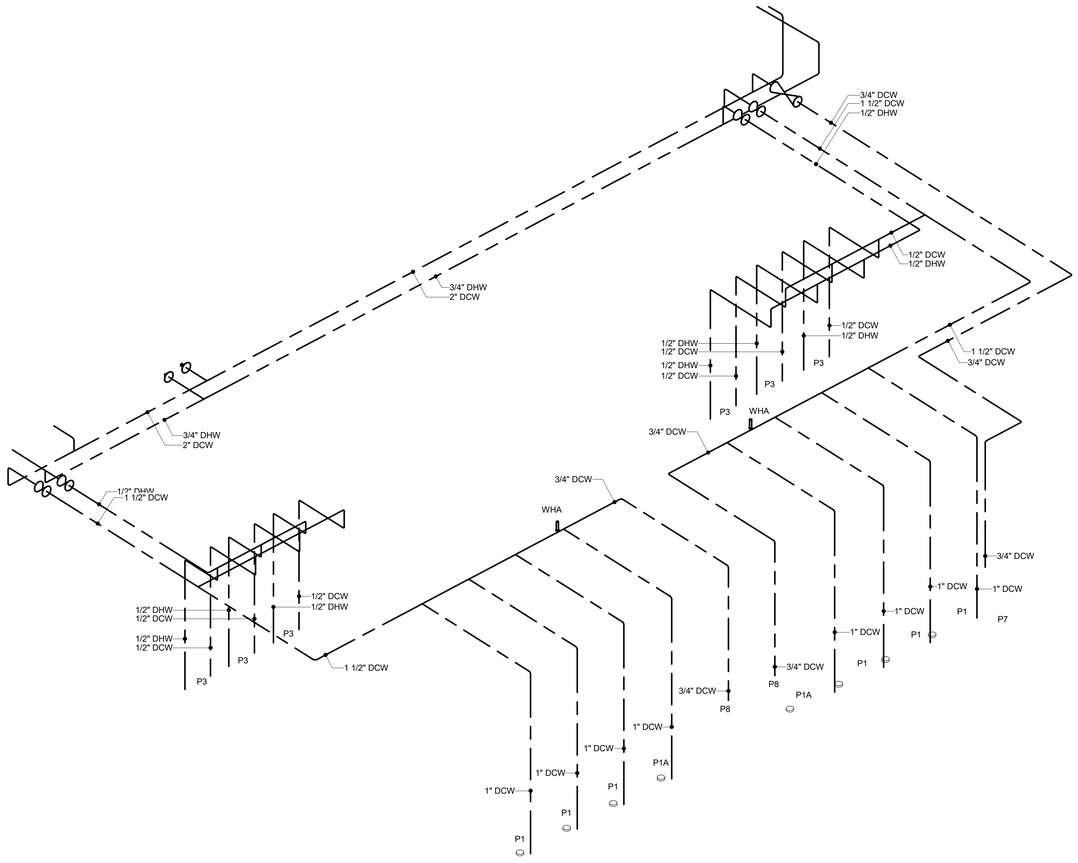

1 DOMESTIC WATER RISER - AREA D - VISITORS LOCKER ROOM

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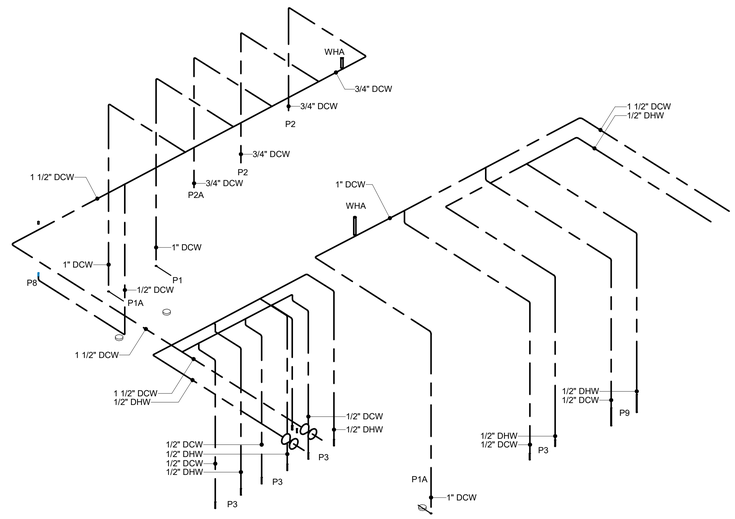

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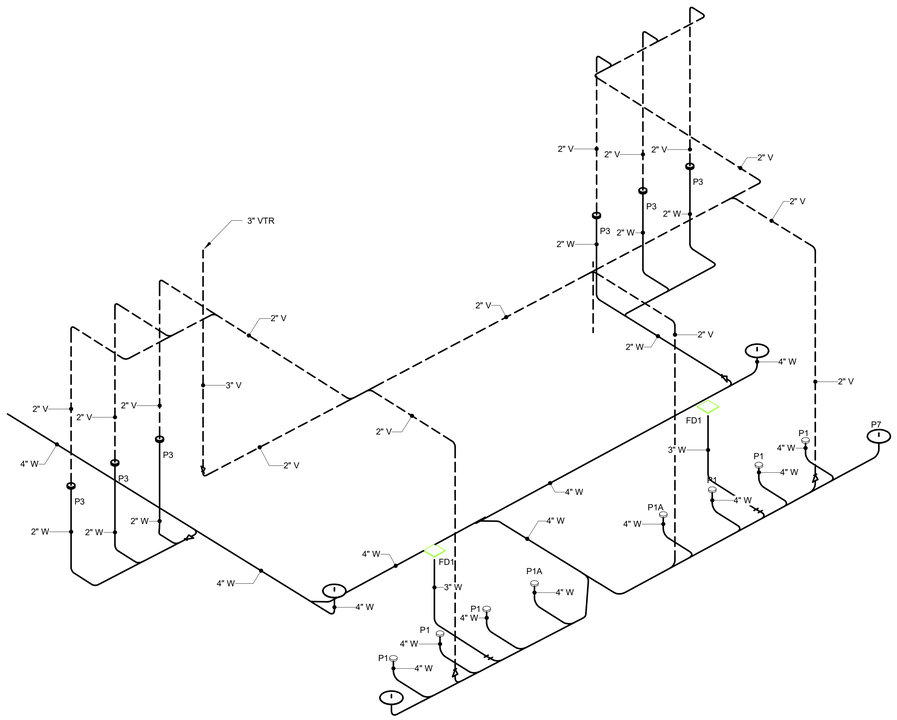
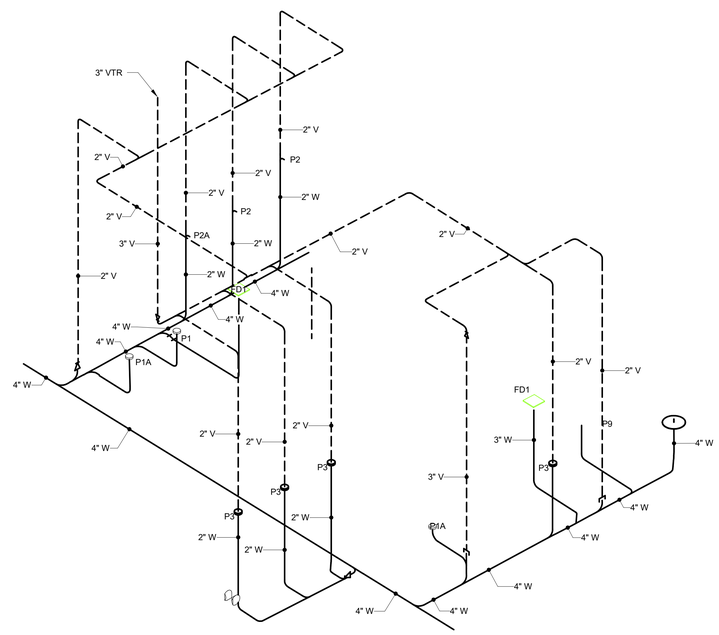


2 SANITARY WASTE & VENT RISER - AREA D - VISITORS LOCKER ROOM

Scale: N.T.S.



4 SANITARY WASTE & VENT RISER - AREA D - BOYS LOCKER ROOM

Scale: N.T.S.

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WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039771 CHRISTOPHER C. HOY REGISTERED

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BID DOCUMENTS
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SHEET TITLE

RISER DIAGRAMS

P09.02

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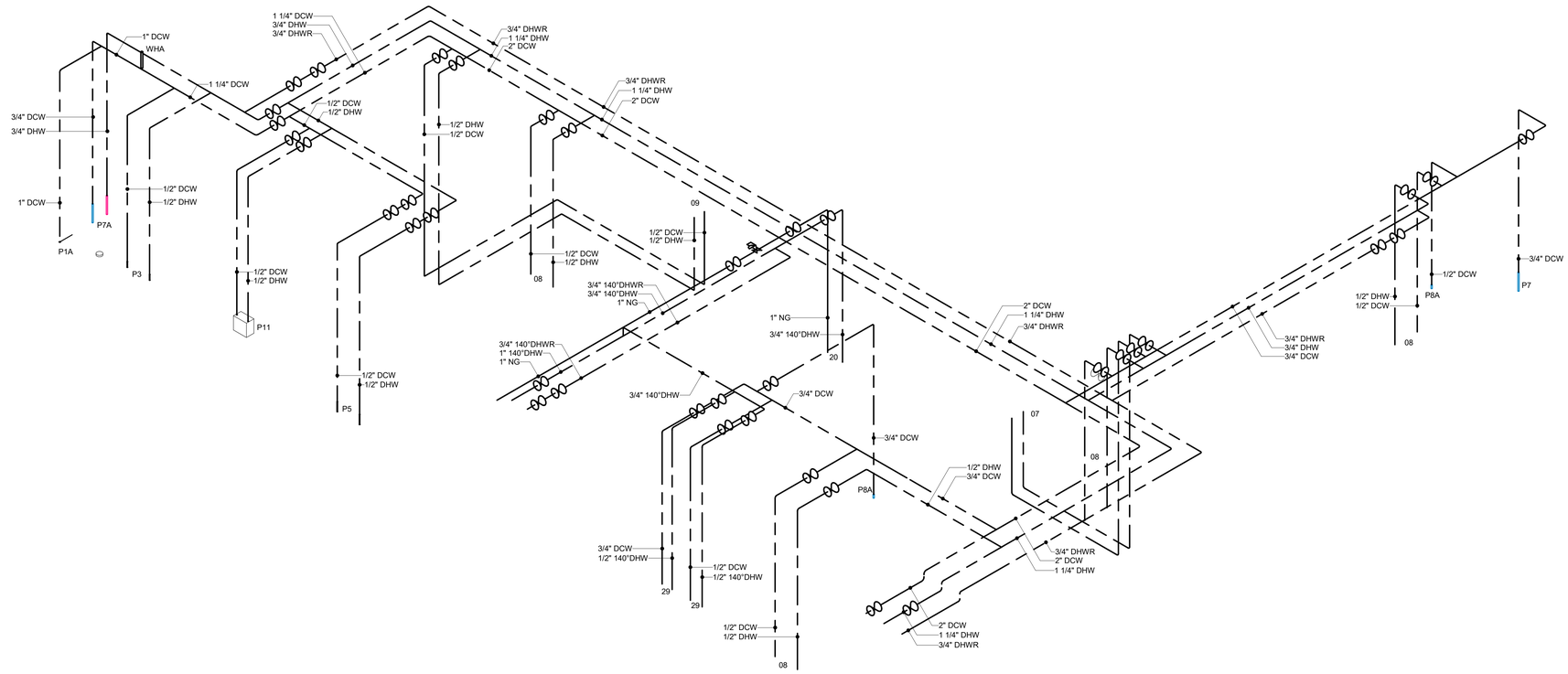

1 DOMESTIC WATER RISER - KITCHEN PLANS

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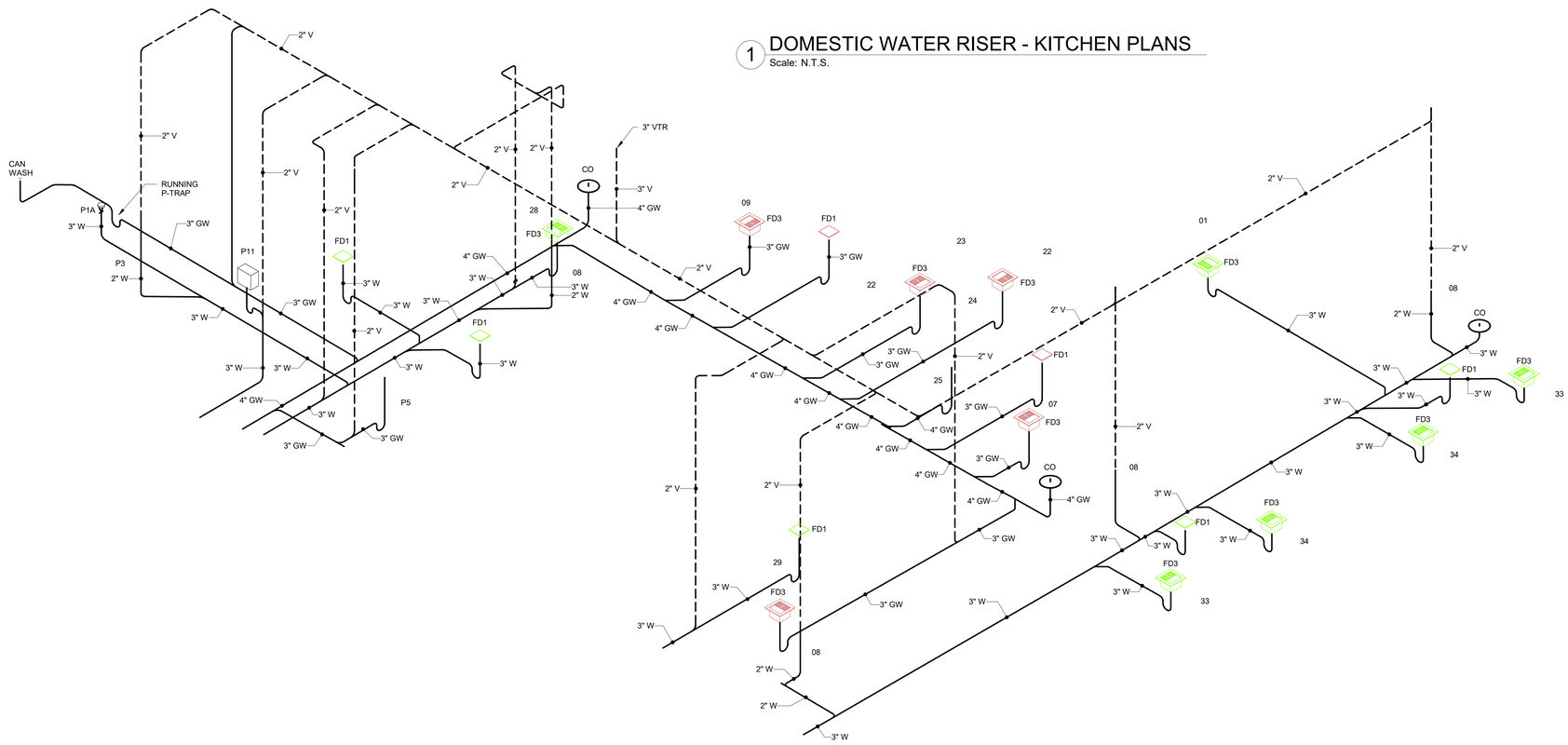
2" V
2" V
2" V
2" V
2" V
2" V
2" V
CAN WASH
RUNNING P-TRAP
P1A
3" W
3" GW
P3
2" W
P11
3" W
3" GW
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HVAC SYMBOLS

SYMBOL	DESCRIPTION
	GRILLES
CEILING MTD / WALL MTD	
	SUPPLY AIR DEVICE
	RETURN AIR DEVICE
	EXHAUST AIR DEVICE
	LINEAR SLOT AIR DEVICE
	LINEAR SLOT AIR DEVICE WITH INACTIVE SECTIONS LENGTH AS INDICATED ON PLANS
X / 500	AIR DEVICE TAG "TYPE" / "CFM" (SEE SCHEDULE)
	ECCENTRIC TRANSITION
	CONCENTRIC TRANSITION
	RADIUS OFFSET (IN THE VERTICAL)
	MITERED OFFSET (IN THE VERTICAL)
	RADIUS ELBOW
	MITERED ELBOW WITH TURNING VANES
RISE / DROP	SUPPLY DUCT
RISE / DROP	RETURN AIR DUCT
RISE / DROP	EXHAUST AIR DUCT
	FLEX DUCT
	DEMOLITION DUCTWORK OR EQUIPMENT.
	EXISTING DUCTWORK OR EQUIPMENT.
24x24	NEW OR FUTURE DUCTWORK OR EQUIPMENT
24ø	ROUND DUCT RISE/DROP
24/18ø	OVAL DUCT RISE/DROP
	RECTANGULAR TAKE-OFF
	ROUND TAKE-OFF
BOTTOM / TOP / SIDE	ACCESS DOORS

HVAC SYMBOLS CONTINUED

SYMBOL	DESCRIPTION
	DAMPERS
AD	AUTOMATIC DAMPER
MD	MANUAL DAMPER
BD	BACKDRAFT DAMPER
FD	FIRE DAMPER
F/S	FIRE/SMOKE DAMPER
SD	SMOKE DAMPER

ABBREVIATIONS
"AD" = AUTOMATIC/MOTORIZED
"MD" = MANUAL VOLUME
"BD" = BACKDRAFT
"FD" = FIRE
"F/S" = FIRE SMOKE
"SD" = SMOKE

	MANUAL DAMPER
	GRAVITY BACKDRAFT DAMPER
S	MOTORIZED PARALLEL BLADE DAMPER
S	MOTORIZED OPPOSED BLADE DAMPER
	CONTROLS
T	THERMOSTAT
T	TEMPERATURE SENSOR
T FP	S.S. FLAT PLATE TEMPERATURE SENSOR
T FPO	S.S. FLAT PLATE TEMPERATURE SENSOR W/ OVERRIDE
H	HUMIDITY SENSOR
CO	CARBON MONOXIDE SENSOR
CO2	CARBON DIOXIDE SENSOR
	DUCT MOUNTED SMOKE DETECTOR
T H	DUCT MOUNTED TEMPERATURE/HUMIDITY SENSOR
	OCCUPANCY SENSOR
	EMERGENCY POWER OFF SWITCH (E-STOP)
$ M	MANUAL MOTOR STARTER, FRACTIONAL HORSEPOWER
	VARIABLE FREQUENCY DRIVE (VFD)
	DISCONNECT SWITCH

MECHANICAL PIPING SYSTEMS

SYMBOL	
AV	ATMOSPHERIC VENT
CD	CONDENSATE DRAIN
CF	CHEMICAL FEED
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
D	DRAIN
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
MU	MAKEUP WATER
NG	NATURAL GAS
RF	REFRIGERANT

MECHANICAL PIPING SYMBOLS

SYMBOL	DESCRIPTION
	BALL VALVE
	STOP VALVE
	3-WAY VALVE
AM	BALANCING VALVE AUTOMATIC
MB	BALANCING VALVE MANUAL
	BACKWATER VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	CONTROL VALVE
	3-WAY CONTROL VALVE
	GATE VALVE
	GLOBE VALVE
	OSY VALVE
	PRESSURE REGULATING VALVE
	PIPE TURN UP
	PIPE TURN DOWN
	PIPE BOTTOM TAKE OFF
	PIPE TOP TAKE OFF
	PIPE CAP OR PLUG
	UNION
	WYE STRAINER

ABBREVIATIONS - MECHANICAL

THIS IS A MASTER ABBREVIATIONS LIST. SOME ABBREVIATIONS MAY NOT APPLY TO THIS PROJECT.

(D)	DEMOLISH
(E)	EXISTING
(R)	REMOVE
AC	AIR CONDITIONING
AD	ACCESS DOOR
ADJ	ADJUSTABLE
AF	AIRFLOW
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AI	ANALOG INPUT
AO	ANALOG OUTPUT
ARCH	ARCHITECTURAL
AS	AIR SEPARATOR
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATING, AND AIR-CONDITIONING ENGINEERS
ATC	AUTOMATIC TEMPERATURE CONTROL
ATV	ATMOSPHERIC VENT
B	BOILER
BAS	BUILDING AUTOMATION SYSTEM
BBD	BOILER BLOWDOWN
BHP	BRAKE HORSEPOWER
BI	BINARY INPUT
BMS	BUILDING MANAGEMENT SYSTEM
BO	BINARY OUTPUT
BT	BUFFER TANK
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
CD	CONDENSATE DRAIN
CF	CHEMICAL FEEDER
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CHWP	CHILLED WATER PUMP
CO2, CD	CARBON DIOXIDE
CO, CM	CARBON MONOXIDE
CONT	CONTROLS, CONTINUED
CRU	CONDENSATE RETURN UNIT
CT	COOLING TOWER
CU	CONDENSING UNIT
CUH	CABINET UNIT HEATER
Cv	VALVE COEFFICIENT
CWP	CONDENSER WATER PUMP
DB	DRY BULB
DBL	DOUBLE
DEG	DEGREE
DI	DIGITAL INPUT
DIA	DIAMETER
DMSS	DUCTLESS MINI-SPLIT SYSTEM
DN	DOWN
DO	DIGITAL OUTPUT
DOAS	DEDICATED OUTDOOR AIR SYSTEM
DP	DIFFERENTIAL PRESSURE (SENSOR)
DP	DEW POINT
DRE	DRYER EXHAUST
DWG	DRAWING
DWH	DOMESTIC WATER HEATER
DX	DIRECT EXPANSION
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
ECM	ELECTRONICALLY COMMUTATED MOTOR
EF	EXHAUST FAN
EHC	ELECTRIC HEATING COIL
ELEC	ELECTRICAL
EMCS	ENVIRONMENTAL MANAGEMENT CONTROL SYSTEM
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
ETC	ETCETERA
EUH	ELECTRIC UNIT HEATER
EWH	ELECTRIC WATER HEATER
EWT	ENTERING WATER TEMPERATURE

ABBREVIATIONS - MECHANICAL

THIS IS A MASTER ABBREVIATIONS LIST. SOME ABBREVIATIONS MAY NOT APPLY TO THIS PROJECT.

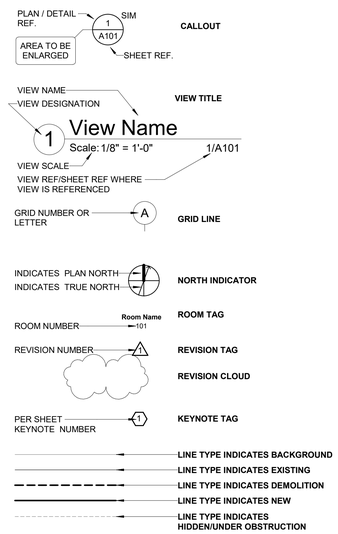
F	DEGREES FAHRENHEIT
FD	FIRE DAMPER OR FLOOR DRAIN
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE
FP	FAN POWERED
FPM	FEET PER MINUTE
FPTD	FAN POWERED TERMINAL DEVICE
FS	FLOW SWITCH
FT	FOOT/FEET
GA	GAUGE
GAL	GALLONS
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	GRAINS
GUH	GAS FIRED UNIT HEATER
H	HUMIDIFIER OR HEIGHT
H2O	WATER
HD	HEAD
HP	HORSEPOWER
HVAC	HEATING, VENTILATION, AND AIR-CONDITIONING
HWT	HEATING WATER TEMPERATURE
HX	HEAT EXCHANGER
IN	INCH
KEF	KITCHEN EXHAUST FAN
KW	KILOWATT
L	LOUVER
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LF	LINEAR FEET
LWT	LEAVING WATER TEMPERATURE
M	MOTOR OR MOTORIZED DAMPER OR METER
MA	MIXED AIR
MAT	MIXED AIR TEMPERATURE
MAU	MAKEUP AIR UNIT
MBH	1,000 BRITISH THERMAL UNITS PER HOUR
MCA	MINIMUM CIRCUIT AMPS
MERV	MINIMUM EFFICIENCY REPORTING VALUE
MFR	MANUFACTURER
MOCP	MAXIMUM OVERCURRENT PROTECTION
NC	NORMALLY CLOSED OR NOISE CRITERIA
NO	NORMALLY OPEN OR NUMBER
NPSH	NET POSITIVE SUCTION HEAD
NTS	NOT TO SCALE
OA	OUTDOOR AIR
OAT	OUTDOOR AIR TEMPERATURE
OD	OUTSIDE DIAMETER
OS	OCCUPANCY SENSOR
P	PRESSURE OR PRESSURE SENSOR
PD	PRESSURE DROP
PH	PHASE
PHC	PREHEAT COIL
PICV	PRESSURE INDEPENDENT CONTROL VALVE
PPM	PARTS PER MILLION
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAUGE
PTAC	PACKAGED TERMINAL AIR CONDITIONER
QTY	QUANTITY
R	RADIUS, RISE, OR REMOVE
RA	RETURN AIR
RAT	RETURN AIR TEMPERATURE
RCP	REFLECTED CEILING PLAN
RE	RELIEF AIR
REF	RELIEF AIR FAN
RF	RETURN AIR FAN
RH	RELATIVE HUMIDITY, REHEAT
RHC	REHEAT COIL

ABBREVIATIONS - MECHANICAL

THIS IS A MASTER ABBREVIATIONS LIST. SOME ABBREVIATIONS MAY NOT APPLY TO THIS PROJECT.

RPM	REVOLUTIONS PER MINUTE
RTU	ROOF TOP UNIT
SA	SUPPLY AIR
SAT	SUPPLY AIR TEMPERATURE
SCH	SCHEDULE
SEC	SECONDS
SF	SUPPLY FAN OR SQUARE FOOT
SF	SUPPLY AIR FAN
SP	STATIC PRESSURE
SS	SPLIT SYSTEM OR STAINLESS STEEL
T&P	TEMPERATURE AND PRESSURE
T, TEMP	TEMPERATURE
T-STAT	THERMOSTAT
TON	COOLING TONS (12,000 BTUH)
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UH	UNIT HEATER
V, VOLT	VOLTAGE
VAV	VARIABLE AIR VOLUME
VEL	VELOCITY
VF	VENTILATION FAN
VFD	VARIABLE FREQUENCY DRIVE
W	WIDTH OR WATTS
W/	WITH
WB	WET BULB
WC	WATER COLUMN
WG	WATER GAUGE
WPD	WATER PRESSURE DROP
WSHP	WATER-SOURCE HEAT PUMP

STANDARD DETAILING SYMBOLS



MECHANICAL GENERAL NEW WORK NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL CODES AND REGULATIONS. MECHANICAL EQUIPMENT SHALL BE SELECTED TO MEET OR EXCEED THE REQUIREMENTS OF THE ENERGY CONSERVATION CODE. MECHANICAL WORK SHALL COMPLY WITH PROJECT SPECIFICATIONS.
2. FURNISH AND INSTALL ALL INCIDENTAL ACCESSORIES REQUIRED TO MAKE THE MECHANICAL WORK COMPLETE AND OPERATIONAL.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR INSPECTING, TESTING AND VERIFYING CONTROL AND FIRE ALARM SEQUENCES, LINE BY LINE, AND VERIFYING OPERATION OF THE EQUIPMENT, ALL EQUIPMENT, VALVES, DAMPERS ACTUATORS, ETC. SHALL BE FUNCTIONAL BEFORE PROJECT CLOSEOUT. COORDINATE WITH ELECTRICAL, FIRE ALARM AND TAB CONTRACTORS. REFER TO SECTION 239000 FOR MORE DETAIL.
4. THESE DRAWINGS ARE DIAGRAMMATIC. EXACT EQUIPMENT LOCATIONS AND DUCT AND PIPING ROUTING SHALL BE COORDINATED WITH THE BUILDING AND SITE CONDITIONS. THE ACTUAL EQUIPMENT AND MINIMUM CLEARANCE DIMENSIONS SHALL BE VERIFIED WITH THE SUPPLIERS. FITTINGS NOT SHOWN ON THE DRAWINGS MIGHT BE REQUIRED.
5. EQUIPMENT, DUCTWORK, PIPING AND CONDUIT LAYOUT SHALL BE COORDINATED WITH BUILDING COMPONENTS AND OTHER TRADES PRIOR TO INSTALLATION. THE SYSTEM SHALL BE NEATLY ARRANGED TO MAXIMIZE SPACE ABOVE CEILINGS AND WITHIN CHASES. MAINTAIN MINIMUM EQUIPMENT AND DEVICE MAINTENANCE CLEARANCES. DEVICES SHALL BE READILY MAINTAINABLE. METERS AND GAGES SHALL BE ORIENTED FOR BEST VIEW. INSTALLED MATERIALS NOT COORDINATED SHALL BE REMOVED AND REINSTALLED AT NO ADDITIONAL COST.
6. DUCT OFFSETS SHALL BE MADE AT 15 OR 30-DEGREE ANGLES WHERE POSSIBLE BUT AT NEVER MORE THAN 45-DEGREES.
7. CEILING-MOUNTED EQUIPMENT EXACT LOCATIONS SHALL BE COORDINATED WITH THE REFLECTED CEILING PLANS AND THE EXISTING CONDITIONS. AIR OUTLETS AND SMOKE DETECTORS SHALL BE COORDINATED TO BE NO LESS THAN 36-INCHES APART.
8. WALL-MOUNTED CONTROL SENSORS SHALL BE INSTALLED AT 46-INCHES ABOVE THE FLOOR TO THE BACK-BOX CENTERLINE. COORDINATE EXACT LOCATIONS WITH LIGHT SWITCHES. WHEN BOTH ARE INDICATED AT THE SAME ELEVATION, ADJACENT TO A DOOR, LOCATE THE SWITCH CLOSEST TO THE DOOR AND THE SENSOR WITHIN 12-INCHES OF THE SWITCH. REFER TO DRAWING A000 FOR DETAILED REQUIREMENTS.
9. CONTROL AND ALARM DEVICES SHALL BE INSTALLED IN BACK-BOXES WITHIN NEW AND EXISTING WALLS. SURFACE-MOUNTED CONDUIT AND RACEWAY WILL NOT BE ACCEPTED EXCEPT FOR EXISTING SOLID CONCRETE WALLS. DEVICE BACK-BOXES IN FIRE-RATED WALLS SHALL HAVE FIRESTOP PUTTY PADS OR EQUIVALENT UL-LISTED INSTALLATION.
10. INSTALL PENETRATIONS OF LIFE-SAFETY RATED ASSEMBLIES PER APPROVED UL-LISTED DETAIL IN ACCORDANCE WITH THE BUILDING CODE.
11. INSTALL LIFE-SAFETY (FIRE, SMOKE AND COMBINATION FIRE AND SMOKE) DAMPERS IN RATED ASSEMBLIES PER UL-LISTED DETAIL IN ACCORDANCE WITH THE BUILDING CODE AND MANUFACTURER'S LISTING REQUIREMENTS.
12. PROVIDE A DUCT ACCESS DOOR FOR EACH DUCT-MOUNTED DEVICE REQUIRING MAINTENANCE OR INSPECTION. REFER TO SECTION 23 33 00 FOR DOOR SIZING REQUIREMENTS. COORDINATE CEILING AND WALL ACCESS DOORS WITH DUCT ACCESS DOORS.
13. HVAC PIPING SHALL BE NO LESS THAN 3/4-INCH, EXCEPT REFRIGERANT PIPING.
14. ALL MOTORIZED EQUIPMENT SHALL BE CONNECTED TO DUCTWORK OR PIPING WITH FLEXIBLE CONNECTIONS.
15. ROOF MODIFICATIONS AND REPAIRS SHALL MEET THE REQUIREMENTS OF THE ROOF WARRANTY.
16. EXTEND POWER CONDUIT AND WIRING FROM DEDICATED POWER SOURCES TO CONTROL EQUIPMENT AND DEVICES. COORDINATE POWER SOURCES WITH ELECTRICAL CONTRACTOR.
17. DUCT BRANCH FROM MAIN TAKEOFF TO AIR INLET OR OUTLET SHALL MATCH SCHEDULED NECK SIZE UNLESS OTHERWISE NOTED.
18. SUPPLY DUCT BRANCH DUCTS FROM MAIN TO TERMINAL UNIT INLETS AND DISCHARGE DUCT SIZES SHALL MATCH CONNECTION SIZES UNLESS OTHERWISE NOTED. PROVIDE NO LESS THAN 3 DUCT DIAMETERS OF STRAIGHT LENGTH AT UNIT INLET.
19. PIPING BRANCHES FROM MAINS TO HEATING AND COOLING COILS SHALL MATCH SCHEDULED SIZES UNLESS OTHERWISE NOTED.
20. MAINTAIN MINIMUM 36-INCH CLEARANCE FOR 120/208V POWER OR 42-INCH CLEARANCE FOR 277/480V POWER AS REQUIRED BY THE NATIONAL ELECTRIC CODE FOR ELECTRICAL EQUIPMENT AND TO PROVIDE MAINTENANCE ACCESS.
21. MAINTAIN CLEAR SPACE BETWEEN THE CEILING AND THE BOTTOM OF EACH TERMINAL UNIT. COORDINATE ALL CLEARANCES WITH OTHER TRADES. ENSURE ACCESS DOORS CAN BE OPENED FULLY AND ALL VALVES, DAMPERS AND DEVICES CAN BE EASILY REACHED AND ACTUATED.
22. FIELD VERIFY EXACT PIPING SIZES AND FLOW DIRECTIONS PRIOR TO CONNECTING TO PIPING SYSTEM.
23. EXPOSED DUCT, PIPING AND CONDUIT SHALL BE PRIMED AND PAINTED TO MATCH ADJACENT SURFACES.
24. SCHEDULE ALL SERVICE DISRUPTIONS AND SHUTDOWNS WITH THE OWNER NO LESS THAN 1 WEEK PRIOR.
25. AIR HANDLING UNIT INTAKES SHALL BE SEPARATED BY MINIMUM 10 FEET FROM EXHAUST FANS, EXHAUST VENTS, FLUES, PLUMBING VENTS, ETC.

MECHANICAL GENERAL DEMOLITION WORK NOTES

1. VERIFY PROJECT SITE EXISTING CONDITIONS PRIOR TO BID. EXISTING CONDITIONS INDICATED IN THESE DOCUMENTS ARE APPROXIMATE AND DO NOT INCLUDE EVERY COMPONENT.
2. RECORD EXISTING CONDITIONS PRIOR TO THE START OF WORK. REPAIR DAMAGES RESULTING FROM PROJECT WORK.
3. COORDINATE MATERIALS TO BE RETAINED BY THE OWNER PRIOR TO THE START OF DEMOLITION WORK. RETAINED MATERIALS SHALL BE DELIVERED TO A POINT DESIGNATED BY THE OWNER WITHIN A 10-MILE RADIUS OF THE PROJECT SITE. PROPERLY DISPOSE OF ALL REMAINING DEMOLITION MATERIALS. COMPLY WITH MATERIAL RECYCLING REQUIREMENTS. DO NOT ABANDON IN PLACE ANY ITEMS IDENTIFIED TO BE REMOVED UNLESS OTHERWISE NOTED.
4. THE SCOPE OF DEMOLITION FOR ITEMS TO BE REMOVED INCLUDES ASSOCIATED SUPPORTS, POWER CONNECTIONS, CONTROLS, ETC.
5. PERFORM ALL DEMOLITION INDICATED INCLUDING THAT REQUIRED TO INSTALL NEW WORK. REMOVE AND REINSTALL MATERIALS TO REMAIN AS NEEDED WHERE REQUIRED TO PERFORM DEMOLITION OR TO INSTALL NEW WORK. REPAIR DAMAGED SURFACES TO MATCH EXISTING ADJACENT SURFACES.
6. REMOVE DUCT, PIPING AND CONDUIT BACK TO POINTS INDICATED. PREPARE OPEN ENDS FOR CONNECTION TO NEW WORK INDICATED OR CAP.
7. REPAIR DAMAGE TO ANY OPENINGS IN LIFE-SAFETY RATED ASSEMBLIES CREATED BY THE DEMOLITION WORK PER APPROVED UL-LISTED DETAIL IN ACCORDANCE WITH THE BUILDING CODE.
8. PIPING AND CONDUIT TO BE REMOVED THAT IS LOCATED BELOW CONCRETE SLAB-ON-GRADE FLOORS OR WITHIN CONCRETE SOLID OR BLOCK WALLS MAY BE ABANDONED IN PLACE UNLESS NECESSARY TO INSTALL NEW WORK OR NOTED OTHERWISE. WHEN ABANDONING CUT PIPING OR CONDUIT BACK AT LEAST 1-INCH BEHIND THE SURFACE, PLUG THE ENDS AND PATCH THE SURFACE WITH SIMILAR MATERIAL.
9. CAPTURE AND RECYCLE REFRIGERANT FROM HVAC EQUIPMENT. COMPLY WITH THE EPA REFRIGERANT RECYCLING REQUIREMENTS.
10. MAIN GYMNASIUM MAY BE OCCUPIED DURING CONSTRUCTION. COORDINATE GYMNASIUM WORK WITH OWNER. MAINTAIN OPERATION OF EXISTING GYMNASIUM HVAC SYSTEMS INCLUDING RTU, UNIT HEATERS, AND ASSOCIATED CONTROLS DURING RENOVATION.

HAZARDOUS MATERIAL NOTES

1. HAZARDOUS MATERIALS WARNING: HAZARDOUS MATERIALS ARE ANTICIPATED TO BE ON SITE. REFER TO THE HAZARDOUS MATERIALS TESTING REPORT PROVIDED BY THE OWNER PRIOR TO THE START OF WORK. IF UNCOVERED MATERIALS ARE SUSPECTED OF CONTAINING ASBESTOS, LEAD-BASED PAINT, PCB'S OR ANY OTHER HAZARDOUS MATERIAL, STOP WORK IN THAT AREA AND REPORT THE CONCERN TO THE CONSTRUCTION MANAGER, OWNER, ARCHITECT AND ENGINEER IMMEDIATELY.

BID ALTERNATES

BID ALTERNATE NO. 1: TWO-STORY BUILDING EXPANSION TO THE SOUTH END OF AREA 'A'.

- MECHANICAL SCOPE INCLUDES EXTENSION OF AHU-4 SERVICES TO EXPANSION AREAS AS SHOWN ON AREA 'A' FIRST AND SECOND FLOOR DUCT AND PIPING PLANS.

BID ALTERNATE NO. 2: RENOVATION OF AREA B.

- MECHANICAL SCOPE INCLUDES SUPPLY AIR TO ENCLOSED CONNECTOR BETWEEN BUILDINGS 'A' AND 'B' AS SHOWN ON AREA 'A' DUCT PLAN, 1/M01.01, AND CLEANINF, TEMPORARY SUPPORT AND REPLACEMENT OF ALL EXISTING AREA 'B' CEILING DIFFUSERS, GRILLES, AND REGISTERS TO FACILITATE CEILING REPLACEMENT WORK SCOPE AS NOTED ON MD1.00.

2018 APPENDIX B

BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

MECHANICAL DESIGN SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

THERMAL ZONE	3A
WINTER DRY BULB, °F:	25.4°F
SUMMER DRY BULB, °F:	93.6°F
INTERIOR DESIGN CONDITIONS	
WINTER DRY BULB, °F:	70°F
SUMMER DRY BULB, °F:	75°F
RELATIVE HUMIDITY, %:	50% SUMMER DESIGN
BUILDING HEATING LOAD:	2,312 MBH (INCLUDING BID ALT. NO. 1)
BUILDING COOLING LOAD:	193 TONS (INCLUDING BID ALT. NO. 1)
MECHANICAL SPACE CONDITIONING SYSTEM	
UNITARY	
DESCRIPTION OF UNIT:	N/A
HEATING EFFICIENCY:	N/A
COOLING EFFICIENCY:	N/A
SIZE CATEGORY OF UNIT:	N/A
BOILER(S)	
SIZE CATEGORY; IF OVERSIZED, STATE REASON:	TABLE C403.2.3(5) - GAS AND OIL FIRED BOILERS BOILERS, HOT WATER; GAS-FIRED; ≥ 300 MBH AND ≤ 2,500 MBH
CHILLER(S)	
SIZE CATEGORY; IF OVERSIZED, STATE REASON:	TABLE C403.2.3(7) - WATER CHILLING PACKAGES AIR COOLED CHILLERS < 150 TONS
LIST EQUIPMENT EFFICIENCIES	
BOILERS	Et = 96.2% (TABLE C403.2.3(5))
CHILLERS	10.16 EER @ FL & 15.88 IPLV (TABLE C403.2.3(7); PATHS A & B)
Other	REFER TO MECHANICAL EQUIPMENT SCHEDULES

DRAWING LIST - MECHANICAL

M00.01	MECHANICAL SYMBOLS, ABBREVIATIONS & NOTES
MD1.00	FIRST FLOOR MECHANICAL DEMOLITION PLAN
MD1.05	FIRST FLOOR MECHANICAL DEMOLITION PLAN AREA E
M00.02	FIRST FLOOR OVERALL HVAC ZONE PLAN
M00.03	SECOND FLOOR OVERALL HVAC ZONE PLAN
M01.00	FIRST FLOOR DUCTWORK PLAN
M01.01	FIRST FLOOR DUCTWORK PLAN AREA A
M01.03	FIRST FLOOR DUCTWORK PLAN AREA C
M01.04	FIRST FLOOR DUCTWORK PLAN AREA D
M01.05	FIRST FLOOR DUCTWORK PLAN AREA E
M01.10	FIRST FLOOR PIPING PLAN
M01.11	FIRST FLOOR PIPING PLAN AREA A
M01.13	FIRST FLOOR PIPING PLAN AREA C
M01.14	FIRST FLOOR PIPING PLAN AREA D
M01.15	FIRST FLOOR PIPING PLAN AREA E
M02.00	SECOND FLOOR DUCTWORK PLAN
M02.01	SECOND FLOOR DUCTWORK PLAN AREA A
M02.03	SECOND FLOOR DUCTWORK PLAN AREA C
M02.10	SECOND FLOOR PIPING PLAN
M02.11	SECOND FLOOR PIPING PLAN AREA A
M02.13	SECOND FLOOR PIPING PLAN AREA C
M04.01	LARGE SCALE FLOOR PLANS
M04.02	LARGE SCALE FLOOR PLANS
M04.03	LARGE SCALE FLOOR PLANS
M04.04	MECHANICAL SECTIONS
M04.05	MECHANICAL ISOMETRIC VIEWS
M05.01	DETAILS
M05.02	DETAILS
M05.03	DETAILS
M05.04	DETAILS
M05.05	DETAILS
M05.06	AHU GENERAL ARRANGEMENT DETAILS
M05.07	KITCHEN DETAILS
M05.08	KITCHEN DETAILS
M05.09	KITCHEN DETAILS
M05.10	KITCHEN DETAILS
M05.11	KITCHEN DETAILS
M05.12	KITCHEN DETAILS
M05.13	KITCHEN DETAILS
M05.14	KITCHEN DETAILS
M06.01	SCHEDULES
M06.02	SCHEDULES
M06.03	SCHEDULES
M07.01	MECHANICAL CONTROLS
M07.02	MECHANICAL CONTROLS
M07.03	MECHANICAL CONTROLS
M07.04	MECHANICAL CONTROLS
M07.05	MECHANICAL CONTROLS

TOTAL: 48

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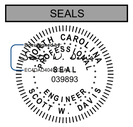
PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS



1/10/2025

DKA JOB NUMBER
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DEWBERRY NUMBER
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BID DOCUMENTS
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SHEET TITLE

MECHANICAL SYMBOLS, ABBREVIATIONS & NOTES

M00.01

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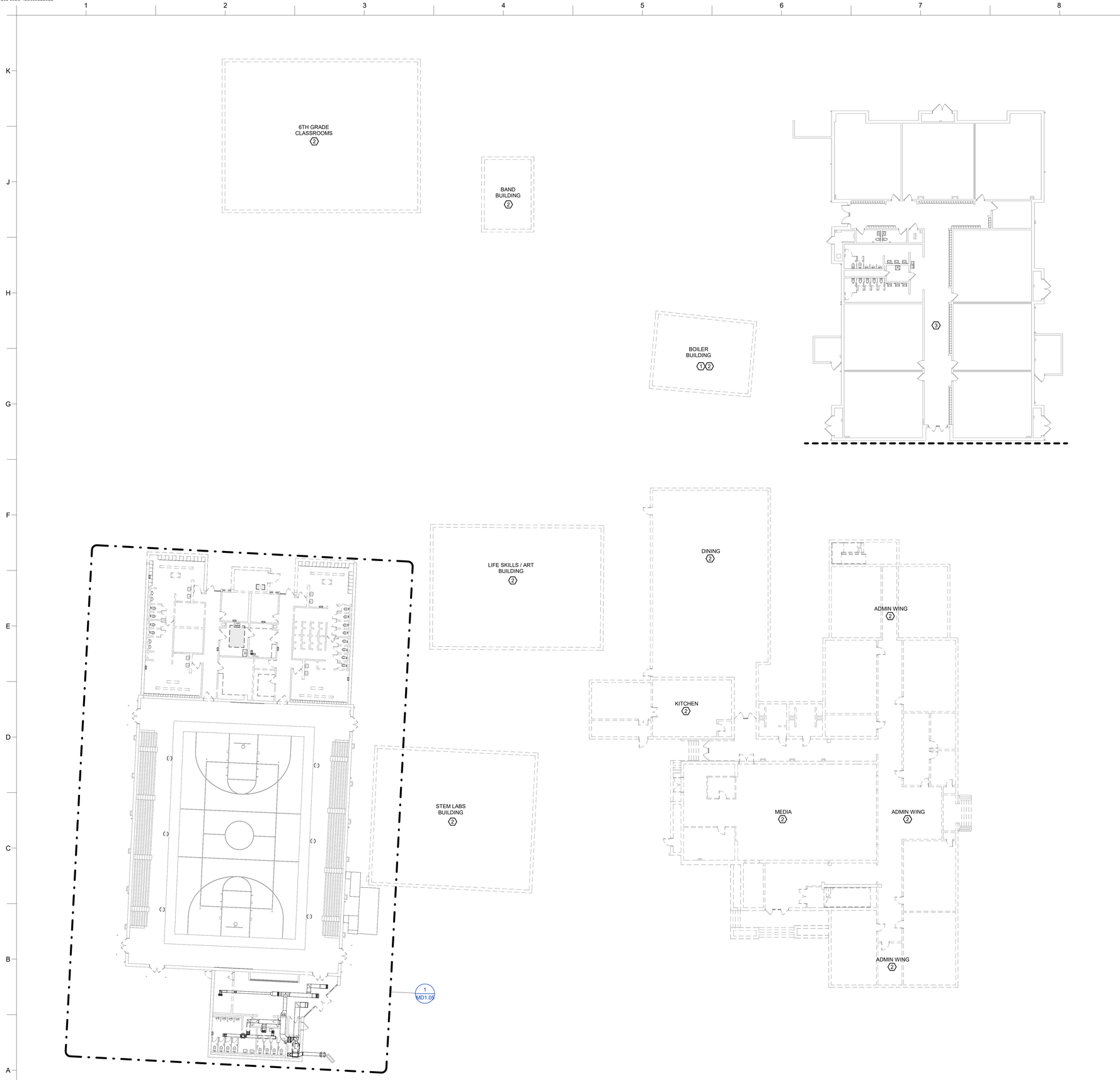

1 FIRST FLOOR MECHANICAL DEMOLITION PLAN

Scale: 1/16" = 1'-0"

0' 8' 16' 32'

GENERAL NOTES:

1. SEE SHEET M00.01 FOR LEGEND AND GENERAL MECHANICAL PROJECT NOTES.

KEYNOTES:

1 FULLY DEMOLISH STEAM SYSTEM IN BOILER BUILDING INCLUDING ASSOCIATED EQUIPMENT, SUPPORTS, AND ALL CAMPUS STEAM AND CONDENSATE PIPING FROM BOILER BUILDING OUT TO, AND INCLUDING END-USE EQUIPMENT, COILS, CONDENSATE RETURN PUMPS, ETC.

2 BUILDING/BUIDING AREA TO BE FULLY DEMOLISHED. CONTRACTOR TO COORDINATE SALVAGE OF MECHANICAL AND BUILDING AUTOMATION SYSTEM ITEMS WITH OWNER PRIOR TO DEMOLITION.

3 FOR BID ALTERNATE 2 ONLY (AREA 'B' RENOVATION): TEMPORARILY SUPPORT, CLEAN, AND REINSTALL ALL EXISTING CEILING GRILLES AND DIFFUSERS IN AREA 'B' CEILINGS TO FACILITATE CEILING REPLACEMENT WORK. REFER TO ARCHITECTURAL FOR DETAILED CEILING REPLACEMENT WORK SCOPE. FIELD VERIFY QTY AND LOCATIONS PRIOR TO START OF WORK.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

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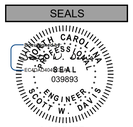

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SHEET TITLE

FIRST FLOOR MECHANICAL DEMOLITION PLAN

MD1.00

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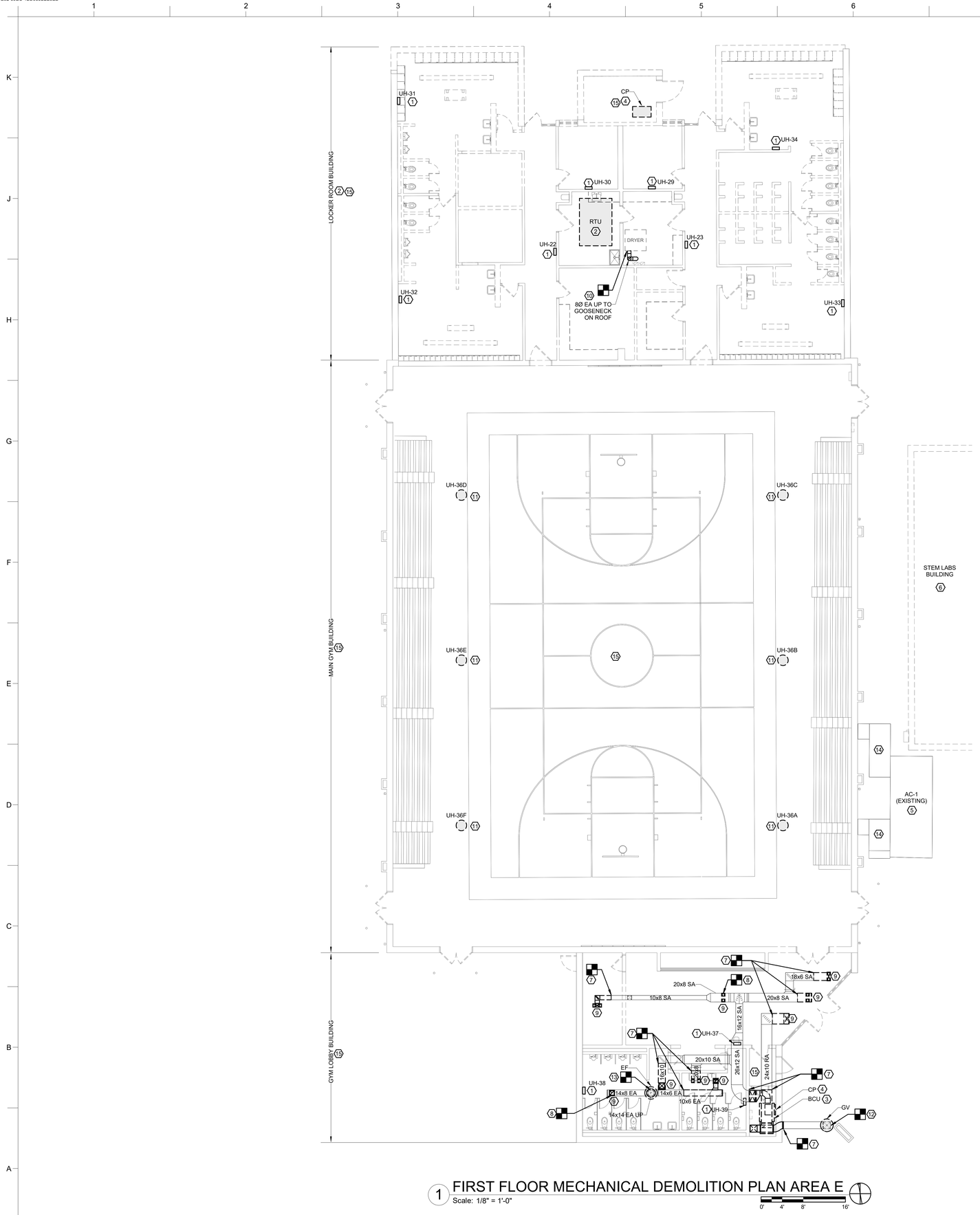


1 FIRST FLOOR MECHANICAL DEMOLITION PLAN AREA E

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

1. SEE SHEET M00.01 FOR LEGEND AND GENERAL MECHANICAL PROJECT NOTES.

KEYNOTES:

1 DEMOLISH TEMPORARY WALL-MOUNTED ELECTRIC UNIT HEATER AND PATCH WALL.

2 DEMOLISH LOCKER ROOM BUILDING HVAC SYSTEMS INCLUDING DX ROOFTOP UNIT, STEAM COILS, STEAM FAN COIL UNIT(S), CONDENSATE PUMPS, AND EXHAUST FANS WITH ALL ASSOCIATED PIPING, DUCTWORK, AND CONTROLS.

3 DEMOLISH HORIZONTAL STEAM BLOWER COIL UNIT SERVING GYMNASIUM LOBBY AREA. DISCONNECT DUCTWORK AND DEMOLISH BACK TO POINTS INDICATED. DISCONNECT PIPING AND CONTROLS AND DEMOLISH IN THEIR ENTIRETY.

4 DEMOLISH FLOOR MOUNTED DUPLEX ELECTRIC STEAM CONDENSATE PUMP. DISCONNECT POWER AND DEMOLISH DISCONNECT SWITCH. DISCONNECT PIPING AND CONTROLS AND DEMOLISH IN THEIR ENTIRETY.

5 EXISTING GYMNASIUM AIR CONDITIONING SYSTEM TO REMAIN INCLUDING PAD-MOUNTED DX AC UNIT, DUCTWORK AND CONTROLS.

6 BUILDING/BUIDING AREA TO BE FULLY DEMOLISHED. CONTRACTOR TO COORDINATE SALVAGE OF MECHANICAL AND BUILDING AUTOMATION SYSTEM ITEMS WITH OWNER PRIOR TO DEMOLITION.

7 DISCONNECT DUCT AT POINT INDICATED AND DEMOLISH EXTENTS INDICATED INCLUDING CEILING GRILLES REGISTERS AND DIFFUSERS.

8 BRANCH DUCT OFF BOTTOM OF MAIN DUCT EXTENDS DOWN TO CEILING GRILLE. DISCONNECT BRANCH FROM MAIN AND DEMOLISH BRANCH AND ASSOCIATED CEILING GRILLE.

9 DEMOLISH CEILING DIFFUSER/GRILLE.

10 DISCONNECT 8Ø EA FROM DRYER AND FULLY DEMOLISH UP TO ROOF TERMINATION POINT. PREPARE ROOF OPENING FOR INSTALLATION OF NEW, SMALLER RESIDENTIAL DRYER EXHAUST DUCT.

11 DEMOLISH VERTICAL OVERHEAD ELECTRIC UNIT HEATER IN PREPARATION FOR REPLACEMENT WITH HW UNIT HEATER.

12 REMOVE GRAVITY INTAKE HOOD FROM ROOF CURB AND DEMOLISH. PREPARE CURB FOR INSTALLATION OF NEW FAN.

13 DISCONNECT EF FROM DUCTWORK AT ROOF CURB AND DEMOLISH. PREPARE CURB FOR INSTALLATION OF NEW FAN.

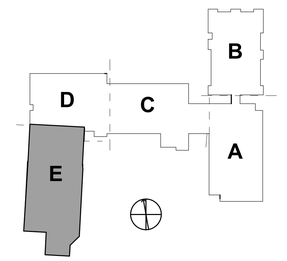
14 REMOVE EXTERIOR DUCT INSULATION AND JACKETING FROM SA AND RA DUCTWORK AND PLENUMS BETWEEN AC UNIT CONNECTIONS AND BUILDING EXTERIOR WALL. PREPARE SHEET METAL DUCTWORK FOR REPLACEMENT WITH NEW AS INDICATED ON NEW WORK DRAWINGS.

15 FULLY DEMOLISH STEAM/CONDENSATE SYSTEM PIPING FROM BOILER PLANT INCLUDING ASSOCIATED EQUIPMENT AND SUPPPORTS WITHIN BUILDING AREA E, AND ALL EXTERIOR ABOVE GROUND PIPING ROUTED ALONG WALKWAYS BACK TO BOILER BUILDING.

WALL RATING LEGEND:

1-HR RATED FIRE BARRIER
2-HR RATED FIRE BARRIER
3-HR RATED FIRE BARRIER
4-HR RATED FIRE BARRIER

KEYPLAN:



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SEALS

NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER SEAL 039893 SCOTT W. DAVIS

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SHEET TITLE

FIRST FLOOR MECHANICAL DEMOLITION PLAN AREA E

MD1.05

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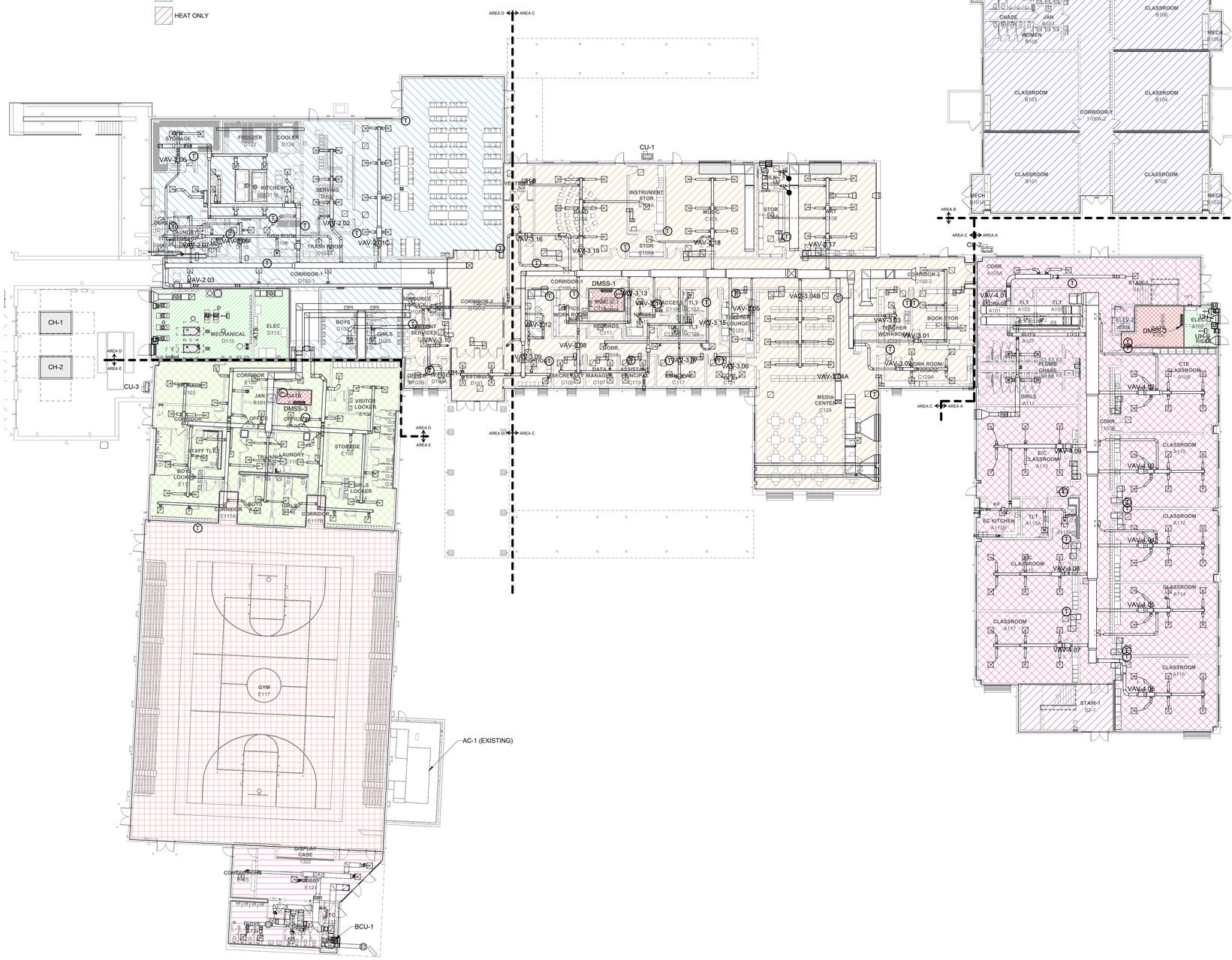
Schema 1 Legend

- AC-1 - GYMNASIUM (EXISTING)
- AHU-1 (LOCKER ROOMS)
- AHU-2 (KITCHEN/DINING)
- AHU-3 (ADMIN/MEDIA/BAND/MUSIC/ART)
- AHU-4 (CLASSROOM WING)
- AREA B - EXISTING TO REMAIN
- BCU-1 (GYM LOBBY)
- DMSS (MDF & DATA ROOMS)
- HEAT AND EXHAUST
- HEAT ONLY



1 FIRST FLOOR OVERALL HVAC ZONE PLAN

Scale: 1/16" = 1'-0"

0' 8' 16' 32'

GENERAL NOTES:

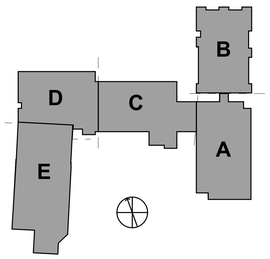
1. SEE SHEET M00.01 FOR LEGEND AND GENERAL MECHANICAL PROJECT NOTES.
2. REFER TO EQUIPMENT SCHEDULES FOR PIPING BRANCH SIZES FROM MAINS TO HEATING AND COOLING COILS.

KEYNOTES:

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039893 SCOTT W. DAVIS

1/10/2025

DKA JOB NUMBER
2401

DEWBERRY NUMBER
50171439

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SHEET TITLE

FIRST FLOOR OVERALL HVAC ZONE PLAN

M00.02

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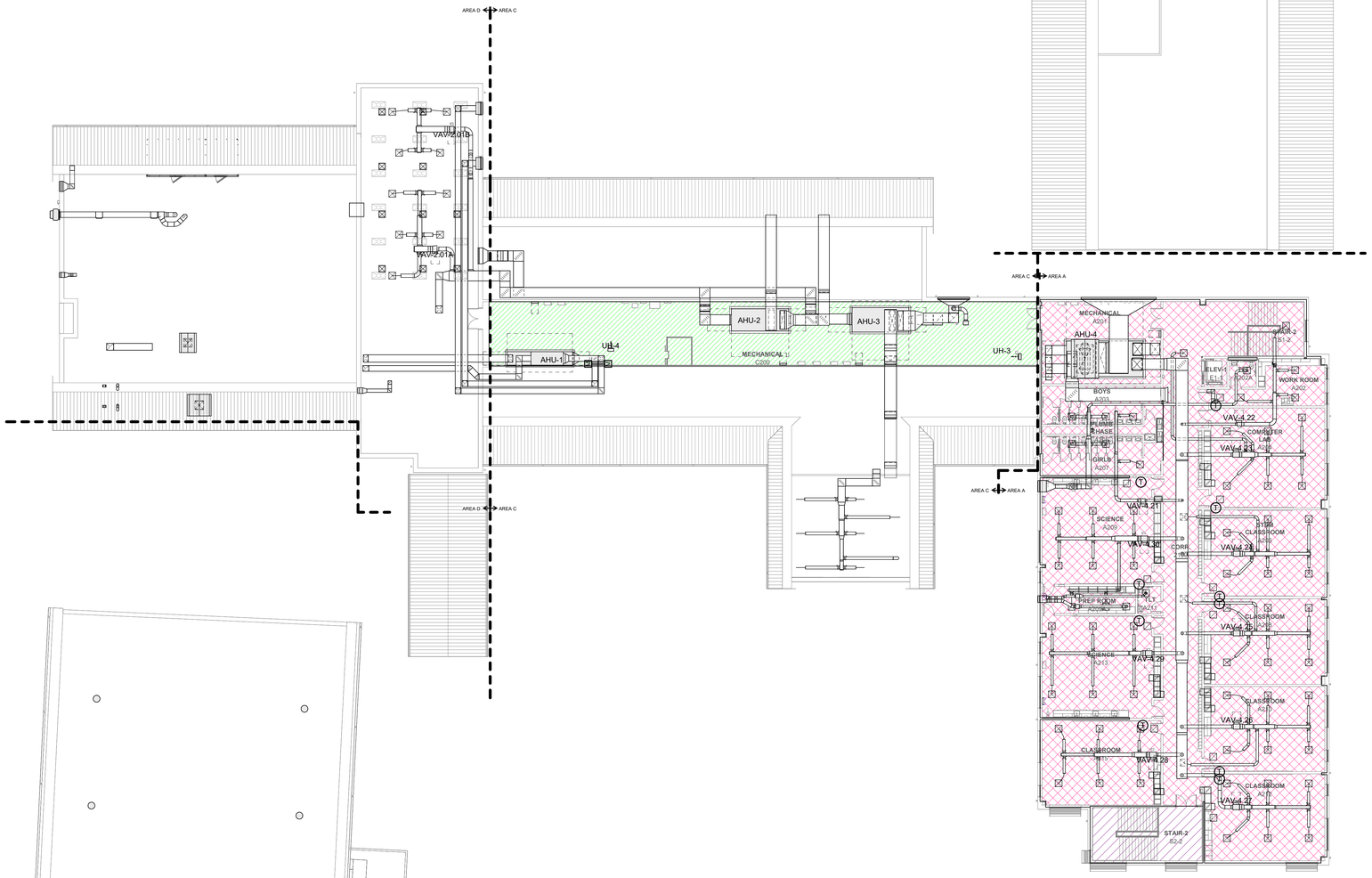
Schema 1 Legend

- AHU-4 (CLASSROOM WING)
- HEAT AND EXHAUST
- HEAT ONLY



1 SECOND FLOOR OVERALL HVAC ZONE PLAN

Scale: 1/16" = 1'-0"

0' 8' 16' 32'

GENERAL NOTES:

1. SEE SHEET M00.01 FOR LEGEND AND GENERAL MECHANICAL PROJECT NOTES.
2. REFER TO EQUIPMENT SCHEDULES FOR PIPING BRANCH SIZES FROM MAINS TO HEATING AND COOLING COILS.

KEYNOTES:

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:

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SHEET TITLE

SECOND FLOOR OVERALL HVAC ZONE PLAN

M00.03

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GENERAL NOTES:

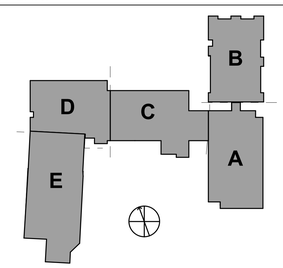
1. SEE SHEET M0.01 FOR LEGEND AND GENERAL MECHANICAL PROJECT NOTES.
2. REFER TO MECHANICAL PIPING PLANS FOR THERMOSTAT ASSIGNMENTS.
3. TAB CONTRACTOR SHALL BALANCE DEVICES TO AIRFLOWS INDICATED.

KEYNOTES:

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



1 FIRST FLOOR DUCTWORK PLAN
Scale: 1/16" = 1'-0"
0' 8' 16' 32'

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SHEET TITLE
FIRST FLOOR DUCTWORK PLAN

M01.00

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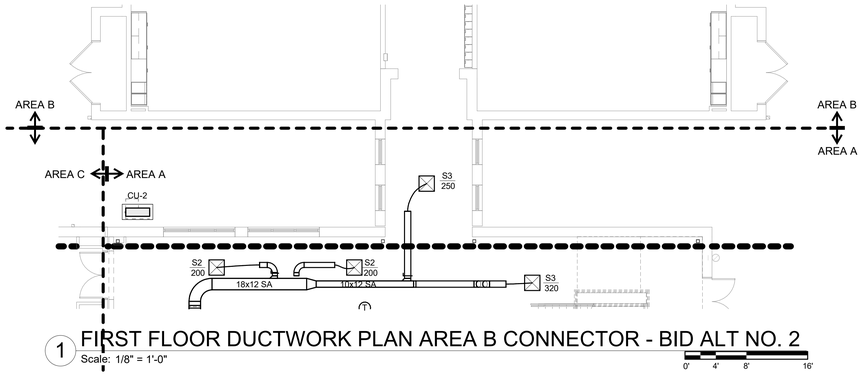
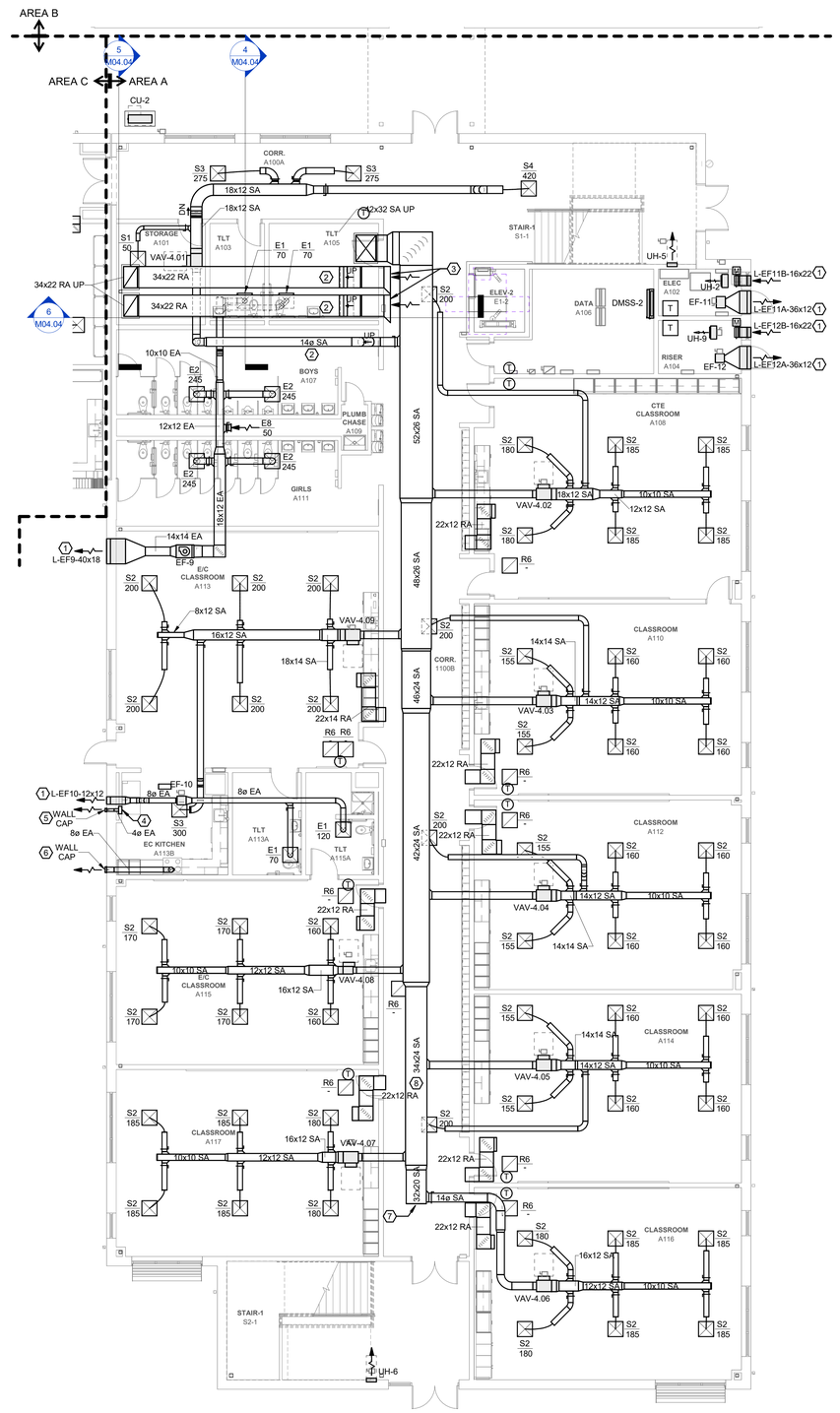
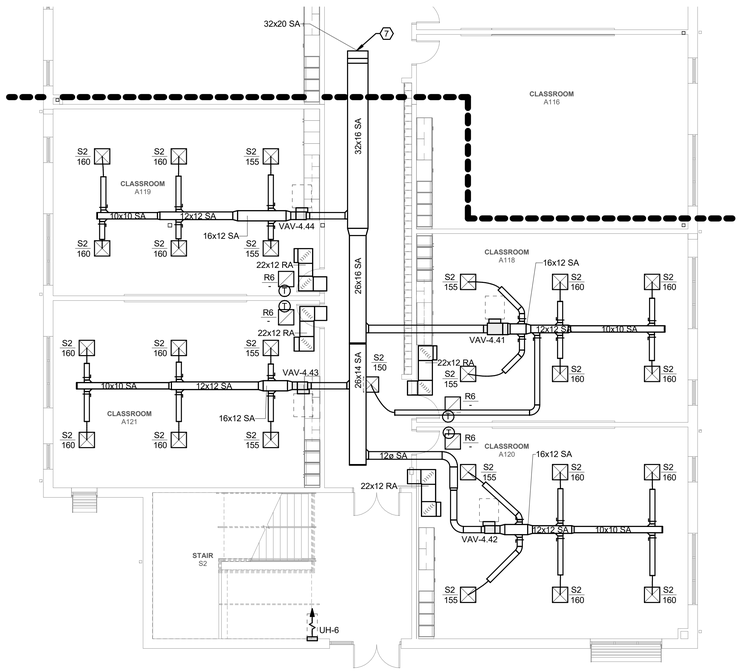


1 FIRST FLOOR DUCTWORK PLAN AREA B CONNECTOR - BID ALT NO. 2
Scale: 1/8" = 1'-0"



3 FIRST FLOOR DUCTWORK PLAN AREA A
Scale: 1/8" = 1'-0"



2 FIRST FLOOR DUCTWORK PLAN AREA A - BID ALT NO. 1
Scale: 1/8" = 1'-0"

GENERAL NOTES:

1. SEE SHEET M0.01 FOR LEGEND AND GENERAL MECHANICAL PROJECT NOTES.
2. REFER TO MECHANICAL PIPING PLANS FOR THERMOSTAT ASSIGNMENTS.
3. TAB CONTRACTOR SHALL BALANCE DEVICES TO AIRFLOWS INDICATED.

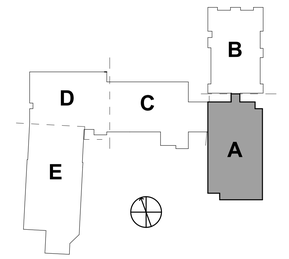
KEYNOTES:

1. LOUVER SIZE SHOWN IS MINIMUM REQUIRED FOR HVAC DESIGN. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOUVER SIZE & LOCATION.
2. ROUTE DUCT HIGH IN JOIST BAY.
3. 34X22 RA DUCT FLARED OUT TO 44X34 FOR PLENUM RETURN INLET.
4. PROVIDE DRYER VENT CONNECTION WALL BOX BEHIND DRYER. MAKE FINAL CONNECTION BETWEEN WALL BOX AND OWNER'S DRYER WITH 4Ø ALUMINUM FLEX DUCT.
5. PROVIDE 4Ø WALL CAP WITH FLAPPER-TYPE BACKDRAFT DAMPER, APPROVED FOR CLOTHES DRYER EXHAUST SERVICE. PAINT TO MATCH BUILDING EXTERIOR.
6. PROVIDE 8Ø EA WALL CAP WITH FLAPPER-TYPE BACKDRAFT DAMPER. PAINT TO MATCH BUILDING EXTERIOR. PROVIDE TRANSITION TO EQUIPMENT SIZE AT HOOD.
7. POINT OF DEMARK BETWEEN BASE BID AND BID ALT.1 CAP END OF DUCT IF BID ALT.1 NOT CONSTRUCTED
8. AIR HANDLING UNIT SA DUCT STATIC PRESSURE SENSOR.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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SHEET TITLE
FIRST FLOOR DUCTWORK PLAN AREA A

M01.01

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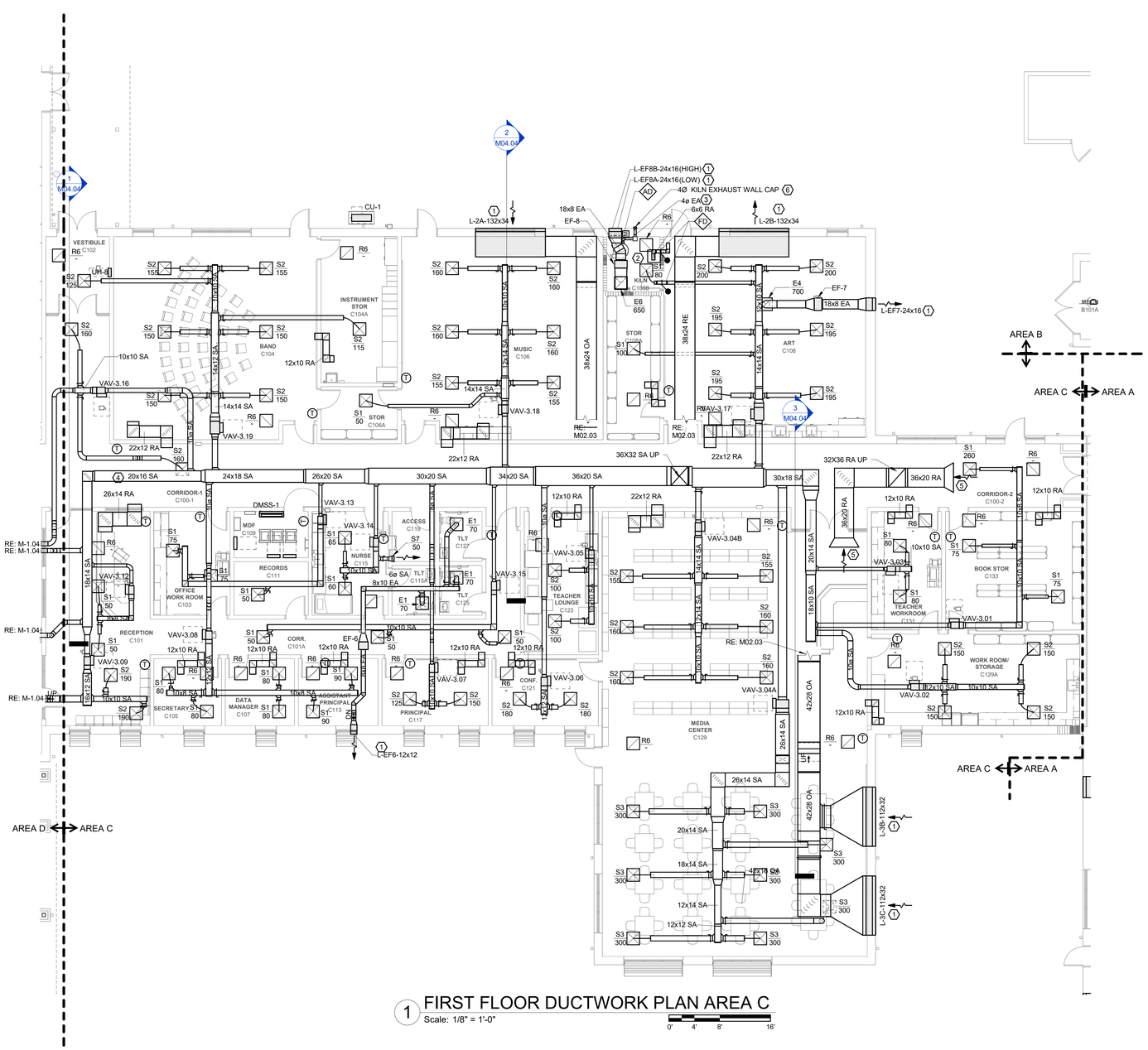


1 FIRST FLOOR DUCTWORK PLAN AREA C

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

1. SEE SHEET M0.01 FOR LEGEND AND GENERAL MECHANICAL PROJECT NOTES.
2. REFER TO MECHANICAL PIPING PLANS FOR THERMOSTAT ASSIGNMENTS.
3. TAB CONTRACTOR SHALL BALANCE DEVICES TO AIRFLOWS INDICATED.

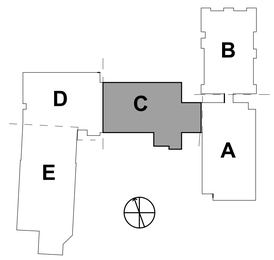
KEYNOTES:

1. LOUVER SIZE SHOWN IS MINIMUM REQUIRED FOR HVAC DESIGN. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOUVER SIZE & LOCATION.
2. REFER TO KILN HVAC DETAIL FOR KILN ROOM HVAC REQUIREMENTS AND M01.13 FOR KILN ROOM EXHAUST FAN THERMOSTAT.
3. PROVIDE 4Ø SS DOUBLE-WALL EA FROM KILN TO WALL CAP.
4. AIR HANDLING UNIT SA DUCT STATIC PRESSURE SENSOR.
5. 36X20 RA DUCT FLARED OUT TO 56X22 FOR PLENUM RETURN INLET.
6. PAINT WALL CAP TO MATCH ADJACENT WALL.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

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SHEET TITLE

FIRST FLOOR DUCTWORK PLAN AREA C

M01.03

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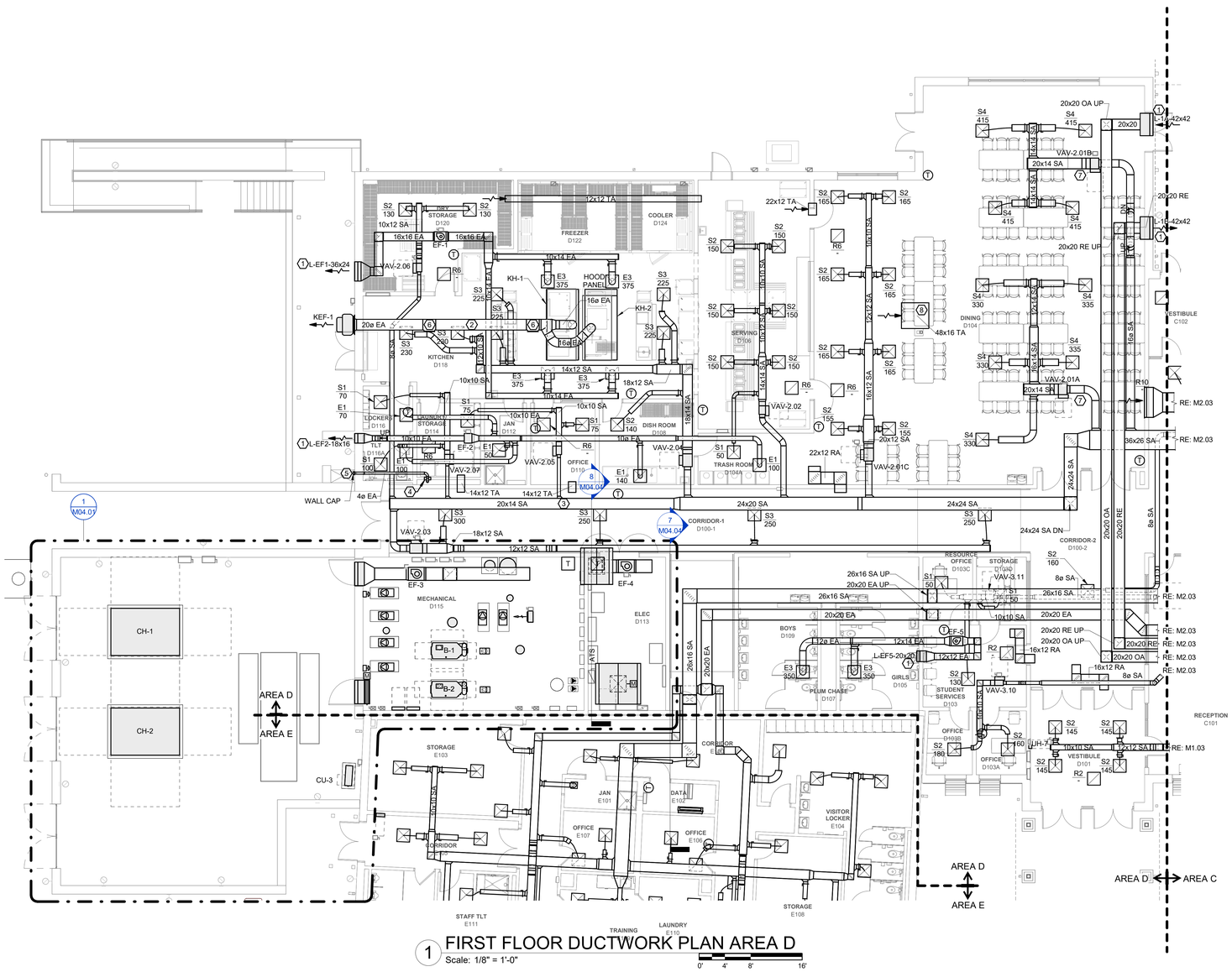


1 FIRST FLOOR DUCTWORK PLAN AREA D

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

1. SEE SHEET M0.01 FOR LEGEND AND GENERAL MECHANICAL PROJECT NOTES.
2. REFER TO MECHANICAL PIPING PLANS FOR THERMOSTAT ASSIGNMENTS.
3. TAB CONTRACTOR SHALL BALANCE DEVICES TO AIRFLOWS INDICATED.

(#) KEYNOTES:

1 LOUVER SIZE SHOWN IS MINIMUM REQUIRED FOR HVAC DESIGN. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOUVER SIZE & LOCATION.

2 ZERO-CLEARANCE DOUBLE-WALL GREASE EXHAUST DUCT WITH CONTINUOUS 1/4-INCH PER FT SLOPE FROM FAN BACK TO HOODS. COMPLY WITH SECTION 233113 AND NFPA 96.

3 AIR HANDLING UNIT SA DUCT STATIC PRESSURE SENSOR.

4 PROVIDE DRYER VENT CONNECTION WALL BOX BEHIND DRYER. MAKE FINAL CONNECTION BETWEEN WALL BOX AND OWNER'S DRYER WITH 4Ø ALUMINUM FLEX DUCT.

5 PROVIDE 4Ø WALL CAP WITH FLAPPER-TYPE BACKDRAFT DAMPER, APPROVED FOR CLOTHES DRYER EXHAUST SERVICE. PAINT TO MATCH BUILDING EXTERIOR.

6 PROVIDE CLEANOUT IN GREASE EXHAUST DUCT. COORDINATE EXACT LOCATION FOR HIGH ACCESS IN CEILING.

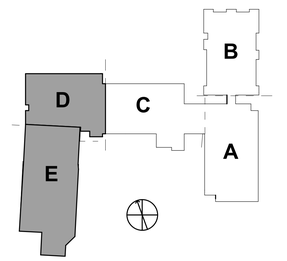
7 ASSOCIATED DUCTWORK ABOVE DROPPED CLOUD CEILINGS IN DINING D104 SHALL BE PAINTED FLAT BLACK; REFER TO ARCH RCP.

8 INSTALL TRANSFER AIR DUCT HIGH IN WALL ABOVE DINING D104 HIGH CEILING AREA. REFER TO ARCH RCP.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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SHEET TITLE

FIRST FLOOR DUCTWORK PLAN AREA D

M01.04

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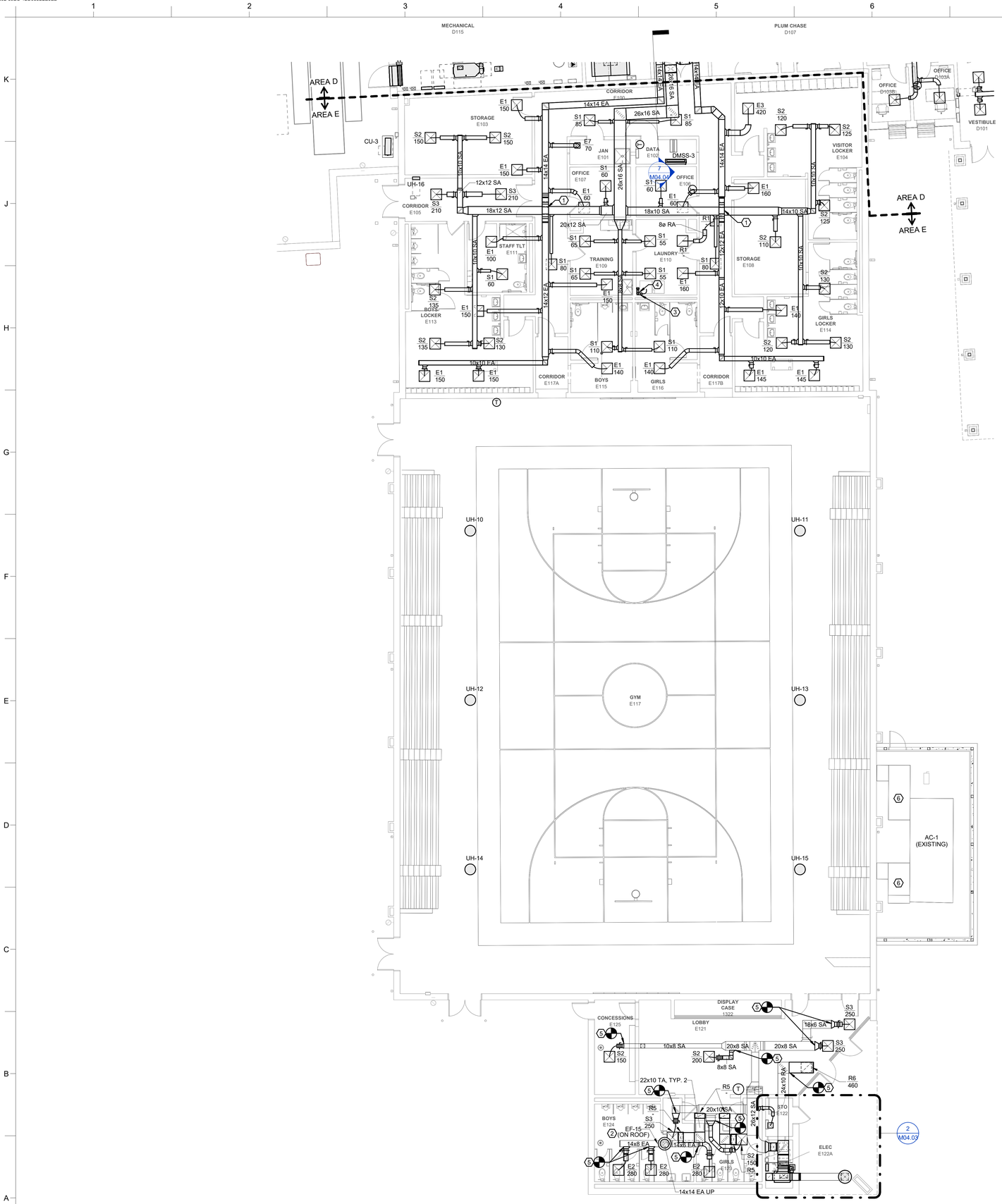


1 FIRST FLOOR DUCTWORK PLAN AREA E
Scale: 1/8" = 1'-0"

GENERAL NOTES:

1. SEE SHEET M0.01 FOR LEGEND AND GENERAL MECHANICAL PROJECT NOTES.
2. REFER TO MECHANICAL PIPING PLANS FOR THERMOSTAT ASSIGNMENTS.
3. TAB CONTRACTOR SHALL BALANCE DEVICES TO AIRFLOWS INDICATED.

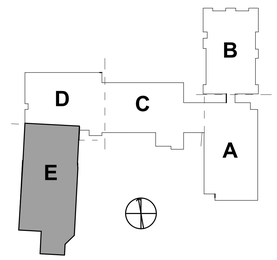
KEYNOTES:

1. DUCT CROSSING. OFFSET EA UP INTO JOIST SPACE. COORDINATE EXACT LOCATION OF CROSSING WITH EXISTING JOISTS.
2. INSTALL EF ON EXISTING ROOF CURB. PROVIDE CURB ADAPTOR AS NEEDED. CONNECT EF TO EXISTING 14X14 EA RISER IN CURB.
3. PROVIDE WALL-MOUNTED DRYER VENT CONNECTION WALL BOX BEHIND DRYER. MAKE FINAL CONNECTION BETWEEN WALL BOX AND OWNER'S DRYER WITH 4Ø ALUMINUM FLEX DUCT.
4. ROUTE 4Ø DRYER EXHAUST FROM TOP OF WALL BOX UP IN CORNER OF ROOM THROUGH EXISTING ROOF OPENING AND TERMINATE ON ROOF. REFER TO DRYER VENT ROOF PENETRATION DETAIL. COORDINATE ROOF PENETRATION INSULATION AND FLASHING REQUIREMENTS WITH G.C. PAINT EXPOSED DUCT TO MATCH ADJACENT WALLS.
5. CONNECT TO EXISTING DUCT. PATCH DUCT INSULATION AND JACKET AT POINT OF CONNECTION.
6. INSTALL INSULATION WITH VAPOR BARRIER AND JACKET ON EXISTING AC-1 SUPPLY AND RETURN AIR DUCTWORK AND PLENUMS BETWEEN AC-1 CONNECTIONS AND EXTERIOR BUILDING WALL. REFER TO DUCT INSULATION SPECIFICATION FOR REQUIREMENTS. PROVIDE FLASHING WITH WATER TIGHT SEAL AT EXTERIOR WALL PENETRATION.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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FIRST FLOOR DUCTWORK PLAN AREA E

M01.05

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1 FIRST FLOOR PIPING PLAN

Scale: 1/16" = 1'-0"

0' 8' 16' 32'

GENERAL NOTES:

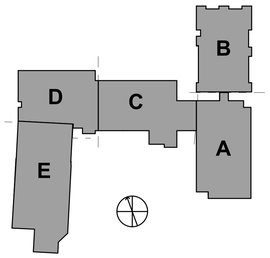
1. SEE SHEET M00.01 FOR LEGEND AND GENERAL MECHANICAL PROJECT NOTES.
2. REFER TO EQUIPMENT SCHEDULES FOR PIPING BRANCH SIZES FROM MAINS TO HEATING AND COOLING COILS.

KEYNOTES:

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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FIRST FLOOR PIPING PLAN

M01.10

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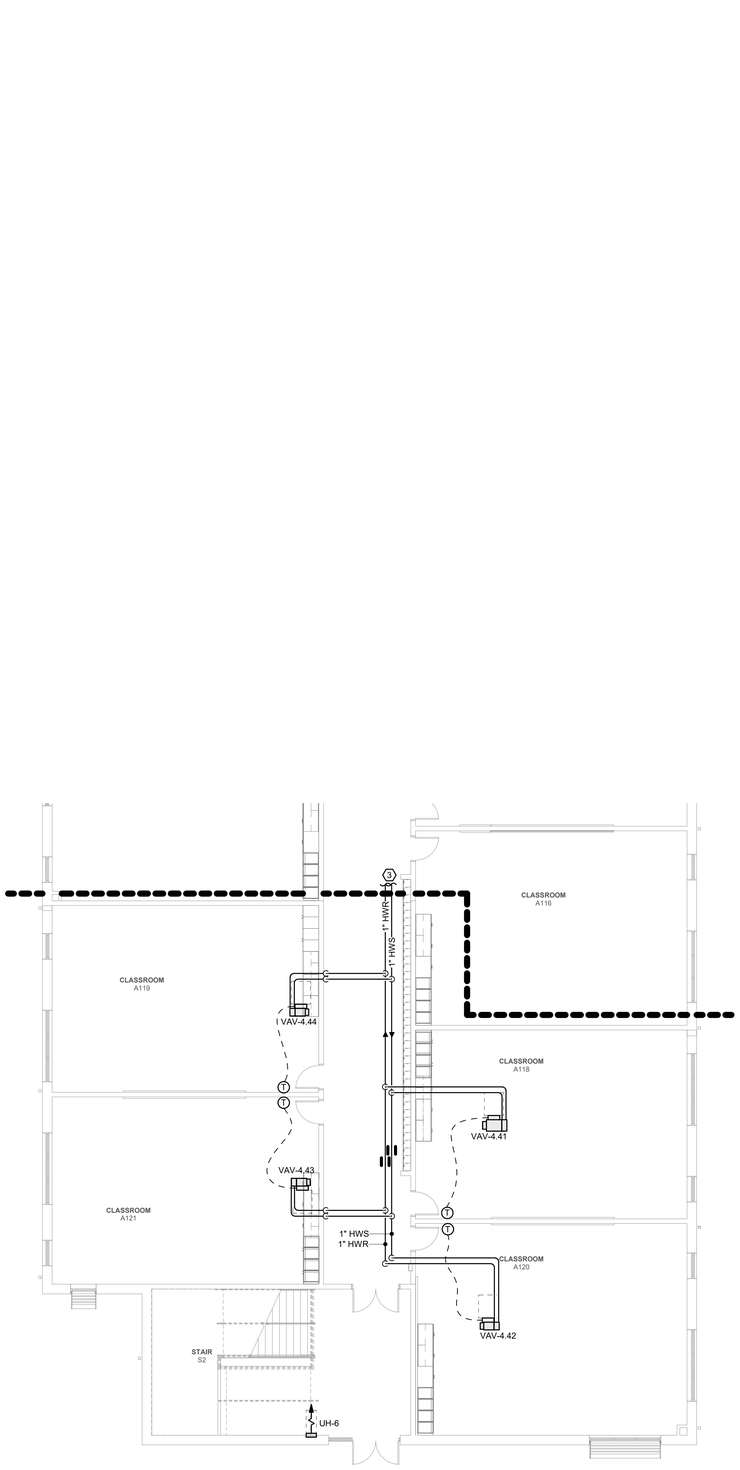
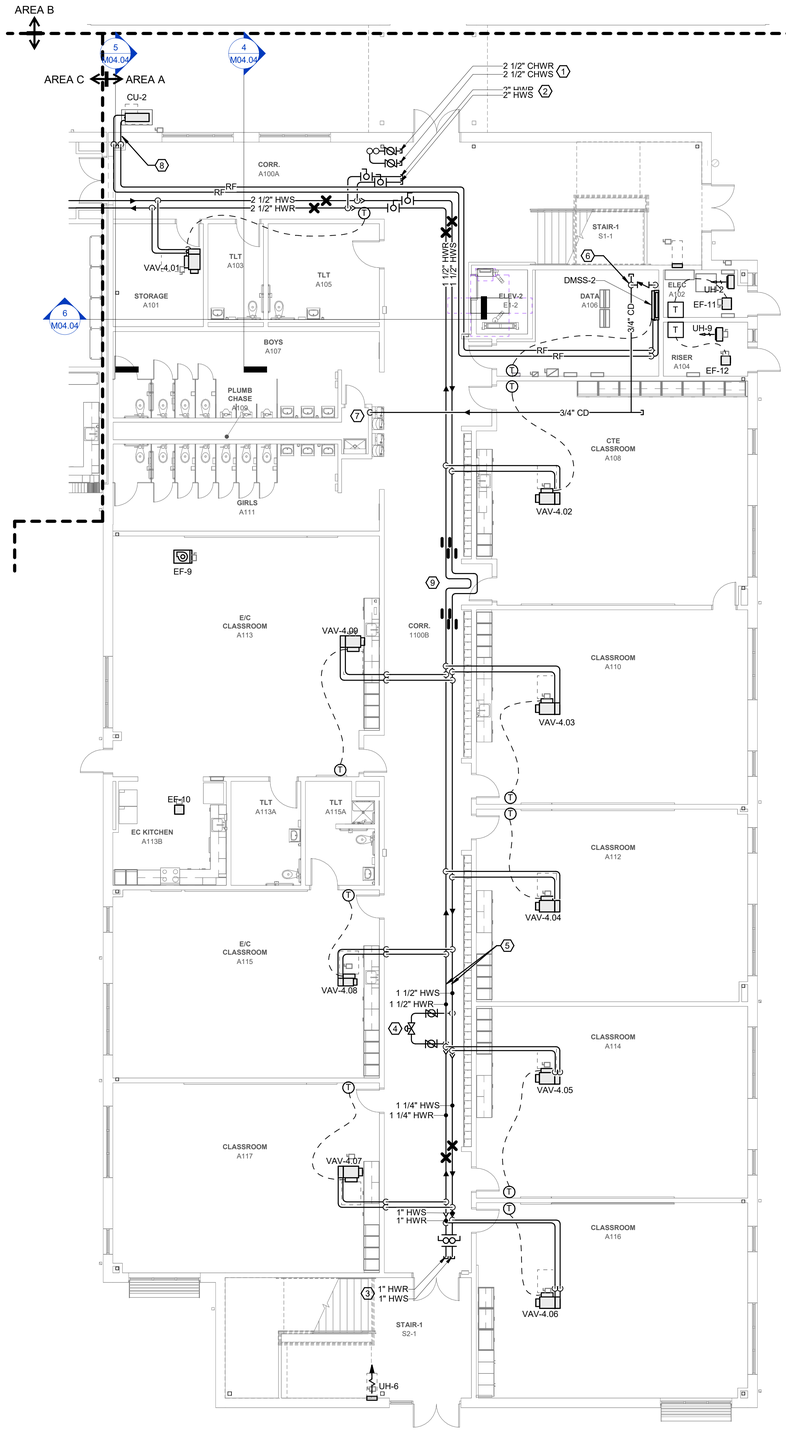


1 FIRST FLOOR PIPING PLAN AREA A -BID ALT NO. 1
Scale: 1/8" = 1'-0"
0' 4' 8' 16'



2 FIRST FLOOR PIPING PLAN AREA A
Scale: 1/8" = 1'-0"
0' 4' 8' 16'

GENERAL NOTES:

1. SEE SHEET M00.01 FOR LEGEND AND GENERAL MECHANICAL PROJECT NOTES.
2. REFER TO EQUIPMENT SCHEDULES FOR PIPING BRANCH SIZES FROM MAINS TO HEATING AND COOLING COILS.

KEYNOTES:

1 TERMINATE 2 1/2" CHWS/R PIPE STUBS WITH ISOLATION VAVES AND CAP FOR FUTURE SERVICE TO AREA 'B'. CHW PIPING SYSTEM MAINS SIZED TO ACCOMMODATE 50 GPM FUTURE CAPACITY.

2 TERMINATE 2" HWS/R PIPE STUBS WITH ISOLATION VAVES AND CAP FOR FUTURE SERVICE TO AREA 'B'. HW PIPING SYSTEM MAINS SIZED TO ACCOMMODATE 20 GPM FUTURE CAPACITY.

3 POINT OF DEMARK BETWEEN BASE BID AND BIT ALT. 1. CAP ENDS OF HWS/R MAINS IF BID ALT. 1 NOT CONSTRUCTED.

4 HW LOOP BYPASS VALVE. REFER TO CONTROLS DRAWINGS AND BYPASS VALVE DETAIL.

5 HW LOOP DIFFERENTIAL PRESSURE SENSOR. REFER TO CONTROLS DRAWINGS AND DIFFERENTIAL PRESSURE TRANSMITTER DETAIL.

6 CONNECT DMSS PUMPED CONDENSATE TO TOP OF GRAVITY DRAINED CONDENSATE LINE. ROUTE GRAVITY DRAIN LINE WITH CONTINUOUS SLOPE THROUGH CEILING TO RECEPTOR AS SHOWN.

7 3/4" CD DN IN WALL; TERMINATE WITH AIR GAP AT CONDENSATE RECEPTICAL WALL BOX. REFER TO PLUMBING.

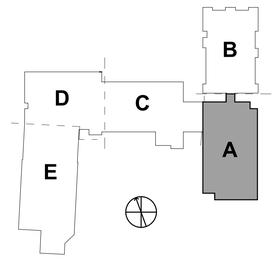
8 SEAL REFRIGERANT PIPING AT WALL PENETRATION. REFER TO DETAIL.

9 PROVIDE METRAFLEX METRALOOP OR EQUAL. INSTALL PER MANUFACTURER'S REQUIREMENTS. PROVIDE GUIDES AND ANCHORS PER MANUFACTURER'S RECOMMENDATIONS.

WALL RATING LEGEND:

1-HR RATED FIRE BARRIER
2-HR RATED FIRE BARRIER
3-HR RATED FIRE BARRIER
4-HR RATED FIRE BARRIER

KEYPLAN:



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PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

1/10/2025

DKA JOB NUMBER
2401

DEWBERRY NUMBER
50171439

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BID DOCUMENTS
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SHEET TITLE

FIRST FLOOR PIPING PLAN AREA A

M01.11

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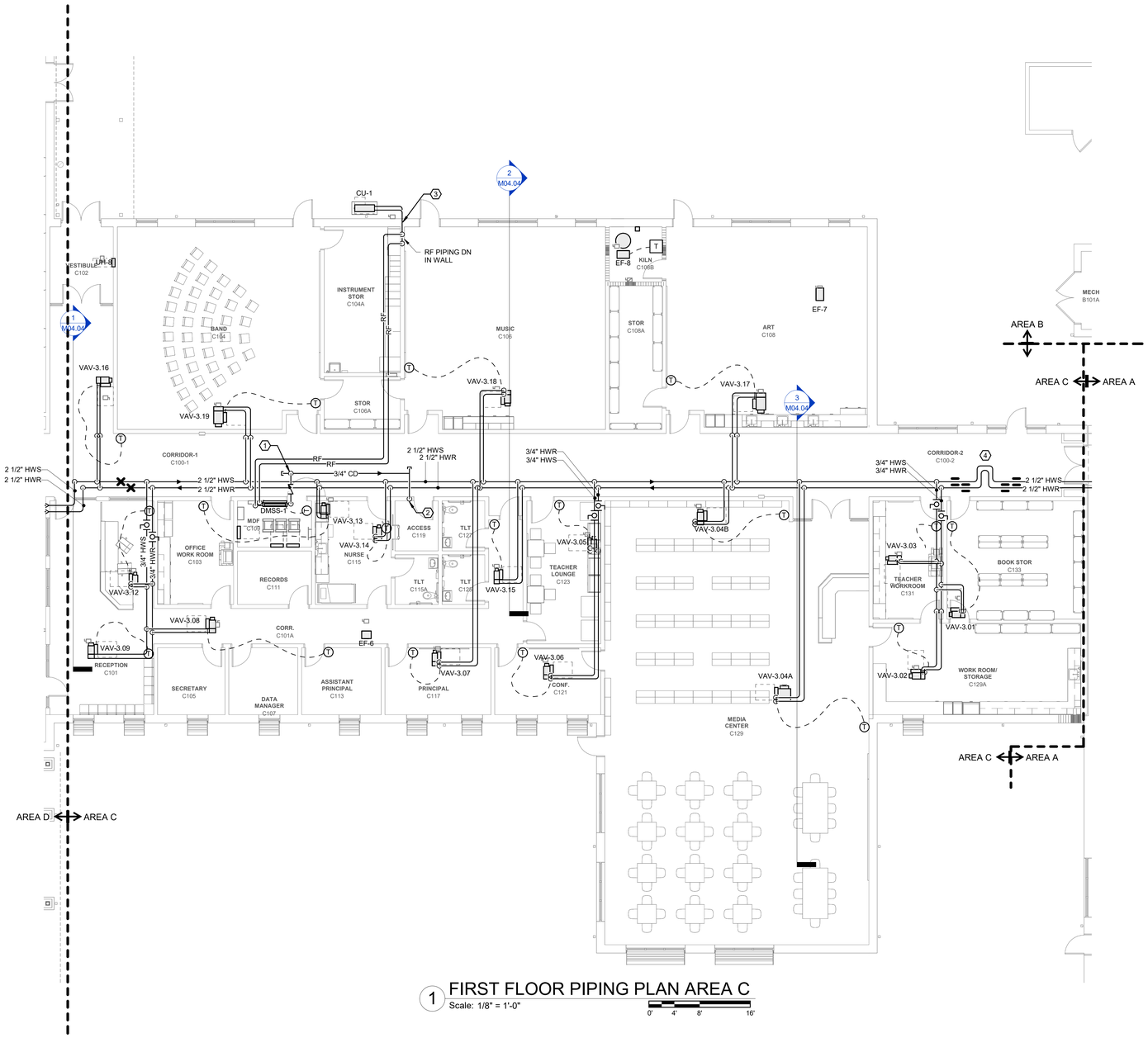


1 FIRST FLOOR PIPING PLAN AREA C
Scale: 1/8" = 1'-0"
0' 4' 8' 16'

GENERAL NOTES:

1. SEE SHEET M00.01 FOR LEGEND AND GENERAL MECHANICAL PROJECT NOTES.
2. REFER TO EQUIPMENT SCHEDULES FOR PIPING BRANCH SIZES FROM MAINS TO HEATING AND COOLING COILS.

KEYNOTES:

1 CONNECT DMSS PUMPED CONDENSATE TO TOP OF GRAVITY DRAINED CONDENSATE LINE. ROUTE GRAVITY DRAIN LINE WITH CONTINUOUS SLOPE THROUGH CEILING TO RECEPTOR AS SHOWN.

2 3/4" CD DN IN WALL; TERMINATE WITH AIR GAP AT CONDENSATE RECEPTICAL WALL BOX. REFER TO PLUMBING.

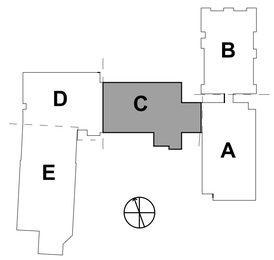
3 SEAL REFRIGERANT PIPING AT WALL PENETRATION. REFER TO DETAIL.

4 PROVIDE METRAFLEX METRALOOP OR EQUAL. INSTALL PER MANUFACTURER'S REQUIREMENTS. PROVIDE GUIDES AND ANCHORS PER MANUFACTURER'S RECOMMENDATIONS.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039893 SCOTT W. DAY
1/10/2025

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SHEET TITLE
FIRST FLOOR PIPING PLAN AREA C

M01.13

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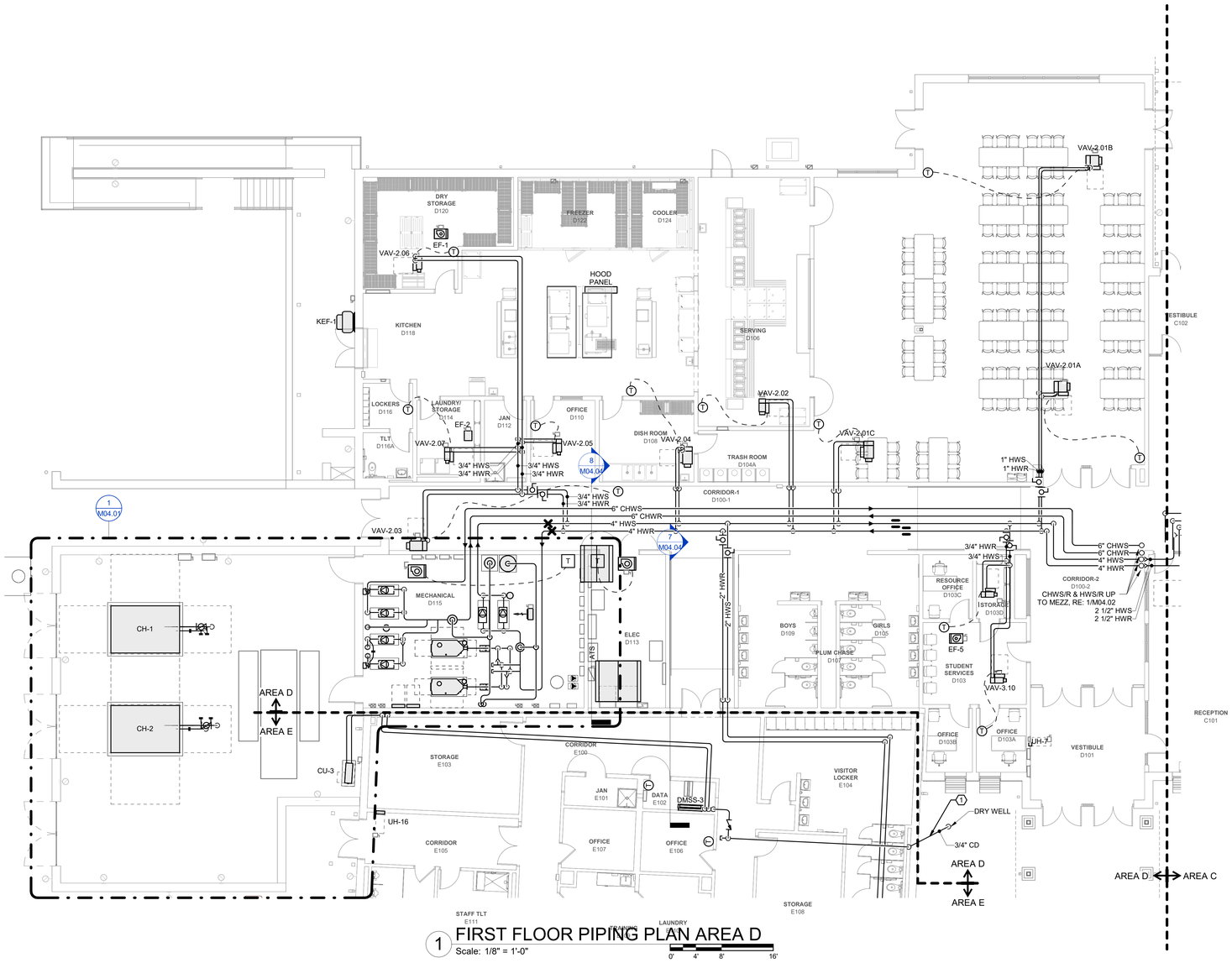


1 FIRST FLOOR PIPING PLAN AREA D
Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

1. SEE SHEET M00.01 FOR LEGEND AND GENERAL MECHANICAL PROJECT NOTES.
2. REFER TO EQUIPMENT SCHEDULES FOR PIPING BRANCH SIZES FROM MAINS TO HEATING AND COOLING COILS.

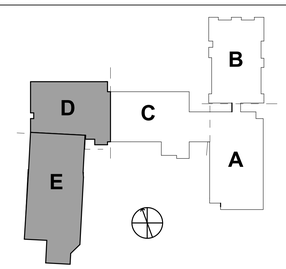
KEYNOTES:

1 3/4" CD BELOW GROUND FROM RISER IN CHASE TO DRY WELL. REFER TO DRY WELL DETAIL FOR REQUIREMENTS.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039893 SCOTT W. DAVIS

1/10/2025

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SHEET TITLE
FIRST FLOOR PIPING PLAN AREA D

M01.14

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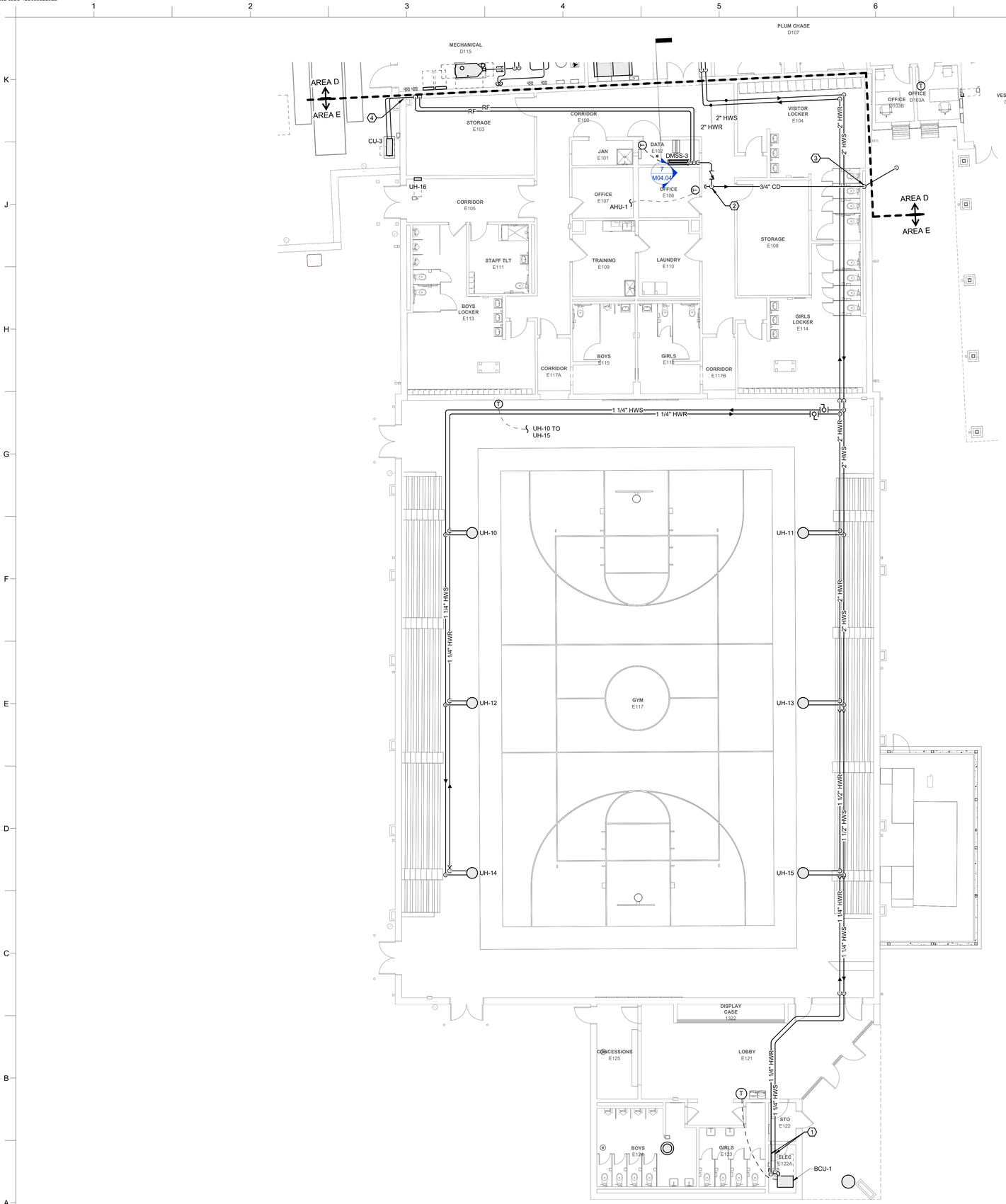


1 FIRST FLOOR PIPING PLAN AREA E
Scale: 1/8" = 1'-0"
0' 4' 8' 16'

GENERAL NOTES:

1. SEE SHEET M00.01 FOR LEGEND AND GENERAL MECHANICAL PROJECT NOTES.
2. REFER TO EQUIPMENT SCHEDULES FOR PIPING BRANCH SIZES FROM MAINS TO HEATING AND COOLING COILS.

(#) KEYNOTES:

1 CHW LOOP DIFFERENTIAL PRESSURE SENSOR. REFER TO CONTROLS DRAWINGS AND DIFFERENTIAL PRESSURE TRANSMITTER DETAIL.

2 CONNECT DMSS PUMPED CONDENSATE TO TOP OF GRAVITY DRAINED CONDENSATE LINE. ROUTE GRAVITY DRAIN LINE WITH CONTINUOUS SLOPE THROUGH CEILING TO DRY WELL AS SHOWN.

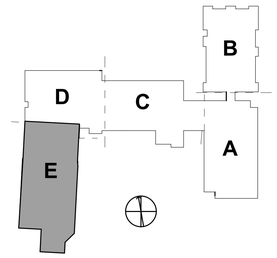
3 3/4" CD DN IN CHASE TO BELOW GROUND, CONTINUING TO DRY WELL. REFER TO DRY WELL DETAIL FOR REQUIREMENTS.

4 SEAL REFRIGERANT PIPING AT WALL PENETRATION. REFER TO DETAIL.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER SEAL 039893 SCOTT W. DAVIS
1/10/2025

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SHEET TITLE
FIRST FLOOR PIPING PLAN AREA E

M01.15

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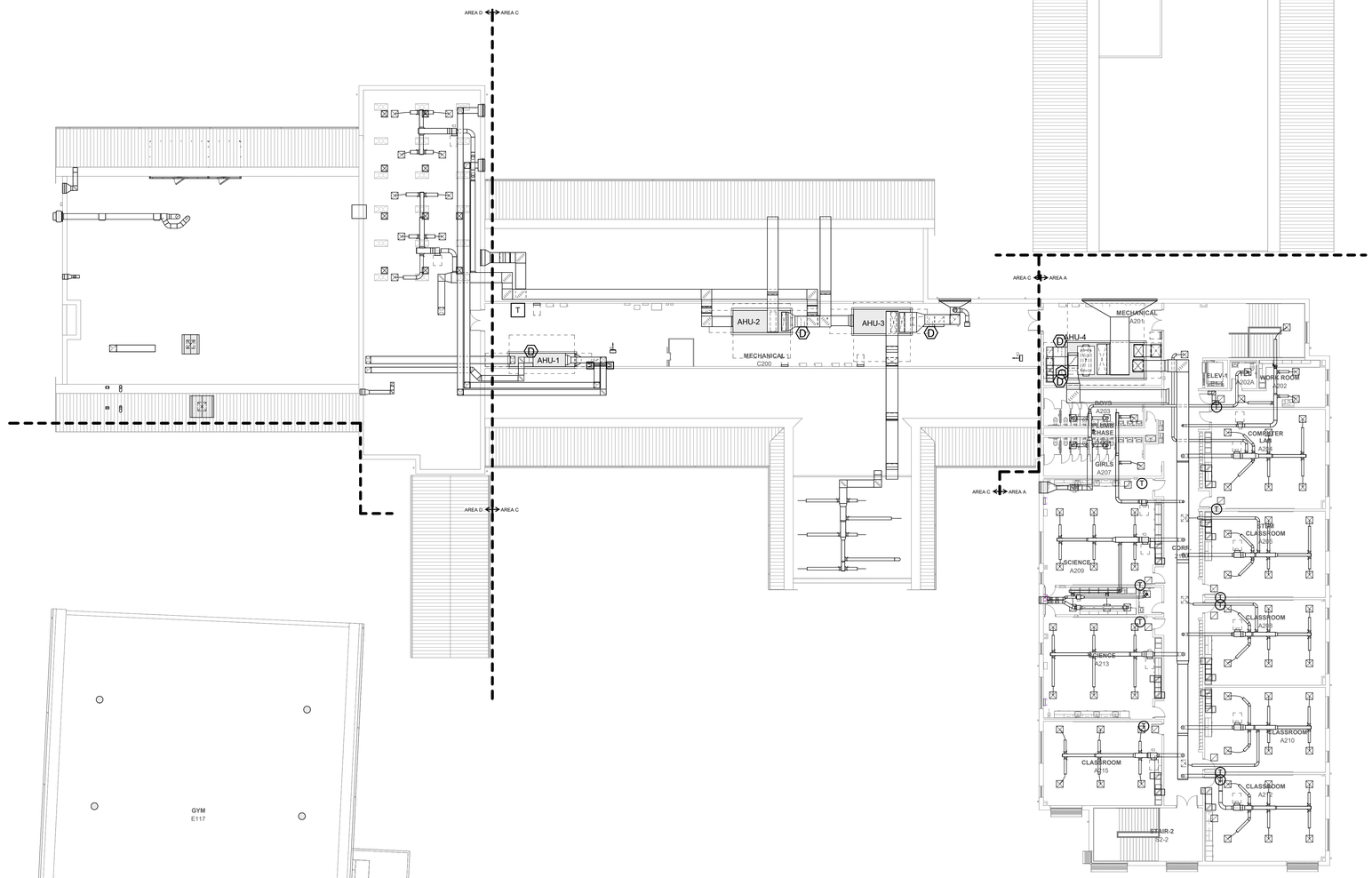


1 SECOND FLOOR DUCTWORK PLAN

Scale: 1/16" = 1'-0"

0' 8' 16' 32'

GENERAL NOTES:

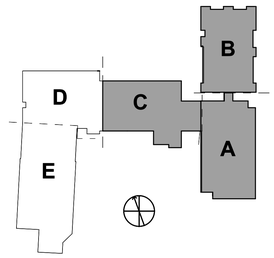
1. SEE SHEET M0.01 FOR LEGEND AND GENERAL MECHANICAL PROJECT NOTES.
2. REFER TO MECHANICAL PIPING PLANS FOR THERMOSTAT ASSIGNMENTS.
3. TAB CONTRACTOR SHALL BALANCE DEVICES TO AIRFLOWS INDICATED.

(#) KEYNOTES:

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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NORTH CAROLINA PROFESSIONAL SEAL 039893 ENGINEER SCOTT W. DAVIS

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SHEET TITLE

SECOND FLOOR DUCTWORK PLAN

M02.00

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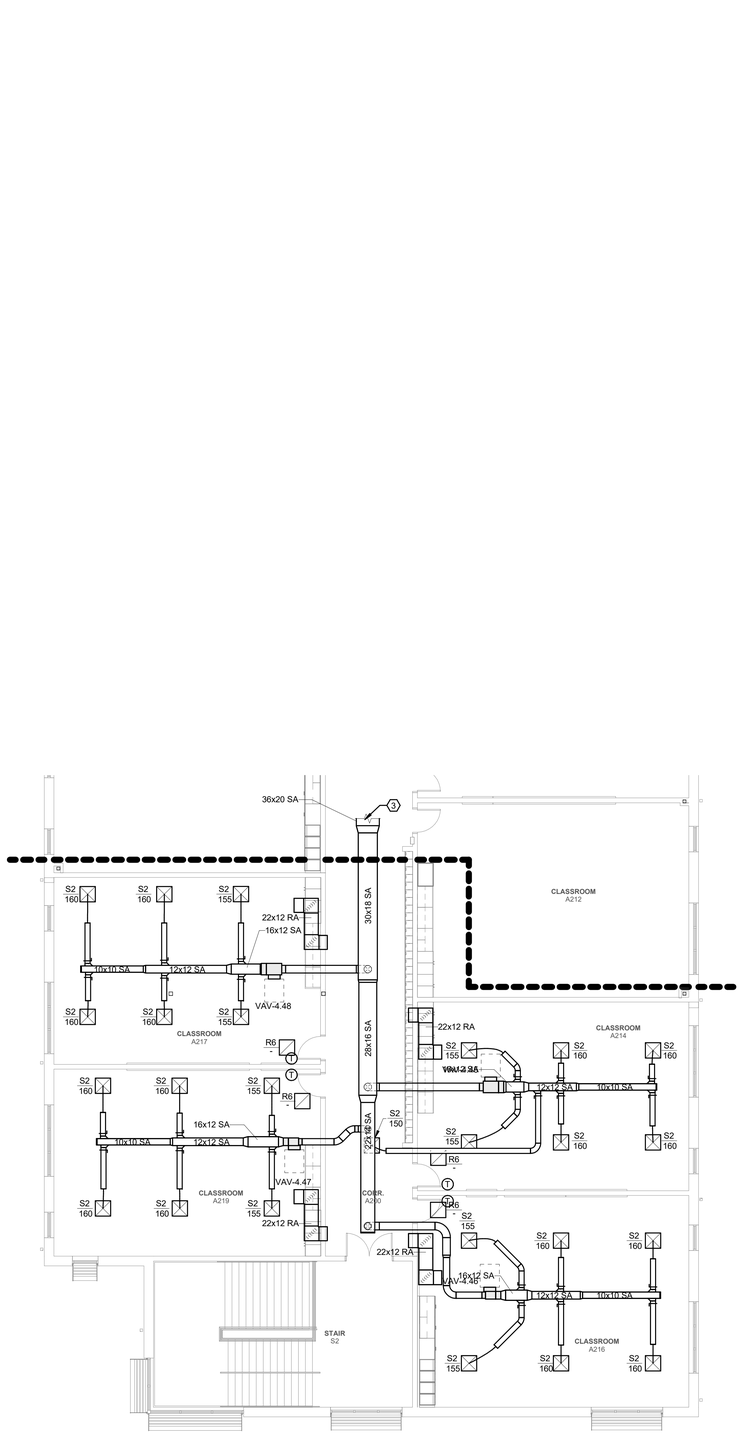
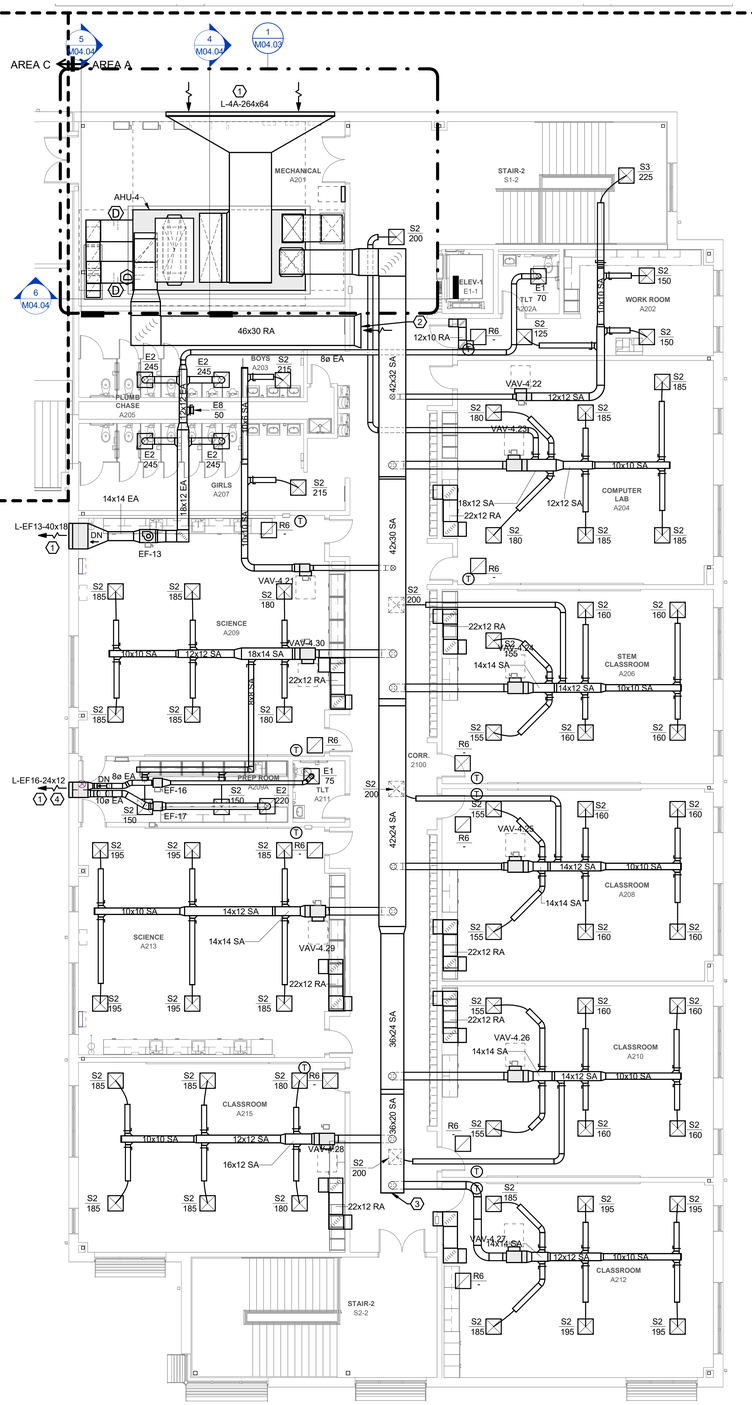


1 SECOND FLOOR DUCTWORK PLAN AREA A - BID ALT NO. 1

Scale: 1/8" = 1'-0"

0' 4' 8' 16'



2 SECOND FLOOR DUCTWORK PLAN AREA A

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

1. SEE SHEET M0.01 FOR LEGEND AND GENERAL MECHANICAL PROJECT NOTES.
2. REFER TO MECHANICAL PIPING PLANS FOR THERMOSTAT ASSIGNMENTS.
3. TAB CONTRACTOR SHALL BALANCE DEVICES TO AIRFLOWS INDICATED.

KEYNOTES:

1 LOUVER SIZE SHOWN IS MINIMUM REQUIRED FOR HVAC DESIGN. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOUVER SIZE & LOCATION.

2 46X30 RA DUCT FLARED OUT TO 54X42 FOR PLENUM RETURN INLET.

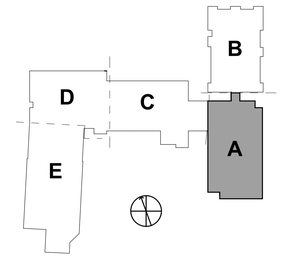
3 POINT OF DEMARK BETWEEN BASE BID AND BID ALT.1 CAP END OF DUCT IF BID ALT.1 NOT CONSTRUCTED

4 PROVIDE 50/50 SPLITTER IN LOUVER PLENUM.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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SECOND FLOOR DUCTWORK PLAN AREA A

M02.01

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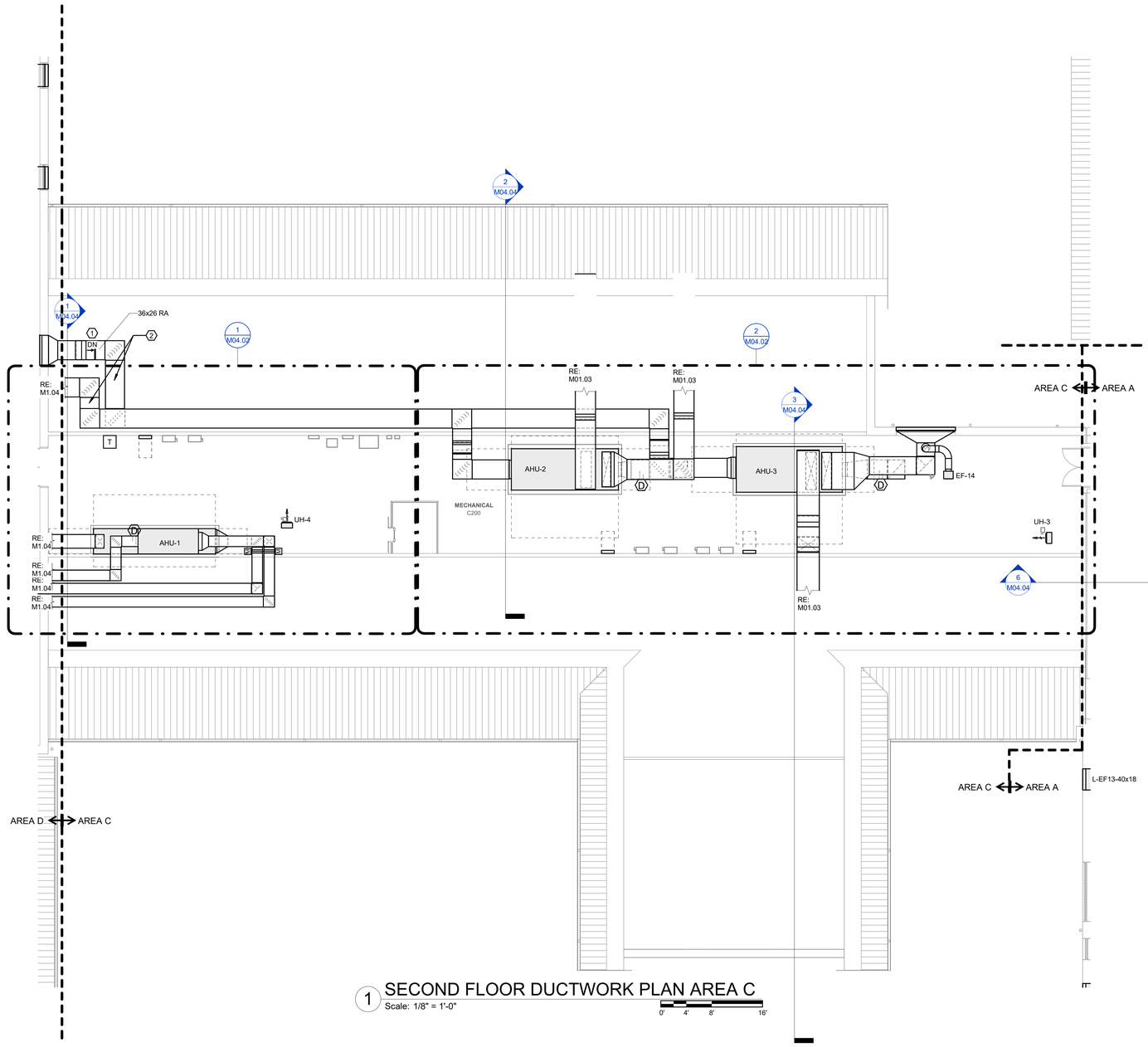


1 SECOND FLOOR DUCTWORK PLAN AREA C
Scale: 1/8" = 1'-0"
0' 4' 8' 16'

GENERAL NOTES:

1. SEE SHEET M00.01 FOR LEGEND AND GENERAL MECHANICAL PROJECT NOTES.
2. REFER TO EQUIPMENT SCHEDULES FOR PIPING BRANCH SIZES FROM MAINS TO HEATING AND COOLING COILS.

(#) KEYNOTES:

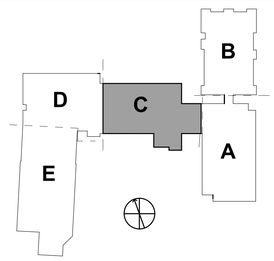
1 ROUTE RA DUCT DN BELOW BOTTOM OF ROOF TRUSS.

2 COORDINATE DUCT ROUTING BETWEEN ROOF TRUSSES.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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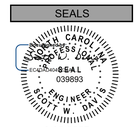

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SHEET TITLE

SECOND FLOOR DUCTWORK PLAN AREA C

M02.03

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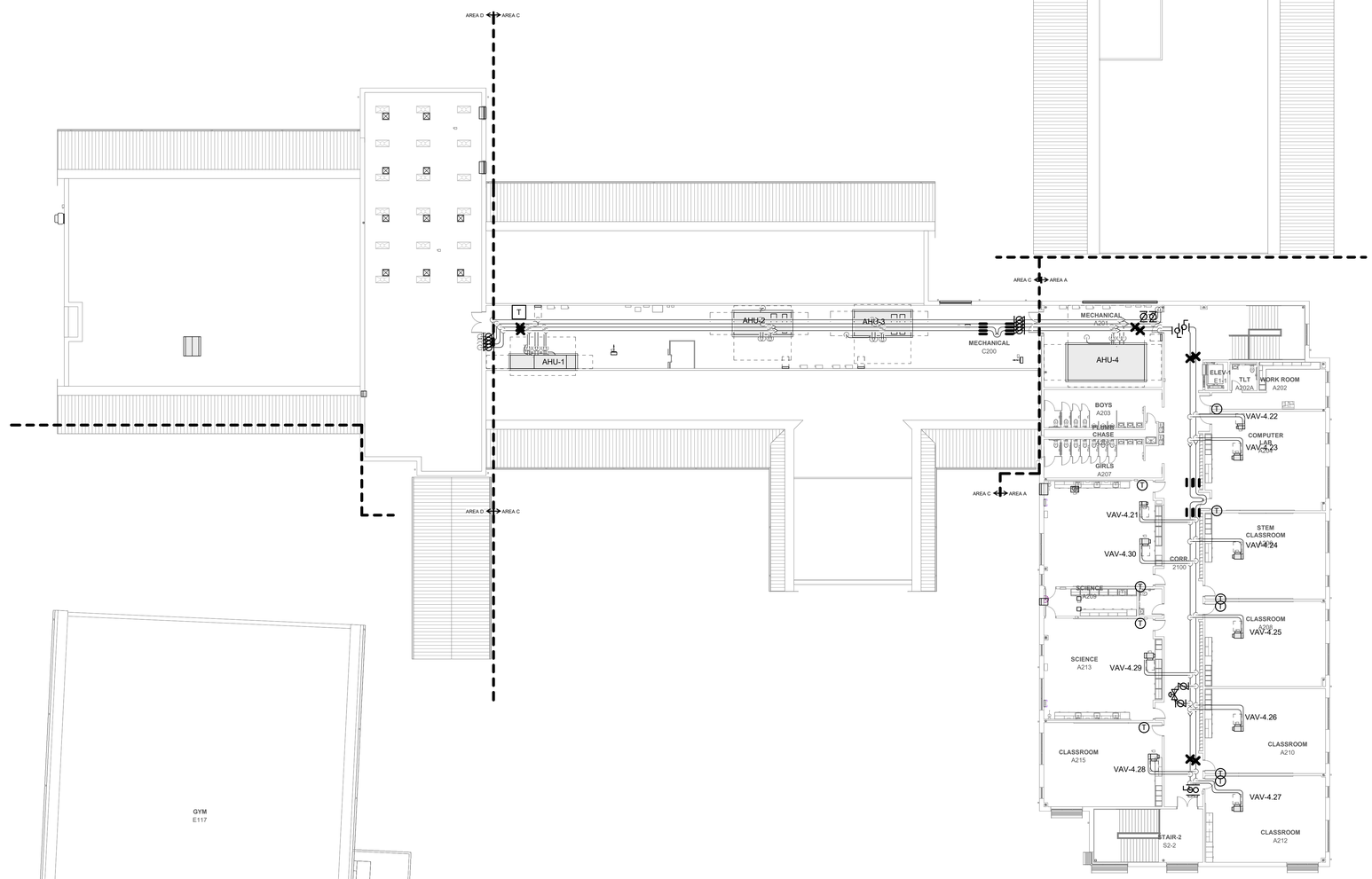


1 SECOND FLOOR PIPING PLAN
Scale: 1/16" = 1'-0"
0' 8' 16' 32'

GENERAL NOTES:

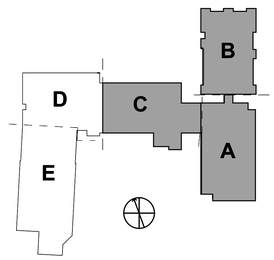
1. SEE SHEET M00.01 FOR LEGEND AND GENERAL MECHANICAL PROJECT NOTES.
2. REFER TO EQUIPMENT SCHEDULES FOR PIPING BRANCH SIZES FROM MAINS TO HEATING AND COOLING COILS.

(#) KEYNOTES:

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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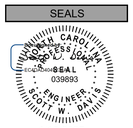
PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS



1/10/2025

DKA JOB NUMBER
2401

DEWBERRY NUMBER
50171439

REVISIONS

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Drawn By: SMF
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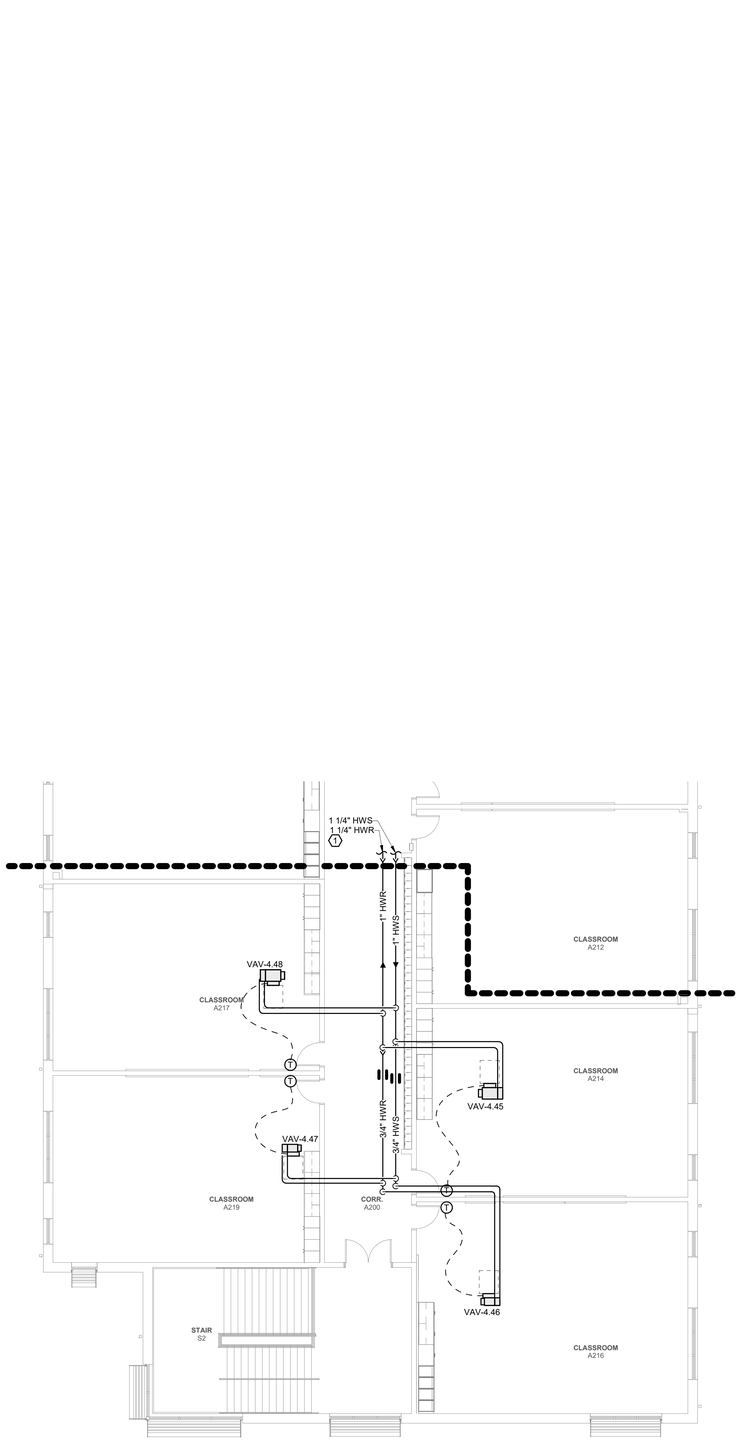
BID DOCUMENTS
01/10/2025

SHEET TITLE

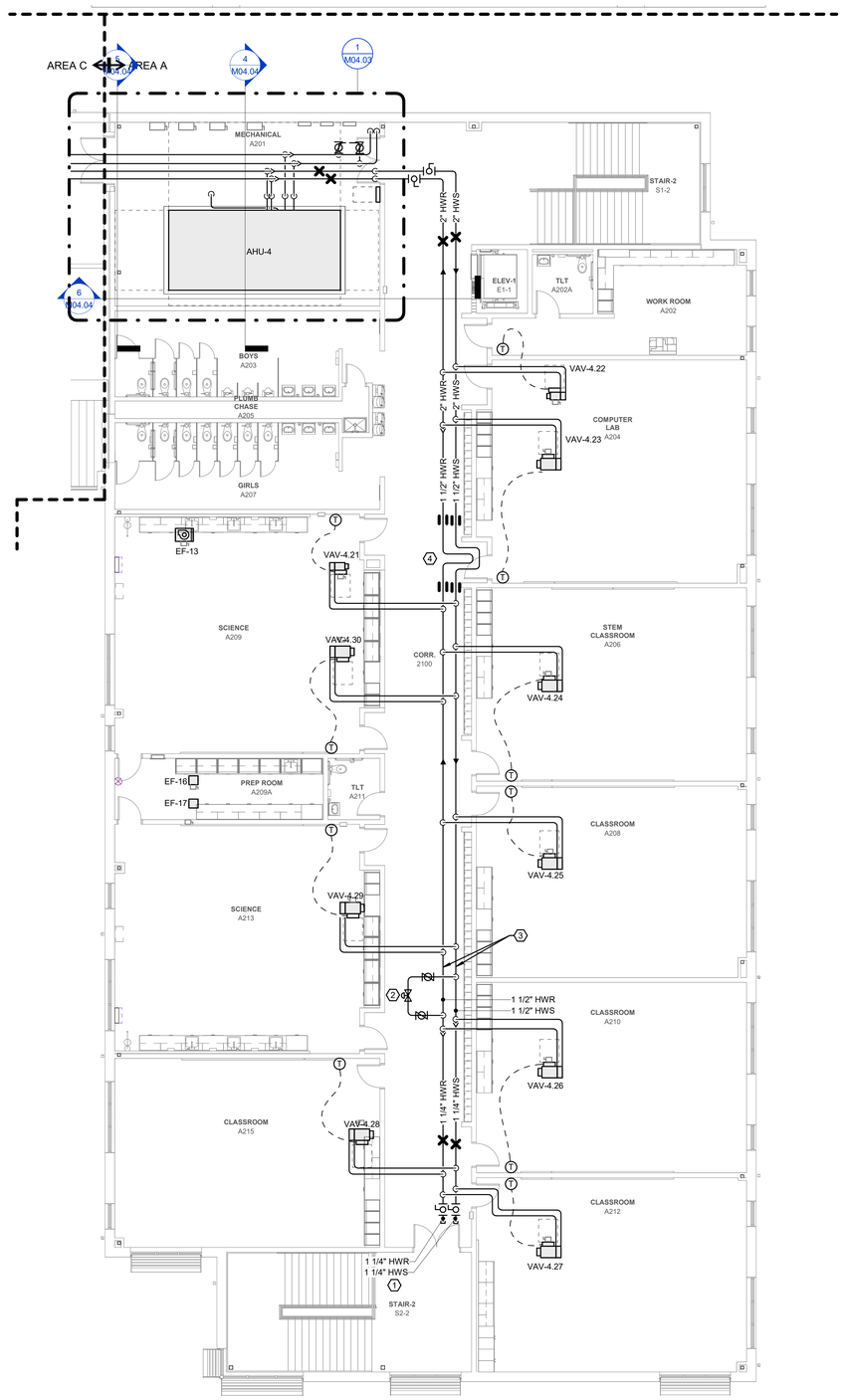
SECOND FLOOR PIPING PLAN

M02.10

Docusign Envelope ID: 63D80F16-124C-4E02-89EC-4BD985B2E6ED



1 SECOND FLOOR PIPING PLAN AREA A - BID ALT NO. 1
Scale: 1/8" = 1'-0"
0' 4' 8' 16'



2 SECOND FLOOR PIPING PLAN AREA A
Scale: 1/8" = 1'-0"
0' 4' 8' 16'

GENERAL NOTES:

1. SEE SHEET M00.01 FOR LEGEND AND GENERAL MECHANICAL PROJECT NOTES.
2. REFER TO EQUIPMENT SCHEDULES FOR PIPING BRANCH SIZES FROM MAINS TO HEATING AND COOLING COILS.

KEYNOTES:

1 POINT OF DEMARK BETWEEN BASE BID AND BIT ALT. 1. CAP ENDS OF HWS/R MAINS IF BID ALT. 1 NOT CONSTRUCTED.

2 HW LOOP BYPASS VALVE. REFER TO CONTROLS DRAWINGS AND BYPASS VALVE DETAIL.

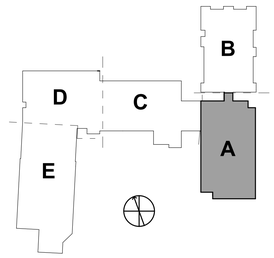
3 HW LOOP DIFFERENTIAL PRESSURE SENSOR. REFER TO CONTROLS DRAWINGS AND DIFFERENTIAL PRESSURE TRANSMITTER DETAIL.

4 PROVIDE METRAFLEX METRALOOP OR EQUAL. INSTALL PER MANUFACTURER'S REQUIREMENTS. PROVIDE GUIDES AND ANCHORS PER MANUFACTURER'S RECOMMENDATIONS.

WALL RATING LEGEND:

1-HR RATED FIRE BARRIER
2-HR RATED FIRE BARRIER
3-HR RATED FIRE BARRIER
4-HR RATED FIRE BARRIER

KEYPLAN:



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PROJECT INFORMATION

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PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT SEAL 039893 SCOTT W. DAVIS

1/10/2025

DKA JOB NUMBER
2401

DEWBERRY NUMBER
50171439

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SHEET TITLE
SECOND FLOOR PIPING PLAN AREA A

M02.11

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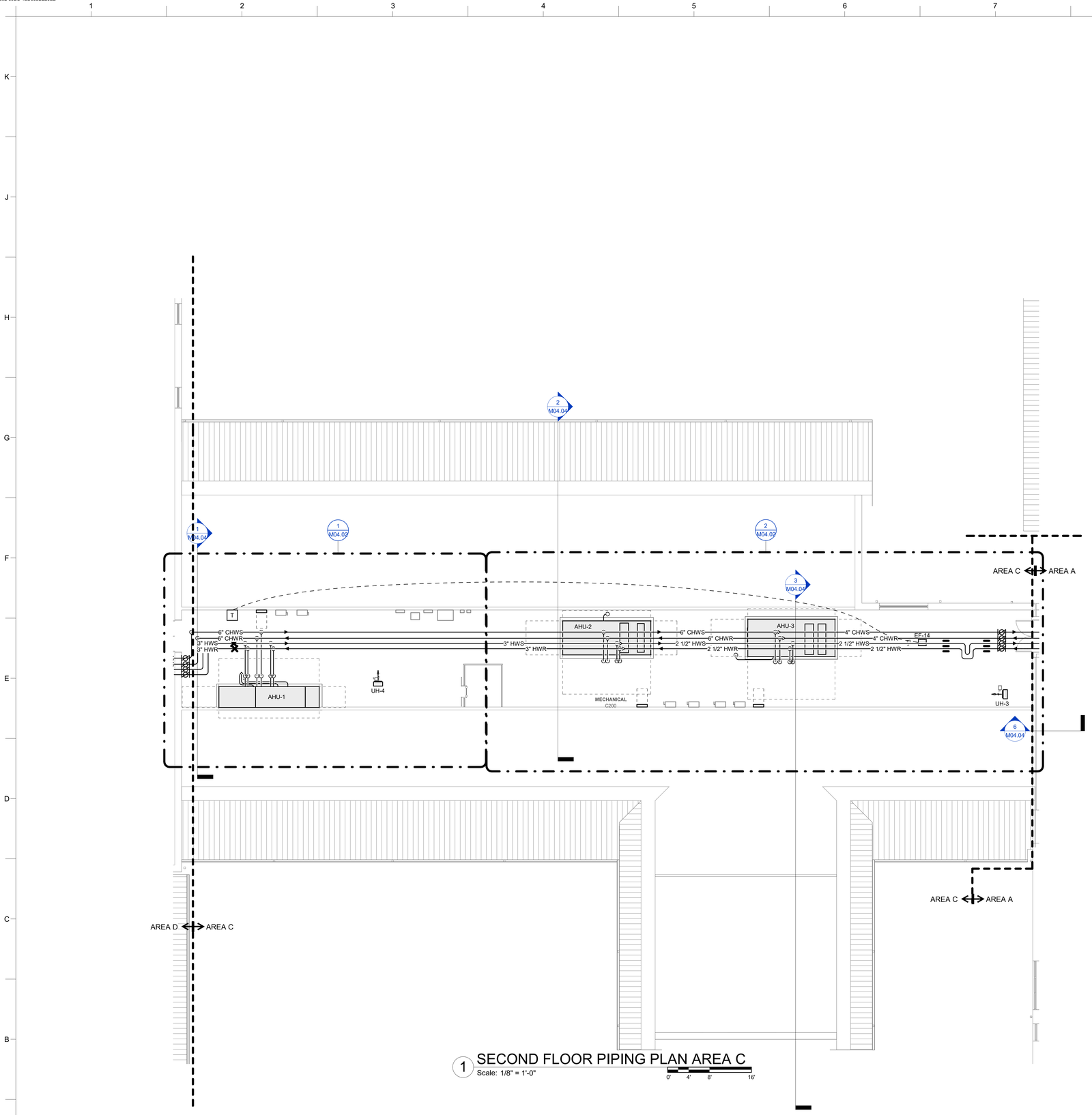


1 SECOND FLOOR PIPING PLAN AREA C
Scale: 1/8" = 1'-0"
0' 4' 8' 16'

GENERAL NOTES:

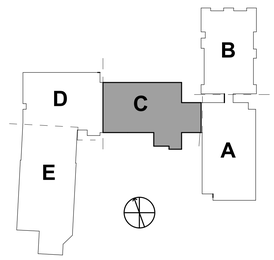
1. SEE SHEET M00.01 FOR LEGEND AND GENERAL MECHANICAL PROJECT NOTES.
2. REFER TO EQUIPMENT SCHEDULES FOR PIPING BRANCH SIZES FROM MAINS TO HEATING AND COOLING COILS.

KEYNOTES:

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION
WAYNE COUNTY PUBLIC SCHOOLS
541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039893 SCOTT W. HARRIS
1/10/2025

DKA JOB NUMBER
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DEWBERRY NUMBER
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01/10/2025

SHEET TITLE
SECOND FLOOR PIPING PLAN AREA C

M02.13

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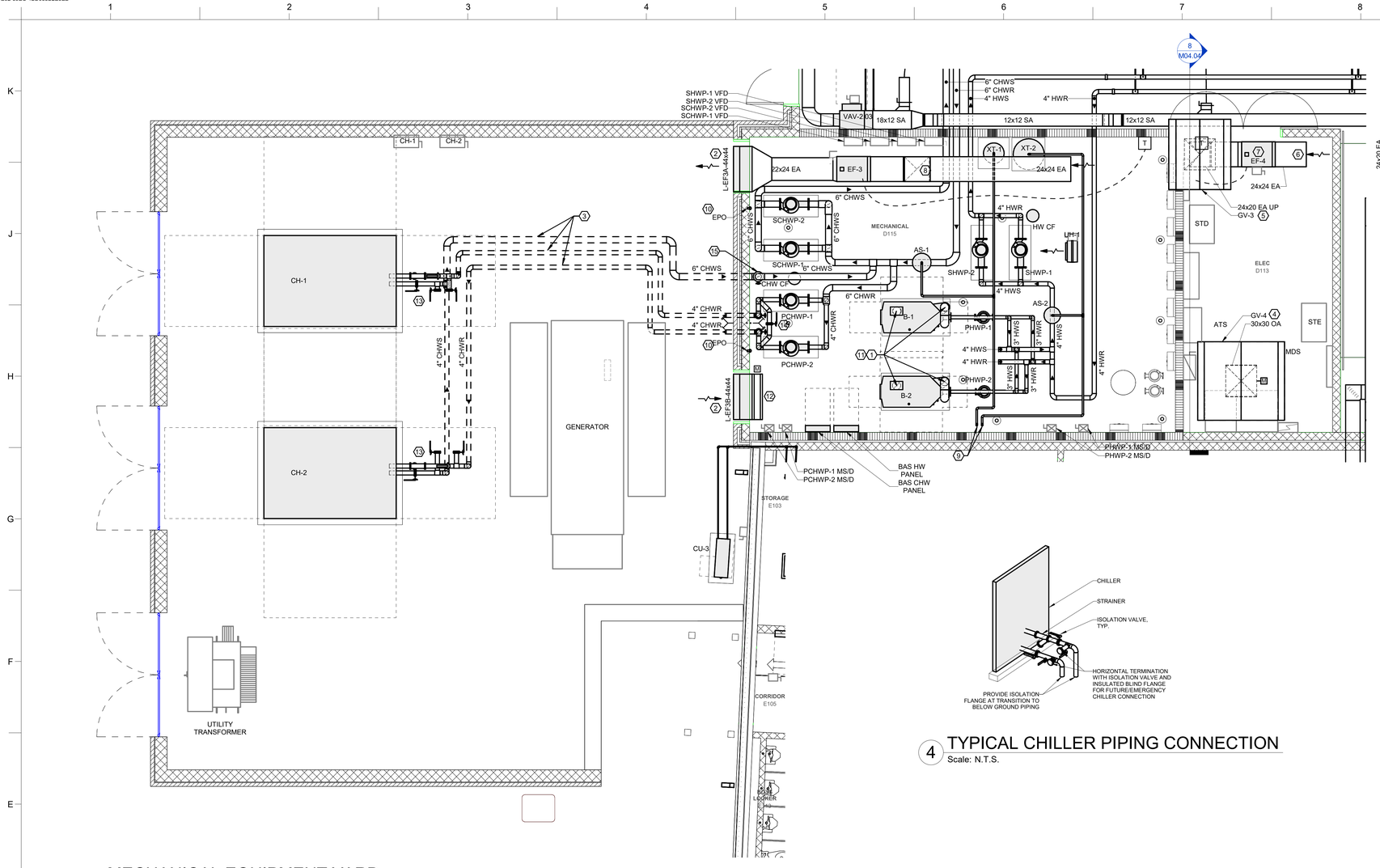


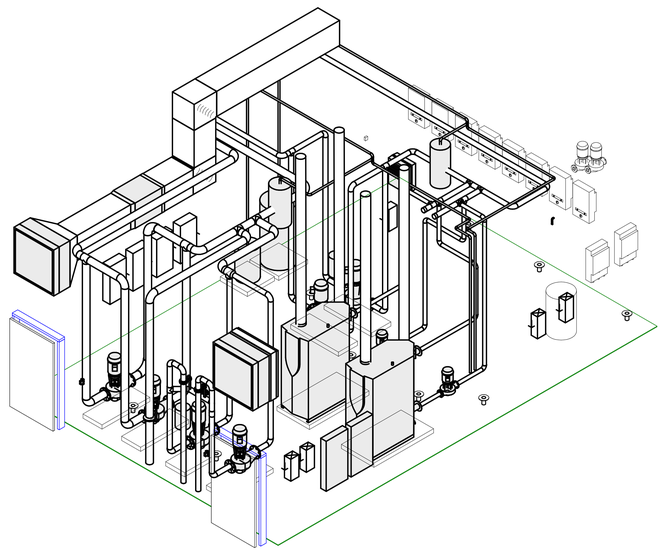
1 MECHANICAL EQUIPMENT YARD

Scale: 1/4" = 1'-0"

0' 2' 4' 8'

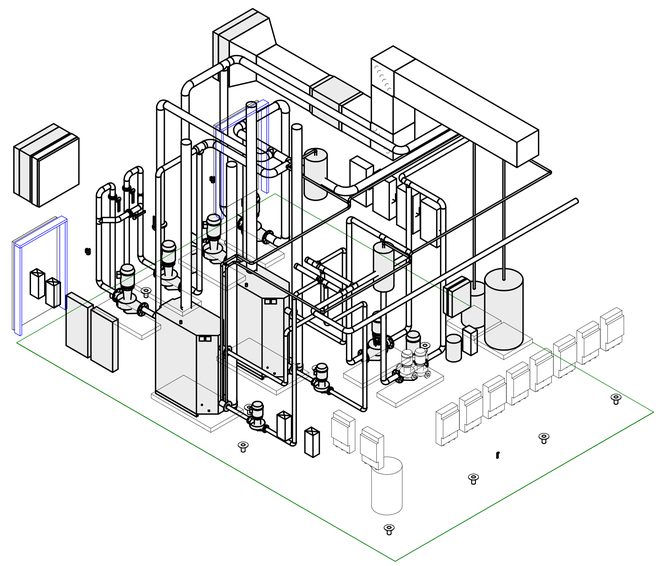
4 TYPICAL CHILLER PIPING CONNECTION

Scale: N.T.S.



2 BOILER ROOM ISOMETRIC - VIEW FROM SW

Scale: N.T.S.



3 BOILER ROOM ISOMETRIC - VIEW FROM SE

Scale: N.T.S.

GENERAL NOTES:

1. SEE SHEET M00.01 FOR LEGEND AND GENERAL MECHANICAL PROJECT NOTES.
2. REFER TO EQUIPMENT SCHEDULES FOR PIPING BRANCH SIZES FROM MAINS TO HEATING AND COOLING COILS.

KEYNOTES:

1 8Ø EXHAUST FLUE AND 8Ø COMBUSTION AIR INTAKE UP TO ROOF.

2 LOUVER SIZE SHOWN IS MINIMUM REQUIRED FOR HVAC DESIGN. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOUVER SIZE & LOCATION.

3 MAINTAIN MINIMUM 36-INCHES OF COVER. REFER TO BELOW GRADE PIPING DETAIL. COORDINATE ELEVATION DEPTHS WITH CIVIL ENGINEER AND SITE UTILITIES CONTRACTOR.

4 INTAKE GRAVITY HOOD ON PITCHED ROOF ABOVE. ROUTE 30X30 ON DN FROM HOOD AND TERMINATE @ 14'-6" AFF WITH GALVANIZED WIRE MESH SCREEN. INSTALL MOTORIZED ISOLATION DAMPER IN VERTICAL DUCT AND INTERLOCK TO OPEN WHEN EF-4 OPERATES.

5 GRAVITY EXHAUST AIR HOOD ON PITCHED ROOF ABOVE. ROUTE 24X20 EA UP TO HOOD FROM EF-4 DISCHARGE. INSTALL BACKDRAFT DAMPER IN DUCT AT FAN DISCHARGE.

6 PROVIDE MIN 3 FT LONG 24X24 EA DUCT AT FAN INLET. TERMINATE OPEN END WITH GALVANIZED WIRE MESH SCREEN.

7 MOUNT FAN AS HIGH AS POSSIBLE BELOW BOTTOM CHORD OF ROOF TRUSSES. BOTTOM OF FAN AND ASSOCIATED DUCTWORK SHALL BE LOCATED MIN. 12'-2" AFF.

8 OFFSET EA DUCT UP ABOVE BOTTOM CHORD OF ROOF TRUSSES AND EXTEND TO TERMINATION POINT SHOWN. TERMINATE OPEN END WITH GALVANIZED WIRE MESH SCREEN.

9 1-1/2" MAKEUP WATER DN TO BACKFLOW DEVICE. REFER TO PLUMBING DRAWINGS & MECHANICAL DETAILS FOR ADDITIONAL INFORMATION. PROVIDE SEPARATE PRV STATION FOR EACH CHW AND HW SYSTEM.

10 BOILER EMERGENCY POWER-OFF PUSH-BUTTON 48" AFF ADJACENT TO EXIT DOOR.

11 REFER TO PLUMBING DRAWINGS FOR GAS PIPING.

12 PROVIDE MOTORIZED ISOLATION DAMPER AT INTAKE LOUVER AND INTERLOCK TO OPEN WHEN EF-3 OPERATES.

13 REFER TO ISOMETRIC VIEW 4 ON THIS SHEET AND AIR-COOLED CHILLER DETAIL FOR CHILLER PIPING CONNECTION REQUIREMENTS. PIPING SHOWN STAGGERED FOR CLARIFICATION, ACTUAL PIPING IS VERTICALLY ALIGNED.

14 PROVIDE FULL SIZE 4" CHWR BYPASS WITH ISOLATION VALVES AS INDICATED TO MANUALLY ASSIGN EITHER PUMP TO EITHER CHILLER. REFER TO ISOMETRIC VIEWS ON THIS SHEET FOR VALVE LOCATIONS.

15 PROVIDE ISOLATION VALVE AT FLANGE TO UNDERGROUND PIPING.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:

PROJECT INFORMATION

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ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER SEAL 039893 SCOTT W. DAVIS

1/10/2025

DKA JOB NUMBER
2401

DEWBERRY NUMBER
50171439

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SHEET TITLE

LARGE SCALE FLOOR PLANS

M04.01

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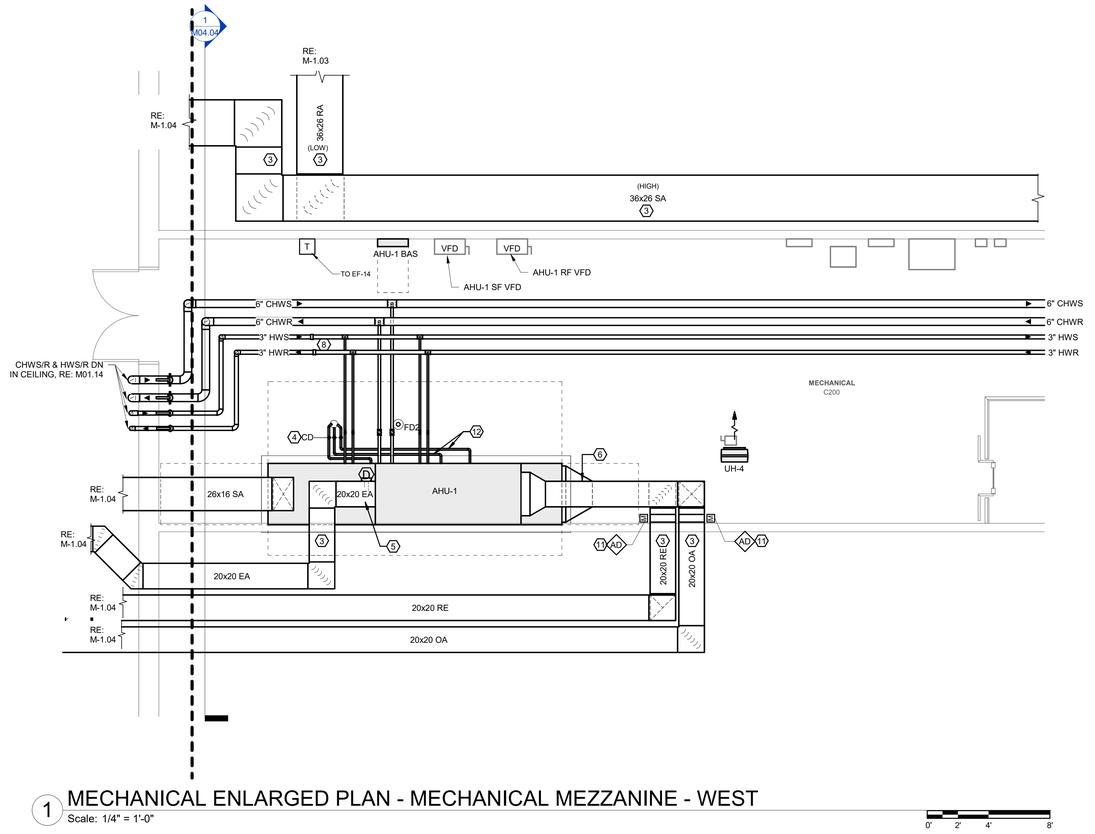
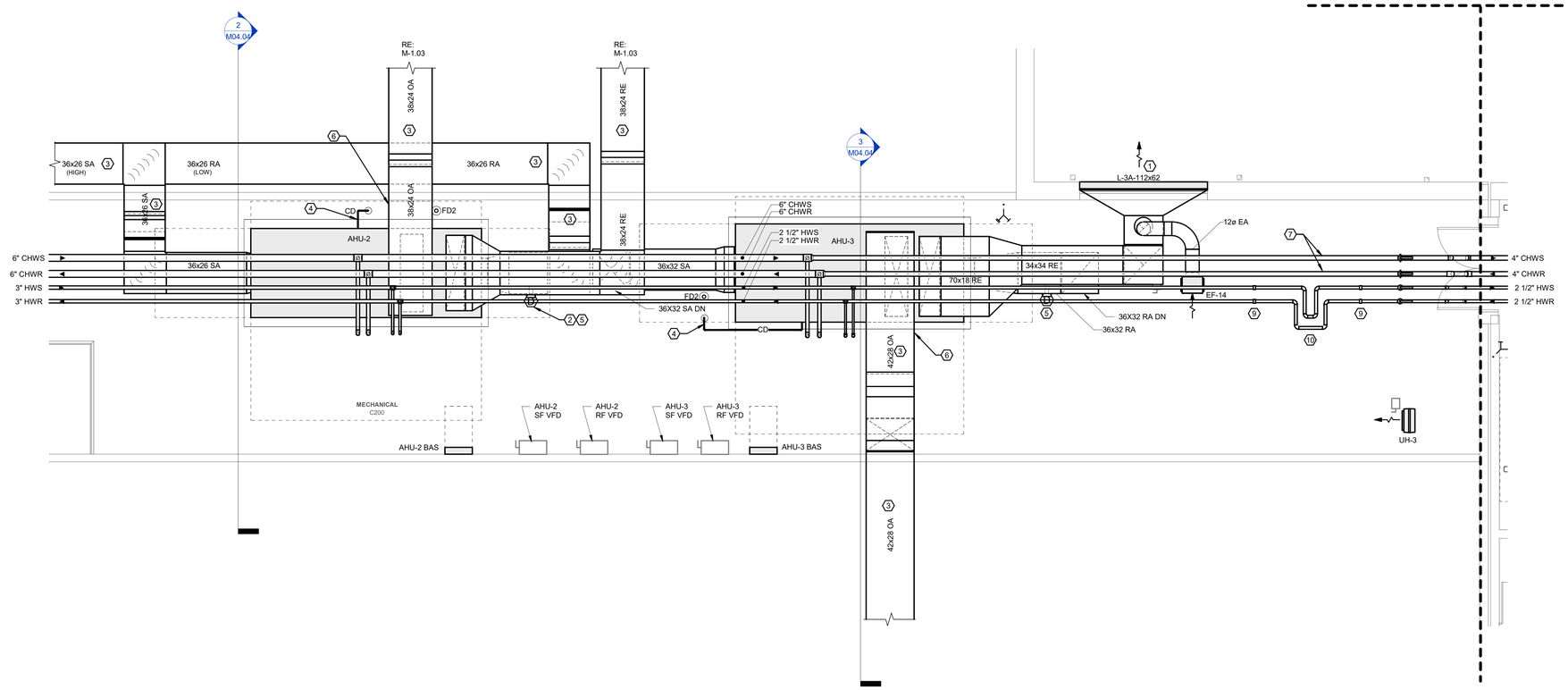


1 MECHANICAL ENLARGED PLAN - MECHANICAL MEZZANINE - WEST

Scale: 1/4" = 1'-0"

0' 2' 4' 8'



2 MECHANICAL ENLARGED PLAN - MECHANICAL MEZZANINE - EAST

Scale: 1/4" = 1'-0"

0' 2' 4' 8'

GENERAL NOTES:

1. SEE SHEET M00.01 FOR LEGEND AND GENERAL MECHANICAL PROJECT NOTES.
2. REFER TO EQUIPMENT SCHEDULES FOR PIPING BRANCH SIZES FROM MAINS TO HEATING AND COOLING COILS.

(#) KEYNOTES:

1 LOUVER SIZE SHOWN IS MINIMUM REQUIRED FOR HVAC DESIGN. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOUVER SIZE & LOCATION.

2 LOCATED IN 36X26 RA BELOW

3 COORDINATE EXACT DUCT ROUTING WITH ROOF TRUSSES. REFER TO STRUCTURAL DWGS AND TRUSS SHOP DRAWINGS.

4 ROUTE AHU CONDENSATE DRAIN TO CONDENSATE HUB DRAIN RECEPTOR. DRAIN LINE OD SHALL BE FULL SIZE OF THE UNIT CONNECTION. REFER TO PLUMBING FOR RECEPTOR LOCATION. REFER TO CONDENSATE TRAP DETAIL.

5 INSTALL DUCT MOUNTED RA SMOKE DETECTOR. COORDINATE WITH ELECTRICAL AND FIRE ALARM CONTRACTOR. REFER TO DUCT DETECTOR DETAIL.

6 PROVIDE AIR FLOW MEASURING STATION IN THIS LOCATION.

7 CHW LOOP DIFFERENTIAL PRESSURE SENSOR. REFER TO CONTROLS DRAWINGS AND DIFFERENTIAL PRESSURE TRANSMITTER DETAIL.

8 PROVIDE HOT WATER PIPING ANCHORS IN THIS LOCATION.

9 PROVIDE HOT WATER PIPING GUIDES IN THIS LOCATION.

10 PROVIDE METRAFLEX METRALOOP OR EQUAL. INSTALL PER MANUFACTURER'S REQUIREMENTS. PROVIDE GUIDES AND ANCHORS PER MANUFACTURER'S RECOMMENDATIONS.

11 PROVIDE MOTORIZED ISOLATION DAMPER IN DUCT IF NOT PROVIDED WITH AIR HANDLING UNIT. REFER TO AHU PREPURCHASE SUBMITTAL AND CONTROLS DRAWINGS.

12 PROVIDE CONDENSATE DRAINS WITH TRAPS FROM HEAT RECOVERY SECTION DRAIN CONNECTIONS. SIZE FULL SIZE OF UNIT CONNECTION.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:

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WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039893 KYLE W. DAVIS

1/10/2025

DKA JOB NUMBER
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SHEET TITLE

LARGE SCALE FLOOR PLANS

M04.02

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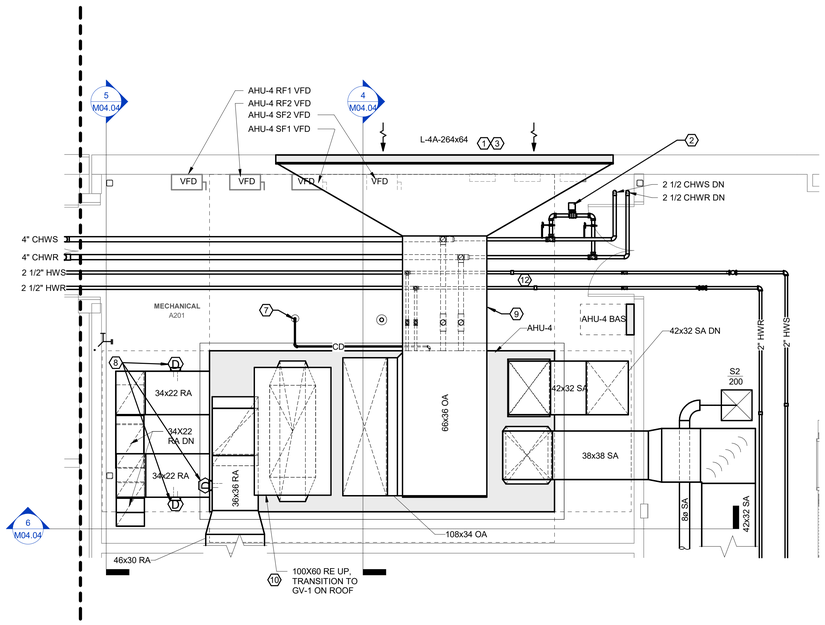
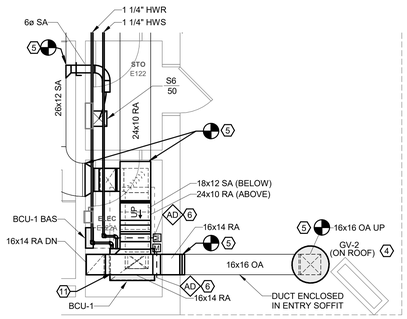


1 MECHANICAL ENLARGED PLAN - MECHANICAL A201

Scale: 1/4" = 1'-0"

0' 2' 4' 8'



2 MECHANICAL ENLARGED PLAN - ELEC RM E122A (BCU-1)

Scale: 1/4" = 1'-0"

0' 2' 4' 8'

GENERAL NOTES:

1. SEE SHEET M00.01 FOR LEGEND AND GENERAL MECHANICAL PROJECT NOTES.
2. REFER TO EQUIPMENT SCHEDULES FOR PIPING BRANCH SIZES FROM MAINS TO HEATING AND COOLING COILS.

(#) KEYNOTES:

1 LOUVER SIZE SHOWN IS MINIMUM REQUIRED FOR HVAC DESIGN. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOUVER SIZE & LOCATION.

2 CHW LOOP BYPASS VALVE. REFER TO CONTROLS DRAWINGS AND BYPASS VALVE DETAIL.

3 FIRE DAMPER NOT REQUIRED AT LOUVER IN EXTERIOR WALL IN ACCORDANCE WITH 2018 NCBC TABLE 705.8.

4 INSTALL GRAVITY INTAKE HOOD ON EXISTING ROOF CURB AND CONNECT TO EXISTING 16X16OA IN CURB. PROVIDE CURB ADAPTER AS NEEDED.

5 CONNECT TO EXISTING DUCT. PATCH DUCT INSULATION AND JACKET AT POINT OF CONNECTION.

6 PROVIDE MOTORIZED DAMPER. REFER TO CONTROLS DRAWINGS.

7 ROUTE AHU CONDENSATE DRAIN TO CONDENSATE HUB DRAIN RECEPTOR. DRAIN LINE OD SHALL BE FULL SIZE OF THE UNIT CONNECTION. REFER TO PLUMBING FOR RECEPTOR LOCATION. REFER TO CONDENSATE TRAP DETAIL.

8 INSTALL DUCT MOUNTED RA SMOKE DETECTOR. COORDINATE WITH ELECTRICAL AND FIRE ALARM CONTRACTOR. REFER TO DUCT DETECTOR DETAIL.

9 PROVIDE AIR FLOW MEASURING STATION IN THIS LOCATION.

10 REFER TO SCHEDULE FOR GRAVITY VENTILATOR INFORMATION.

11 INSTALL BLOWER COIL ON RAISED WELDED ANGLE-STEEL SUPPORT FRAME TO ACCOMMODATE BOTTOM RETURN DUCT CONNECTION. PROVIDE FLEXIBLE DUCT CONNECTIONS ON RA AND SA CONNECTIONS. REFER TO ISOMETRIC VIEW 7/M-4.05 FOR GENERAL ARRANGEMENT.

12 PROVIDE HOT WATER PIPING ANCHORS IN THIS LOCATION.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039893 SCOTT W. DAVIS

1/10/2025

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SHEET TITLE

LARGE SCALE
FLOOR PLANS

M04.03

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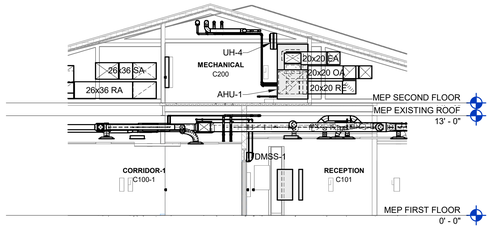
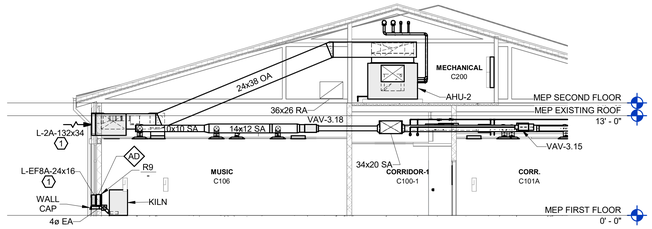
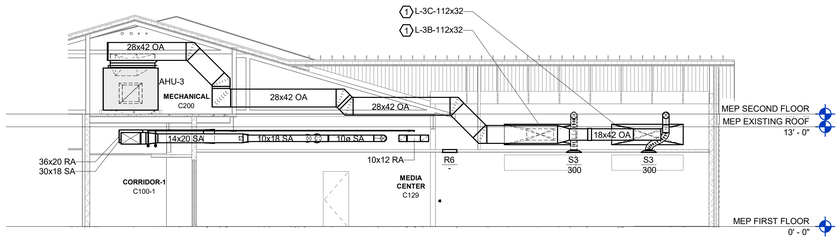


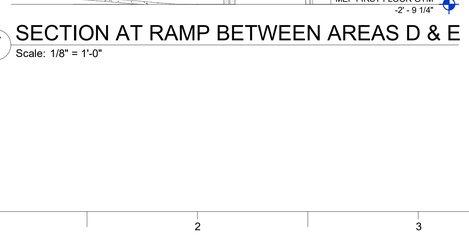
1 SECTION AT AHU-1 LOOKING EAST
Scale: 1/8" = 1'-0"



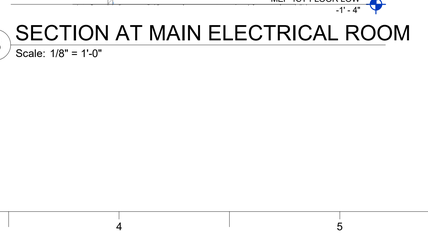
2 SECTION AT AHU-2 LOOKING EAST
Scale: 1/8" = 1'-0"



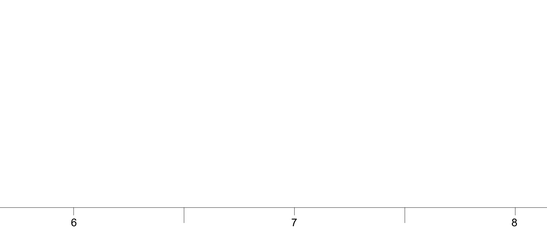
3 SECTION AT AHU-3 LOOKING EAST
Scale: 1/8" = 1'-0"



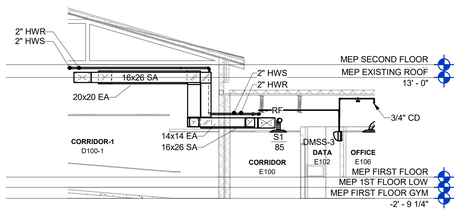
4 SECTION 1 AT AHU-4 LOOKING EAST
Scale: 1/8" = 1'-0"



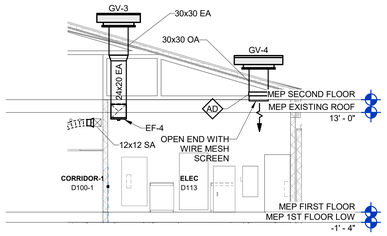
5 SECTION 2 AT AHU-4 LOOKING EAST
Scale: 1/8" = 1'-0"



6 SECTION AT AHU-4 LOOKING NORTH
Scale: 1/8" = 1'-0"



7 SECTION AT RAMP BETWEEN AREAS D & E
Scale: 1/8" = 1'-0"



8 SECTION AT MAIN ELECTRICAL ROOM
Scale: 1/8" = 1'-0"

GENERAL NOTES:

1. SEE SHEET M00.01 FOR LEGEND AND GENERAL MECHANICAL PROJECT NOTES.
2. REFER TO EQUIPMENT SCHEDULES FOR PIPING BRANCH SIZES FROM MAINS TO HEATING AND COOLING COILS.

(#) KEYNOTES:

1 LOUVER SIZE SHOWN IS MINIMUM REQUIRED FOR HVAC DESIGN. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOUVER SIZE & LOCATION.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:

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PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION
WAYNE COUNTY PUBLIC SCHOOLS
541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039893 SCOTT W. DAVIS
1/10/2025

DKA JOB NUMBER
2401
DEWBERRY NUMBER
50171439
REVISIONS

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SHEET TITLE
MECHANICAL SECTIONS

M04.04

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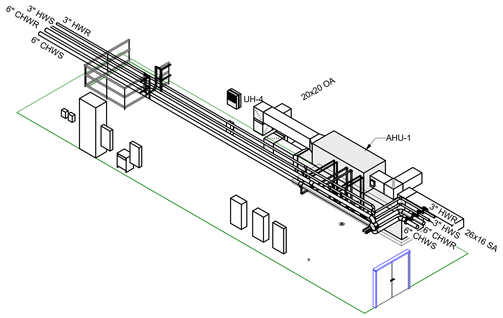
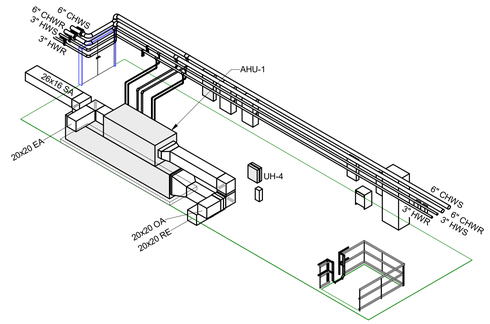
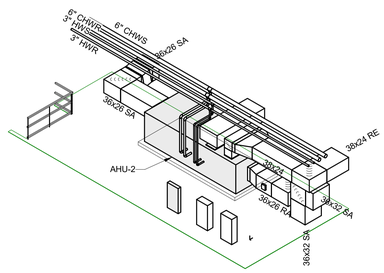


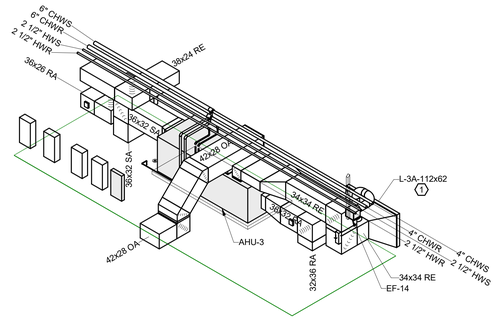
1 AHU-1 ISOMETRIC - VIEW FROM NW
Scale: N.T.S.



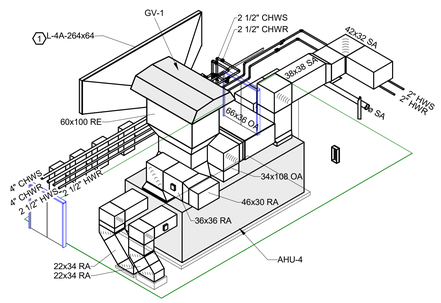
2 AHU-1 ISOMETRIC - VIEW FROM SE
Scale: N.T.S.



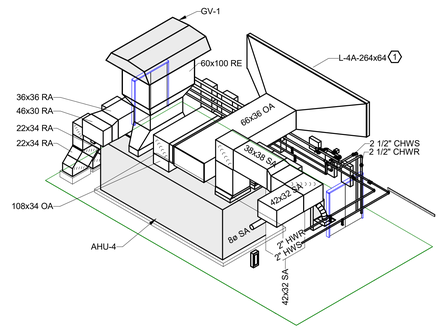
3 AHU-2 ISOMETRIC - VIEW FROM SE
Scale: N.T.S.



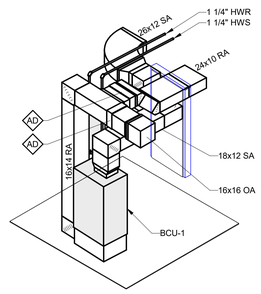
4 AHU-3 ISOMETRIC - VIEW FROM SE
Scale: N.T.S.



5 AHU-4 ISOMETRIC - VIEW FROM NE
Scale: N.T.S.



6 AHU-4 ISOMETRIC - VIEW FROM SE
Scale: N.T.S.



7 BCU-1 ISOMETRIC - VIEW FROM SE
Scale:

GENERAL NOTES:

1. SEE SHEET M00.01 FOR LEGEND AND GENERAL MECHANICAL PROJECT NOTES.
2. REFER TO EQUIPMENT SCHEDULES FOR PIPING BRANCH SIZES FROM MAINS TO HEATING AND COOLING COILS.

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SHEET TITLE
MECHANICAL ISOMETRIC VIEWS

M04.05

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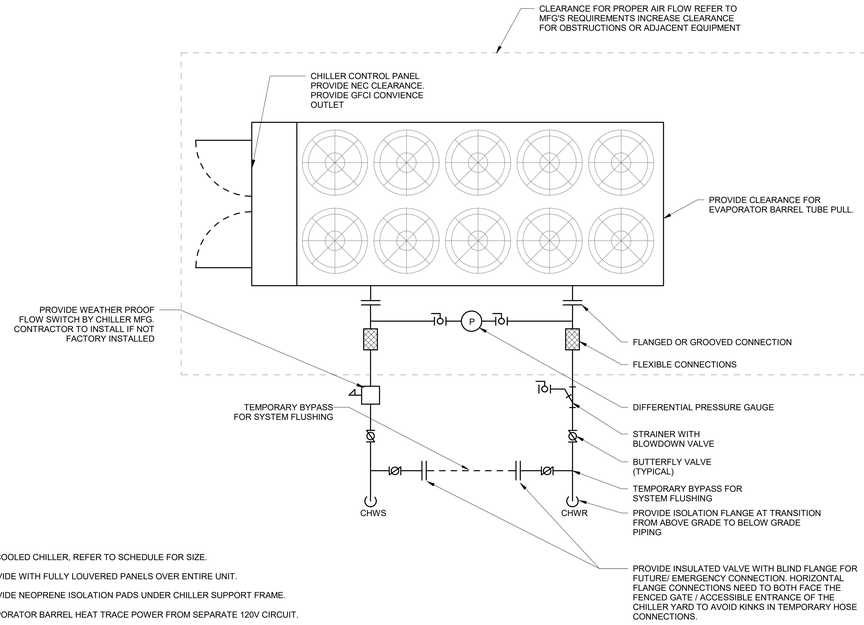
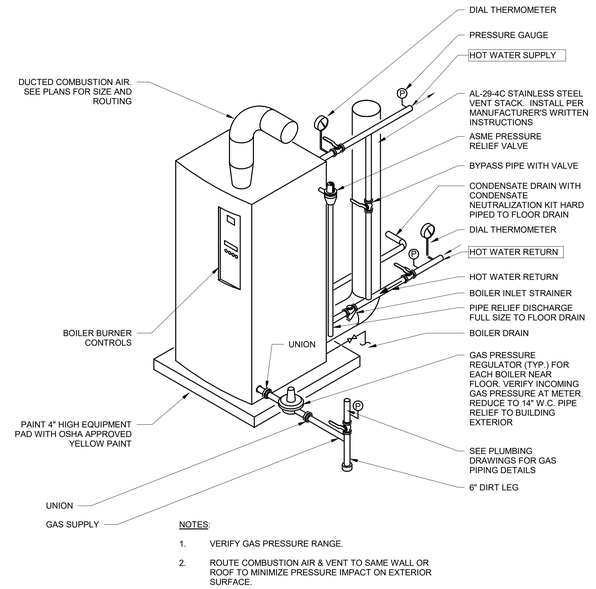


NOTES:

1. AIR COOLED CHILLER, REFER TO SCHEDULE FOR SIZE.
2. PROVIDE WITH FULLY LOUVERED PANELS OVER ENTIRE UNIT.
3. PROVIDE NEOPRENE ISOLATION PADS UNDER CHILLER SUPPORT FRAME.
4. EVAPORATOR BARREL HEAT TRACE POWER FROM SEPARATE 120V CIRCUIT.
5. PROVIDE HEAT TRACING OF ALL ABOVE GRADE PIPING, 120V/1. ABOVE GRADE PIPING TO 3' BELOW GRADE TO BE FIELD INSULATED WITH ALUMINUM JACKET.
6. BELOW GRADE PIPING SHALL BE BURIED TO MIN 3 FEET BELOW GRADE, REFER TO SPECIFICATIONS FOR MATERIALS AND UNDERGROUND WORK REQUIREMENTS.
7. REFER TO PLANS FOR PIPE SIZES.
8. LOCATE CHILLERS NO CLOSER THAN 20 FT FROM BUILDING OPENINGS FOR COMPLIANCE WITH REQUIREMENTS FOR CLASS A2 REFRIGERANTS.
9. PIPING CONFIGURATION SHOWN IS SCHEMATIC. COORDINATE EXACT ROUTING WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.

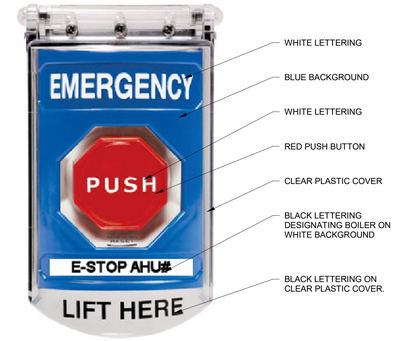
1 AIR COOLED CHILLER
Scale: N.T.S.



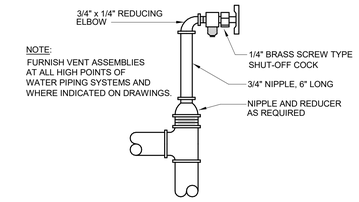
NOTES:

1. VERIFY GAS PRESSURE RANGE.
2. ROUTE COMBUSTION AIR & VENT TO SAME WALL OR ROOF TO MINIMIZE PRESSURE IMPACT ON EXTERIOR SURFACE.

2 CONDENSING BOILER
Scale: N.T.S.

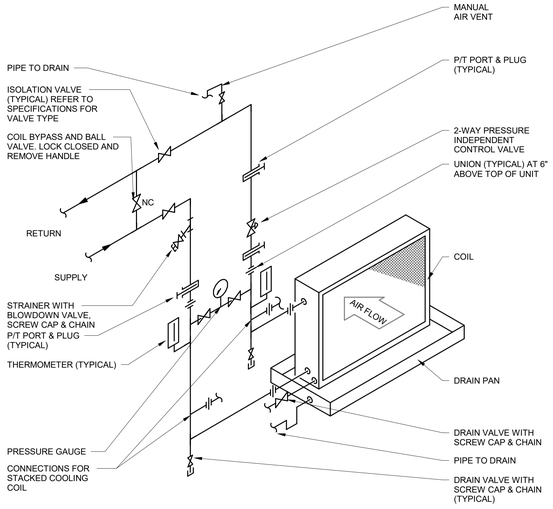


3 EMERGENCY PUSH OFF STATION (EPO)
Scale: N.T.S.



NOTE:
FURNISH VENT ASSEMBLIES AT ALL HIGH POINTS OF WATER PIPING SYSTEMS AND WHERE INDICATED ON DRAWINGS.

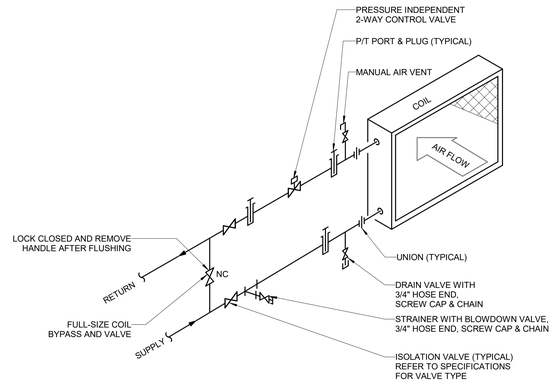
4 MANUAL AIR VENT DETAIL
Scale: N.T.S.



NOTES:

1. REFER TO SPECIFICATIONS FOR CONTROL AND BALANCING VALVE TYPES.
2. REFER TO EQUIPMENT SCHEDULES FOR PIPE SIZES.
3. PROVIDE DRAIN PAN OVERFLOW SWITCH FOR COOLING COIL.
4. COIL PIPING DROPS SHALL NOT BLOCK COIL PULL ACCESS.
5. PROVIDE MANUAL BALANCE VALVE (NOT SHOWN) ON EACH COIL OUTLET AT STACKED COIL CONNECTIONS.

5 AIR HANDLING UNIT COIL
Scale: N.T.S.



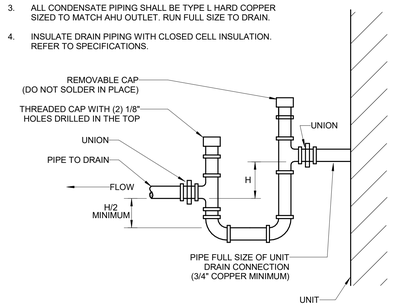
NOTE:

REFER TO SPECIFICATIONS FOR CONTROL VALVE REQUIREMENTS

6 TERMINAL UNIT COIL PIPING
Scale: N.T.S.

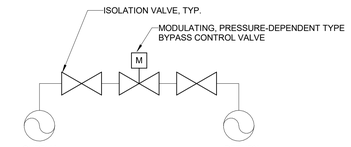
NOTES:

1. LOCATE TRAP SO AS TO BE ACCESSIBLE FOR CLEANING.
2. H = UNIT NEGATIVE PRESSURE (IN. W.C.) + 1 IN.
3. ALL CONDENSATE PIPING SHALL BE TYPE L HARD COPPER SIZED TO MATCH AHU OUTLET. RUN FULL SIZE TO DRAIN.
4. INSULATE DRAIN PIPING WITH CLOSED CELL INSULATION. REFER TO SPECIFICATIONS.



DRAW-THRU UNITS

7 CONDENSATE TRAP - DRAW-THRU
Scale: N.T.S.



NOTES:

1. REFER TO PLANS FOR BYPASS VALVE LOCATION(S).
2. BYPASS PIPING AND ISOLATION VALVES SHALL BE TEH FULL SIZE OF THE MAIN.

8 HYDRONIC SYSTEM BYPASS VALVE
Scale: 12" = 1'-0"

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Drawn By: SMF
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SHEET TITLE
DETAILS

M05.01

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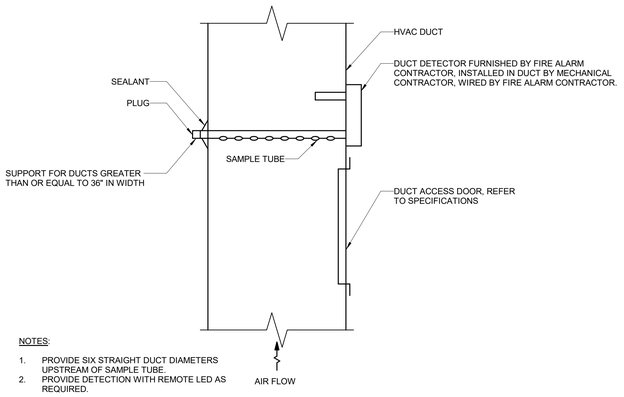
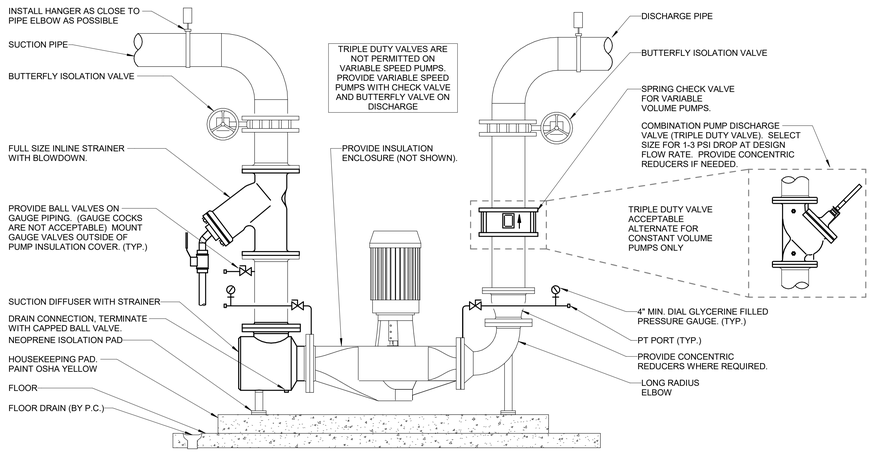


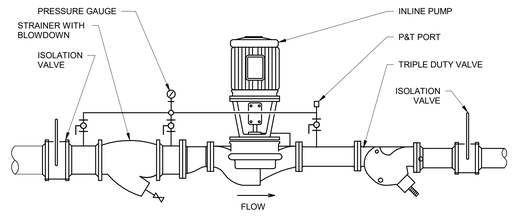
NOTES:

1. PROVIDE SIX STRAIGHT DUCT DIAMETERS UPSTREAM OF SAMPLE TUBE.
2. PROVIDE DETECTION WITH REMOTE LED AS REQUIRED.

1 DUCT DETECTOR
Scale: N.T.S.



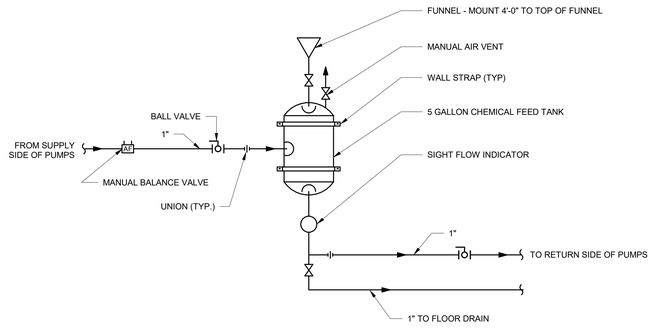
2 PAD MOUNTED VERTICAL INLINE PUMPS (SHWP-1&2, SCHWP-1&2, PCHWP-1&2)
Scale: N.T.S.



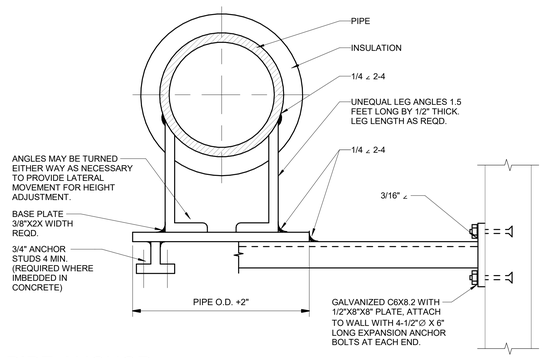
NOTE:

THIS DETAIL ONLY APPLICABLE TO CONSTANT VOLUME PUMPS. NOT ACCEPTABLE FOR USE WITH VARIABLE SPEED PUMPS.

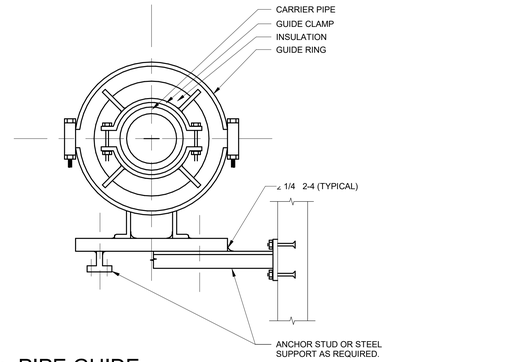
3 IN-LINE PUMP (PHWP-1, PHWP-2)
Scale: N.T.S.



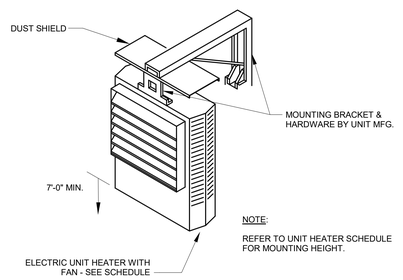
4 CHEMICAL FEEDER TANK
Scale: N.T.S.



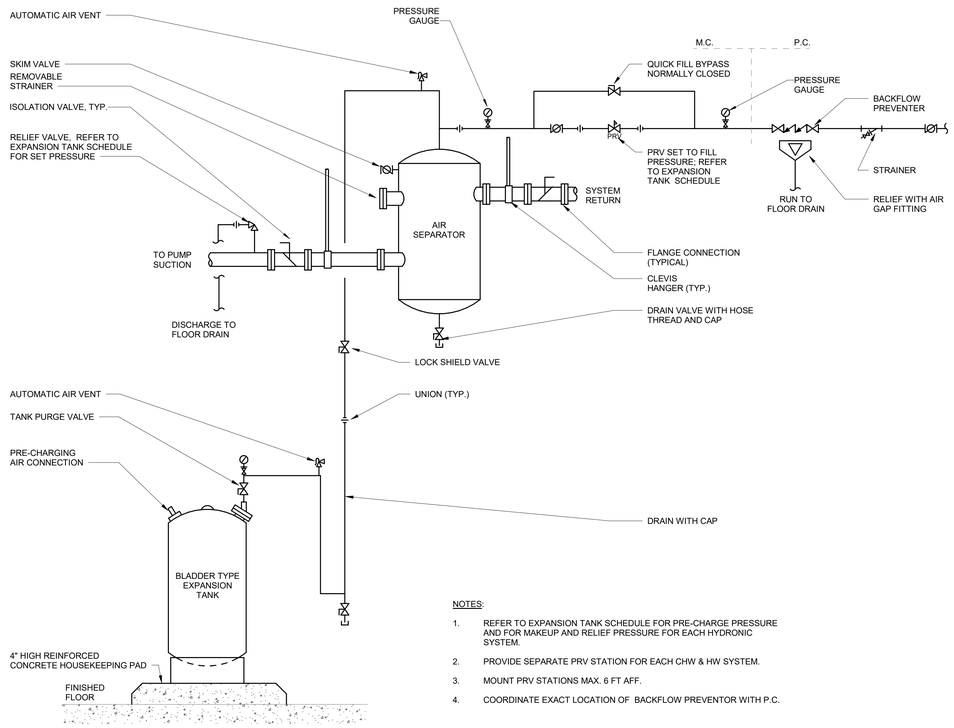
5 PIPE ANCHOR
Scale: N.T.S.



6 PIPE GUIDE
Scale: N.T.S.



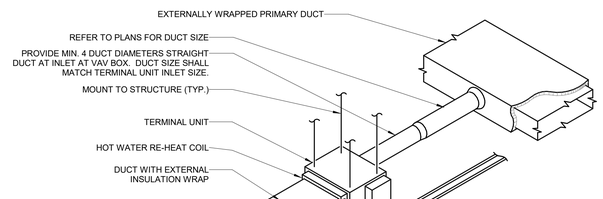
9 ELECTRIC UNIT HEATER DETAIL
Scale: N.T.S.



NOTES:

1. REFER TO EXPANSION TANK SCHEDULE FOR PRE-CHARGE PRESSURE AND FOR MAKEUP AND RELIEF PRESSURE FOR EACH HYDRONIC SYSTEM.
2. PROVIDE SEPARATE PRV STATION FOR EACH CHW & HW SYSTEM.
3. MOUNT PRV STATIONS MAX. 6 FT AFF.
4. COORDINATE EXACT LOCATION OF BACKFLOW PREVENTOR WITH P.C.

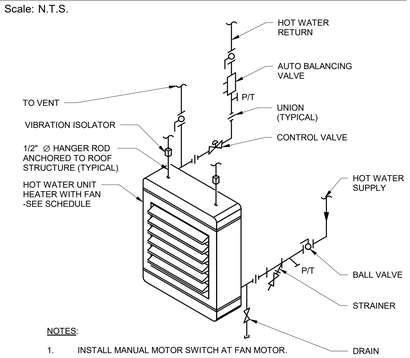
7 AIR SEPARATOR/EXPANSION TANK
Scale: N.T.S.



NOTES:

1. REFER TO PLANS AND SCHEDULES FOR DUCT SIZES.
2. PROVIDE 36" CLEARANCE SPACE TO ACCESS CONTROL SIDE OF TERMINAL UNIT. ENSURE ACCESS TO UNIT FROM BELOW CEILING GRID IS UNOBSTRUCTED.
3. TRANSITION TO TERMINAL UNIT INLET SIZE AS SPECIFIED.
4. CONTROL BOX SHALL BE ON THE SAME SIDE AS COIL CONNECTIONS AND REHEAT CONTROL VALVE.
5. PROVIDE GASKETED ACCESS DOORS PER SPECIFICATIONS.
6. DO NOT LOCATION SERVICE ACCESS ZONE ABOEV FIXED FURNITURE, CASEWORK, LARGE EQUIPMENT, AND OTHER OBSTRUCTIONS BELOW.

8 TERMINAL UNIT - HOT WATER REHEAT
Scale: N.T.S.



NOTES:

1. INSTALL MANUAL MOTOR SWITCH AT FAN MOTOR.
2. VERTICAL HW UNIT HEATER INSTALLATION SIMILAR WITH HIGH POINT AIR VENTS AND LOW POINT DRAIN.
3. SEE PLANS FOR MOUNTING HEIGHT.

10 HOT WATER UNIT HEATER PIPING
Scale: N.T.S.

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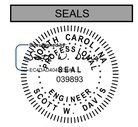

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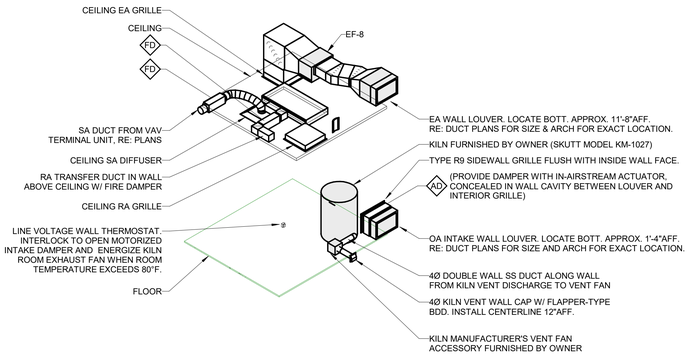
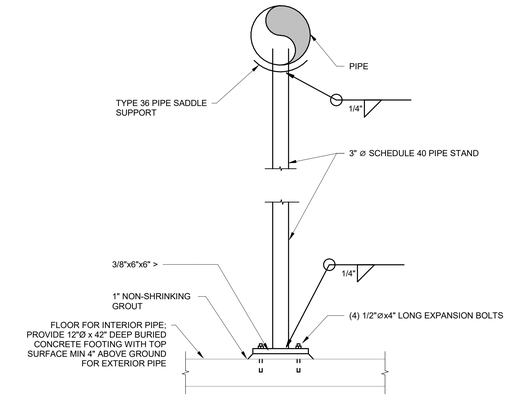
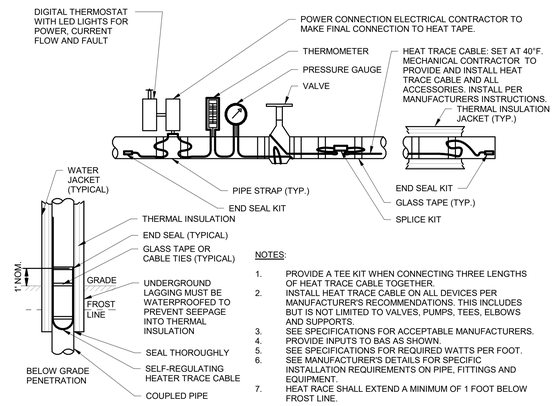


KILN ROOM EXHAUST NOTES:
1. REFER TO FLOOR PLANS FOR ELEVATIONS AND EXACT LOCATIONS OF EQUIPMENT AND COMPONENTS SHOWN.
2. CONTRACTOR SHALL INSTALL KILN VENT SYSTEM IN ACCORDANCE WITH KILN MANUFACTURER'S WRITTEN INSTRUCTIONS, USING MANUFACTURER'S APPROVED COMPONENTS.

1 KILN ROOM HVAC DETAIL
Scale: N.T.S.

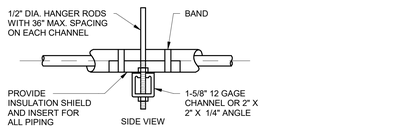


2 PIPE SUPPORT
Scale: N.T.S.

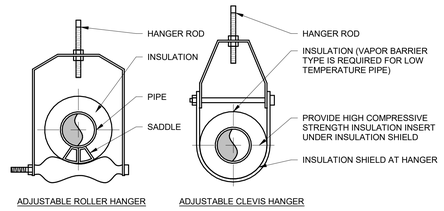


NOTES:
1. PROVIDE A TEE KIT WHEN CONNECTING THREE LENGTHS OF HEAT TRACE CABLE TOGETHER.
2. INSTALL HEAT TRACE CABLE ON ALL DEVICES PER MANUFACTURER'S RECOMMENDATIONS. THIS INCLUDES BUT IS NOT LIMITED TO VALVES, PUMPS, TEES, ELBOWS AND SUPPORTS.
3. SEE SPECIFICATIONS FOR ACCEPTABLE MANUFACTURERS.
4. PROVIDE INPUTS TO BAS AS SHOWN.
5. SEE SPECIFICATIONS FOR REQUIRED WATTS PER FOOT.
6. SEE MANUFACTURERS DETAILS FOR SPECIFIC INSTALLATION REQUIREMENTS ON PIPE, FITTINGS AND EQUIPMENT.
7. HEAT RACE SHALL EXTEND A MINIMUM OF 1 FOOT BELOW FROST LINE.

3 HEAT TRACE CABLE
Scale: N.T.S.

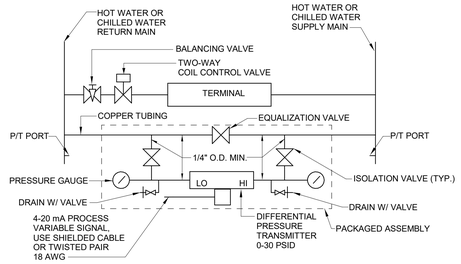


TRAPEZE HANGER FOR UP TO 1000 LBS. UNIFORM LOAD



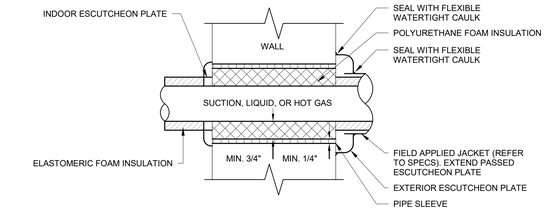
ADJUSTABLE ROLLER HANGER — ADJUSTABLE CLEVIS HANGER

4 TYPICAL PIPE HANGERS
Scale: N.T.S.



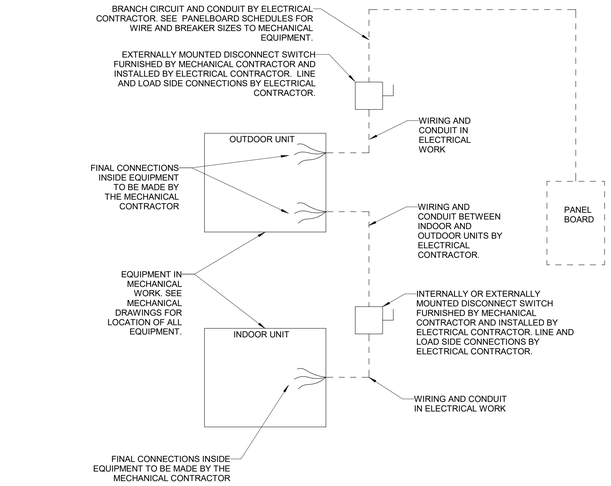
NOTES:
1. GROUND SHIELD AT CONTROL PANEL ONLY.
2. PURGE AIR FROM TUBING PRIOR TO START-UP USING VENT VALVES ON TRANSMITTER.
3. OPEN EQUALIZATION VALVE TO BALANCE PRESSURE, CLOSE PRIOR TO SYSTEM START-UP.
4. PIPING SHALL BE TYPE 'L' RIGID COPPER ONLY WITH SOLDERED FITTINGS. NO SOFT COPPER ALLOWED.

5 DIFFERENTIAL PRESSURE TRANSMITTER
Scale: N.T.S.

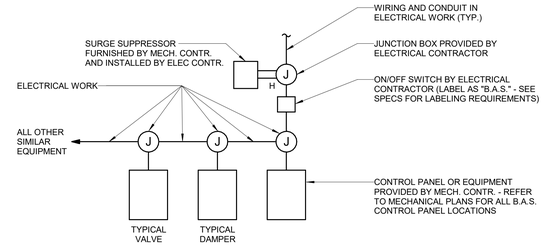


NOTES:
1. SEAL OPENING WITH POLYURETHANE FOAM. TRIM OFF EXCESS FOAM.

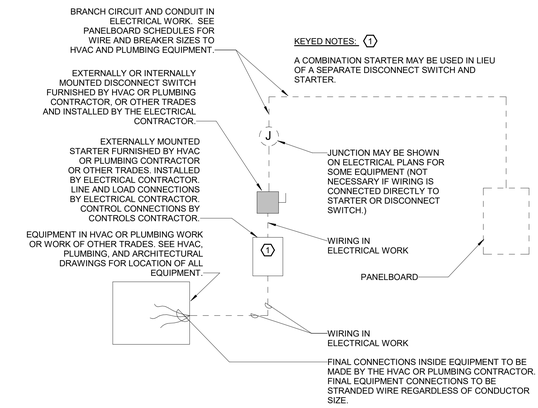
6 REFRIGERANT LINE WALL PENETRATION
Scale: N.T.S.



7 ELECTRICAL CONNECTIONS FOR DMSS EQUIPMENT
Scale: N.T.S.



8 POWER SUPPLY TO HVAC CONTROL PANELS/EQUIPMENT
Scale: N.T.S.



9 ELECTRICAL CONNECTIONS TO MECHANICAL AND PLUMBING EQUIPMENT
Scale: N.T.S.

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ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION
WAYNE COUNTY PUBLIC SCHOOLS
541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT SEAL 039893 SCOTT W. DAVIS

1/10/2025

DKA JOB NUMBER
2401
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SHEET TITLE
DETAILS

M05.03

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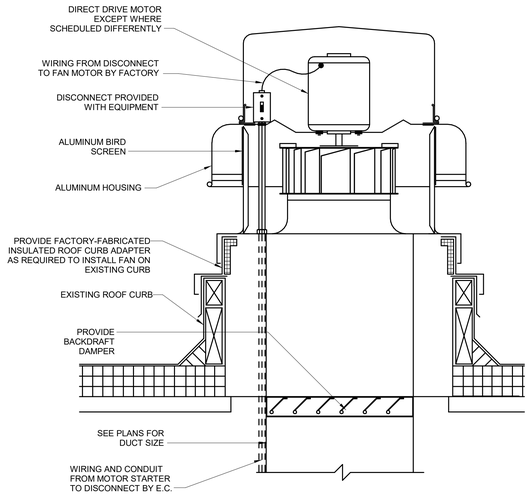
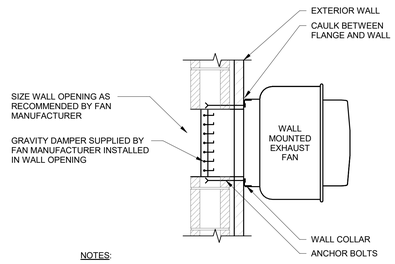


1 ROOF MOUNTED FAN INSTALLATION DETAIL

Scale: N.T.S.

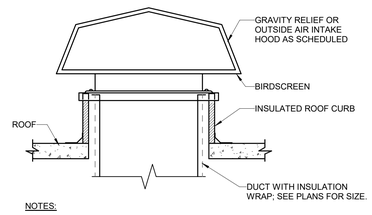


NOTES:

1. FOR INSTALLATION ON SPLIT FACE BLOCK, GRIND AREA ON BLOCK SMOOTH WHERE WALL COLLAR SEATS, SHIM AND CAULK AS REQUIRED.
2. ALL CAVITIES AROUND WALL OPENING SHALL BE FILLED SOLID WITH MORTAR.
3. WHERE EXHAUST FAN IS INSTALLED ON CAVITY WALL CONSTRUCTION, CAVITY SHALL BE FILLED SOLID WITH MORTAR ALL AROUND OPENING.

2 WALL MOUNTED EXHAUST FAN

Scale: N.T.S.

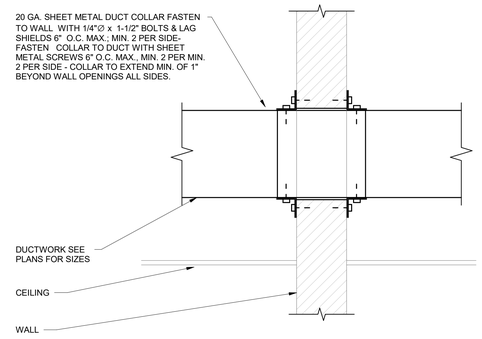


NOTES:

1. CURB AND ROOF OPENING DIMENSIONS SHALL BE DETERMINED BY MANUFACTURER. SEE SCHEDULE FOR THROAT OPENING DIMENSIONS.
2. PROVIDE MODULATING CONTROL DAMPER IN DUCTWORK AS INDICATED ON GRAVITY ROOF VENTILATOR SCHEDULE.

3 ROOF MOUNTED GRAVITY VENTILATOR

Scale: N.T.S.

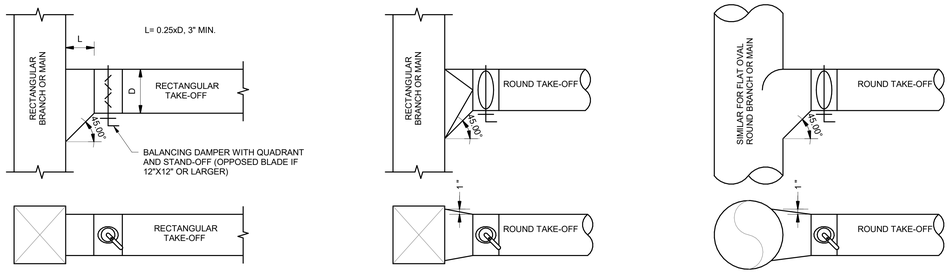


NOTE:

PROVIDE DUCT COLLAR FOR ALL DUCTS WHICH PASS THROUGH ANY NON-RATED WALLS. SEE ARCH. FLOOR PLANS FOR WALL LOCATIONS.

4 DUCT SLEEVE WITH COLLAR

Scale: N.T.S.

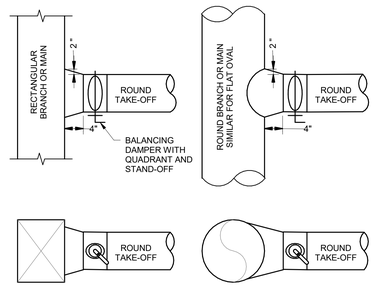


NOTES:

1. PROVIDE 45° LATERAL WYE TAKE-OFFS.
2. WHEN SPACE DOES NOT ALLOW 45° LATERAL WYE TAKE-OFF, USE 90° CONICAL TEE CONNECTIONS.
3. STRAIGHT IN FACTORY BUILT CONNECTIONS ARE PERMITTED FOR:
   A. SINGLE DIFFUSER, GRILLE OR REGISTER RUNOUTS FOR EXHAUST OR RETURN AIR APPLICATIONS.
   B. SINGLE DIFFUSER, GRILLE OR REGISTER RUNOUTS ON THE LOW PRESSURE SIDE OF TERMINAL BOXES.
4. STANDOFF REQUIRED FOR DAMPER HANDLE ON ALL INSULATED DUCT.

5 DUCT 45 DEG. LATERAL TAKE-OFF

Scale: N.T.S.



NOTES:

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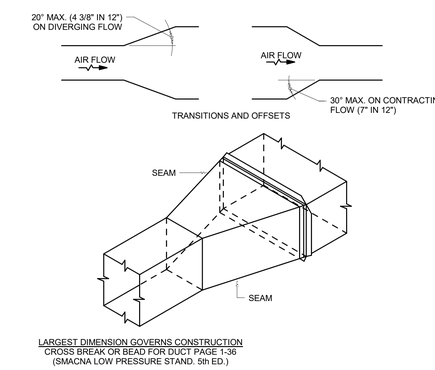
   B. SINGLE DIFFUSER, GRILLE OR REGISTER RUNOUTS ON THE LOW PRESSURE SIDE OF TERMINAL BOXES.
4. STANDOFF REQUIRED FOR DAMPER HANDLE ON ALL INSULATED DUCT.

6 DUCT CONICAL TAKE-OFF

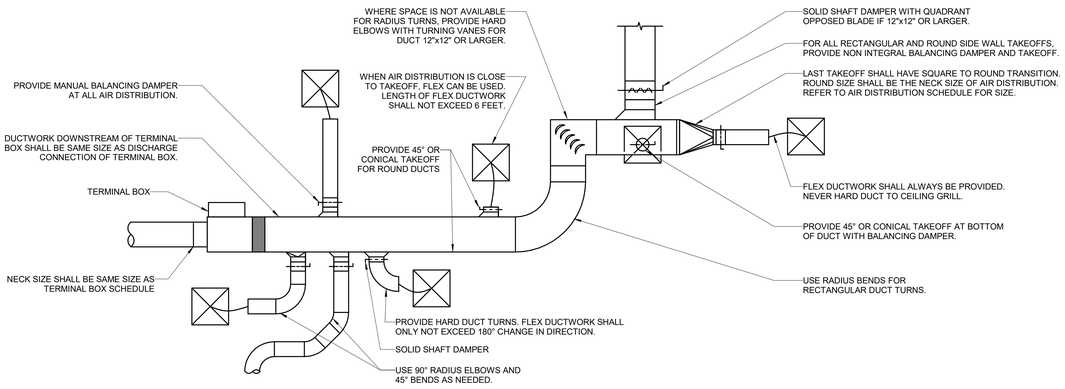
Scale: N.T.S.



LARGEST DIMENSION GOVERNS CONSTRUCTION
CROSS BREAK OR BEAD FOR DUCT PAGE 1-36
(SMACNA LOW PRESSURE STAND. 5th ED.)

7 DUCT TRANSITION

Scale: N.T.S.

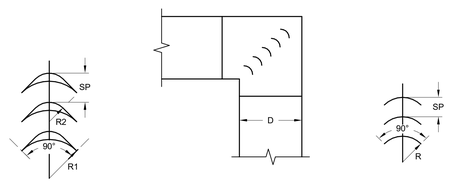


NOTE:

RETURN AND EXHAUST DUCT SIMILAR

8 TYPICAL DUCT REQUIREMENTS

Scale: N.T.S.



DOUBLE VANE SCHEDULE						
	D	H	R1	R2	SP	GA
LARGE	>18"	>18"	4-1/2"	2-1/4"	3-1/4"	24

SINGLE VANE SCHEDULE					
	D	H	R	SP	GA
SMALL	≤18"	≤18"	2"	1-1/2"	24

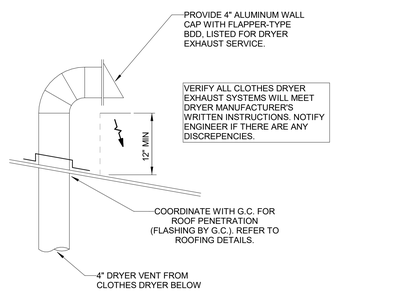
MAXIMUM UNSUPPORTED VANE LENGTH LARGE DOUBLE VANE 72"

NOTES:

1. SINGLE VANES ALLOWED IN ELBOWS LESS THAN OR EQUAL TO 18" X 18".
2. TURNING VANES NOT REQUIRED IN ELBOWS SMALLER THAN 12" X 12"

9 DUCT MITERED 90 ELBOW

Scale: N.T.S.



10 DRYER VENT ROOF PENETRATION

Scale: NTS

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541 North Carolina 581 S, Goldsboro, NC 27530

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DETAILS

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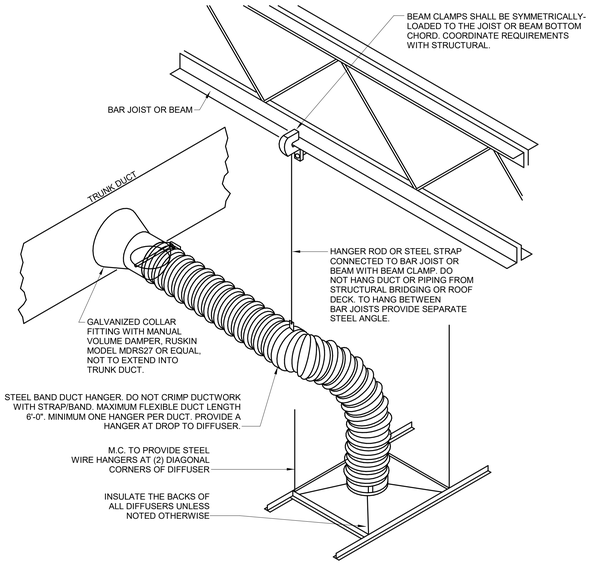
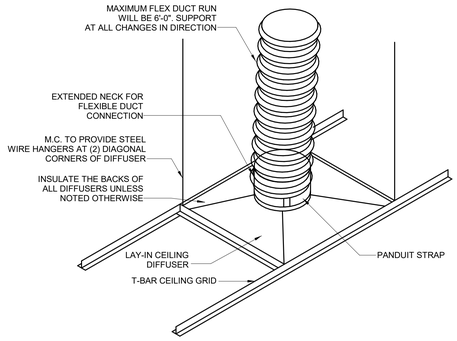
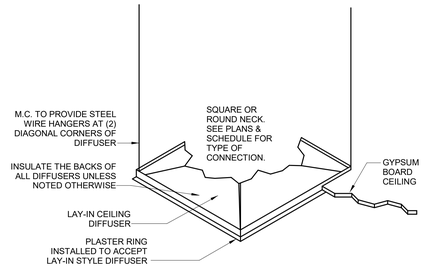


1 FLEXIBLE DUCTWORK INSTALLATION DETAIL
Scale: N.T.S.



2 ROUND NECK LAY-IN DIFFUSER DETAIL
Scale: N.T.S.



3 GYPSUM CEILING DIFFUSER DETAIL
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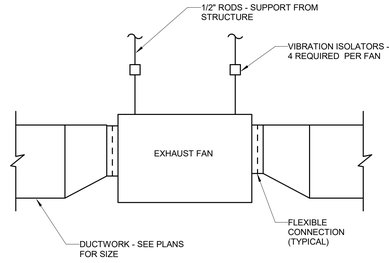
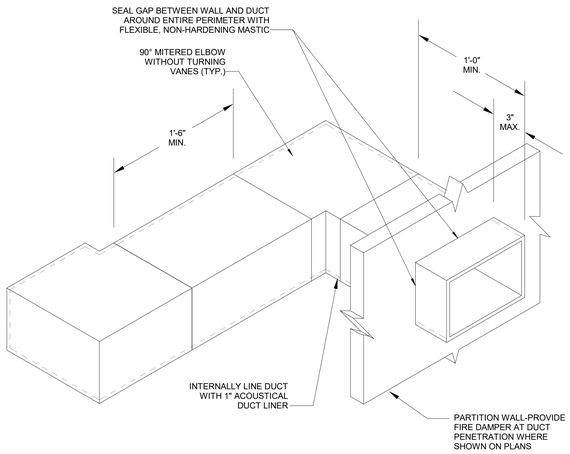
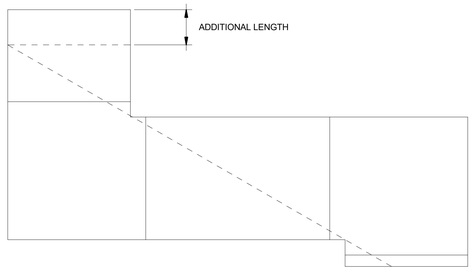


4 INLINE FAN INSTALLATION DETAIL
Scale: N.T.S.



NOTES:

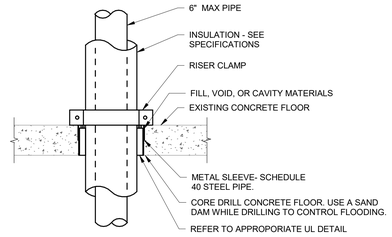
1. DETAIL IS TYPICAL FOR ALL ABOVE-CEILING RETURN AIR TRANSFER DUCTS SHOWN ON PLANS. REFER TO PLANS FOR DUCT SIZES AND ORIENTATION.
2. DUCT SIZES LISTED ON PLANS ARE INSIDE-CLEAR DIMENSIONS.



NOTES:

1. PROVIDE ADDITIONAL DUCT LENGTH TO GUARANTEE NO STRAIGHT-LINE PATH EXISTS THROUGH TRANSFER BOOT.

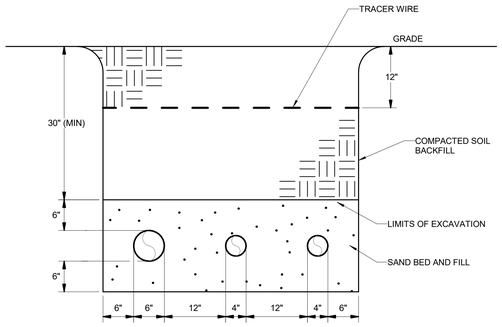
7 TRANSFER AIR SOUND ATTENUATION DUCT DETAIL (TYPICAL FOR ALL)
Scale: N.T.S.



NOTE:

LOCATE FLOOR SUPPORT MEMBERS AND ADJUST LOCATION OF FLOOR PENETRATIONS AS NECESSARY TO AVOID ANY CONFLICTS WITH THESE MEMBERS.

5 FLOOR PIPE PENETRATION DETAIL
Scale: N.T.S.



6 BELOW GRADE PIPING DETAIL
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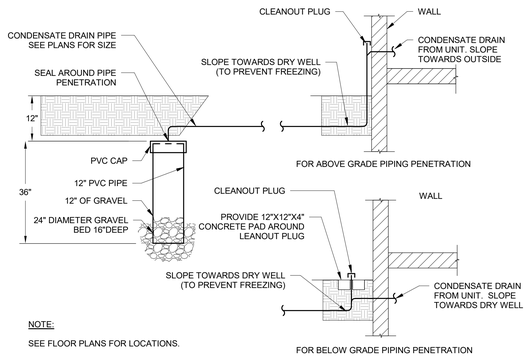

NOTE:

SEE FLOOR PLANS FOR LOCATIONS.

8 DRY WELL
Scale: N.T.S.

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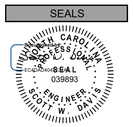

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DETAILS

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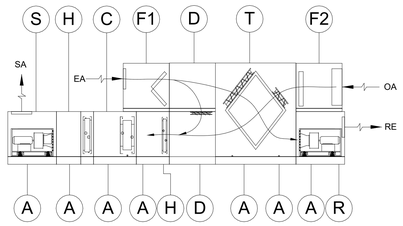
AHU-1



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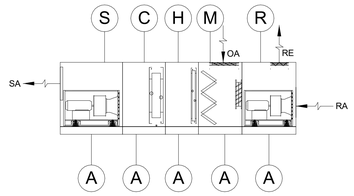

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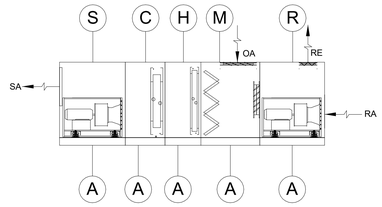

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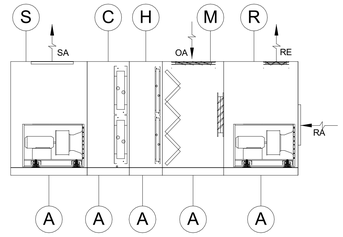

AHU COMPONENT LEGEND:

- (A) ACCESS
- (C) CHILLED WATER COOLING COIL
- (D) RECIRC DAMPER MIXING SECTION
- (F1) ANGLED FILTER SECTION
- (F2) FLAT FILTER SECTION
- (H) HOT WATER HEATING COIL
- (I) INLET AIR PLENUM SECTION
- (M) MIXING SECTION WITH ANGLED FILTERS
- (R) RETURN / EXHAUST FAN SECTION
- (S) SUPPLY FAN SECTION
- (T) TOTAL ENTHALPY FIXED MEMBRANE MODULE WITH BYPASS AND COLD-CORNER DEFROST DAMPERS

NOTES:

1. ALL CONNECTIONS AND ACCESS DOORS SHALL BE SAME SIDE OF THE UNIT. REFER TO AHU ENLARGED VIEWS FOR ACCESS SIDE.
2. ALL ACCESS DOORS OPENING WIDTH SHALL BE MINIMUM 18" INSIDE CLEAR.
3. PROVIDE AIR HANDLING UNITS WITH MINIMUM 6" INTEGRAL BASE RAILS.
4. AIR HANDLING UNITS SHALL BE CONNECTED TO DUCTWORK WITH FLEXIBLE CONNECTIONS.
5. REFER TO AHU SCHEDULE AND SPECIFICATIONS FOR MORE INFORMATION.

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PROJECT INFORMATION

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PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER SEAL 039893 SCOTT W. DAVIS

1/10/2025

DKA JOB NUMBER
2401

DEWBERRY NUMBER
50171439

REVISIONS

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AHU GENERAL ARRANGEMENT DETAILS

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HOOD INFORMATION - JOB#6869092

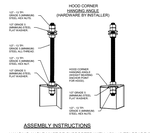
HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM RISER(S) WIDTH	LENG	HEIGHT	DIA	CFM	VEL	SP	HOOD CONSTRUCTION	HOOD CONFIG END TO END	ROW
1	KH-1	6024 ND-2	CAPTIVEAIRE	11' 0"	450 DEG	I	MEDIUM	175	1925			4"	16"	1925	1379	-0.528"	430 SS WHERE EXPOSED	ALONE	FRONT
2	KH-2	6024 ND-2	CAPTIVEAIRE	10' 0"	450 DEG	I	MEDIUM	175	1750			4"	16"	1750	1253	-0.446"	430 SS WHERE EXPOSED	ALONE	BACK

HOOD INFORMATION

HOOD NO	TAG	FILTER(S) TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	LIGHT(S) QTY	TYPE	WIRE GUARD	UTILITY CABINET(S) LOCATION	SIZE	FIRE SYSTEM TYPE	FIRE SYSTEM SIZE	ELECTRICAL MODEL #	SWITCHES QUANTITY	FIRE SYSTEM PIPING	HOOD HANGING WEIGHT
1	KH-1	CAPTRATE SOLO FILTER	8	20"	16"	85% SEE FILTER SPEC	3	RECESSED ROUND	NO							YES	572 LBS
2	KH-2	CAPTRATE SOLO FILTER	7	20"	16"	85% SEE FILTER SPEC	3	RECESSED ROUND	NO	RIGHT	12"x60"x24"	TANK FS	4.0/4.0	SC-310110MA	1 LIGHT 1 FAN	YES	812 LBS

HOOD OPTIONS

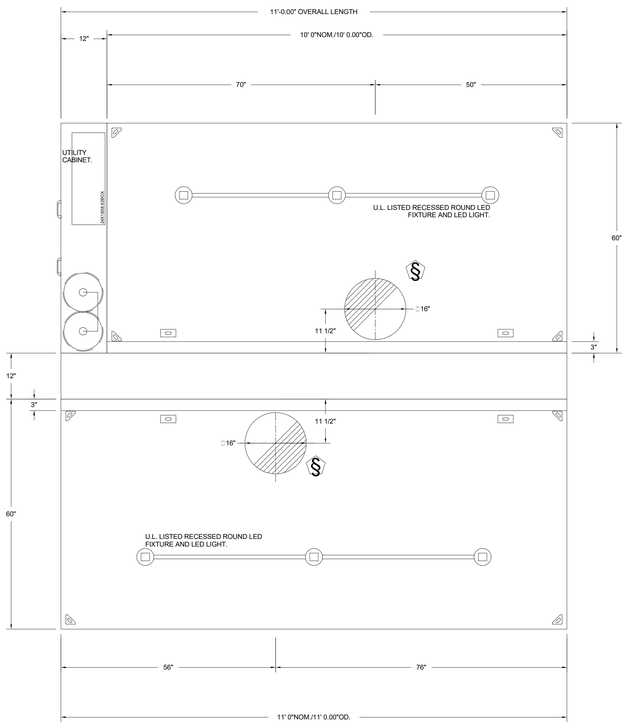
HOOD NO	TAG	OPTION
1	KH-1	FIELD WRAPPER 17.00" HIGH FRONT, LEFT, RIGHT.
		BACK STANDOFF (FLAT) 12" WIDE 132" LONG.
2	KH-2	FIELD WRAPPER 17.00" HIGH FRONT, LEFT, RIGHT.



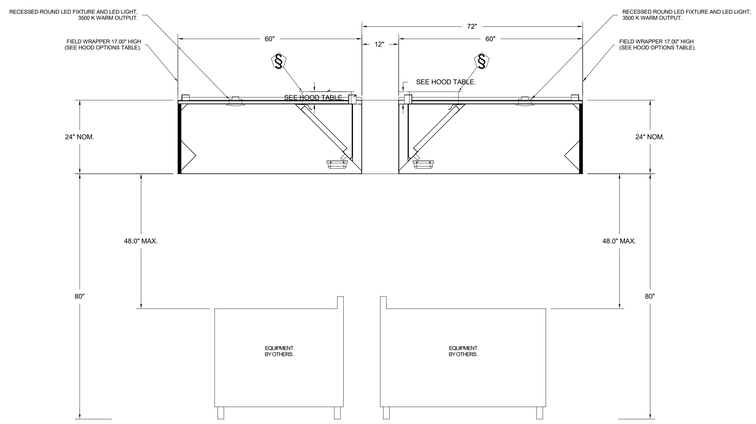
ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5, MINIMUM STEEL THREADED ROD AND NUTS AT CEILING. CEILING ANCHOR POINTS WITH 1/2" GRADE 5 MINIMUM STEEL FLAT WASHERS AND 1/2" -13 TPI GRADE 5 MINIMUM HEX NUTS AS SHOWN IN DETAIL ABOVE. ADJUST THREADED ROD LENGTH AS REQUIRED TO HOOD HANGING ANGLE AND ABOVE CEILING ANCHORS. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 37 FT-LBS.

PLAN VIEW - HOOD #2 (KH-2)
10' 0.00" LONG 6024ND-2



PLAN VIEW - HOOD #1 (KH-1)
11' 0.00" LONG 6024ND-2



SECTION VIEW - MODEL 6024ND-2
HOOD - #2 (KH-2)

SECTION VIEW - MODEL 6024ND-2
HOOD - #1 (KH-1)

SPECIFICATION: CAPTRATE GREASE-STOP SOLO FILTER

THE CAPTRATE GREASE-STOP SOLO FILTER IS A SINGLE-STAGE FILTER FEATURING A UNIQUE S-BAFFLE DESIGN IN CONJUNCTION WITH A SLOTTED REAR BAFFLE DESIGN, TO DELIVER EXCEPTIONAL FILTRATION EFFICIENCY.

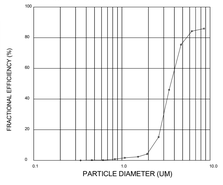
FILTER IS STAINLESS STEEL CONSTRUCTION, AND SIZED TO FIT INTO STANDARD 2-INCH DEEP HOOD CHANNEL(S).

UNITS SHALL INCLUDE STAINLESS STEEL HANDLES AND A FASTENING DEVICE TO SECURE THE TWO COMPONENTS WHEN ASSEMBLED.

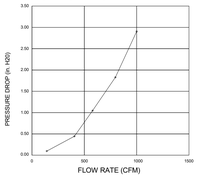
GREASE EXTRACTION EFFICIENCY PERFORMANCE SHALL REMOVE AT LEAST 75% OF GREASE PARTICLES FIVE MICRONS IN SIZE, AND 85% GREASE PARTICLES SEVEN MICRONS IN SIZE AND LARGER, WITH A CORRESPONDING PRESSURE DROP NOT TO EXCEED 1.0 INCHES OF WATER GAUGE.

THE CAPTRATE GREASE-STOP SOLO WAS TESTED TO ASTM STANDARD ASTM F2519-05. MANUFACTURER APPROVED FOR USE IN SOLID FUEL APPLICATIONS AS A SPARK ARRESTER.

EFFICIENCY VS. PARTICLE DIAMETER



PRESSURE DROP VS. FLOW RATE



CAPTRATE FILTERS ARE BUILT IN COMPLIANCE WITH:.
NFPA #96.
NSF STANDARD #2.
UL STANDARD #1046.
INT. MECH. CODE (IMC).
ULC-S649.

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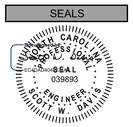

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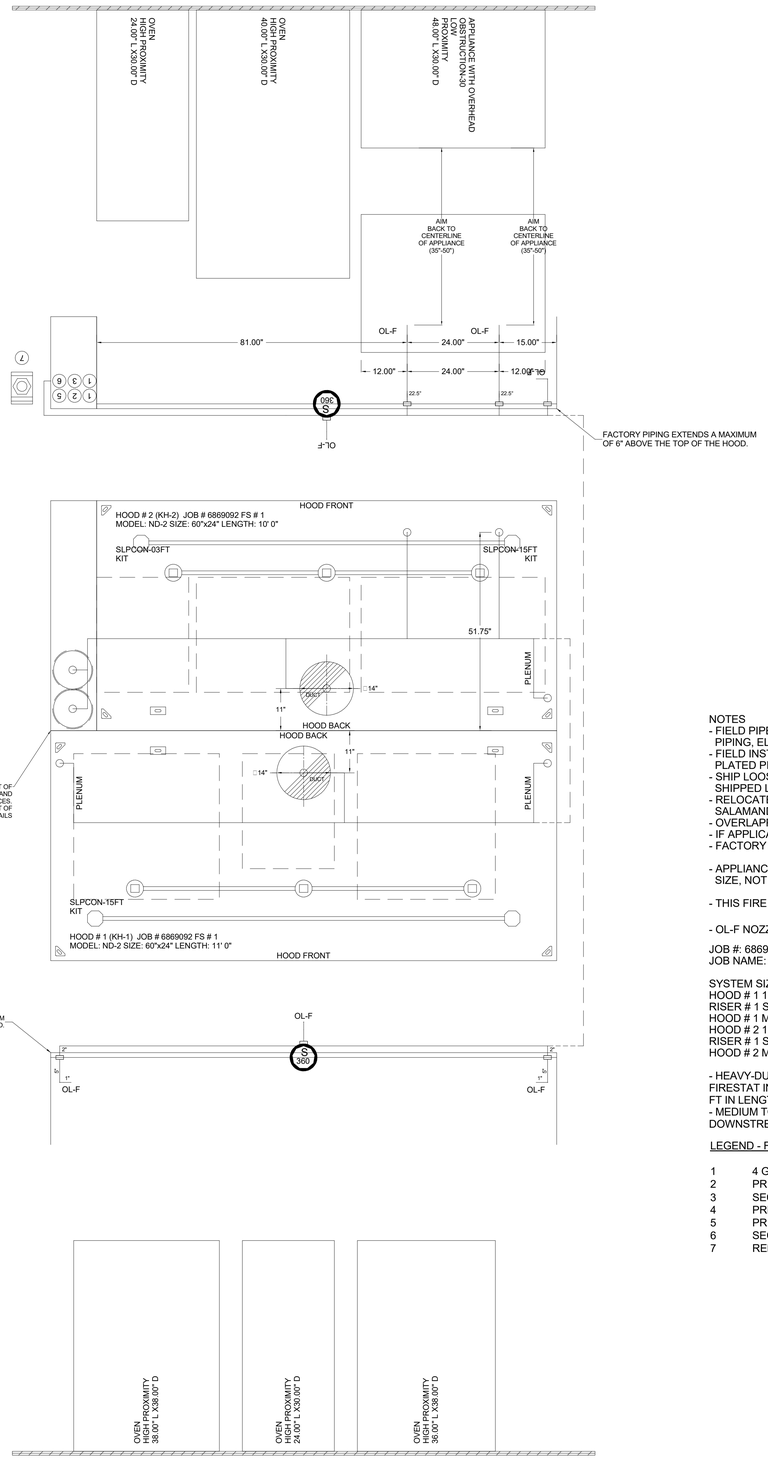

NOTES
- FIELD PIPE DROPS AS SHOWN
  PIPING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY CAS.
- FIELD INSTALLED DROP: FACTORY WILL PROVIDE QTY 2 60IN LONG PIECES OF CHROME PLATED PIPING SHIPPED LOOSE TO BE FIELD-INSTALLED.
- SHIP LOOSE DROP: FACTORY WILL PROVIDE THE EXACT CHROME PIPE LENGTH NEEDED SHIPPED LOOSE TO BE FIELD-INSTALLED.
- RELOCATE NOZZLES IF FLOW PATTERN IS BLOCKED BY SHELVING, SALAMANDERS, ETC.
- OVERLAPPING COVERAGE SHALL NOT BE USED ON ANY APPLIANCE WITH AN OBSTRUCTION.
- IF APPLICABLE, EXTENDED PRE-PIPED DROPS ARE SHIPPED LOOSE.
- FACTORY PIPING EXTENDS A MAXIMUM OF 6" ABOVE THE TOP OF THE HOOD.

- APPLIANCE DIMENSIONS LISTED REPRESENT THE COOKING SURFACE SIZE, NOT THE OVERALL APPLIANCE SIZE.

- THIS FIRE SYSTEM COMPLIES WITH U.L. 300 REQUIREMENTS.

- OL-F NOZZLE PART NUMBER REPLACES 3070-3/8H-10-SS

JOB #: 6869092.
JOB NAME: ROSEWOOD MIDDLE SCHOOL-WAYNE COUNTY.

SYSTEM SIZE: TANK-SP-2 DESIGN FP: 28. MAXIMUM FP: 40.
HOOD # 1 11' 0.00" LONG x 60" WIDE x 24" HIGH.
RISER # 1 SIZE: 14" DIA.
HOOD # 1 METAL BLOW-OFF CAPS INCLUDED.
HOOD # 2 10' 0.00" LONG x 60" WIDE x 24" HIGH.
RISER # 1 SIZE: 14" DIA.
HOOD # 2 METAL BLOW-OFF CAPS INCLUDED.

- HEAVY-DUTY APPLIANCES (RATED 600°F) WILL REQUIRE AN ADDITIONAL DOWNSTREAM FIRESTAT IN THE EVENT THAT THE DUCTWORK CONTAINS ANY HORIZONTAL RUNS OVER 25 FT IN LENGTH.
- MEDIUM TO LIGHT-DUTY APPLIANCES (RATED 450°F) WILL NOT REQUIRE ANY ADDITIONAL DOWNSTREAM DETECTION.

LEGEND - FIRE CABINET TANK SYSTEM

1 4 GALLON TANK.
2 PRIMARY ACTUATOR RELEASE.
3 SECONDARY ACTUATOR RELEASE.
4 PRESSURE SUPERVISION SWITCH.
5 PRIMARY HOSE ASSEMBLY.
6 SECONDARY HOSE ASSEMBLY.
7 REMOTE MANUAL ACTUATION DEVICE.

INCLUDES: FIELD INSTALLATION AND HOOKUP DURING NORMAL BUSINESS HOURS BY CERTIFIED INSTALLERS ONLY IN THE LOCATION NOTED ABOVE. TWO SITE VISITS ONLY (ONE VISIT TO SET PULL STATION & SYSTEM HOOKUP AND ONE VISIT FOR ONE TEST; ADDITIONAL VISITS WILL RESULT IN ADDITIONAL CHARGES), ONE MECHANICAL OR ELECTRICAL GAS VALVE PER SYSTEM AT A MAXIMUM SIZE OF 2", PERMIT, AND SYSTEM TEST.
EXCLUDES: UNION LABOR & PREVAILING WAGE (LABOR & WAGES WILL BE ADDED IF APPLICABLE), GAS VALVE INSTALLATION, ELECTRICAL HOOKUP AND CONNECTIONS, HANGING OF FIRE CABINET, SHUNT TRIP, HANDHELD EXTINGUISHER(S), ON-SITE RE-PIPING DUE TO EQUIPMENT LAYOUT CHANGES.

UL 300 HOOD FIRE SUPPRESSION SYSTEM

TANK/CAS ELECTRIC WET CHEMICAL

The TANK / CAS-EWC Fire Suppression System has been tested and certified to the UL 1254 Standard for Pre-Engineered Chemical Extinguishing System Units and UL/ULC 300 Standard for Fire Extinguishing Systems for Protection of Commercial Cooking Equipment and is listed with Underwriters Laboratories (UL) under file number EX3559.

SEQUENCE OF OPERATIONS
The TANK / CAS-EWC fire system is a self-contained pressurized fire suppression system. TANK / CAS-EWC is activated when the electric firestat contacts close (at determined firestat setting and/or temperature rate-of-rise of 40°F per minute) and/or the manual activation station is pushed, an electric signal is sent to the release solenoid of the fire system. When the release solenoid is opened, it allows stored pressure from the primary tank to travel through the primary actuator kit opening a pneumatic actuator. The pneumatic actuator forces the plunger in the tank valve body to open, allowing the liquid fire suppressant to be distributed throughout the fire system piping network over the protected hazard area.

FIRE SYSTEM INFORMATION - JOB#6869092

FIRE SYSTEM NO	TAG	TYPE	SIZE	MAX FP	DESIGN FP	INSTALLATION	
						SYSTEM	LOCATION ON HOOD
1		TANK FS	4.0/4.0	40	28	FIRE CABINET RIGHT	RIGHT, HOOD 2

GAS VALVE(S)

FIRE SYSTEM NO	TAG	TYPE	SIZE	SUPPLIED BY
1		SC ELECTRICAL	2.000	CAPTIVEAIRE SYSTEMS

FIRE SYSTEM PARTS LIST KEY

FIRE SYSTEM NO	TAG	KEY NUMBER - PART DESCRIPTION	QTY BY FACTORY	QTY BY DIST
		0 - 0 - TANK FIRE SUPPRESSION POST-DISCHARGE PROCEDURE UTILITY CABINET LABEL SHEET.	1	0
		0 - 0 - TANK FIRE SUPPRESSION MAINTENANCE GUIDE UTILITY CABINET LABEL SHEET.	1	0
		0 - 0 - 12-F28021-32144-OT-360 DUCT FIRE THERMOSTAT WITH 12 FOOT WIRE LEADS: NO, CLOSE ON TEMP RISE AT 360°F. (A0034310).	2	0
		0 - 0 - 32-00002 QUIK SEAL - 1/2" (UL).	2	0
		0 - 0 - 361091 3/8" BRASS PLUG.	2	0
		0 - 0 - 4429K153 1/2" MALE NPT TO 1/2" FEMALE NPT ELBOW, BRASS.	2	0
		0 - 0 - 4429K422 1/2" X 1/4" BRASS REDUCING BUSHING.	1	0
		0 - 0 - 79425 3/8" NPT FEMALE TO 1/2" MALE PROPRESS ADAPTER.	2	0
		0 - 0 - 79525 1/2" 90 PRO-PRESS ELBOW WITH 1/2" NPT FEMALE CONNECTION, VIEGA.	1	0
		0 - 0 - 79580 1/2" X 1/2" PRO-PRESS TEE X 1/2" NPT FEMALE CONNECTION, VIEGA.	2	0
		0 - 0 - 87-120042-001 SECONDARY ACTUATOR VALVE (SVA) - SINGLE ACTUATOR; REQUIRES PRIMARY RELEASE ACTUATOR, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-120045-001 HOSE, SECONDARY ACTUATOR HOSE, 7.5" BRAIDED STAINLESS STEEL, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-300001-001 TANK - PRESSURIZED TANK USED FOR TANK FIRE SUPPRESSION.	2	0
		0 - 0 - 87-300030-001 PRIMARY ACTUATOR KIT (PAK) - ACTUATOR AND RELEASE SOLENOID ASSEMBLY, ONE NEEDED PER FIRE SYSTEM, SUPERVISED, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-300152-001 HARDWARE, SVA BOLTS, TANK FIRE SUPPRESSION.	8	0
		0 - 0 - 905545PC PRO PRESS 1/2 PRESS X PRESS 90 ELBOW LD.	10	0
		0 - 0 - 9097200PC PRO PRESS PC611 1/2 PRESS TEE LD.	6	0
		0 - 0 - 98694A115 HARDWARE, DATANKLOCK LOCKING BRACKET SQUARE NUTS 5/16" ZINC, TANK FIRE SUPPRESSION.	4	0
1		0 - 0 - A0034332 JUNCTION BOX FOR MANUAL PULL STATION. 1.5" DEEP BACK BOX, RED COLOR.	1	0
		0 - 0 - A31484 1/4" NPT SCHRADER VALVE AND CAP, JB INDUSTRIES. 1/4" FLARE X 1/4" MPT HALF UNION. USED ON TANK SERVICE PORT.	1	0
		0 - 0 - BI145 3/8" BLACK IRON 90 ELL.	5	0
		0 - 0 - CBI-22.5 CHROME PLATED PIPE FITTING 3/8" NPT 22.5 DEGREE ELBOW.	2	0
		0 - 0 - DATANKLOCK DISCHARGE ADAPTER TANK LOCKING PLATE FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	2	0
		0 - 0 - DETECTION CONNECTOR SUPERVISED LOOP CONNECTION KIT. CONTAINS THE PARTS NEEDED TO CONNECT THE SUPERVISED LOOP BETWEEN END TO END HOODS WITH LESS THAN A 2' GAP. KIT CONTAINS 5 FEET OF BLACK MG WIRE, 5 FEET OF TAN MG WIRE, 3 FEET OF FLEXIBLE CONDUIT, AND TWO 3/8 CONNECTORS.	1	0
		0 - 0 - DETECTION CONNECTOR SUPERVISED LOOP CONNECTION KIT. CONTAINS THE PARTS NEEDED TO CONNECT THE SUPERVISED LOOP BETWEEN END TO END HOODS WITH LESS THAN A 14' GAP OR BACK TO BACK HOODS. KIT CONTAINS 17 FEET OF BLACK MG WIRE, 17 FEET OF TAN MG WIRE, 15 FEET OF FLEXIBLE CONDUIT, AND TWO 7/8" CONNECTORS.	2	0
		0 - 0 - TANK STRAP TANK STRAP - USED FOR TANK FIRE SUPPRESSION.	6	0
		0 - 0 - TFS-UCTANKBRACKET TANK BRACKET FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	2	0
		0 - 0 - WK-283952-000 DISCHARGE ADAPTER, TANK FIRE SUPPRESSION.	2	0
		16 - 16 - 79210 1/2" X 3/8" NPT MALE ADAPTER, VIEGA.	7	0
		16 - 16 - OL-F NOZZLE - TANK PROTECTION APPLIANCE COVERAGE NOZZLE (INCLUDES METAL BLOW OFF CAP, LANYARD, USED WITH CHROME-PLATED PIPE).	7	0
		26 - 26 - QSA-3/8 QUIK SEAL - 3/8" (UL).	7	0
		34 - 34 - A0034331 24VDC SINGLE ACTION MANUAL ACTUATION DEVICE (PUSH/PULL STATION) WITH PROTECTIVE COVER, ONE (1) NORMALLY OPEN CONTACT, RED COLOR.	1	0

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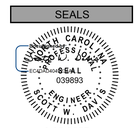

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EXHAUST FAN INFORMATION - JOB#6869092

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SONES
1	KEF-01	1	DU180HFA	CAPTIVEAIRE	3675	1.200	1340	ODP,PREMIUM	3.000	1.8610	3	460	4.3	849 FPM	198	22

FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	KEF-01	1	GREASE BOX
		1	WALL MOUNT CONSTRUCTION 18/20 (D60 ISOLATORS), 70LB MOTOR MAX FOR WALL MOUNTING
		1	THROUGH WALL CURB MOUNT INSTALLATION. CURB HEIGHT MUST BE MINIMUM 10" TALLER THAN WALL THICKNESS FOR USE WITH A HINGE KIT
		1	SHIP LOOSE DISCONNECT FOR REMOTE MOUNT
		1	HINGE KIT LOCKING (XHD)- SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
		1	LOAD REACTOR MOUNTED IN FAN
		1	2 YEAR PARTS WARRANTY

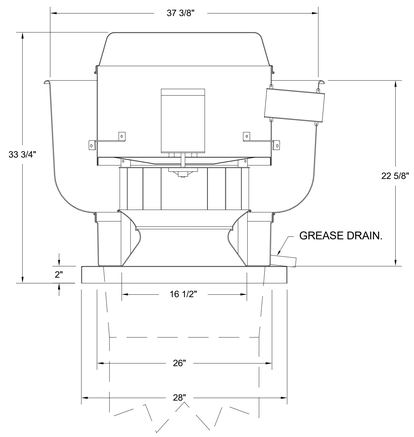
FAN ACCESSORIES

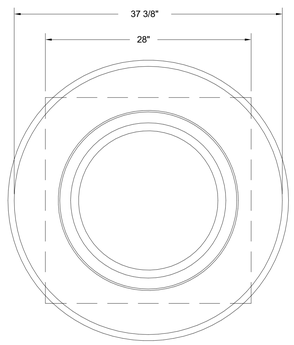
FAN UNIT NO	TAG	EXHAUST			SUPPLY			
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT
1	KEF-01	YES						

CURB ASSEMBLIES

NO	ON FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	KEF-01	80 LBS	CURB	26.500"W X 26.500"L X 24.000"H VENTED 16 GAUGE.

FAN #1 DU180HFA - EXHAUST FAN (KEF-01)





TOP VIEW

FEATURES:

- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL705 AND UL762 AND ULC-S645
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- HIGH HEAT OPERATION 300°F (149°C).
- GREASE CLASSIFICATION TESTING.
- NEMA 3R SAFETY DISCONNECT SWITCH.

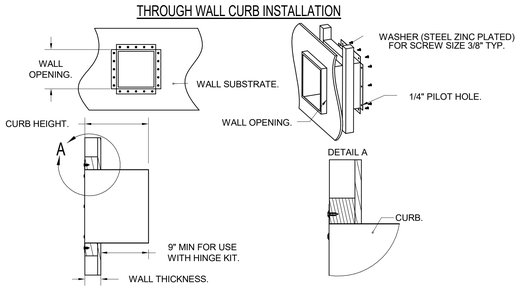
NORMAL TEMPERATURE TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

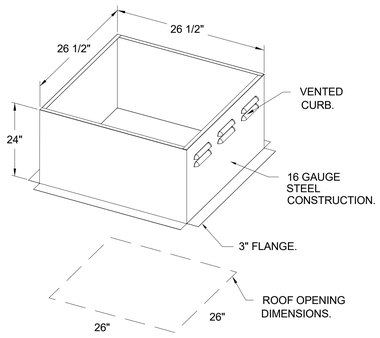
ABNORMAL FLARE-UP TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING BURNING GREASE VAPORS AT 600°F (316°C) FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.

OPTIONS

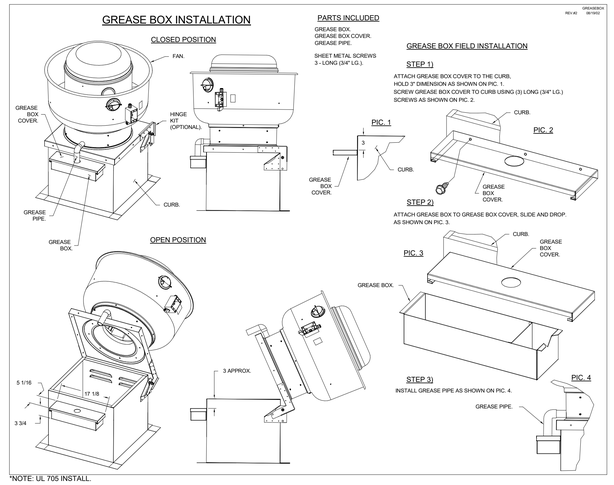
- GREASE BOX.
- WALL MOUNT CONSTRUCTION 18/20 (D60 ISOLATORS), 70LB MOTOR MAX FOR WALL MOUNTING.
- THROUGH WALL CURB MOUNT INSTALLATION. CURB HEIGHT MUST BE MINIMUM 10" TALLER THAN WALL THICKNESS FOR USE WITH A HINGE KIT.
- SHIP LOOSE DISCONNECT FOR REMOTE MOUNT.
- HINGE KIT LOCKING (XHD)- SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS.
- LOAD REACTOR MOUNTED IN FAN.
- 2 YEAR PARTS WARRANTY.

THROUGH WALL CURB INSTALLATION

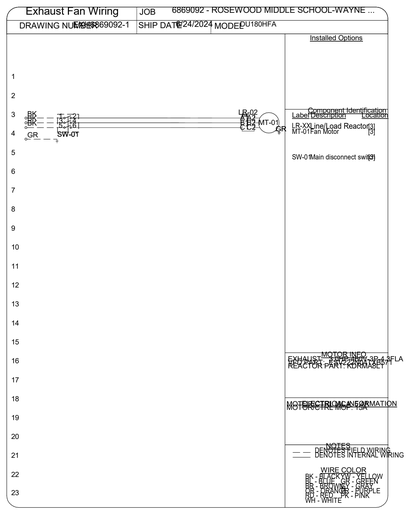




GREASE BOX INSTALLATION



*NOTE: UL 705 INSTALL.



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PROJECT INFORMATION

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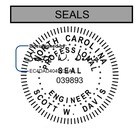
ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS



1/10/2025

DKA JOB NUMBER
2401

DEWBERRY NUMBER
50171439

REVISIONS

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PM: BK
Drawn By: SMF
Plot Date: 1/8/2025 12:09:10 PM

DATE ISSUED

BID DOCUMENTS
01/10/2025

SHEET TITLE
KITCHEN DETAILS

M05.09

Docusign Envelope ID: 63D80F16-124C-4E02-89EC-4BD985B2E6ED

IMPORTANT SPECIAL UDS PARTS/NOTES

☆	ONE (1) EV-9797-40 WATER FILTER WITH WINDOW.

UDS CONSTRUCTION TO BE
18 GA., TYPE 304 STAINLESS STEEL

UTILITY DISTRIBUTION SYSTEM MODEL UDI
IS LISTED UNDER ETL FILE NUMBERS
104826524CRT-001 & 10175491COL-001
CONFORMS TO UL STD 891 & 508A
CERTIFIED TO CAN/CSA C22.2 No. 31-M89

ALL GAS ASSOCIATED REVIEW AND TESTING
WERE PERFORMED THROUGH INTERTEK UNDER
THESE NEW TESTS/CERTIFICATIONS.

PRIOR TO SCHEDULING UDS FOR PRODUCTION
PLEASE PROVIDE APPROVED SUBMITTAL CUTSHEETS
ON FINIAL KITCHEN EQUIPMENT ASSOCIATED WITH
THE UDS (NEW & USED) SO THAT CONNECTION
SIZES, TYPES AND LOCATIONS CAN BE VERIFIED

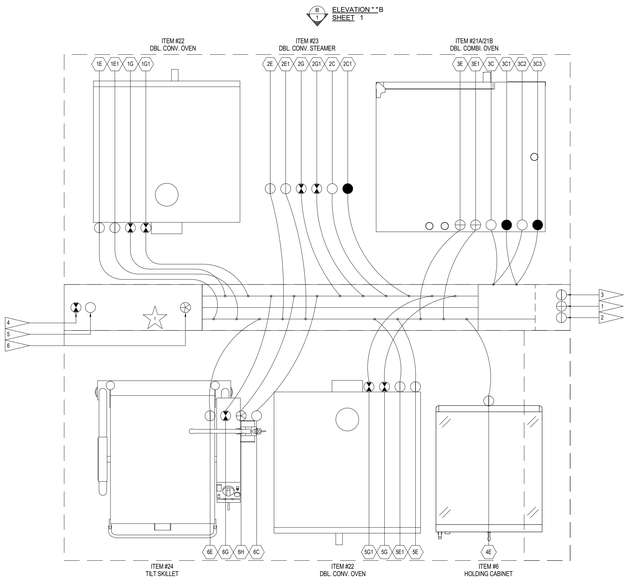
ANY CHANGES TO SUBMITTAL DRAWING
MAY AFFECT PRICE AND PRODUCTION TIME
PLEASE FORWARD CHANGES ASAP

----NOTE----
CUSTOMER TO VERIFY FLOOR DRAIN LOCATIONS PRIOR TO ORDERING UDS. C.A.S. IS NOT RESPONSIBLE FOR DRAINS LOCATED UNDERNEATH RISERS/PEDESTALS LOCATIONS.

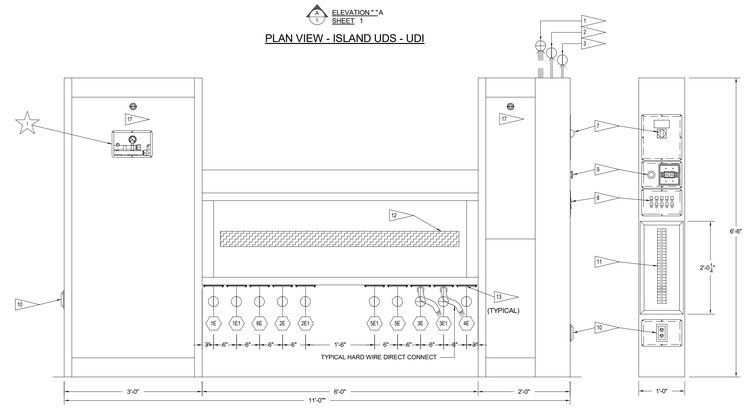
----NOTE----
NEC REQUIRES 36"
OF FIELD CLEARANCE
IN FRONT & 30"
ACCROSS OF CIRCUIT
BREAKERS FOR ACCESS.

SYMBOL SCHEDULE

COLD WATER
HOT WATER
FILTERED WATER
NATURAL GAS
PROPANE
120 VAC 1 PHASE
208 VAC 1 PHASE
208 VAC 3 PHASE
480 VAC 3 PHASE
STEAM SUPPLY
STEAM CONDENSATE RETURN



PLAN VIEW - ISLAND UDS - UDI



STANDARD FLAG NOTES

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16. 120V ELECTRICAL GAS VALVE.
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●	FILTERED WATER
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⊗	480 VAC 3 PHASE
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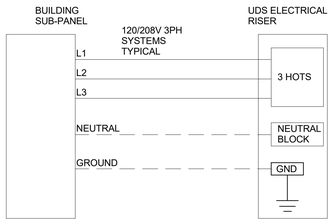
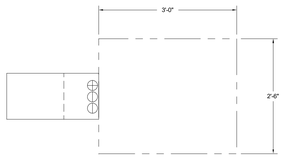
	STEAM CONDENSATE RETURN



NEC BREAKER CLEARANCE

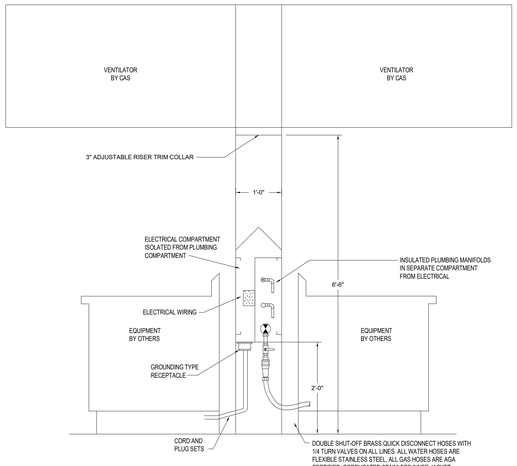


UTILITY DISTRIBUTION SYSTEM EQUIPMENT SCHEDULE

EQUIPMENT					ELECTRICAL					CIRCUIT BREAKER		RECEPTACLE	GAS		WATER		STEAM			CONNECTION		NOTES
CONN.#	ITEM	DESCRIPTION	MANUFACTURER	MODEL #	KW.	AMPS	HP	VOLT	PH	AMPS	POLES	PART #	SIZE	MBH	HOT	COLD	SUPPLY	COND. RETURN	LBS/HR	TYPE	LENGTH	
1E	22	DBL. CONV. OVEN	BLODGETT	ZEPHAIRE 100-G DBL	0.7	6.0	-	120	1	20	1	DR20	-	-	-	-	-	-	-	SUPPLIED W/ EQUIP.	-	GFI BREAKER
1E1	22	DBL. CONV. OVEN	BLODGETT	ZEPHAIRE 100-G DBL	0.7	6.0	-	120	1	20	1	DR20	-	-	-	-	-	-	-	SUPPLIED W/ EQUIP.	-	GFI BREAKER
1G	22	DBL. CONV. OVEN	BLODGETT	ZEPHAIRE 100-G DBL	-	-	-	-	-	-	-	-	3/4"	50	-	-	-	-	-	QUICK DISCONNECT	5'	-
1G1	22	DBL. CONV. OVEN	BLODGETT	ZEPHAIRE 100-G DBL	-	-	-	-	-	-	-	-	3/4"	50	-	-	-	-	-	QUICK DISCONNECT	5'	-
2E	23	DBL. CONV. STEAMER	CLEVELAND	(2) 22CGT66.1	0.5	4.0	-	120	1	20	1	DR20	-	-	-	-	-	-	-	CORD & PLUG	6'	GFI BREAKER
2E1	23	DBL. CONV. STEAMER	CLEVELAND	(2) 22CGT66.1	0.5	4.0	-	120	1	20	1	DR20	-	-	-	-	-	-	-	CORD & PLUG	6'	GFI BREAKER
2G	23	DBL. CONV. STEAMER	CLEVELAND	(2) 22CGT66.1	-	-	-	-	-	-	-	-	1/2"	32	-	-	-	-	-	QUICK DISCONNECT	5'	-
2G1	23	DBL. CONV. STEAMER	CLEVELAND	(2) 22CGT66.1	-	-	-	-	-	-	-	-	1/2"	32	-	-	-	-	-	QUICK DISCONNECT	5'	-
2C	23	DBL. CONV. STEAMER	CLEVELAND	(2) 22CGT66.1	-	-	-	-	-	-	-	-	-	-	-	3/4"	-	-	-	QUICK DISCONNECT	5'	-
2C1	23	DBL. CONV. STEAMER	CLEVELAND	(2) 22CGT66.1	-	-	-	-	-	-	-	-	-	-	-	3/4"	-	-	-	QUICK DISCONNECT	5'	FILTERED
3E	21A/21B	DBL. COMBI. OVEN	CONVOTHERM	C4ET 6.20EB-N/C4ET 10.20EB-N	15.9	44.1	-	208	3	60	3	-	-	-	-	-	-	-	-	DIRECT	8'	CONDUIT & WIRE
3E1	21A/21B	DBL. COMBI. OVEN	CONVOTHERM	C4ET 6.20EB-N/C4ET 10.20EB-N	27.4	76.1	-	208	3	100	3	-	-	-	-	-	-	-	-	DIRECT	8'	CONDUIT & WIRE
3C	21A/21B	DBL. COMBI. OVEN	CONVOTHERM	C4ET 6.20EB-N/C4ET 10.20EB-N	-	-	-	-	-	-	-	-	-	-	-	3/4"	-	-	-	QUICK DISCONNECT	5'	-
3C1	21A/21B	DBL. COMBI. OVEN	CONVOTHERM	C4ET 6.20EB-N/C4ET 10.20EB-N	-	-	-	-	-	-	-	-	-	-	-	3/4"	-	-	-	QUICK DISCONNECT	5'	FILTERED
3C2	21A/21B	DBL. COMBI. OVEN	CONVOTHERM	C4ET 6.20EB-N/C4ET 10.20EB-N	-	-	-	-	-	-	-	-	-	-	-	3/4"	-	-	-	QUICK DISCONNECT	5'	-
3C3	21A/21B	DBL. COMBI. OVEN	CONVOTHERM	C4ET 6.20EB-N/C4ET 10.20EB-N	-	-	-	-	-	-	-	-	-	-	-	3/4"	-	-	-	QUICK DISCONNECT	5'	FILTERED
4E	6	HOLDING CABINET	WINDSTON	HOV3-14UV	2.3	19.1	-	120	1	20	1	DR20	-	-	-	-	-	-	-	SUPPLIED W/ EQUIP.	-	GFI BREAKER
5E	22	DBL. CONV. OVEN	BLODGETT	ZEPHAIRE 100-G DBL	0.7	6.0	-	120	1	20	1	DR20	-	-	-	-	-	-	-	SUPPLIED W/ EQUIP.	-	GFI BREAKER
5E1	22	DBL. CONV. OVEN	BLODGETT	ZEPHAIRE 100-G DBL	0.7	6.0	-	120	1	20	1	DR20	-	-	-	-	-	-	-	SUPPLIED W/ EQUIP.	-	GFI BREAKER
5G	22	DBL. CONV. OVEN	BLODGETT	ZEPHAIRE 100-G DBL	-	-	-	-	-	-	-	-	3/4"	50	-	-	-	-	-	QUICK DISCONNECT	5'	-
5G1	22	DBL. CONV. OVEN	BLODGETT	ZEPHAIRE 100-G DBL	-	-	-	-	-	-	-	-	3/4"	50	-	-	-	-	-	QUICK DISCONNECT	5'	-
6E	24	TILT SKILLET	CLEVELAND	SGL30T1	0.2	1.4	-	120	1	20	1	DR20	-	-	-	-	-	-	-	SUPPLIED W/ EQUIP.	-	GFI BREAKER
6G	24	TILT SKILLET	CLEVELAND	SGL30T1	-	-	-	-	-	-	-	-	3/4"	125	-	-	-	-	-	QUICK DISCONNECT	5'	-
6H	24	TILT SKILLET	CLEVELAND	SGL30T1	-	-	-	-	-	-	-	-	-	-	1/2"	-	-	-	-	QUICK DISCONNECT	5'	-
6C	24	TILT SKILLET	CLEVELAND	SGL30T1	-	-	-	-	-	-	-	-	-	-	-	1/2"	-	-	-	QUICK DISCONNECT	5'	-
D1	-	DUPLEX OUTLET	-	-	-	-	-	120	1	20	1	DR20	-	-	-	-	-	-	-	FACTORY	-	GFI BREAKER
D2	-	DUPLEX OUTLET	-	-	-	-	-	120	1	20	1	DR20	-	-	-	-	-	-	-	FACTORY	-	GFI BREAKER
TOTAL CONNECTED LOAD:				49.6	KW.	137.7	AMP	0.0	KW.	0.0	AMP	389	MBH		H.W.		STEAM SUPPLY			LEGEND		
FUTURE AVAILABLE LOAD CAPACITY:				8.0	KW.	22.3	AMP	0.0	KW.	0.0	AMP	1311	MBH		3/4"		-			MBH = BTU PER HOUR (1000S) SB = STRAIGHT BLADE PLUGS TL = TWIST LOCK PLUGS PS = PIN & SLEEVE PLUGS DCO = DUAL CONVENIENCE OUTLET DIRECT = CONDUIT & WIRE		
SYSTEM CAPACITY:				57.6	KW.	160.0	AMP	0.0	KW.	0.0	AMP	1700	MBH		C.W.		COND. RETURN					
SERVICE SIZE:				120/208 V/ 3 PH/ 200 AMP				V/ PH/ AMP				2" IPS SINGLE			1"		-					

UTILITY DISTRIBUTION SYSTEM FILTER INFORMATION

EQUIPMENT						FILTER				
CONN. #	ITEM	DESCRIPTION	MANUFACTURER	MODEL #	EQUIPMENT FLOW RATE (GPM)	MANUFACTURER	MODEL #	FILTER FLOWRATE (GPM)	CONNECTION TYPE INLET	CONNECTION TYPE OUTLET
2C1	23	CONV. STEAMER	CLEVELAND	(2) 22CGT66.1	0.07					
3C1	21A/21B	DBL. COMBI. OVEN	CONVOTHERM	C4ET 6.20EB-N/C4ET 10.20EB-N	0.16	EVERPURE	EV-9797-40	5	3/4"	3/4"
3C3	21A/21B	DBL. COMBI. OVEN	CONVOTHERM	C4ET 6.20EB-N/C4ET 10.20EB-N	0.16					



TYPICAL SECTION VIEW
MODEL UDI DISTRIBUTION SYSTEM

PRODUCT DESCRIPTION	
UDS STYLE	ISLAND
HOOD HEIGHT	80"
RISER HEIGHT	78"-81"
TRIM COLLAR SIZE	3"
RACEWAY TO FLOOR	24"
UDS WIDTH	12"
TOP OF RACEWAY FROM FLOOR	53.88"
OUTLET LOCATION	UNDERNEATH
OUTLET HEIGHT (IF APPLICABLE)	N/A
PLUMBING HEIGHT	22"

STANDARD FLAG NOTES

1. ELECTRICAL SERVICE FROM ABOVE, SEE SCHEDULE FOR DETAILS. PROVIDED BY ELECTICAL CONTRACTOR.
2. 120V/1PH/15A DEDICATED ELECTRICAL CIRCUIT INTO UDS TERMINALS "N1, N1" FOR FUEL/SHUNT CONTROL. (PROVIDED BY ELECTRICAL CONTRACTOR) SEE SCHEMATIC BELOW.
3. 3-WIRE ELECTRICAL CIRCUIT FROM HOOD CONTROL PACKAGE TERMINALS "GAS, ST & KTS" TO UDS LIKE TERMINALS "GAS, ST & KTS" FOR UDS SHUT DOWN IN A FIRE CONDITION. (PROVIDED BY ELECTRICAL CONTRACTOR). SEE SCHEMATIC BELOW.
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5. COLD WATER SERVICE FROM ABOVE, SEE SCHEDULE FOR SERVICE SIZE (PROVIDED BY PLUMBING CONTRACTOR)
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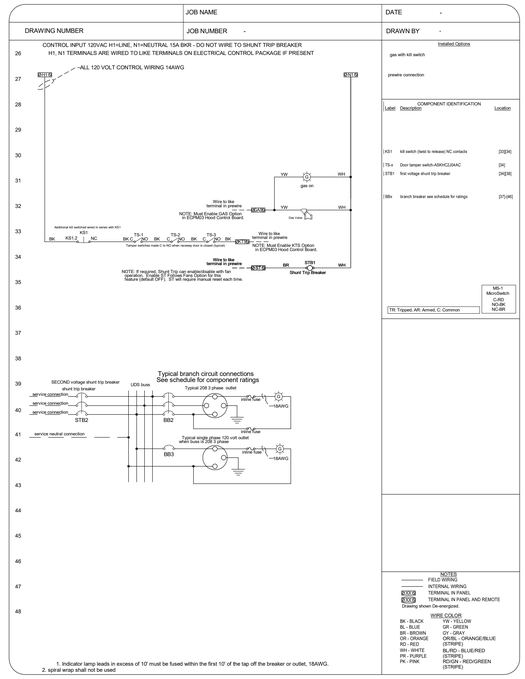
17. REMOVABLE ACCESS DOORS.

	JOB NAME	DATE -
DRAWING NUMBER	JOB NUMBER -	DRAWN BY -



Installed Options
gas with kill switch
preserv connection

COMPONENT IDENTIFICATION

Label	Description	Location
KS1	kill switch (twist to release) NC contacts	[32][34]
TS-x	Door tamper switch-ASHRAE2AAC	[34]
STB1	first voltage shunt trip breaker	[34][38]
BBx	branch breaker see schedule for ratings	[37]-[48]

TR: Tripped, AR: Armed, C: Common

MS-1 MicroSwitch
1SM1
1C-NC
NC-NR

NOTES
——— FIELD WIRING
INTERNAL WIRING
XTB TERMINAL IN PANEL
XDB TERMINAL IN PANEL AND REMOTE
Drawing shown De-energized

WIRE COLOR

BK - BLACK	YW - YELLOW
BL - BLUE	GN - GREEN
BR - BROWN	GY - GRAY
OR - ORANGE	OR/BL - ORANGE/BLUE (STRIPE)
RD - RED	
WH - WHITE	BL/RD - BLUE/RED (STRIPE)
PR - PURPLE	
PK - PINK	GN/RD - GREEN/RED (STRIPE)

1. Indicator lamp leads in excess of 10' must be fused within the first 10' of the tap off the breaker or outlet, 18AWG.
2. spiral wrap shall not be used

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ELECTRICAL PACKAGE - JOB#6869092

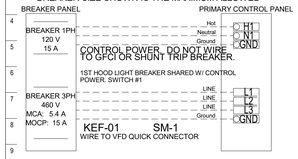
NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED					
				LOCATION	QUANTITY		FAN TAG	TYPE	ϕ	HP	VOLT	FLA
1		SC-310110MA	UTILITY CABINET RIGHT	UDS	1 LIGHT 1 FAN	SMART CONTROLS THERMOSTATIC CONTROL W/ RELAY ON/OFF WITH SUPPLY	KEF-01	EXHAUST	3	3.000	460	4.3

JOB NO	MODEL NUMBER	DRAWN BY	SCHEMATIC TYPE	DESCRIPTION OF OPERATION:
6869092	SC-310110MA		INSTALL	3 Phase w/ control for 1 Exhaust Fan, Exhaust on in Fire, Lights out in Fire, Relay On/Off with Supply Fan, Fan(s) On/Off Thermostatically Controlled. Room temperature sensor shipped loose for field installation. INVERTER DUTY 3 PHASE MOTOR REQUIRED FOR USE WITH VFD.
JOB NAME: ROSEWOOD MIDDLE SCHOOL-WAYNE ...		DATE: 6/24/2024	DWG NO: ECP #1-1	

BREAKER PANEL TO PRIMARY CONTROL PANEL

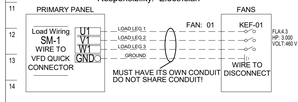
Responsibility: Electrician

BREAKER SIZE SHOWN IS THE MAXIMUM ALLOWED



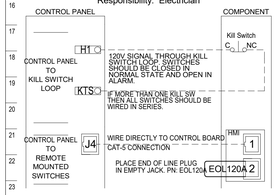
CONTROL PANEL TO FANS

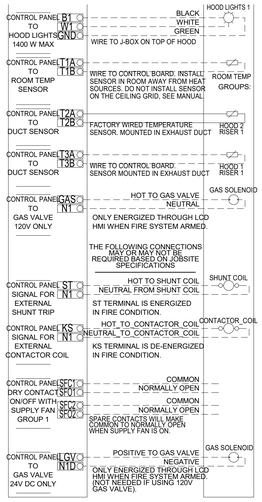
Responsibility: Electrician



CONTROL PANEL TO ACCESSORY ITEMS

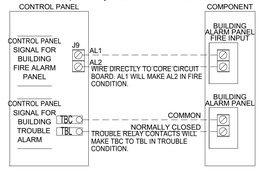
Responsibility: Electrician





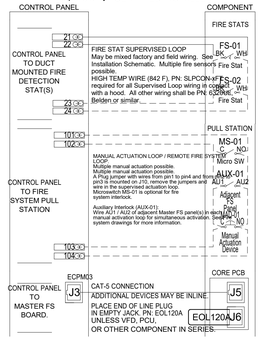
CONTROL PANEL TO FIRE SYSTEM

Responsibility: ALARM CONTRACTOR



CONTROL PANEL TO FIRE SYSTEM

Responsibility: CERTIFIED INSTALLER



JOB NO	MODEL NUMBER	DRAWN BY	SCHEMATIC TYPE	DESCRIPTION OF OPERATION:
6869092	SC-310110MA		INSTALL	3 Phase w/ control for 1 Exhaust Fan, Exhaust on in Fire, Lights out in Fire, Relay On/Off with Supply Fan, Fan(s) On/Off Thermostatically Controlled. Room temperature sensor shipped loose for field installation. INVERTER DUTY 3 PHASE MOTOR REQUIRED FOR USE WITH VFD.
JOB NAME: ROSEWOOD MIDDLE SCHOOL-WAYNE ...		DATE: 6/24/2024	DWG NO: ECP #1-2	

JOB NO	MODEL NUMBER	DRAWN BY	SCHEMATIC TYPE	DESCRIPTION OF OPERATION:
6869092	SC-310110MA		INSTALL	Fire System #1 TANK FS - 4.0/4.0.
JOB NAME: ROSEWOOD MIDDLE SCHOOL-WAYNE ...		DATE: 6/24/2024	DWG NO: ECP #1-3	

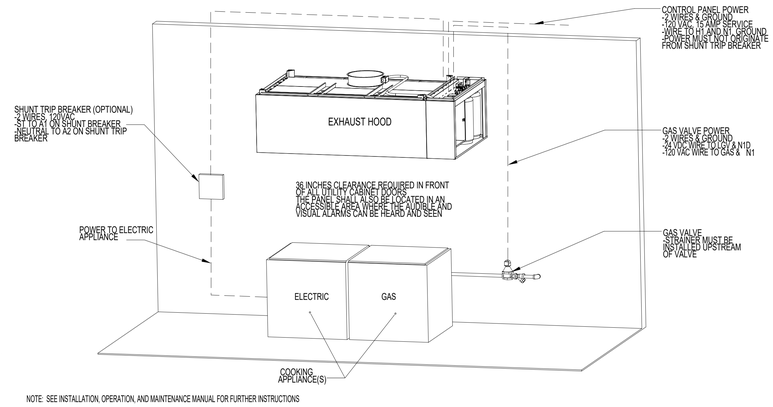
TANK PROTECTION ELECTRICAL DETAIL

02/10/2021 Rev. 2

ELECTRICIAN:
1. WIRE MAIN CONTROL PANEL PER INCLUDED SCHEMATIC
2. WIRE ALL FANS PER INCLUDED SCHEMATIC
3. WIRE SHUNT TRIP BREAKER (OPTIONAL)
4. WIRE UDS APPLIANCE KILL SWITCH, IF EQUIPPED (OPTIONAL)
5. WIRE GAS VALVE

FS-1: MASTER

ELECTRICAL CONTRACTOR REQUIREMENT					
ITEM	CONNECTION IN PANEL	CONNECTION IN DEVICE	VOLTAGE	AMPERAGE	COMMENTS
SHUNT TRIP BREAKER (OPTIONAL)	ST & N1	BREAKER COIL (A1 & A2)	120 VAC	< 4 AMPS	ST TO A1 ON SHUNT BREAKER COIL, AND NEUTRAL TO A2 ON SHUNT TRIP BREAKER COIL
CONTROL PANEL POWER	H1 & N1 + GROUND	CIRCUIT BREAKER	120 VAC	15 AMPS	CONTROL PANEL POWER MUST NOT BE RUN THROUGH SHUNT TRIP BREAKER
UDS APPLIANCE KILL SWITCH (OPTIONAL)	KTS & N1	KTS & N1	120 VAC	< 4 AMPS	KILL SWITCH TERMINALS MUST BE IN SERIES WITH OTHER KILL SWITCHES
REMOTE 120VAC ANSUL AUTOMAN (OPTIONAL)	AU1, AU2	SOLENOID	120 VAC	< 6 AMPS	120V TO AU1, AU2 TO ANSUL ELECTRIC AUTOMAN, ANSUL SOLENOID TO NEUTRAL
GAS VALVE	LGV & N1D (IF 24 VDC) GAS & N1 (IF 120 VAC)	RED/RED/GREEN	24 VDC OR 120 VAC	< 1.0 AMPS	IF 24 VDC - 2 WIRES & GROUND. N1D TO RED, LGV TO RED, AND GREEN TO GROUND IF 120 VAC - 2 WIRES & GROUND GAS TO RED, N1 TO RED, AND GREEN TO GROUND



NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS

JOB NO	MODEL NUMBER	DRAWN BY	SCHEMATIC TYPE	DESCRIPTION OF OPERATION:
6869092	SC-310110MA		INSTALL	Fire System #1 TANK FS - 4.0/4.0.
JOB NAME: ROSEWOOD MIDDLE SCHOOL-WAYNE ...		DATE: 6/24/2024	DWG NO: ECP #1-4	

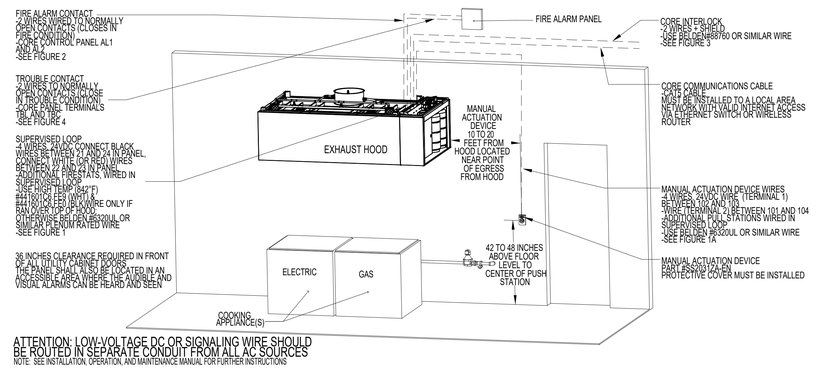
TANK PROTECTION LOW-VOLTAGE DETAIL

10/01/2023 Rev. 3

ALARM CONTRACTOR:
1. WIRE MANUAL ACTUATION DEVICE(S), REMOTE FIRESTAT(S), CORE INTERLOCK(S), FIRE SENSOR(S) AND FIRE ALARM CONTACTS
2. CORE CIRCUIT BOARD PROGRAM AT SYSTEM
3. VERIFY FINAL FIRE SYSTEM TEST

FS-1: MASTER

ALARM CONTRACTOR REQUIREMENT					
ITEM	CONNECTION IN PANEL	CONNECTION ON DEVICE	VOLTAGE	AMPERAGE	COMMENTS
MANUAL ACTUATION DEVICE(S)	101 AND 104 102 AND 103	1 & 2	24 VDC	< 1.0 AMPS	WIRE MANUAL ACTUATION DEVICE TERMINAL 1 BETWEEN CORE PANEL TERMINALS 102 AND 103 WIRE MANUAL ACTUATION DEVICE TERMINAL 2 BETWEEN CORE PANEL TERMINALS 101 AND 104 JUMPER 101 TO 104 AND 102 TO 103 IF NO MANUAL ACTUATION DEVICE IS INSTALLED
MANUAL ACTUATION DEVICE COVER	N/A	N/A	N/A	N/A	MANUAL ACTUATION DEVICE COVER MUST BE INSTALLED
REMOTE FIRESTAT SENSOR(S)	21 AND 24 22 AND 23	BLACK AND WHITE	24 VDC	< 1.0 AMPS	WIRE FIRE SENSOR WITH THERMISTOR TO CORE PANEL TERMINALS 22 AND 23 WIRE FIRE SENSOR WITH 2 WIRE DRY CONTACT TO CORE PANEL TERMINALS 21 AND 24 HIGH TEMP (842 F) FS01/BLACK/WHITE & FS02/WHITE/WHITE SPLICED IN ONE RUN OF HOOD, OTHERWISE BELDEN 89320UL OR SIMILAR PLENUM RATED WIRE. SEE FIGURE 1
FIRE ALARM CONTACT	AL1, AL2	VARIES	50V MAX (AC/DC)	UP TO 1 AMP	FIRE ALARM RELAY CONTACTS FOR BUILDING FIRE ALARM LOCATED IN THE CORE ELECTRICAL CONTROL PANEL.
CORE INTERLOCK(S)	CA, CB, CC	CA, CB, CC	RS-485 COMMUNICATIONS SIGNAL		CORE SYSTEM (1) CA, TO CORE SYSTEM (2) CA, CORE SYSTEM (1) CB, TO CORE SYSTEM (2) CB, CORE SYSTEM (1) CC, TO CORE SYSTEM (2) CC. USE BELDENM 88760 OR SIMILAR WIRE
TROUBLE CONTACT	TBC, TBL, TOK	VARIES	MAX 120 VAC	UP TO 6 AMPS	WIRE TO TBL & TBC NORMALLY OPEN CONTACT, CLOSES IN TROUBLE CONDITION
CORE COMMUNICATIONS CABLE	RJ-45 Jack	INTERNET CONNECTION	SIGNAL	<1.0 AMPS	TYPICAL CONNECTION CAT5 CABLE TO LOCAL AREA NETWORK VIA ETHERNET SWITCH OR WIRELESS ROUTER WITH VALID INTERNET CONNECTION



ATTENTION: LOW-VOLTAGE DC OR SIGNALING WIRE SHOULD BE ROUTED IN SEPARATE CONDUIT FROM ALL AC SOURCES

NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS

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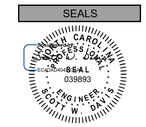
ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS



1/10/2025

DKA JOB NUMBER
2401

DEWBERRY NUMBER
50171439

REVISIONS

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Drawn By: SMF
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DATE ISSUED

BID DOCUMENTS
01/10/2025

SHEET TITLE
KITCHEN DETAILS

M05.12

Docusign Envelope ID: 63D80F16-124C-4E02-89EC-4BD985B2E6ED

DUCTWORK #1 PARTS - JOB#6869092

TAG	PART #	CFM	GPM	ZONE	COVEREDBY	SP	WEIGHT	VELOCITY	QTY	DESCRIPTION
P1	DW1604C1D	1750				-0.001	2.79	1253.35	1	SINGLE WALL DUCT OFF SET COLLAR - 16" DIAMETER DUCT - 1/4" PITCH.
P2	DW1607LT	1750				-0.0015	4.14	1253.35	1	SINGLE WALL DUCT 16" DIAMETER, 7" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P3	DW1615AJDKIT	1750				-0.0015	16.29	1253.35	1	SINGLE WALL DUCT ADJUSTABLE, 16" DIAMETER, 14.50" LONG, FLANGE AT ONE END WITH A 16" ADJUSTABLE COLLAR - STAINLESS STEEL.
P4	DW1690ASY	1750				-0.0705	13.00	1253.35	1	SINGLE WALL DUCT 90 DEGREE ELBOW, 16" DUCT, ASSEMBLY.
P5	DW1645ASY	1750				-0.0615	7.22	1253.35	1	SINGLE WALL DUCT 45 DEGREE ELBOW, 16" DUCT, ASSEMBLY.
P6	DW1611LT	1750				-0.0021	6.16	1253.35	1	SINGLE WALL DUCT 16" DIAMETER, 11" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P7	DW1624AJDKIT	1750				-0.0029	16.63	1253.35	1	SINGLE WALL DUCT ADJUSTABLE, 16" DIAMETER, 23.5" LONG, FLANGE AT ONE END WITH A 16" ADJUSTABLE COLLAR - STAINLESS STEEL.
P8	DW1620ADPEC17	1750				-0.016	12.01	1253.35	1	SINGLE WALL DUCT ECCENTRIC ADAPTER, 16" DUCT DIA TO 20" DUCT DIA, ASSEMBLY - 430 STAINLESS STEEL.
P9	DW2090ASY	1750				-0.0318	18.41	802.14	1	SINGLE WALL DUCT 90 DEGREE ELBOW, 20" DUCT, ASSEMBLY.
P10	DW2005LT	1750					15.50	802.14	1	SINGLE WALL DUCT 20" DIAMETER, 5" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P11	DW2012AJDKIT	1750					12.16	802.14	1	SINGLE WALL DUCT ADJUSTABLE, 20" DIAMETER, 11.5" LONG, FLANGE AT ONE END WITH A 20" ADJUSTABLE COLLAR - STAINLESS STEEL.
P12	DW20TEASY	3675		1		-0.4295	26.16	1684.50	1	SINGLE WALL DUCT TEE, 20" DUCT, ASSEMBLY.
P13	DW1620ADPEC17	1925				-0.019	12.01	1378.68	1	SINGLE WALL DUCT ECCENTRIC ADAPTER, 16" DUCT DIA TO 20" DUCT DIA, ASSEMBLY - 430 STAINLESS STEEL.
P14	DW1690ASY	1925				-0.0855	13.00	1378.68	1	SINGLE WALL DUCT 90 DEGREE ELBOW, 16" DUCT, ASSEMBLY.
P15	DW1604C2D	1925				-0.001	2.73	1378.68	1	SINGLE WALL DUCT OFF SET COLLAR - 16" DIAMETER DUCT - 1/2" PITCH.
P16	DW1607LT	1925				-0.0019	4.14	1378.68	1	SINGLE WALL DUCT 16" DIAMETER, 7" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P17	DW1615AJDKIT	1925				-0.0021	16.29	1378.68	1	SINGLE WALL DUCT ADJUSTABLE, 16" DIAMETER, 14.50" LONG, FLANGE AT ONE END WITH A 16" ADJUSTABLE COLLAR - STAINLESS STEEL.
P18	DW2047LT	3675				-0.01	31.08	1684.50	1	SINGLE WALL DUCT 20" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P19	DW2048AJDKIT	3675				-0.008	37.95	1684.50	1	SINGLE WALL DUCT ADJUSTABLE, 20" DIAMETER, 47.5" LONG, FLANGE AT ONE END WITH A 20" ADJUSTABLE COLLAR - STAINLESS STEEL.
P20	DW20SUBRASY						3.58		1	DUCT SUPPORT BRACKET KIT, 20" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P21 ASSEMBLED W/P37	DW20TEASY	3675		1		-0.007	26.16	1684.50	1	SINGLE WALL DUCT TEE, 20" DUCT, ASSEMBLY.
P22	DW2047LT	3675				-0.01	31.08	1684.50	1	SINGLE WALL DUCT 20" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P23	DW2047LT	3675				-0.01	31.08	1684.50	1	SINGLE WALL DUCT 20" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P24	DW20SUBRASY						3.58		1	DUCT SUPPORT BRACKET KIT, 20" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P25	DW2047LT	3675				-0.01	31.08	1684.50	1	SINGLE WALL DUCT 20" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P26	DW2048AJDKIT	3675				-0.008	37.95	1684.50	1	SINGLE WALL DUCT ADJUSTABLE, 20" DIAMETER, 47.5" LONG, FLANGE AT ONE END WITH A 20" ADJUSTABLE COLLAR - STAINLESS STEEL.
P27	DW20SUBRASY						3.58		1	DUCT SUPPORT BRACKET KIT, 20" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P28 ASSEMBLED W/P36	DW20TEASY	3675		1		-0.007	26.16	1684.50	1	SINGLE WALL DUCT TEE, 20" DUCT, ASSEMBLY.
P29	DW2035LT	3675				-0.0079	23.51	1684.50	1	SINGLE WALL DUCT 20" DIAMETER, 35" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P30	DW2048AJDKIT	3675				-0.0081	37.95	1684.50	1	SINGLE WALL DUCT ADJUSTABLE, 20" DIAMETER, 47.5" LONG, FLANGE AT ONE END WITH A 20" ADJUSTABLE COLLAR - STAINLESS STEEL.
P31	DW20SUBRASY						3.58		1	DUCT SUPPORT BRACKET KIT, 20" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P32	DW2004C2D	3675				-0.001	3.46	1684.50	1	SINGLE WALL DUCT OFF SET COLLAR - 20" DIAMETER DUCT - 1/2" PITCH.
P33 ASSEMBLED W/P34	DW2047LT	3675				-0.01	31.08	1684.50	1	SINGLE WALL DUCT 20" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P34 ASSEMBLED W/P33 O=B	DW2620TP	3675					9.42	1684.50	1	DUCT TO CURB TRANSITION, 26-1/2" CURB TO 20" DUCT, 16 GA ALUMINIZED. USED ON BDU20.
SYSTEM AT P34						-1.164	0.00			
P35	DW20SUBRASY						3.58		1	DUCT SUPPORT BRACKET KIT, 20" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P36 ASSEMBLED W/P28 O=T	DW2021ADIASY						23.46		1	DUCT ACCESS DOOR - INSULATED - USED WITH 20" DUCT - GREASE DAM INCLUDED - ASSEMBLY.
P37 ASSEMBLED W/P21 O=T	DW2021ADIASY						23.46		1	DUCT ACCESS DOOR - INSULATED - USED WITH 20" DUCT - GREASE DAM INCLUDED - ASSEMBLY.
	3M-2000PLUS						0.80		11	DUCT - 3M FIRE BARRIER 2000 PLUS SILICONE - USED AS SEALANT TO SEAL DUCT JOINTS.
	DW16CLASY						1.18		13	DUCT "V" CLAMP WITH NEW DESIGN 14 GA BRACKETS, 16" DUCT, ASSEMBLY.
	DW20CLASY						1.41		19	DUCT "V" CLAMP WITH NEW DESIGN 14 GA BRACKETS, 20" DUCT, ASSEMBLY.
TOTAL WEIGHT							672.35			

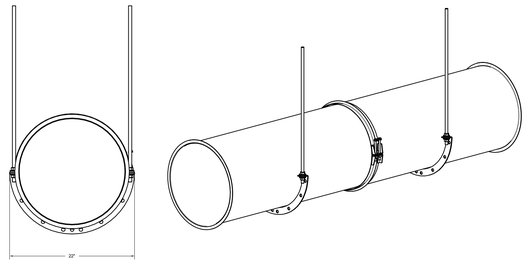
SINGLE WALL FACTORY BUILT DUCTWORK

- ALL DUCTWORK IS REQUIRED TO BE INSTALLED WITH THE MAXIMUM SUPPORT SPACING LISTED BELOW.
- FOR A COMPLETE LIST OF APPROVED SUPPORT METHODS, SEE THE INSTALLATION AND OPERATION MANUAL.
- DUCTWORK SHALL SLOPE NOT LESS THAN 1/16" PER LINEAR FOOT TOWARDS THE HOOD OR AN APPROVED GREASE COLLECTION RESERVOIR.
- WHERE HORIZONTAL DUCTS EXCEED 75 FEET IN LENGTH, THE SLOPE SHALL NOT BE LESS THAN 3/16" PER LINEAR FOOT.

DUCT DIAMETER	HORIZONTAL SUPPORT (FT)	VERTICAL WALL SUPPORT (FT)	VERTICAL CURB SUPPORT (FT)
5"	10'	10'	24'
6"	10'	10'	24'
7"	10'	10'	24'
8"	10'	10'	24'
10"	10'	10'	24'
12"	10'	10'	24'
14"	10'	10'	24'
16"	10'	10'	24'
18"	10'	10'	24'
20"	10'	10'	24'
22"	10'	10'	24'
24"	10'	10'	24'
26"	10'	10'	24'
28"	10'	10'	24'
30"	10'	10'	24'
32"	10'	10'	24'
34"	10'	10'	24'
36"	10'	10'	24'

SUPPORT SYSTEM DETAILS #1

DW20SUBRASY - HORIZONTAL SUPPORT



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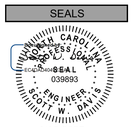
ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS



1/10/2025

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PM: BK
Drawn By: SMF
Plot Date: 1/8/2025 12:09:13 PM

DATE ISSUED

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01/10/2025

SHEET TITLE
KITCHEN DETAILS

M05.13

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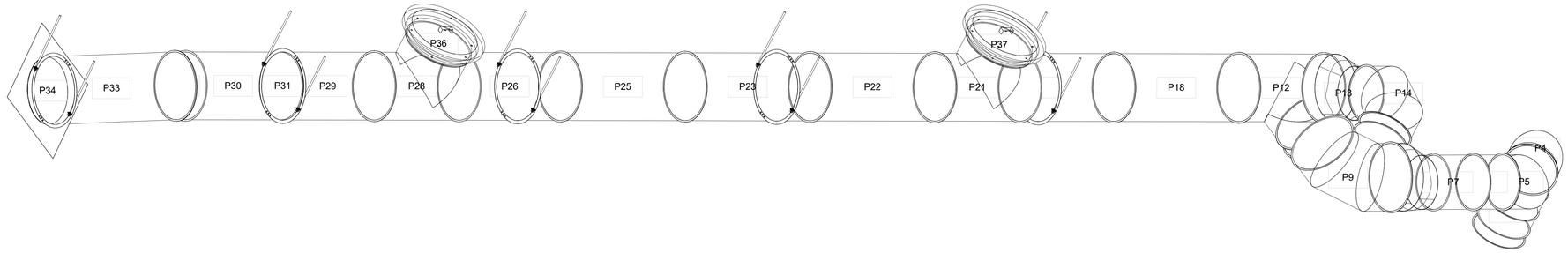

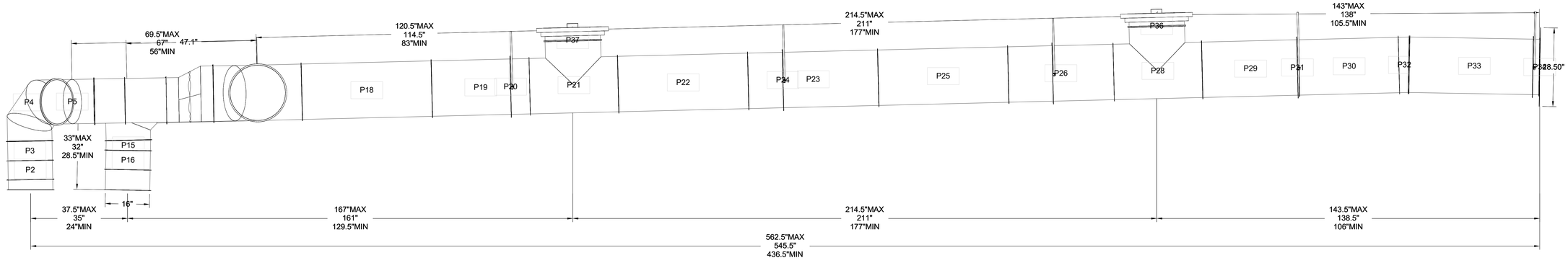

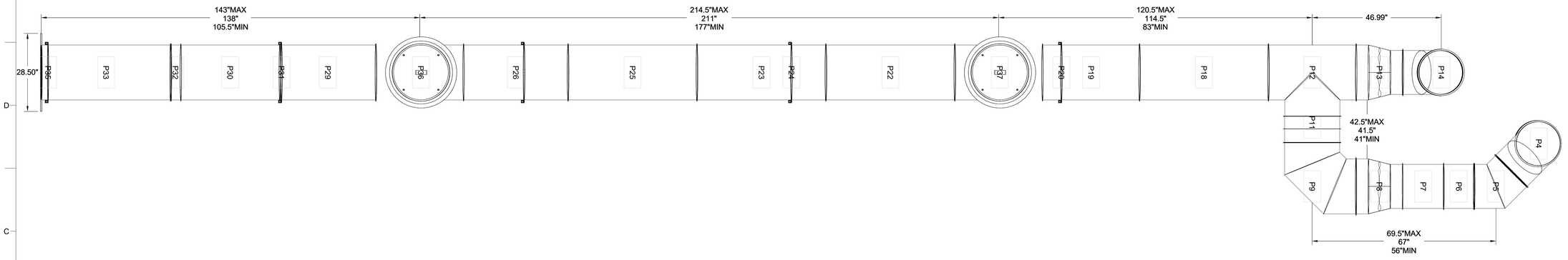

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PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER SEAL 038893 SCOTT W. DAVIS

1/10/2025

DKA JOB NUMBER
2401

DEWBERRY NUMBER
50171439

REVISIONS

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BID DOCUMENTS
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KITCHEN DETAILS

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AIR-COOLED CHILLER SCHEDULE (FURNISHED UNDER SEPARATE CONTRACT)

MARK	SERVICE	TYPE	MANUFACTURER / MODEL	REFRIGERANT TYPE	REFRIGERANT CHARGE (LBS)	CHILLED WATER CAPACITY (TONS)	CHILLED WATER FLOW (GPM)	CHILLED WATER MIN FLOW (GPM)	CHILLED WATER EWT (F)	CHILLED WATER LWT (F)	CHILLED WATER MAX. WPD (FT H2O)	PERFORMANCE MIN. FL EER @ AHRI (BTUH/W)	PERFORMANCE MIN. IPLV @ AHRI (BTUH/W)	PERFORMANCE MIN. NPLV @ DESIGN (BTUH/W)	PERFORMANCE AMB. (F)	PERFORMANCE MAX. SOUND (dBA)	ELECTRICAL MCA (A)	ELECTRICAL MOCP (A)	ELECTRICAL VOLTAGE/ PHASE	EVAPORATOR HEATER REQ'D (Y OR N)	EVAPORATOR HEATER VOLTAGE/ PHASE	PIPING HEAT TRACE REQ'D (Y OR N)	PIPING HEAT TRACE VOLTAGE/ PHASE	DIMENSIONS AND WEIGHT FOOTPRINT (FT x FT)	DIMENSIONS AND WEIGHT HEIGHT (FT)	DIMENSIONS AND WEIGHT WEIGHT (LBS)	NOTES
CH-1	BUILDING CHW LOOP	AIR-COOLED SCROLL	DAIKIN / AGZ006F	R-32	68	110	190	138	58	44	10	10.57	17.18	15.68	95	65	231	250	480/3	YES	120/1	YES	120/1	7.4 x 10.7	8.2	5,400	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15
CH-2	BUILDING CHW LOOP	AIR-COOLED SCROLL	DAIKIN / AGZ006F	R-32	68	110	190	138	58	44	10	10.57	17.18	15.68	95	65	231	250	480/3	YES	120/1	YES	120/1	7.4 x 10.7	8.2	5,400	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15

NOTES:
1. CHILLER FURNISHED UNDER SEPARATE CONTRACT FOR INSTALLATION UNDER THIS CONTRACT. MECHANICAL CONTRACTOR SHALL OBTAIN FINAL PRE-PURCHASE EQUIPMENT SUBMITTAL FOR EQUIPMENT AND ACCESSORIES FURNISHED UNDER SEPARATE CONTRACT FOR INSTALLATION UNDER THIS CONTRACT. ALL EQUIPMENT, ACCESSORIES, WARRANTIES, ETC. NOT FURNISHED UNDER SEPARATE CONTRACT SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR UNDER THIS CONTRACT.
2. REFER TO SECTION 236426 FOR ADDITIONAL REQUIREMENTS FOR AIR-COOLED CHILLERS.
3. PROVIDE HIGH EFFICIENCY CHILLER WITH MINIMUM SCHEDULED FULL LOAD EER & IPLV IN ACCORDANCE WITH AHRI 550/590. MINIMUM SCHEDULED NPLV AT DESIGN CONDITIONS INDICATED.
4. CAPACITIES ARE BASED ON 0.00010 FOULING FACTORS FOR AIR-COOLED CHILLERS.
5. SOUND PERFORMANCE IS BASED ON SOUND PRESSURE LEVELS MEASURED AT 30 FEET FROM UNIT AT FULL CAPACITY IN ACCORDANCE WITH AHRI 370.
6. PROVIDE FACTORY INSTALLED CIRCUIT BREAKERS, ACROSS THE LINE START, AND SINGLE POINT ELECTRICAL CONNECTION.
7. PROVIDE 20A DEDICATED CIRCUIT FOR EVAPORATOR HEATER FOR EACH CHILLER.
8. PROVIDE 20A DEDICATED CIRCUIT FOR PIPING HEAT TAPE FOR EACH CHILLER.
9. PROVIDE 20A DEDICATED CIRCUIT FOR CONTROLS FOR EACH CHILLER.
10. PROVIDE WITH HEAT TRACING ON CHILLER BARREL AND PIPING.
11. PROVIDE WITH WATER STRAINER; REFRIGERANT ISOLATION VALVES; FREEZE PROTECTION PACKAGE; PROGRAMMABLE RELAYS; SUPER-QUIET SOUND PACKAGE.
12. PROVIDE CONCRETE PAD FOR OUTDOOR CHILLERS THAT IS 6-INCHES LONGER AND WIDER THAN UNIT FOOTPRINT AND 6-INCHES THICK WITH DOWNTURNED EDGES, 4-INCH DEEP CRUSHED STONE BASE AND 1" FULL PERIMETER CHAMFER. REFER TO STRUCTURAL DETAILS FOR ADDITIONAL RQUIREMENTS.
13. PROVIDE FACTORY INSTALLED WATER FLOW SWITCH AND EXTENDED 5 YR. COMPRESSOR WARRANTY.
14. PROVIDE WITH OPEN PROTOCOL BACNET COMPLIANT CONTROLS INTERFACE FOR COMMUNICATION WITH BAS AS INDICATED ON CONTROLS DRAWINGS.
15. PROVIDE WITH FULLY LOUVERED PANELS OVER ENTIRE UNIT.

CONDENSING WATER BOILER SCHEDULE

MARK	SERVICE	TYPE	MANUFACTURER / MODEL	HEATING WATER EWT (F)	HEATING WATER LWT (F)	HEATING WATER DESIGN FLOW (GPM)	HEATING WATER MINIMUM FLOW (GPM)	HEATING WATER WPD (FT H2O)	BURNER PRIMARY FUEL PRIMARY FUEL TYPE	BURNER PRIMARY FUEL PRESSURE (IN WC)	BURNER THERMAL EFF. (%)	BURNER FULL FIRE MIN. EFF. (%)	BURNER MIN. FIRE MIN. EFF. (%)	BURNER INPUT (MBH)	BURNER DESIGN OUTPUT (MBH)	ELECTRICAL MCA (A)	ELECTRICAL FLA (A)	ELECTRICAL VOLTAGE/ PHASE	DIMENSIONS AND WEIGHT FOOTPRINT (IN x IN)	DIMENSIONS AND WEIGHT HEIGHT (IN)	EXHAUST FLUE VENT (IN DIA)	COMBUST. AIR DUCT (IN DIA)	WET WEIGHT (LBS)	NOTES
B-1	BUILDING HHW	S.S. FIRE-TUBE HX	LOCHINVAR / CREST FBN1501	110	140	100	36.0	10	NAT. GAS	4 to 14	96.2%	91.8%	94.1%	1,500	1412	13.0	10.0	120/1	68 x 30	78	8	8	2,400	1,2,3,4,5,6,7,8,9
B-2	BUILDING HHW	S.S. FIRE-TUBE HX	LOCHINVAR / CREST FBN1501	110	140	100	36.0	10	NAT. GAS	4 to 14	96.2%	91.8%	94.1%	1,500	1412	13.0	10.0	120/1	68 x 30	78	8	8	2,400	1,2,3,4,5,6,7,8,9

NOTES:
1. REFER TO SECTION 235216 FOR ADDITIONAL REQUIREMENTS.
2. PROVIDE MOTOR-RATED DISCONNECT SWITCH.
3. SCHEDULED EFFICIENCIES AT FULL FIRE AND MINIMUM FIRE ARE BASED ON DESIGN ENTERING WATER TEMPERATURE AS SCHEDULED.
4. CAPACITY AND PRESSURE DROP IS BASED ON DESIGN FLOW RATE. CONTROL / TAB SHALL NOT ALLOW FLOW BELOW MINIMUM FLOW RATE PLUS A 15% SAFETY FACTOR.
5. PROVIDE 4-INCH DEEP CONCRETE PAD THAT IS 4-INCHES LONGER AND WIDER THAN UNIT FOOTPRINT. REFER TO STRUCTURAL DETAILS.
6. PROVIDE GAS REGULATOR AS REQUIRED FOR BOILER UTILIZATION PRESSURE. REGULATORS SHALL BE VENTED TO A SAFE LOCATION EXTERIOR TO THE BUILDING. VENTLESS REGULATORS WITH VENT LIMITERS ARE NOT ACCEPTABLE.
7. PROVIDE BACnet COMPLIANT CONTROL INTERFACE.
8. PROVIDE EACH BOILER WITH INDEPENDENT CONDENSATE DRAIN ACID NEUTRALIZATION SYSTEM. SYSTEM SIZING SHALL COMPLY WITH THE REQUIREMENTS AND RECOMMENDATIONS OF BOTH THE BOILER MANUFACUTER AND THE ACID NEUTRALIZATION SYSTEM MANUFACTURER.
9. THERMAL EFFICIENCY IN ACCORDANCE WITH 10 CFR PART 431.

AIR DISTRIBUTION SCHEDULE

MARK	SERVICE	TYPE	MANUFACTURER / SERIES	MATERIAL	COLOR	PATTERN	MAX. AIR FLOW (CFM)	FACE SIZE (IN x IN)	NECK SIZE (IN x IN)	APD (IN WG)	MAX. SOUND (NC)	NOTES
S1	SUPPLY	SQUARE LOUVER FACE	TITUS TMSA	STEEL	WHITE	360-DEG.	100	24 x 24	6	0.08	20	1,2,3,4,5,6,7
S2							200	24 x 24	8	0.08		
S3							325	24 x 24	10	0.10		
S4							500	24 x 24	12	0.10		
S5							675	24 x 24	14	0.10		
S6							100	12 x 12	6	0.10		
S7	SUPPLY	AIRFOIL BLADE GRILLE	TITUS 272	STEEL	WHITE	90 DEG.	150	10 x 8	8 x 6	0.10	20	1,2,3,4,5,6,7
R1 / E1	RETURN/EXHAUST	SQUARE PERFORATED FACE	TITUS PAR	STEEL	WHITE	N/A	200	24 x 24	8	0.10	20	1,2,3,4,5,6,7
R2 / E2							325	24 x 24	10	0.10		
R3 / E3							450	24 x 24	12	0.10		
R4 / E4							600	24 x 24	14	0.10		
R5 / E5							800	24 x 12	22 x 10	0.10		
R6 / E6							1,300	24 x 24	22 x 22	0.10		
R7 / E7							200	12 x 12	8	0.10		
R8 / E8	RETURN/EXHAUST	STANDARD BLADE GRILLE	TITUS 350RL	STEEL	WHITE	N/A	200	12 x 8	10 x 6	0.10	20	1,2,3,4,5,6,7
R9 / E9							1,300	26 x 18	24 x 16	0.10		
R10 / E10	RETURN/EXHAUST	HEAVY-DUTY BLADE GRILLE	TITUS 30RL	STEEL	WHITE	N/A	6,700	62 X 38	60 X 36	0.10	30	1,2,3,4,5,6,7

NOTES:
1. REFER TO SECTION 233713 FOR ADDITIONAL REQUIREMENTS.
2. SOUND LEVELS SHALL BE BASED ON ASHRAE 70.
3. VERIFY MOUNTING FRAME STYLE WITH ARCHITECTURAL REFLECTED CEILING PLANS AND FINISH SCHEDULES.
4. DUCT BRANCH FROM MAIN TAKEOFF TO AIR INLET / OUTLET SHALL MATCH SCHEDULED NECK SIZE UNLESS OTHERWISE NOTED.
5. DESIGN INCLUDES DUCT-MOUNTED VOLUME DAMPERS FOR ALL DEVICES. INTEGRAL DAMPERS ADJUSTABLE AT THE DEVICE FACE ARE PROHIBITED.
6. PROVIDE PRIMED-FOR-PAINT FINISH FOR DIFFUSERS AND GRILLES IN SPACES WITH EXPOSED STRUCTURE CEILINGS AND/OR MOUNTED TO EXPOSED DUCT.
7. PROVIDE ALUMINUM CONSTRUCTION FOR HUMID AREAS INCLUDING MAIN KITCHEN AND DISHWASHER AREAS, TOILET ROOMS, LOCKER ROOMS, AND MECHANICAL SPACES.

LIFE-SAFETY PENETRATION SCHEDULE

	ASSEMBLY AND PENETRATION TYPE	F RATING (HR)	U. L. DETAIL SYSTEM NUMBER
CONCRETE FLOORS	INSULATED METAL PIPES	1 or 2	CAJ-5061, CAJ-5090, CAJ-5091, CAJ-5096, CAJ-5277
		3	CAJ-5061, CAJ-5090
	UNINSULATED METAL PIPES OR CONDUITS	1 or 2	CAJ-1226, CAJ-1155, CAJ-1380, CAJ-1575, FA-1028
		4	CBJ-1037
	UNINSULATED NON-METAL PIPES OR CONDUITS	1 or 2	CAJ-2109, CAJ-2407, CAJ-2567, CAJ-2831
	UNINSULATED METAL DUCTWORK WITHOUT DAMPERS	1 or 2	CAJ-7029, CAJ-7084
	CABLES	1 or 2	CAJ-3095, CAJ-3210, CAJ-3239
	CABLE TRAYS	1 or 2	CAJ-4034, CAJ-4035, CAJ-4083
		4	CAJ-4107
CONCRETE / MASONRY WALLS	INSULATED METAL PIPES	1 or 2	CAJ-5061, CAJ-5090, CAJ-5091, CAJ-5096, CAJ-5277
		4	WJ-5028
	UNINSULATED METAL PIPES OR CONDUITS	1 or 2	CAJ-1226, CAJ-1155, CAJ-1380, CAJ-1575
		4	CAJ-1630
	UNINSULATED NON-METAL PIPES OR CONDUITS	1 or 2	CAJ-2109, CAJ-2407, CAJ-2567, CAJ-2831
	INSULATED METAL DUCTWORK WITHOUT DAMPERS	1 or 2	CAJ-7145, WJ-7091, WJ-7112
	UNINSULATED METAL DUCTWORK WITHOUT DAMPERS	1 or 2	CAJ-7029, WJ-7109, WJ-7021
		3	CAJ-7192
	CABLES	1 or 2	CAJ-3095, CAJ-3180, WJ-3036
	CABLE TRAYS	1 or 2	CAJ-4034, CAJ-4035, CAJ-4083
		4	CAJ-4107
GYPSUM WALLBOARD	INSULATED METAL PIPES	1 or 2	WL-5046, WL-5047, WL-5096
		4	WL-5073
	UNINSULATED METAL PIPES OR CONDUITS	1 or 2	WL-1164, WL-1205, WL-1465
	UNINSULATED NON-METAL PIPES OR CONDUITS	1 or 2	WL-2084, WL-2341, WL-2649
	INSULATED METAL DUCTWORK WITHOUT DAMPERS	1 or 2	WL-7151, WL-7156
	UNINSULATED METAL DUCTWORK WITHOUT DAMPERS	1 or 2	WL-7155, WL-7213, WL-7250
	CABLES	1 or 2	WL-3065, WL-3111, WL-3161
	CABLE TRAYS	1 or 2	WL-4011, WL-4019, WL-4081

NOTES:
1. REFER TO SECTION 230500 FOR MORE INFORMATION.
2. SELECT UL LISTED PENETRATION DETAIL MATCHING THE PENETRATION CONDITIONS.
3. SUBMIT AN APROPRIATE DETAIL FOR ENGINEER REVIEW IF THE PROJECT CONDITIONS ARE NOT REPRESENTED ABOVE.

PUMP SCHEDULE

MARK	SERVICE	TYPE	MANUFACTURER / MODEL	FLOW (GPM)	REVISED HEAD (FT H2O)	EFF. (%)	PUMP SPEED (RPM)	BRAKE MOTOR (HP)	NOMINAL MOTOR (HP)	VOLTAGE/ PHASE	STARTER/ DSCNNCT MEANS	NOTES
PCHWP-1	PRIMARY CHW	SEPARATELY-COUPLED IN-LINE	BELL & GOSSETT / E80SC 3x3x7C	190	35	75%	1750	2.3	3	480/3	MS/D	1,2,3,4,5,6,7
PCHWP-2	PRIMARY CHW	SEPARATELY-COUPLED IN-LINE	BELL & GOSSETT / E80SC 3x3x7C	190	35	75%	1750	2.3	3	480/3	MS/D	1,2,3,4,5,6,7
SCHWP-1	SECONDARY CHW	SEPARATELY-COUPLED IN-LINE	BELL & GOSSETT / E80SC 4x4x11B	380	70	73%	1598	9.2	15	480/3	VFD	1,2,3,4,5,6,7
SCHWP-2	SECONDARY CHW	SEPARATELY-COUPLED IN-LINE	BELL & GOSSETT / E80SC 4x4x11B	380	70	73%	1598	9.2	15	480/3	VFD	1,2,3,4,5,6,7
PHWP-1	PRIMARY HW	CLOSE-COUPLED IN-LINE	BELL & GOSSETT / E80 2.5x2.5x7B	100	30	68%	1750	1.1	1.5	480/3	MS/D	1,2,3,4,5,6
PHWP-2	PRIMARY HW	CLOSE-COUPLED IN-LINE	BELL & GOSSETT / E80 2.5x2.5x7B	100	30	68%	1750	1.1	1.5	480/3	MS/D	1,2,3,4,5,6
SHWP-1	SECONDARY HW	SEPARATELY-COUPLED IN-LINE	BELL & GOSSETT / E80SC 3x3x9.5C	200	65	70%	1663	4.6	7.5	480/3	VFD	1,2,3,4,5,6,7
SHWP-2	SECONDARY HW	SEPARATELY-COUPLED IN-LINE	BELL & GOSSETT / E80SC 3x3x9.5C	200	65	70%	1663	4.6	7.5	480/3	VFD	1,2,3,4,5,6,7

NOTES:
1. REFER TO SECTION 232123 FOR ADDITIONAL REQUIREMENTS.
2. PUMPS OPERATING IN PARALLEL SHALL BE SELECTED FOR PARALLEL OPERATION.
3. PROVIDE STARTING AND DISCONNECTING MEANS AS SCHEDULED. (MRS = MOTOR RATED SWITCH; MS/D = COMBINATION MOTOR-STARTER AND DISCONNECT; AND VFD = VARIABLE FREQUENCY DRIVE)
4. PUMPS MOTOR SELECTION SHALL BE BASED ON NON-OVERLOADING SERVICE.
5. PUMPS SUBMITTED BY MANUFACTURER OTHER THAN LISTED SHALL HAVE SIMILAR CURVES AS THOSE SPECIFIED.
6. REFER TO DETAILS FOR ADDITIONAL INFORMATION.
7. PROVIDE 4-INCH DEEP CONCRETE PAD. REFER TO STRUCTURAL DETAILS.

EXPANSION TANK SCHEDULE

MARK	SERVICE	TYPE	MANUFACTURER / MODEL	EXPANSION TANK TOTAL VOLUME (GALLONS)	EXPANSION TANK ACCEPT. VOLUME (GALLONS)	EXPANSION TANK CHARGE PRESSURE (PSIG)	HYDRONIC SYSTEM MAKEUP PRESSURE (PSIG)	HYDRONIC SYSTEM RELIEF PRESSURE (PSIG)	DIMENSIONS AND WEIGHT INLET SIZE (IN DIA)	DIMENSIONS AND WEIGHT DIMENSIONS (IN DIA x IN)	DIMENSIONS AND WEIGHT WEIGHT (LBS)	NOTES
XT-1	CHILLED WATER	BLADDER	BELL & GOSSETT / B-100	26	26	21	22	50	0.75	20"Ø x 31"	320	1,2
XT-2	HEATING WATER	BLADDER	BELL & GOSSETT / B-500	132	132	21	22	50	0.75	30"Ø x 57"	1,435	1,2

NOTES:
1. REFER TO SECTION 232116 FOR ADDITIONAL REQUIREMENTS.
2. PROVIDE 4-INCH DEEP CONCRETE PAD. REFER TO STRUCTURAL DETAILS.

AIR SEPARATOR SCHEDULE

MARK	SERVICE	TYPE	MANUFACTURER / MODEL	WATER FLOW (GPM)	MAX. WPD (FT H2O)	DIMENSIONS (IN DIA x IN)	INLET SIZE (IN DIA)	OPERATING WEIGHT (LBS)	NOTES
AS-1	CHILLED WATER	TANGENTIAL	B&G ROLAIRTROL / R-6	380	2	18"Ø x 44"	6	580	1,2,3
AS-2	HEATING WATER	TANGENTIAL	B&G ROLAIRTROL / R-4	200	2	13"Ø x 32"	4	280	1,2,3

NOTES:
1. REFER TO SECTION 232116 FOR ADDITIONAL REQUIREMENTS.
2. PROVIDE MANUAL BLOWDOWN VALVE.
3. PROVIDE AUTOMATIC AIR VENT.

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541 North Carolina 581 S, Goldsboro, NC 27530

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039893 ENGINEER SCOTT W. DAILY

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REVISIONS

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SHEET TITLE
SCHEDULES

M06.01

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UNIT HEATER SCHEDULE

MARK	SERVICE	TYPE	MANUFACTURER / MODEL	FAN AIR FLOW (CFM)	FAN MOTOR (HP)	FAN VOLTAGE/ PHASE	AIR EAT (F)	AIR LAT (F)	HEATING WATER CAPACITY (MBH)	HW EWT (F)	HW LWT (F)	HW FLOW (GPM)	MAX. WPD (FT H2O)	PIPE SIZE (INCHES)	CONTROL VALVE	ELECTRIC MIN. CAP. (KW)	ELECTRIC VOLTAGE/ PHASE	NOTES
UH-1	BOILER MECHANICAL D115	HORIZONTAL UNIT HEATER	TRANE / UHEC05	400	-	-	60	99	-	-	-	-	-	-	-	5.0	277/1	1,2,3,4,6
UH-2	ELEC A102	HORIZONTAL UNIT HEATER	TRANE / UHEC05	400	-	-	60	86	-	-	-	-	-	-	-	3.3	277/1	1,2,3,4,6
UH-3	MECHANICAL C200	HORIZONTAL UNIT HEATER	TRANE / UHEC03	400	-	-	60	86	-	-	-	-	-	-	-	3.3	277/1	1,2,3,4,6
UH-4	MECHANICAL C200	HORIZONTAL UNIT HEATER	TRANE / UHEC03	400	-	-	60	86	-	-	-	-	-	-	-	3.3	277/1	1,2,3,4,6
UH-5	STAIR S1 ENTRY	WALL/SEMI-RECESSED	TRANE / UHWA05	245	-	-	50	114	-	-	-	-	-	-	-	5.0	277/1	1,3,4,5,7
UH-6	STAIR S2 ENTRY	WALL/SEMI-RECESSED	TRANE / UHWA05	245	-	-	50	114	-	-	-	-	-	-	-	5.0	277/1	1,3,4,5,7
UH-7	VESTIBULE D101	WALL/SEMI-RECESSED	TRANE / UHWA05	245	-	-	50	114	-	-	-	-	-	-	-	5.0	277/1	1,3,4,5,7
UH-8	VESTIBULE C102	WALL/SEMI-RECESSED	TRANE / UHWA05	245	-	-	50	114	-	-	-	-	-	-	-	5.0	277/1	1,3,4,5,7
UH-9	RISER A104	HORIZONTAL UNIT HEATER	TRANE / UHEC03	400	-	-	60	86	-	-	-	-	-	-	-	3.3	277/1	1,2,3,4,6
UH-10	GYM E117	VERTICAL UNIT HEATER	TRANE / UHP-146	2220	1/6	120/1	65	84	46.8	140	110	3.25	5	1.00	2-WAY PI	-	-	1,2,8,9,10
UH-11	GYM E117	VERTICAL UNIT HEATER	TRANE / UHP-146	2220	1/6	120/1	65	84	46.8	140	110	3.25	5	1.00	2-WAY PI	-	-	1,2,8,9,10
UH-12	GYM E117	VERTICAL UNIT HEATER	TRANE / UHP-146	2220	1/6	120/1	65	84	46.8	140	110	3.25	5	1.00	2-WAY PI	-	-	1,2,8,9,10
UH-13	GYM E117	VERTICAL UNIT HEATER	TRANE / UHP-146	2220	1/6	120/1	65	84	46.8	140	110	3.25	5	1.00	2-WAY PI	-	-	1,2,8,9,10
UH-14	GYM E117	VERTICAL UNIT HEATER	TRANE / UHP-146	2220	1/6	120/1	65	84	46.8	140	110	3.25	5	1.00	2-WAY PI	-	-	1,2,8,9,10
UH-15	GYM E117	VERTICAL UNIT HEATER	TRANE / UHP-146	2220	1/6	120/1	65	84	46.8	140	110	3.25	5	1.00	2-WAY PI	-	-	1,2,8,9,10
UH-16	CORRIDOR E105	WALL/SEMI-RECESSED	TRANE / UHWA05	245	-	-	50	114	-	-	-	-	-	-	-	5.0	277/1	1,3,4,5,7

NOTES:
1. REFER TO SECTION 238239 FOR ADDITIONAL REQUIREMENTS.
2. PROVIDE MOTOR-RATED DISCONNECT SWITCH.
3. PROVIDE WITH INTEGRAL THERMOSTAT.
4. PROVIDE SINGLE-STEP CONTROLLER FOR ELECTRIC COILS. COIL CAPACITIES SHALL BE NO LESS THAN MINIMUM AND NO MORE THAN THE ELECTRICAL DESIGN BASIS SCHEDULED.
5. PROVIDE MANUFACTURER'S INTEGRAL LISTED DISCONNECT SWITCH.
6. PROVIDE FACTORY-FABRICATED WALL/CEILING SUPPORT. MOUNT AT 7'-0" AFF TO BOTTOM OF HEATER UON ON PLANS.
7. PROVIDE RECESSED WALL INSTALLATION. MOUNT AT 1'-4" AFF TO BOTTOM OF HEATER UON ON PLANS. COORDINATE WALL REQUIREMENTS PRIOR TO ORDERING.
8. PROVIDE THERMOSTAT WITH FAN AUTO/ON SELECTOR SWITCH. MOUNT WITH PROTECTIVE WALL GUARD IN SAME LOCATION AS EXISTING THERMOSTAT.
9. PROVIDE FACTORY-FABRICATED SUPPORT. MOUNT BOTTOM OF HEATER DISCHARGE CONE FLUSH WITH BOTTOM OF ROOF TRUSSES (APPROX. 20'-0" AFF).
10. PROVIDE WITH MANUFACTURER'S ADJUSTABLE LOUVER CONE DISCHARGE WITH PROTECTIVE WIRE GUARD FOR VERTICAL DOWN-DISCHARGE AIRFLOW ADJUSTEMENT.

FAN SCHEDULE

MARK	SERVICE	TYPE	MANUFACTURER / MODEL	AIR FLOW (CFM)	ESP (IN WG)	EC MOTOR (Y or N)	DRIVE TYPE	SPEED (RPM)	BRAKE MOTOR (HP)	NOMINAL MOTOR (HP)	MAX. SOUND (SONES)	DAMPER TYPE	VOLTAGE/ PHASE	STARTER/ DSCNNCT MEANS	CONTROL TYPE	NOTES
EF-1	KITCHEN D118 GENERAL EXH.	IN-LINE SQUARE CENTRIFUGAL	GREENHECK / SQ-120-VG	1,500	0.75	YES	DIRECT	1683	0.43	3/4	12.5	GRAVITY	120/1	MRS	B	1,2,3
EF-2	DISH D112, JAN D114, LOCKER 116, TLT 116A	IN-LINE CABINET	GREENHECK / CSP-A700-VG	460	0.75	YES	DIRECT	1349	0.17	1/4	2.6	GRAVITY	120/1	MRS	A	1,2,4,5
EF-3	MAIN MECHANICAL/BOILER RM D115	IN-LINE SQUARE CENTRIFUGAL	GREENHECK / SQ-16-M2-VG	3,300	0.40	YES	DIRECT	1148	0.42	1	5.7	GRAVITY	277/1	MRS	C	1,2,3
EF-4	MAIN ELEC RM D114	IN-LINE SQUARE CENTRIFUGAL	GREENHECK / SQ-16-M2-VG	3,400	0.40	YES	DIRECT	1170	0.44	1	5.8	GRAVITY	277/1	MRS	C	1,2,3
EF-5	BOYS D109, GIRLS D105	IN-LINE SQUARE CENTRIFUGAL	GREENHECK / SQ-120-VG	700	0.75	YES	DIRECT	1242	0.16	1/4	6.6	GRAVITY	120/1	MRS	A	1,2,3
EF-6	TLT RMS C115A, C125, C127	IN-LINE CABINET	GREENHECK / CSP-A390-VG	210	0.625	YES	DIRECT	1376	0.07	1/4	2.8	GRAVITY	120/1	MRS	A	1,2,4,5
EF-7	ART C108	IN-LINE CABINET	GREENHECK / CSP-A1050-VG	700	0.625	YES	DIRECT	1229	0.21	1/2	2.4	GRAVITY	120/1	MRS	A	1,2,4,5
EF-8	KILN C108B	IN-LINE CABINET	GREENHECK / CSP-A700-VG	650	0.50	YES	DIRECT	1223	0.19	1/4	2.0	GRAVITY	120/1	MRS	C	1,2,4,5
EF-9	BOYS A107, GIRLS A111, JAN A109, TLT A103, TLT A105	IN-LINE SQUARE CENTRIFUGAL	GREENHECK / SQ-120-VG	1,170	0.75	YES	DIRECT	1464	0.29	1/2	6.9	GRAVITY	120/1	MRS	A	1,2,3
EF-10	TLT A113A, TLT A115A	IN-LINE CABINET	GREENHECK / CSP-A390-VG	190	0.625	YES	DIRECT	1376	0.07	1/4	2.8	GRAVITY	120/1	MRS	A	1,2,4,5
EF-11	ELEC A102	IN-LINE CABINET	GREENHECK / CSP-A700-VG	600	0.50	YES	DIRECT	1195	0.17	1/4	1.8	GRAVITY	120/1	MRS	C	1,2,4,5,6
EF-12	RISER A104	IN-LINE CABINET	GREENHECK / CSP-A390-VG	300	0.50	YES	DIRECT	1361	0.09	1/4	2.6	GRAVITY	120/1	MRS	C	1,2,4,5,6
EF-13	BOYS A203, GIRLS A207, JAN A205, TLT A205	IN-LINE SQUARE CENTRIFUGAL	GREENHECK / SQ-120-VG	1,100	0.75	YES	DIRECT	1421	0.26	1/2	6.5	GRAVITY	120/1	MRS	A	1,2,3
EF-14	MECHANICAL (MEZZANINE) C200	IN-LINE CABINET	GREENHECK / CSP-A700-VG	600	0.50	YES	DIRECT	1195	0.17	1/4	1.8	GRAVITY	120/1	MRS	C	1,2,4,5,6
EF-15	BOYS E124, GIRLS E123	DOWNBLAST DOME	GREENHECK / G-100-VG	840	0.625	YES	DIRECT	1642	0.16	1/4	7.4	GRAVITY	120/1	MRS	A	1,2,4,5,7
EF-16	TLT A211	IN-LINE CABINET	GREENHECK / CSP-A390-VG	75	0.60	YES	DIRECT	1300	0.05	1/4	1.5	GRAVITY	120/1	MRS	A	1,2,4,5
EF-17	PREP ROOM A209A	IN-LINE CABINET	GREENHECK / CSP-A390-VG	220	0.60	YES	DIRECT	1258	0.05	1/4	1.5	GRAVITY	120/1	MRS	E	1,2,4,5,8
KEF-1	KITCHEN HOODS H-1 & H-2	UPBLAST DOME, GREASE	REFER TO KITCHEN DETAILS	4,000	-	-	-	-	-	-	-	-	-	-	D	-

NOTES:
1. REFER TO SECTION 233400 FOR ADDITIONAL REQUIREMENTS.
2. PROVIDE STARTING AND DISCONNECTING MEANS AS SCHEDULED. (MRS = MOTOR RATED SWITCH; MS/D = COMBINATION MOTOR-STARTER AND DISCONNECT; VFD = VARIABLE FREQUENCY DRIVE; AND DISC = DISCONNECT)
3. PROVIDE WITH SPRING ISOLATION MOUNTS. REFER TO 230548.
4. PROVIDE WITH ELASTOMERIC ISOLATION MOUNTS. REFER TO 230548.
5. PROVIDE METAL FAN WHEEL CONSTRUCTION. PLASTIC WHEELS ARE NOT ACCEPTABLE.
6. PROVIDE WITH FAN INLET SAFETY SCREEN.
7. PROVIDE FACTORY-FABRICATED ROOF CURB ADAPTOR AS NEEDED TO MOUNT FAN ON EXISTING ROOF CURB.
8. AMCA SPARK B CONSTRUCTION.

CONTROL TYPE (REFER TO CONTROLS DIAGRAMS):
A. CONTROLLED BY BUILDING AUTOMATION SYSTEM - BASED ON OCCUPANCY.
B. CONTROLLED BY BUILDING AUTOMATION SYSTEM - KITCHEN EXHAUST.
C. THERMOSTATICALLY CONTROLLED BY LINE VOLTAGE THERMOSTAT.
D. KITCHEN HOOD CONTROL; RE: KITCHEN DETAILS & CONTROL DWGS.
E. CONTINUOUS OPERATION.

GRAVITY ROOF VENTILATOR SCHEDULE

MARK	SERVICE	TYPE	MANUFACTURER / MODEL	AIR FLOW (CFM)	APD (IN WG)	VENT. SIZE (IN x IN)	THROAT SIZE (IN x IN)	MAX. HEIGHT (IN)	DAMPER TYPE	NOTES
GV-1	AHU-4 RELIEF	LOW-PROFILE HOOD	GREENHECK / FGR-60x100	24900	0.05	90 x 132	60 x 100	44.5	MOTORIZED DAMPER AT AHU	1,2,3,4,6
GV-2	BCU-1 INTAKE	DOME VENTILATOR	GREENHECK / GRSI-16	950	0.05	29Ø	16Ø	25	MOTORIZED DAMPER AT BCU	1,3,5
GV-3	EF-4 EXHAUST	LOW-PROFILE HOOD	GREENHECK / FGR-30x30	3400	0.05	56 x 48	30 x 30	34	MOTORIZED DUCT-MOUNTED	1,2,3,4,6
GV-4	EF-4 INTAKE	LOW-PROFILE HOOD	GREENHECK / FGI-30x30	3400	0.05	40 x 48	30 x 30	34	MOTORIZED DUCT-MOUNTED	1,2,3,4,6

NOTES:
1. REFER TO SECTION 233723 FOR ADDITIONAL REQUIREMENTS.
2. PROVIDE FACTORY-FABRICATED ROOF CURB. COORDINATE EXACT LOCATION OF ROOF OPENINGS AND STRUCTURAL SUPPORT. REFER TO ARCH FOR ROOF PITCH.
3. DAMPER LOCATED AT RELIEF / OUTDOOR AIR DUCT CONNECTION TO AIR HANDLING UNIT.
4. FOR PITCHED ROOFS, SCHEDULED MAX HEIGHT IS FROM ROOF SURFACE AT HIGH ROOF SIDE OF CURB TO TOP OF HOOD.
5. PROVIDE FACTORY FABRICATED ROOF CURB ADAPTER FOR INSTALLATION ON EXISTING ROOF CURB.
6. REFER TO PLANS FOR LOCATION OF REMOTE DAMPER.

KITCHEN HOOD AIR BALANCE SCHEDULE

EQUIP. TAG	DESCRIPTION / SERVES	AIR STREAM	AIRFLOWS AT EACH OPERATING CONDITION (CFM) KEF-1 OFF, EF-1 ON	KEF-1 ON, EF-1 OFF
KEF-1	GREASE HOOD EXHAUST / KITCH D118 HOODS H-1 & H-2	EXHAUST	0	(4,000)
EF-1	KITCHEN GENERAL EXHAUST	EXHAUST	(1,500)	0
EF-5	BOYS D109 / GIRLS D105	EXHAUST	(700)	(700)
EF-2	KITCHEN MISC ROOMS	EXHAUST	(460)	(460)
AHU-2	KITCHEN AIR DINING / HANDLING UNIT MIN OA	OUTDOOR AIR	2,900	5,400
NET POSITIVE AIRFLOW BALANCE			**240**	**240**

NOTES:
1. REFER TO 230593 TESTING ADJUSTING AND BALANCING FOR ADDITIONAL REQUIREMENTS.
2. MANUALLY BALANCE AHU OUTDOOR AIRFLOW CFM'S UNDER EACH SCHEDULED CONDITION DURING FINAL TAB PROCESS.
3. MAINTAINING SPACE PRESSURE +0.03" W.C. RELATIVE TO OUTDOOR AMBIENT SHALL HAVE PRIORITY OVER MAINTAINING NET POSITIVE AIRFLOWS SCHEDULED.
4. OUTDOOR AIR FLOWRATES SCHEDULED ARE DESIGN MINIMUMS REQUIRED FOR HOOD MAKE-UP.
5. REFER TO SEQUENCE OF OPERERATION FOR EACH PIECE OF EQUIPMENT FOR ADDITIONAL INFORMATION.

ENERGY RECOVERY SCHEDULE

MARK	SERVICE	TYPE	MANUFACTURER / MODEL	COOLING PEAK RECOVERY PERFORMANCE: FRESH/SUPPLY AIRSTREAM AIR FLOW (CFM)	MAX APD (IN WG)	DEHUMIDIFICATION EAT (Fdb/Fwb)	DEHUMIDIFICATION LAT (Fdb/Fwb)	COOLING EAT (Fdb/Fwb)	COOLING LAT (Fdb/Fwb)	RETURN/EXHAUST AIRSTREAM AIR FLOW (CFM)	MAX APD (IN WG)	EAT (Fdb/Fwb)	HEATING PEAK RECOVERY PERFORMANCE: FRESH/SUPPLY AIRSTREAM AIR FLOW (CFM)	MAX APD (IN WG)	EAT (F)	LAT (F)	RETURN/EXHAUST AIRSTREAM AIR FLOW (CFM)	MAX APD (IN WG)	EAT (F)	FILTRATION PLATE EA TYPE & THICKNESS	MAX. VELOCITY (FPM)	INITIAL APD (IN WG)	FINAL APD (IN WG)	EFF. (MERV)
ERU-1	AHU-1 (LOCKER ROOMS)	ENTHALPY FIXED PLATE	SEE AHU SCHEDULE	2,800	0.75	82.5 / 80.0	80.5 / 78.1	96.4 / 76.2	84.3 / 73.0	2,500	0.75	75.0 / 62.5	2,800	0.75	21.2	49.3	2,500	0.75	70.0	2" PLEATED PANEL	400	0.5	1.0	8

NOTES:
1. REFER TO SECTION 237200 FOR EFFECTIVENESS AND ADDITIONAL REQUIREMENTS.
2. ENERGY RECOVERY MODULE INTEGRAL TO AIR HANDLING UNIT. REFER TO AIR HANDLING UNIT SCHEDULE FOR ADDITIONAL INFORMATION.
3. REFER TO AHU SCHEDULE FOR PLATE SA FILTER REQUIREMENTS.

AIR HANDLING UNIT SCHEDULE (FURNISHED UNDER SEPARATE CONTRACT)

		AHU-1	AHU-2	AHU-3	AHU-4
MARK		AHU-1	AHU-2	AHU-3	AHU-4
SERVICE		LOCKER ROOMS	KITCHEN/DINING	ADMIN/MEDIA	CLASSROOM WING
TYPE		MODULAR INDOOR	MODULAR INDOOR	MODULAR INDOOR	MODULAR INDOOR
MANUFACTURER / MODEL		TRANE / CSAA 08	TRANE / CSAA 21	TRANE / CSAA 25	TRANE / CSAA 57
CONTROL DIAGRAM		M07.04	M07.03	M07.03	M07.03
SUPPLY AIR FAN	TYPE	PLENUM	PLENUM	PLENUM	PLENUM
	DRIVE TYPE	DIRECT	DIRECT	DIRECT	DIRECT
	TOTAL CAPACITY AIR FLOW (CFM)	2,800	8,700	12,000	29,000
	NOMINAL / DESIGN SPEED (RPM)	1800 / 2338	1800 / 2428	1800 / 1995	1800 / 2127
	TSP (IN WG)	4.0	4.9	5.2	5.7
	ESP (IN WG)	1.3	2.7	2.7	3.1
	FAN QUANTITY	1	1	1	2
	BRAKE MOTOR, EACH (HP)	3.1	12.1	15.4	23.3
	NOMINAL MOTOR, EACH (HP)	5.0	15.0	20.0	30.0
	VFD QUANTITY	1	1	1	2
	VOLTAGE/PHASE	480/3	480/3	480/3	480/3
	STARTER/DISCONNECTING MEANS	VFD	VFD	VFD	VFD
OA	ECONOMIZER AIR FLOW (CFM)	-	8,700	12,000	29,000
	DESIGN MAX. VENT. AIR FLOW (CFM)	-	3,900 / 5,400 (NOTE 10)	2,800	6,250
	DEMAND CTRL. MIN. VENT. AIR FLOW (CFM)	-	2,900	1,600	4,100
RETURN / EXHAUST AIR FAN	TYPE	PLENUM	PLENUM	PLENUM	PLENUM
	DRIVE TYPE	DIRECT	DIRECT	DIRECT	DIRECT
	TOTAL AIR FLOW (CFM)	2,500	6,700	10,400	24,900
	NOMINAL / DESIGN SPEED (RPM)	1800 / 2173	1200 / 1440	1200 / 1576	1200 / 1506
	TSP (IN WG)	3.0	1.8	2.6	3.1
	ESP (IN WG)	1.3	1.25	1.5	1.75
	FAN QUANTITY	1	1	1	2
	BRAKE MOTOR, EACH (HP)	2.0	3.4	6.7	10.5
	NOMINAL MOTOR, EACH (HP)	3.0	5.0	10.0	15.0
	VFD QUANTITY	1	1	1	2
	VOLTAGE/PHASE	480/3	480/3	480/3	480/3
	STARTER/DISCONNECTING MEANS	VFD	VFD	VFD	VFD
COOLING COIL CHILLED WATER AIR	COIL FLOW (CFM)	2,800	8,700	12,000	29,000
	EAT (Fdb/Fwb)	96.4 / 76.1	88.3 / 71.4	80.0 / 66.0	79.7 / 65.7
	LAT (Fdb/Fwb)	52.0 / 51.5	52.0 / 51.5	52.0 / 51.5	52.0 / 51.5
	MAX. FACE VELOCITY (FPM)	500	500	500	500
	MAX. APD (IN WG)	1.00	1.00	1.00	1.00
	TOT. CAP. (MBH)	234.4	555.6	522.8	1,236.5
	SENS. CAP. (MBH)	134.3	340.9	362.8	864.8
	EWT (F)	44.0	44.0	44.0	44.0
	LWT (F)	58.0	58.0	58.0	58.0
	FLOW (GPM)	34	80	75	177
	MIN. ROWS	6	8	8	8
	MAX. FINS PER INCH	12	12	12	12
	MAX. WPD (FT)	10	10	10	10
	PIPE SIZE (INCHES)	2	3	3	4
	CONTROL VALVE	2-WAY PI	2-WAY PI	2-WAY PI	2-WAY PI
PREHEAT COIL HEATING WATER AIR	COIL FLOW (CFM)	2,800	5,400	6,000	14,500
	EAT (Fdb)	21.2	21.2	44.6	46.1
	LAT (Fdb)	55.0	70.0	70.0	70.0
	MAX. FACE VELOCITY (FPM)	750	750	750	750
	MAX. APD (IN WG)	0.25	0.25	0.25	0.25
	CAPACITY (MBH)	102.7	285.9	165.4	376.0
	EWT (F)	140.0	140.0	140.0	140.0
	LWT (F)	110.0	110.0	110.0	110.0
	FLOW (GPM)	7	19.25	11.25	25.25
	MIN. ROWS	2	2	2	2
	MAX. FINS PER INCH	12	12	12	12
	MAX. WPD (FT)	2	2	2	2
	PIPE SIZE (INCHES)	1.25	2	1.5	2
	CONTROL VALVE	2-WAY PI	2-WAY PI	2-WAY PI	2-WAY PI
REHEAT COIL HEATING WATER AIR	COIL FLOW (CFM)	2,800	-	-	-
	EAT (Fdb)	55.0	-	-	-
	LAT (Fdb)	90.0	-	-	-
	MAX. FACE VELOCITY (FPM)	750	-	-	-
	MAX. APD (IN WG)	0.25	-	-	-
	CAPACITY (MBH)	106.3	-	-	-
	EWT (F)	140.0	-	-	-
	LWT (F)	110.0	-	-	-
	FLOW (GPM)	7.25	-	-	-
	MIN. ROWS	2	-	-	-
	MAX. FINS PER INCH	12	-	-	-
	MAX. WPD (FT)	2	-	-	-
	PIPE SIZE (INCHES)	1.25	-	-	-
	CONTROL VALVE	2-WAY PI	-	-	-
FILTERS MAIN	TYPE & THICKNESS	2" PLEATED PANEL	2" PLEATED PANEL	2" PLEATED PANEL	2" PLEATED PANEL
	MAX. FACE VELOCITY (FPM)	400	450	450	450
	INITIAL APD (IN WG)	0.50	0.50	0.50	0.50
	FINAL APD (IN WG)	1.00	1.00	1.00	1.00
	EFFICIENCY (MERV)	13	13	13	13
ENERGY RECOVERY SYSTEM MARK		ERU-1	-	-	-
MAX. FOOTPRINT (IN x IN)		230 x 52	192 x 80	210 x 80	273 x 126
MAX. HEIGHT (IN)		80	60	66	89
WEIGHT (LBS)		4,000	4,250	4,800	11,000
NOTES		1,2,3,4,5,6,7,8,9,11	1,2,3,4,5,6,7,8,9,10	1,2,3,4,5,6,7,8,9	1,2,3,4,5,6,7,8,9

NOTES:
1. AHU FURNISHED UNDER SEPARATE CONTRACT FOR INSTALLATION UNDER THIS CONTRACT. MECHANICAL CONTRACTOR SHALL OBTAIN FINAL PRE-PURCHASED EQUIPMENT SUBMITTAL TO CONFIRM EQUIPMENT AND ACCESSORIES FURNISHED FOR INSTALLATION UNDER THIS CONTRACT. EQUIPMENT, ACCESSORIES, WARRANTIES, ETC THAT ARE NOT INDICATED TO BE INCLUDED WITH THE PREPURCHASED EQUIPMENT SHALL BE PROVIDED BY THIS MECHANICAL CONTRACTOR.
2. REFER TO SECTION 237316 - MODULAR AHUS FOR ADDITIONAL REQUIREMENTS. REFER TO SHEET M-506 FOR AHU GENERAL ARRANGEMENT DRAWINGS.
3. PROVIDE FAN STARTING AND DISCONNECTING MEANS AS SCHEDULED. (MS/D = COMBINATION MOTOR-STARTER AND DISCONNECT; AND VFD = VARIABLE FREQUENCY DRIVE)
4. UNIT CASING, COIL CAPACITIES AND COMPONENT APD'S ARE BASED ON THE MAX. SUPPLY FAN AIRFLOW.
5. INTERNAL STATIC PRESSURE SHALL INCLUDE SCHEDULED PRESSURE DROP FOR DIRTY FILTERS.
6. VFDS SHALL NOT EXCEED 80 HZ AND MOTORS SHALL NOT EXCEED 2400 RPM FOR DIRECT-DRIVE FANS.
7. UNIT SHALL BE PROVIDED WITH INTEGRAL 6-INCH HIGH CONTINUOUS PERIMETER AND INTERMEDIATE BASERAILS.
8. PROVIDE CONCRETE PAD THAT IS 6-INCHES LONGER AND WIDER THAN UNIT FOOTPRINT AND 6-INCHES OR TALLER AS NECESSARY FOR INSTALLATION OF CONDENSATE TRAP. REFER TO STRUCTURAL DETAILS. PROVIDE 3/4" THICK NEOPRENE WAFFLE PADS BETWEEN UNIT AND PAD. PAINT PAD OSHA YELLOW.
9. MOTORS SHALL BE STANDARD NEMA HP SIZES. NON-STANDARD HP SELECTIONS ARE UNACCEPTABLE.
10. REFER TO "KITCHEN HOOD AIR BALANCE SCHEDULE" THIS SHEET FOR AHU MINIMUM OA SETPOINT WHEN KITCHEN HOOD FAN, KEF-1, IS OPERATING
11. AHU-1 EQUIPPED WITH INTEGRAL FIXED MEMBRANE ENERGY RECOVERY MODULE. REFER TO ENERGY RECOVERY SCHEDULE.

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PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

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SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039893 ENGINEERS W. DAVIS
1/10/2025

DKA JOB NUMBER
2401
DEWBERRY NUMBER
50171439
REVISIONS

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PM: BK
Drawn By: SMF
Plot Date: 1/8/2025 12:09:18 PM

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01/10/2025

SHEET TITLE
SCHEDULES

M06.02

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BLOWER COIL UNIT SCHEDULE

MARK	SERVICE	TYPE	MANUFACTURER / MODEL	SUPPLY AIR FAN: AIR FLOW (CFM)	ESP (IN WG)	BRAKE MOTOR (HP)	NOMINAL MOTOR (HP)	VOLTAGE/ PHASE	STARTER/ DSCNNCT MEANS	OUTSIDE AIR INTAKE: ECONO. AIR FLOW (CFM)	MIN. VENT. AIR FLOW (CFM)	HEATING COIL: AIR EAT (F)	AIR LAT (F)	HEATING WATER: MAX. APD (IN WG)	CAPACITY (MBH)	EWT (F)	LWT (F)	FLOW (GPM)	MAX. WPD (FT)	PIPE SIZE (INCHES)	CONTROL VALVE	FILTRATION: TYPE & THICKNESS	EFF. (MERV)	DIMENSIONS AND WEIGHT: FOOTPRINT W x L (IN x IN)	HEIGHT (IN)	WET WEIGHT (LBS)	NOTES
BCU-1	GYM LOBBY AREA	VERTICAL	TRANE / BCVE048	1,300	1.00	0.5	1.5	208/3	MS/D	1,300	950	33.0	90.0	0.20	80.4	140.0	110.0	5.50	5	1.25	2-WAY PI	2" PLEATED PANEL	13	35 x 35	57	350	1,2,3,4,5,6,7,8

NOTES:

1. REFER TO SECTION 237316 FOR ADDITIONAL REQUIREMENTS.
2. PROVIDE FAN STARTING AND DISCONNECTING MEANS AS SCHEDULED. (MRS = MOTOR-RATED SWITCH; MS/D = COMBINATION MOTOR-STARTER AND DISCONNECT; AND VFD = VARIABLE FREQUENCY DRIVE)
3. PROVIDE DIRECT DRIVE BLOWER WITH EC MOTOR.
4. HEATING WATER COILS SHALL HAVE MINIMUM OF 2 ROWS.
5. PROVIDE 4-INCH DEEP CONCRETE PAD THAT IS 4-INCHES LONGER AND WIDER THAN UNIT FOOTPRINT.
6. DOUBLE-WALL CONSTRUCTION WITH FIELD INSTALLED MIXING DAMPERS AS INDICATED ON DRAWINGS.

DUCTLESS MINI-SPLIT UNIT SCHEDULE

MARK (INDOOR UNIT)	MARK (OUTDOOR UNIT)	SERVICE	TYPE	MANUFACTURER / MODEL INDOOR & OUTDOOR	REFRIG. TYPE	SUPPLY AIR FLOW (CFM)	COOLING: TOT. CAP. (MBH)	SENS. CAP. (MBH)	SEER/EER (BTUH/W)	AMB. (F)	MAX. SOUND: INDOOR (dBA)	OUTDOOR (dBA)	ELECTRICAL - INDOOR UNIT: MCA (A)	FLA (A)	VOLTAGE/ PHASE	ELECTRICAL - OUTDOOR UNIT: MCA (A)	MOCP (A)	VOLTAGE/ PHASE	MAX. EQUIV. PIPE LENGTHS: HEIGHT (FT)	LENGTH (FT)	DIMENSIONS AND WEIGHT - OUTDOOR: FOOTPRINT (FT x FT)	HEIGHT (FT)	WEIGHT (LBS)	NOTES
DMSS-1	CU-1	MDF C109	WALL MTD / COOLING ONLY	MITSUBISHI / PKA-A24KA7 & PUYA24NHA7	R-410A	775	24.0	18.5	21.4	95	45	47	1.0	0	208/1	19.0	25	208/1	100	225	3.2 x 1.2	3.1	150	1,2,3,4,5,6,7,8,9,10
DMSS-2	CU-2	DATA A106	WALL MTD / COOLING ONLY	MITSUBISHI / PKA-A24KA7 & PUYA24NHA7	R-410A	775	24.0	18.5	21.4	95	45	47	1.0	0	208/1	19.0	25	208/1	100	225	3.2 x 1.2	3.1	150	1,2,3,4,5,6,7,8,9,10
DMSS-3	CU-3	DATA E102	WALL MTD / COOLING ONLY	MITSUBISHI / PKA-A24KA7 & PUYA24NHA7	R-410A	775	24.0	18.5	21.4	95	45	47	1.0	0.36	208/1	19.0	25	208/1	100	225	3.2 x 1.2	3.1	150	1,2,3,4,5,6,7,8,9,10

NOTES:

1. REFER TO SECTION 238116 FOR ADDITIONAL REQUIREMENTS.
2. SOUND PERFORMANCE IS BASED ON SOUND PRESSURE LEVELS MEASURED AT 3 FEET FROM UNIT AT FULL CAPACITY IN ACCORDANCE WITH AHRI 270 AND 350.
3. ALL UNITS SHALL MEET OR EXCEED SEASONAL ENERGY EFFICIENCY RATIO (SEER) FOR NOMINAL COOLING SIZES LESS THAN 65,000 BTUH AND ENERGY EFFICIENCY RATIO (EER) FOR SIZES GREATER THAN OR EQUAL TO 65,000 BTUH.
4. SIZE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS.
5. PROVIDE SINGLE-POINT POWER CONNECTION. PROVIDE FUSED-DISCONNECT SWITCH FOR OUTDOOR UNIT. PROVIDE MOTOR-RATED DISCONNECT SWITCH FOR INDOOR UNIT.
6. PROVIDE LOW AMBIENT TEMPERATURE OPTION.
7. PROVIDE WIRED THERMOSTAT / TEMPERATURE SENSOR AS INDICATED. WIRELESS REMOTE CONTROLS ARE NOT ACCEPTABLE.
8. PROVIDE OPTIONAL CONDENSATE DRAIN PUMP WITH 3-FT LIFT AND INTEGRAL POWER CONNECTION.
9. PROVIDE OUTDOOR UNIT WITH WIND BAFFLES.
10. PROVIDE 4-INCH DEEP CONCRETE PAD FOR OUTDOOR UNIT. REEFER TO STRUCTURAL DETAILS.

TERMINAL UNIT SCHEDULE

MARK	SOURCE	TYPE	MANUFACTURER / MODEL	MAX. DISC. SOUND (NC)	MAX. RADIATED SOUND (NC)	PRIMARY AIR VALVE: INLET SIZE (INCHES)	MAX. CLG. AIRFLOW (CFM)	MIN. AIRFLOW (CFM)	MAX. HTG. AIRFLOW (CFM)	HEATING COIL: AIR COIL FLOW (CFM)	EAT (F)	LAT (F)	MAX. APD (IN WG)	HEATING WATER: CAPACITY (MBH)	EWT (F)	LWT (F)	FLOW (GPM)	MAX. WPD (FT)	PIPE SIZE (INCHES)	CONTROL VALVE	NOTES
VAV-2.01A	AHU-2	SINGLE-DUCT	TITUS / DESV	20	25	14	1,660	500	980	980	55	90	0.25	37.2	140	110	2.50	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-2.01B	AHU-2	SINGLE-DUCT	TITUS / DESV	20	25	14	1,660	500	980	980	55	90	0.25	37.2	140	110	2.50	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-2.01C	AHU-2	SINGLE-DUCT	TITUS / DESV	20	20	12	1,300	390	650	650	55	90	0.25	24.7	140	110	1.75	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-2.02	AHU-2	SINGLE-DUCT	TITUS / DESV	20	20	10	950	285	475	475	55	90	0.25	18.0	140	110	1.25	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-2.03	AHU-2	SINGLE-DUCT	TITUS / DESV	20	20	12	1,050	315	525	525	55	90	0.25	19.9	140	110	1.50	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-2.04	AHU-2	SINGLE-DUCT	TITUS / DESV	20	20	12	1,500	450	1,500	1,500	55	90	0.25	57.0	140	110	4.00	5.00	1.00	2-WAY PI	1,2,3,4,5
VAV-2.05	AHU-2	SINGLE-DUCT	TITUS / DESV	20	20	6	150	75	75	75	55	90	0.25	2.8	140	110	0.25	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-2.06	AHU-2	SINGLE-DUCT	TITUS / DESV	20	20	6	260	130	130	130	55	90	0.25	4.9	140	110	0.50	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-2.07	AHU-2	SINGLE-DUCT	TITUS / DESV	20	20	6	170	85	85	85	55	90	0.25	3.2	140	110	0.25	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-3.01	AHU-3	SINGLE-DUCT	TITUS / DESV	20	20	8	410	125	205	205	55	90	0.25	7.8	140	110	0.75	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-3.02	AHU-3	SINGLE-DUCT	TITUS / DESV	20	20	8	600	180	300	300	55	90	0.25	11.4	140	110	1.00	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-3.03	AHU-3	SINGLE-DUCT	TITUS / DESV	20	20	6	160	80	80	80	55	90	0.25	3.0	140	110	0.25	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-3.04A	AHU-3	SINGLE-DUCT	TITUS / DESV	20	25	16	2,400	720	1,200	1,200	55	90	0.25	45.6	140	110	3.25	5.00	1.00	2-WAY PI	1,2,3,4,5
VAV-3.04B	AHU-3	SINGLE-DUCT	TITUS / DESV	20	20	10	950	285	475	475	55	90	0.25	18.0	140	110	1.25	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-3.05	AHU-3	SINGLE-DUCT	TITUS / DESV	20	20	6	200	100	100	100	55	90	0.25	3.8	140	110	0.50	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-3.06	AHU-3	SINGLE-DUCT	TITUS / DESV	20	20	8	360	110	180	180	55	90	0.25	6.8	140	110	0.50	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-3.07	AHU-3	SINGLE-DUCT	TITUS / DESV	20	20	6	275	140	140	140	55	90	0.25	5.3	140	110	0.50	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-3.08	AHU-3	SINGLE-DUCT	TITUS / DESV	20	20	8	500	150	250	250	55	90	0.25	9.5	140	110	0.75	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-3.09	AHU-3	SINGLE-DUCT	TITUS / DESV	20	20	10	960	290	480	480	55	90	0.25	18.2	140	110	1.25	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-3.10	AHU-3	SINGLE-DUCT	TITUS / DESV	20	20	6	340	100	170	170	55	90	0.25	6.5	140	110	0.50	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-3.11	AHU-3	SINGLE-DUCT	TITUS / DESV	20	20	6	230	115	115	115	55	90	0.25	4.4	140	110	0.50	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-3.12	AHU-3	SINGLE-DUCT	TITUS / DESV	20	20	6	100	50	50	50	55	90	0.25	1.9	140	110	0.25	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-3.13	AHU-3	SINGLE-DUCT	TITUS / DESV	20	20	6	200	100	100	100	55	90	0.25	3.8	140	110	0.50	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-3.14	AHU-3	SINGLE-DUCT	TITUS / DESV	20	20	6	175	90	90	90	55	90	0.25	3.4	140	110	0.25	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-3.15	AHU-3	SINGLE-DUCT	TITUS / DESV	20	20	6	150	75	75	75	55	90	0.25	2.8	140	110	0.25	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-3.16	AHU-3	SINGLE-DUCT	TITUS / DESV	20	20	8	480	145	240	240	55	90	0.25	9.1	140	110	0.75	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-3.17	AHU-3	SINGLE-DUCT	TITUS / DESV	20	20	12	1,360	410	680	680	55	90	0.25	25.8	140	110	1.75	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-3.18	AHU-3	SINGLE-DUCT	TITUS / DESV	20	20	10	1,000	300	500	500	55	90	0.25	19.0	140	110	1.50	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-3.19	AHU-3	SINGLE-DUCT	TITUS / DESV	20	20	12	1,150	345	575	575	55	90	0.25	21.8	140	110	1.50	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-4.01	AHU-4	SINGLE-DUCT	TITUS / DESV	20	20	12	1,020	305	510	510	55	90	0.25	19.4	140	110	1.50	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-4.02	AHU-4	SINGLE-DUCT	TITUS / DESV	20	20	12	1,300	390	650	650	55	90	0.25	24.7	140	110	1.75	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-4.03	AHU-4	SINGLE-DUCT	TITUS / DESV	20	20	12	1,150	345	575	575	55	90	0.25	21.8	140	110	1.50	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-4.04	AHU-4	SINGLE-DUCT	TITUS / DESV	20	20	12	1,150	345	575	575	55	90	0.25	21.8	140	110	1.50	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-4.05	AHU-4	SINGLE-DUCT	TITUS / DESV	20	20	12	1,150	345	575	575	55	90	0.25	21.8	140	110	1.50	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-4.06	AHU-4	SINGLE-DUCT	TITUS / DESV	20	20	12	1,100	330	550	550	55	90	0.25	20.9	140	110	1.50	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-4.07	AHU-4	SINGLE-DUCT	TITUS / DESV	20	20	12	1,100	330	550	550	55	90	0.25	20.9	140	110	1.50	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-4.08	AHU-4	SINGLE-DUCT	TITUS / DESV	20	20	10	1,000	300	500	500	55	90	0.25	19.0	140	110	1.50	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-4.09	AHU-4	SINGLE-DUCT	TITUS / DESV	20	20	12	1,500	450	750	750	55	90	0.25	28.5	140	110	2.00	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-4.21	AHU-4	SINGLE-DUCT	TITUS / DESV	20	20	8	430	130	215	215	55	90	0.25	8.2	140	110	0.75	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-4.22	AHU-4	SINGLE-DUCT	TITUS / DESV	20	20	8	650	195	325	325	55	90	0.25	12.3	140	110	1.00	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-4.23	AHU-4	SINGLE-DUCT	TITUS / DESV	20	20	12	1,300	390	650	650	55	90	0.25	24.7	140	110	1.75	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-4.24	AHU-4	SINGLE-DUCT	TITUS / DESV	20	20	12	1,150	345	575	575	55	90	0.25	21.8	140	110	1.50	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-4.25	AHU-4	SINGLE-DUCT	TITUS / DESV	20	20	12	1,150	345	575	575	55	90	0.25	21.8	140	110	1.50	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-4.26	AHU-4	SINGLE-DUCT	TITUS / DESV	20	20	12	1,150	345	575	575	55	90	0.25	21.8	140	110	1.50	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-4.27	AHU-4	SINGLE-DUCT	TITUS / DESV	20	20	12	1,150	345	575	575	55	90	0.25	21.8	140	110	1.50	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-4.28	AHU-4	SINGLE-DUCT	TITUS / DESV	20	20	12	1,100	330	550	550	55	90	0.25	20.9	140	110	1.50	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-4.29	AHU-4	SINGLE-DUCT	TITUS / DESV	20	20	12	1,150	345	575	575	55	90	0.25	21.8	140	110	1.50	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-4.30	AHU-4	SINGLE-DUCT	TITUS / DESV	20	20	12	1,400	420	700	700	55	90	0.25	26.6	140	110	2.00	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-4.41 (ALT)	AHU-4	SINGLE-DUCT	TITUS / DESV	20	20	12	1,100	330	550	550	55	90	0.25	20.9	140	110	1.50	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-4.42 (ALT)	AHU-4	SINGLE-DUCT	TITUS / DESV	20	20	10	950	285	475	475	55	90	0.25	18.0	140	110	1.25	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-4.43 (ALT)	AHU-4	SINGLE-DUCT	TITUS / DESV	20	20	10	950	285	475	475	55	90	0.25	18.0	140	110	1.25	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-4.44 (ALT)	AHU-4	SINGLE-DUCT	TITUS / DESV	20	20	10	950	285	475	475	55	90	0.25	18.0	140	110	1.25	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-4.45 (ALT)	AHU-4	SINGLE-DUCT	TITUS / DESV	20	20	12	1,100	330	550	550	55	90	0.25	20.9	140	110	1.50	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-4.46 (ALT)	AHU-4	SINGLE-DUCT	TITUS / DESV	20	20	10	950	285	475	475	55	90	0.25	18.0	140	110	1.25	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-4.47 (ALT)	AHU-4	SINGLE-DUCT	TITUS / DESV	20	20	10	950	285	475	475	55	90	0.25	18.0	140	110	1.25	5.00	0.75	2-WAY PI	1,2,3,4,5
VAV-4.48 (ALT)	AHU-4	SINGLE-DUCT	TITUS / DESV	20	20	10	950	285	475	475	55	90	0.25	18.0	140	110	1.25	5.00	0.75	2-WAY PI	1,2,3,4,5

NOTES:

1. REFER TO SECTION 233600 FOR ADDITIONAL REQUIREMENTS.
2. SOUND LEVELS SHALL BE BASED ON ASHRAE 130, AHRI 880, AHRI 885 AND 1.0-INCH WG ACROSS UNIT INLET AND OUTLET.
3. SUPPLY AIR BRANCH DUCTS FROM MAIN TO TERMINAL UNIT INLETS AND DISCHARGE DUCT SIZES SHALL MATCH UNIT CONNECTION SIZES UNLESS OTHERWISE NOTED.
4. PIPING BRANCHES FROM MAINS TO TERMINAL UNIT COILS SHALL MATCH SCHEDULED SIZES UNLESS OTHERWISE NOTED.
5. COORDINATE CONTROL POWER TRANSFORMER INPUT VOLTAGE WITH THE LINE VOLTAGE PROVISIONS.

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PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039893 SCOTT W. DAVIS

1/10/2025

DKA JOB NUMBER
2401

DEWBERRY NUMBER
50171439

REVISIONS

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PA: ROBERT STEVENSON
PM: BK
Drawn By: SMF
Plot Date: 1/8/2025 12:09:21 PM

DATE ISSUED

BID DOCUMENTS
01/10/2025

SHEET TITLE
SCHEDULES

M06.03

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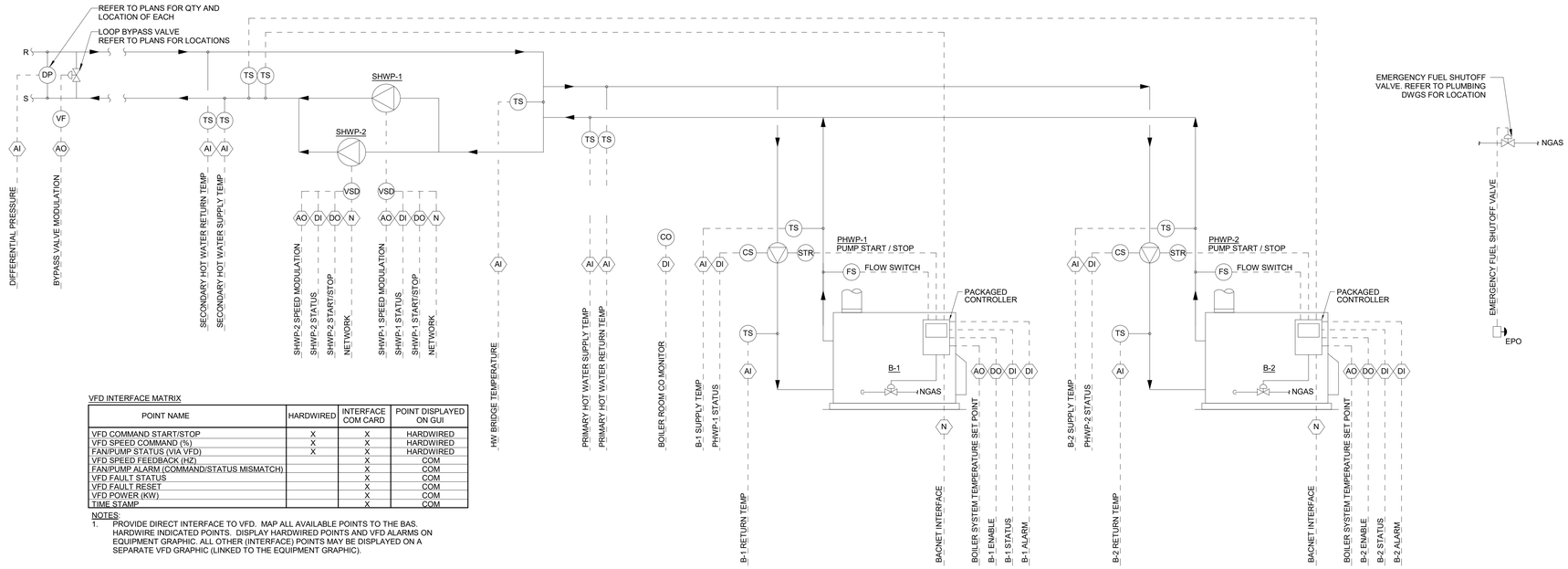
CONTROLS LEGEND

- AI = ANALOG INPUT
- AO = ANALOG OUTPUT
- DI = DIGITAL INPUT
- DO = DIGITAL OUTPUT
- N = NETWORK CONNECTION
- AC = ACTUATOR CONTROL
- AF = AIR FLOW SWITCH
- CO = CARBON MONOXIDE SENSOR
- CO2 = CARBON DIOXIDE SENSOR
- CS = CURRENT SENSING RELAY
- DP = DIFFERENTIAL PRESSURE SENSOR
- EM = ENERGY METER
- FM = FLOW METER
- FS = FLOAT SWITCH OR FLOW SWITCH
- HL = HUMIDITY HIGH LIMIT SWITCH
- HS = HUMIDITY SENSOR
- OS = OCCUPANCY SENSOR
- PS = PRESSURE SENSOR
- R = RELAY
- ES = END SWITCH
- SD = DUCT SMOKE DETECTOR
- STR = STARTER
- TS = TEMPERATURE SENSOR
- VF = VARIABLE FLOW VALVE OR DAMPER
- VS = VELOCITY SENSOR
- VSD = VARIABLE SPEED DRIVE
- $ = OVERRIDE SWITCH
- FA = FIRE ALARM CONTACT
- FO = FAIL OPEN
- FC = FAIL CLOSED
- = THREE WAY CONTROL VALVE
- = TWO WAY CONTROL VALVE
- M = MOTOR
- AFMS = AIR FLOW MONITORING STATION
- = DAMPER
- = COOLING OR HEATING COIL
- TS = FREEZE STAT
- = FILTER
- = FAN
- = FAN
- = PUMP



VFD INTERFACE MATRIX

POINT NAME	HARDWIRED	INTERFACE COM CARD	POINT DISPLAYED ON GUI
VFD COMMAND START/STOP	X	X	HARDWIRED
VFD SPEED COMMAND (%)	X	X	HARDWIRED
FAN/PUMP STATUS (VIA VFD)	X	X	HARDWIRED
VFD SPEED FEEDBACK (HZ)		X	COM
FAN/PUMP ALARM (COMMAND/STATUS MISMATCH)		X	COM
VFD FAULT STATUS		X	COM
VFD FAULT RESET		X	COM
VFD POWER (KW)		X	COM
TIME STAMP		X	COM

NOTES:
1. PROVIDE DIRECT INTERFACE TO VFD. MAP ALL AVAILABLE POINTS TO THE BAS. HARDWIRE INDICATED POINTS. DISPLAY HARDWIRED POINTS AND VFD ALARMS ON EQUIPMENT GRAPHIC. ALL OTHER (INTERFACE) POINTS MAY BE DISPLAYED ON A SEPARATE VFD GRAPHIC (LINKED TO THE EQUIPMENT GRAPHIC).

CONDENSING BOILER WITH PRIMARY SECONDARY PUMPING CONTROL DIAGRAM

HEATING WATER SYSTEM CONTROL

DESCRIPTION: TWO EQUAL-CAPACITY CONDENSING-TYPE WATER BOILERS WITH PRIMARY-SECONDARY PUMPING.

OPERATIONAL MODES

HEATING PLANT ENABLE: HEATING PLANT SHALL BE ENABLED WHENEVER
1. MANUALLY SELECTED TO RUN BY BAS REMOTE OVERRIDE
2. OR, OAT IS LESS THAN 50F (ADJ.)
3. OR, THERE IS A CALL FOR THE HEATING SYSTEM TO RUN FROM ANY AHU OR TERMINAL UNIT FOR 10 MINUTES (ADJ.)
4. OR, ANY AHU IS TRIPPED DUE TO A FREEZE CONDITION
5. AND, EMERGENCY STOP BUTTON IS NOT ENABLED
6. AND, HEATING SYSTEM IS NOT MANUALLY DISABLED BY BAS REMOTE OVERRIDE

HEATING PLANT DISABLE: HEATING PLANT SHALL BE DISABLED WHENEVER
1. MANUALLY DISABLED BY BAS REMOTE OVERRIDE
2. OR, EMERGENCY STOP BUTTON IS ENABLED
3. OR, OAT IS GREATER THAN 50F (ADJ.) AND THERE IS NO CALL FOR THE HEATING SYSTEM TO RUN FROM ANY AHU OR TERMINAL UNIT FOR 5 MINUTES (ADJ.)

SHUTDOWN MODE: SWITCH TO SHUTDOWN MODE BASED ON AUTOMATIC SAFETY FUNCTION, REMOTE OVERRIDE, OR MANUAL OVERRIDE CONTROL.

OVERRIDE MODES

EMERGENCY OVERRIDE MODE: SWITCH TO SHUTDOWN MODE BASED ON MANUAL ACTIVATION OF ANY ONE EMERGENCY SHUTDOWN SWITCH LOCATED AT EACH BOILER ROOM EXIT DOOR. SWITCH BACK TO ENABLED / DISABLED MODE WHEN SHUTDOWN SWITCH HAS BEEN MANUALLY RESET.

REMOTE OVERRIDE MODE: SWITCH TO ENABLED OR DISABLED MODE BASED ON BAS OPERATOR COMMAND. SWITCH BACK TO ENABLED / DISABLED MODE WHEN OVERRIDE IS REMOVED.

TEMPERATURE CONTROL

LEAVING WATER TEMPERATURE (LWT) SET POINT CONTROL: RESET HEATING WATER SUPPLY SET POINT BASED ON OA TEMPERATURE:

LWT = 140F WHEN OAT < 35F
LWT = 140F TO 120F LINEARLY WHEN OAT = 35F TO 75F
LWT = 120F WHEN OAT > 75F

BOILER AND PRIMARY PUMP CONTROL: THE BOILER SHALL START THE ASSOCIATED PRIMARY PUMP. WITH PROOF OF PRIMARY WATER FLOW AND COMBUSTION AIR, START BOILER AT MINIMUM FIRING RATE. MODULATE BURNER TO MAINTAIN BOILER SUPPLY TEMPERATURE SET POINT. BOILER SUPPLY TEMPERATURE SET POINT SHALL BE EQUAL TO SECONDARY HEATING WATER TEMPERATURE SET POINT. WHEN COMMANDED OFF, STOP BOILER, STOP PRIMARY PUMP (2 MINUTE TIME DELAY).

BOILER MINIMUM RUN-TIMES: EACH BOILER SHALL RUN FOR MINIMUM 15 MINUTES ONCE COMMANDED ON. OVERRIDE MINIMUM RUN-TIME IF COMMANDED OFF BY OPERATOR OR EMERGENCY OVERRIDES.

BOILER BAS INTERFACE: PACKAGED BOILER CONTROLS SHALL PROVIDE BACNET COMPATIBLE MONITORING POINTS INCLUDING BOILER STATUS AND ALARMS.

BOILER STAGING & RUN TIME: BAS SHALL FULLY CONTROL BOILER STAGING. ASSIGN EACH BOILER A LEAD / LAG ORDER FROM 1 TO 2. ROTATE BOILERS LEAD / LAG ORDER WEEKLY BASED ON RUNTIME AT A SET TIME ON A SET DAY OF THE WEEK (DEFAULT AT 12:00 PM TUESDAYS).

HEATING WATER TEMPERATURE: IF LEAD BOILER IS OPERATING ABOVE 95% AND SECONDARY HHW TEMPERATURE REMAINS MORE THAN 5F (ADJ) BELOW SET POINT FOR 5 MINUTES (ADJ), START LAG BOILER. MODULATE THE FIRING RATE OF THE LAG BOILER TO MAINTAIN SUPPLY HOT WATER SETPOINT. DISABLE LAG BOILER IF HHW TEMPERATURE REMAINS 5F (ADJ) ABOVE SET POINT FOR 10 MINUTES (ADJ) OR HHW SYSTEM IS NO LONGER BEING REQUESTED.

BOILER FAILURES: START LAG BOILER IF AN ACTIVE BOILER OR ASSOCIATED PRIMARY PUMP FAILS AS DETERMINED BY THE BOILER CONTROL PANEL. STOP ALL ASSOCIATED HHW PUMPS IF BOILER SAFETY SHUTDOWN CONTACT CLOSES.

SECONDARY HEATING WATER PUMP CONTROL: REFER TO "SECONDARY PUMPING CONTROL" SEQUENCE.

FUEL SERVICE SUPPLY VALVE CONTROL

FUEL SERVICE EMERGENCY SHUTOFF: CLOSE UPON EMERGENCY OR REMOTE OVERRIDE SIGNAL, OTHERWISE REMAIN OPEN.

SAFETY AND ALARM CONTROLS

EMERGENCY SHUTDOWN CONTROL: IMMEDIATELY CLOSE MAIN BOILER SYSTEM FUEL VALVE AND SHUT DOWN HEATING WATER SYSTEM TO AVOID DAMAGE WHEN AN EMERGENCY SHUTDOWN BUTTON IS MANUALLY ACTIVATED OR A GENERAL ALARM SIGNAL IS RECEIVED FROM THE FIRE ALARM PANEL.

GENERAL ALARMS CONTROL: ALARM BAS OF THE FOLLOWING CONDITIONS:

ACTIVATION OF EMERGENCY SHUTDOWN CONTROL
BOILER ALARMS AND FAILURES
PRIMARY HEATING WATER PUMP FAILURES
SECONDARY HEATING WATER PUMP FAILURES

FUEL SERVICE SUPPLY VALVE NOTES

M.C. SHALL FURNISH AND P.C. SHALL INSTALL FULL LINE SIZE TWO-WAY TWO-POSITION VALVE TO SHUTOFF AND ISOLATE EACH FUEL SOURCE FROM THE BOILER ROOM. COORDINATE LINE SIZE AND LOCATION WITH THE P.C. PRIOR TO PURCHASE. THE VALVE SHALL FAIL IN POSITION.

SECONDARY PUMPING CONTROL

DESCRIPTION: ACTIVE / STANDBY SECONDARY PUMPING CONFIGURATION AS PART OF THE HEATING WATER SYSTEM. ACTIVE AND STANDBY PUMPS ARE EACH SIZED FOR 100% OF SYSTEM CAPACITY TO PROVIDE N+1 REDUNDANCY.

OPERATIONAL MODES

ENABLE / DISABLE MODES: ENABLE / DISABLE SECONDARY PUMPS BASED ON SYSTEM STATUS.

SHUTDOWN MODE: SWITCH TO SHUTDOWN MODE BASED ON AUTOMATIC SAFETY FUNCTION, REMOTE OVERRIDE, OR MANUAL OVERRIDE CONTROL.

OVERRIDE MODES

EMERGENCY OVERRIDE MODE: SWITCH TO SHUTDOWN MODE BASED ON EMERGENCY SHUTDOWN SIGNAL FROM SYSTEM.

REMOTE OVERRIDE MODE: SWITCH TO ENABLED OR DISABLED MODE BASED ON BAS OPERATOR COMMAND. SWITCH BACK TO ENABLED OR DISABLED MODE WHEN OVERRIDE IS REMOVED.

VARIABLE FREQUENCY DRIVE CONTROL

MINIMUM SPEEDS: RESET FACTORY DEFAULT VFD MINIMUM SPEED SETTINGS AS DETERMINED THE TAB CONTRACTOR WITH AN INITIAL SET POINT OF 12HZ (20%) (ADJ).

SECONDARY PUMP CONTROL – ACTIVE / STANDBY: ASSIGN ONE SECONDARY PUMP 'ACTIVE' AND ONE PUMP 'STANDBY' STATUS. OPERATE SECONDARY PUMPS IN ACTIVE / STANDBY DUTY. ROTATE SECONDARY PUMPS ACTIVE / STANDBY ORDER BASED ON RUNTIME WEEKLY AT A SET TIME ON A SET DAY OF THE WEEK. START STANDBY PUMP IF ACTIVE PUMP FAILS.

PUMP ROTATION DEFAULT SCHEDULE:
HEATING WATER 12:00 PM TUESDAYS

PUMP START / STOP AND SPEED CONTROL: START ACTIVE SECONDARY PUMP BASED ON SYSTEM ENABLE / DISABLE STATUS. SECONDARY PUMP SHALL RUN ANYTIME A BOILER PRIMARY PUMP IS RUNNING. MODULATE PUMP SPEED (20-100%) TO MAINTAIN BUILDING DIFFERENTIAL PRESSURE SET POINT(S). WHERE MULTIPLE DIFFERENTIAL PRESSURE SENSORS ARE INDICATED, CONTROL TO THE SENSOR WITH THE LOWEST READING. IF BAS LOSES COMMUNICATION WITH BUILDING DIFFERENTIAL PRESSURE SENSORS, MAINTAIN CONSTANT PUMP SPEED AT VALUE LAST READ UNTIL COMMUNICATION IS RE-ESTABLISHED.

PUMP ACTIVE / STANDBY TRANSITION: WHEN A TRANSITION IS COMMANDED, THE STANDBY PUMP SHALL START AND RUN AT MINIMUM SPEED (20%). THE STANDBY PUMP SHALL SLOWLY MODULATE ITS SPEED UP AND THE ACTIVE PUMP INVERSELY MODULATE DOWN TILL THE ACTIVE PUMP IS AT MINIMUM SPEED (20%). UPON SATISFYING THE SYSTEM PRESSURE DIFFERENTIAL SET POINT(S), THE STANDBY PUMP SHALL BE ASSIGNED AS 'ACTIVE' AND THE ACTIVE PUMP SHALL BE 'STANDBY'. THE NEWLY ASSIGNED STANDBY PUMP SHALL SHUTDOWN.

SECONDARY BYPASS VALVE CONTROL: SLOWLY MODULATE SECONDARY BYPASS VALVE TO REDUCE PRESSURE DIFFERENTIAL(S) TO NO MORE THAN 2 PSIG ABOVE DIFFERENTIAL PRESSURE SET POINT(S). BYPASS VALVE SHALL BE CLOSED WHEN PUMPS ARE OPERATING ABOVE MINIMUM SPEED. BYPASS VALVE SHALL MODULATE TO ALLOW THE PUMP(S) TO OPERATE AT MINIMUM SPEED WHEN BUILDING DEMAND IS LESS. SIZE BYPASS VALVE TO OPERATE FROM 0 TO 20% OF TOTAL SECONDARY PUMP FLOW.

HEATING WATER SYSTEM GRAPHICAL DISPLAY: MINIMUM REQUIREMENTS INCLUDE:

COMPLETE SYSTEM GRAPHIC INCLUDING ALL CONTROL COMPONENTS
BUILDING PLAN GRAPHIC WITH BOILER AND PUMP LOCATIONS
OPERATIONAL MODE STATUS, INCLUDING TIME OF DAY
OVERRIDE MODE STATUS
ENTERING AND LEAVING HEATING WATER TEMPERATURES OF EACH BOILER
PRIMARY AND SECONDARY LOOP HEATING WATER SUPPLY AND RETURN TEMPERATURES
HW BRIDGE TEMPERATURE
SECONDARY HEATING WATER SUPPLY TEMPERATURE SET POINT
PRIMARY HEATING WATER PUMP STATUS AND RUN TIMES
SECONDARY HEATING WATER PUMP STATUS AND RUN TIMES
SECONDARY PUMP SPEEDS
BOILER STATUS AND FIRING RATES
DIFFERENTIAL PRESSURES
BYPASS VALVE POSITIONS
ALL ALARMS

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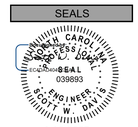
PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS



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50171439

REVISIONS

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01/10/2025

SHEET TITLE

MECHANICAL CONTROLS

M07.01

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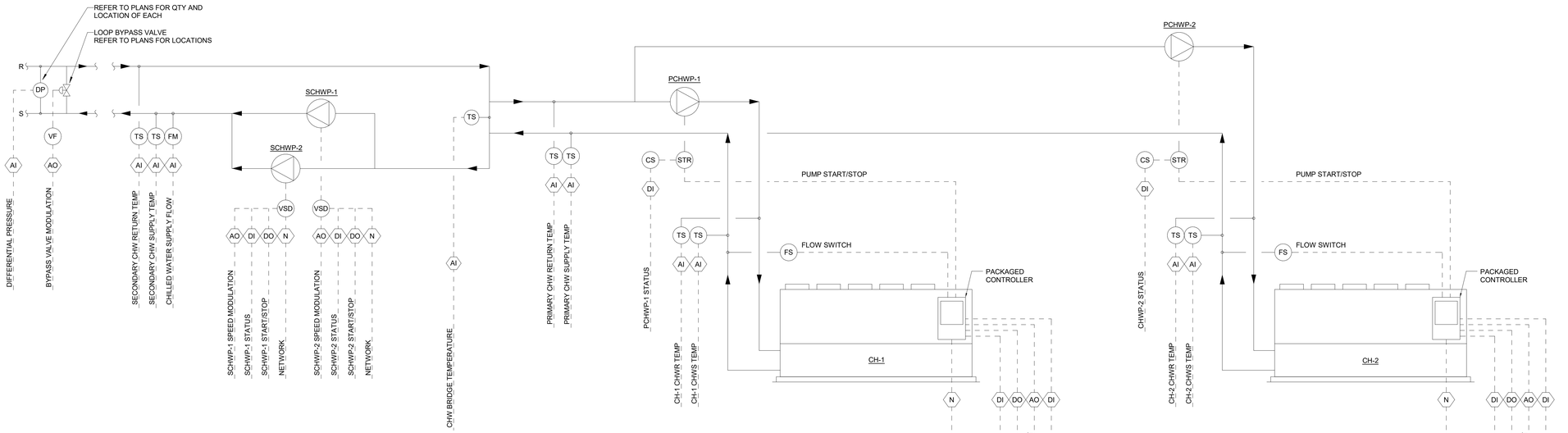

VFD INTERFACE MATRIX

POINT NAME	HARDWIRED	INTERFACE COM CARD	POINT DISPLAYED ON GUI
VFD COMMAND START/STOP	X	X	HARDWIRED
VFD SPEED COMMAND (%)	X	X	HARDWIRED
FAN/PUMP STATUS (VIA VFD)	X	X	HARDWIRED
VFD SPEED FEEDBACK (HZ)		X	COM
FAN/PUMP ALARM (COMMAND/STATUS MISMATCH)		X	COM
VFD FAULT STATUS		X	COM
VFD FAULT RESET		X	COM
VFD POWER (KW)		X	COM
TIME STAMP		X	COM

NOTES:
1. PROVIDE DIRECT INTERFACE TO VFD. MAP ALL AVAILABLE POINTS TO THE BAS. HARDWIRE INDICATED POINTS. DISPLAY HARDWIRED POINTS AND VFD ALARMS ON EQUIPMENT GRAPHIC. ALL OTHER (INTERFACE) POINTS MAY BE DISPLAYED ON A SEPARATE VFD GRAPHIC (LINKED TO THE EQUIPMENT GRAPHIC).

AIR COOLED CHILLER WITH PRIMARY SECONDARY PUMPING CONTROL DIAGRAM

AIR-COOLED CHILLED WATER SYSTEM CONTROL

DESCRIPTION: TWO EQUAL-CAPACITY AIR-COOLED CHILLERS WITH PRIMARY-SECONDARY PUMPING.

OPERATIONAL MODES

CHILLED WATER PLANT ENABLE: CHILLED WATER PLANT SHALL BE ENABLED WHENEVER (CHILLED WATER PLANT SHALL OPERATE FOR A MINIMUM OF 30 MINUTES (ADJ.))
1. OAT IS GREATER THAN 58F (ADJ.)
2. AND, ANY CHILLED WATER VALVE OPENS MORE THAN 20% CONTINUOUSLY FOR 5 MINUTES (ADJ.)
3. OR, MANUALLY SELECTED TO RUN BY BAS REMOTE OVERRIDE

CHILLED WATER PLANT DISABLE: CHILLED WATER PLANT SHALL BE DISABLED WHENEVER
1. ALL CHILLED WATER VALVES ARE LESS THAN 5% OPEN CONTINUOUSLY FOR 10 MINUTES (ADJ.)
2. OR, OAT IS LESS THAN 55F (ADJ.)
3. OR, MANUALLY DISABLED BY BAS REMOTE OVERRIDE

SHUTDOWN MODE: SWITCH TO SHUTDOWN MODE BASED ON AUTOMATIC SAFETY FUNCTION OR REMOTE OVERRIDE

OVERRIDE MODES

REMOTE OVERRIDE MODE: SWITCH TO ENABLED OR DISABLED MODE BASED ON BAS OPERATOR COMMAND. SWITCH BACK TO ENABLED / DISABLED MODE WHEN OVERRIDE IS REMOVED.

CHILLER AND PRIMARY PUMP CONTROL, SECONDARY SUPPLY TEMPERATURE: START LEAD PRIMARY CHILLED WATER PUMP. START LEAD CHILLER WITH PROOF OF PRIMARY WATER FLOW. PACKAGED CHILLER CONTROLS SHALL OPERATE CHILLER TO MAINTAIN SECONDARY CHILLED WATER SUPPLY TEMPERATURE SET POINT OF 44F (ADJ.). IF LEAD CHILLER CANNOT MAINTAIN CHILLED WATER SUPPLY TEMPERATURE SET POINT WITHIN 30 MINUTES THEN START LAG PRIMARY PUMP AND CHILLER. IF BOTH CHILLERS ARE ACTIVE AND OPERATING AT BELOW 50% OF THEIR RLA CAPACITY FOR 15 MINUTES THEN STOP LAG CHILLER AND PRIMARY PUMP.

TEMPERATURE SETPOINT: CHILLER SUPPLY TEMPERATURE SHALL BE CONTROLLED BY ITS CHILLER CONTROL PANEL. THE BAS SHALL SEND A CHILLED WATER SUPPLY TEMPERATURE COMMAND TO THE CHILLER CONTROL PANEL. THE SETPOINT SHALL BE CAPABLE OF BEING RESET LINEARLY FROM 44F CHILLED WATER SUPPLY TEMPERATURE, AT 85F OUTSIDE AIR TEMPERATURE TO 50F CHILLED WATER SUPPLY TEMPERATURE AT 60F OUTSIDE AIR TEMPERATURE. THE INITIAL SET POINT FOR THE CHILLED WATER SUPPLY TEMPERATURE SHALL BE 44F (ADJ.).

CHILLER FREEZE PROTECTION: PACKAGED CHILLER CONTROL PANELS SHALL COMMAND ASSOCIATED PRIMARY PUMPS TO START TO PREVENT FREEZING DUE TO REFRIGERANT MIGRATION. CONTROL SHALL BE DIRECT FROM THE PANEL TO THE PUMP MOTOR-STARTER.

CHILLER FAILURES: START LAG PRIMARY PUMP AND CHILLER IF LEAD CHILLER / PUMP FAILS AS DETERMINED BY THE CHILLER CONTROL PANEL.

STOP PRIMARY PUMP IF CHILLER SAFETY SHUTDOWN CONTACT CLOSES.
STOP PRIMARY PUMP IF CHILLER HAS BEEN COMMANDED TO START BUT INTERNAL SENSORS OF THE CHILLER INDICATE NO MOTOR AMPERAGE WITHIN 5 MINUTES.

CHILLER RUN TIME: ALTERNATE CHILLERS AND PUMPS LEAD/LAG ORDER BASED ON RUNTIME WEEKLY.

CHILLER BAS INTERFACE: PACKAGED CHILLER CONTROLS SHALL PROVIDE BACNET COMPATIBLE MONITORING POINTS INCLUDING CHILLER STATUS AND ALARMS.

SECONDARY CHILLED WATER PUMP CONTROL: REFER TO "SECONDARY PUMPING CONTROL" SEQUENCE.

MONITOR AND TREND (INCLUDED ON CHILLED WATER SYSTEM GRAPHIC):
ENTERING AND LEAVING CHILLED WATER TEMPERATURES OF EACH CHILLER (15 MINUTE INTERVALS)
PRIMARY AND SECONDARY CHILLED WATER SUPPLY AND RETURN TEMPERATURES (15 MINUTE INTERVALS)
SECONDARY CHILLED WATER SUPPLY TEMPERATURE SET POINT
PRIMARY AND SECONDARY CHILLED WATER PUMP STATUS (5 MINUTE INTERVALS) BY CURRENT SENSING RELAY
PRIMARY AND SECONDARY CHILLED WATER PUMP RUN TIMES
SECONDARY CHILLED WATER PUMP SPEEDS (5 MINUTE INTERVALS)
SECONDARY CHILLED WATER FLOW RATE (5 MINUTE INTERVALS)
DIFFERENTIAL PRESSURE SET POINT CHANGES (TIME AND VALUE)
DIFFERENTIAL PRESSURES (15 MINUTE INTERVALS)
CHILLER STATUS

ALARMS:
CHILLER ALARMS AND FAILURES
PRIMARY CHILLED WATER PUMP FAILURES
SECONDARY CHILLED WATER PUMP FAILURES

SECONDARY PUMPING CONTROL

DESCRIPTION: ACTIVE / STANDBY SECONDARY PUMPING CONFIGURATION AS PART OF THE CHILLED WATER SYSTEM. ACTIVE AND STANDBY PUMPS ARE EACH SIZED FOR 100% OF SYSTEM CAPACITY TO PROVIDE N+1 REDUNDANCY.

OPERATIONAL MODES

ENABLE / DISABLE MODES: ENABLE / DISABLE SECONDARY PUMPS BASED ON SYSTEM STATUS.

SHUTDOWN MODE: SWITCH TO SHUTDOWN MODE BASED ON AUTOMATIC SAFETY FUNCTION, REMOTE OVERRIDE, OR MANUAL OVERRIDE CONTROL.

OVERRIDE MODES

EMERGENCY OVERRIDE MODE: SWITCH TO SHUTDOWN MODE BASED ON EMERGENCY SHUTDOWN SIGNAL FROM SYSTEM.

FREEZE PROTECTION: SWITCH TO ENABLED MODE BASED ON A CALL FROM THE BAS FOR COIL FREEZE PROTECTION.

REMOTE OVERRIDE MODE: SWITCH TO ENABLED OR DISABLED MODE BASED ON BAS OPERATOR COMMAND. SWITCH BACK TO ENABLED OR DISABLED MODE WHEN OVERRIDE IS REMOVED.

VARIABLE FREQUENCY DRIVE CONTROL

MINIMUM SPEEDS: RESET FACTORY DEFAULT VFD MINIMUM SPEED SETTINGS AS DETERMINED THE TAB CONTRACTOR WITH AN INITIAL SET POINT OF 12 HZ (20%) (ADJ).

SECONDARY PUMP CONTROL – ACTIVE / STANDBY: ASSIGN ONE SECONDARY PUMP 'ACTIVE' AND ONE PUMP 'STANDBY' STATUS. OPERATE SECONDARY PUMPS IN ACTIVE / STANDBY DUTY. ROTATE SECONDARY PUMPS ACTIVE / STANDBY ORDER BASED ON RUNTIME WEEKLY AT A SET TIME ON A SET DAY OF THE WEEK. START STANDBY PUMP IF ACTIVE PUMP FAILS.

PUMP ROTATION DEFAULT SCHEDULE:
CHILLED WATER 12:00 PM TUESDAYS

PUMP START / STOP AND SPEED CONTROL: START ACTIVE SECONDARY PUMP BASED ON SYSTEM ENABLE / DISABLE STATUS. SECONDARY PUMP SHALL RUN ANYTIME A CHILLER PRIMARY PUMP IS RUNNING. MODULATE PUMP SPEED (20-100%) TO MAINTAIN BUILDING DIFFERENTIAL PRESSURE SET POINT(S). WHERE MULTIPLE DIFFERENTIAL PRESSURE SENSORS ARE INDICATED, CONTROL TO THE SENSOR WITH THE LOWEST READING. IF BAS LOSES COMMUNICATION WITH BUILDING DIFFERENTIAL PRESSURE SENSORS, MAINTAIN CONSTANT PUMP SPEED AT VALUE LAST READ UNTIL COMMUNICATION IS RE-ESTABLISHED.

PUMP ACTIVE / STANDBY TRANSITION: WHEN A TRANSITION IS COMMANDED, THE STANDBY PUMP SHALL START AND RUN AT MINIMUM SPEED (20%). THE STANDBY PUMP SHALL SLOWLY MODULATE IT'S SPEED UP AND THE ACTIVE PUMP INVERSELY MODULATE DOWN TILL THE ACTIVE PUMP IS AT MINIMUM SPEED (20%). UPON SATISFYING THE SYSTEM PRESSURE DIFFERENTIAL SET POINT(S), THE STANDBY PUMP SHALL BE ASSIGNED AS 'ACTIVE' AND THE ACTIVE PUMP SHALL BE 'STANDBY'. THE NEWLY ASSIGNED STANDBY PUMP SHALL SHUTDOWN.

SECONDARY BYPASS VALVE CONTROL: SLOWLY MODULATE SECONDARY BYPASS VALVE TO REDUCE PRESSURE DIFFERENTIAL(S) TO NO MORE THAN 2 PSIG ABOVE DIFFERENTIAL PRESSURE SET POINT(S). BYPASS VALVE SHALL BE CLOSED WHEN PUMPS ARE OPERATING ABOVE MINIMUM SPEED. BYPASS VALVE SHALL MODULATE TO ALLOW THE PUMP(S) TO OPERATE AT MINIMUM SPEED WHEN BUILDING DEMAND IS LESS. SIZE BYPASS VALVE TO OPERATE FROM 0 TO 20% OF TOTAL SECONDARY PUMP FLOW.

CHILLED WATER SYSTEM GRAPHICAL DISPLAY: MINIMUM REQUIREMENTS INCLUDE:

COMPLETE SYSTEM GRAPHIC INCLUDING ALL CONTROL COMPONENTS
BUILDING PLAN GRAPHIC WITH CHILLER AND PUMP LOCATIONS
OPERATIONAL MODE STATUS, INCLUDING TIME OF DAY
OVERRIDE MODE STATUS
SECONDARY PUMP STATUS AND RUN TIMES
SECONDARY PUMP SPEEDS
SECONDARY FLOW RATE
DIFFERENTIAL PRESSURES
BYPASS VALVE POSITIONS

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PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

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DKA JOB NUMBER
2401

DEWBERRY NUMBER
50171439

REVISIONS

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SHEET TITLE

MECHANICAL CONTROLS

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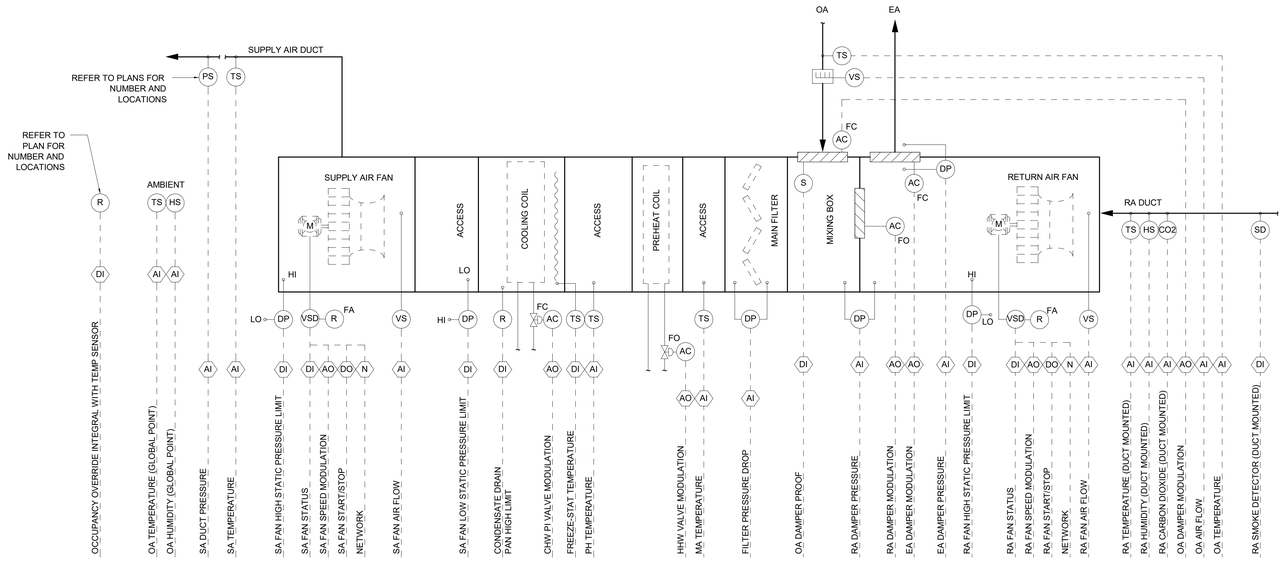

NOTES:

1. HARDWIRE FREEZESTAT TO SA AND RA FAN.
2. HARDWIRE FAN HIGH STATIC LIMIT SWITCHES TO ASSOCIATED FANS.

VAV AHU WITH RETURN FAN CONTROL DIAGRAM (AHU-2, AHU-3, AHU-4)

VFD INTERFACE MATRIX

POINT NAME	HARDWIRED	INTERFACE COM CARD	POINT DISPLAYED ON GUI
VFD COMMAND START/STOP	X	X	HARDWIRED
VFD SPEED COMMAND (%)	X	X	HARDWIRED
FAN/PUMP STATUS (VIA VFD)	X	X	HARDWIRED
VFD SPEED FEEDBACK (HZ)		X	COM
FAN/PUMP ALARM (COMMAND/STATUS MISMATCH)		X	COM
VFD FAULT STATUS		X	COM
VFD FAULT RESET		X	COM
VFD POWER (KW)		X	COM
TIME STAMP		X	COM

NOTES:
1. PROVIDE DIRECT INTERFACE TO VFD. MAP ALL AVAILABLE POINTS TO THE BAS. HARDWIRE INDICATED POINTS. DISPLAY HARDWIRED POINTS AND VFD ALARMS ON EQUIPMENT GRAPHIC. ALL OTHER (INTERFACE) POINTS MAY BE DISPLAYED ON A SEPARATE VFD GRAPHIC (LINKED TO THE EQUIPMENT GRAPHIC).

VAV AHU WITH RETURN AIR FAN CONTROL

DESCRIPTION: VARIABLE VOLUME AIR HANDLING UNITS WITH RETURN AIR FANS, CHILLED WATER COILS AND HEATING WATER COILS. THESE AIR HANDLING UNITS SERVING MULTIPLE TEMPERATURE CONTROL ZONES, EACH WITH A TERMINAL UNIT.

A. OPERATIONAL MODES

1. OCCUPIED MODE: SWITCH TO OCCUPIED MODE BASED ON OCCUPANCY SCHEDULE.
2. UNOCCUPIED MODE: SWITCH TO UNOCCUPIED MODE BASED ON OCCUPANCY SCHEDULE. CYCLE ON BASED ON 10% REQUESTS FOR ZONE HEATING AND COOLING AND RUN FOR 30 MINUTES MINIMUM. CYCLE OFF BASED ON SATISFYING 95% OF ZONES.
3. PRE-OCCUPIED MODE: SWITCH TO PRE-OCCUPIED (WARM-UP / COOL-DOWN) MODE BASED ON THE OCCUPANCY SCHEDULE AND AN INTERVAL DERIVED FROM BAS OPTIMIZATION LOGIC THAT USES THE SYSTEM'S HISTORY OF OUTSIDE AIR TEMPERATURES VERSUS TIME NEEDED TO SATISFY 95% OF THE OCCUPIED ZONE TEMPERATURE SET POINTS. OPTIMIZATION LOGIC SHALL HAVE A DEFAULT VALUE OF 2 HOURS.
4. SHUTDOWN MODE: SWITCH TO SHUTDOWN MODE BASED ON AUTOMATIC SAFETY FUNCTION, REMOTE OVERRIDE, OR MANUAL OVERRIDE CONTROL.

B. OVERRIDE MODES

1. MANUAL OVERRIDE MODE: SWITCH TO OCCUPIED MODE BASED ON MANUAL ACTIVATION OF ANY ONE OCCUPANT OVERRIDE SWITCH LOCATED ON SPACE TEMPERATURE SENSOR(S). SWITCH BACK TO OCCUPIED, UNOCCUPIED OR PRE-OCCUPIED MODE BASED ON OCCUPANCY SCHEDULE WHEN OVERRIDE TIME OF 60 MINUTES EXPIRES.
2. REMOTE OVERRIDE MODE: SWITCH TO OCCUPIED, UNOCCUPIED OR PRE-OCCUPIED MODE BASED ON BAS OPERATOR COMMAND. SWITCH BACK TO OCCUPIED, UNOCCUPIED OR PRE-OCCUPIED MODE BASED ON OCCUPANCY SCHEDULE WHEN OVERRIDE IS REMOVED.

C. VERIFICATION MODES

1. CHILLED WATER PLANT: ENABLE ASSOCIATED COOLING SEQUENCES UPON VERIFICATION CHILLED WATER IS AVAILABLE.
2. HEATING WATER PLANT: ENABLE ASSOCIATED HEATING SEQUENCES UPON VERIFICATION HEATING WATER IS AVAILABLE.

D. TEMPERATURE CONTROL MODES

1. COOLING MODE: WHEN AHU IS IN COOLING OR ECONOMIZER COOLING MODES, INITIATE AHU COOLING.
2. HEATING MODE: WHEN AHU IS IN HEATING MODE, INITIATE AHU HEATING.

E. DEHUMIDIFICATION MODE:

1. UPON A RISE IN HUMIDITY LEVEL ABOVE 56% (ADJ.) AND UNTIL RELATIVE HUMIDITY DROPS TO 50% (ADJ.), AS SENSED BY THE RETURN DUCT HUMIDITY SENSOR, THE COOLING COIL CONTROL VALVE SHALL MODULATE TO PROVIDE 50F DISCHARGE AIR TEMPERATURE. THE UNIT FAN SPEED, TERMINAL BOX POSITION AND REHEAT COIL CONTROL VALVE SHALL BE MODULATED TO MAINTAIN SPACE TEMPERATURE 1 DEG LOWER THAN COOLING SETPOINT. IN UNOCCUPPIED MODE, UPON A RISE IN HUMIDITY LEVEL ABOVE 60% (ADJ.) AT ANY ASSOCIATED ZONE SPACE SENSOR, AND UNTIL RELATIVE HUMIDITY DROPS TO 55% (ADJ.) AT ALL ASSOCIATED ZONE SPACE SENSORS, UNIT SHALL BE IN DEHUMIDIFICATION MODE.

F. ENERGY CONSERVATION MODES

1. ECONOMIZER MODE: IF OA ENTHALPY IS LESS THAN RA ENTHALPY AND OA TEMPERATURE IS LESS THAN 65F (ADJ.), ENABLE "FREE COOLING". DISABLE VENTILATION DEMAND CONTROL WHEN ECONOMIZER MODE IS ACTIVE. MONITOR MIXED AIR TEMP TO MAINTAIN A SET POINT OF 55F (ADJ.). IF MIXED AIR TEMP DROPS BELOW 53F (ADJ.) WHEN OUTSIDE AIR TEMPERATURE IS BELOW 55F (ADJ.), MODULATE OUTSIDE AIR DAMPER BACK TOWARD DEMAND CONTROL MINIMUM VENTILATION AIRFLOW. AT DEMAND CONTROL MINIMUM VENTILATION AIRFLOW, SWITCH OUT OF ECONOMIZER CONTROL. WHEN OUTSIDE AIR TEMP IS LESS THAN 60F (ADJ.), AND ECON DAMPERS ARE AT 100%, MECHANICAL COOLING SHALL BE ALLOWED TO OPERATE TO MAINTAIN LEAVING AIR TEMPERATURE SETPOINT. IF RA HUMIDITY RISES ABOVE SETPOINT, MODULATE OUTSIDE AIR DAMPER BACK TOWARD DEMAND CONTROL MINIMUM VENTILATION AIRFLOW. AT DEMAND CONTROL VENTILATION AIRFLOW, SWITCH OUT OF ECONOMIZER CONTROL.
2. DEMAND CONTROL VENTILATION (DOES NOT APPLY TO AHU-1): MONITOR CO2 LEVELS IN RA. IF THE RETURN AIR CO2 RISES TO 900 PPM (500PPM ABOVE AMBIENT 400PPM), OA VENTILATION SHALL BE INCREASED FROM THE DEMAND CONTROL MINIMUM VENTILATION AIR FLOW IN 25% INCREMENTS (ADJ.) EVERY 15 MINUTES (ADJ.) TOWARD THE DESIGN MAX VENTILATION AIRFLOW UNTIL THE CO2 LEVEL DROPS BELOW THE SEPOINT.

G. SUPPLY AIR FAN CONTROL

1. OCCUPANCY MODES: START (TIME DELAY) UPON INITIATION OF PRE-OCCUPIED MODE AND CONTINUE TO RUN THROUGHOUT OCCUPIED MODE. SA FAN VFD SHALL MODULATE SPEED TO MAINTAIN DUCT STATIC PRESSURE SET POINT(S). STOP UPON INITIATION OF UNOCCUPIED MODE AND CYCLE ON (TIME DELAY) AND OFF THROUGHOUT UNOCCUPIED MODE BASED ON HEATING / COOLING DEMAND.
2. SHUTDOWN MODE: STOP SUPPLY AND RETURN FANS UPON INITIATION OF SHUTDOWN.

H. DUCT STATIC PRESSURE SET POINT RESET CONTROL:
RESET DUCT STATIC PRESSURE SET POINT(S) HIGHER OR LOWER BETWEEN MAXIMUM AND MINIMUM SET POINTS BASED ON BAS OPTIMIZATION LOGIC THAT USES THE TERMINAL UNIT AIR DAMPER POSITIONS. SET POINT(S) SHALL BE INCREASED TO MAINTAIN ALL DAMPERS AT LESS THAN 95% OPEN. SET POINT(S) SHALL BE DECREASED TO MAINTAIN MINIMUM OF ONE DAMPER AT NO LESS THAN 90% OPEN. INITIAL AND MINIMUM SET POINTS SHALL BE RECOMMENDED BY THE TAB CONTRACTOR AND APPROVED BY THE ENGINEER. MAXIMUM SET POINTS SHALL BE EQUAL TO THE INITIAL SET POINTS PLUS 0.50 INCHES WG. RESET SET POINT IN 15 MINUTE INCREMENTS.

I. RETURN FAN CONTROL: WHENEVER THE FAN IS ENERGIZED AND THE UNIT IS OPERATING IN THE OCCUPIED MODE, BAS SHALL CONTROL THE SPEED OF THE VFD BASED ON A TRACKING ALGORITHM AS DEFINED BELOW.

1. TAB CONTRACTOR SHALL DETERMINE THE FOLLOWING 4 VALUES:
   a. SUPPLY FAN MAX: THE SPEED AT WHICH THE SUPPLY FAN WILL TYPICALLY OPERATE WHEN ALL CONNECTED TERMINAL UNITS ARE AT THEIR MAXIMUM FLOW SETPOINTS
   b. SUPPLY FAN MIN: THE SPEED AT WHICH THE SUPPLY FAN WILL TYPICALLY OPERATE WHEN ALL CONNECTED TERMINAL UNITS ARE AT THEIR MINIMUM FLOW SETPOINTS
   c. RETURN FAN MAX: THE SPEED AT WHICH THE RETURN FAN WILL TYPICALLY NEED TO OPERATE WHEN ALL CONNECTED TERMINAL UNITS ARE AT THEIR MAXIMUM FLOW SETPOINTS
   d. RETURN FAN MIN: THE SPEED AT WHICH THE RETURN FAN WILL TYPICALLY NEED TO OPERATE WHEN ALL CONNECTED TERMINAL UNITS ARE AT THEIR MINIMUM FLOW SETPOINTS
2. THE BAS SHALL MODULATE THE RETURN FAN SPEED AS FOLLOWS:
   a. WHEN THE SPEED OF THE SUPPLY FAN IS LESS THAN THE SUPPLY FAN MIN VALUE, THE RETURN FAN SPEED SHALL BE THE OUTPUT OF A LINEAR RESET LOOP THAT IS RESET FROM 0% TO THE RETURN FAN MIN VALUE AS THE SUPPLY FAN SPEED INCREASES FROM 0% TO THE SUPPLY FAN MIN VALUE
   b. WHEN THE SPEED OF THE SUPPLY FAN IS GREATER THAN THE SUPPLY FAN MIN VALUE BUT NOT GREATER THAN THE SUPPLY FAN MAX VALUE, THE RETURN FAN SPEED SHALL BE THE OUTPUT OF A LINEAR RESET LOOP THAT IS RESET FROM THE RETURN FAN MIN VALUE TO THE RETURN FAN MAX VALUE AS THE SUPPLY FAN SPEED INCREASES FROM THE SUPPLY FAN MIN VALUE TO THE SUPPLY FAN MAX VALUE
   c. WHEN THE SPEED OF THE SUPPLY FAN IS GREATER THAN THE SUPPLY FAN MAX VALUE, THE RETURN FAN SPEED SHALL BE THE OUTPUT OF A LINEAR RESET LOOP THAT IS RESET FROM THE RETURN FAN MAX VALUE TO 100% AS THE SUPPLY FAN SPEED INCREASES FROM THE SUPPLY FAN MAX VALUE TO 100%. NOTE THAT THIS STAGE WILL NOT APPLY IF SUPPLY FAN MAX VALUE OR THE RETURN FAN MAX VALUE EQUALS 100%.
   d. THE RETURN FAN SPEED SHALL BE LIMITED SO THAT IT IS NEVER COMMANDED TO A SPEED THAT IS ABOVE OR 20% (ADJ.) BELOW THE SPEED OF THE SUPPLY FAN.
3. ON START AND STOP, THE VFD SHALL RAMP TO SPEED AND SLOW DOWN WITHIN ADJUSTABLE ACCELERATION AND DECELERATION LIMITS.
4. DURING UNOCCUPIED MODE OF OPERATION, THE RETURN FAN SPEED SHALL BE SET TO THE SAME AS THE SUPPLY FAN SPEED.

J. DAMPER CONTROL:

1. HEATING OR COOLING:
   a. MODULATE OA DAMPER TO MAINTAIN OA FLOW SET POINT AS SENSED BY AIRFLOW MONITORING STATION UPON INITIATION OF OCCUPIED MODE. OA DAMPER CONTROL SHALL NOT BE ENABLED UNTIL 5 MINUTES (ADJ.) AFTER SUPPLY FAN STATUS HAS BEEN PROVEN ON.
   b. MODULATE RA DAMPER TO MAINTAIN PRESSURE DIFFERENTIAL SET POINT OF +0.050-INCHES WG AS SENSED BY THE DIFFERENTIAL PRESSURE SENSOR INSTALLED ACROSS THE RETURN DAMPER.
   c. WHEN RELIEF AIR IS REQUIRED, MODULATE RELIEF AIR DAMPER BETWEEN 0% AND 100% OPEN TO MAINTAIN PRESSURE DIFFERENTIAL SET POINT RANGE +0.075 TO +0.125 INCHES WG AS SENSED BY THE DIFFERENTIAL PRESSURE SENSOR INSTALLED ACROSS THE RELIEF DAMPER.
2. ECONOMIZER:
   a. MODULATE OA, RA & EA DAMPERS IN COORDINATION WITH A PID LOOP TO MAINTAIN MIXED AIR TEMPERATURE SETPOINT. ECONOMIZER LOGIC SHALL REMAIN ENABLED DURING SETBACK COOLING, WHERE APPLICABLE. THE DAMPERS SHALL MODULATE OPEN PER THE HIGHER OF THE ECONOMIZER PID LOOP OUTPUT AND:
      1. MINIMUM OA FLOW CONRCL OUTPUT (FOR OA & RA DAMPERS ONLY)
      2. RELIEF CONTROL OUTPUT (FOR EA DAMPER)
3. DEMAND CONTROL VENTILATION:
   a. LINEARLY RESET THE ACTIVE OA AIRFLOW SETPOINT FROM DEMAND CONTROL MINIMUM VENTILATION AIRFLOW TO DESIGN MAXIMUM VENTILATION AIRFLOW BASED ON DIFFERENCE BETWEEN INDOOR AND BACKGROUND (400 PPM) CO2 LEVELS. WHEN ECONOMIZER IS ENABLED, IT SHALL HAVE PRIORITY OVER THE DAMPER POSITION AND CO2 CONTROL SHALL NOT BE ACTIVE.
   b. THE MINIMUM OA REQUIREMENTS SHALL BE SPECIFIED BY THE ENGINEER (REFER TO AHU SCHEDULE), DAMPER POSITIONS ESTABLISHED BY THE AIR BALANCER, AND BAS PROGRAMMED BY THE BAS CONTRACTOR. ENGINEER SHALL ENSURE THAT SPECIFIED MINIMUM SETPOINTS ARE ADEQUATE TO MAINTAIN BUILDING PRESSURE SLIGHTLY POSITIVE AT ALL TIMES.
4. UNOCCUPIED / PRE-OCCUPIED MODE:
   a. CLOSE OUTSIDE AIR DAMPER AND RELIEF AIR DAMPER AND OPEN RETURN AIR DAMPER TO 100%, UNLESS ECONOMIZER IS FAVORABLE.
5. SHUTDOWN:
   a. SET DAMPERS TO THEIR NORMAL POSITION AS FOLLOWS:
      1. RETURN DAMPER – OPEN
      2. RELIEF DAMPER – FAIL IN PLACE
      3. OUTSIDE DAMPER – CLOSED

K. CHILLED WATER COIL CONTROL (FAIL CLOSED):

1. ON A RISE IN DISCHARGE SUPPLY AIR TEMPERATURE ABOVE SETPOINT MODULATE COOLING COIL OPEN TO MAINTAIN SETPOINT OF 55F.
2. IF OUTSIDE AIR TEMP IS BELOW 55F (ADJ.), DISABLE COOLING COIL.

L. HEATING WATER PREHEAT COIL CONTROL (FAIL OPEN)

1. ON A DROP IN DISCHARGE SUPPLY AIR TEMPERATURE BELOW SETPOINT MODULATE HEATING COIL OPEN TO MAINTAIN SETPOINT OF 55F.
2. IF OUTSIDE AIR TEMP IS ABOVE 50F (ADJ.), DISABLE PREHEAT COIL.

M. AIR FILTER STATUS CONTROL: ALARM BAS WHEN PRESSURE DROP ACROSS FILTER BANK IS GREATER THAN SET POINT OF 1.75-INCH W.G. (ADJ).

N. TERMINAL BOX CONTROL

1. OCCUPANCY MODES: ENABLE TERMINAL BOX CONTROL UPON INITIATION OF PRE-OCCUPIED MODE AND CONTINUE THROUGH OCCUPIED MODE. DISABLE UPON INITIATION OF UNOCCUPIED MODE AND ENABLE / DISABLE THROUGHOUT UNOCCUPIED MODE BASED ON HEATING / COOLING DEMAND.
2. SHUTDOWN MODE: DISABLE TERMINAL BOX CONTROL.

O. SAFETY & SHUTDOWN:

1. SMOKE DETECTION CONTROL: INITIATE AHU SHUTDOWN MODE AND ALARM BAS WHEN FIRE ALARM SYSTEM SENDS SIGNAL BASED ON SMOKE AT ANY ONE OF THE DUCT-MOUNTED SMOKE DETECTORS OR BASED ON A GENERAL BUILDING ALARM.
2. FREEZE PROTECTION: INITIATE FREEZE PROTECTION MODE AND ALARM BAS WHEN SA DISCHARGE TEMPERATURE DROPS BELOW 42F (ADJ.). AUTOMATICALLY RESET WHEN SA DISCHARGE TEMPERATURE RISES ABOVE 47F (ADJ.).
3. FREEZE SHUTDOWN: HARD-WIRE TO AHU FAN RELAYS, INITIATE AHU SHUTDOWN MODE, AND ALARM BAS WHEN ENTERING AIR TEMPERATURE AT CHILLED WATER COIL FACE DROPS BELOW 37F (ADJ.) AT ANY 12-INCH SECTION OF THE SENSOR PROBE. MANUALLY RESET. OPEN ALL COIL CONTROL VALVES.
4. CONDENSATE LEVEL SHUTDOWN CONTROL: INITIATE AHU SHUTDOWN MODE AND ALARM BAS WHEN CONDENSATE DRAIN PAN HIGH-LEVEL SWITCH INDICATES HIGH-LEVEL.
5. FAN PROTECTION CONTROL: STOP FANS, INITIATE AHU SHUTDOWN MODE, AND ALARM BAS WHEN ANY OF THE HIGH OR LOW PRESSURE SWITCHES ARE TRIPPED.
6. GENERAL ALARMS CONTROL: ALARM BAS OF THE FOLLOWING CONDITIONS:
   a. FAN FAILURES
   b. FAILURES TO MEET SET POINT TEMPERATURES WITHIN 15 MINUTES (ADJ.)

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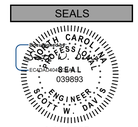

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SHEET TITLE

MECHANICAL CONTROLS

M07.03

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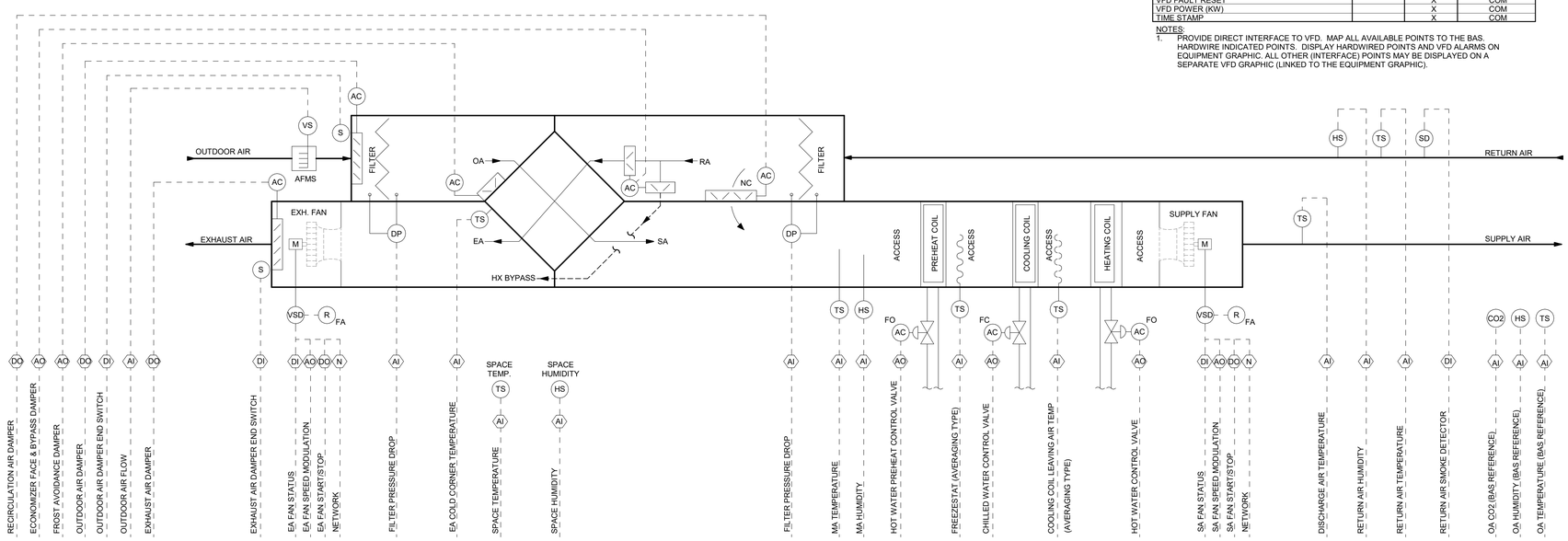
VFD INTERFACE MATRIX

POINT NAME	HARDWIRED	INTERFACE COM CARD	POINT DISPLAYED ON GUI
VFD COMMAND START/STOP	X	X	HARDWIRED
VFD SPEED COMMAND (%)	X	X	HARDWIRED
FAN/PUMP STATUS (VIA VFD)	X	X	HARDWIRED
VFD SPEED FEEDBACK (HZ)		X	COM
FAN/PUMP ALARM (COMMAND/STATUS MISMATCH)		X	COM
VFD FAULT STATUS		X	COM
VFD FAULT RESET		X	COM
VFD POWER (KW)		X	COM
TIME STAMP		X	COM

NOTES:
1. PROVIDE DIRECT INTERFACE TO VFD. MAP ALL AVAILABLE POINTS TO THE BAS. HARDWIRE INDICATED POINTS. DISPLAY HARDWIRED POINTS AND VFD ALARMS ON EQUIPMENT GRAPHIC. ALL OTHER (INTERFACE) POINTS MAY BE DISPLAYED ON A SEPARATE VFD GRAPHIC (LINKED TO THE EQUIPMENT GRAPHIC).



ENERGY RECOVERY UNIT CONTROL DIAGRAM (AHU-1)

ENERGY RECOVERY UNIT CONTROL

DESCRIPTION: CONSTANT VOLUME 100% OA AIR HANDLING UNIT WITH FLAT PLATE TOTAL ENERGY RECOVERY MODULE, HW & CHW COILS.

A. OCCUPIED PERIOD:
1. AIR HANDLING UNIT, SUPPLY FAN AND EXHAUST FAN SHALL BE STARTED AND STOPPED BY THE BAS UNDER A TOD SCHEDULE. THE UNIT SHALL START WITH THE RECIRCULATION DAMPER OPEN AND THE OA AND EA DAMPERS CLOSED. WHEN THE UNIT ENTERS THE OCCUPIED MODE, THE OA AND EA DAMPERS SHALL OPEN AND THEN THE RECIRCULATION DAMPER SHALL CLOSE. THIS SCHEDULE SHALL BE MODIFIED BY A START TIME OPTIMIZATION PROGRAM.
2. DURING OCCUPIED MODE, OA AND EA DAMPERS SHALL REMAIN OPEN AND THE RECIRCULATION DAMPER SHALL REMAIN CLOSED. SA AND EA FANS SHALL RUN CONTINUOUSLY TO VENTILATE THE SPACE. VARIABLE FREQUENCY DRIVE SPEEDS SHALL BE SET TO MAINTAIN THE AIRFLOWS ESTABLISHED DURING FINAL TESTING AND BALANCING.
3. THE ENERGY RECOVERY MODULE WILL OPERATE AUTOMATICALLY TO PRECONDITION THE OUTDOOR AIR.
4. SPACE TEMPERATURE CONTROL: FOUR SPACE TEMPERATURE SETPOINTS SHALL APPLY. NORMAL HEATING (70°F ADJ.)), NORMAL COOLING (75°F ADJ.)), SETBACK HEATING (62°F (ADJ.)), AND SETBACK COOLING (80°F). THE THREE ADJUSTABLE VALUES SHALL BE THE ONLY VALUES CHANGED BY THE OPERATOR TO ADJUST SPACE TEMPERATURE SETPOINT. ALL OTHER DEADBANDS, DIFFERENTIALS, ETC. SHALL BE CALCULATED IN THE PROGRAM LOGIC (UNLESS ANOTHER MEANS IS PROVIDED TO PROHIBIT OVERLAP OF THE HEATING AND COOLING LOOPS AND ENSURE A DEAD BAND SUCH AS FUNCTION BLOCK TEMPLATES THAT RESTRICT THE SETPOINT INPUT).
5. COOLING VALVE: CHW CONTROL VALVE SHALL MODULATE VIA PID LOOP AS REQUIRED TO MAINTAIN SPACE TEMPERATURE AT THE COOLING SETPOINT.
6. HEATING VALVES - HEATING OPERATION: STARTING WITH HW PREHEAT VALVE, MODULATE HW PREHEAT AND HW HEATING VALVES IN SEQUENCE VIA PID LOOP AS REQUIRED TO MAINTAIN SPACE TEMPERATURE AT THE HEATING SETPOINT.
7. DEHUMIDIFICATION:
   a. A DEHUMIDIFICATION LOOP SHALL ENABLED WHENEVER
      1. THE RETURN AIR HUMIDITY IS ABOVE SETPOINT,
      2. THE UNIT IS NOT IN MORNING WARMUP OR NIGHT SETBACK MODE,
      3. UNIT FAN STATUS IS PROVEN ON.
   b. UPON A RISE IN RA HUMIDITY LEVEL ABOVE 65% RH (ADJ.) AND UNTIL RA HUMIDITY LEVEL DROPS TO 55% RH, THE COOLING COIL CONTROL VALVE SHALL MODULATE TO PROVIDE 50°F LEAVING AIR TEMPERATURE. THE REHEAT COIL CONTROL VALVE SHALL BE MODULATED TO MAINTAIN SPACE TEMPERATURE 1°F LOWER THAN THE COOLING SETPOINT.
8. ECONOMIZER OPERATION (HX FACE & BYPASS DAMPER CONTROL): WHEN THE SPACE THERMOSTAT CALLS FOR COOLING, THE HEAT EXCHANGER FACE AND BYPASS DAMPERS SHALL SWITCH FROM ENERGY RECOVERY POSITION TO BYPASS POSITION TO PROVIDE "FREE COOLING"
   ECONOMIZER OPERATION WHENEVER:
   a. THE UNIT IS ENERGIZED AND STATUS HAS BEEN PROVEN FOR AT LEAST 15 SECONDS (ADJ.), AND
   b. WHEN OUTSIDE AIR TEMPERATURE FALLS BELOW THE SWITCHING SETPOINT OF 68°F (ADJ.) WITH 1°F (ADJ.) CYCLE DIFFERENTIAL, AND
   c. WHEN OUTSIDE AIR TEMPERATURES ARE ABOVE 52°F (ADJ.) WITH 1°F (ADJ.) CYCLE DIFFERENTIAL
   d. AND, WHEN OUTSIDE AIR ENTHALPY IS LESS THAN 28 BTU/LB.
9. FROST AVOIDANCE DAMPER: WHEN THE EXHAUST AIR TEMPERATURE AT THE HEAT EXCHANGER "COLD CORNER" FALLS BELOW 33°F(ADJ.) THE FROST AVOIDANCE DAMPER SHALL CLOSE. WHEN THE TEMPERATURE AT THE COLD CORNER TEMPERATURE SENSOR RISES ABOVE 35°F(ADJ.), THE FROST AVOIDANCE DAMPER SHALL REOPEN.
10. AT THE END OF THE OCCUPIED PERIOD, SUPPLY AND EXHAUST FAN SHALL STOP AND THEIR RESPECTIVE O.A. AND E.A. DAMPERS SHALL FULLY CLOSE, AND THE RECIRCULATION DAMPER SHALL OPEN.

B. UNOCCUPIED PERIOD:
1. SUPPLY AND EXHAUST FANS ARE OFF, O.A. AND E.A. DAMPERS ARE CLOSED, RECIRCULATION AIR DAMPER IS OPEN.
2. UNOCCUPIED LOW LIMIT: WHEN THE SPACE TEMPERATURE DROPS BELOW THE UNOCCUPIED HEATING SETPOINT OF 62°F, THE SUPPLY AND EXHAUST AIR FAN SHALL START, THE O.A. AND E.A. DAMPERS SHALL REMAIN CLOSED, THE RECIRCULATION DAMPER SHALL REMAIN OPEN, THE HEATING HOT WATER SYSTEM SHALL ENTER HEATING MODE AND THE HEATING COIL CONTROL VALVES SHALL MODULATE OPEN IN SEQUENCE TO MAINTAIN THE UNOCCUPIED HEATING SETBACK TEMPERATURE SETPOINT.
3. UNOCCUPIED HIGH LIMIT: WHEN THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED COOLING SETPOINT OF 80°F, THE SUPPLY AND EXHAUST AIR FAN SHALL START, THE O.A. AND E.A. DAMPERS SHALL REMAIN CLOSED, THE RECIRCULATION DAMPER SHALL REMAIN OPEN, THE CHILLED WATER SYSTEM SHALL ENTER COOLING MODE AND THE COOLING COIL CONTROL VALVE SHALL MODULATE OPEN TO MAINTAIN THE UNOCCUPIED COOLING SETBACK TEMPERATURE SETPOINT.

C. OCCUPANCY OVERRIDE: WHEN THE OCCUPANCY OVERRIDE BUTTON ON THE ROOM SENSOR IS DEPRESSED MOMENTARILY, THE UNIT SHALL BE INDEXED TO THE OCCUPIED PERIOD FOR 60 MIN. (ADJ).

D. SMOKE DETECTION & AHU SHUTDOWN:
1. UPON DETECTION OF SMOKE IN THE AIR HANDLING SYSTEM BY THE DUCT-MOUNTED EXHAUST AIR SMOKE DETECTOR, AN ALARM CONDITION SHALL BE SENT TO THE BUILDING FIRE ALARM SYSTEM, AND THE AIR HANDLING UNIT SHALL BE SHUT DOWN BY THE BUILDING FIRE ALARM SYSTEM.
2. THE BUILDING FIRE ALARM SYSTEM SHALL PROVIDE ONE DIGITAL OUTPUT TO THE BAS TO INDICATE AN ALARM CONDITION. WIRING FOR THIS ALARM POINT SHALL BE PROVIDED BY THE BAS SUBCONTRACTOR.

E. FREEZE PROTECTION: UPON DETECTION OF COOLING COIL ENTERING AIR TEMPERATURE BELOW 45°F THE O.A. AND E.A. DAMPERS SHALL CLOSE AND THE RECIRCULATION AIR DAMPER SHALL OPEN. UPON DETECTION OF DISCHARGE TEMPERATURE BELOW 40°F, THE SUPPLY AND EXHAUST FANS SHALL BE SHUTDOWN, THE CHILLED WATER AND HOT WATER COIL CONTROL VALVES SHALL FULLY OPEN AND AN ALARM CONDITION SHALL BE SENT TO THE BAS.

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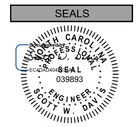

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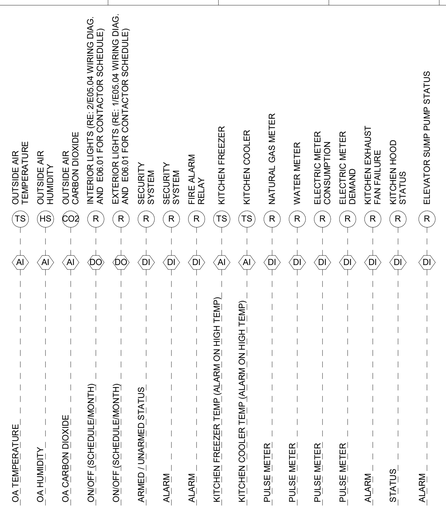


1 MISCELLANEOUS CONTROL POINTS

Scale: N.T.S.

MISCELLANEOUS CONTROL SEQUENCES

LIGHTING CONTROL: BAS CONTRACTOR SHALL PROVIDE THE SPECIFIED NUMBER OF OUTPUTS FOR LIGHTING CONTROL FOR EXTERIOR LIGHTING. THESE LOADS WILL BE CONTROLLED BASED ON TIME-OF-DAY AND SPECIAL SCHEDULING SUPPLIED BY OWNER. THE BAS CONTRACTOR SHALL PROVIDE ALL WIRING BETWEEN THE BAS AND THE LIGHTING CONTACTS. ALL POWER WIRING TO LIGHTING CONTACTS SHALL BE BY THE ELECTRICAL CONTRACTOR. LIGHTING CONTACTS ARE PROVIDED BY THE ELECTRICAL CONTRACTOR. EXTERIOR LIGHTING COMMAND SHALL OVERRIDE ON WHENEVER THE FIRE ALARM STATUS IS IN ALARM OR IF THE SECURITY SYSTEM STATUS IS IN ALARM.

SECURITY SYSTEM: BAS SHALL MONITOR AND REPORT THE SECURITY SYSTEM ARMED STATUS AND GENERAL ALARM.

FIRE ALARM SYSTEM: BAS SHALL SEND THE APPROPRIATE HVAC SHUTDOWN SIGNALS IN THE EVENT THE FIRE ALARM PANEL IS IN ALARM.

KITCHEN WALK-IN FREEZER AND COOLER MONITORING: PROVIDE A WALL MOUNTED TEMPERATURE SENSOR TO MONITOR BOTH THE FREEZER AND COOLER TEMPERATURES. EACH POINT SHALL BE AN INPUT TO THE BAS FOR INDICATION AND ALARM.

NATURAL GAS CONSUMPTION: OWNER TO PROVIDE DRY CONTACTS AT GAS METER. CONTROLS CONTRACTOR SHALL WIRE FROM CONTACTS TO BAS TO MEASURE AND RECORD BUILDING GAS CONSUMPTION. PROGRAM TREND LOGS TO RECORD (A) MAXIMUM CONSUMPTION PER HOUR ON HOURLY INTERVALS (B) BUILDING CONSUMPTION ON A DAILY INTERVAL (C) BUILDING CONSUMPTION ON A MONTHLY INTERVAL.

DOMESTIC WATER CONSUMPTION: OWNER TO PROVIDE DRY CONTACTS AT WATER METER. CONTROLS CONTRACTOR SHALL WIRE FROM CONTACTS TO BAS TO MEASURE AND RECORD BUILDING GAS CONSUMPTION. PROGRAM TREND LOGS TO RECORD (A) MAXIMUM CONSUMPTION PER HOUR ON HOURLY INTERVALS (B) BUILDING CONSUMPTION ON A DAILY INTERVAL (C) BUILDING CONSUMPTION ON A MONTHLY INTERVAL.

ELECTRIC DEMAND AND CONSUMPTION: OWNER TO PROVIDE DRY CONTACTS AT ELECTRIC DEMAND METER. CONTROLS CONTRACTOR SHALL WIRE FROM CONTACTS TO BAS TO MEASURE AND RECORD BUILDING ELECTRICAL DEMAND AND BUILDING ELECTRICAL CONSUMPTION. PROGRAM TREND LOGS TO RECORD (A) MAXIMUM DEMAND AND CONSUMPTION PER HOUR ON HOURLY INTERVALS (B) BUILDING DEMAND AND CONSUMPTION ON A DAILY INTERVAL (C) BUILDING DEMAND AND CONSUMPTION ON A MONTHLY INTERVAL.

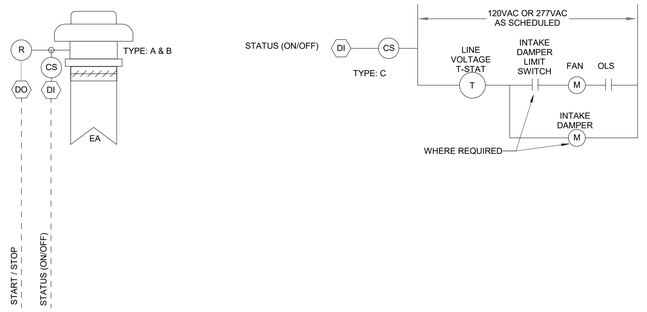
KITCHEN HOOD EXHAUST FAN STATUS: PROVIDE STATUS INPUT TO BAS FROM KITCHEN HOOD MANUFACTURER'S CONTROL PANEL.

ELECTRIC UNIT HEATERS: BUILT-IN THERMOSTAT SHALL MAINTAIN ITS SET POINT OF 65F (ADJ) BY STARTING THE UNIT HEATER.

TREND LOGS: PROVIDE TREND LOGS FOR BOILER OPERATION, CHILLER OPERATION, PUMP OPERATION, AIR HANDLING UNIT OPERATION AND ENERGY RECOVERY UNIT OPERATION AT OWNER'S DISCRETION. COORDINATE WITH OWNER FOR EXACT REQUIREMENTS OF TREND LOG REQUIREMENTS.

ELEVATOR SUMP PUMP: SUMP PUMP CONTROL SHALL BE MANAGED BY THE SUMP PUMP CONTROLLER. BAS SHALL MONITOR PUMP STATUS AT SUMP PUMP PANEL DRY CONTACTS. RELAY POWER BY BAS.. REFER TO PLUMBING FOR CONTROL PANEL LOCATION.

OA TEMPERATURE, HUMIDITY AND CARBON DIOXIDE: BUILDING TEMPERATURE, HUMIDITY, AND CO2 SENSORS USED BY ALL HVAC CONTROLLERS TO DETERMINE THE OUTSIDE AIR REFERENCE CONDITIONS.



2 EXHAUST FAN FLOW DIAGRAM

Scale: N.T.S.

EXHAUST FAN CONTROL SEQUENCE - BASIC CONTROL TYPES AS SCHEDULED

TYPE A - GENERAL EXHAUST FANS SHALL BE CONTROLLED BY THE BAS BASED ON OCCUPANCY.
- OCCUPIED PERIOD: FANS SHALL OPERATE.
- UNOCCUPIED PERIOD: FANS ARE OFF.
- PRE-OCCUPIED PERIOD: FANS ARE OFF.

TYPE B - KITCHEN GENERAL EXHAUST FAN (EF-1)
- REFER TO KITCHEN EXHAUST SYSTEM CONTROL SECTION BELOW.

TYPE C - VENTILATION FANS SHALL BE THERMOSTATICALLY CONTROLLED BY LINE-VOLTAGE THERMOSTAT
- LINE VOLTAGE THERMOSTAT SHALL ENERGIZE FAN AND OPEN DAMPER (WHERE APPLICABLE) WHEN TEMPERATURE IS ABOVE 85F.

TYPE D - KITCHEN HOOD EXHAUST FAN (KEF-1)
- REFER TO KITCHEN EXHAUST SYSTEM CONTROL SECTION BELOW.

KITCHEN EXHAUST SYSTEM CONTROL

A. SYSTEM DESCRIPTION: KITCHEN EXHAUST SYSTEM INCLUDES ONE (1) KITCHEN HOOD EXHAUST FAN (KEF-1) AND ONE (1) KITCHEN GENERAL EXHAUST FAN (EF-1). AHU-2 OCCUPIED / UNOCCUPIED SCHEDULES SHALL BE USED.

a. REFER TO THE KITCHEN AIR BALANCE SCHEDULE FOR MORE INFORMATION.

B. KITCHEN HOOD EXHAUST FAN (KEF-1): FAN SHALL BE CONTROLLED BY KITCHEN HOOD SMART THERMOSTATIC CONTROLLER(S) AND A MANUAL OCCUPANT CONTROLLED SWITCH. MANUAL SWITCH SHALL BE WIRED TO HOOD SMART CONTROLLER(S). MONITOR STATUS OF FAN AT THE BAS.

a. OCCUPIED / UNOCCUPIED MODES: KITCHEN HOOD EXHAUST FAN SHALL START/STOP BASED ON INITIATION BY SMART CONTROLLER OR MANUAL SWITCH. THE FAN SHALL START IF EITHER COMMAND IT ON. THE FAN SHALL STOP IF BOTH COMMAND IT OFF.

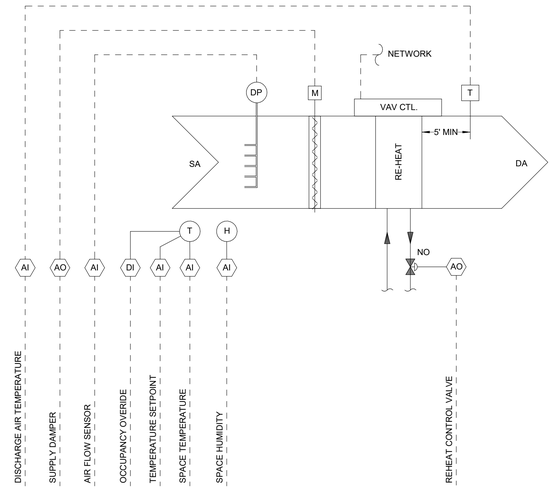
C. GENERAL KITCHEN EXHAUST FAN (EF-1): FAN SHALL BE CONTROLLED BY THE BAS. MONITOR STATUS OF FAN AT THE BAS.

a. OCCUPIED MODE: WHEN THE KITCHEN HOOD EXHAUST FAN IS ON AS DETERMINED BY HOOD CONTROLLER STATUS, THE KITCHEN GENERAL EXHAUST FAN SHALL STOP AND REMAIN OFF. WHEN THE KITCHEN HOOD EXHAUST FAN STOPS, THE KITCHEN GENERAL EXHAUST FAN SHALL START AND REMAIN ON.

b. UNOCCUPIED MODE: FAN SHALL BE OFF.

D. KITCHEN/DINING AIR HANDLING UNIT (AHU-2): WHEN KITCHEN HOOD FAN IS OPERATING AS DETERMINED BY HOOD CONTROLLER STATUS, AHU MINIMUM OUTDOOR AIR SETPOINT SHALL BE ADJUSTED TO THE MAXIMUM SCHEDULED AIRFLOW. WHEN AHU-2 IS OPERATING IN HEATING MODE, AHU-2 TERMINAL UNITS RESET TO MAX HEATING AIRFLOW. WHEN KEF-1 FAN STATUS IS OFF, VENTILATION SHALL BE SET TO MINIMUM OUTSIDE AIR OR AIR FLOW REQUIRED FOR DEMAND CONTROLLED VENTILATION SEQUENCE, WHICHEVER IS GREATER AS INDICATED IN AHU SEQUENCE OF OPERATION. REFER TO KITCHEN HOOD AIR BALANCE SCHEDULE.

E. PROVIDE DIRECT INTERFACE TO HOOD CONTROLLER. HARDWIRE INDICATED POINTS. DISPLAY HARDWIRED POINTS ON BAS EQUIPMENT GRAPHIC. PROVIDE GRAPHIC LINK TO PARENT AHU-2.



3 SINGLE DUCT VAV BOX FLOW DIAGRAM

Scale: N.T.S.

VARIABLE AIR VOLUME TERMINAL UNIT W/ REHEAT

OPERATION

A. GENERAL

a. THE TERMINAL UNIT SHALL BE PRESSURE INDEPENDENT CONTROL. IN GENERAL, THE SPACE TEMPERATURE SHALL BE USED TO PROVIDE A PID OUTPUT WHICH IS USED TO RESET THE PRIMARY AIRFLOW BETWEEN FLOW SETPOINTS. THE PRIMARY AIR DAMPER IS THEN MODULATED TO MAINTAIN THE FLOW SETPOINT.
b. TERMINAL UNITS SHALL HAVE PRIMARY AIR DAMPER ACTUATORS AND REHEAT VALVES. DAMPERS/VALVE ACTUATORS SHALL FAIL IN PLACE.

B. ZONE TERMINAL LOAD CONTROL

a. THE TERMINAL UNIT CONTROLLER WILL MONITOR OPERATING MODE BASED ON TIME SCHEDULE, FAN STATUS, AND THE DISCHARGE AIR TEMPERATURE FROM THE AHU TO DETERMINE THE TERMINAL UNIT RESPONSE.
- CALCULATE A COOLING AND HEATING TERMINAL LOAD BASED ON SPACE TEMPERATURE VERSUS ACTIVE SETPOINTS.
- PROVIDE A MINIMUM 4F (ADJ) DEADBAND BETWEEN COOLING AND HEATING SETPOINTS.

C. PRIMARY AIR DAMPER AND REHEAT:

a. THE TERMINAL UNIT SHALL OPERATE WITH A MINIMUM FLOW SETPOINT, A MAXIMUM FLOW SETPOINT AND A HEATING FLOW SETPOINT. THE TERMINAL UNIT SUPPLY DAMPER SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM FLOWS TO MAINTAIN THE SPACE AT THE COOLING SETPOINT (75F, ADJ). IF THE TERMINAL UNIT IS AT MINIMUM FLOW AND THE SPACE TEMPERATURE DROPS BELOW THE HEATING SETPOINT (70F, ADJ), THE CONTROL VALVE SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE. AS THE CONTROL VALVE MODULATES, THE SUPPLY DAMPER SHALL ALSO MODULATE BETWEEN MINIMUM AND HEATING FLOWS (100% HEATING OUTPUT WILL RESULT IN TERMINAL UNIT AT HEATING FLOW).

D. HUMIDITY MONITORING AND DEHUMIDIFICATION

a. WHEN ASSOCIATED AHU IS INDEXED TO DEHUMIDIFICATION MODE, THE TERMINAL UNIT SHALL OPERATE AS NORMAL.
b. WHEN ZONE RELATIVE HUMIDITY RISES ABOVE 60% (ADJ) AS SENSED BY TEMRINAL UNIT ZONE SENSOR, THE TERMINAL UNIT SHALL INDEX THE ASSOCAITED AHU TO DEHUMIDIFICATION MODE.
c. TERMINAL UNIT DEHUMIDIFICATION AIRFLOW SHALL BE INITIALLY EQUAL TO THE MINIMUM FLOW (INDEPENDENTLY ADJ).

UNOCCUPIED MODE OPERATION

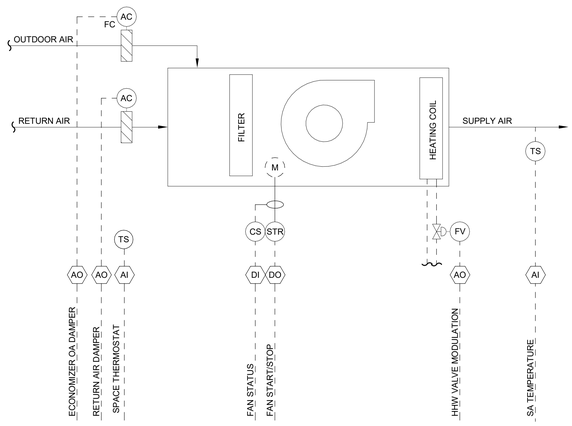
A. TERMINAL UNIT SHALL OPERATE AS DESCRIBED ABOVE, EXCEPT:

a. INCREASE COOLING SETPOINT TO 80F (UNOCCUPIED COOLING SETPOINT, ADJ) AND DECREASE HEATING SETPOINT TO 62F (UNOCCUPIED HEATING SETPOINT, ADJ).
b. IF THE OCCUPANCY OVERRIDE IS PRESSED, PLACE THE TERMINAL UNIT INTO OCCUPIED MODE. THE TERMINAL UNIT SHALL CONTROL TO OCCUPIED SETPOINTS.
c. THE TERMINAL 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.

GRAPHICAL INTERFACE

A. PROVIDE A GRAPHICAL DISPLAY FOR THE ZONE DAMPER WITH LINK TO ZONE DAMPER SUMMARIES AND FLOOR PLAN GRAPHIC INDICATING DAMPER AND THERMOSTAT LOCATIONS. ZONE DAMPER GRAPHICS TO INCLUDE THE FOLLOWING POINTS.

a. ZONE DAMPER POSITION
b. MEASURED AIRFLOW
c. ZONE DAMPER MIN AND MAX FLOW SETPOINTS
d. HOT WATER REHEAT AND DAMPER COMMANDS
e. ZONE TEMPERATURE WITH OCCUPIED AND UNOCCUPIED SETPOINTS
f. ZONE HUMIDITY WITH OCCUPIED SETPOINT
g. SPACE OCCUPANCY AND OVERRIDE STATUS
h. DISCHARGE AIR TEMPERATURE



4 BLOWER COIL UNIT CONTROL DIAGRAM (BCU-1)

Scale: NTS

BLOWER COIL UNIT CONTROL SEQUENCE

A. SUPPLY FAN: BAS SHALL COMMAND THE FAN TO START AND RUN CONTINUOUSLY DURING THE OCCUPIED PERIOD AND STOP AND CYCLE ON/OFF AS NEEDED DURING THE UNOCCUPIED PERIOD AS SCHEDULED.

B. OUTSIDE AIR (OA)/ RETURN AIR (RA) DAMPERS: BAS SHALL CONTROL THE DAMPERS BASED ON OCCUPANCY SCHEDULE. DURING OCCUPIED MODE, THE OA AND RA DAMPERS SHALL MODULATE TO THEIR BALANCED POSITIONS. DURING UNOCCUPIED MODE, THE OA DAMPER SHALL CLOSE AND REMAIN CLOSED AND THE RA DAMPER SHALL OPEN 100%.

a. MIXED AIR LOW LIMIT: IF THE MIXED AIR TEMPERATURE DROPS BELOW THE LOW LIMIT SETPOINT (44F), THE OA DAMPER SHALL CLOSE AND REMAIN CLOSED UNTIL THE OA TEMPERATURE INCREASES 5 DEG F.

C. HEATING COIL CONTROL VALVE: HEATING COIL CONTROL VALVE (N.O.) SHALL MODULATE TO MAINTAIN SPACE HEATING SETPOINT OF 70 DEG F DURING OCCUPIED HOURS AND 62 DEG F DURING UNOCCUPIED HOURS.

a. FREEZE CONDITION: WHENEVER A FREEZE CONDITION IS INITIATED, HEATING COIL CONTROL VALVES SHALL BE COMMANDED TO 100% OPEN (ADJ.).

DUCTLESS MINI-SPLIT SYSTEM CONTROL

SCHEDULED FAN CONTROL: COOL TO MAINTAIN SPACE TEMPERATURE SET POINTS VIA PACKAGED CONTROLS.

COOLING SET POINTS:
MDF AND DATA ROOMS = 75°F

HW UNIT HEATER CONTROL

GENERAL: PROVIDE WALL-MOUNTED ADJUSTABLE THERMOSTAT WITH MANUAL FAN OVERRIDE SWITCH. CYCLE FAN ON AND MODULATE HW CONTROL VALVE OPEN TO MAINTAIN SETPOINT WHEN SPACE TEMPERATURE FALLS BELOW SETPOINT. PROVIDE AQUASTAT TO PREVENT FAN OPERATION IF HOT WATER SUPPLY DROPS BELOW 90F. DEENERGIZE FAN AND CLOSE HW VALVE WHEN OUTSIDE AIR TEMP RISES ABOVE 60F ADJUSTABLE. ENABLE FAN OPERATION FOR 2 HRS (ADJ.) WHEN MANUAL FAN OVERRIDE SWITCH IS ACTIVATED.

OCCUPIED SPACE SET POINTS:
GYMNASIUM = 70F

UNOCCUPIED SPACE SET POINTS:
GYMNASIUM = 62F

MONITOR AND TREND: SPACE TEMPERATURE (15 MINUTE INTERVALS)

ALARM BAS: SPACE TEMPERATURE FALLS 10F (ADJ.) BELOW SETPOINT.

ELECTRIC UNIT HEATER CONTROL

GENERAL: INTEGRAL THERMOSTAT SHALL MAINTAIN SPACE TERMPERATURE SETPOINT BY STARTING THE UNIT HEATER. ONCE THE UNIT HEATER IS ENERGIZED, IT WILL RUN FOR AT LEAST FIVE MINUTES TO AVOID SHORT CYCLING. NO BAS SYSTEM MONITORING OR CONTROL IS REQUIRED FOR ELECTRIC UNIT HEATERS.

SPACE SET POINTS:
STAIRWELLS AND BUILDING ENTRY VESTIBULES = 62F
MECHANICAL AND ELECTRICAL ROOMS = 55F

BAS CONTROL SYSTEM GENERAL NOTES

DESCRIPTION: TRIDIUM NIAGARA AX FRAMEWORK ARCHITECTURE SHALL VIEW, MONITOR AND CONTROL BACNET PROTOCOL DEVICES OVER ETHERNET OR IP.

SET POINTS: ALL SET POINTS AND NUMERIC VALUES SHALL BE ADJUSTABLE.

TIME DELAYS: TIME DELAYS NOTED IN THE SEQUENCES OF OPERATION ARE INTENDED TO ALLOW FOR OTHER DEVICES TO ACT IN ADVANCE. FOR EXAMPLE, A FAN NOTED TO START ON A TIME DELAY IS WAITING FOR AN ASSOCIATED DAMPER TO OPEN. TIME DELAY DURATIONS SHALL BE DETERMINED WITH THE ENGINEER ONCE THE ACTUATORS HAVE BEEN SELECTED.

VARIABLE SPEED DRIVE OPERATION: WHEN A FAN OR PUMP IS STARTED, THE VARIABLE FREQUENCY DRIVE SHALL START AT MINIMUM SPEED AND SLOWLY INCREASE UNTIL REACHING THE REQUIRED SPEED TO SATISFY THE REFERENCE SIGNAL. STARTING AT FULL SPEED AND SLOWING TO MEET SET POINT IS NOT ACCEPTABLE.

EQUIPMENT WITH PACKAGED CONTROLS: HVAC EQUIPMENT THAT COMES EQUIPPED WITH FACTORY-INSTALLED PACKAGED CONTROLS SHALL COME WITH BACNET INTERFACE CARDS THAT ALLOW FULL VISIBILITY OF INTERNAL CONTROL AND MONITORING POINTS. THIS REQUIREMENT SHALL INCLUDE CHILLERS AND BOILERS. ELECTRICAL OR INDUSTRIAL EQUIPMENT THAT IS NOT AVAILABLE WITH A DIRECT BACNET INTERFACE SHALL BE MODBUS.

REGAIN POWER CONTROL: ENABLE CHILLER AND BOILER AUTOMATIC RESTART 5 MINUTES (ADJ.) AFTER RESUMPTION OF POWER FROM AN OUTAGE. AUTOMATICALLY RESTART ALL OTHER EQUIPMENT BASED ON THE OCCUPANCY SCHEDULE.

POWER SUPPLY: POWER TO THE BAS SYSTEM SHALL BE MAINTAINED BY UPS FOR A POWER LOSS DURATION OF UP TO 30 MINUTES.

SCHEDULES: PROVIDE A REAL TIME CLOCK AND SCHEDULE CONTROLLER WITH SUFFICIENT SCHEDULING CAPABILITY TO SCHEDULE ALL REQUIRED CONTROLLERS AND SEQUENCES. SET UP INITIAL SCHEDULES IN COORDINATION WITH DURHAM PUBLIC SCHOOLS.

SPACE SENSORS: ALL SPACE SENSORS SHALL BE COMBINATION TEMPERATURE / HUMIDITY SENSORS. ALL SPACE SENSORS SHALL BE EQUIPPED WITH SETPOINT ADJUSTMENT AND OVERRIDE PUSH BUTTON (ASSOCIATED SYSTEM SHALL OPERATE FOR 90 MINUTE PERIOD (ADJ.)). REFER TO PLANS FOR LOCATIONS OF STAINLESS STEEL FLAT PLATE SENSORS AND FLAT PLATE SENSORS WITH OVERRIDE.

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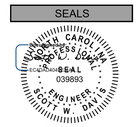
PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS



1/10/2025

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REVISIONS

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SHEET TITLE
MECHANICAL CONTROLS

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GENERAL NOTES - ELECTRICAL

DEMOLITION:

1. DEMOLITION WORK SHOWN BOLD AND DASHED. EXISTING TO REMAIN WORK SHOWN LIGHT AND CONTINUOUS.
2. NOT ALL ELECTRICAL DEVICES AND EQUIPMENT ARE SHOWN. LOCATIONS AND ASSOCIATED CIRCUITS OF EXISTING DEVICES AND EQUIPMENT SHOWN ARE BASED IN PART UPON PREVIOUS DRAWINGS, FIELD OBSERVATIONS AND INFORMATION FURNISHED BY OTHERS AND SHALL BE CONSIDERED APPROXIMATE. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO COMMENCING WORK.
3. ALL EXISTING DEVICES AND EQUIPMENT SHALL REMAIN IN PLACE AND OPERATIONAL UON.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTINUITY OF ALL EXISTING CIRCUITS AND SYSTEMS TO REMAINING DEVICES AND EQUIPMENT WHICH MAY BE AFFECTED BY AREA OF WORK. MATCH AND EXTEND CONDUIT, CONDUCTORS, CABLES, ETC. AS NECESSARY TO MAINTAIN CIRCUIT INTEGRITY.
5. ALL EXISTING RACEWAY AND WIRING THAT ARE TO REMAIN IN THE AREA OF WORK SHALL BE RELOCATED AS REQUIRED TO PROVIDE OR MAINTAIN ACCESSIBILITY AND TO ACCOMMODATE THE PROPOSED CONSTRUCTION. CONTRACTOR SHALL FIELD VERIFY ALL RACEWAY AND WIRING TO REMAIN PRIOR TO COMMENCING WORK. ALL RELOCATION SHALL BE COORDINATED WITH THE OWNER OR OWNER'S REPRESENTATIVE. PROVIDE TEMPORARY CONNECTIONS TO EQUIPMENT AND DEVICES TO MAINTAIN EQUIPMENT AND SYSTEMS IN SERVICE. ALL DOWNTIME REQUIRED FOR INSTALLATION OF TEMPORARY CONNECTIONS SHALL BE COORDINATED WITH THE OWNER OR OWNER'S REPRESENTATIVE.
6. IN AREAS WHERE EXISTING CEILINGS ARE NOT SLATED TO BE REPLACED, CONTRACTOR SHALL WORK THROUGH EXISTING CEILINGS. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR AREA OF WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING AND REPLACING CEILING SYSTEM DAMAGED AS A RESULT OF THEIR WORK.
7. ALL ELECTRICAL DEVICES AND CIRCUITS SCHEDULED FOR DEMOLITION, INCLUDING ALL ASSOCIATED CONDUIT, WIRING, SUPPORTS AND OTHER HARDWARE, SHALL BE REMOVED BACK TO SOURCE, UON.
8. ALL REMOVED ELECTRICAL EQUIPMENT, DEVICES, CONDUIT, CONDUCTORS, BOXES, LUMINAIRES AND ASSOCIATED ITEMS SHALL BE PROPERLY DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS, UON.
9. CONTRACTOR SHALL DISCONNECT AND REMOVE ALL ELECTRICAL CONNECTIONS TO EQUIPMENT FROM OTHER TRADES BEING REMOVED WITHIN AREA OF WORK. COORDINATE WITH OTHER TRADE CONTRACTORS PRIOR TO DEMOLITION.
10. PRIOR TO REMOVAL OF CIRCUIT FROM A PANEL, CONTRACTOR SHALL VERIFY NO OTHER DEVICES EXIST ON THE CIRCUIT. IN THE EVENT OF A CONFLICT, DEVIATION OR DISCREPENCY, CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO ENGINEER OF RECORD FOR CLARIFICATION PRIOR TO REMOVAL.
11. ONCE A CIRCUIT HAS BEEN REMOVED, THE REMAINING BREAKER SHALL BE LABELED SPARE, TURNED OFF, AND MADE READY FOR USE UNDER NEW WORK.

GENERAL NOTES - ELECTRICAL

GENERAL:

1. ELECTRICAL PLANS ARE GENERALLY DIAGRAMMATIC IN NATURE AND DO NOT CONVEY ALL DETAILS REQUIRED FOR A COMPLETE INSTALLATION. HOWEVER, THESE PLANS SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE FOR GENERAL ARRANGEMENT AND LOCATION OF EQUIPMENT. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS, DIMENSIONS AND MOUNTING METHODS. CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO COMMENCING WORK. CONTRACTOR SHALL VERIFY STRUCTURAL AND FINISH CONDITIONS PRIOR TO COMMENCING WORK. CONTRACTOR SHALL ARRANGE WORK TO MEET THESE CONDITIONS AND PROVIDE SUCH EQUIPMENT AND ACCESSORIES AS MAY BE REQUIRED. IN THE EVENT OF A CONFLICT, DEVIATION OR DISCREPENCY FOUND WITHIN THE PLANS OR SPECIFICATIONS, CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO ENGINEER OF RECORD FOR CLARIFICATION PRIOR TO COMMENCING WORK.
2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, MANUFACTURERS' RECOMMENDED INSTALLATION PROCEDURES, THE AMERICANS WITH DISABILITIES ACT, ANSI A117.1, THE NATIONAL ELECTRICAL CODE, THE NATIONAL FIRE ALARM AND SIGNALING CODE AND ALL OTHER APPLICABLE LOCAL AND STATE CODES AS ADOPTED AND MODIFIED BY THE AUTHORITIES HAVING JURISDICTION.
3. CONTRACTOR SHALL COORDINATE WITH OWNER FOR ACCESS TO AREA OF WORK AND FOLLOW ALL OWNER ENVIRONMENTAL, HEALTH, SAFETY AND SECURITY PROTOCOLS.
4. ALL WORK SHALL BE PHASED IN ACCORDANCE WITH CONTRACT PLANS, SPECIFICATIONS AND OWNER'S REQUIREMENTS.
5. CONTRACTOR SHALL COORDINATE LOCATIONS OF ALL FIRE AND/OR SMOKE RATED WALLS, BARRIERS, CEILINGS, FLOORS, PARTITIONS, AND ROOFS PRIOR TO AND DURING CONSTRUCTION.
6. CONTRACTOR SHALL PROVIDE NATIONALLY RECOGNIZED TESTING LABORATORY LISTED THROUGH-PENETRATION DRAFT, FIRE AND SMOKE STOP SYSTEMS FOR ALL NEW FIRE AND/OR SMOKE-RATED WALL, BARRIER, CEILING, FLOOR AND ROOF PENETRATIONS WITHIN THE AREA OF WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, NATIONALLY RECOGNIZED TESTING LABORATORY LISTED REQUIREMENTS AND APPLICABLE BUILDING CODES. PROVIDE PENETRATION ASSEMBLIES SUITABLE FOR PARTICULAR CONSTRUCTION.
7. CONTRACTOR SHALL MAINTAIN INTEGRITY OF VAPOR BARRIER AND INSULATION FOR ALL ELECTRICAL WORK AND DEVICES ON EXTERIOR AND PERIMETER WALLS.
8. CONTRACTOR SHALL COORDINATE ELECTRICAL WORK WITH ALL OTHER TRADES PRIOR TO COMMENCING WORK TO ENSURE ELECTRICAL WORK DOES NOT INTERFERE WITH OTHER TRADES. LINES AND SYSTEMS THAT REQUIRE SLOPE SHALL TAKE PRECEDENCE OVER ELECTRICAL WORK.
9. CONTRACTOR SHALL REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR LOCATIONS OF MECHANICAL AND PLUMBING EQUIPMENT. CONTRACTOR SHALL REFER TO DRAWINGS OF OTHER TRADES FOR LOCATIONS OF THEIR EQUIPMENT. CONTRACTOR SHALL COORDINATE AND VERIFY ELECTRICAL REQUIREMENTS WITH OTHER TRADES PRIOR TO COMMENCING WORK.
10. PRIOR TO EQUIPMENT INSTALLATION, CONTRACTOR SHALL CONDUCT FIELD MEASUREMENTS TO ENSURE ALL ELECTRICAL EQUIPMENT AND ACCESSORIES WILL FIT INTO LOCATION(S) AS INDICATED ON PLANS. IN THE EVENT OF A CONFLICT, DEVIATION OR DISCREPENCY, CONTRACTOR SHALL PROVIDE A PROPOSED SKETCH OF REVISED ARRANGEMENT TO ENGINEER OF RECORD FOR ACCEPTANCE PRIOR TO COMMENCING WORK.
11. PROPERLY SUPPORT ALL WORK AND EQUIPMENT INSTALLED UNDER THIS CONTRACT PLUMB AND PARALLEL WITH BUILDING LINES. STUDY ALL GENERAL, STRUCTURAL, PLUMBING, HVAC, AND ELECTRICAL DRAWINGS, SHOP DRAWINGS, AND CATALOG DATA TO DETERMINE HOW EQUIPMENT, ACCESSORIES, PIPING, FIXTURES, AND RELATED ITEMS ARE TO BE SUPPORTED, MOUNTED, OR SUSPENDED. PROVIDE ALL BOLTS, INSERTS, PIPE STANDS, BRACKETS, STRUCTURAL SUPPORTS, AND ACCESSORIES FOR PROPER SUPPORT OF EQUIPMENT FURNISHED UNDER THIS CONTRACT.
12. CONTRACTOR SHALL PROVIDE ADDITIONAL SUPPORT FOR DEVICE BACK BOXES, EQUIPMENT, LUMINAIRES AND RACEWAY WHERE BUILDING CONSTRUCTION IS NOT SUITABLE FOR DIRECT MOUNTING.
13. CONTRACTOR SHALL VERIFY CEILING SYSTEMS AND PROVIDE MOUNTING ACCESSORIES, TRIMS AND ALL REQUIRED MOUNTING HARDWARE TO SUIT THE PARTICULAR INSTALLATION.
14. CONTRACTOR SHALL NOT BACKFILL EXCAVATIONS, INSTALL COVERPLATES AND ENCLOSURES OR GENERALLY SEAL OR OBSCURE ELECTRICAL INSTALLATIONS PRIOR TO INSPECTION AND ACCEPTANCE BY AUTHORITIES HAVING JURISDICTION.
15. CONTRACTOR SHALL REMOVE ALL DIRT AND DEBRIS FROM ALL ELECTRICAL ENCLOSURES AND DEVICE, JUNCTION AND PULL BOXES PRIOR TO INSTALLATION OF DEVICES, COVERPLATES AND LIDS.
16. CONTRACTOR SHALL LABEL ALL COVERPLATES, EQUIPMENT, JUNCTION BOXES, AND PULL BOXES WITH CIRCUIT AND PANEL DESIGNATIONS. REFER TO DETAILS AND SPECIFICATIONS FOR SPECIFIC LABEL AND IDENTIFICATION REQUIREMENTS.
17. CONTRACTOR SHALL PROVIDE NEW, TWO COLUMN, TYPED, COMPLETED AND REMOVABLE DIRECTORIES INDICATING CIRCUIT DESCRIPTIONS AND ROOM NUMBERS (AS INDICATED BY FINAL ROOM SIGNAGE), FOR ALL AFFECTED CIRCUITS WITHIN ELECTRICAL DISTRIBUTION EQUIPMENT. ALL SPACES SHALL BE INDICATED AS SUCH. ALL SPARES SHALL BE INDICATED AS SUCH AND PLACED IN THE "OFF" POSITION.
18. MINIMUM RACEWAY SIZE OF 3/4" AND 1"C FOR UNDERGROUND CONDUIT, UON.
19. ALL RACEWAYS SHALL BE INSTALLED CONCEALED ABOVE CEILINGS, WITHIN WALLS OR BELOW FLOORS EXCEPT WITHIN UNFINISHED SPACES AND ON CEILINGS OF AREAS WITH EXPOSED STRUCTURE. WITHIN PUBLIC SPACES, EXPOSED CONDUIT SHALL BE FACTORY OR FIELD PAINTED TO MATCH ADJACENT STRUCTURE. ALL CONDUITS SHALL BE ROUTED PARALLEL OR PERPENDICULAR TO BUILDING STRUCTURE. ALL CONDUITS ROUTED IN PARALLEL SHALL UTILIZE CONCENTRIC BEND RADII FOR ALL TURNS.
20. ALL EMPTY RACEWAYS SHALL BE PROVIDED WITH PULL STRINGS INSTALLED PER SPECIFICATIONS.
21. ALL EXPOSED RACEWAY ENDS SHALL BE PROVIDED WITH PLASTIC BUSHINGS.
22. ALL ELECTRICAL CONDUCTORS, EQUIPMENT AND TERMINALS SHALL BE 75°C RATED UON.
23. MINIMUM CONDUCTOR SIZE OF #12AWG, COPPER, THHN/THWN, FOR BRANCH CIRCUITS, UON.
24. ALL BRANCH AND FEEDER CIRCUITS SHALL ORIGINATE FROM PANELS AND SERVE DEVICES AND EQUIPMENT AS INDICATED ON PLANS AND SCHEDULES. IN THE EVENT OF A CONFLICT, DEVIATION OR DISCREPENCY, CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO ENGINEER OF RECORD FOR CLARIFICATION PRIOR TO COMMENCING WORK.
25. ALL BRANCH CIRCUITS SHALL HAVE A DEDICATED NEUTRAL CONDUCTOR.
26. ALL RACEWAYS CONTAINING A FEEDER OR BRANCH CIRCUIT SHALL BE PROVIDED WITH AN INSULATED EQUIPMENT GROUNDING CONDUCTOR. FOR RACEWAYS CONTAINING MORE THAN ONE BRANCH CIRCUIT, SIZE OF EQUIPMENT GROUNDING CONDUCTOR SHALL BE BASED ON THE LARGEST CIRCUIT'S OVERCURRENT PROTECTIVE DEVICE.
27. ALL DEVICE BACK BOXES SHALL BE RECESSED WITHIN WALLS, FURRING, OR CASEWORK, UON. USE OF EXPOSED SURFACE MOUNTED DEVICE BACK BOXES IS PROHIBITED EXCEPT WITHIN UNFINISHED SPACES AND ON CEILINGS OF AREAS WITH EXPOSED STRUCTURE. WITHIN PUBLIC SPACES, EXPOSED DEVICE BACK BOXES SHALL BE FACTORY OR FIELD PAINTED TO MATCH ADJACENT STRUCTURE.
28. DEVICE BACK BOXES INDICATED ON PLANS AS ADJACENT TO ONE ANOTHER SHALL BE MOUNTED 8" APART, CENTER-TO-CENTER, UON.
29. DEVICE BACK BOXES LOCATED ON OPPOSITE SIDES OF FIRE OR SMOKE RATED PARTITIONS SHALL NOT BE MOUNTED WITHIN THE SAME WALL CAVITY. WALL PENETRATIONS SHALL BE SEPARATED BY MOUNTING BOXES ON OPPOSITE SIDES OF WALL STUDS OR OTHER VERTICAL STRUCTURAL MEMBER INSIDE THE WALL.
30. CONTRACTOR SHALL COORDINATE EXACT HEIGHT AND LOCATION OF ALL WALL MOUNTED DEVICE BACK BOXES WITH ARCHITECTURAL INTERIOR ELEVATIONS AND CASEWORK SHOP DRAWINGS PRIOR TO INSTALLATION. IN THE EVENT OF A CONFLICT, DEVIATION OR DISCREPENCY, CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO ARCHITECT AND ENGINEER OF RECORD FOR CLARIFICATION PRIOR TO COMMENCING WORK. MINOR ADJUSTMENTS IN ANY DIRECTION FOR DEVICE LOCATION, I.E. 5'-0" OR LESS, SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER.
31. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL DEVICE BACK BOX AND EQUIPMENT LOCATIONS WITH OTHER TRADES PRIOR TO INSTALLATION. IN THE EVENT OF A CONFLICT, DEVIATION OR DISCREPENCY, CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO ENGINEER OF RECORD FOR CLARIFICATION PRIOR TO COMMENCING WORK. MINOR ADJUSTMENTS IN ANY DIRECTION FOR DEVICE LOCATION, I.E. 5'-0" OR LESS, SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER.
32. CONTRACTOR SHALL PROVIDE MINIMUM 4" HOUSEKEEPING PAD WITH CHAMFERED EDGES FOR ALL FLOOR MOUNTED EQUIPMENT, UON. REFER TO DETAILS, IF APPLICABLE.
33. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS FOR THE EXACT LOCATION OF ALL CEILING MOUNTED LUMINAIRES AND DEVICES.
34. EXACT HEIGHTS AND LOCATIONS OF LUMINAIRES WITHIN UNFINISHED SPACES SHALL BE COORDINATED AND DETERMINED IN THE FIELD. LUMINAIRES SHALL NOT BE SUPPORTED FROM DUCTWORK OR PIPING. CHAIN OR TRAPEZE-TYPE HANGERS SHALL BE PROVIDED WHERE LUMINAIRES CAN NOT BE MOUNTED DIRECTLY TO STRUCTURE OR CEILING. LUMINAIRES SHALL BE LOCATED TO MAXIMIZE ACCESSIBILITY AND ILLUMINATION.
35. ORIENT VERTICALLY MOUNTED RECEPTACLES WITH GROUND PIN UP. ORIENT HORIZONTALLY MOUNTED RECEPTACLES WITH GROUND PIN TO LEFT (NEUTRAL UP).
36. CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL FLOOR-BOXES WITH ARCHITECT PRIOR TO INSTALL.
37. ALL AV, DATA, SECURITY AND TELECOMMUNICATIONS CABLING SHALL BE INSTALLED CONCEALED FROM VIEW ABOVE CEILINGS, IN WALLS OR BELOW FLOORS EXCEPT WITHIN UNFINISHED SPACES AND ON CEILINGS OF AREAS WITH EXPOSED STRUCTURE. ALL CABLING SHALL BE ROUTED PARALLEL OR PERPENDICULAR TO BUILDING STRUCTURE.
38. SMOKE DETECTORS SHALL BE LOCATED MINIMUM 3'-0" FROM HVAC SUPPLY AND RETURN OPENINGS.
39. WHERE MULTIPLE VISUAL NOTIFICATION DEVICES CAN BE SEEN FROM A SINGLE LOCATION DURING NORMAL FACILITY OPERATION, ALL STROBES SHALL BE SYNCHRONIZED TO ALLOW FOR SIMULTANEOUS OPERATION.

STANDARD WALL MOUNTING HEIGHTS

DEVICE OR EQUIPMENT TYPE	MOUNTING HEIGHT (AFF/AFG)	MEASURED TO	NOTES
AV, COAX, DATA & TELECOM	18"/ SEE NOTES	CENTER	1, 5
DOOR ACCESS & CONTROLS	48"	TOP	1
EMERGENCY LIGHTS	96"	TOP	1, 2
ENCLOSED CIRCUIT BREAKERS	78"	TOP	1, 3
EXIT SIGNS	SEE NOTES	TOP	1, 4
FA NOTIFICATION DEVICES	84"	BOTTOM	1
FA PULL STATIONS	48"	TOP	1
LIGHT SWITCHES	48"	TOP	1
MOTOR STARTERS	78"	TOP	1, 3
PANELBOARDS	78"	TOP	1, 3
PLUGMOLD AND WIREMOLD	SEE NOTES	TOP	1, 5
RECEPTACLES - NORMAL AREAS	18"	CENTER	1
RECEPTACLES - ABOVE COUNTER	SEE NOTES	TOP	1, 5
RECEPTACLES - EXTERIOR AREAS	18"	CENTER	1
RECEPTACLES - UNDER COUNTER	18"	CENTER	1
SAFETY SWITCHES	78"	TOP	1, 3
SENSORS - WALL MOUNTED	96"	TOP	1, 2
VARIABLE FREQUENCY DRIVES	78"	TOP	1, 3
WALL MOUNTED CAMERAS	120"	CENTER	1

NOTES:

1. UNLESS NOTED OTHERWISE, WALL MOUNTING HEIGHTS INDICATED ON DRAWINGS OR DETAILS SHALL SUPERSEDE STANDARD WALL MOUNTING HEIGHTS LISTED HERE. COORDINATE ALL DEVICE LOCATIONS WITH OTHER TRADES PRIOR TO INSTALLATION. COORDINATE EXACT HEIGHT AND LOCATION WITH ARCHITECTURAL INTERIOR ELEVATIONS AND CASEWORK SHOP DRAWINGS PRIOR TO INSTALLATION. ADJUST TO MATCH MASONRY COURSES, IF APPLICABLE. MOUNT ALL BOXES TRUE AND PLUMB.
2. CEILING HEIGHT PERMITTING, OTHERWISE MOUNT 12" BELOW CEILING TO TOP OF BOX.
3. MOUNTING HEIGHT AS MEASURED TO TOP OF ENCLOSURE OR CENTER OF OPERATING HANDLE AT HIGHEST POSITION, WHICHEVER IS HIGHER. STACKING OF SAFETY SWITCHES, ENCLOSED CIRCUIT BREAKERS AND MOTOR STARTERS IS PERMITTED.
4. CEILING HEIGHT PERMITTING, MOUNT EXIT SIGN 18" ABOVE TOP OF DOOR FRAME AS MEASURED FROM TOP OF SIGN. FOR ALL OTHER AREAS AND CEILING HEIGHT PERMITTING, MOUNT 96" AFF TO TOP OF BOX. OTHERWISE, MOUNT 12" BELOW CEILING TO TOP OF BOX.
5. MOUNT 6" ABOVE COUNTERTOP OR BACKSPLASH (IF APPLICABLE) TO TOP OF BOX. COORDINATE EXACT HEIGHT AND LOCATION WITH ARCHITECTURAL INTERIOR ELEVATIONS AND CASEWORK SHOP DRAWINGS PRIOR TO INSTALLATION.

ABBREVIATIONS -...

THIS IS A MASTER ABBREVIATIONS LIST. SOME ABBREVIATIONS MAY NOT APPLY TO THIS PROJECT.

A, AMP	AMPERE
AC	ALTERNATING CURRENT
AC	ABOVE CEILING
ADA	AMERICANS WITH DISABILITIES ACT
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AHJ	AUTHORITY HAVING JURISDICTION
AIC	AMPERES INTERRUPTING CAPACITY
AL, ALUM	ALUMINUM
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ATS	AUTOMATIC TRANSFER SWITCH
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
BAS	BUILDING AUTOMATION SYSTEM
BLDG	BUILDING
BMS	BUILDING MANAGEMENT SYSTEM
BRKR, BKR	BREAKER
C	CONDUIT
C/B, CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
cd	CANDELA
CKT	CIRCUIT
CLG	CEILING
COMM	COMMUNICATION
CRI	COLOR RENDERING INDEX
CT	CURRENT TRANSFORMER
CU	COPPER
DIA	DIAMETER
DN	DOWN
DWG	DRAWING
E, EX	EXISTING
EA	EACH
EC	ELECTRICAL CONTRACTOR
ECB	ENCLOSED CIRCUIT BREAKER
EGB	EARTH, ELECTRICAL OR EQUIPMENT GROUND BAR
EGC	EQUIPMENT GROUNDING CONDUCTOR
ELEC	ELECTRIC, ELECTRICAL
ELEV	ELEVATOR
EM, EMERG	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
EOL	END OF LINE RESISTOR
EPO	EMERGENCY POWER OFF
EQ, EQP	EQUIPMENT
ERMS	ENERGY REDUCTION MAINTENANCE SWITCH
FA	FIRE ALARM
FC	FOOT-CANDLE
FLA	FULL LOAD AMPS
FLR	FLOOR
FO	FIBER OPTIC
FSS	FUSED SAFETY SWITCH
G, GND	GROUND
GALV	GALVANIZED
GEN	GENERATOR
GFCI, GF	GROUND FAULT CIRCUIT INTERRUPTER
GFEP	GROUND FAULT EQUIPMENT PROTECTION
GFP	GROUND FAULT PROTECTION
GRC, GRMC	GALVANIZED RIGID METALLIC CONDUIT

ABBREVIATIONS -...

THIS IS A MASTER ABBREVIATIONS LIST. SOME ABBREVIATIONS MAY NOT APPLY TO THIS PROJECT.

HOA	HAND OFF AUTO
HORIZ	HORIZONTAL
HP	HORSE POWER
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
IDF	INTERMEDIARY DISTRIBUTION FRAME
K	KELVIN
KCMIL	THOUSAND CIRCULAR MILLS
KVA	KILOVOLT-AMPERES
KW	KILOWATT
LED	LIGHT EMITTING DIODE
LFMC	LIQUID TIGHT FLEXIBLE METALLIC CONDUIT
LP	LIGHTING PANEL
LRA	LOCKED ROTOR AMPS
LS	LIFE SAFETY
LS	LIMIT SWITCH
LSIG	LONG, SHORT, INSTANTANEOUS & GROUND
LTG	LIGHTING
LTS	LIGHTS
LV	LOW VOLTAGE
MC	METAL CLAD CABLE
MCA	MAXIMUM CIRCUIT AMPACITY
MCB	MAIN CIRCUIT BREAKER
MDF	MAIN DISTRIBUTION FRAME
MECH	MECHANICAL
MLO	MAIN LUGS ONLY
MOCP	MAXIMUM OVERCURRENT PROTECTION
MTS	MANUAL TRANSFER SWITCH
N/A	NOT APPLICABLE
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NF	NOT FUSED / NON-FUSED
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NFSS	NON-FUSED SAFETY SWITCH
NIC	NOT IN CONTRACT
NL	NIGHT LIGHTING
NTS	NOT TO SCALE
P	POLE
PH, Ø	PHASE
PNL	PANEL
POE	POWER OVER ETHERNET
PWR	POWER
QTY	QUANTITY
R	REMOVE
RCP	REFLECTED CEILING PLAN
REC, RECP	RECEPTACLE
REQ, REQ'D	REQUIRED
SPD	SURGE PROTECTIVE DEVICE
STD	STANDARD
STR	MOTOR STARTER
SW	SWITCH
TEL, TELE	TELEPHONE

SECURITY SYMBOLS

SYMBOL (CEILING MOUNTED)	SYMBOL (WALL MOUNTED)	DESCRIPTION	
		LOW VOLTAGE EQUIPMENT AND CABLING PROVIDED BY DIVISION 27 CONTRACTOR.. DIVISION 26 SHALL PROVIDE CONDUIT TO ACCESSIBLE CEILINGS OR CABLE TRAY, AND BACK BOXES FOR WALL MOUNTED DEVICES OR DEVICES IN CEILINGS ABOVE 10'-0" OR GYP BOARD CEILINGS.	
CM	CM	SECURITY CAMERA	SUBSCRIPTS
	PA	PANIC ALARM BUTTON	REFER TO SPECIFICATIONS FOR SUBSCIPT INFORMATION
	DA	DURESS ALARM	
DOOR ACCESS CONTROLS			
	XX	DOOR ACCESS CONTROL DEVICES	TYPES
	XX	VIDEO ENTRY SYSTEM SUBSCRIPTS "AI" = AI PHONE "A2" = MASTER CONTROL CONSOLE	"EL" = ELECTRIC LOCK "ES" = ELECTRIC STRIKE "DR" = DOOR RELEASE "CR" = CARD READER "DC" =DOOR CONTACT
		DOOR ACCESS CONTROL PANEL	
INTRUSION DETECTION			
		MOTION DETECTOR	SUBSCRIPTS
		INTRUSION DETECTION CONTROL PANEL	C = 360 DEG. COVERAGE "W" = WIDE ANGLE "L" = LONG RANGE
	KP	ALARM KEYPAD	

POWER SYMBOLS

SYMBOL (CEILING MTD)	(NORMAL WALL MTD)	(STUB UP)	(FLOOR MTD)	DESCRIPTION	
				SIMPLEX OUTLETS	SUBSCRIPTS
				DUPLEX OUTLETS	"AC" = ABOVE COUNTER "G" = GROUND FAULT BREAKER
				QUADRUPLEX OUTLETS	"GF" = GROUND FAULT "WP" = WEATHERPROOF BOX
				SPECIALTY OUTLETS (NEMA TYPE AS SHOWN)	"WR" = WEATHER RESISTANT
J		J		JUNCTION BOX	
	H			HDMI CONNECTION PLATE, REFER TO DETAILS FOR ADDITIONAL INFORMATION	
TV#			FB#	COMBINATION AV, DATA & POWER BOX (SEE DETAILS FOR SIZE AND BOX REQUIREMENTS, SEE ARCH ELEVATIONS FOR MOUNTING HEIGHTS. ETC.)	
				PUSH BUTTON	SUBSCRIPTS
				EQUIPMENT CONNECTION	"EPO" = EMERGENCY POWER OFF
				POWER/TELECOM POLE, REFER TO SCHEDULE ON E-506 FOR ADDITIONAL INFORMATION ON POLE TYPE	
				MOTOR	
				MANUAL MOTOR STARTER, FRACTIONAL HORSEPOWER (SEE STARTER SCHEDULE FOR SIZE, ETC.)	
				NON-FUSIBLE SAFETY SWITCH (SEE DISCONNECT SCHEDULE FOR SIZE, ETC.)	
				FUSIBLE SAFETY SWITCH (SEE DISCONNECT SCHEDULE FOR SIZE, ETC.)	
				ENCLOSED CIRCUIT BREAKER, ECB (SEE RISER DIAGRAM FOR SIZE, ETC.)	
				COMBINATION MOTOR STARTER/SAFETY SWITCH (FUSNISHED BY DIV 23, INSTALLED BY DIV 26)	
				VARIABLE FREQUENCY DRIVE (VFD) (FURNISHED BY DIV 23, INSTALLED BY DIV 26)	
				DISCONNECT SWITCH (FURNISHED BY DIV 23, INSTALLED BY DIV 26)	
				SURGE SUPPRESSOR	
				GROUND BAR	
				POWER/TELECOMMUNICATIONS HANDHOLE	
				POWER/TELECOMMUNICATIONS MANHOLE	
POWER DISTRIBUTION					
				WALL MOUNTED PANEL (SHADING INDICATES 120/208)	
				RECESSED PANEL (SHADING INDICATES 120/208)	
				ELECTRICAL EQUIPMENT/GEAR SIZE, TYPE, AND MOUNTING AS SHOWN AND/OR NOTED.	
				UTILITY METER	

FIRE ALARM SYMBOLS

SYMBOL (CEILING MOUNTED)	(WALL MOUNTED)	DESCRIPTION	
BT	BR	SMOKE DETECTOR PHOTOELECTRIC, UNO.	SUBSCRIPTS
		GAS DETECTOR, CARBON MONOXIDE, UNO.	"ER" = ELEVATOR "F" = FIXED TEMPERATURE "IP" = COMBINATION I/P "RF" = COMBINATION R/F "SB" = SOUNDER BASE "WP" = WEATHER PROOF
MC	MC	MULTI CRITERIA DETECTOR	
H	H	HEAT DETECTOR RATE OF RISE, UNO.	
		STROBE	SUBSCRIPTS
		SPEAKER	"#cd" = CANDELA "#dB" = DECIBEL RATING "#W" = SPEAKER WATTAGE "WG" = WIRE GUARD "WP" = WEATHER PROOF
		COMBINATION SPEAKER/VISIBLE	
		REMOTE ALARM INDICATOR	SUBSCRIPTS
		FIRE ALARM BELL	"RTS"= REMOTE INDICATOR & TEST SWITCH "RI" = REMOTE INDICATOR "TS" = TEST SWITCH
DH	DH	MAGNETIC DOOR HOLD OPEN DEVICE FLOOR MOUNTED UNO	
XXX		ADDRESSABLE MODULE	TYPES
		DUCT MOUNTED DETECTOR PHOTOELECTRIC, UNO	"AIM" = ADDRESSABLE INPUT "AOM"= ADDRESSABLE OUTPUT "PIV" = POST INDICATOR VALVE "PS" = PRESSURE SWITCH "VS" = VALVE/TAMPER SWITCH "WF" = WATER FLOW
	F	PULL STATION FIRE ALARM, UNO	
FACP		FIRE ALARM PANEL SURFACE MOUNTED	DESIGNATIONS
FATC		FIRE ALARM PANEL RECESSED	"ASDP" = ASPIRATING SMOKE DETECTOR PANEL "BATT" = BATTERY CABINET "FAA" = ANNUNCIATOR PANEL "FACU" = CONTROL UNIT "FATC" = TERMINAL CABINET "NAC" = NOTIFICATION APPLIANCE CIRCUIT PANEL

LIGHTING SYMBOLS

SYMBOL (NORMAL)	(EMERGENCY CRITICAL)	DESCRIPTION	
		'T' (BRACKET INDICATES WALL MOUNTED TYP.)	
		SURFACE/RECESSED TROFFER LUMINAIRE	
		DIRECT/INDIRECT PENDANT LUMINAIRE	
		LINEAR WALL MOUNTED LUMINAIRE	
		LINEAR RECESSED LUMINAIRE (RAY INDICATES DIRECTION OF WALL WASH)	
		STRIP LUMINAIRE - SIZE AND TYPE AS SHOWN	
		SURFACE/RECESSED CAN LUMINAIRE (RAY INDICATES DIRECTION OF WALL WASH)	
		WALL SCONCE LUMINAIRE	
		DECORATIVE/SPECIALTY LUMINAIRE (SIZE AND TYPE AS SHOWN)	
		SITE LUMINAIRE- BOLLARD LUMINAIRE (RAY INDICATES DIRECTIONALITY)	
		SITE LUMINAIRE- POLE MOUNTED LUMINAIRE (HEAD QUANTITY AND ORIENTATION AS SHOWN)	
		SITE LUMINAIRE- IN/ON-GRADE ACCENT/SPOT LUMINAIRE	
		CEILING MOUNTED EXIT SIGN FACES AND CHEVRONS AS SHOWN	
		WALL MOUNTED EXIT SIGNS FACES AND CHEVRONS AS SHOWN	
		WALL MOUNTED EMERGENCY LUMINARE	
ET	ER	EMERGENCY LIGHTING CONTROL DEVICE	SUBSCRIPTS "ER" = LOAD CTRL RELAY (UL924) "ET" = TRANSFER SWITCH (UL1008)
		TRACK LUMINAIRE	
$		SWITCH	SUBSCRIPTS
		OCCUPANCY SENSORS	"a" = SWITCHED CIRCUIT "3" = 3-WAY "3D" = 3-WAY DIMMER "D" = DIMMER "K" = KEY-OPERATED "KS" = KEY SNAP "OS" =

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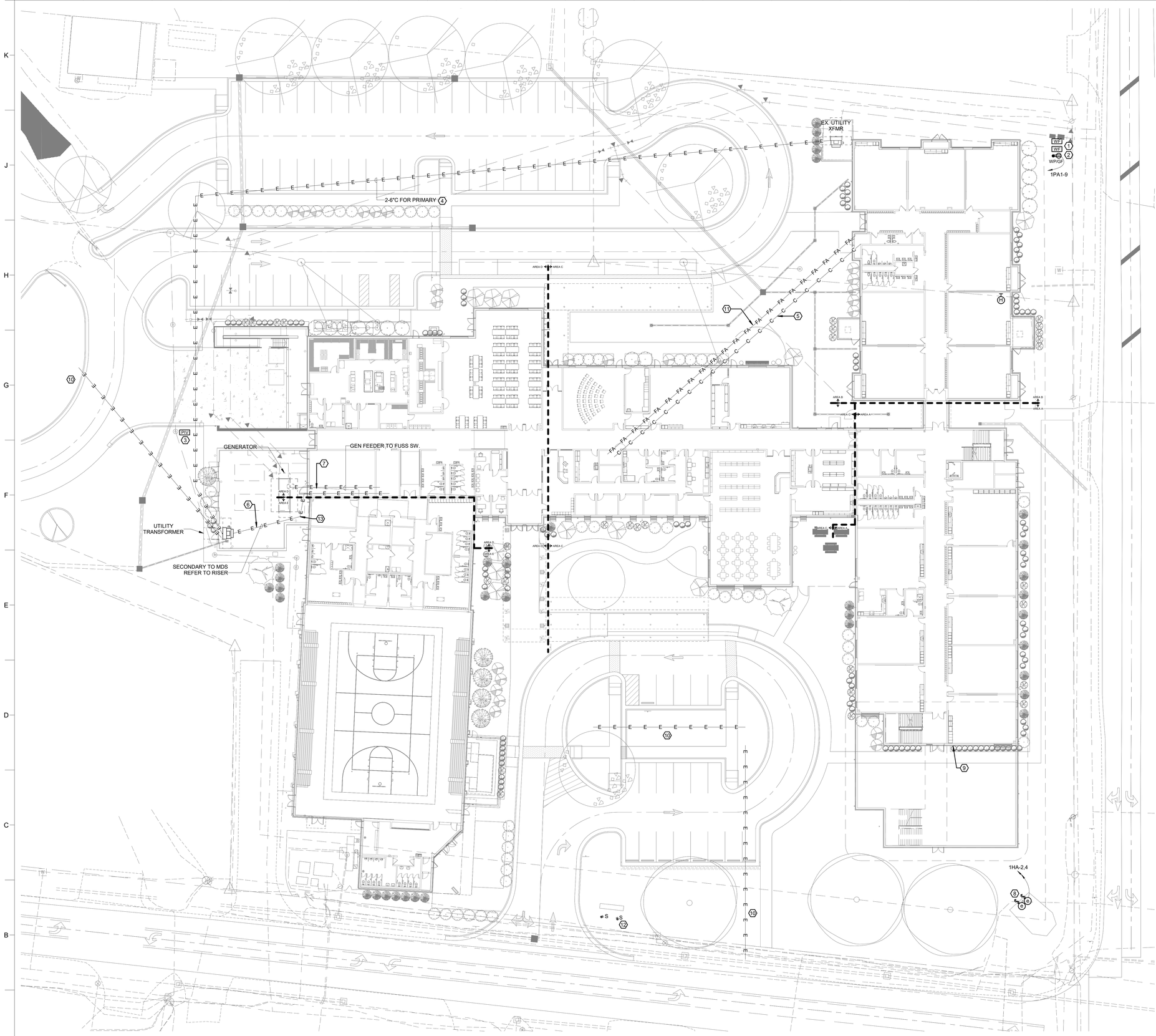


1 ELECTRICAL SITE OVERALL
Scale: 1" = 20'-0"

GENERAL NOTES:

1. REFER TO SHEET E00.01 FOR ADDITIONAL ELECTRICAL GENERAL NOTES.
2. LOW VOLTAGE SYSTEMS (I.E CAMERAS/CCTV, INTERCOM, INTRUSION, AND CARD ACCESS) SHALL BE PROVIDED BY OTHERS. DIVISION 26 CONTRACTOR SHALL PROVIDE ROUGH-IN IN AND INFASTRUCTURE FOR DEVICES AS INDICATED IN CONTRACT DRAWINGS AND SPECIFICATIONS. DEVICE LOCATIONS ARE SHOWN FOR REFERENCE ONLY. FINAL DEVICE LOCATIONS SHALL BE COORDINATED BETWEEN OWNER AND DIVISION 27 CONTRACTOR. REFER TO SHOP DRAWINGS FOR ROUGH-IN LOCATIONS.

KEYNOTES:

1 PROVIDE CONNECTION TO TWO TAMPER SWITCH ON FIRE PROTECTION WATER LINE AND CONNECT TO FA SLC LOOP. ALL WIRING SHALL BE IN 1"C.

2 PROVIDE CONNECTION TO ELECTRICAL HEATER IN BACKFLOW PREVENTER ENCLOSURE. FIELD VERIFY HEATER SIZE AND LOCATION PRIOR TO FINAL CONNECTION. PROVIDE A TOGGLE SWITCH WITHING ENCLOSURE FOR EACH HEATER. IF HARDWIRED. FOR PLUG-IN HEATER PROVIDE DUPLEX RECEPTACLE (AS SHOWN) IN LIEU OF TOGGLE SWITCH.

3 PROVIDE CONNECTION TO TAMPER SWITCH AT POST INDICATOR VALVE. CONNECT TO FA SLC LOOP IN BUILDING. WIRING SHALL BE IN 1"C.

4 SLEEVES FOR UNDERGROUND ELECTRICAL PRIMARY. PROVIDE (2) - 6"C SLEEVES FROM EXISTING TRANSFOMER PAD TO NEW TRANSFORMER PAD. PROVIDE PULL STRINGS; AND MARK ENDS. COORDINATE EXACT LOCATION AND ROUTING WITH DUKE ENERGY, ALL TRADES, AND UTILITES PRIOR TO ROUGH-IN.

5 PROVIDE UNDERGROUND 4"C FROM DEMARC LOCATED IN EXISTING ELECTRICAL ROOM IN AREA "B". PROVIDE WITH PULL STRINGS AND THREE (3) CELL MAXCELL EDGE INNERDUCT.

6 ELECTRICAL UTILITY TRANSFORMER SECONDARY. PROVIDE WIRE AND CONDUIT TO SWITCHBOARD UNDERGROUND AS NOTED ON RISER DIAGRAM.

7 GENERATOR FEEDER AND GEN-PNL FEEDER SHALL BE ROUTED IN SAME DUCT BANK. REFER TO RISER DIAGRAM FOR FEEDER SIZES.

8 PROVIDE TWO BRANCH CIRCUITS FOR NEW MONUMENTAL SIGN. PROVIDE TOGGLE SWITCH ON SIGN EXTERIOR FOR LOCAL POWER DISCONNECT. PROVIDE WEATHER PROOF ENCLOSURE FOR TOGGLE SWITCH. COORDINATE SIGN REQUIREMENTS WITH DIVISION 11 CONTRACTOR. REFER TO PANEL SCHEDULE FOR WIRE AND CONDUIT SIZE.

9 PROVIDE ROUGH-IN FOR TRANSMITTER FOR MONUMENTAL SIGN. PROVIDE 1"C FROM EXTERIOR ROUGH AT 11'-0" AFG TO CABLE TRAY IN COORDIOR. WIRING AND TRANSMITTER PROVIDED BY OTHERS. COORDINATE WITH DIVISION 11. SIGN CONTRACTOR, FOR TRANSMITTER ROUGH-IN REQUIREMENTS. TRANSMITTER SHALL BE LOCATED ON EXTERIOR SOUTH WALL. RELOCATE TO WALL IF ALT ON AREA A EXPANSION IS ACCEPTED.

10 PROVIDE ONE (1) 2" C SLEEVE FOR DUKE ENERGY LIGHTING. PROVIDE WITH PULL STRING AND MARK ENDS OF SLEEVE. COORDINATE WITH DUKE ENERGY ON FINAL SLEEVE LOCATIONS. WIRING AND SITE LIGHTING POLES PROVIDED BY DUKE ENERGY.

11 PROVIDE UNDERGROUND 2"C FROM NEW FACP LOCATED IN NEW MDF ROOM TO NEW NAC PANEL LOCATED IN EXISTING ELECTRICAL ROOM. PROVIDE WITH PULL STRINGS. REFER TO FIRE ALARM RISER DIAGRAM FOR ADDITIONAL INFORMATION.

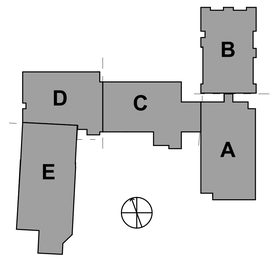
12 PROVIDE SPOT LIGHTS FOR RELOCATED MONUMENTAL SIGN. CONNECT LIGHTS TO CANOPY LIGHTING CIRCUIT. REFER TO DETAILS FOR MOUNTING INFORMATION ON ABOVE GRADE SPOT LIGHTS. USE 2#10, #12G IN 1"C.

13 PROVIDE HAND HOLE FOR SECONDARY FEEDER CONDUITS.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

NORTH CAROLINA PROFESSIONAL SEAL 041410 ENGINEER WILLIAM A KANE
1/10/2025

DKA JOB NUMBER
2401

DEWBERRY NUMBER
50171439

REVISIONS

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DATE ISSUED

BID DOCUMENTS
01/10/2025

SHEET TITLE
ELECTRICAL SITE PLAN

E00.02

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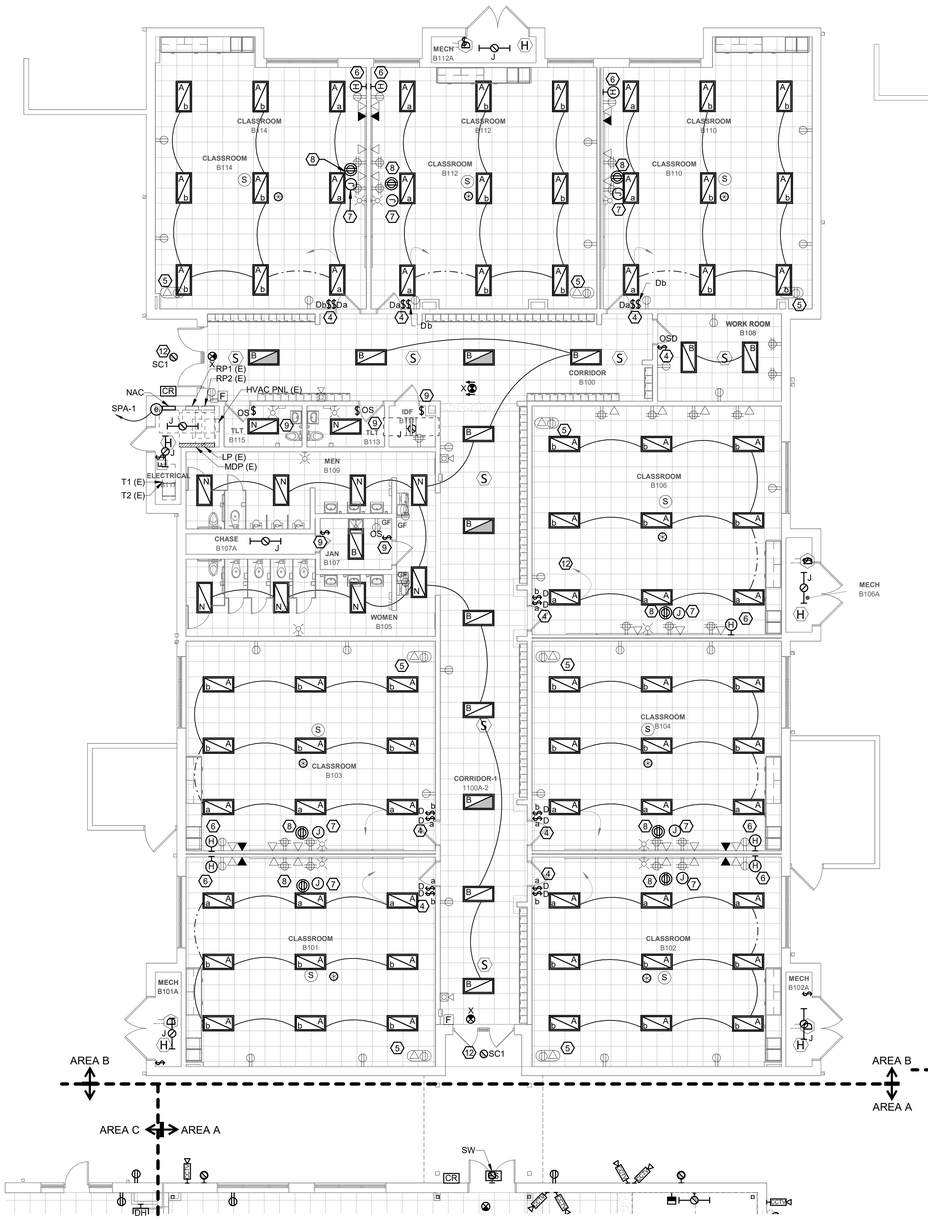
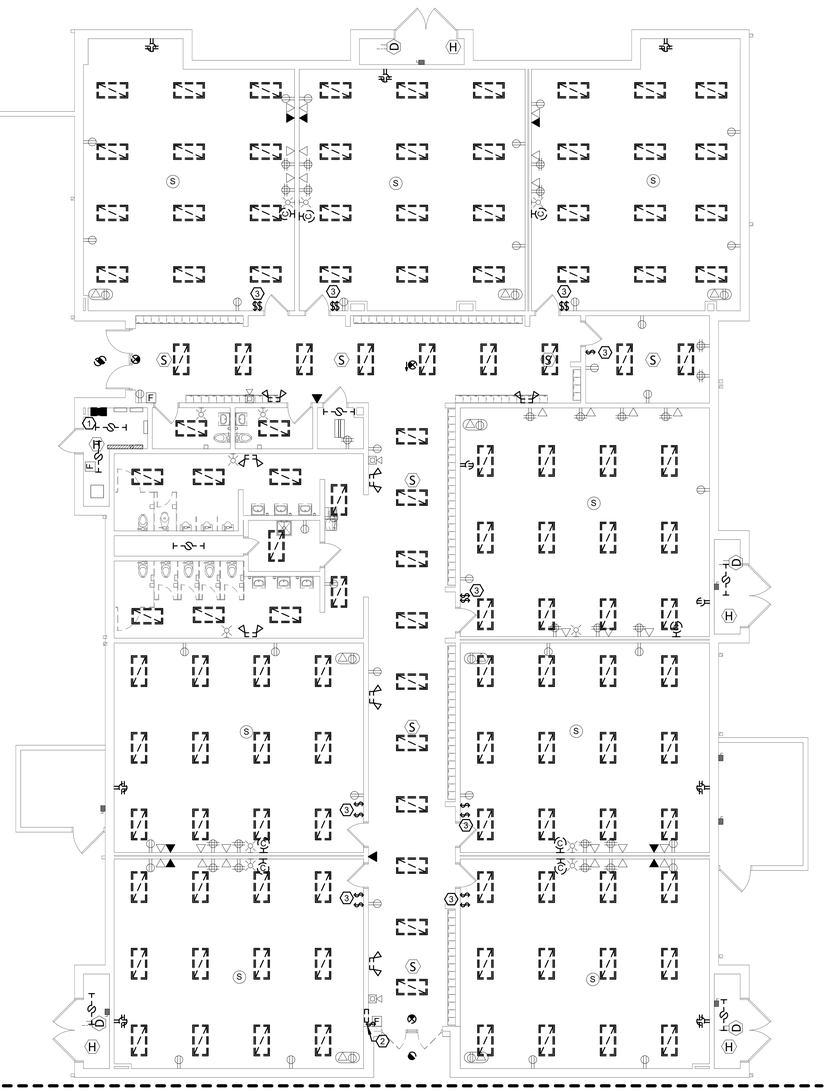


2 FIRST FLOOR ELECTRICAL PLAN AREA B

Scale: 1/8" = 1'-0"

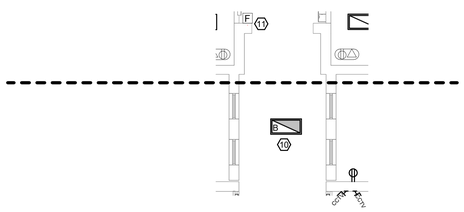
0' 4' 8' 16'



1 FIRST FLOOR ELECTRICAL DEMOLITION PLAN AREA B

Scale: 1/8" = 1'-0"

0' 4' 8' 16'



3 AREA A AND B CORRIDOR - ALTERNATE

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

BASE BID SHALL INCLUDE DEMOLISHING AND PROVIDING ALL LIGHT FIXTURES, LIGHT SWITCHES AND REMOVAL OF ABANDONED SIMPLEX FACP.

a. FIRE ALARM DEVICES AND EQUIPMENT SHALL BE EXISTING TO REMAIN, UON.
b. ALL CAMERAS, WAP, AND EXISTING CEILING MOUNT FIRE ALARM DEVICES SHALL BE TEMPORARILY SUPPORTED WHILE CEILINGS ARE BEING REPLACES.
c. LIGHT SWITCHES AND FIXTURES SHALL BE DEMOLISHED AND REPLACED WITH NEW SWITCHES AND FIXTURES. REMOVE ALL WIRING AND CONDUIT FROM NEAREST UPSTREAM JUNCTION BOX FROM SWITCH. PROVIDE ALL NEW FIXTURES AND SWITCHES INCLUDING WIRING FROM SWITCH TO FIXTURES. RETAIN HOMERUN CIRCUITING AND CONDUIT FOR REUSE IN NEW WOR. RECONNECT NEW CIRCUIT TO EXISTING HOMERUN. REUSE ALL BACK BOXES AND IN WALL CONDUIT FOR NEW SWITCHES. PROVIDE NEW SWITCH FACEPLATES AND LABEL WITH CIRCUIT NUMBER AND PANEL.

ALTERNATE: LOW VOLTAGE WORK

a. DEMOLISH EXISTING CEILING DUPLEX LOCATED AT CEILING MOUNT TELEVISION. RELOCATE DUPLEX TO LOCATION OF PROJECTOR. EXTEND WIRING AND CONDUIT AS REQUIRED TO REACH NEW LOCATION.
b. PROVIDE ROUGH-IN FOR HDMI AS NOTED ON NEW WORK PLANS.
c. DEMOLISH ALL EXISTING SIMPLEX, DUPLEX, AND QUADRAPLEX RECEPTACLES AND FACEPLATES. RETAIN ALL EXISTING WIRING, CONDUIT AND BACKBOXES FOR NEW DEVICES. PROVIDE NEW TAMPER RESISTANT DEVICES IN THE DEMOLISHED LOCATIONS AND PROVIDE NEW COVER PLATE.

KEYNOTES:

1 DEMOLISH EXISTING DECOMMISSIONED FIRE ALARM PANEL AND ANY REMAINING CONDUIT OR WIRING.

2 DEMOLISH ALL CORRIDOR LIGHTS, EXIT SIGNS, BUG EYES, AND KEYED SWITCHES. REMOVE ALL WIRING ASSOCIATED WITH THE CORRDIOR BACK TO SOURCE.

3 DEMOLISH EXISTING WIRING DEVICES AND LIGHT FIXTURES IN ROOM. DEMOLISH ALL WIRING FROM SWITCHES TO FIXTURES. DEMOLISH ALL FIXTURE WHIPS.

4 PROVIDE NEW SWITCHES AND COVER PLATE IN EXISTING BACK BOX. EXTEND BRANCH CIRCUIT FROM SWITCHES TO NEW FIXTURES. PROVIDE 0-10V DIMMING WIRE AS NOTED IN DETAILS AND LIGHT FIXTURE SCHEDULE.

5 DEMOLISH EXISTING CEILING MOUNTED DATA AND POWER. REMOVE WIRING AND CONDUIT TO NEAREST UPSTREAM JUNCTION BOX. REFER TO NOTE NUMBER EIGHT FOR ADDITIONAL INFORMATION.

6 PROVIDE SURFACE MOUNT BOX FOR NEW HDMI CONNECTION. PROVIDE HDMI PLATE ON JUNCTION BOX. ALL SURFACE MOUNT CONDUIT SHALL BE PAINTED TO MATCH THE ROOM COLOR.

7 PROVIDE NEW JUNCTION BOX IN CEILING WITH A BRUSH PLATE FOR NEW HDMI CORD. PROVIDE 1"C ABOVE CEILING FROM JUNCTION BOX TO HDMI WALL LOCATION. PROVIDE SURFACE MOUNTED RACEWAY FROM CEILING HEIGHT TO HEIGHT OF WALL BOX LOCATION.

8 EXTEND DEMOLISHED CEILING RECEPTACLE BRANCH CIRCUIT TO NEW CEILING RECEPTACLE LOCATION. PROVIDE 3#12 IN 3/4"C TO NEW CEILING LOCATION. RECEPTACLE SHALL BE LOCATED IN TILE NEAREST TO WALL MOUNTED PROJECTOR SCREEN.

9 PROVIDE NEW SWITCHES AND COVER PLATE IN EXISTING BACK BOX. EXTEND BRANCH CIRCUIT FROM SWITCHES TO NEW FIXTURES.

10 PROVIDE TROFFER IN HALLWAY CONNECTING AREA "A" AND AREA "B" CONNECT FIXTURE FOR CIRCUIT FOR CORRIDOR LIGHTS IN AREA "A".

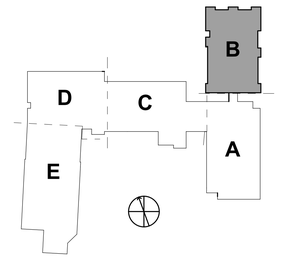
11 DEMOLISH FIRE ALARM PULL STATION. REMOVE WIRING TO NEAREST DEVICE. FIX EXISTING FA SLC LOOP AS REQUIRED TO RETAIN CONTINUIOUS LOOP. PROVIDE BLANK STAINLESS STEEL COVER PLATE FOR REMOVED DEVICE.

12 CONNECT NEW FIXTURES TO EXISTING HOMERUN. TYPICAL ALL NEW FIXTURES.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

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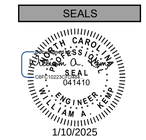
SEALS



DKA JOB NUMBER
2401

DEWBERRY NUMBER
50171439

REVISIONS

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Drawn By: MEH
Plot Date: 1/8/2025 2:14:37 PM

DATE ISSUED

BID DOCUMENTS
01/10/2025

SHEET TITLE

FIRST FLOOR ELEC DEMO & NEW WORK PLAN AREA B

ED1.02

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DEMOLISHED PANEL: GYM — DEMO

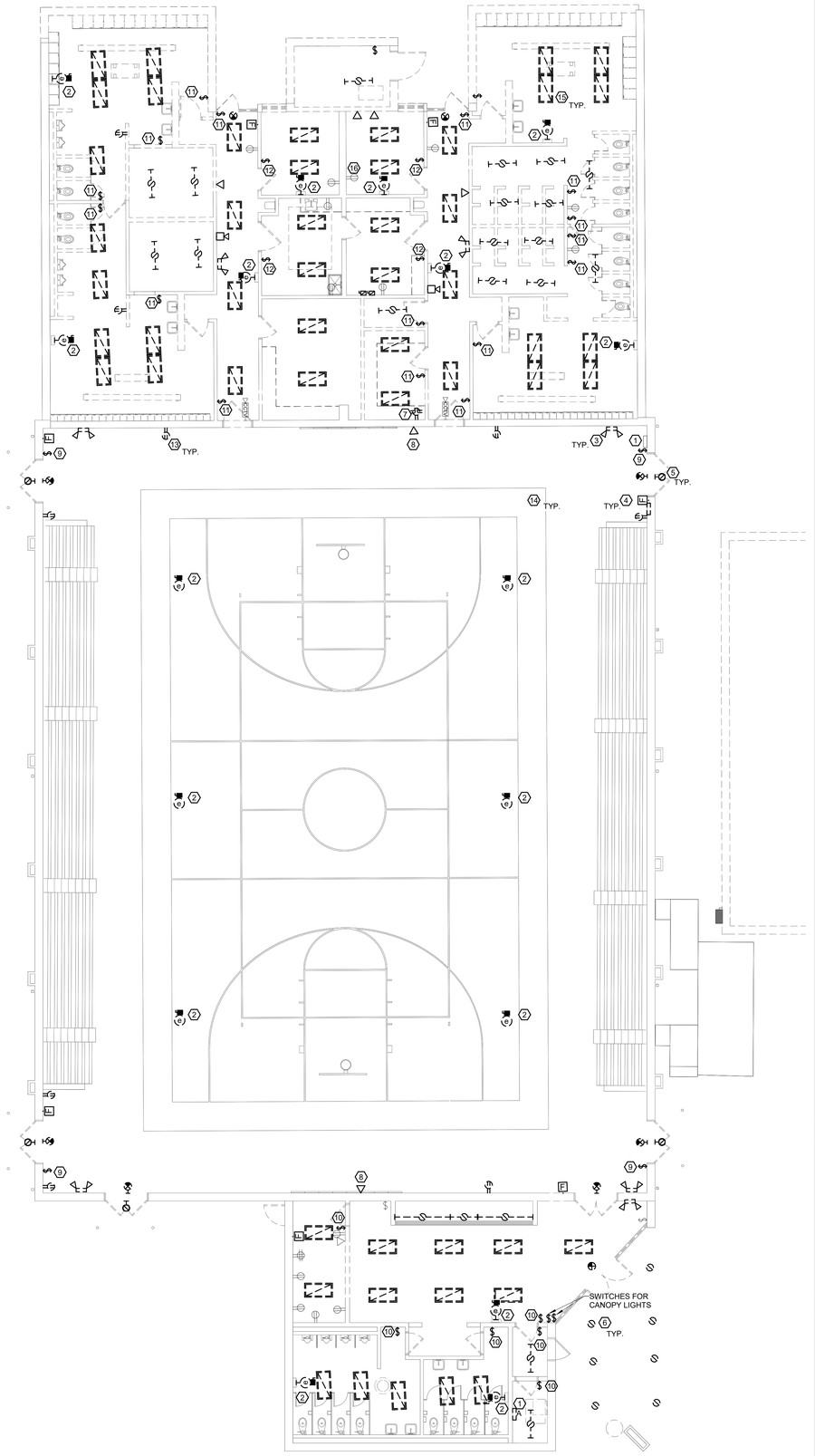
LOCATION: GYM E117 | **VOLTS:** 208Y/120V 3PH | **MAINS TYPE:** MCB
SUPPLY FROM: | **PHASES:** 3 | **BREAKER RATING:** 400 A
MOUNTING: Surface | **WIRES:** 4 | **BUS RATING:** 400 A
ENCLOSURE: Type 1 | **SE RATED:** YES | **NEUTRAL RATING:** 100.00%
CALCULATED Isc: | **MINIMUM KAIC:** 10

CKT	LOAD SERVED	CB	P	*	A	B	C	*	P	CB	LOAD SERVED	CKT
1	LIGHTS GYM	20 A	1	--	0 0			--	3	60 A	LOBBY PANELBOARD (REFER TO RISER DIAGRAM FOR RECONNECTION OF EX. PANEL)	2
3	HEAT	20 A	1	--		0 0						4
5	HEAT	20 A	1	--			0 0					6
7	HEAT	20 A	1	--	0 0			--	1	20 A	OUTLET (OFF)	8
9	HEAT	20 A	1	--		0 0		--	1	20 A	OUTLET (OFF)	10
11	OUTLET	20 A	1	--			0 0	--	1	20 A	LIGHTS NE	12
13	LIGHTS SE	20 A	1	--	0 0			--	1	20 A	LIGHTS	14
15	OUTLET	20 A	1	--		0 0		--	1	20 A	LIGHTS	16
17	OUTLET (OFF)	20 A	1	--			0 0	--	1	20 A	LIGHTS	18
19	PA ROOM (OFF)	20 A	1	--	0 0			--	1	20 A	OUTLET (OFF)	20
21	SCOREBOARD (OFF)	20 A	1	--		0 0						22
23	EXISTING	40 A	2	--			0 0	--	3	20 A	EXHAUST FANS	24
25					0 0							26
27	EXISTING	40 A	2	--		0 0						28
29							0 0	--	2	40 A	SPARE	30
		CONNECTED LOAD:			0 VA	0 VA	0 VA					
		CONNECTED AMPS:			0 A	0 A	0 A					
		DEMAND AMPS:										

BREAKER NOTES:
* INDICATES BREAKER TYPE: 1 =GFCI (6mA), 2= GECB (30mA/100mA), 3=SHUNT TRIP, 4=AFCI, 5=SUBFEED BREAKER, 6=LI, 7=LSI, 8=LSIG, 9= LOCKING DEVICE, 10=NEW BREAKER IN EXISTING, 11=EXISTING BREAKER.

PANEL NOTES:
RELOCATE LIGHTING LOADS FOR GYM TO NEW PANEL (CIRCUITS 1,13,12,14,16,18) RELOCATED EXISTING 40A - 2P LOADS TO NEW PANELBAORD (CIRCUITS 23,25 & 27,29 & 28,30). RELOCATED POWER CIRCUITS 11 AND 15 TO NEW PANEL. REFER TO PANEL KEYED NOTES FOR ADDITIONAL DETAILS FOR WORK REQUIRED ON EXISTING PANELBAORD.

LOAD CLASSIFICATION	CONNECTED LOAD	Demand Factor	ESTIMATED DEMAND	PANEL TOTALS	
				TOTAL LOAD:	0 VA
				DEMAND FACTOR:	100.00%
				DEMAND LOAD:	0 VA
				DEMAND AMPS:	0 A



1 FIRST FLOOR ELECTRICAL DEMOLITION PLAN AREA E
Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

1. DEMOLISH EQUIPMENT AND FIXTURES ONLY WHERE INDICATED ON PLANS. ALL OTHER EQUIPMENT AND FIXTURES SHALL REMAIN.

KEYNOTES:

1 DEMOLISH EXISTING PANELBAORD INTERIORS, RETAIN CAN FOR REUSE IN NEW WORK PHASE. DEMOLISH UNUSED CIRCUIT WIRING TO DEMOLISHED EQUIPMENT. REFER TO PANELBAORD SCHEDULE ON THIS SHEET FOR RELOCATED CIRCUITS. REFER TO NEW WORK FOR ADDITIONAL INFORMATION ON NEW WORK REQUIRED.

2 DEMOLISH EQUIPMENT CONNECTION, DISCONNECT SWITCH, WIRE AND CONDUIT BACK TO SOURCE. RETURN DISCONNECT TO OWNER.

3 DEMOLISH ALL LIGHTING FIXTURES IN LOCKER ROOM SPACE (PLAN NORTH OF GYM) AND LOBBY SPACE. DEMOLISH ALL WALL MOUNTED EMERGENCY LIGHTING AND EXIT SIGNS IN GYMNASIUM. HIGH BAY LIGHTS SHALL BE EXISTING TO REMAIN, REFER TO NEW WORK FOR WORK RELATED TO HIGH-BAYS. DEMOLISH ALL WIRING AND CONDUIT ASSOCIATED WITH DEMOLISHED FIXTURES.

4 DEMOLISH ALL EXISTING FIRE ALARM DEVICES WITHIN SPACE. REMOVE ALL WIRING AND CONDUIT BACK TO SOURCE. ALL LIGHTS, RECEPTACLES, CONDUIT AND WIRING NOT RELATED TO FIRE ALARM SHALL REMAIN.

5 DEMOLISH ALL EXTERIOR LIGHTING AND WIRING BACK TO SOURCE.

6 DEMOLISH CANOPY LIGHT FIXTURES. REMOVE WIRING FROM FIXTURES TO SOURCE. RETAIN CONDUIT FROM LIGHT SWITCH TO FIXTURE FOR REUSE IN NEW WORK.

7 EXISTING SOUND EQUIPMENT LOCATION. COORDINATE WITH OWNER ON RELOCATION OF SOUND EQUIPMENT. RELOCATE SPEAKER AND MICROPHONE CABLING TO NEW LOCATION OF SOUND EQUIPMENT. DEMOLISH RECEPTACLE, BACK BOX, CONDUIT AND WIRING BACK TO SOURCE.

8 DEMOLISH EXISTING MICROPHONE CONNECTION. REMOVE WIRING, CONDUIT, OUTLET, AND BACK BOX.

9 DEMOLISH WALL SWITCH, BACK BOX, CONDUIT, AND WIRING TO NEAREST UPSTREAM JUNCTION BOX.

10 DEMOLISH LIGHT SWITCHES. RETAIN CONDUIT AND HOME RUN WIRING. DEMOLISH ALL WIRING DOWNSTREAM OF SWITCH. RETAIN BACK BOX FOR NEW SWITCH INSTALLATION.

11 DEMOLISH LIGHT SWITCH. DEMOLISH ALL WIRING UPSTRAEM AND DOWNSTREAM OF SWITCH. DEMOLISH ALL CONDUIT ABOVE CEILING. CAP OFF CONDUIT IN WALL AND PROVIDE STAINLESS STEEL BLANK PLATE OVER DEMOLISHED SWITCH.

12 DEMOLISH LIGHT SWITCH. DEMOLISH ALL WIRING UPSTRAEM AND DOWNSTREAM OF SWITCH. DEMOLISH ALL CONDUIT ABOVE CEILING. SWITCH LOCATION SHALL BE REUSED IN NEW WORK PHASE, RETAIN VERTICAL CONDUIT AND BACK BOX FOR RE USE.

13 TYPICAL FOR GYM RECEPTACLES. DEMOLISH ALL WIRING, CONDUIT, BACK BOX, AND WIRING BACK TO SOURCE.

14 ALL EXISTING GYM HIGH BAY LIGHT FIXTURES SHALL BE EXISTING TO REMAIN. FIXTURES NOT SHOWN.

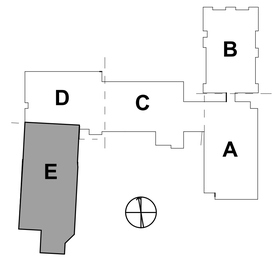
15 DEMOLISH ALL LIGHT FIXTURES, WIRING AND CONDUIT TO LIGHT SWITCH, UON. TYPICAL FOR ALL FIXTURES IN LOCKER ROOM SPACE AND LOBBY SPACE SOUTH OF THE GYM.

16 TYPICAL FOR RECEPTACLES IN LOCKER ROOM SPACE ONLY. RECEPTACLES SHALL BE REPLACED IN NEW WORK. REMOVE ALL WIRING BACK TO SOURCE. REMOVE CONDUIT ABOVE CEILING. RETAIN VERTICAL CONDUIT IN EXISTING WALL FOR REUSE IN NEW WORK.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

1/10/2025

DKA JOB NUMBER
2401

DEWBERRY NUMBER
50171439

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BID DOCUMENTS
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SHEET TITLE
FIRST FLOOR ELEC DEMO PLAN AREA E

ED1.05

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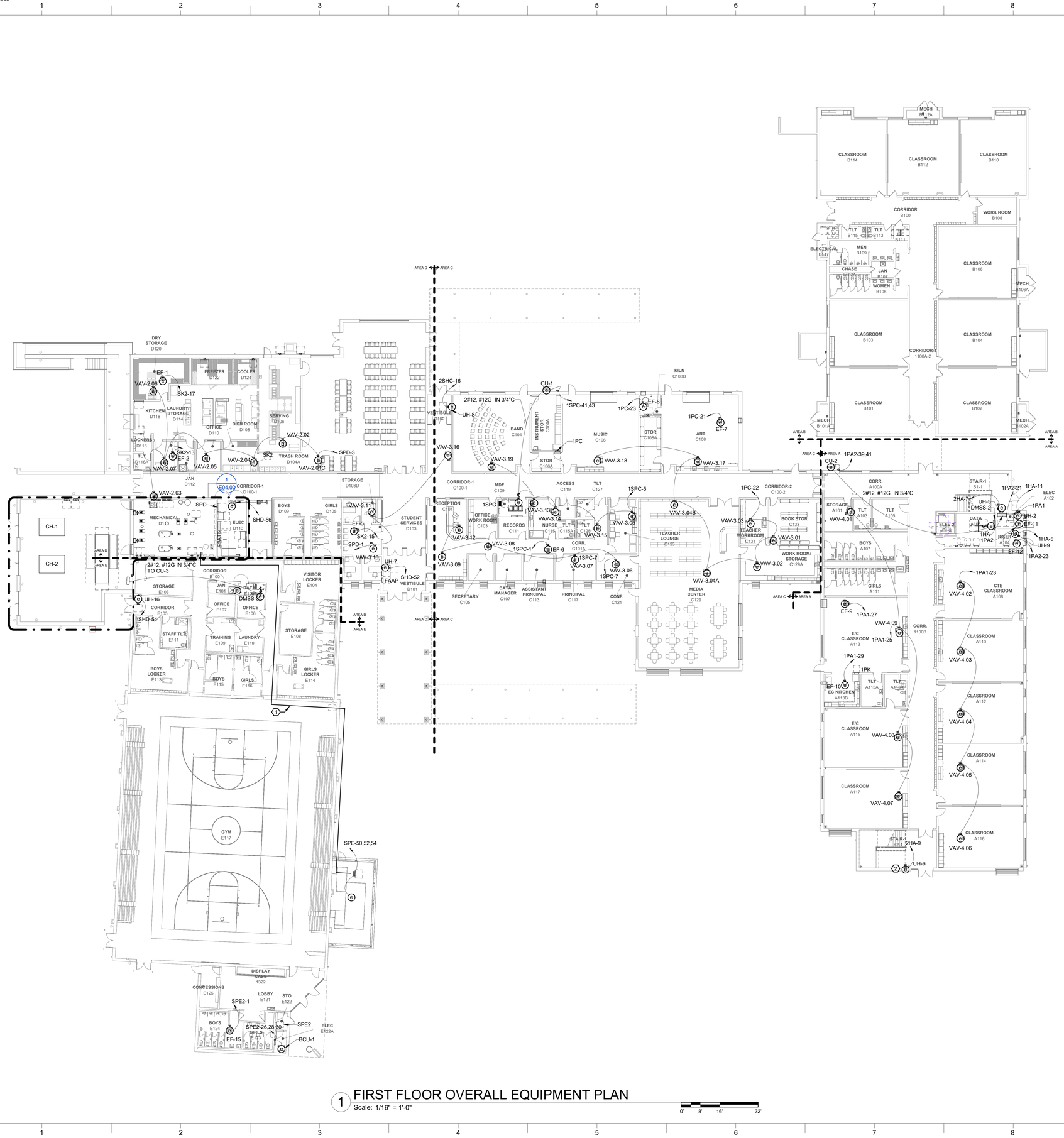


1 FIRST FLOOR OVERALL EQUIPMENT PLAN

Scale: 1/16" = 1'-0"

0' 8' 16' 32'

GENERAL NOTES:

1. REFER TO SHEET E00.01 FOR ADDITIONAL ELECTRICAL GENERAL NOTES.
2. PANEL "SPC" LCOATED IN MECHANCIAL MEZZANINE.

KEYNOTES:

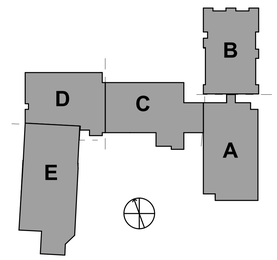
1 PROVIDE A NEW FEEDER FOR EXISTING MECHANICAL EQUIPMENT. ROUTE NEW CIRCUIT AT APPROXIMATELY 20'-0" AFF IN GYMNASIUM. TURN DOWN ON EXTERIOR OF BUILDING AND CONTINUE ROUTING UNDERGROUND TO EXISTING DISCONNECT LOCATION. WIRING AND CONDUIT FROM DISCONNECT TO EQUIPMENT SHALL REMAIN. REFER TO PANEL SCHEDULE FOR NEW FEEDER SIZE.

2 RELOCATE EQUIPMENT CONNECT AND DISCONNECT TO NEW STAIRWELL LOCATION IS ALT FOR ADDITIONAL CLASSROOMS IN AREA "A" IS ACCEPTED.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 041410 WILLIAM A. MCENTIRE JR. 1/10/2025

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SHEET TITLE

FIRST FLOOR EQUIPMENT PLAN

E00.03

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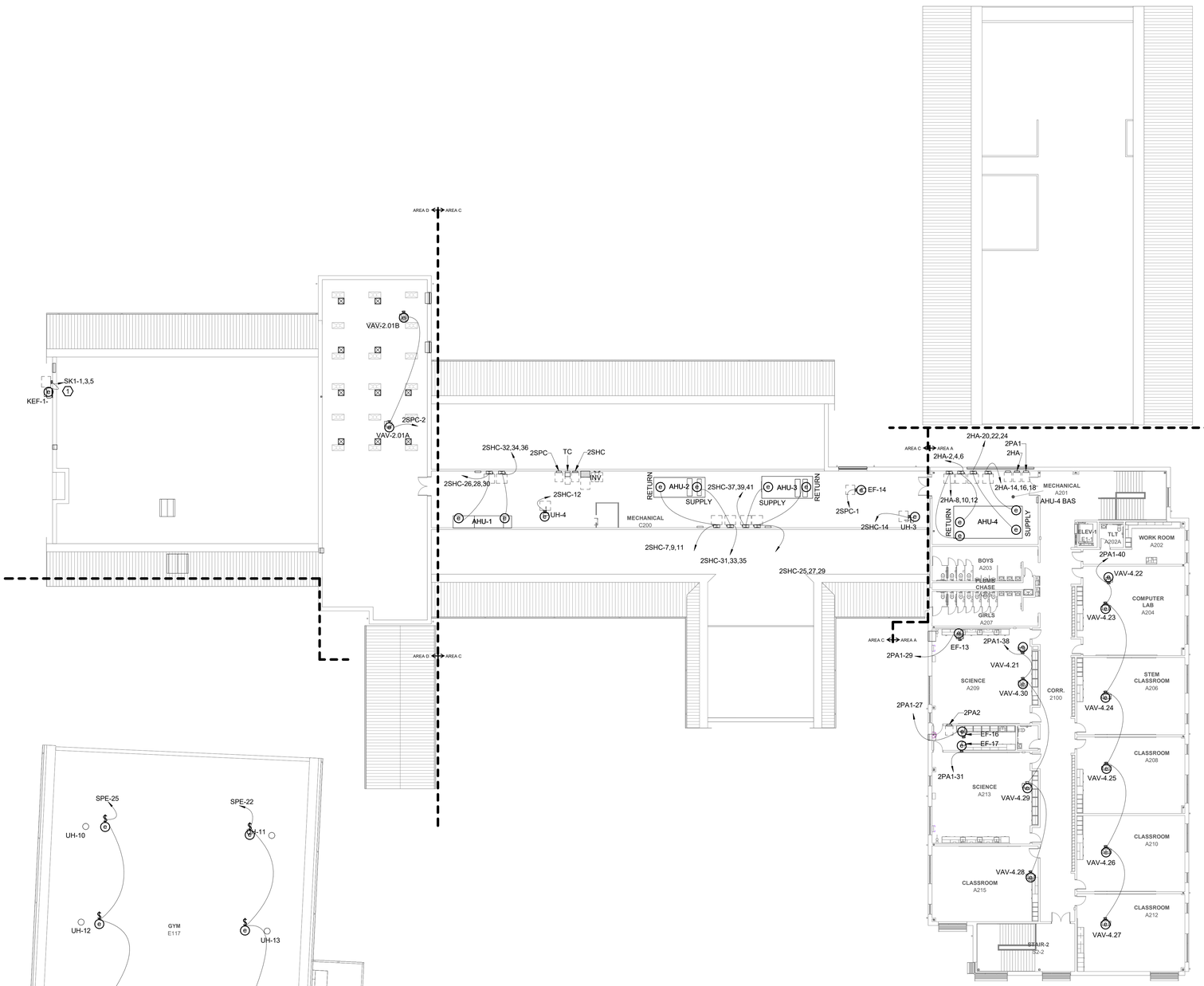


1 SECOND FLOOR EQUIPMENT PLAN
Scale: 1/16" = 1'-0"
0' 8' 16' 32'

GENERAL NOTES:

1. REFER TO SHEET E00.01 FOR ADDITIONAL ELECTRICAL GENERAL NOTES.
2. LOW VOLTAGE SYSTEMS (I.E CAMERAS/CCTV, INTERCOM, INTRUSION, AND CARD ACCESS) SHALL BE PROVIDED BY OTHERS. DIVISION 26 CONTRACTOR SHALL PROVIDE ROUGH-IN IN AND INFASTRUCTURE FOR DEVICES AS INDICATED IN CONTRACT DRAWINGS AND SPECIFICATIONS. DEVICE LOCATIONS ARE SHOWN FOR REFERENCE ONLY. FINAL DEVICE LOCATIONS SHALL BE COORDINATED BETWEEN OWNER AND DIVISION 27 CONTRACTOR. REFER TO SHOP DRAWINGS FOR ROUGH-IN LOCATIONS.

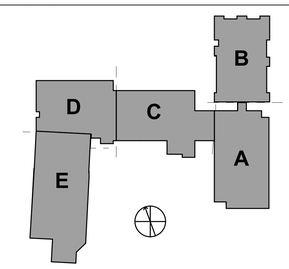
(#) KEYNOTES:

1 ROUTE POWER FOR KEF-1 THROUGH UDS SYSTEM.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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541 North Carolina 581 S, Goldsboro, NC 27530

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SHEET TITLE
SECOND FLOOR EQUIPMENT PLAN

E00.04

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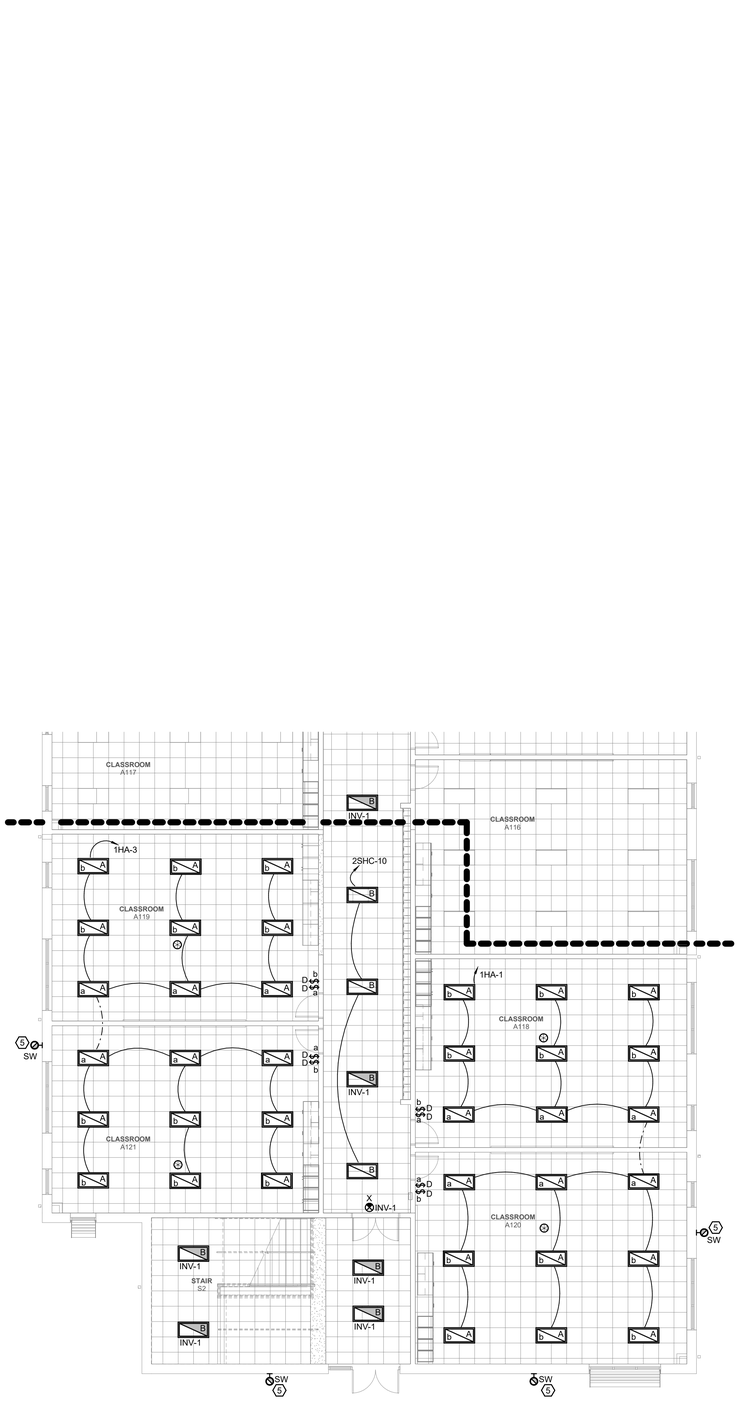
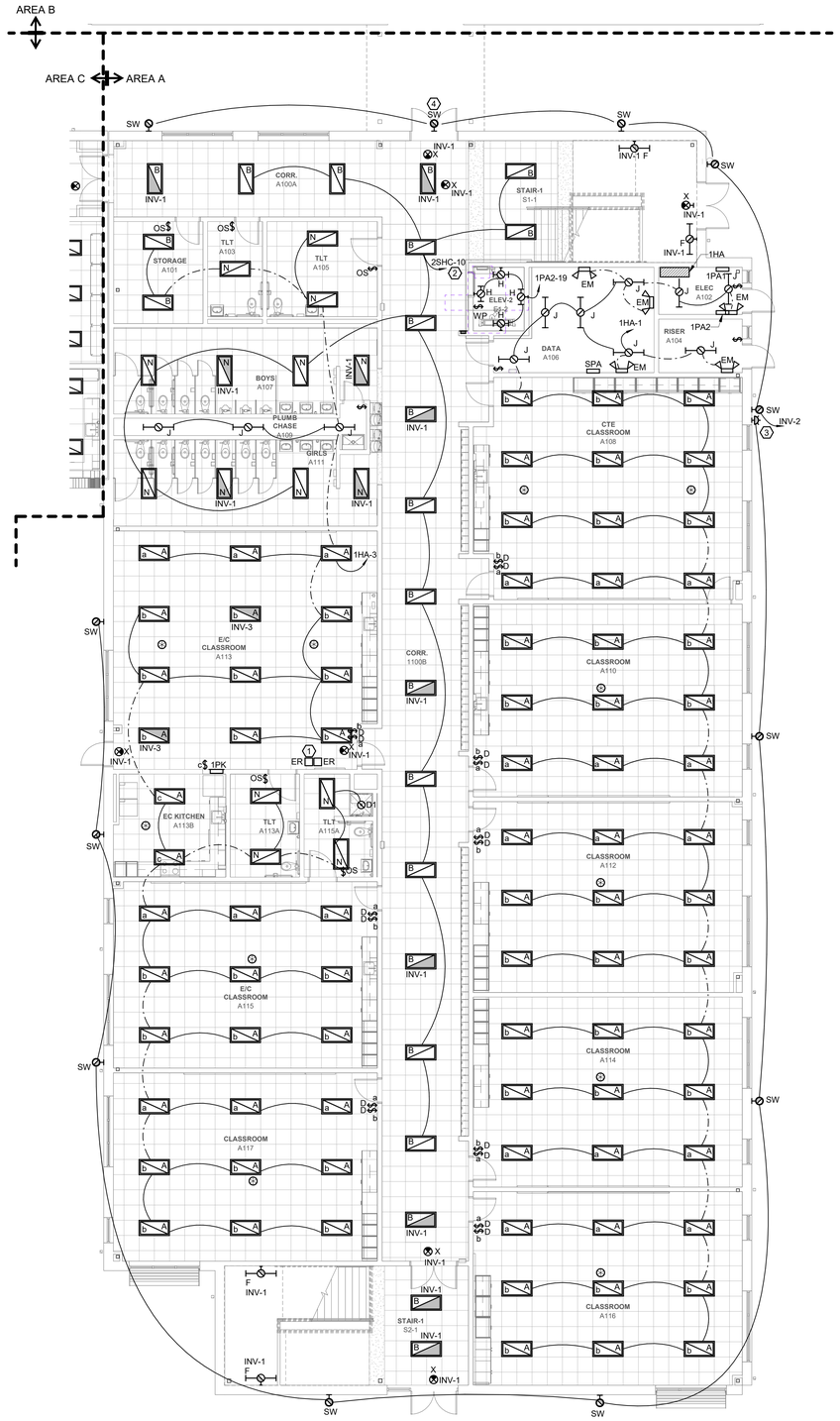


1 FIRST FLOOR LIGHTING PLAN AREA A - ALTERNATE

Scale: 1/8" = 1'-0"

0' 4' 8' 16'



2 FIRST FLOOR LIGHTING PLAN AREA A

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

1. REFER TO SHEET E00.01 FOR ADDITIONAL ELECTRICAL GENERAL NOTES.
2. LOW VOLTAGE SYSTEMS (I.E CAMERAS/CCTV, INTERCOM, INTRUSION, AND CARD ACCESS) SHALL BE PROVIDED BY OTHERS. DIVISION 26 CONTRACTOR SHALL PROVIDE ROUGH-IN IN AND INFASTRUCTURE FOR DEVICES AS INDICATED IN CONTRACT DRAWINGS AND SPECIFICATIONS. DEVICE LOCATIONS ARE SHOWN FOR REFERENCE ONLY. FINAL DEVICE LOCATIONS SHALL BE COORDINATED BETWEEN OWNER AND DIVISION 27 CONTRACTOR. REFER TO SHOP DRAWINGS FOR ROUGH-IN LOCATIONS.

KEYNOTES:

1 PROVIDE EMERGENCY RELAY, UL-924, DEVICE FOR EMERGENCY LIGHTING IN CLASSROOM. REFER TO EMERGENCY RELAY SCHEDULE AND LIGHTING CONTROL DETAILS FOR ADDITIONAL INFORMATION. PROVIDE REMOTE TEST SWITCH IN CEILING TILE NEAR DOOR. TYPICAL FOR BOTH EMERGENCY FIXTURES.

2 CONTROLS FOR CORRIDOR LIGHTING LOCATED IN MECHANICAL MEZZANINE.

3 PROVIDE PHOTOCELL BY YORK OR APPROVED EQUAL ON EXTERIOR OF BUILDING. PHOTOCELL SHALL CONTROL EXTERIOR FIXTURES.

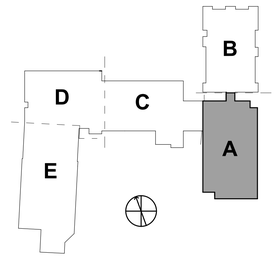
4 PROVIDE FIXTURE IN BASE BID ONLY. REFER TO SHEET ED1.02 FOR ADDITIONAL INFORMATION ON ALTERNATES FOR AREA "B".

5 SHOULD ALTERNATE FOR AREA A BE ACCEPTED CONTRACTOR SHALL PROVIDE ADDITIONAL EXTERIOR LIGHTS AS SHOWN AND CONNECT TO EXTERIOR LIGHTING CIRCUIT SHOWN ON THIS SHEET.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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SEALS

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SHEET TITLE

FIRST FLOOR LIGHTING PLAN AREA A

E01.01

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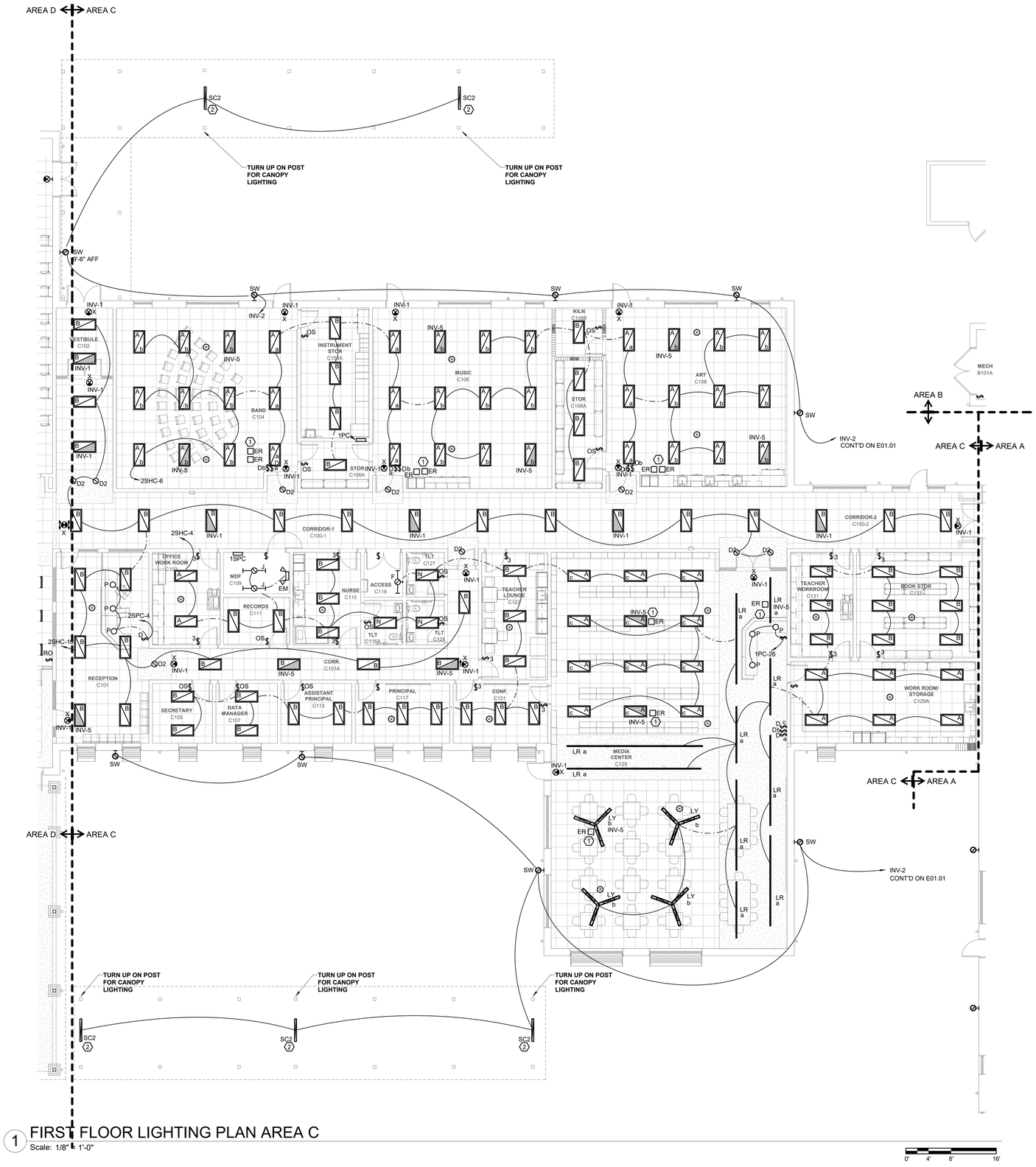


1 FIRST FLOOR LIGHTING PLAN AREA C

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

1. REFER TO SHEET E00.01 FOR ADDITIONAL ELECTRICAL GENERAL NOTES.
2. LOW VOLTAGE SYSTEMS (I.E CAMERAS/CCTV, INTERCOM, INTRUSION, AND CARD ACCESS) SHALL BE PROVIDED BY OTHERS. DIVISION 26 CONTRACTOR SHALL PROVIDE ROUGH-IN AND INFASTRUCTURE FOR DEVICES AS INDICATED IN CONTRACT DRAWINGS AND SPECIFICATIONS. DEVICE LOCATIONS ARE SHOWN FOR REFERENCE ONLY. FINAL DEVICE LOCATIONS SHALL BE COORDINATED BETWEEN OWNER AND DIVISION 27 CONTRACTOR. REFER TO SHOP DRAWINGS FOR ROUGH-IN LOCATIONS.

(#) KEYNOTES:

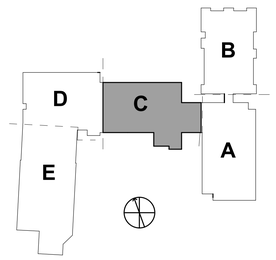
1 PROVIDE EMERGENCY RELAY UL924 DEVICES FOR EMERGENCY LIGHTS IN CLASSROOM/MEDIA CENTER. REFER TO EMERGENCY RELAY SCHEDULE FOR QUANTITIES AND CIRCUIT NUMBERS.

2 PROVIDE BRANCH CIRCUIT TO CANOPY FIXTURES BY ROUTING CONDUIT FROM BELOW GRADE TO ADJACENT POST. CONTINUE ROUTING CONDUIT UP ADJACENT POST AND ACCROSS BEAM TO FIXTURE. NO CONDUIT SHALL BE RUN BETWEEN FIXTURES ABOVE GRADE. LOOP IN AND OUT BELOW GRADE TO NEXT FIXTURE.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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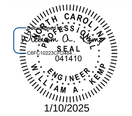

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SHEET TITLE

FIRST FLOOR LIGHTING PLAN AREA C

E01.03

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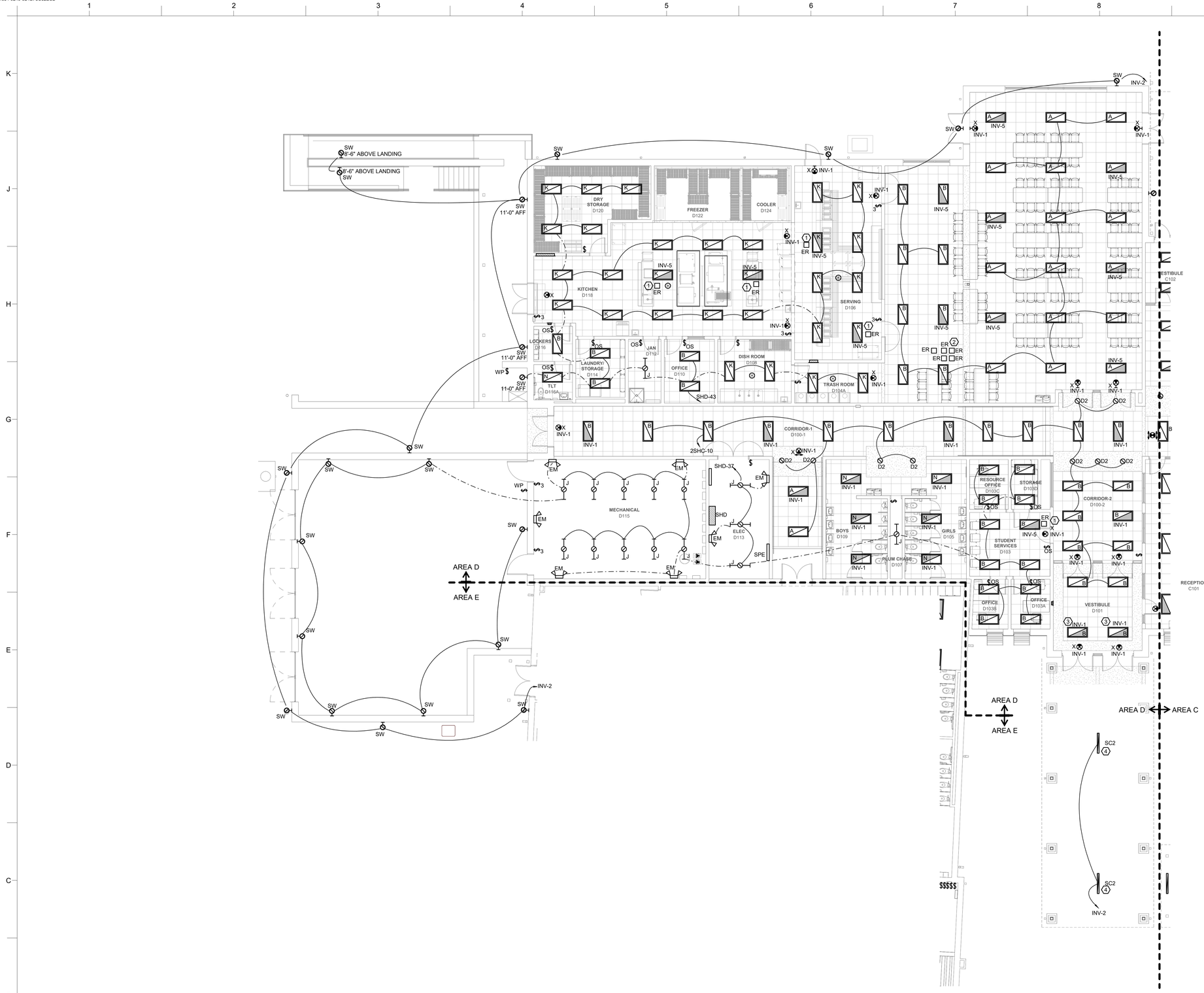


1 FIRST FLOOR LIGHTING PLAN AREA D

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

1. REFER TO SHEET E00.01 FOR ADDITIONAL ELECTRICAL GENERAL NOTES.
2. LOW VOLTAGE SYSTEMS (I.E CAMERAS/CCTV, INTERCOM, INTRUSION, AND CARD ACCESS) SHALL BE PROVIDED BY OTHERS. DIVISION 26 CONTRACTOR SHALL PROVIDE ROUGH-IN AND INFASTRUCTURE FOR DEVICES AS INDICATED IN CONTRACT DRAWINGS AND SPECIFICATIONS. DEVICE LOCATIONS ARE SHOWN FOR REFERENCE ONLY. FINAL DEVICE LOCATIONS SHALL BE COORDINATED BETWEEN OWNER AND DIVISION 27 CONTRACTOR. REFER TO SHOP DRAWINGS FOR ROUGH-IN LOCATIONS.

KEYNOTES:

1 PROVIDE EMERGENCY RELAY UL924 DEVICES FOR EMERGENCY LIGHT IN ROOM. PROVIDE TEST SWITCH IN CEILING TILE BEFORE UL924 DEVICE. REFER TO EMERGENCY RELAY SCHEDULE FOR QUANTITIES AND CIRCUIT NUMBERS.

2 PROVIDE EMERGENCY RELAY UL924 DEVICES FOR EMERGENCY LIGHTS IN DINING SPACE. PROVIDE TEST SWITCHES FOR EACH RELAY AND INSTALL IN LOWER ACCESSIBLE CEILING WITHIN THE SPACE. REFER TO EMERGENCY RELAY SCHEDULE FOR QUANTITIES AND CIRCUIT NUMBERS.

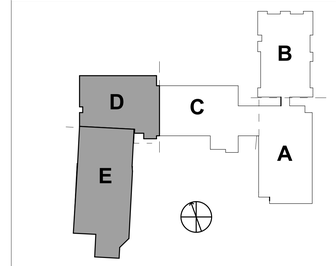
3 NIGHT LIGHT FIXTURE. FIXTURE SHALL BURN 24 HOURS A DAY FOR SAFETY.

4 CIRCUIT CANOPY LIGHTS FROM CONDUIT THAT IS ATTACHED TO THE UNDERSIDE OF CANOPY PEAK. CORE DRILL THROUGH BUILDING JUST BENEATH CANOPY. ROUTE CONDUIT TO BOTH LIGHT FIXTURES NOTED. REMAINING CANOPY FIXTURES SHALL BE FED FROM A DIFFERENT POINT.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 041410 WILLIAM A. KANE
1/10/2025

DKA JOB NUMBER
2401

DEWBERRY NUMBER
50171439

REVISIONS

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PM: BK
Drawn By: MEH
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DATE ISSUED

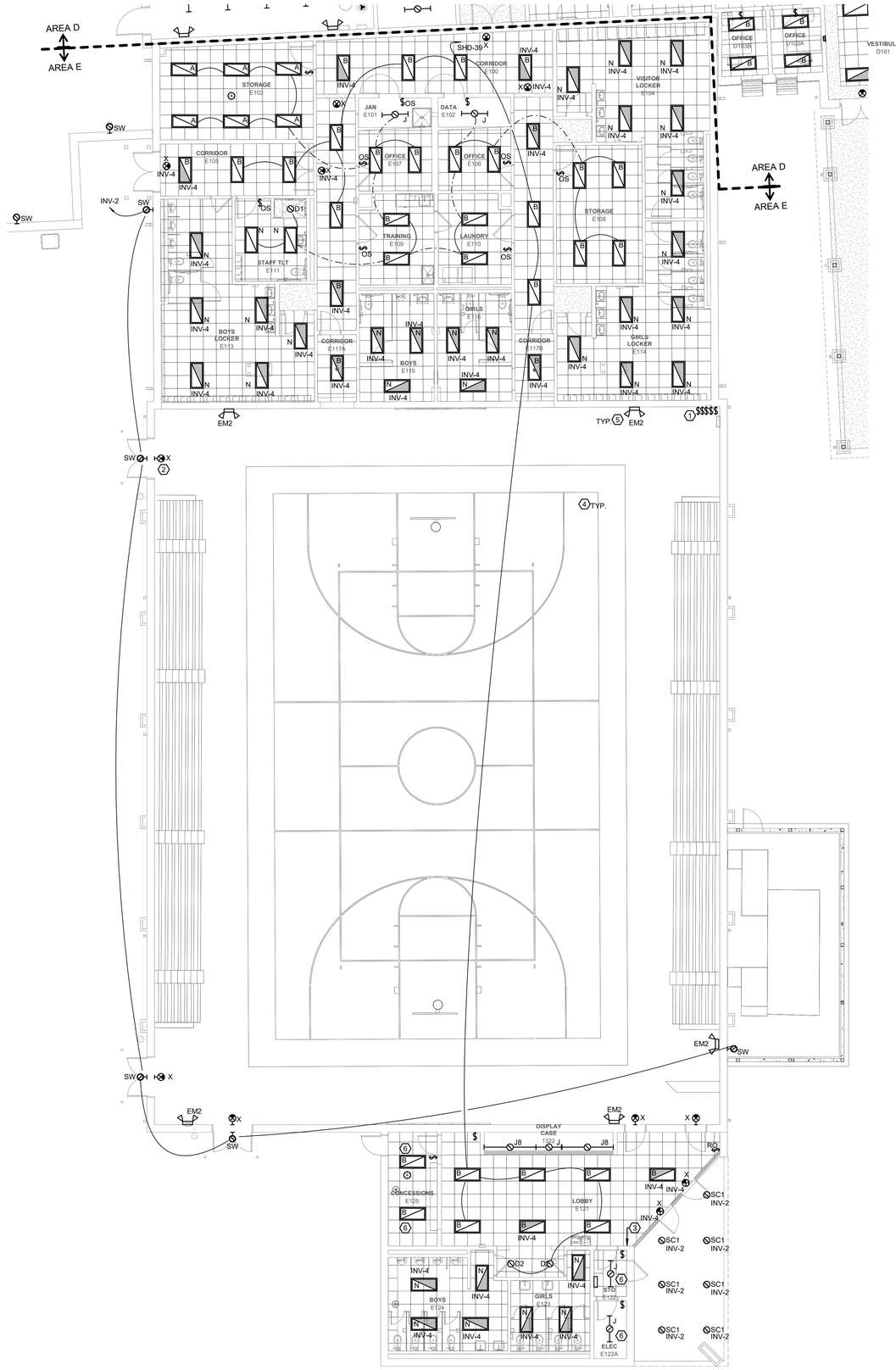
BID DOCUMENTS
01/10/2025

SHEET TITLE

FIRST FLOOR LIGHTING PLAN AREA D

E01.04

Docusign Envelope ID: 265849C1-DFEA-4634-9240-6B1BF3C62ECB



1 FIRST FLOOR LIGHTING PLAN AREA E

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

1. REFER TO SHEET E00.01 FOR ADDITIONAL ELECTRICAL GENERAL NOTES.
2. LOW VOLTAGE SYSTEMS (I.E CAMERAS/CCTV, INTERCOM, INTRUSION, AND CARD ACCESS) SHALL BE PROVIDED BY OTHERS. DIVISION 26 CONTRACTOR SHALL PROVIDE ROUGH-IN IN AND INFASTRUCTURE FOR DEVICES AS INDICATED IN CONTRACT DRAWINGS AND SPECIFICATIONS. DEVICE LOCATIONS ARE SHOWN FOR REFERENCE ONLY. FINAL DEVICE LOCATIONS SHALL BE COORDINATED BETWEEN OWNER AND DIVISION 27 CONTRACTOR. REFER TO SHOP DRAWINGS FOR ROUGH-IN LOCATIONS.

(#) KEYNOTES:

1 PROIVDE SWITCHES FOR HIGH-BAY LIGHTING CONTROLS IN GYMNASIUM. PROVIDE ONE SWITCH PER EXISTING LIGHTING ZONE. SWITCHES SHALL BE MOUNTED IN ONE JUNCTION BOX. PROVIDE NEW CONDUIT AND WIRING TO ALLOW FOR SWITCHING.

2 PROVIDE WIRE GUARD FOR ALL EXIT SIGNS IN GYMNASIUM.

3 PROVIDE BLANK PLATES OVER DEMOLISHED SWITCHES. INTERECEPT CIRCUIT AT NEAREST JUNCTION BOX ABOVE CEILING. INTERCEPT EXISTING CIRCUIT AND TIE INTO NEW EXTERIOR CIRCUIT.

4 EXTEND EXISTING BRANCH CIRCUITS FOR GYMNASIUM LIGHTING FROM DEMOLISHED PANEL TO NEW "SPE" PANELBOARD.

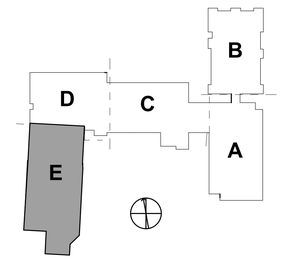
5 PREOIVDE NEW BRANCH CIRCUIT WIRING AND CONDUIT TO NEW BUG EYES AND EXIT SIGNS IN GYMNASIUM FROM EMERGENCY CIRCUIT USED IN LOCKER ROOMS. REFER TO WIRING DETAIL FOR ADDITIONAL INFORMAITON ON WIRING REQUIREMENTS.

6 RECONNECT FIXTURES TO CIRCUIT RETAINED IN DEMOLITION. PROVIDE NEW SWITCH, CONDUCTORS AND CONDUIT DOWNSTREAM OF SWITCH.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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BID DOCUMENTS
01/10/2025

SHEET TITLE

FIRST FLOOR
LIGHTING PLAN
AREA E

E01.05

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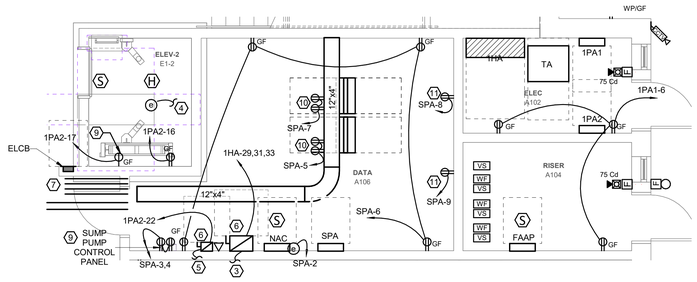
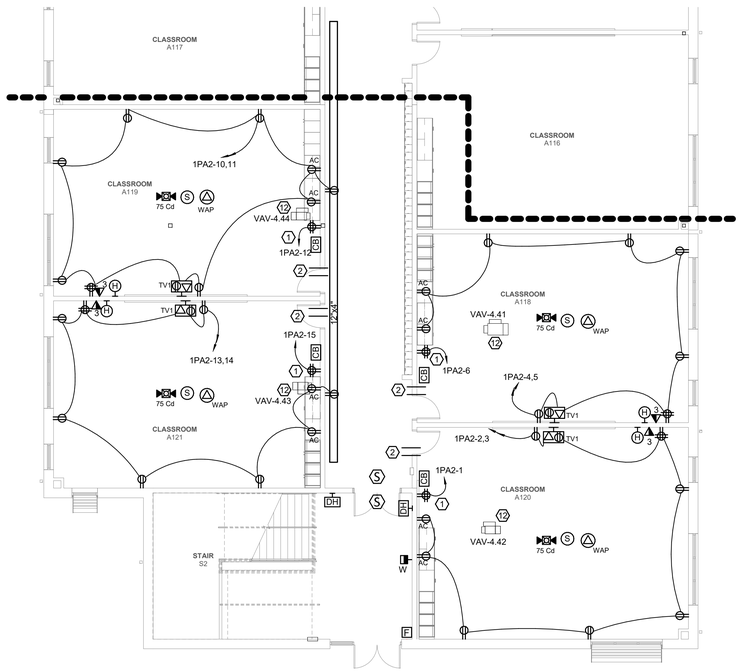


4 ENLARGED ELEV PIT, DATA 1104, RISER 1000D, ELEC ROOM 1000C

Scale: 1/4" = 1'-0"

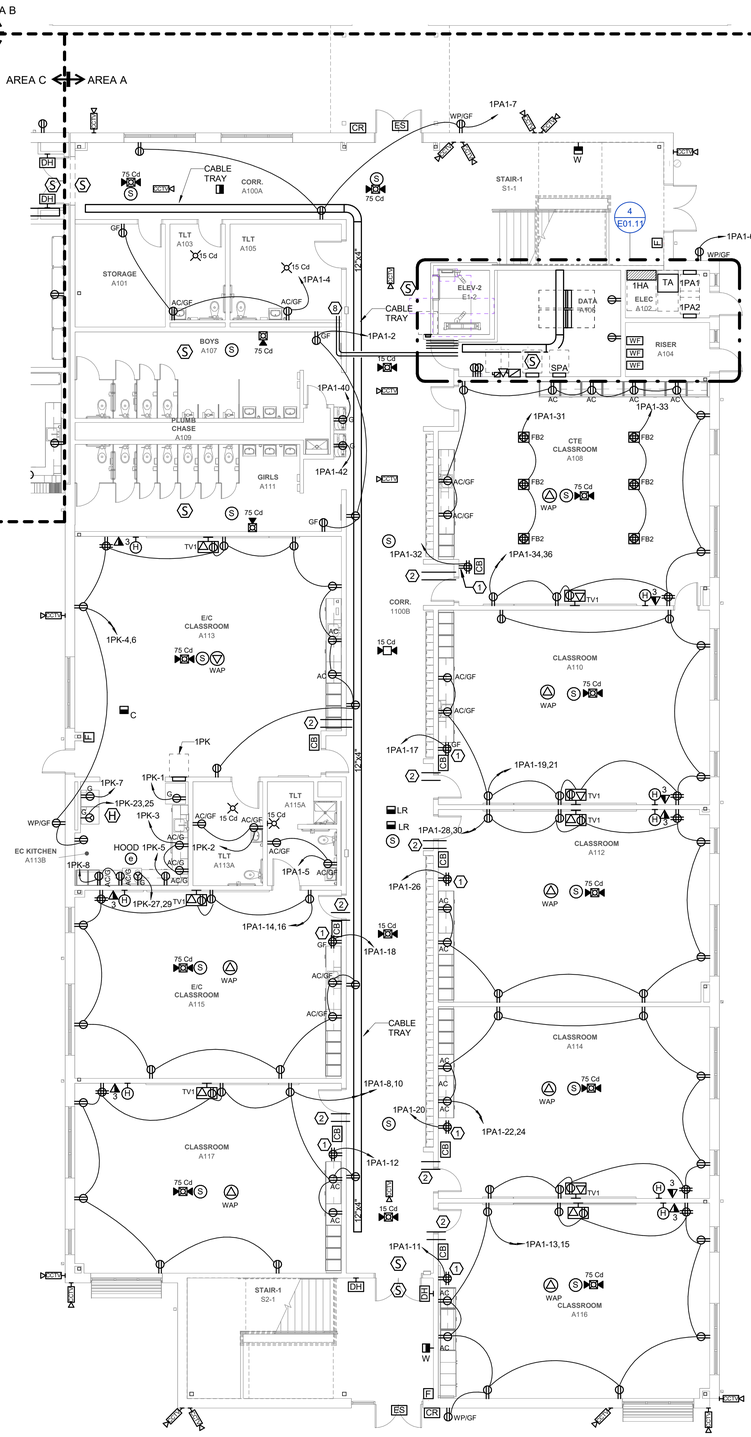
0' 4' 8' 16'



2 FIRST FLOOR POWER & LOW VOLTAGE PLAN AREA A ALTERNATE

Scale: 1/8" = 1'-0"

0' 4' 8' 16'



1 FIRST FLOOR POWER & LOW VOLTAGE PLAN AREA A

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

1. REFER TO SHEET E00.01 FOR ADDITIONAL ELECTRICAL GENERAL NOTES.
2. LOW VOLTAGE SYSTEMS (I.E CAMERAS/CCTV, INTERCOM, INTRUSION, AND CARD ACCESS) SHALL BE PROVIDED BY OTHERS. DIVISION 26 CONTRACTOR SHALL PROVIDE ROUGH-IN IN AND INFASTRUCTURE FOR DEVICES AS INDICATED IN CONTRACT DRAWINGS AND SPECIFICATIONS. DEVICE LOCATIONS ARE SHOWN FOR REFERENCE ONLY. FINAL DEVICE LOCATIONS SHALL BE COORDINATED BETWEEN OWNER AND DIVISION 27 CONTRACTOR. REFER TO SHOP DRAWINGS FOR ROUGH-IN LOCATIONS.

KEYNOTES:

1 PROVIDE DEDICATED QUAD RECEPTACLE FOR CART CHARGERS.

2 PROVIDE TWO (2) - 3" RIGID GALVANIZED STEEL SLEEVES FROM ABOVE CEILING OF ROOM TO ABOVE CEILING OF CORRIDOR.

3 PROVIDE FEEDER FOR HYDRAULIC ELEVATOR. ROUTE FEEDER FROM PANEL THROUGH SHUNT TRIP, FUSED DISCONNECT SWITCH. THEN CONTINUE ROUTING THROUGH JAMB MOUNT CONTROLLER ON SECOND STORY. FINALLY CONNECT TO MOTOR ON FIRST FLOOR IN ELEVATOR PIT. COORDINATE FINAL CIRCUIT ROUTING WITH MANUFACTURER DRAWINGS.

4 PROVIDE FINAL CONNECTION FOR PUMP LOCATED IN PIT FROM CONTROLLER ON SECOND FROM.

5 PROVIDE DEDICATED BRANCH CIRCUIT FOR CAB LIGHTING. ROUTE CIRCUIT THROUGH CONTROLLER IN JAMB ON SECOND FLOOR. CONTINUE TO FINAL CAB LIGHT CONNECTION POINT.

6 PROVIDE FUSED DISCONNECTS FOR ELEVATOR, REFER TO DISCONNECT SCHEDULE FOR ADDITIONAL INFORMATION.

7 PROVIDE FOUR (4) - 4" RIGID GALVANIZED STEEL SLEEVES FROM ABOVE CEILING OF ROOM TO ABOVE CEILING OF CORRIDOR.

8 PROVIDE FOUR (4) - 3" RIGID GALVANIZED STEEL CONDUITS FROM IDF CLOSET TO MECHANICAL ROOM ON SECOND FLOOR FOR DATA CABLING ON SECOND FLOOR. TURN UP CONDUITS FROM ABOVE CEILING ON FIRST FLOOR INTO MECHANICAL ROOM. COORDINATE FINAL LOCATION OF CONDUIT TURN UP.

9 ROUTE POWER FOR SUMP PUMP THROUGH CONTROL PANEL IN DATA CLOSET. REFER TO DETAIL ON SHEET P05.02 FOR ADDITIONAL INFORMATION ON SUMP PUMP WIRING REQUIREMENTS.

10 PROVIDE DUPLEX RECEPTACLES AT RACK AS INDICATED. ATTACH RECEPTACLES TO LADDER RACK ABOVE.

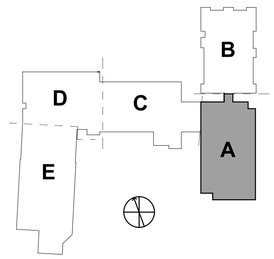
11 PROVIDE DEDICATED DUPLEX RECEPTACLES FOR CARD ACCESS AND INTRUCION DETECTION EXPANSION MODULES. COORDINATE WITH DIVISION 27 CONTRACTOR FOR FINAL RECEPTACLE LOCATIONS.

12 EXTEND VAV CIRCUIT TO VAVS IN ALTERNATE AREA IS ALTERNATE IS ACCEPTED. REFER TO E00.03 FOR CIRCUIT INFORMATION.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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SHEET TITLE

FIRST FLOOR POWER PLAN AREA A

E01.11

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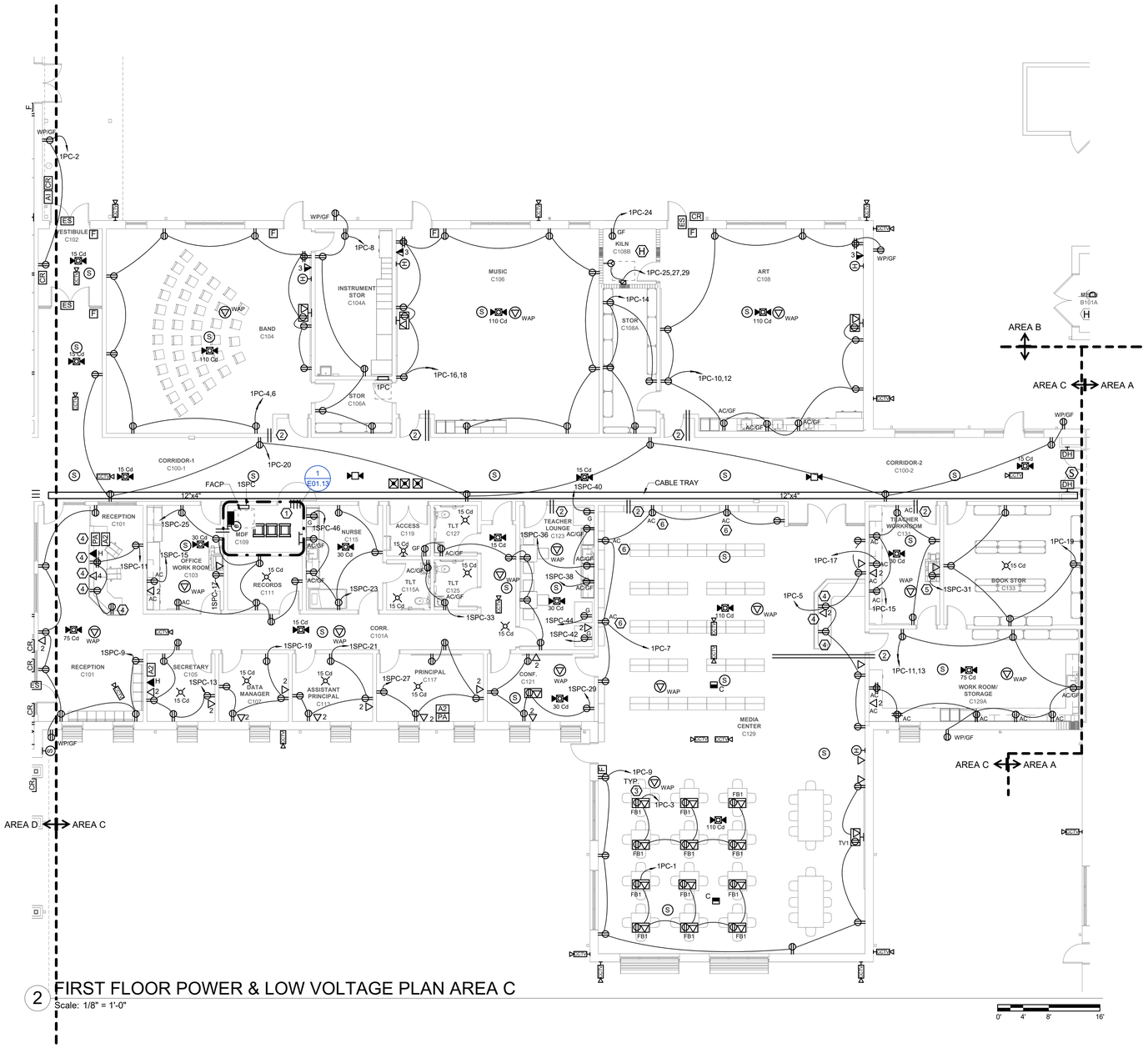
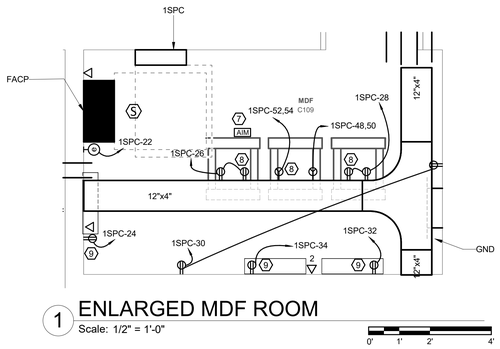


2 FIRST FLOOR POWER & LOW VOLTAGE PLAN AREA C

Scale: 1/8" = 1'-0"



1 ENLARGED MDF ROOM

Scale: 1/2" = 1'-0"

GENERAL NOTES:

1. REFER TO SHEET E00.01 FOR ADDITIONAL ELECTRICAL GENERAL NOTES.
2. LOW VOLTAGE SYSTEMS (I.E CAMERAS/CCTV, INTERCOM, INTRUSION, AND CARD ACCESS) SHALL BE PROVIDED BY OTHERS. DIVISION 26 CONTRACTOR SHALL PROVIDE ROUGH-IN AND INFASTRUCTURE FOR DEVICES AS INDICATED IN CONTRACT DRAWINGS AND SPECIFICATIONS. DEVICE LOCATIONS ARE SHOWN FOR REFERENCE ONLY. FINAL DEVICE LOCATIONS SHALL BE COORDINATED BETWEEN OWNER AND DIVISION 27 CONTRACTOR. REFER TO SHOP DRAWINGS FOR ROUGH-IN LOCATIONS.

(#) KEYNOTES:

1 PROVIDE FOUR (4) - 4" RIGID GALAVANIZED STEEL SLEEVES FROM ABOVE CEILING OF ROOM TO ABOVE CEILING OF CORRIDOR.

2 PROVIDE TWO (2) - 3" RIGID GALVANIZED STEEL SLEEVES FROM ABOVE CEILING OF ROOM TO ABOVE CEILING OF CORRIDOR.

3 TYPICAL FOR ALL FLOOR BOXES IN MEDIA CENTER. ROUTE CONDUIT UNDERGROUND FOR DATA CABLES FROM FLOOR BOX TO MDF ROOM.

4 COORDINATE ROUGH-IN FOR RECEPTION DESK WITH DIV06 CONTRACTOR. REFER TO SHOP DRAWING FOR ADDITIONAL INFORMATION ON DESK.

5 PROVIDE DEDICATED DUPLEX RECEPTACLE AND DATA OUTLET FOR NEW COPIER.

6 MOUNT RECEPTACLE ABOVE BOOKCASE, AT APPROXIMATELY AT 86" AFF.

7 PROVIDE RELAY MODULE FOR INTERCOM PA SYSTEM. RELAY SHALL SHUNT THE INTERCOM SYSTEM UPON ACTIVIATION. COORDINATE WITH FIRE ALARM AND INTERCOM VENDORS FOR FINAL SYSTEM REQUIREMENTS.

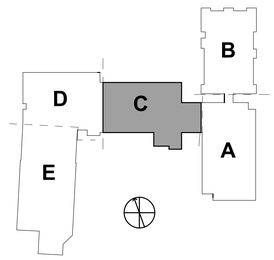
8 PROVIDE RECEPTACLES AT RACK AS INDICATED. ATTACH RECEPTACLES TO LADDER RACK ABOVE.

9 COORDINATE FINAL POWER REQUIREMENTS WITH DIVISION 27 CONTRACTOR. CONTRACTOR SHALL PROVIDE POWER FOR INTRUSION, DOOR ACCESS, AND ELEVATOR COMMUNICATIONS AS REQUIRED.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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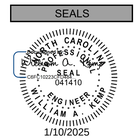
ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS



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BID DOCUMENTS
01/10/2025

SHEET TITLE

FIRST FLOOR POWER PLAN AREA C

E01.13

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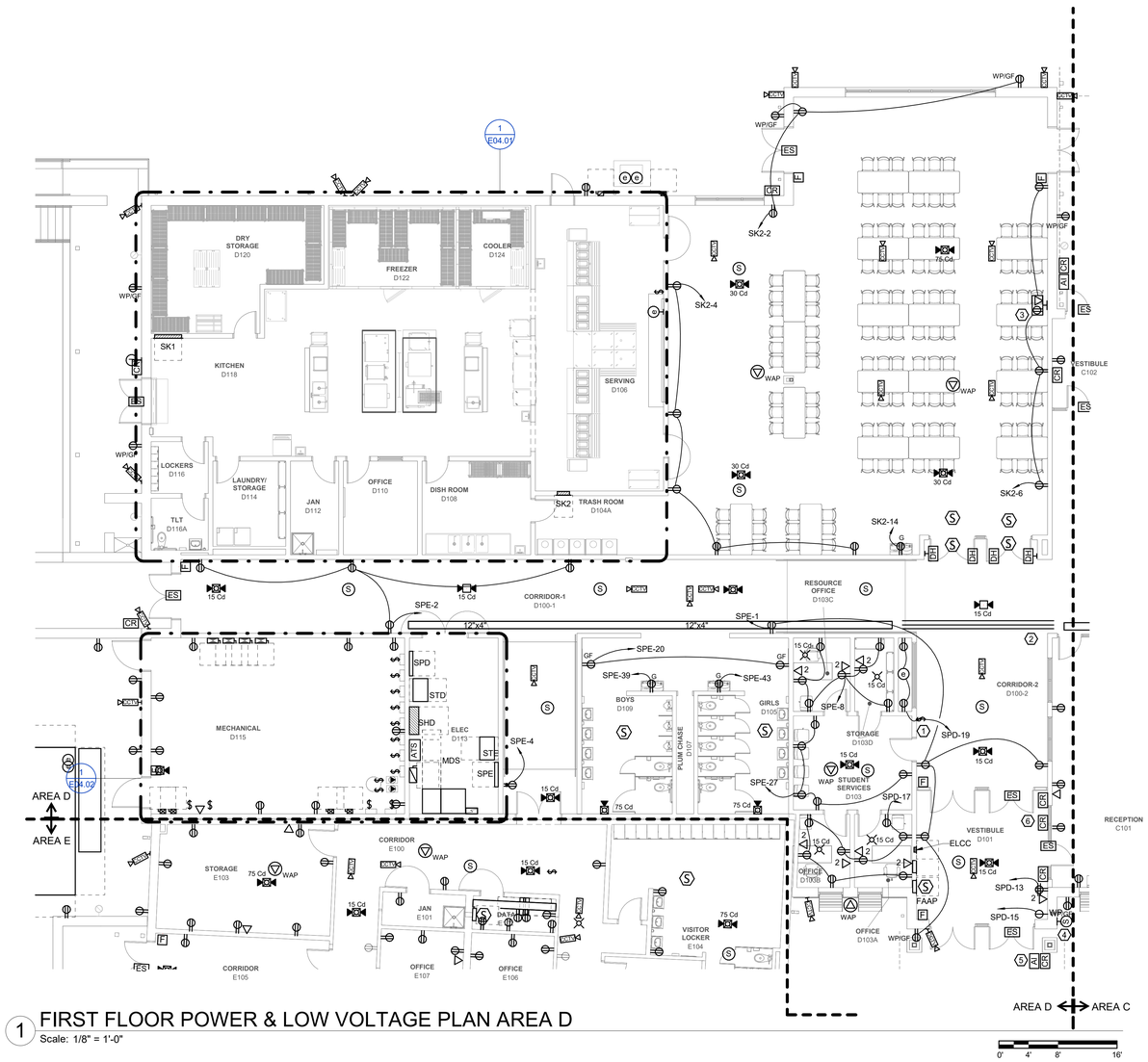


1 FIRST FLOOR POWER & LOW VOLTAGE PLAN AREA D

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

1. REFER TO SHEET E00.01 FOR ADDITIONAL ELECTRICAL GENERAL NOTES.
2. LOW VOLTAGE SYSTEMS (I.E CAMERAS/CCTV, INTERCOM, INTRUSION, AND CARD ACCESS) SHALL BE PROVIDED BY OTHERS. DIVISION 26 CONTRACTOR SHALL PROVIDE ROUGH-IN AND INFASTRUCTURE FOR DEVICES AS INDICATED IN CONTRACT DRAWINGS AND SPECIFICATIONS. DEVICE LOCATIONS ARE SHOWN FOR REFERENCE ONLY. FINAL DEVICE LOCATIONS SHALL BE COORDINATED BETWEEN OWNER AND DIVISION 27 CONTRACTOR. REFER TO SHOP DRAWINGS FOR ROUGH-IN LOCATIONS.

KEYNOTES:

1 PROVIDE KEYED-SWITCH FOR DISPLAY CASE. PROVIDE CONNECTION TO LIGHTS FURNISHED WITH DISPLAY CASE. PROVIDE DUPLEX RECEPTACLES IN CASE. COORDINATE WITH SHOP DRAWINGS FOR FINAL MOUNTING HEIGHTS.

2 PROVIDE THREE (3) - 4" RIGID GALVANIZED STEEL SLEEVES FROM ABOVE CEILING OF ROOM TO ABOVE CEILING OF CORRIDOR.

3 COORDINATE MOUNTING HEIGHT AND FINAL LOCATION OF PROJECTOR WITH ARCHITECTURAL ELEVATIONS AND OWNER.

4 COORDINATE ROUGH-IN OF SECURITY, INTERCOM, AND CCTV DEVICES WITH ARCHITECTURAL ELEVATIONS AND SECTIONS. PROVIDE 1"C STUBBED BELOW GRADE TO MDF CLOSET FOR EACH DEVICE, PROVIDE PULL STRING AND NOTE WHERE CONDUIT IS TERMINATED AT IN THE MDF ROOM.

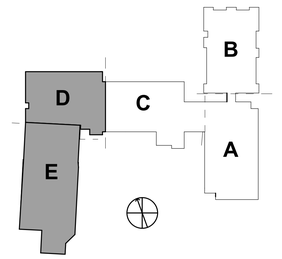
5 COORDINATE ROUGH-IN OF SECURITY DEVICES WITH ARCHITECTURAL ELEVATIONS AND SECTIONS. PROVIDE 1-1/2"C STUBBED BELOW GRADE TO MDF CLOSET FOR EACH DEVICE. PROVIDE PULL STRING AND NOTE WHERE CONDUIT IS TERMINATED AT IN THE MDF ROOM. MOUNT EQUIPMENT SHOWN TO BOLLARD PROVIDED BY OTHERS.

6 COORDINTAE MULLION MOUNT READER WITH DIVISION 27 CONTRACTOR.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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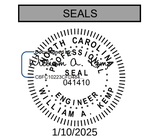
SEALS



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SHEET TITLE

FIRST FLOOR POWER PLAN AREA D

E01.14

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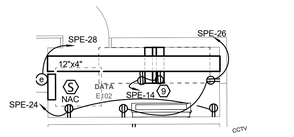
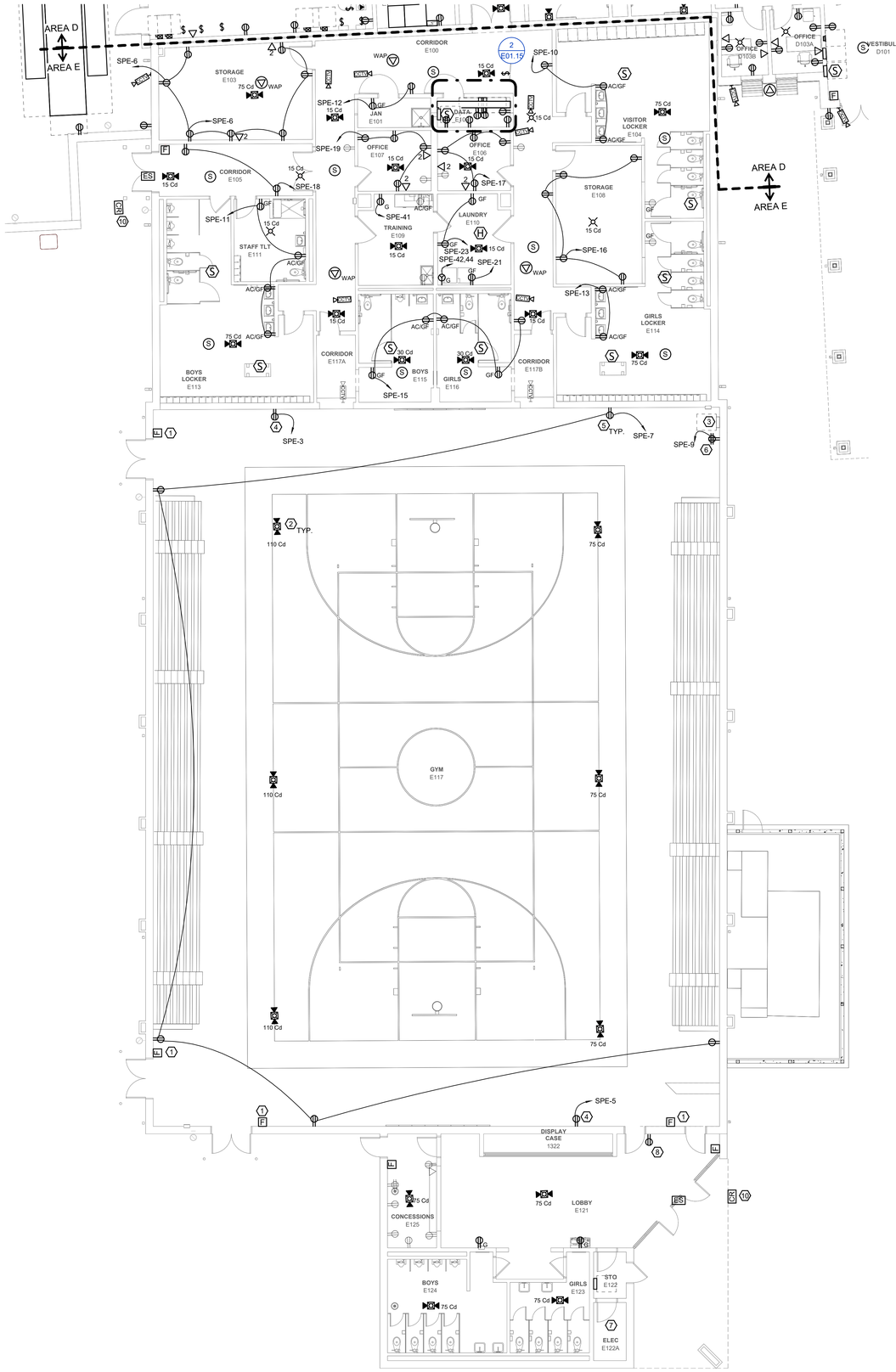


2 ENLARGED DATA ROOM

Scale: 1/4" = 1'-0"

0' 2' 4' 8'



1 FIRST FLOOR POWER & LOW VOLTAGE PLAN AREA E

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

1. REFER TO SHEET E00.01 FOR ADDITIONAL ELECTRICAL GENERAL NOTES.
2. LOW VOLTAGE SYSTEMS (I.E CAMERAS/CCTV, INTERCOM, INTRUSION, AND CARD ACCESS) SHALL BE PROVIDED BY OTHERS. DIVISION 26 CONTRACTOR SHALL PROVIDE ROUGH-IN IN AND INFASTRUCTURE FOR DEVICES AS INDICATED IN CONTRACT DRAWINGS AND SPECIFICATIONS. DEVICE LOCATIONS ARE SHOWN FOR REFERENCE ONLY. FINAL DEVICE LOCATIONS SHALL BE COORDINATED BETWEEN OWNER AND DIVISION 27 CONTRACTOR. REFER TO SHOP DRAWINGS FOR ROUGH-IN LOCATIONS.

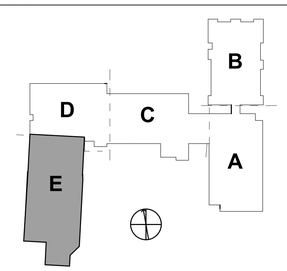
KEYNOTES:

1. PROVIDE NEW PULL STATIONS FOR GYMNASIUM WHERE INDICATED ON PLANS. PROVIDE NEW CONDUIT AND PAINT TO MATCH EXISTING GYM WALL COLORS.
2. PROVIDE NEW FA SPEAKER STROBES FOR GYMNASIUM WHERE INDICATED ON PLANS. PROVIDE NEW CONDUIT AND PAINT WHITE.
3. PROVIDE TERMINAL STRIP IN EXISTING PANELBOARD CAN. EXTEND EXISTING BRANCH CIRCUITS INDICATED ON DEMO PLAN TO NEW PANELBOARD. PROVIDE NEW COVER ON PANELBOARD CAN TO MATCH EXISTING CAN SIZE.
4. PROVIDE NEW RECEPTACLE FOR SCOREBOARD. PROVIDE NEW BRANCH CIRCUIT, INCLUDING WIRE AND CONDUIT. COORDINATE FINAL MOUNTING HEIGHT WITH EXISTING SCOREBOARD PLUG LOCATION.
5. PROVIDE NEW GENERAL PURPOSE RECEPTACLES FOR GYMNASIUM. PROVIDE NEW CONDUIT AND WIRE. NEW CONDUIT SHALL BE PAINTED TO MATCH THE EXISTING GYMNASIUM PAINT COLOR.
6. PROVIDE NEW DEDICATED QUAD RECEPTACLE FOR EXISTING SOUND SYSTEM. PROVIDE NEW BRANCH CIRCUIT, INCLUDING WIRE AND CONDUIT. PAINT CONDUIT TO MATCH THE EXISTING WALL COLORS.
7. PROVIDE NEW FEEDER TO EXISTING PANEL. EXTEND FEEDER FOR PANEL FROM DEMOLISHED PANEL IN GYMNASIUM. REFER TO RISER DIAGRAM FOR ADDITIONAL INFORMATION ON EXISTING PANEL.
8. PROVIDE NEW RECEPTACLE FOR MAGOMETER. PROVIDE SURFACE MOUNT CONDUIT FOR VERTICAL RUN FROM CEILING TO RECEPTACLE. REMAINING CONDUIT SHALL BE CONCEALED ABOVE CEILING.
9. PROVIDE DUPLEX RECEPTACLES AT RACK AS INDICATED. ATTACH RECEPTACLES TO LADDER RACK ABOVE.
10. COORDINATE ROUGH-IN OF SECURITY DEVICES WITH ARCHITECTURAL ELEVATIONS AND SECTIONS. PROVIDE 1-1/2"C STUBBED BELOW GRADE TO MDF CLOSET FOR EACH DEVICE. PROVIDE PULL STRING AND NOTE WHERE CONDUIT IS TERMINATED AT IN THE MDF ROOM. MOUNT EQUIPMENT SHOWN TO BOLLARD PROVIDED BY OTHERS.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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SHEET TITLE

FIRST FLOOR POWER PLAN AREA E

E01.15

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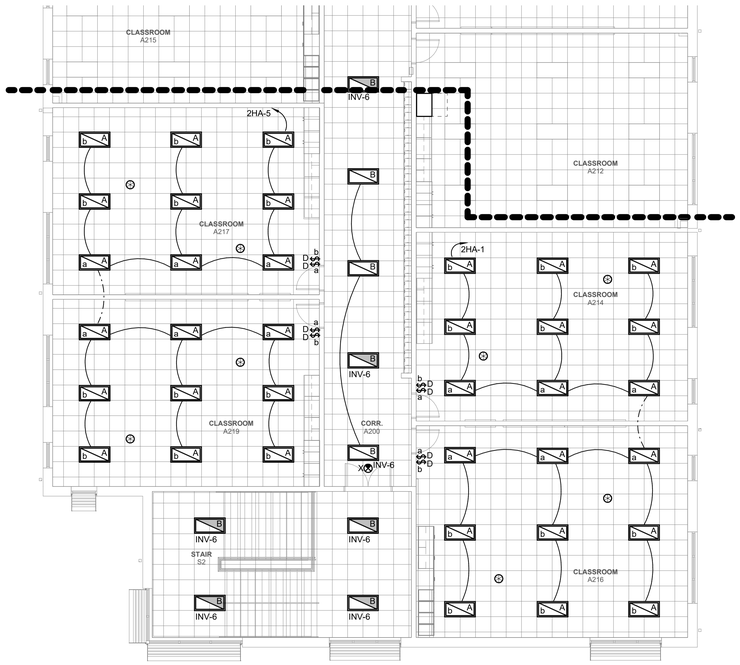


1 SECOND FLOOR LIGHTING PLAN AREA A ALTERNATE
Scale: 1/8" = 1'-0"

2 SECOND FLOOR LIGHTING PLAN AREA A
Scale: 1/8" = 1'-0"

GENERAL NOTES:

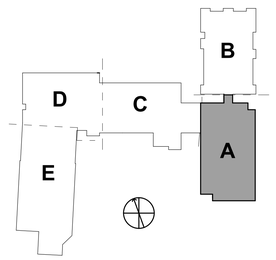
1. REFER TO SHEET E00.01 FOR ADDITIONAL ELECTRICAL GENERAL NOTES.
2. LOW VOLTAGE SYSTEMS (I.E CAMERAS/CCTV, INTERCOM, INTRUSION, AND CARD ACCESS) SHALL BE PROVIDED BY OTHERS. DIVISION 26 CONTRACTOR SHALL PROVIDE ROUGH-IN IN AND INFASTRUCTURE FOR DEVICES AS INDICATED IN CONTRACT DRAWINGS AND SPECIFICATIONS. DEVICE LOCATIONS ARE SHOWN FOR REFERENCE ONLY. FINAL DEVICE LOCATIONS SHALL BE COORDINATED BETWEEN OWNER AND DIVISION 27 CONTRACTOR. REFER TO SHOP DRAWINGS FOR ROUGH-IN LOCATIONS.

KEYNOTES:

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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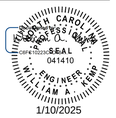
PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS



1/10/2025

DKA JOB NUMBER
2401

DEWBERRY NUMBER
50171439

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SHEET TITLE

SECOND FLOOR LIGHTING PLAN AREA A

E02.01

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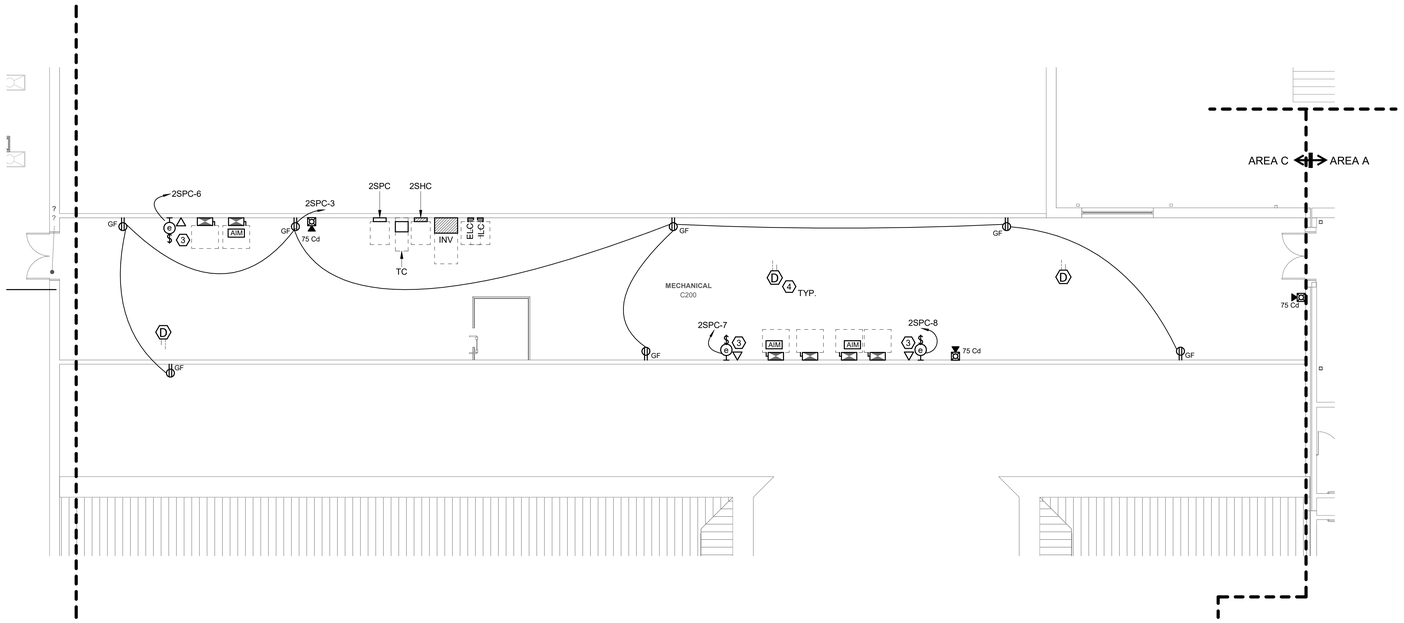
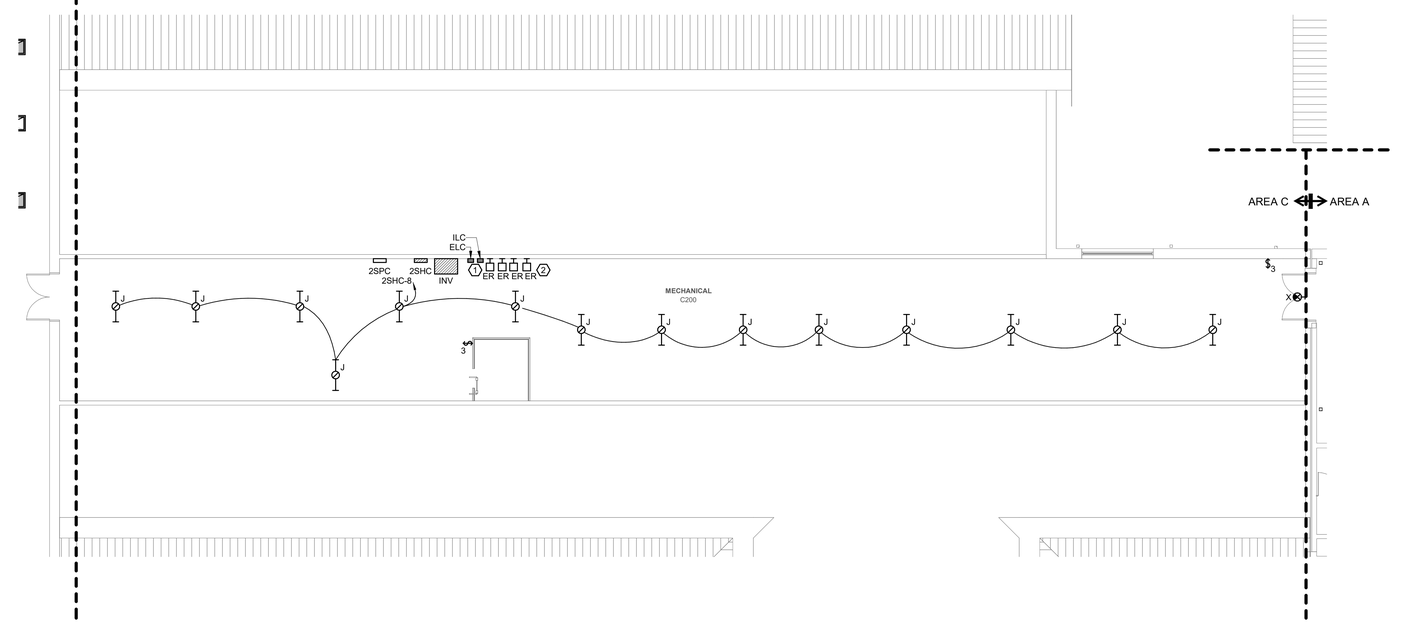


1 SECOND FLOOR POWER & LOW VOLTAGE PLAN AREA C
Scale: 1/8" = 1'-0"



2 SECOND FLOOR LIGHTING PLAN AREA C
Scale: 1/8" = 1'-0"

GENERAL NOTES:

1. REFER TO SHEET E00.01 FOR ADDITIONAL ELECTRICAL GENERAL NOTES.
2. REFER TO SHEET E00.04 FOR MECHANCIAL EQUIPMENT CONNECTION INFORMATION.

KEYNOTES:

1 PROVIDE INTERIOR AND EXTERIOR LIGHTING CONTACTORS. CONTACTORS SHALL HAVE HAND, OFF, AUTO, OR HOA SWITCH. COORDINATE WITH BAS PROVIDER ON CONTROLS FOR CONTACTOR. REFER TO LIGHTING CONTACTOR SCHEDULE FOR ADDITIONAL INFORMATION.

2 PROVIDE EMERGENCY RELAY UL924 DEVICES FOR CORRIDOR AND EXTERIOR EMERGENCY LIGHTS. REFER TO EMERGENCY RELAY SCHEDULE FOR QUANTITIES AND CIRCUIT NUMBERS.

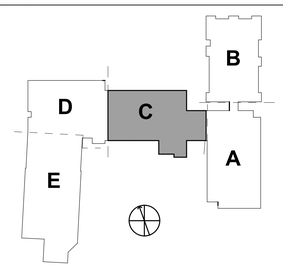
3 POWER AND DATA FOR BAS CONTROL PANEL. PROVIDE TOGGLE SWITCH FOR 120V. PROVIDE 3/4"C TO MDF ROOM AND BACK BOX AND BLANK COVER PLATE FOR DATA JACK.

4 REMOTE TEST SWITCH AND INDICATOR LIGHT IN CORRIDOR BELOW MECHANICAL C200. REFER TO FIRST FLOOR POWER PLAN AREA "C" FOR LOCATION(S).

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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SHEET TITLE

SECOND FLOOR POWER & LIGHTING PLAN AREA C

E02.03

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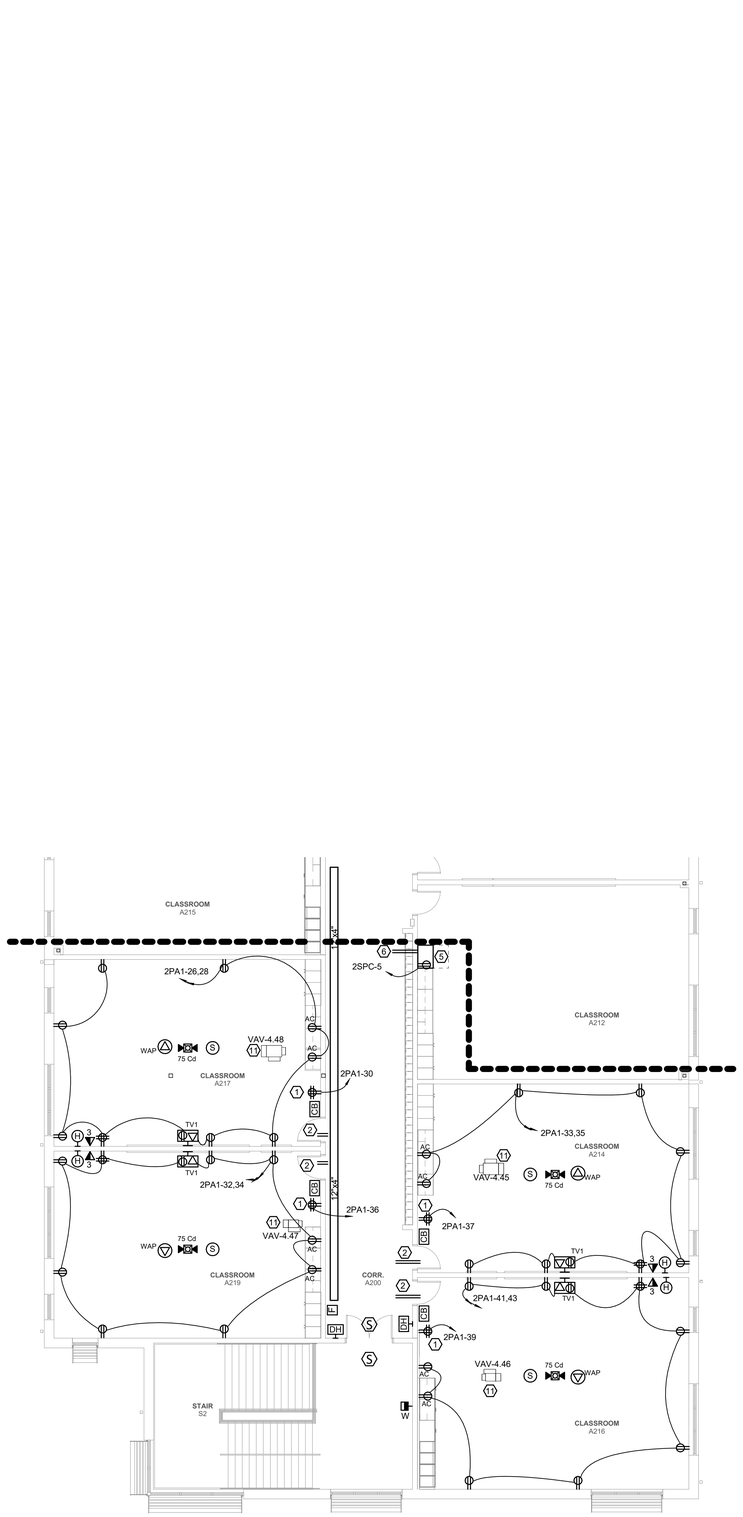
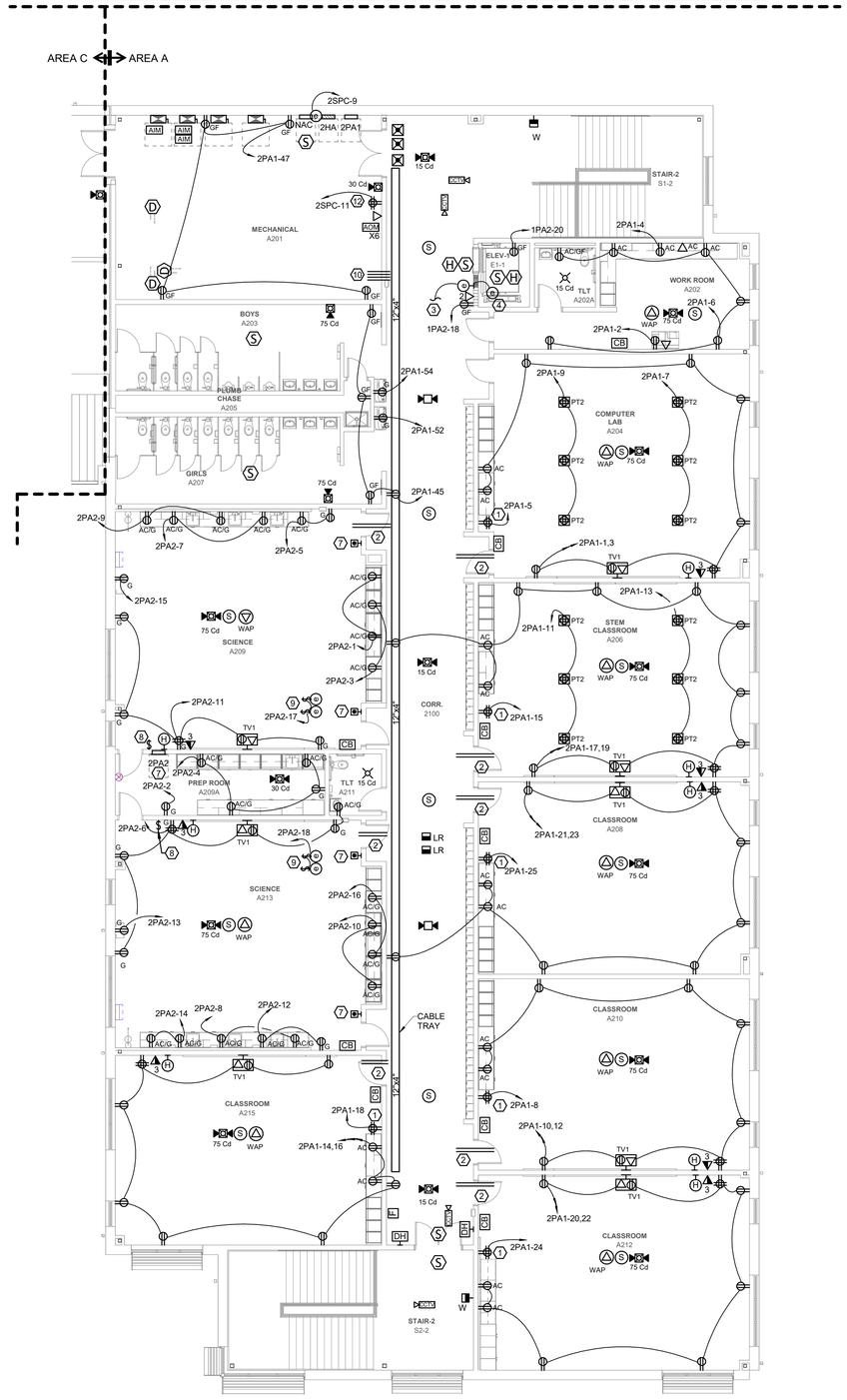


2 SECOND FLOOR POWER & LOW VOLTAGE PLAN AREA A ALTERNATE

Scale: 1/8" = 1'-0"

0' 4' 8' 16'



1 SECOND FLOOR POWER & LOW VOLTAGE PLAN AREA A

Scale: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL NOTES:

1. REFER TO SHEET E00.01 FOR ADDITIONAL ELECTRICAL GENERAL NOTES.
2. LOW VOLTAGE SYSTEMS (I.E CAMERAS/CCTV, INTERCOM, INTRUSION, AND CARD ACCESS) SHALL BE PROVIDED BY OTHERS. DIVISION 26 CONTRACTOR SHALL PROVIDE ROUGH-IN IN AND INFASTRUCTURE FOR DEVICES AS INDICATED IN CONTRACT DRAWINGS AND SPECIFICATIONS. DEVICE LOCATIONS ARE SHOWN FOR REFERENCE ONLY. FINAL DEVICE LOCATIONS SHALL BE COORDINATED BETWEEN OWNER AND DIVISION 27 CONTRACTOR. REFER TO SHOP DRAWINGS FOR ROUGH-IN LOCATIONS.

(#) KEYNOTES:

1 PROVIDE DEDICATED QUAD RECEPTACLE FOR CART CHARGERS.

2 PROVIDE TWO (2) - 3" RIGID GALAVANIZED STEEL SLEEVES FROM ABOVE CEILING OF ROOM TO ABOCE CEILING OF CORRIDOR.

3 ROUTE FEEDER AND BRANCH CIRCUIT(S) ASSOCIATED WITH HYDRAULIC ELEVATOR THORUGH CONTROLLER. COORDINATE FINAL ROUTES WITH DIV 14 CONTRACTOR.

4 CAB LIGHT EQUIPMENT CONNECTION SHALL BE COORDINATED WITH MANUFACTURER.

5 PROVIDE REBOX IF ALTERNATE "A" IS ACCEPTED. REBOX SHALL SERVE ALT "A" AREA ON SECOND FLOOR FOR DATA.

6 PROVIDE THREE (3) - 4" RIGID GALAVANIZED STEEL SLEEVES FROM ABOVE CEILING OF ROOM TO ABOCE CEILING OF CORRIDOR.

7 PROVIDE EPO MUSHROOM STOP BUTTONS WITH CLEAR COVERS. EPO BUTTONS SHALL ACTIVATE THE SHUNT TRIP OF THE MAIN BREAKER OF PANEL NOTED. REFER TO DETAIL ON EPO SHUTDOWN FOR ADDITIONAL INFORMATION ON BUTTONS AND WIRING.

8 PROVIDE KEYED SWITCH FOR SOLENOID VALVE. REFER TO DETAILS FOR SWITCH INFORMATION.

9 PROVIDE POWER FOR SOLENOID VALVE. REFER TO PLUMBING PLANS FOR FINAL EQUIPMENT LOCATIONS. REFER TO SOLENOID DETAIL FOR ADDITIONAL INFORMATION.

10 APPROXIMATE LOCATION OF CONDUIT TURNUP FROM IDF ROOM. REFER TO FIRST FLOOR FOR INFORMATION ABOUT CONDUITS FROM FIRST FLOOR IDF ROOM TO SECOND FLOOR MECHANCIAL ROOM. PROVIDE SLEEVES BETWEEN MECHANCIAL ROOM AND COORIDOR TO CABLE TRAY.

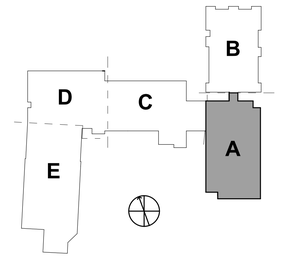
11 EXTEND VAV CIRCUIT TO VAVS IN ALTERNATE AREA IS ALTERNATE IS ACCEPTED. REFER TO E00.04 FOR CIRCUIT INFORMATION.

12 PROVIDE 4X8 PLYWOOD BACKBOARD FOR BDA EQUIPMENT. DEDICATED QUAD AND DATA ARE FOR BDA. PROVIDE FIRE ALARM RELAYS FOR BDA MONITORING.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 041410 WILLIAM A. KNOX 1/10/2025

DKA JOB NUMBER
2401

DEWBERRY NUMBER
50171439

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SHEET TITLE

SECOND FLOOR POWER PLAN AREA A

E02.11

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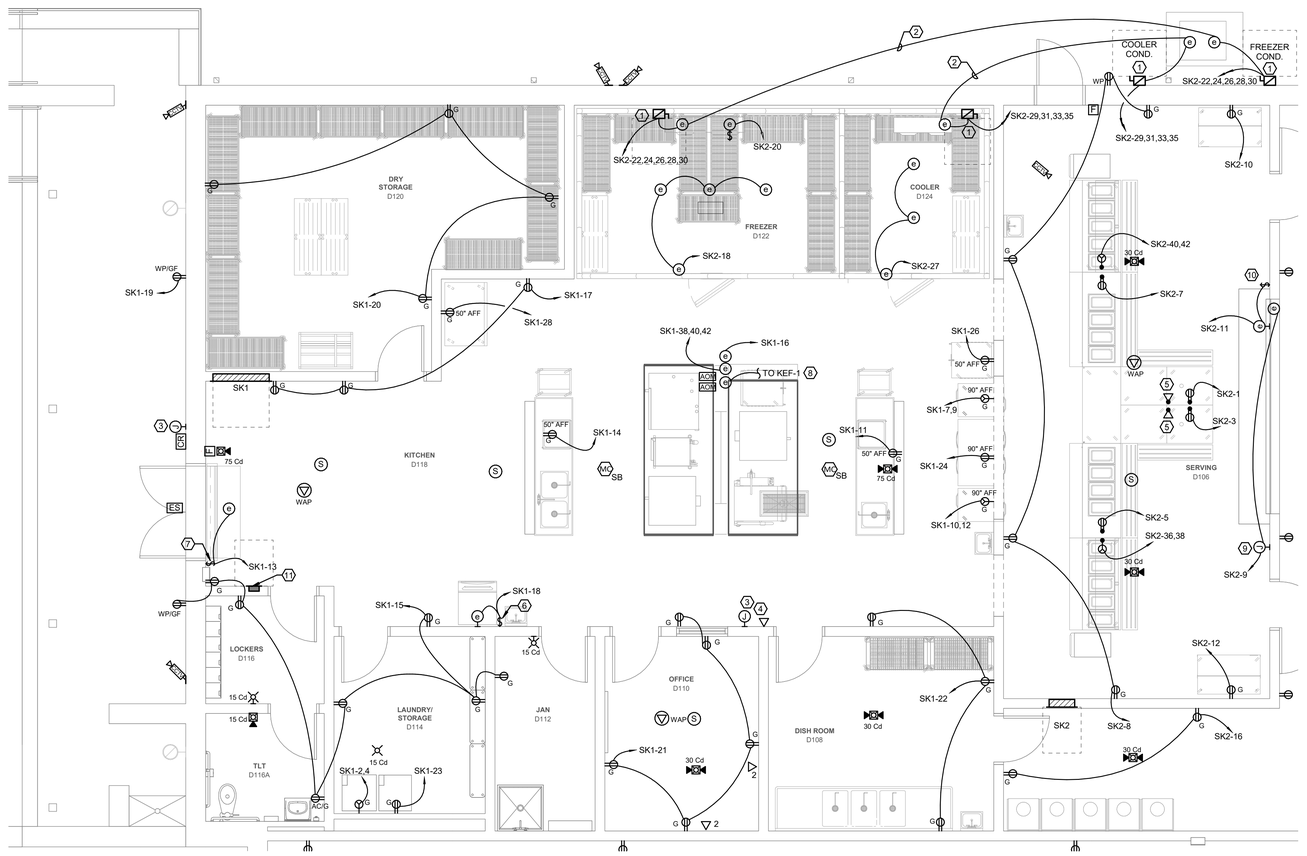


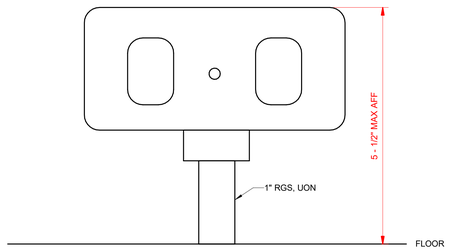
1 ENLARGED KITCHEN ELECTRICAL PLAN

Scale: 1/4" = 1'-0"

0' 2' 4' 8'

NOTES:

1. ALL STUB UP KITCHEN RECEPTACLES SHALL BE INSTALLED ACCORDING TO THE DETAIL BELOW.
2. PROVIDE CAST METAL "FS" STYLE BOXES FOR ALL STUB-UP RECEPTACLES AND DATA OUTLETS.
3. COORDINATE BOX SIZE WITH REQUIRED WIRING DEVICE.
4. PROVIDE MATING/MATCHING FACEPLATES FOR BOX STYLE AND INSTALLED DEVICE.
5. COORDINATE HEIGHT OF BOXES WITH SUBMITTED AND APPROVED KITCHEN EQUIPMET.
6. STUUB-UP: MINIMUM 1"C RGS



2 FLOOR RECEPTACLE - FOOD SERVICE

Scale: N.T.S.

GENERAL NOTES:

1. REFER TO SHEET E00.01 FOR ADDITIONAL ELECTRICAL GENERAL NOTES.
2. REFER TO FOOD SERVICE PLANS AND KITCHEN HOOD PLANS FOR ADDITIONAL INFORMATION.
3. COORDINATE MOUNTING HEIGHTS OF ALL KITCHEN EQUIPMENT CONNECTIONS WITH FOOD SEVICE ELECTRICAL ROUGH-IN DRAWINGS.

(#) KEYNOTES:

1 PROVIDE DISCONNECT SWITCH FOR EQUIPMENT SHOWN. REFER TO DISCONNECT SCHEDULE FOR ADDITIONAL INFORMATION ON DISCONNECT SWITCH.

2 PROVIDE 1"C CONTROLS CONDUIT. WIRE PER COOLER AND FREEZER MANUFACTURER'S RECOMMENDATIONS.

3 PROVIDE DOORBELL BUTTON (EDWARDS 821) AND BELL (EDWARDS 874 ADJUSTABLE) OR APPROVED EQUAL. CONNECT BELL TO OFFICE RECEPTACLE CIRCUIT. MOUNT AT 96" TO TOP OF BOX FOR BELL AND 48" FOR BUTTON.

4 PROVIDE ONE (1) CAT6 CABLE FROM BELL TO NEAREST IDF ROOM. BELL SHALL BE PREMIER PM481244-PTTS WITH COVER OR APPROVED EQUAL. MOUNT AT 96"AFF TO TOP OF BOX.

5 PROVIDE 1-1/4"C FROM EACH DATA STUB-UP LOCATION FOR P.O.S TO MDF CLOSET. PROVIDE PULL STRING IN CONDUIT AND LABEL ENDS WITH WHERE THE OTHER SIDE OF CONDUIT ENDS.

6 PROVIDE WR TOGGLE SWITCH FOR ICE MAKER FOR LOCAL DISCONNECTING MEANS.

7 PROVIDE MOTOR RATED TOGGLE SWITCH FOR AIR CURTAIN FAN. REFER TO FSEC PROVIDER FOR INSTALLATION INFORMNATION.

8 PROVIDE WIRING FOR KEF-1 THROUGH UDS. REFER TO PANEL SCHEDULE FOR WIRING AND CONDUIT INFORMATION.

9 PROVIDE JUNCTION BOX AT 48" AFF FOR OVERHEAD COILING DOOR PUSH BUTTON. PROVIDE WITH 3/4"C WITH PULL STRING ROM JUNCTION BOX TO OVERHEAD DOOR SWITCH. COORDINATE EXACT LOCATION WITH DIVISION 11 CONTRACTOR. OVERHEAD DOOR AND CONTROL WIRING BY DIVISION 11 CONTRACTOR. BRANCH CIRCUIT CONDUIT AND WIRE, AND CONTROL CONDUIT BY DIVISION 26.

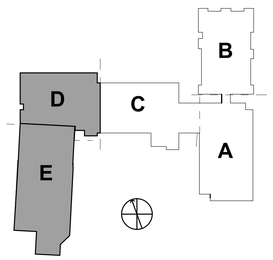
10 INSTALL SWITCH FOR MOTORIZED DOOR CONTROLS. COORDINATE WITH MOTORIZED DOOR PROVIDER ON CONTROL WIRING REQUIREMENTS. PROVIDE 3#12 IN 3/4"C FROM DOOR TO CONTROLS SWITCH.

11 INSTALL REMOTE ANNUCIATOR FOR GENERATOR IN KITCHEN SPACE. COORDINATE WITH OWNER ON FINAL LOCATION OF REMOTE ANNUCIATOR. PROVIDE 1"C FROM GENERATOR TO RA WITH CABLING AS REQUIRED BY MANUFACTURER. REFER TO SHOP DRAWINGS SUBMITTED IN PREPURCHASE PACKAGE FOR ROUGH-IN REQUIREMENTS, RA SHALL BE MOUNTED FLUSH.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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C087510223
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LARGE SCALE FLOOR PLANS

E04.01

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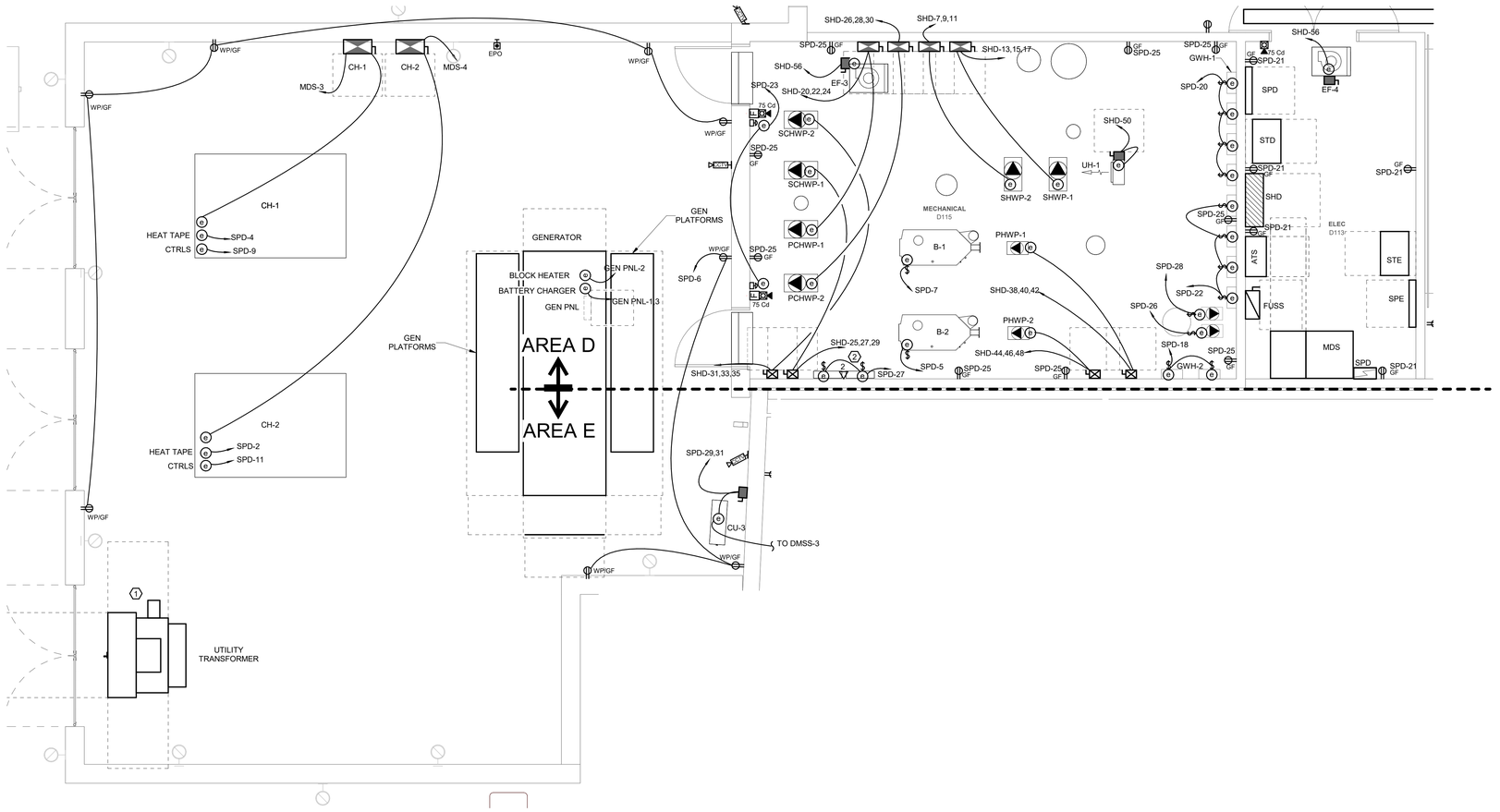


1 ENLARGED MAIN MECHANICAL AND ELECTRICAL ROOM

Scale: 1/4" = 1'-0"

0' 2' 4' 8'

GENERAL NOTES:

1. REFER TO SHEET E00.01 FOR ADDITIONAL ELECTRICAL GENERAL NOTES.
2. LOW VOLTAGE SYSTEMS (I.E CAMERAS/CCTV, INTERCOM, INTRUSION, AND CARD ACCESS) SHALL BE PROVIDED BY OTHERS. DIVISION 26 CONTRACTOR SHALL PROVIDE ROUGH-IN IN AND INFASTRUCTURE FOR DEVICES AS INDICATED IN CONTRACT DRAWINGS AND SPECIFICATIONS. DEVICE LOCATIONS ARE SHOWN FOR REFERENCE ONLY. FINAL DEVICE LOCATIONS SHALL BE COORDINATED BETWEEN OWNER AND DIVISION 27 CONTRACTOR. REFER TO SHOP DRAWINGS FOR ROUGH-IN LOCATIONS.

KEYNOTES:

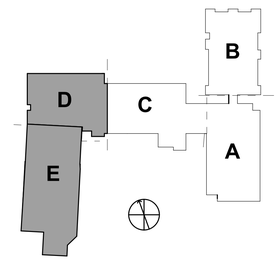
1 REFER TO SITE PLAN FOR PRIMARY AND SECONDARY FEEDER ROUTING FOR UTILITY TRANSFORMER BY OTHERS. DIVISION 26 CONTRACTOR SHALL PROVIDE TRANSFORMER PAD, COORDINATE WITH DUKE ON FINAL PAD REQUIREMENTS.

2 POWER AND DATE FOR BAS CONTROL PANELS. COORDINATE WITH DIVISION 23 ON FINAL ROUGH-IN LOCATIONS AND REQUIREMENTS.

WALL RATING LEGEND:

- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER
- 3-HR RATED FIRE BARRIER
- 4-HR RATED FIRE BARRIER

KEYPLAN:



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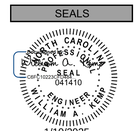

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LARGE SCALE FLOOR PLANS

E04.02

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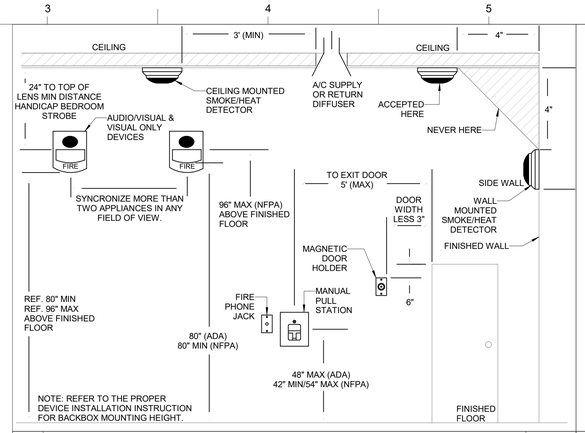
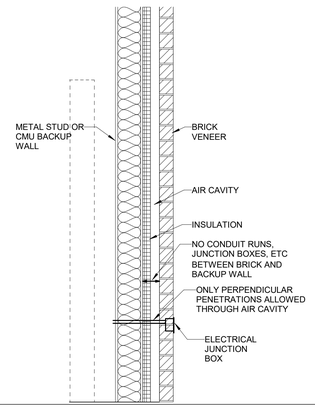


6 FIRE ALARM DEVICE MOUNTING — SCALE: NTS — E063-02



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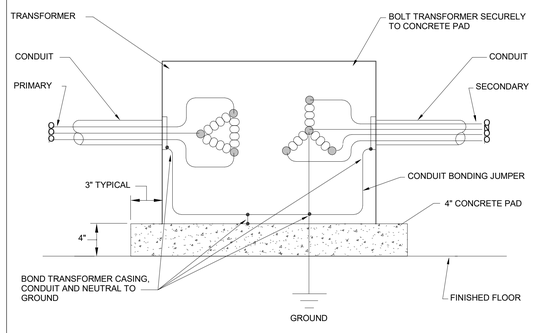
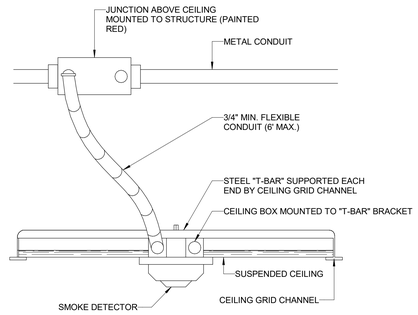
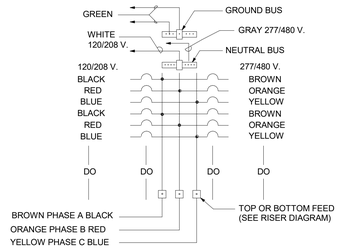


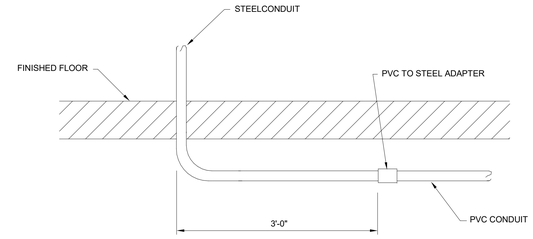
1 DRY TYPE TRANSFORMER DETAIL — SCALE: NTS



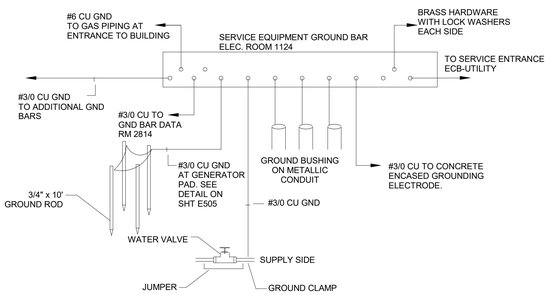
8 CEILING MOUNTED SMOKE DETECTOR — SCALE: NTS — E062-13



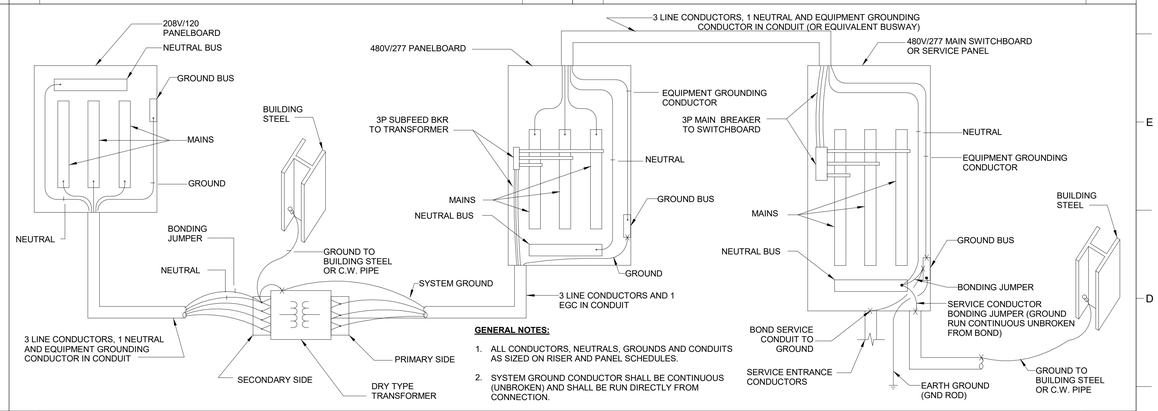
4 WIRE COLOR CODING — SCALE: NTS



10 PVC TO STEEL CONDUIT CONVERSION DETAIL — SCALE: NTS



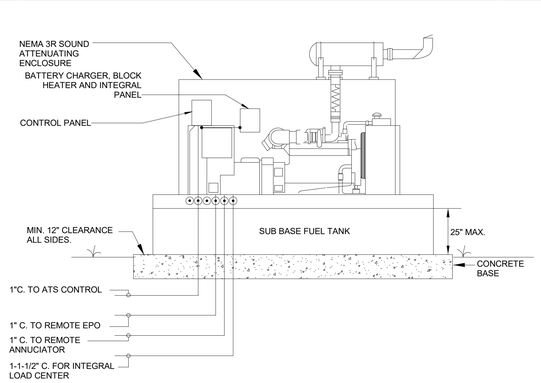
11 SERVICE BONDING DETAIL — SCALE: NTS



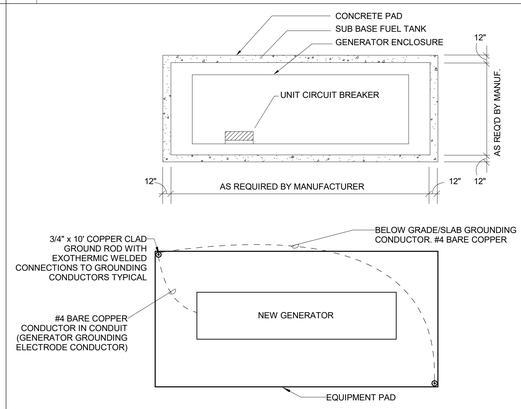
GENERAL NOTES:

1. ALL CONDUCTORS, NEUTRALS, GROUNDS AND CONDUITS AS SIZED ON RISER AND PANEL SCHEDULES.
2. SYSTEM GROUND CONDUCTOR SHALL BE CONTINUOUS (UNBROKEN) AND SHALL BE RUN DIRECTLY FROM CONNECTION.

2 TYPICAL BONDING AND GROUNDING DIAGRAM — SCALE: NTS

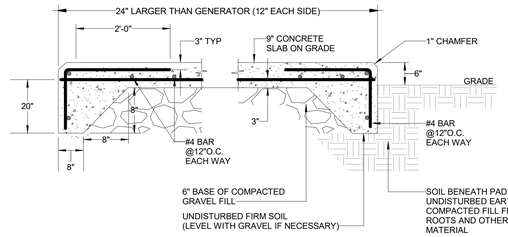


7 GENERATOR DETAIL — SCALE: NTS



NOTES:.

1. REINFORCING STEEL SHALL BE ASTM A-165 GRADE 60.
2. CONCRETE SHALL BE TYPE "C", AIR-ENTRAINED, 3000 P.S.I. @28 DAYS. SURFACE SHALL BE LEVEL AND TROWELLED. SMOOTH.



5 GENERATOR BASE AND GROUNDING PLAN — SCALE: NTS

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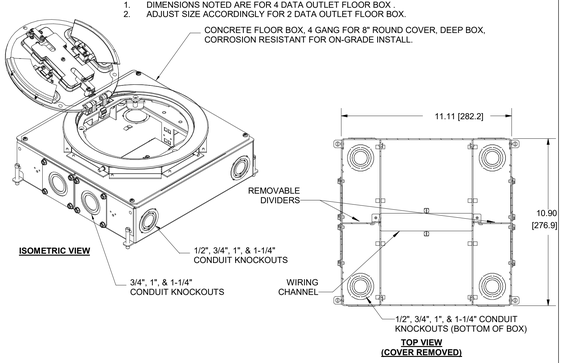
DETAILS

E05.01

Docusign Envelope ID: 265849C1-DFEA-4634-9240-6B1BF3C62ECB

NOTES:

1. DIMENSIONS NOTED ARE FOR 4 DATA OUTLET FLOOR BOX.
2. ADJUST SIZE ACCORDINGLY FOR 2 DATA OUTLET FLOOR BOX.



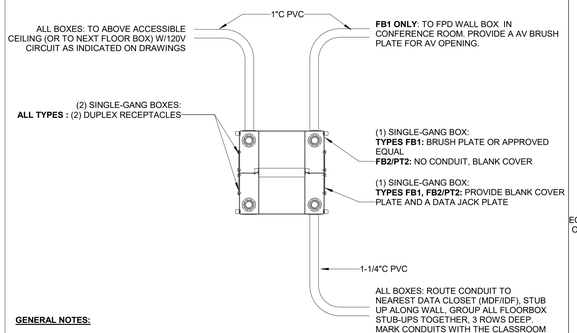
ISOMETRIC VIEW

TOP VIEW (COVER REMOVED)

9 STANDARD FLOOR BOX

SCALE: NTS

E003-08

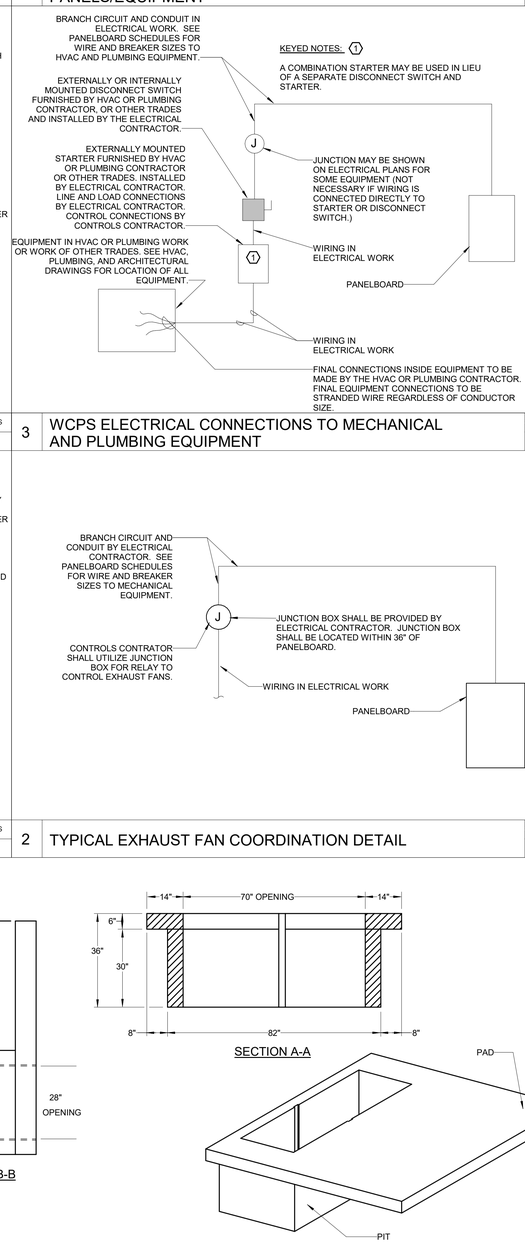


GENERAL NOTES:

1. REFER TO DETAIL ON PAGE E05.03 FOR ADDITONAL POKE THROUGH REQUIREMENTS. "PT#" STANDS FOR POKE THROUGH.
2. REFER TO DETAIL ABOVE FORE ADDITIONAL FLOOR BOX REQUIREMENTS. "FB#" STANDS FOR FLOOR BOX.

8 POWER SUPPLY TO HVAC CONTROL PANELS/EQUIPMENT

SCALE: NTS



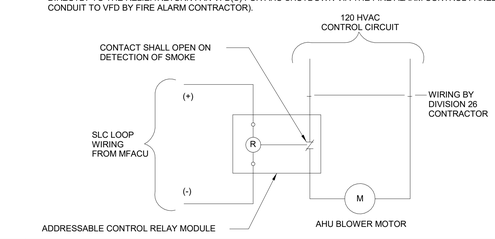
5 FLOOR BOX AND POKE THROUGH DEVICE AND ROUGH-IN REQUIREMENTS

SCALE: NTS

E003-03

NOTE:

- SUPPLY FANS:
  1. THE FIRE ALARM CONTRACTOR SHALL PROVIDE TWO FIRE ALARM OUTPUT RELAYS FOR THE SUPPLY FAN(S) AT EACH AHU. THE FA RELAYS SHALL BE INSTALLED NEAR THE SUPPLY VARIABLE FREQUENCY DRIVE(S) (VFD). THE FIRST RELAY SHALL BE WIRED DIRECTLY TO THE SUPPLY FAN VFD(S) FOR AHU SHUTDOWN VIA THE FIRE ALARM CONTROL PANEL (WIRING TO VFD BY FIRE ALARM CONTRACTOR). THE SECOND RELAY SHALL BE WIRED TO THE UNIT'S BAS CONTROLLER TO MONITOR FA SHUTDOWN FOR THAT AHU (WIRING AND CONDUIT TO BAS CONTROLLER BY BAS CONTRACTOR).
- RELIEF OR RETURN FANS:
  1. THE FIRE ALARM CONTRACTOR SHALL PROVIDE ONE FIRE ALARM OUTPUT RELAY FOR THE RELIEF/RETURN FAN(S) AT EACH AHU. THE FA RELAY SHALL BE INSTALLED NEAR THE RETURN/RELIEF VFD(S). THE RELAY SHALL BE WIRED DIRECTLY TO THE RELIEF/RETURN FAN VFD(S) FOR AHU SHUTDOWN VIA THE FIRE ALARM CONTROL PANEL (WIRING AND CONDUIT TO VFD BY FIRE ALARM CONTRACTOR).



3 WCPS ELECTRICAL CONNECTIONS TO MECHANICAL AND PLUMBING EQUIPMENT

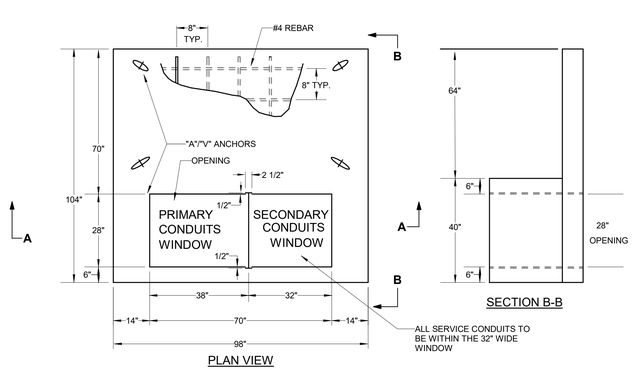
SCALE: NTS

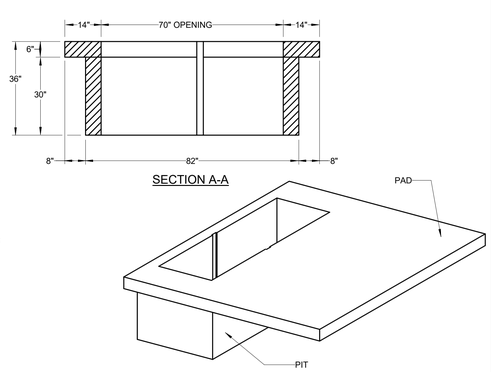
7 AHU SHUT DOWN DIAGRAM

SCALE: NTS

2 TYPICAL EXHAUST FAN COORDINATION DETAIL

SCALE: NTS



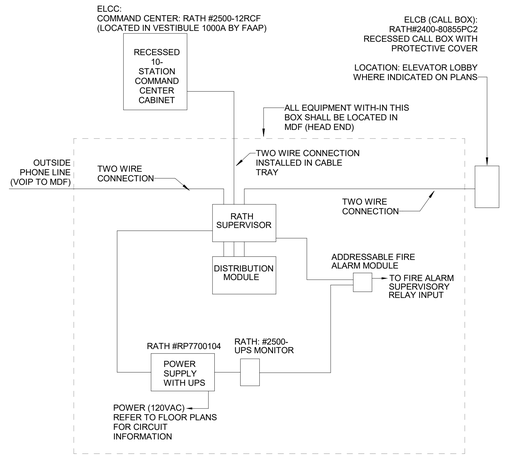


4 UTILITY TRANSFORMER PAD DETAIL

SCALE: NTS

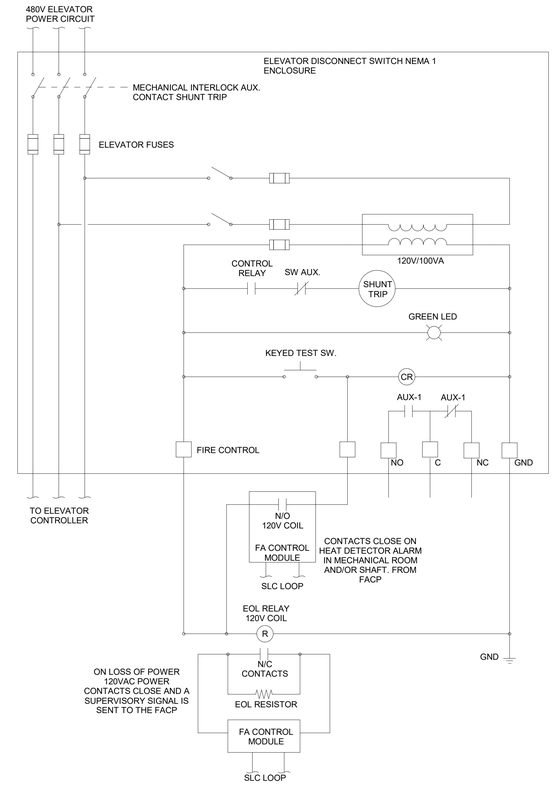
2-WAY COMMUNICATION GENERAL NOTES:

1. PROVIDE ANALOG COMMUNICATION SYSTEM AS INDICATED. BASIS OF DESIGN: 2500 SERIES (COMMAND CENTER) BY RATH, INC. ALL MODEL NUMBERS LISTED ARE FROM RATH, INC.
2. PROVIDE THE EQUIPMENT SHOWN IN THIS DETAIL AND ALL ADDITIONAL EQUIPMENT, RELAYS, WIRING, CONDUIT, TRANSFORMERS, POWER SUPPLIES, ETC. FOR A COMPLETE WORKING SYSTEM.
3. PROVIDE INSTRUCTIONAL (#7049) AND EMERGENCY COMMUNICATION SIGNS (#7087) WITH BRAILLE BESIDE EACH CALL STATION. MOUNTING HEIGHTS: #7049 - 48" TO THE TOP; #7087 - 60" TO THE CENTER. COORDINATE FINAL LOCATION AND INSTALLATION TECHNIQUES/METHODS WITH ARCHITECT PRIOR TO INSTALLATION.
4. SYSTEM SHALL BE WIRED WITH CABLE PER MANUFACTURER'S RECOMMENDATIONS FOR COMMUNICATION CABLING. INSTALL CABLING IN MINIMUM 3/4"C.
5. CALL BOX SHALL BE MOUNTED 48" AFF TO THE TOP OF THE BOX. COMMAND CENTER SHALL BE MOUNTED 60" AFF TO CENTER OF THE COMMAND CENTER ENCLOSURE.
6. LOCATE DISTRIBUTION MODULE, POWER SUPPLY WITH UPS, PATHWAY MONITOR, AND UPS MONITOR IN MDF 178C.
7. ALL EQUIPMENT AND INSTALLATION CONDITIONS SHALL MEET ADA REQUIREMENTS.
8. SYSTEM SHALL BE SUPERVISED BY THE BUILDING FIRE ALARM SYSTEM. COMMUNICATION OR POWER FAULT SHALL SEND A 'TROUBLE' SIGNAL TO THE FACP VIA THE MONITOR MODULE. PROVIDE FIRE ALARM MONITOR MODULE(S) AS NEEDED.
9. CALL BOX SHALL BE PROGRAMMED TO CALL THE COMMAND CENTER, AND IF CALL IS NOT ANSWERED, IT SHALL THEN CALL THE SECURITY/FIRE ALARMMONITORING STATION (A.K.A. "THE TOWER"). COORDINATE SECONDARY PHONE NUMBER WITH WAYNE COUNTY.
10. A MINIMUM OF THREE SETS OF COMMAND CENTER KEYS SHALL BE PROVIDED. ONE OF THESE SETS SHALL BE IN THE KNOX BOX FOR EMERGENCY PERSONNEL USE.
11. A MAP SHALL BE PROVIDED AT EACH CALL BOX INDICATING THE ROUTE TO THE OTHER AVAILABLE MEANS OF EGRESS FOR THAT FLOOR. SEE ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION.



6 ELEVATOR LOBBY TWO-WAY COMMUNICATION SYSTEM DIAGRAM

SCALE: NTS



1 ELEVATOR DISCONNECT SWITCH DIAGRAM

SCALE: NTS

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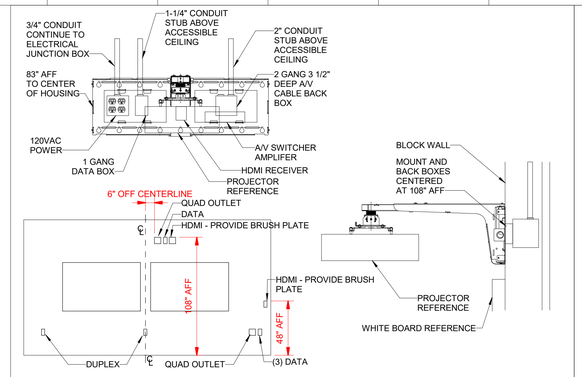
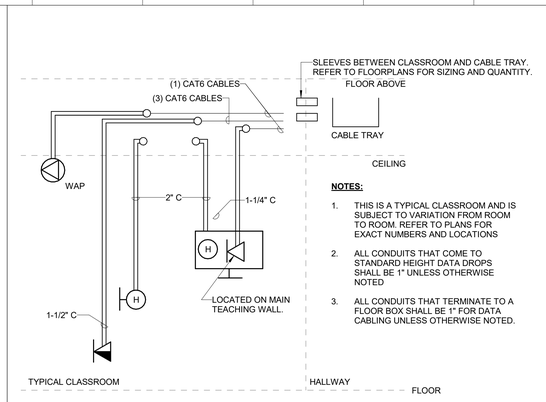
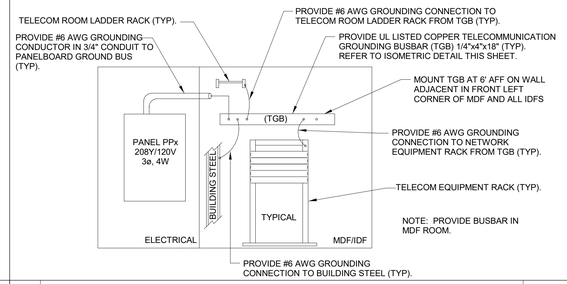


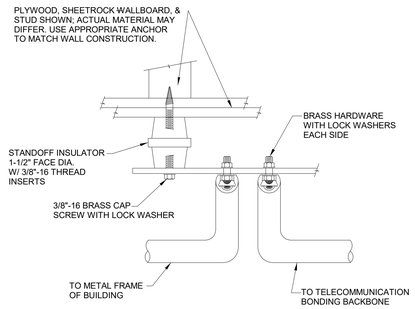
11 WALL MOUNT PROJECTOR DETAIL - NEW CONSTRUCTION — SCALE: NTS



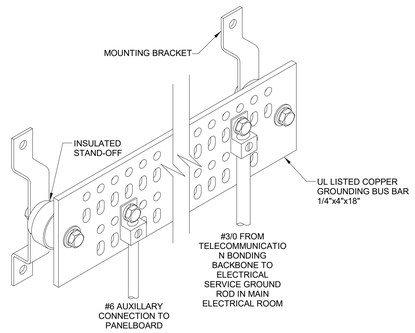
2 TYPICAL CLASSROOM DATA DROP — SCALE: NTS



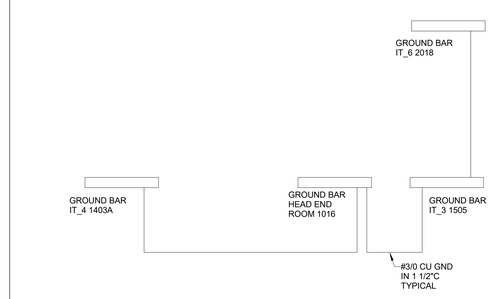
1 TELECOMMUNICATIONS ROOM GROUNDING DETAIL — SCALE: NTS



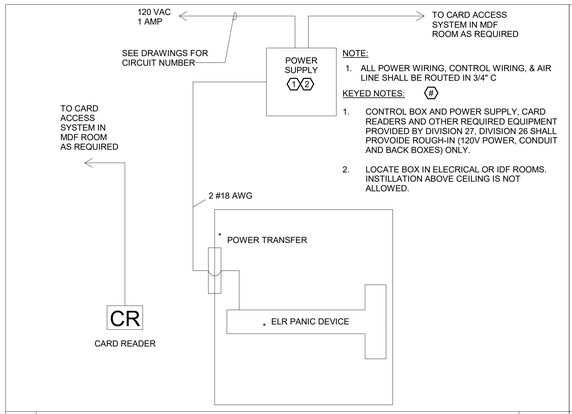
6 TELECOMMUNICATIONS GROUNDING BUSSBAR PLAN VIEW — SCALE: NTS



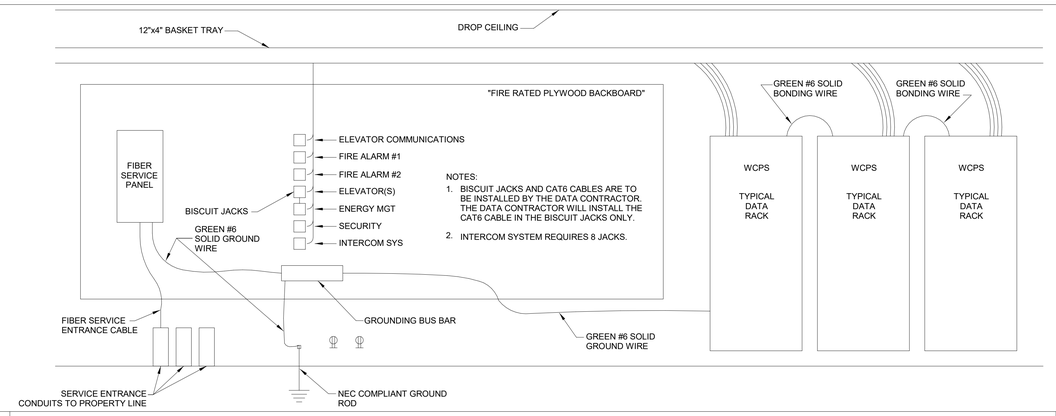
5 TELECOMMUNICATIONS GROUNDING BUSSBAR DETAIL — SCALE: NTS



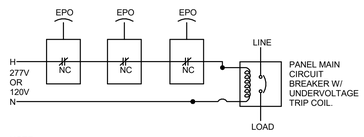
4 TELECOMM GROUNDING RISER DIAGRAM — SCALE: NTS



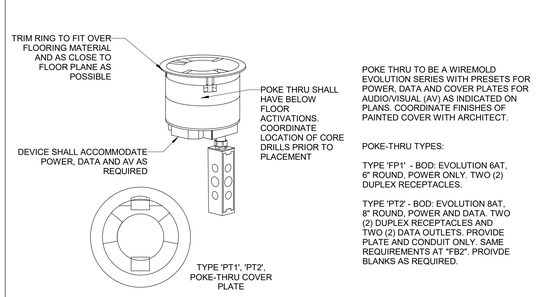
8 CARD READER SINGLE DOOR — SCALE: NTS



7 MDF/DEMARC ROOM GROUNDING SYSTEM — SCALE: NTS

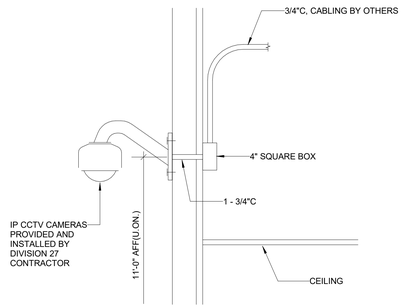


3 TYPICAL EPO BUTTON SHUT DOWN — SCALE: NTS



10 FIRE-RATED POKE-THROUGH — SCALE: NTS

E023-08



SECTION

9 TYPICAL CCTV EXTERIOR CAMERA TERMINATION DETAIL — SCALE: NTS

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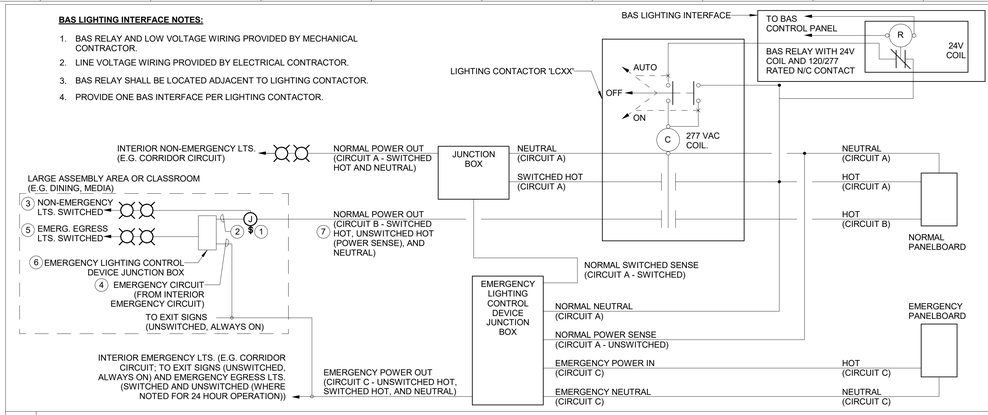
BAS LIGHTING INTERFACE NOTES:

1. BAS RELAY AND LOW VOLTAGE WIRING PROVIDED BY MECHANICAL CONTRACTOR.
2. LINE VOLTAGE WIRING PROVIDED BY ELECTRICAL CONTRACTOR.
3. BAS RELAY SHALL BE LOCATED ADJACENT TO LIGHTING CONTACTOR.
4. PROVIDE ONE BAS INTERFACE PER LIGHTING CONTACTOR.



2 INTERIOR LIGHTING CONTROL WIRING DIARGAM

SCALE: NTS

GENERAL NOTES:

1. TO TURN INTERIOR NON-EMERGENCY LIGHTS "OFF", BAS CONTROL WILL PROVIDE POWER TO RELAY "R". CONTACTS WILL OPEN AND CONTACTOR COIL WILL DROP OUT, INTERIOR NON-EMERGENCY LIGHTS WILL GO OUT.
2. TO TURN INTERIOR NON-EMERGENCY LIGHTS "ON", BAS CONTROL WILL REMOVE POWER TO RELAY "R". CONTACTS WILL CLOSE AND CONTACTOR COIL WILL PULL IN, INTERIOR NON-EMERGENCY LIGHTS WILL COME ON.
3. THE INTERIOR EMERGENCY CIRCUITS ARE PRIMARILY USED FOR SWITCHING THE CORRIDOR EMERGENCY EGRESS LIGHTING VIA THE EMERGENCY LIGHTING CONTROL DEVICE. THE DEVICE MIMICS THE SWITCHED STATE OF THE INTERIOR NON-EMERGENCY LIGHTING UNDER NORMAL POWER CONDITIONS. UPON LOSS OF POWER THE DEVICE WILL TURN THE LIGHTS ON REGARDLESS OF THE STATE OF THE INCOMING SWITCHED NON-EMERGENCY LEAD. THE INTERIOR EMERGENCY CIRCUITS ALSO PROVIDE POWER TO EXIT SIGNS, EMERGENCY LIGHTING CONTROL DEVICES FOR LARGE ROOMS, AND LIGHTS INTENDED TO OPERATE 24/7. EMERGENCY POWER IS PROVIDED BY THE GENERATOR.
4. PROVIDE JUNCTION BOX FOR MOUNTING THE EMERGENCY SHUNT RELAY DEVICE ADJACENT TO THE CONTACTOR.
5. DETAIL IS TYPICAL, REFER TO ELECTRICAL PLANS AND LIGHTING CONTACTOR SCHEDULE FOR ADDITIONAL INFORMATION.
6. GROUND WIRES NOT SHOWN FOR CLARITY.
7. PROVIDE A REMOTE TEST SWITCH FOR EMERGENCY LIGHTING CONTROL DEVICES INSTALLED ABOVE LAY-IN CEILINGS (E.G. LARGE CLASSROOMS, ETC.) FOR ROUTINE TESTING. SWITCH SHALL BE INSTALLED IN CEILING TILE BELOW DEVICE. SWITCH SHALL BE INSTALLED SO THAT TILE IS REMOVABLE AND AS NOT TO PROHIBIT ACCESS TO CONTROL DEVICE ABOVE.

LARGE AREA CIRCUIT KEYED NOTES: (#)

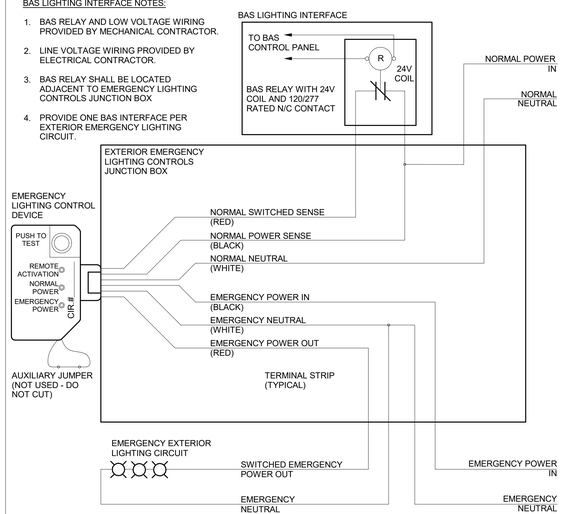
1. TO ALLOW FOR THE DE-ENERGIZING OF NON-EMERGENCY LIGHTING AFTER HOURS VIA THE CONTACTOR AND BAS, THE LOCAL SWITCH SHALL BE CONNECTED TO THE SWITCHED CONDUCTOR FROM THE CONTACTOR.
2. CIRCUIT B (ROOM SWITCHED HOT (DOWNSTREAM OF LOCAL SWITCH), POWER SENSE HOT (UNSWITCHED FROM UPSTREAM OF CONTACTOR), AND NEUTRAL).
3. CIRCUIT B (SWITCHED HOT (DOWNSTREAM OF LOCAL SWITCH) AND NEUTRAL).
4. CIRCUIT C (UNSWITCHED HOT AND NEUTRAL).
5. CIRCUIT C (SWITCHED HOT (DOWNSTREAM OF LOCAL EMER. LIGHTING CONTROL DEVICE) AND NEUTRAL)
6. LOCAL EMER. LIGHTING CONTROL DEVICE: ALLOWS THE EMERGENCY EGRESS LIGHTING IN THE SPACE TO MIMIC THE SWITCHED STATE OF THE NORMAL LIGHTING IN THE ROOM. PROVIDE 2ND DEVICE AT SAME LOCATION FOR BI-LEVEL DIMMING APPLICATIONS, EACH SWITCH LEG REQUIRES A DEVICE.
7. CIRCUIT B (NEUTRAL AND SWITCHED HOT (POWER SENSE) NOT SHOWN SEPERATELY FOR CLARITY. CIRCUIT B POWER SENSE HOT IS THE UNSWITCHED HOT FROM UPSTREAM OF THE CONTACTOR (SIMILAR TO CIRCUIT A) AND IS FOR POWER SENSING FOR OPERATION OF THE LOCAL EMERGENCY LIGHTING CONTROL DEVICE.

GENERAL NOTES:

1. TO TURN EXTERIOR EMERGENCY LIGHTS "OFF", BAS CONTROL WILL PROVIDE POWER TO RELAY "R". CONTACTS WILL OPEN AND CONTACTOR COIL WILL DROP OUT, EXTERIOR EMERGENCY LIGHTS WILL GO OUT.
2. TO TURN EXTERIOR EMERGENCY LIGHTS "ON", BAS CONTROL WILL REMOVE POWER TO RELAY "R". CONTACTS WILL CLOSE AND CONTACTOR COIL WILL PULL IN, EXTERIOR EMERGENCY LIGHTS WILL COME ON.
3. EXTERIOR EMERGENCY LIGHTING CIRCUITS ARE SWITCHED VIA THE EMERGENCY LIGHTING CONTROL DEVICE. THE DEVICE MIMICS THE SWITCHED STATE OF THE BAS RELAY UNDER NORMAL POWER CONDITIONS. UPON LOSS OF POWER THE DEVICE WILL TURN THE LIGHTS ON REGARDLESS OF THE STATE OF THE INCOMING SWITCHED NON-EMERGENCY LEAD. EMERGENCY POWER IS PROVIDED BY THE GENERATOR.
4. PROVIDE JUNCTION BOX FOR MOUNTING THE EMERGENCY LIGHTING CONTROL DEVICE AND BAS LIGHTING INTERFACE ADJACENT TO THE EMERGENCY PANEL.
5. NORMAL POWER SHALL BE PROVIDED BY A DEDICATED 277V, 1P CIRCUIT FROM CLOSEST NORMAL POWER PANEL. ONE CIRCUIT PER EMERGENCY PANEL.
6. DETAIL IS TYPICAL, REFER TO ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.
7. GROUND WIRES NOT SHOWN FOR CLARITY.

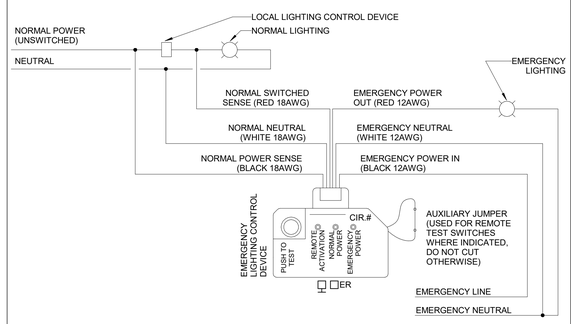
BAS LIGHTING INTERFACE NOTES:

1. BAS RELAY AND LOW VOLTAGE WIRING PROVIDED BY MECHANICAL CONTRACTOR.
2. LINE VOLTAGE WIRING PROVIDED BY ELECTRICAL CONTRACTOR.
3. BAS RELAY SHALL BE LOCATED ADJACENT TO EMERGENCY LIGHTING CONTROLS JUNCTION BOX
4. PROVIDE ONE BAS INTERFACE PER EXTERIOR EMERGENCY LIGHTING CIRCUIT.



1 EXTERIOR LIGHTING CONTROL WIRING DIAGRAM

SCALE: NTS

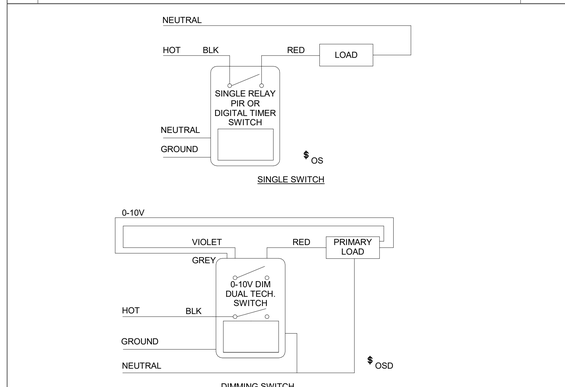


EMERGENCY LIGHTING CONTROL UNIT NOTES (ER):

1) INTENT OF EMERGENCY LIGHTING CONTROL UNIT IS FOR THE EMERGENCY LIGHTS IN A SPACE TO MIMIC THE SWITCHING OF THE NORMAL LIGHTING FIXTURES IN THAT SPACE. WITHOUT ADDITIONAL DEDICATED SWITCHES. UPON LOSS OF POWER, EMERGENCY LIGHTS ARE SWITCHED ON REGARDLESS OF NORMAL POWER SWITCHING STATUS. DEVICE IS UL 924 LISTED.

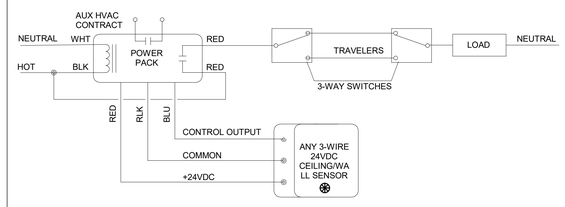
3 EMERGENCY LIGHTING CONTROL DEVICE WIRING DETAIL

SCALE: NTS



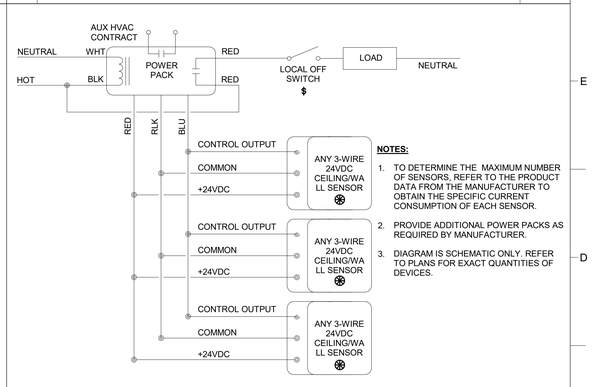
6 WALL SWITCH OCCUPANCY SENSOR WIRING DIAGRAM

SCALE: NTS



8 LOW-VOLTAGE OCCUPANCY SENSOR WIRING DIAGRAMS THREE-WAY SWITCHING

SCALE: NTS



4 LIGHTING FIXTURE MOUNTING DETAIL

SCALE: NTS

NOTES:

1. TO DETERMINE THE MAXIMUM NUMBER OF SENSORS, REFER TO THE PRODUCT DATA FROM THE MANUFACTURER TO OBTAIN THE SPECIFIC CURRENT CONSUMPTION OF EACH SENSOR.
2. PROVIDE ADDITIONAL POWER PACKS AS REQUIRED BY MANUFACTURER.
3. DIAGRAM IS SCHEMATIC ONLY. REFER TO PLANS FOR EXACT QUANTITIES OF DEVICES.

5 LOW-VOLTAGE OCCUPANCY SENSOR WIRING DIAGRAM POWER PACK WITH MULTIPLE SENSORS

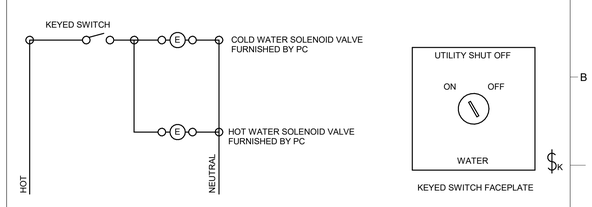
SCALE: NTS

NOTE:

1. ALL CONTROL WIRING SHALL BE IN CONDUIT. ALL OCCUPANCY SENSORS SHALL BE MOUNTED TO JUNCTION BOXES.
2. DO NOT MOUNT POWER PACKS CLOSER THAN 6-12 INCHES FROM SENSOR(S)
3. MOUNT JUNCTION BOX VERTICALLY TO WALL OR HORIZONTALLY TO BOTTOM OF TRUSS/BEAM

9 POWER PACK J-BOX INSTALLATION DETAIL

SCALE: NTS



NOTES:

KEYED SWITCHES SHALL BE EITHER TUMBLER OR CAM STYLE LOCK. PROVIDE ENGRAVED LABELS FOR FACEPLATE AND SWITCHES AS SHOWN ABOVE.

7 TYPICAL SCIENCE ROOM WATER SHUT OFF

SCALE: NTS

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PROJECT INFORMATION

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PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

DKA JOB NUMBER
2401

DEWBERRY NUMBER
50171439

REVISIONS

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PA: ROBERT STEVENSON
PM: BK
Drawn By: MEH
Plot Date: 1/8/2025 2:15:58 PM

DATE ISSUED

BID DOCUMENTS
01/10/2025

SHEET TITLE

DETAILS

E05.04

Docusign Envelope ID: 265849C1-DFEA-4634-9240-6B1BF3C62ECB

PANEL: INV

LOCATION: MECHANICAL C200 | **VOLTS:** 480Y/277V 3PH | **MAINS TYPE:** MCB
SUPPLY FROM: 2SHC | **PHASES:** 3 | **BREAKER RATING:** 40 A
MOUNTING: FLOOR | **WIRES:** 4 | **BUS RATING:** 100 A
ENCLOSURE: Type 1 | **SE RATED:** NO | **NEUTRAL RATING:** 100.00%
CALCULATED Isc: | **MINIMUM KAIC:**

CKT	LOAD SERVED	CB	P	*	A		B		C		*	P	CB	LOAD SERVED	CKT
1	LTS: CORR. A, C, D	20 A	1		1713	2380						1	20 A	LTS: EXTERIOR WALL PACKS	2
3	LTS: E/C CLASSROOM A113	20 A	1				92	1654				1	20 A	LTS: LOCKER CORRIDOR E100	4
5	LTS:...	20 A	1						1324	792		1	20 A	LTS: FLOOR 2 AREA A CORR....	6
7	LTS: SCIENCE A213, A209	20 A	1		184	0					--	1	20 A	SPARE	8
9	SPARE	20 A	1	--			0	0			--	1	20 A	SPARE	10
		CONNECTED LOAD:			4277 VA		1746 VA		2116 VA						
		CONNECTED AMPS:			16 A		6 A		8 A						
		DEMAND AMPS:			20 A		8 A		10 A						

BREAKER NOTES:
* INDICATES BREAKER TYPE: 1 =GFCI (6mA), 2= GECB (30mA/100mA), 3=SHUNT TRIP, 4=AFCI, 5=SUBFEED BREAKER, 6=LI, 7=LSI, 8=LSIG, 9= LOCKING DEVICE, 10=NEW BREAKER IN EXISTING, 11=EXISTING BREAKER.

PANEL NOTES:
PROVIDE A 12.5KVA INVERTER

LOAD CLASSIFICATION	CONNECTED LOAD	Demand Factor	ESTIMATED DEMAND	PANEL TOTALS
Lighting	8088 VA	125.00%	10110 VA	**TOTAL LOAD:** 8138 VA
Other	50 VA	100.00%	50 VA	**DEMAND FACTOR:** 124.85%
				DEMAND LOAD: 10160 VA
				DEMAND AMPS: 12 A

LIGHTING CONTACTOR SCHEDULE

NAME	LOCATION CONTROLLED	CIRCUIT DESCRIPTION	VOLTAGE	POLES/AMPS	NOTES
ILC	1. LTS CORRIDOR - AREA A/B/C (1000) 2. LTS CORRIDOR/LOBBY - AREA E 3. SPARE 4. SPARE	L1-1 (INV1-1) L1-9 (INV1-4) SPARE SPARE	277	3-POLE	40A
ELC	1. LTS: EXTERIOR 2. SPARE	L1-# (INV1-3) SPARE	277	2-POLE	30A

GENERAL NOTES:
1) CONTRACTOR SHALL PROVIDE BAS RELAY CONNECTION FOR EACH CONTACTOR TO CONTROL LIGHTS. REFER TO INTERIOR AND EXTERIOR LIGHTING CONTROL DETAILS FOR ADDITIONAL INFORMATION.
2) PROVIDE AN HOA (HAND OFF AUTO) SWITCH FOR ALL CONTACTORS

Lighting Device Schedule - Emergency Relay

Name	Normal Circuit	Emergency Circuit	Room Name	Room Number
ER-01	1HA-3	INV-3	E/C CLASSROOM	A113
ER-02	1HA-3	INV-3	E/C CLASSROOM	A113
ER-03	2SHC-10	INV-1	MECHANICAL	C200
ER-04	2SHC-2	INV-2	MECHANICAL	C200
ER-05	SHD-39	INV-4	MECHANICAL	C200
ER-06	2SHC-4	INV-5	MEDIA CENTER	C129
ER-07	2SHC-4	INV-5	MEDIA CENTER	C129
ER-08	2SHC-4	INV-5	MEDIA CENTER	C129
ER-09	2SHC-4	INV-5	MEDIA CENTER	C129
ER-10	2SHC-6	INV-5	ART	C108
ER-11	2SHC-6	INV-5	ART	C108
ER-12	2SHC-6	INV-5	MUSIC	C106
ER-13	2SHC-6	INV-5	MUSIC	C106
ER-14	2SHC-6	INV-5	BAND	C104
ER-15	2SHC-6	INV-5	BAND	C104
ER-16	SHD-37	INV-5	STUDENT SERVICES	D103
ER-17	SHD-37	INV-5	DINING	D104
ER-18	SHD-37	INV-5	DINING	D104
ER-19	SHD-37	INV-5	DINING	D104
ER-20	SHD-37	INV-5	DINING	D104
ER-21	SHD-37	INV-5	DINING	D104
ER-22	SHD-43	INV-5	SERVING	D106
ER-23	SHD-43	INV-5	SERVING	D106
ER-24	SHD-43	INV-5	KITCHEN	D118
ER-25	SHD-43	INV-5	KITCHEN	D118
ER-26	2HA-5	INV-7	SCIENCE	A209
ER-27	2HA-5	INV-7	SCIENCE	A209
ER-28	2HA-5	INV-7	SCIENCE	A213
ER-29	2HA-5	INV-7	SCIENCE	A213
ER-30	2HA-3	INV-6	MECHANICAL	C200

LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER & MODEL NUMBER	MOUNTING	SIZE	LIGHT SOURCE: TYPE	LUMENS	COLOR	CRI	DRIVER: TYPE	VOLTAGE	SYSTEM WATTS	NOTES
A	2X4 LED RECESSED FLAT PANEL, 0-10V DIMMING, DIFFUSED SMOOTH FLAT OPAL LENS, INTEGRAL DRIVER & POWER SUPPLY ACCESSIBLE FROM BELOW. EXTRUDED ALUMINUN GRAME WITH DIE FORE GALVANIZED STEEL HOUSING.	METALUX#2CGTS-L3C3 DAY-BRITE #2FPZ-E05,-840-ADS-UNV-DIM LITHONIA #EPANL-2X4-4000LM-80CRI-40K-MIN10-ZT-MVOLT	RECESSED	23-3/4" WIDE 47-3/4" LONG 3" DEEP	LED	5957	4000K	80	0-10V DIMMING TO 10%	120/277	46	1
B	2X4 LED RECESSED FLAT PANEL, 0-10V DIMMING, DIFFUSED SMOOTH FLAT OPAL LENS, INTEGRAL DRIVER & POWER SUPPLY ACCESSIBLE FROM BELOW. EXTRUDED ALUMINUN GRAME WITH DIE FORE GALVANIZED STEEL HOUSING.	METALUX#2CGTS-L3C3 DAY-BRITE #2FPZ-E31,-840-ADS-UNV-DIM LITHONIA #EPANL-2X4-4000LM-80CRI-40K-MIN10-ZT-MVOLT	RECESSED	23-3/4" WIDE 47-3/4" LONG 3-1/4" DEEP	LED	3993	4000K	80	0-10V DIMMING TO 10%	120/277	30.7	1
D1	4" DOWNLIGHT, 0-10V DIMMING TO 1%, REGRESSED LENS, ANTIMICROBIAL FINISH, NON-CONDUCTIVE DEAD-FRONT TRIM, LIGHT ENGINE AND DRIVER ACCESSIBLE FROM BELOW. SHOWER LIGHT FIXTURE WET LOCATION RATED.	PORTFOLIO#LD6C-20-90-40-D010-PS-X-MW LIGHTOLIER#4R-N-PAR-SL-20-940-CC-WHAMF-Z10-U GOTHAM#EVO4SH-4/20/DFRAMF-SMO-MVOLT-E21	RECESSED	4.41" DIA. 4.2" H	LED	1684	4000K	90	0-10V DIMMING TO 10%	120/277	20	
D2	4" OPEN LED DOWNLIGHT, 0-10V DIMMING TO 10%, SELF-FLANGED, CLEAR REFLECTOR AND FLANGE, SEMI-SECULAR FINISH. MEDIUM WIDE DISTRIBUTION, LENSED LIGHT ENGINE, DRIVER ACCESSIBLE FROM BELOW.	HALO COMMERCIAL#HC4-10-D010-HM4-0525-840-41-MD-H LIGHTOLIER#4R-N-PAR-DL-10-9040-W-CL-Z10-U GOTHAM#EVO4-40/10-AR-LSS-MWD-MVOLT-GZ10	RECESSED	4.41" DIA. 4.2" H	LED	1131	4000K	80	0-10V DIMMING TO 10%	120/277	10.4	
EM	EMERGENCY LIGHTING UNIT, LOW PROFILE, AIRABLE OPTICS, NICKEL CADMIUM BATTERY. SELF DIAGNOSTICS, OPERATING RANGE: 10°C - 40°C, UL LISTED FOR DAMP LOCATIONS.	SURE-LITE#AEL-H2 MULE#SQ-LED-H-SD-HL LITHONIA#ELM4L	WALL MOUNT AT 96" AFF	9-72" WIDE 4.68" TALL 3.10" DEEP	LED	220	4000K	80	ON / OFF	120/277	2.4	N/A
F	4' LED WALL BRACKET, 0-10V DIMMING, WRAPAROUND LIGHT, PRISMATIC POLYCARBONATE LENS (125" THICK), HEAVY ALUMINUM HOUSING, STAINLESS STEEL TORX SCREWS, WHITE FINISH.	METALUX#4NWS3CS-UNV (LOW, 4000K) DAY-BRITE #NWL-4-40L-8CST-UNV-DIM LITHONIA #BLWP4-40LHE-ADSM-GZ10-LP840-QMB	WALL MOUNT AT 96" AFF	47.75" LONG 7.00" TALL 2.87" DEEP	LED	4,180	4000K	80	0-10V DIMMING TO 10%	120/277	34.3	N/A
H	2' LED INDUSTRIAL VAPORTITE, CONTINUOUS NEMA 4X GASKETING, FIBERGLASS HOUSING, WET LOCATION, LOW PROFILE FROSTED, ACRYLIC LENS, 1P65 & 1P66 RATED, NEMA 4X RATED.	METALUX#DNT3-L-DSL3- G-120V-L840-CD1 CHLORIDE#VJW2-35L-840- UNV-DIM-LFA LITHONIA#FEML24-3000LM- LPAFL-MD-120- GZ10-40K-80CRI	WALL MOUNT AT 24" AFF OF PIT TO BOTTOM OF FIXTURE	2' LONG 6.8" WIDE 4.2" HIGH	LED	3334	4000K	80	0-10V DIMMING TO 10%	120	24	4
J	4' LED STRIPLIGHT WITH WIREGUARD, 80 CRI, INTEGRAL HIGH EFFICIENCY DRIVER & POWER SUPPLY, WIREGUARD, SNAP ON FROSTED DIFFUSE LENS, WHITE FINISH. HANGER CHAINS.	METALUX#4SNLED-LD5-SLW-41SL-UNV-L840-CD-1-AYC-WG/SNF DAY-BRITE#FSSEZ4-40L-840-UNV-DIM-FSWG4-FKR-126 LITHONIA#CLTN-L48-5000LM-FST-MVOLT-40K-80CRI-WH-HC36M12-WGZ48	SUSPEND AT 10'-0" AFF TO BOTTOM OR SURFACE MOUNT WHERE CEILING IS LOWER	3" WIDE 48" LONG 3.5" HIGH	LED	4134	4000K	80	0-10V DIMMING	120/277	38	N/A

Substitution of Equivalent Products: Substitution of manufacturers and products shall only be allowed where three fixtures are not called out. When "approved equal" is written equivalent fixtures to those listed in Light Fixture Schedule shall be submitted to the Engineer for approval through the product/shop drawing submittal review process.

K	2X4 LED RECESSED STATIC TROFFER, 0-10V DIMMING TO 10%, FLAT ACRYLIC LENS (# 12 PATTERN, .125" THICK, FROSTED), FULLY GASKETED, INTEGRAL DRIVER & POWER SUPPLY ACCESSIBLE FROM BELOW.	METALUX#2GR-LD5-56-F125-UNV-SL-L840-CD-G2 DAY BRITE#2GTQS4L-840-4-FS-12F-UNV-DIM-DW LITHONIA#2GTL4-60L-A12125-GZ10-LP840-ABC	RECESSED	23-3/4" WIDE 47-15/16" LONG 3-1/4" DEEP	LED	5618	4000K	80	0-10V DIMMING TO 10%	120/277	45	N/A
LP6	LINEAR 6'-0" DIRECT LIGHTING PENDANT WITH REMOTE 0-10V SMOOTH DIMMING DRIVER, FLUSH ACRYLIC LENS WITH CUSTOM COLOR POWDER COAT FINISH. CUSTOM COLOR ACUSTIC WRAPPING AROUND PENDANT.	ABI#ABID-6'-NA-DC8000-LG-40-U-S-W-RAL##-1-D FINELITE#HP-2-P-D-6-TL1000-840-F-96-277-SC-FC-10%-XX-FE-SW-ABL-12H-### NEORAY#SA212-DP-C-1005D-80-40-CXX-9F0-1-U-DD-F-W-SC-CA	PENDANT HUNG AT 10'-0" AFF.	2-1/4" W 12" H 6'-0" L	LED	8000	4000K	80	0-10V DIMMING TO 10%	120/277	82	3,8
LP8	LINEAR 8'-0" DIRECT LIGHTING PENDANT WITH REMOTE 0-10V SMOOTH DIMMING DRIVER, FLUSH ACRYLIC LENS WITH CUSTOM COLOR POWDER COAT FINISH. CUSTOM COLOR ACUSTIC WRAPPING AROUND PENDANT.	ABI#ABID-8'-NA-DC8000-LG-40-U-S-W-RAL##-1-D FINELITE#HP-2-P-D-8-TL1000-840-F-96-277-SC-FC-10%-XX-FE-SW-ABL-12H-### NEORAY#SA212-DP-C-1005D-80-40-CXX-8F0-1-U-DD-F-W-SC-CA	PENDANT HUNG AT 11'-0" AFF	2-1/4" W 12" H 8'-0" L	LED	8000	4000K	80	0-10V DIMMING TO 10%	120/277	82	3,8
LY	LINEAR "Y" SHAPPED FIXTURE WITH DIRECT LIGHTING PENDANT WITH REMOTE 0-10V SMOOTH DIMMING DRIVER, FLUSH ACRYLIC LENS WITH CUSTOM COLOR POWDER COAT FINISH. CUSTOM COLOR ACUSTIC WRAPPING AROUND PENDANT.	ABI#ABID-8'-NA-DC8000-LG-40-U-S-W-RAL##-1-D FINELITE#HP-2-P-D-8-TL1000-840-F-96-277-SC-FC-10%-XX-FE-SW-ABL-12H-### NEORAY#SA212-DP-C-1005D-80-40-CXX-8F0-1-U-DD-F-W-SC-CA	PENDANT HUNG AT 19'-0" AFF.	2-1/4" W 12" H 8'-0" L, EA LEG	LED	8000	4000K	80	0-10V DIMMING TO 10%	120/277	82	3,8
LR	LINEAR CUSTOM LENGTH DIRECT LIGHTING PENDANT WITH REMOTE 0-10V SMOOTH DIMMING DRIVER, FLUSH ACRYLIC LENS WITH CUSTOM COLOR POWDER COAT FINISH.	ABI#ABID-X'-NA-DC5000-LG-40-U-S-W-RAL##-1-D FINELITE#HP-2-P-D-X-H-840-F-96-277-SC-FC-10%-XX-FE-SW-ABL-12H-### NEORAY#SA212-DP-C-675D-80-40-CXX-XF0-1-U-DD-F-W-SC-CA	RECESSED, REFER TO ARCHITECTURAL PLANS FOR FIXTURE LENGTHS.	2-1/4" W 12" H X'-0" L	LED	5400	4000K	80	0-10V DIMMING TO 10%	120/277	52	3,8
N	2X4 LED RECESSED STATIC TROFFER, 0-10V DIMMING, FLAT ACRYLIC LENS (# 12 PATTERN, .156" THICK, FROSTED), 18-GA DOOR, 20-GA HOUSING, INTEGRAL DRIVER & POWER SUPPLY ACCESSIBLE FROM BELOW.	FAIL-SAFE#CLMF-24-4-INS-A19156-L04-1-HI-40-UNV-EDD-1 HE WILLIAMS#MCT-F-2-4-L40-8-40-CS-S-AD19156-DIM-UNV OR EQUAL	RECESSED	23-3/4" WIDE 46-5/8" LONG 3-1/2" DEEP	LED	4528	4000K	80	0-10V DIMMING TO 10%	120/277	43.3	N/A
P	3D PRINTED LUMINAIRE PENDANT, CONICAL SHAPE, LAMPS AND SOCKET STYLE A19 BULB SOCKET, 120V, LED LAMP BASE, POLYCARBONATE SHADE, WITH IL CERTIFIED CORD. PROVIDE WITH A 90CRI, 4000K, 15W EQUIVELENT TO A 60W INCADESCENT LIGHT PULB. CONFIRM WITH ARCHITECT ON ALL FINAL RAL## CUSTOM COLOR SELECTIONS.	PRENTALUX#PRLX-411-NB-120-XX-RHL-TFIN-DC-XX LIGHTOLIER#3DP OR APPROVED EQUAL	PENDANT HUNG AT 7'-0" AFF	14.17" DIA. 14.37" H DISK + 4.7" DIA.	LED	700	4000K	90	ON/OFF	120	15	3
S	ARCHITECTURAL COMPACT LED FLOOD LIGHT, FOR POLE AND ACCENT LIGHTING, NEUTRAL WHITE LEDS, NON-PIXILATED NARROW SPOT LIGHT SOURCE. IP66 AND DLC LISTED IN A RUGGED DIE-CAST ALUMINUM HOUSING. AVAILABLE IN MULTIPLE COLOR SELECTIONS.	FC LIGHTING#FCF1109-120-940-10BL-BKE-30-LD-PE-LSN9 BEACON LIGHTING#ALX36L-80-40CT-2X2-UNV- LITHONIA#DSXF2 LED-P240K-70CRI-NSP-MVOLT-XX-PE-XX-DXXXX	GROUND MOUNT ON CONCRETE BASE	8.6" WIDE 13.5" HIGH 8.5" DEEP	LED	10,200	4000K	70	ON/OFF	120/277	109	3
SW	ARCHITECTURAL TRAPEZOIDAL LED WALL PACK, TYPE III DISTRIBUTION, NEUTRAL WHITE LEDS, NON-PIXILATED LIGHT SOURCE, NATURAL ALUMINUM FINISH, VISUAL COMFORT OPTICS.	INVUE#CCW-VA3-840-U-T3-XX GARDCO#WY6-196L-1150-NW-GZ-3-UNV-XX LITHONIA#WDGE2 LED-P3-40K-80CRI-VF-MVOLT-XX	WALL MOUNT AT 144" AFG TO BOTTOM OF FIXTURE, UNLESS OTHERWISE NOTED.	16" WIDE 6-13/16" HIGH 10-13/16" DEEP	LED	4514	4000K	80	ON/OFF	120/277	49	3
SC1	15" ROUND SURFACE SOFFIT DOWNLIGHT, MADE FROM MARINE GRADE CORROSION RESISTANT, HEAVY GUAGE DIE CAST ALUMINUM. MOUNTS TO OCTAGONAL JUNCTION BOX OR TO SURFACE. FINISHED IN CHEMICAL IRON PHOSPHATE CONVERSION PRE TREATMENT WITH IMPACT AND VANDAL RESISTANT LENS. IP65 AND IK10 RATED WITH SEAL AROUND ENTIRE FIXTURE.	FC LIGHTING#FCW3800-UNV-4K-CR85-26L-XXX ELCA#15115-S OR APPROVED EQUAL	SURFACE MOUNT TO UNDERSIDE OF SOFFIT	13" DIA 2" HIGH	LED	2619	4000K	85	ON/OFF	0-10V DIMMING	32	3
SC2	4'-0" LONG LINEAR OUTDOOR RATED, SURFACE MOUNT STRIP, NARROW DEPTH, CONTINUOUS FIXTURE WITH UNIFORM ILLUMINATION THAT IS IP65 AND IK10 RATED. EXTRUDED ALUMINUM BODY WITH INTERNAL GASKETS AND SNAP-IN IMPACT RESISTANT ACRYLIC LENS	FINELITE#HP-4WL-R-D-4FT-H-840-F-96-277-SC-FC-10-XF-FE-#### OR APPROVED EQUAL	SURFACE MOUNT ON UNDERSIDE OF METAL CANOPY	4'-0" LONG 4" WIDE 4" HIGH	LED	2688	4000K	80	0-10V DIMMING TO 10%	277	28	3
X	EXIT SIGN, SINGLE / DUAL FACE, SELF-DIAGNOSTICS, EDGE-LIT WITH METALIC HOUSING, UNIVERSAL CHEVRONS, UNIVERSAL MOUNTING, RED LEDS, NICKEL CADMIUM BATTERY, OPERATING RANGE: 10°C - 40°C.	SURE-LITE/SWSCX-7-0-R MULE#ELX-#-B-RC-X-XX-SD LITHONIA#EDGX-X-#-R-EL-XX	SURFACE MOUNT ON CEILING OR WALL MOUNT AT 96" AFF.	14" WIDE 8.1" HIGH 3" DEEP	LED	-	RED	N/A	ON/OFF	120/277	3	2
X1	EXIT SIGN, SINGLE / DUAL FACE, SELF-DIAGNOSTICS, THERMOPLASTIC HOUSING, UNIVERSAL CHEVRONS, UNIVERSAL MOUNTING, RED LEDS, NICKEL CADMIUM BATTERY, OPERATING RANGE: 10°C - 40°C. PROVIDE WITH WIRE GUARD AS NOTED	SURE-LITE/SWSCX-7-XX-WG10 MULE LITHONIA	SURFACE MOUNT ON CEILING OR WALL MOUNT AT 96" AFF.	13" WIDE 7-1/2" HIGH 2-1/8" DEEP	LED	-	RED	N/A	ON/OFF	120/277	3	2

GENERAL NOTES:
1) CONTRACTOR SHALL COORDINATE FIXTURE MOUNTING STYLE (GRID VESUS GYP BOARD) WITH ARCHITECTURAL REFLECTED CEILING PLANS AND PROVIDE REQUIRED MOUNTING ACCESSORIES.
2) CONTRACTOR SHALL CORRDINATE MOUNTING HEIGHT FOR WALL-MOUNTED FIXTURES WITH ARCHITECTURAL ELEVATIONS PRIOR TO ANY ROUGH-IN.
3) ALL INDUSTRIAL FIXTURES WHERE INSTALLED IN MECHANICAL SPACES SHALL BE COORDINATED WITH ALL TRADES TO AVOID CONFLICTS WITH MECHANICAL, PLUMBING AND FIRE PROTECTION EQUIPMENT, PIPING, DUCTWORK, ETC.

NOTES:
1) WIRE FIXTURES FOR 0-10V, DIMMING LEVEL SWITCHING WHERE INDICATED ON PLANS.
2) REFER TO ELECTRICAL LIGHTING PLANS FOR FACE AND ARROW ORIENTATION(S).
3) COLOR OF FIXTURE TO BE SELECTED BY THE ARCHITECT DURING THE SHOP DRAWING PHASE.
4) PROVIDE FIXTURE WITH WIREGUARD.
5) PROVIDE ALL COMPONENTS FOR A FULLY FUNCTIONING SYSTEM.
6) LENGTH AND QUANTITIES AS SHOWN ON PLANS.
7) CONTRACTOR SHALL PROVIDE ALL MOUNTING HARDWARE.
8) LOCATE ALL REMOTE DRIVERS ABOVE ACCESSIBLE TILE CEILING. PROVIDE LABEL ON GRID BELOW DRIVERS INDICATING WHAT IS ABOVE GRID TILE

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PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

DKA JOB NUMBER
2401

DEWBERRY NUMBER
50171439

REVISIONS

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PA: ROBERT STEVENSON
PM: BK
Drawn By: MEH
Plot Date: 1/8/2025 2:16:01 PM

DATE ISSUED

BID DOCUMENTS
01/10/2025

SHEET TITLE
LIGHTING FIXTURE SCHEDULE

E06.01

Docusign Envelope ID: 265849C1-DFEA-4634-9240-6B1BF3C62ECB

PANEL: SPD — PRE PURCHASE

LOCATION: ELEC D113 | **VOLTS:** 208Y/120V 3PH | **MAINS TYPE:** MCB
SUPPLY FROM: STD | **PHASES:** 3 | **BREAKER RATING:** 450 A
MOUNTING: Surface | **WIRES:** 4 | **BUS RATING:** 600 A
ENCLOSURE: Type 1 | **SE RATED:** NO | **NEUTRAL RATING:** 100.00%
CALCULATED Isc: 7.705 | **MINIMUM KAIC:** 10

CKT	LOAD SERVED	CB	P	*	A		*	B		*	C		*	P	CB	LOAD SERVED	CKT
1	VAV 3.10,3.11,3.16 D103, C100	20 A	1		150	1000							2	1	20 A	PWR: HEAT TAPE CH-2	2
3	VAV 2.01-07 KITCHEN D118	20 A	1				350	1000					2	1	20 A	PWR: HEAT TAPE CH-1	4
5	B-2: BOILER	20 A	1							1200	1440			1	20 A	REC: CHILLER YARD	6
7	B-1: BOILER	20 A	1		1200												8
9	PWR: CHP-1 CTRLS	20 A	1				500	0				--	1	20 A	SPARE		10
11	PWR: CHP-2 CTRLS	20 A	1							500	0	--	1	20 A	SPARE		12
13	REC: VESTIBULE 1201	20 A	1		480	0						--	1	20 A	SPARE		14
15	REC: FUTURE MAGOMETER VE...	20 A	1				960	0				--	1	20 A	SPARE		16
17	REC: GUIDANCE/SOCIAL...	20 A	1							1440	804		1	20 A	GWH-2: MECHANICAL D115		18
19	DISPLAY CASE	20 A	1		860	1400							1	20 A	GWH1: MECH D115		20
21	REC: ELEC 1229	20 A	1				900	1400					1	20 A	GWH1: MECH D115		22
23	PWR: EPO BUTTONS MECH D115	20 A	1							1000	0	--	1	20 A	SPARE		24
25	REC: MECHANICAL D115	20 A	1		1620	700							1	15 A	CP-1 (1/6HP) MECHANICAL D115		26
27	PWR: MECH CTRL MECH 1230	20 A	1				1000	700					1	20 A	CP-2 (1/6HP) MECHANICAL D115		28
29	DMSS-3/CU -3 3#10, #10G IN 1"C	25 A	2							1000	0	--	1	20 A	SPARE		30
31					1000	1000											32
33	SPARE	20 A	2	--			0	500					3	60 A	GEN PNL REFER TO RISER DIAGRAM		34
35										0	0						36
37	SK1 REFER TO RISER DIAGRAM	300 A	3		39025	9066											38
39							38465	9320					3	100 A	1SPC REFER TO RISER DIAGRAM		40
41										38204	8510						42
	CONNECTED LOAD:				57501 VA			55095 VA			54094 VA						
	CONNECTED AMPS:				480 A			460 A			451 A						
	DEMAND AMPS:				408 A			391 A			383 A						

BREAKER NOTES:
* INDICATES BREAKER TYPE: 1 =GFCI (6mA), 2= GECB (30mA/100mA), 3=SHUNT TRIP, 4=AFCI, 5=SUBFEED BREAKER, 6=LI, 7=LSI, 8=LSIG, 9= LOCKING DEVICE, 10=NEW BREAKER IN EXISTING, 11=EXISTING BREAKER.

PANEL NOTES:
PROVIDE PANEL WITH LI MAIN BREAKER.

LOAD CLASSIFICATION	CONNECTED LOAD	Demand Factor	ESTIMATED DEMAND	PANEL TOTALS
HVAC	1000 VA	100.00%	1000 VA	**TOTAL LOAD:** 166690 VA
Lighting	1500 VA	125.00%	1875 VA	**DEMAND FACTOR:** 84.90%
Motor	14435 VA	106.93%	15436 VA	**DEMAND LOAD:** 141525 VA
Receptacle	58445 VA	58.56%	34223 VA	**DEMAND AMPS:** 393 A
Kitchen Equipment Non-Dwelling Unit	57360 VA	100.00%	57360 VA	
Power	7960 VA	100.00%	7960 VA	
Appliance - Dwelling Unit	125 VA	100.00%	125 VA	
Electric Clothes Dryer	5000 VA	100.00%	5000 VA	
Heating	8300 VA	100.00%	8300 VA	
Equipment	1000 VA	100.00%	1000 VA	
Kitchen Equipment - Non-Dwelling Unit	11590 VA	80.00%	9272 VA	

PANEL: 1HA — PRE PURCHASE

LOCATION: ELEC A102 | **VOLTS:** 480Y/277V 3PH | **MAINS TYPE:**
SUPPLY FROM: MDS | **PHASES:** 3 | **BREAKER RATING:** 400 A
MOUNTING: Surface | **WIRES:** 4 | **BUS RATING:** 1000 A
ENCLOSURE: Type 1 | **SE RATED:** NO | **NEUTRAL RATING:** 100.00%
CALCULATED Isc: 10.688 | **MINIMUM KAIC:** 35

CKT	LOAD SERVED	CB	P	*	A		*	B		*	C		*	P	CB	LOAD SERVED	CKT
1	LTS: CTE CLASSROOM 1106	20 A	1		3350	1000								1	20 A	EXT LED SIGN(2#10,#10G,1"C)	2
3	LTS: E/C CLASSROOM 1107	20 A	1					2797	1000					1	20 A	EXT LED SIGN(2#10,#10G,1"C)	4
5	UH-9 (3.3KW): RISER A104	20 A	1							3300	0	--	1	20 A	SPARE		6
7	SPARE	20 A	1	--	0	0						--	1	20 A	SPARE		8
9	SPARE	20 A	1	--			0	0				--	1	20 A	SPARE		10
11	UH-2 (3.3KW): ELEC A102	20 A	1							3300	0	--	1	20 A	SPARE		12
13	SPARE	20 A	1	--	0	0						--	1	20 A	SPARE		14
15	SPARE	20 A	1	--			0	0				--	1	20 A	SPARE		16
17	SPARE	20 A	1	--						0	0	--	1	20 A	SPARE		18
19					0	0											20
21	SPARE	100 A	3	--			0	0				--	3	60 A	SPARE		22
23										0	0						24
25	SPACE	--	2	--	--	27495											26
27							--	25019					6	3	250 A	2HA REFER TO RISER DIAGRAM	28
29	ELEV: E1-1 REFER TO RISER DIAGRAM	125 A	3	6	14560	43778				14560	22211						30
31																	32
33							14560	48566					6	3	150 A	PNL 1PA1 VIA XFMR TA REFER TO RISER DIAGRAM	34
35	SPACE	--	1	--						--	47212						36
37					--	--											38
39	SPACE	--	3	--			--	--					--	3	--	SPACE	40
41										--	--						42
	CONNECTED LOAD:				90183 VA			91941 VA			90583 VA						
	CONNECTED AMPS:				326 A			332 A			327 A						
	DEMAND AMPS:				290 A			296 A			292 A						

BREAKER NOTES:
* INDICATES BREAKER TYPE: 1 =GFCI (6mA), 2= GECB (30mA/100mA), 3=SHUNT TRIP, 4=AFCI, 5=SUBFEED BREAKER, 6=LI, 7=LSI, 8=LSIG, 9= LOCKING DEVICE, 10=NEW BREAKER IN EXISTING, 11=EXISTING BREAKER.

PANEL NOTES:
PROVIDE WITH LSIG MAIN BREAKER.

LOAD CLASSIFICATION	CONNECTED LOAD	Demand Factor	ESTIMATED DEMAND	PANEL TOTALS
HVAC	1300 VA	100.00%	1300 VA	**TOTAL LOAD:** 272707 VA
Lighting	15501 VA	125.00%	19376 VA	**DEMAND FACTOR:** 89.12%
Motor	111192 VA	109.82%	122112 VA	**DEMAND LOAD:** 243035 VA
Receptacle	98934 VA	55.05%	54467 VA	**DEMAND AMPS:** 292 A
Power	16180 VA	100.00%	16180 VA	
Electric Clothes Dryer	5000 VA	100.00%	5000 VA	
Heating	16600 VA	100.00%	16600 VA	
Kitchen Equipment	8000 VA	100.00%	8000 VA	

PANEL: 1PA1 — PRE PURCHASE

LOCATION: ELEC A102 | **VOLTS:** 208Y/120V 3PH | **MAINS TYPE:** MCB
SUPPLY FROM: TA | **PHASES:** 3 | **BREAKER RATING:** 350 A
MOUNTING: Surface | **WIRES:** 4 | **BUS RATING:** 400 A
ENCLOSURE: Type 1 | **SE RATED** NO | **NEUTRAL RATING:** 100.00%
CALCULATED Isc: 6.020 | **MINIMUM KAIC:** 10

CKT	LOAD SERVED	CB	P	*	A		*	B		*	C		*	P	CB	LOAD SERVED	CKT
1	SPARE	20 A	1	--	0	540								1	20 A	REC: TLT A111, A107, 1100B	2
3	SPARE	20 A	1	--			0	540						1	20 A	REC: STG/TLT A103, A105, A101	4
5	REC: TLT A115A	20 A	1							360	720			1	20 A	REC: RISER/ELEC A104, A102	6
7	REC: CORRIDOR A100A	20 A	1		540	1080								1	20 A	REC: CLASSROOM A117	8
9	REC: HOT BOX	20 A	1				180	1080						1	20 A	REC: CLASSROOM A117	10
11	REC: CLASSROOM A116	20 A	1							360	360			1	20 A	REC: CLASS A117	12
13	REC: CLASSROOM A116	20 A	1		1080	1080								1	20 A	REC: E/C CLASSROOM A115	14
15	REC: CLASSROOM A116	20 A	1				1080	1080						1	20 A	REC: E/C CLASSROOM A115	16
17	REC: CLASSROOM A110	20 A	1							360	360			1	20 A	REC: E/C CLASSROOM A115	18
19	REC: CLASSROOM A110	20 A	1		900	360								1	20 A	REC: CLASSROOM A114	20
21	REC: CLASSROOM A110	20 A	1				1080	1080						1	20 A	REC: CLASSROOM A114	22
23	VAV 4.02,03,04,05,06:...	20 A	1							250	900			1	20 A	REC: CLASSROOM A114	24
25	VAV 4.01,07,08,09:...	20 A	1		200	360								1	20 A	REC: CLASSROOM A112	26
27	EF-9: CLASS A113...	25 A	1				1176	900						1	20 A	REC: CLASSROOM A112	28
29	EF-10: E/C KITCHEN A113B	15 A	1							696	1080			1	20 A	REC: CLASSROOM A112	30
31	FLR BX: CTE CLASSROOM A108	20 A	1		1080	360								1	20 A	REC: CTE CLASSROOM A108	32
33	FLR BX: CTE CLASSROOM A108	20 A	1				1080	1440						1	20 A	REC: CTE CLASSROOM A108	34
35	SPARE	20 A	1	--						0	1080			1	20 A	REC: CTE CLASSROOM A108	36
37	PANEL 1PC REFER TO RISER DIAGRAM	100 A	3		10798	0							--	1	20 A	SPARE	38
39							10974	960					1	1	20 A	REC: EWC BOYS A107	40
41										9964	960		1	1	20 A	REC: EWC GIRLS A111	42
43	SPACE	--	1	--	--	3840											44
45	SPACE	--	1	--			--	6116					3	100 A	1PA2 REFER TO RISER DIAGRAM		46
47	SPACE	--	1	--						--	4306						48
49	PANEL 2PA1 REFER TO RISER DIAGRAM	125 A	3		13900	7660											50
51							14180	5620					3	100 A	PANEL 1PK REFER TO RISER DIAGRAM		52
53										16916	8540						54
	CONNECTED LOAD:				43778 VA			48566 VA			47212 VA						
	CONNECTED AMPS:				365 A			409 A			398 A						
	DEMAND AMPS:				250 A			281 A			273 A						

BREAKER NOTES:
* INDICATES BREAKER TYPE: 1 =GFCI (6mA), 2= GECB (30mA/100mA), 3=SHUNT TRIP, 4=AFCI, 5=SUBFEED BREAKER, 6=LI, 7=LSI, 8=LSIG, 9= LOCKING DEVICE, 10=NEW BREAKER IN EXISTING, 11=EXISTING BREAKER.

PANEL NOTES:

LOAD CLASSIFICATION	CONNECTED LOAD	Demand Factor	ESTIMATED DEMAND	PANEL TOTALS
HVAC	1300 VA	100.00%	1300 VA	**TOTAL LOAD:** 139556 VA
Lighting	830 VA	125.00%	1038 VA	**DEMAND FACTOR:** 68.64%
Motor	9312 VA	105.37%	9812 VA	**DEMAND LOAD:** 95797 VA
Receptacle	98934 VA	55.05%	54467 VA	**DEMAND AMPS:** 266 A
Power	16180 VA	100.00%	16180 VA	
Electric Clothes Dryer	5000 VA	100.00%	5000 VA	
Kitchen Equipment	8000 VA	100.00%	8000 VA	

PANEL: SHD — PRE PURCHASE

LOCATION: ELEC D113 | **VOLTS:** 480Y/277V 3PH | **MAINS TYPE:** MCB
SUPPLY FROM: ATS | **PHASES:** 3 | **BREAKER RATING:** 800 A
MOUNTING: Surface | **WIRES:** 4 | **BUS RATING:** 800 A
ENCLOSURE: Type 1 | **SE RATED:** NO | **NEUTRAL RATING:** 100.00%
CALCULATED Isc: 20.977 | **MINIMUM KAIC:** 35

CKT	LOAD SERVED	CB	P	*	A		*	B		*	C		*	P	CB	LOAD SERVED	CKT
1	PANEL SPE VIA XFMR STE REFER TO RISER DIAGRAM	200 A	3	6	37030	0											2
3							34294	0					--	3	250 A	SPARE	4
5										33610	0						6
7	SHWP-2 (10HP) 3#10, #10G IN 1"C	35 A	3		3880	40150											8
9							3880	44270					6	3	250 A	PANEL 2SHC REFER TO RISER DIAGRAM	10
11										3880	38648						12
13	SHWP-1 (10HP) 3#10, #10G IN 1"C	35 A	3		3880	57501											14
15							3880	55095					6	3	200 A	PANEL SPD VIA XFMR STD REFER TO RISER DIAGRAM	16
17										3880	54094						18
19					0	5820											20
21	SPARE	20 A	3	--			0	5820					3	35 A	SCHWP-1 (15HP) 3#10, #10G IN 1"C		22
23										0	5820						24
25	PCHWP-1 (5HP) 3#12, #12G IN 1"C	15 A	3		2106	5820											26
27							2106	5820					3	35 A	SCHWP-2 (15HP) 3#10, #10G IN 1"C		28
29										2106	5820						30
31	PCHWP-2 (5HP) 3#12, #12G IN 1"C	15 A	3		2106	0											32
33							2106	0					--	3	20 A	SPARE	34
35										2106	0						36
37	LTS: VESTIBULE 1201	20 A	1		2333	833											38
39	LTS: CORRIDOR 1304A	20 A	1				619	833					3	15 A	PHWP-1 (1.5HP) 3#12, #12G IN 1"C		40
41	LTS: STORAGE 1314	20 A	1							817	833						42
43	LTS: LOCKERS 1238	20 A	1		1734	833											44
45							--	833					3	15 A	PHWP-2 (1.5HP) 3#12, #12G IN 1"C		46
47	SPACE	--	3	--						--	833						48
49					--	5000											50
51							--	5000					1	20 A	UH-1 (5.0KW): BOILER RM		50
53	SPACE	--	3	--						--	5000		1	20 A	UH-7 (5.0KW) VESTIBULE 1201		52
55					--	3840							1	20 A	UH-16 (5.0KW) CORR. E105		54
													1	20 A	EF-4/3: MECH/ELEC D113		56
	CONNECTED LOAD:				172866 VA			164556 VA			157447 VA						
	CONNECTED AMPS:				628 A			598 A			568 A						
	DEMAND AMPS:				612 A			583 A			554 A						

BREAKER NOTES:
* INDICATES BREAKER TYPE: 1 =GFCI (6mA), 2= GECB (30mA/100mA), 3=SHUNT TRIP, 4=AFCI, 5=SUBFEED BREAKER, 6=LI, 7=LSI, 8=LSIG, 9= LOCKING DEVICE, 10=NEW BREAKER IN EXISTING, 11=EXISTING BREAKER.

PANEL NOTES:
PROVIDE WITH LSIG MAIN BREAKER AND LI BREAKER FOR THE SPARE 250A BREAKER.

LOAD CLASSIFICATION	CONNECTED LOAD	Demand Factor	ESTIMATED DEMAND	PANEL TOTALS
HVAC	1100 VA	100.00%	1100 VA	**TOTAL LOAD:** 494869 VA
Lighting	23240 VA	125.00%	29050 VA	**DEMAND FACTOR:** 97.42%
Motor	261686 VA	107.02%	280061 VA	**DEMAND LOAD:** 482103 VA
Other	500 VA	100.00%	500 VA	**DEMAND AMPS:** 580 A
Receptacle	79265 VA	56.31%	44633 VA	
Kitchen Equipment Non-Dwelling Unit	57360 VA	100.00%	57360 VA	
Power	10960 VA	100.00%	10960 VA	
Appliance - Dwelling Unit	125 VA	100.00%	125 VA	
Electric Clothes Dryer	10000 VA	100.00%	10000 VA	
Heating	38068 VA	100.00%	38068 VA	
Equipment	1000 VA	100.00%	1000 VA	
Kitchen Equipment - Non-Dwelling Unit	11590 VA	80.00%	9272 VA	

PANEL: SPE — PRE PURCHASE

LOCATION: ELEC D113 | **VOLTS:** 208Y/120V 3PH | **MAINS TYPE:** MCB
SUPPLY FROM: STE | **PHASES:** 3 | **BREAKER RATING:** 450 A
MOUNTING: Surface | **WIRES:** 4 | **BUS RATING:** 600 A
ENCLOSURE: Type 1 | **SE RATED:** NO | **NEUTRAL RATING:** 100.00%
CALCULATED Isc: 7.481 | **MINIMUM KAIC:** 10

CKT	LOAD SERVED	CB	P	*	A		*	B		*	C		*	P	CB	LOAD SERVED	CKT
1	REC: Room D100-2, D101, D100-1	20 A	1		900	720								1	20 A	REC: CORR D100-1	2
3	REC: SCOREBOARD GYM E117	20 A	1					180	180					1	20 A	REC: CORR D100-1	4
5	REC: SCOREBOARD GYM E117	20 A	1							180	1260			1	20 A	REC: STORAGE E103	6
7	REC: GYM E117	20 A	1		900	1260								1	20 A	REC: Room D103C, D103D	8
9	REC: GYM E117	20 A	1					360	540					1	20 A	REC: Room E100, E104	10
11	REC: Room E111, E113	20 A	1							720	360			1	20 A	REC: Room E100, E101	12
13	REC: GIRLS LOCKER E114	20 A	1		360	360								1	20 A	REC: Room E100, E102	14
15	REC: Room E116, E115, E100	20 A	1					900	900					1	20 A	REC: Room E100, E108	16
17	REC: OFFICE E106	20 A	1							720	360			1	20 A	REC: CORR E105	18
19	REC: OFFICE E107	20 A	1		720	360								1	20 A	REC: Room D109, D105	20
21	REC: LAUNDRY E110	20 A	1					1440	1584					1	20 A	UH-11,13,15 GYM-1 1303-1	22
23	REC: LAUNDRY E110	20 A	1							360	360			1	20 A	REC: DATA E102	24
25	UH-10,12,14 GYM-E117	20 A	1		1584	360								1	20 A	REC: DATA E102	26
27	REC: STUDENT SERVICES D103	20 A	1					900	1000				9	1	20 A	REC: NAC DATA	28
29	EX. GYM LIGHTING	20 A	1	--						0	0	--		1	20 A	SPARE	30
31	EX. GYM LIGHTING	20 A	1	--	0	0							--	1	20 A	SPARE	32
33	EX. GYM LIGHTING	20 A	1	--				0	0				--	1	20 A	SPARE	34
35	EX. GYM LIGHTING	20 A	1	--						0	0		--	1	20 A	SPARE	36
37	EX. GYM LIGHTING	20 A	1	--	0	0							--	1	20 A	SPARE	38
39	REC: EWC MEN D109	20 A	1	1				960	0								40
41	REC: FRIDGE -TRAINING 1307	20 A	1	1							1440	2500					42
43	REC: EWC WOMEN D105	20 A	1	1	960	2500							1	2	30 A	REC: DRYER LAUNDRY E110	44
45	SPARE	20 A	1	--				0	0								46
47	SPARE	20 A	1	--						0	0		--	2	40 A	SPARE	48
49					1546	24500											50
51	PANEL SPE2 REFER TO RISER	100 A	3	6				850	24500				5,6	3	250 A	EX. DX UNIT FOR GYM REFER TO RISER	52
53										850	24500						54
	CONNECTED LOAD:				37030 VA			34294 VA			33610 VA						
	CONNECTED AMPS:				309 A			287 A			280 A						
	DEMAND AMPS:				350 A			325 A			317 A						

BREAKER NOTES:
* INDICATES BREAKER TYPE: 1 =GFCI (6mA), 2= GECB (30mA/100mA), 3=SHUNT TRIP, 4=AFCI, 5=SUBFEED BREAKER, 6=LI, 7=LSI, 8=LSIG, 9= LOCKING DEVICE, 10=NEW BREAKER IN EXISTING, 11=EXISTING BREAKER.

PANEL NOTES:
PROVIDE BREAKERS IN SPACES 45, 47 AS GFI BREAKERS. PROVIDE MAIN BREAKERS AS LI.

LOAD CLASSIFICATION	CONNECTED LOAD	Demand Factor	ESTIMATED DEMAND	PANEL TOTALS
Motor	76746 VA	123.94%	95121 VA	**TOTAL LOAD:** 104934 VA
Receptacle	19020 VA	76.29%	14510 VA	**DEMAND FACTOR:** 113.21%
Power	1000 VA	100.00%	1000 VA	**DEMAND LOAD:** 118799 VA
Electric Clothes Dryer	5000 VA	100.00%	5000 VA	**DEMAND AMPS:** 330 A
Heating	3168 VA	100.00%	3168 VA	

PANEL: SPE2

LOCATION: | **VOLTS:** 208Y/120V 3PH | **MAINS TYPE:** MLO
SUPPLY FROM: SPE | **PHASES:** 3 | **BUS RATING:** 100 A
MOUNTING: Surface | **WIRES:** 4 | **NEUTRAL RATING:** 100.00%
ENCLOSURE: Type 1 | **SE RATED:** NO | **MINIMUM KAIC:** 10
CALCULATED Isc:

CKT	LOAD SERVED	CB	P	*	A		*	B		*	C		*	P	CB	LOAD SERVED	CKT
1	EF-15: BOYS E124 2#12, #12G IN...	15 A	1		696												2
3	HOT WATER HEATER	20 A	1	--				0	0				--	1	20 A	CTRL	4
5	REC	20 A	1	--						0	0		--	1	20 A	WATER COOLER	6
7	REC	20 A	1	--	0	0							--	1	20 A	ICEMAKERS	8
9	LTS	20 A	1	--				0	0				--	1	20 A	PATIO LIGHTS	10
11	EM LIGHT	20 A	1	--						0	0		--	1	20 A	ICE MAKER	12
13	CONDENSATE PUMP	20 A	1	--	0	0							--	1	20 A	REC CONCESSIONS	14
15	REC	20 A	1	--				0	0				--	1	20 A	REC CONCESSIONS	16
17	LTS	20 A	1	--						0	0		--	1	20 A	REC CONCESSIONS	18
19	SPARE	20 A	1	--	0	0											20
21	SPARE	20 A	1	--				0	0				--	3	100 A	1PA2 REFER TO RISER DIAGRAM	22
23	SPARE	20 A	1	--						0	0						24
25	SPARE	20 A	1	--	0	850											26
27	SPARE	20 A	1	--				0	850								28
29	SPARE	20 A	1	--						0	850						30
	CONNECTED LOAD:				1546 VA			850 VA			850 VA						
	CONNECTED AMPS:				13 A			7 A			7 A						
	DEMAND AMPS:				15 A			8 A			8 A						

BREAKER NOTES:
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PANEL NOTES:
PROVIDE CIRCUIT TRACING FOR CIRCUITS 3-18. CIRCUITS ARE EXTENDED FROM DEMOLISHED PANEL "A". RENAME CIRCUITS WITH ROOM NAMES AND THE EQUIPMENT/LOADS IT IS SERVING. PROVIDE A GFI BREAKER FOR RECEPTACLE SERVING WATER COOLER IN LOBBY.

LOAD CLASSIFICATION	CONNECTED LOAD	Demand Factor	ESTIMATED DEMAND	PANEL TOTALS
Motor	3246 VA	119.64%	3884 VA	**TOTAL LOAD:** 3246 VA
				DEMAND FACTOR: 119.64%
				DEMAND LOAD: 3884 VA
				DEMAND AMPS: 11 A

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PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS

NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER SEAL 041410 WILLIAM A. MEH 1/10/2025

DKA JOB NUMBER
2401

DEWBERRY NUMBER
50171439

REVISIONS

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PA: ROBERT STEVENSON
PM: BK
Drawn By: MEH
Plot Date: 1/8/2025 2:16:04 PM

DATE ISSUED

BID DOCUMENTS
01/10/2025

SHEET TITLE
PANEL SCHEDULES

E06.02

Docusign Envelope ID: 265849C1-DFEA-4634-9240-6B1BF3C62ECB

PANEL: 1PK

LOCATION: E/C CLASSROOM... **SUPPLY FROM:** 1PA1 **MOUNTING:** Recessed **ENCLOSURE:** Type 1
VOLTS: 208Y/120V 3PH **PHASES:** 3 **WIRES:** 4 **SE RATED:** NO **CALCULATED Isc:**
MAINS TYPE: MCB **BREAKER RATING:** 100 A **BUS RATING:** 100 A **NEUTRAL RATING:** 100.00% **MINIMUM KAIC:** 10

CKT	LOAD SERVED	CB	P	*	A		B		C		*	P	CB	LOAD SERVED	CKT
1	REC: FRIDGE EC KITCHEN A113B	20 A	1	1	1440	360						1	20 A	REC: TLT A113A	2
3	REC: EC KITCHEN A113B	20 A	1	1			360	1260				1	20 A	REC: EC CLASS A113	4
5	REC: MICRO EC KITCHEN A113B	20 A	1	1					960	1080		1	20 A	REC: EC CLASS A113	6
7	REC: WASHER EC KITCHEN...	20 A	1	1	1440	1920					1	1	20 A	REC: EC KITCHEN A113B	8
9	SPARE	20 A	1	--			0	0			--	1	20 A	SPARE	10
11	SPARE	20 A	1	--					0	0	--	1	20 A	SPARE	12
13	SPARE	20 A	1	--	0	0					--	1	20 A	SPARE	14
15	SPARE	20 A	1	--			0	0			--	1	20 A	SPARE	16
17	SPARE	20 A	1	--					0	0	--	1	20 A	SPARE	18
19	SPARE	20 A	2	--	0	0					--	1	20 A	SPARE	20
21							0	0			--	1	20 A	SPARE	22
23	REC: DRYER EC KITCHEN A113B	30 A	2	1					2500	0	--	1	20 A	SPARE	24
25	3#10, #10G IN 1"C				2500	--					--	1	--	SPACE	26
27	REC: OVEN EC KITCHEN A113B	50 A	2	1			4000	--			--	1	--	SPACE	28
29	3#6, #8G IN 1"C								4000	--	--	1	--	SPACE	30
	CONNECTED LOAD:				7660 VA		5620 VA		8540 VA						
	CONNECTED AMPS:				66 A		47 A		74 A						
	DEMAND AMPS:				66 A		47 A		74 A						

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PANEL NOTES:
PROVIDE SHUNT ON MAIN BREAKER - CONNECT TO EPO BUTTON(S).

LOAD CLASSIFICATION	CONNECTED LOAD	Demand Factor	ESTIMATED DEMAND	PANEL TOTALS
Receptacle	8640 VA	100.00%	8640 VA	**TOTAL LOAD:** 21820 VA
Power	180 VA	100.00%	180 VA	**DEMAND FACTOR:** 100.00%
Electric Clothes Dryer	5000 VA	100.00%	5000 VA	**DEMAND LOAD:** 21820 VA
Kitchen Equipment	8000 VA	100.00%	8000 VA	**DEMAND AMPS:** 61 A

PANEL: 1PC

LOCATION: STOR C106A **SUPPLY FROM:** 1PA1 **MOUNTING:** RECESSED **ENCLOSURE:** Type 1
VOLTS: 208Y/120V 3PH **PHASES:** 3 **WIRES:** 4 **SE RATED:** NO **CALCULATED Isc:**
MAINS TYPE: MCB **BREAKER RATING:** 100 A **BUS RATING:** 100 A **NEUTRAL RATING:** 100.00% **MINIMUM KAIC:** 10

CKT	LOAD SERVED	CB	P	*	A		B		C		*	P	CB	LOAD SERVED	CKT
1	FLR BX: MEDIA CENTER C129	20 A	1		1080	360						1	20 A	REC:VESTIBULE C102	2
3	FLR BX: MEDIA CENTER C129	20 A	1				1080	900				1	20 A	REC: BAND C104	4
5	REC: MEDIA CENTER C129	20 A	1						1080	1080		1	20 A	REC: BAND C104	6
7	REC: MEDIA CENTER C129	20 A	1		1080	1080						1	20 A	REC: BAND C104A, C106A	8
9	REC: MEDIA CENTER C129	20 A	1				1260	1080				1	20 A	REC: ART C108	10
11	REC: WRKRM/STG C129A	20 A	1						1080	1260		1	20 A	REC: ART C108	12
13	REC: WRKRM/STG C129A	20 A	1		900	720						1	20 A	REC: STOR C108A	14
15	REC: TEACH WRKRM C131	20 A	1				900	900				1	20 A	REC: MUSIC C106	16
17	REC: TEACH WRKRM C131	20 A	1						180	1080		1	20 A	REC: MUSIC C106	18
19	REC: BOOK STOR C133	20 A	1		720	1440						1	20 A	REC: CORR. 2 C100-2	20
21	EF-7: ART 1220 2#12, #12G IN...	25 A	1				1176	350				1	20 A	VAV3.01,02,04,17,18 C106,129,131	22
23	EF-8: KILN 1220B 2#12, #12G IN...	15 A	1						696	180		1	20 A	REC: KILN C108B	24
25					3328	90						1	20 A	LTS: MEDIA CENTER C129	26
27	REC: KILN C108B	50 A	3				3328	0			--	1	20 A	SPARE	28
29	3#6, #10G IN 1"C								3328	0	--	1	20 A	SPARE	30
	CONNECTED LOAD:				10798 VA		10974 VA		9964 VA						
	CONNECTED AMPS:				91 A		93 A		83 A						
	DEMAND AMPS:				68 A		69 A		62 A						

BREAKER NOTES:
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PANEL NOTES:

LOAD CLASSIFICATION	CONNECTED LOAD	Demand Factor	ESTIMATED DEMAND	PANEL TOTALS
HVAC	350 VA	100.00%	350 VA	**TOTAL LOAD:** 31736 VA
Lighting	90 VA	125.00%	113 VA	**DEMAND FACTOR:** 74.93%
Motor	1872 VA	115.71%	2166 VA	**DEMAND LOAD:** 23781 VA
Receptacle	26544 VA	68.84%	18272 VA	**DEMAND AMPS:** 66 A
Power	2880 VA	100.00%	2880 VA	

PANEL: 2SHC

LOCATION: MECHANICAL C200 **SUPPLY FROM:** SHD **MOUNTING:** Surface **ENCLOSURE:** Type 1
VOLTS: 480Y/277V 3PH **PHASES:** 3 **WIRES:** 4 **SE RATED:** NO **CALCULATED Isc:**
MAINS TYPE: MCB **BREAKER RATING:** 250 A **BUS RATING:** 250 A **NEUTRAL RATING:** 100.00% **MINIMUM KAIC:** 35

CKT	LOAD SERVED	CB	P	*	A		B		C		*	P	CB	LOAD SERVED	CKT
1					0	200						1	20 A	LTS: EXTERIOR WALL PACKS	2
3	SPARE	20 A	3	--			0	3607				1	20 A	LTS: BOOK STOR 1219	4
5									0	2148		1	20 A	LTS: ART 1220	6
7	AHU-2 RETURN FAN (10HP)	30 A	3		3880	532						1	20 A	LTS: MECHANICAL C200	8
9	3#10, #10G IN 3/4"C						3880	2022				1	20 A	LTS: CORRIDOR-3 1200-3	10
11									3880	3300		1	20 A	UH-4 (3.3KW) MECH C200	12
13	PANEL SPC VIA TC	40 A	3		1796	3300						1	20 A	UH-3 (3.3KW) MECH C200	14
15	REFER TO RISER DIAGRAM						1850	5000				1	30 A	UH-8 (5KW): VEST C102 3#10, 1"C	16
17									1040	0	--	1	30 A	SPARE	18
19	INV	40 A	3		4277	0					--	1	20 A	SPARE	20
21	REFER TO RISER DIAGRAM						1746	0			--	1	20 A	SPARE	22
23									2116	0	--	1	20 A	SPARE	24
25					5820	2106									26
27	AHU-3 RETURN FAN (15HP)	50 A	3				5820	2106				3	15 A	AHU-1 SUPPLY FAN (5HP)	28
29	3#8, #10G IN 3/4"C								5820	2106				3#12, #12G IN 3/4"C	30
31					7483	1333									32
33	AHU-2 SUPPLY FAN (20HP)	60 A	3				7483	1333				3	15 A	AHU-1 RETURN FAN (3HP)	34
35	3#6, #10G IN 3/4"C								7483	1333				3#12, #12G IN 3/4"C	36
37					9423	0									38
39	AHU-3 SUPPLY FAN (25HP)	80 A	3				9423	0			--	3	20 A	SPARE	40
41	3#4, #8G IN 1"C								9423	0					42
	CONNECTED LOAD:				40150 VA		44270 VA		38648 VA						
	CONNECTED AMPS:				146 A		161 A		140 A						
	DEMAND AMPS:				159 A		175 A		152 A						

BREAKER NOTES:
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PANEL NOTES:

LOAD CLASSIFICATION	CONNECTED LOAD	Demand Factor	ESTIMATED DEMAND	PANEL TOTALS
HVAC	100 VA	100.00%	100 VA	**TOTAL LOAD:** 123068 VA
Lighting	16237 VA	125.00%	20296 VA	**DEMAND FACTOR:** 109.04%
Motor	90831 VA	107.78%	97898 VA	**DEMAND LOAD:** 134195 VA
Other	500 VA	100.00%	500 VA	**DEMAND AMPS:** 161 A
Receptacle	1800 VA	100.00%	1800 VA	
Power	2000 VA	100.00%	2000 VA	
Heating	11600 VA	100.00%	11600 VA	

PANEL: 1PA2

LOCATION: ELEC A102 **SUPPLY FROM:** 1PA1 **MOUNTING:** Surface **ENCLOSURE:** Type 1
VOLTS: 208Y/120V 3PH **PHASES:** 3 **WIRES:** 4 **SE RATED:** NO **CALCULATED Isc:**
MAINS TYPE: MLO **BUS RATING:** 100 A **NEUTRAL RATING:** 100.00% **MINIMUM KAIC:** 10

CKT	LOAD SERVED	CB	P	*	A		B		C		*	P	CB	LOAD SERVED	CKT
1	REC: ALT CART	20 A	1		360	1080						1	20 A	REC: ALT	2
3	REC: ALT	20 A	1				720	1080				1	20 A	REC: ALT	4
5	REC: ALT	20 A	1						720	360		1	20 A	REC: ALT CART	6
7	SPARE	20 A	1	--	0	0					--	1	20 A	SPARE	8
9	SPARE	20 A	1	--			0	1080				1	20 A	REC: CLASS ALT	10
11	REC: CLASS ALT	20 A	1						900	360		1	20 A	REC: ALT CART STAIR-1 S2-1	12
13	REC: ALT	20 A	1		1260	720						1	20 A	REC: ALT	14
15	REC: ALT CART	20 A	1				360	180				1	20 A	REC: PIT ELEV-2 E1-2	16
17	REC: ELEV-2 SUMPPUMP	20 A	1						90	180		1	20 A	REC: ELEV CTRL CORR. 2100	18
19	LTS: PIT ELEV-2 E1-2	20 A	1		240	180						1	20 A	REC: TOP OF SHAFT ELEV E1-1	20
21	EF-11: ELEC A102 2#12, #12G IN...	15 A	1				696	1000				1	20 A	LTS: ELEV-1 E1-1	22
23	EF-12: RISER A104 2#12, #12G I...	15 A	1						696	0	--	1	20 A	SPARE	24
25	SPARE	20 A	1	--	0	0					--	1	20 A	SPARE	26
27	SPARE	20 A	1	--			0	0			--	1	20 A	SPARE	28
29	SPARE	20 A	1	--					0	0	--	1	20 A	SPARE	30
31	SPARE	20 A	1	--	0	0					--	1	20 A	SPARE	32
33	SPARE	20 A	1	--			0	0			--	1	20 A	SPARE	34
35	SPARE	20 A	1	--					0	0	--	2	30 A	SPARE	36
37	SPARE	20 A	1	--	0	0									38
39	CU-2/DMSS-2	20 A	2				1000	0			--	2	30 A	SPARE	40
41	3#12, #12G IN 3/4"C								1000	0					42
	CONNECTED LOAD:				3840 VA		6116 VA		4306 VA						
	CONNECTED AMPS:				32 A		52 A		36 A						
	DEMAND AMPS:				34 A		54 A		38 A						

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PANEL NOTES:

LOAD CLASSIFICATION	CONNECTED LOAD	Demand Factor	ESTIMATED DEMAND	PANEL TOTALS
Lighting	740 VA	125.00%	925 VA	**TOTAL LOAD:** 14262 VA
Motor	3392 VA	114.74%	3892 VA	**DEMAND FACTOR:** 104.80%
Receptacle	8910 VA	100.00%	8910 VA	**DEMAND LOAD:** 14947 VA
Power	1220 VA	100.00%	1220 VA	**DEMAND AMPS:** 41 A

PANEL: 2PA1

LOCATION: MECHANICAL A201 **SUPPLY FROM:** 1PA1 **MOUNTING:** Surface **ENCLOSURE:** Type 1
VOLTS: 208Y/120V 3PH **PHASES:** 3 **WIRES:** 4 **SE RATED:** NO **CALCULATED Isc:**
MAINS TYPE: MCB **BREAKER RATING:** 125 A **BUS RATING:** 250 A **NEUTRAL RATING:** 100.00% **MINIMUM KAIC:** 18

CKT	LOAD SERVED	CB	P	*	A		B		C		*	P	CB	LOAD SERVED	CKT
1	REC: COMPUTER LAB A204	20 A	1		900	180						1	20 A	REC: COPIER WRKRM A202	2
3	REC: COMPUTER LAB A204	20 A	1				900	180				1	20 A	REC: WRKRM A202	4
5	REC: CART - COMP LAB A204	20 A	1						360	1080		1	20 A	REC: WRK RM A202, TLT A202A	6
7	FLR BX: COMPUTER LAB A204	20 A	1		1080	360						1	20 A	REC: CART CLASSROOM A210	8
9	FLR BX: COMPUTER LAB A204	20 A	1				1080	900				1	20 A	REC: CLASSROOM A210	10
11	FLR BX: STEM CLASSROOM A206	20 A	1						1080	900		1	20 A	REC: CLASSROOM A210	12
13	FLR BX: STEM CLASSROOM A206	20 A	1		1080	1080						1	20 A	REC: CLASSROOM A215, 2100	14
15	REC: CART - STEM CLASSRM...	20 A	1				360	900				1	20 A	REC: CLASSROOM A215	16
17	REC: STEM CLASSRM A206	20 A	1						1080	360		1	20 A	REC: CART - CLASSRM A215	18
19	REC: STEM CLASSRM A206	20 A	1		1260	900						1	20 A	REC: CLASSROOM A212	20
21	REC: CLASSRM A208	20 A	1				900	900				1	20 A	REC: CLASSROOM A212	22
23	REC: CLASSRM A208	20 A	1						1080	360		1	20 A	REC: CART-CLASSROOM A212	24
25	REC: CART -CLASSRM A208	20 A	1		360	900						1	20 A	REC: CLASSRM A217	26
27	EF-16: STG A209A (1/4HP)	15 A	1				500	1080				1	20 A	REC: CLASSRM A217	28
29	EF-13: SCIENCE A209 (1/2HP)	25 A	1						1176	360		1	20 A	REC: CART - CLASSRM A217	30
31	EF-17: PREP ROOM A209A	20 A	1		500	1080						1	20 A	REC: CLASSRM A219	32
33	REC: CLASSRM A214	20 A	1				900	900				1	20 A	REC: CLASSRM A219	34
35	REC: CLASSRM A214	20 A	1						1080	360		1	20 A	REC: CART - CLASSRM A219	36
37	REC: CART - CLASSRM A214	20 A	1		360	200						1	20 A	VAV-4.21, 28-30	38
39	REC: CART - CLASSRM A216	20 A	1				360	300				1	20 A	VAV-4.22-27 A204-2113	40
41	REC: CLASSRM A216	20 A	1						900	0	--	1	20 A	SPARE	42
43	REC: CLASSRM A216	20 A	1		1080	0					--	1	20 A	SPARE	44
45	REC: TLT A203, A207, A205	20 A	1				720	0			--	1	20 A	SPARE	46
47	REC: MECHANICAL A201	20 A	1						720	0	--	1	20 A	SPARE	48
49	2PA2	60 A	3		2580	0					--	1	20 A	SPARE	50
51	REFER TO RISER DIAGRAM						2340	960				1	1	REC: WATER FOUNTAIN	52
53									5060	960	1	1	20 A	REC: WATER FOUNTAIN	54
	CONNECTED LOAD:				13900 VA		14180 VA		16916 VA						
	CONNECTED AMPS:				116 A		119 A		141 A						
	DEMAND AMPS:				86 A		88 A		105 A						

BREAKER NOTES:
* INDICATES BREAKER TYPE: 1 =GFCI (6mA), 2= GECB (30mA/100mA), 3=SHUNT TRIP, 4=AFCI, 5=SUBFEED BREAKER, 6=LI, 7=LSI, 8=LSIG, 9= LOCKING DEVICE, 10=NEW BREAKER IN EXISTING, 11=EXISTING BREAKER.

PANEL NOTES:

LOAD CLASSIFICATION	CONNECTED LOAD	Demand Factor	ESTIMATED DEMAND	PANEL TOTALS
HVAC	500 VA	100.00%	500 VA	**TOTAL LOAD:** 44996 VA
Motor	2176 VA	113.51%	2470 VA	**DEMAND FACTOR:** 74.16%
Receptacle	33840 VA	64.78%	21920 VA	**DEMAND LOAD:** 33370 VA
Power	8480 VA	100.00%	8480 VA	**DEMAND AMPS:** 93 A

PANEL: 2SPC

LOCATION: MECHANICAL C200 **SUPPLY FROM:** TC **MOUNTING:** Surface **ENCLOSURE:** Type 1
VOLTS: 208Y/120V 3PH **PHASES:** 3 **WIRES:** 4 **SE RATED:** NO **CALCULATED Isc:**
MAINS TYPE: MCB **BREAKER RATING:** 50 A **BUS RATING:** 100 A **NEUTRAL RATING:** 100.00% **MINIMUM KAIC:**

CKT	LOAD SERVED	CB	P	*	A		B		C		*	P	CB	LOAD SERVED	CKT
1	EF-14: MECH C200	15 A	1		696	100						1	20 A	VAV-2.01A&B - DINNING	2
3	REC: MECHANICAL 2200	20 A	1				1260	90				1	20 A	LTS: PENDANT RECEPTION 1202	4
5	REC: REBOX CLASSRM 2113	20 A	1						180	500		1	20 A	PWR: BAS PNL #1 MECH C200	6
7	PWR: BAS PNL #2 MECH C200	20 A	1		500	500						1	20 A	PWR: BAS PNL #3 MECH C200	8
9	PWR: NAC PNL	20 A	1	9			500	0				1	20 A	SPARE	10
11	REC: BDA DATA A106	20 A	1						360	0	--	1	20 A	SPARE	12
13	SPARE	20 A	1	--	0	0					--	1	20 A	SPARE	14
15	SPARE	20 A	1	--			0	0			--	1	20 A	SPARE	16
17	SPARE	20 A	1	--					0	0	--	1	20 A	SPARE	18
	CONNECTED LOAD:				1796 VA		1850 VA		1040 VA						
	CONNECTED AMPS:				16 A		16 A		9 A						
	DEMAND AMPS:				17 A		17 A		9 A						

BREAKER NOTES:
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PANEL NOTES:

LOAD CLASSIFICATION	CONNECTED LOAD	Demand Factor	ESTIMATED DEMAND	PANEL TOTALS
HVAC	100 VA	100.00%	100 VA	**TOTAL LOAD:** 4686 VA
Lighting	90 VA	125.00%	113 VA	**DEMAND FACTOR:** 104.19%
Motor	696 VA	125.00%	870 VA	**DEMAND LOAD:** 4883 VA
Receptacle	1800 VA	100.00%	1800 VA	**DEMAND AMPS:** 14 A
Power	2000 VA	100.00%	2000 VA	

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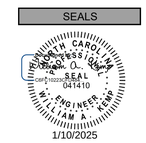
PROJECT INFORMATION

ROSEWOOD MIDDLE SCHOOL ADDITION AND RENOVATION

WAYNE COUNTY PUBLIC SCHOOLS

541 North Carolina 581 S, Goldsboro, NC 27530

SEALS



DKA JOB NUMBER
2401

DEWBERRY NUMBER
50171439

REVISIONS

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PA: ROBERT STEVENSON
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Drawn By: MEH
Plot Date: 1/8/2025 2:16:07 PM

DATE ISSUED

BID DOCUMENTS
01/10/2025

SHEET TITLE
PANEL SCHEDULES

E06.03

Docusign Envelope ID: 265849C1-DFEA-4634-9240-6B1BF3C62ECB

PANEL: SPA

LOCATION: DATA A106 | **VOLTS:** 208Y/120V 3PH | **MAINS TYPE:** MCB
SUPPLY FROM: 1SPC | **PHASES:** 3 | **BREAKER RATING:** 50 A
MOUNTING: Surface | **WIRES:** 4 | **BUS RATING:** 100 A
ENCLOSURE: Type 1 | **SE RATED:** NO | **NEUTRAL RATING:** 100.00%
CALCULATED Isc: | **MINIMUM KAIC:** 10

CKT	LOAD SERVED	CB	P	*	A		B		C		*	P	CB	LOAD SERVED	CKT
1	NAC PANEL AREA B 1119A	20 A	1		500	500					9	1	20 A	NAC PANEL AREA A 1104	2
3	REC: SUMP PUMP ALARM - DAT...	20 A	1				180	180				1	20 A	REC: SUMP PUMP CTRL - DATA...	4
5	REC: RACK MTD - DATA A106	20 A	1						360	720		1	20 A	REC: MECH 1104	6
7	REC: RACK MTD - DATA A106	20 A	1		360	180						1	20 A	REC: CARD ACCESS - DATA A106	8
9	REC: INTRUSION DATA A106	20 A	1				180								10
11															12
13															14
15															16
17															18
19															20
21															22
23															24
25															26
27															28
29															30
	CONNECTED LOAD:				1540 VA		540 VA		1080 VA						
	CONNECTED AMPS:				14 A		5 A		10 A						
	DEMAND AMPS:				14 A		5 A		10 A						

BREAKER NOTES:
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PANEL NOTES:

LOAD CLASSIFICATION	CONNECTED LOAD	Demand Factor	ESTIMATED DEMAND	PANEL TOTALS
Receptacle	2160 VA	100.00%	2160 VA	**TOTAL LOAD:** 3160 VA
Power	500 VA	100.00%	500 VA	**DEMAND FACTOR:** 100.00%
Equipment	500 VA	100.00%	500 VA	**DEMAND LOAD:** 3160 VA
				DEMAND AMPS: 9 A

PANEL: 2HA

LOCATION: MECHANICAL A201 | **VOLTS:** 480Y/277V 3PH | **MAINS TYPE:** MCB
SUPPLY FROM: 1HA | **PHASES:** 3 | **BREAKER RATING:** 250 A
MOUNTING: Surface | **WIRES:** 4 | **BUS RATING:** 250 A
ENCLOSURE: Type 1 | **SE RATED:** NO | **NEUTRAL RATING:** 100.00%
CALCULATED Isc: | **MINIMUM KAIC:** 22

CKT	LOAD SERVED	CB	P	*	A		B		C		*	P	CB	LOAD SERVED	CKT
1	LTS: CLASS RM 2113	20 A	1		3095	3880									2
3	LTS: CORR. 2100	20 A	1				619	3880				3	30 A	AHU-4 RETURN FAN (10HP) 3#10, #10G IN 3/4"C	4
5	LTS: CLASSROOM 2112	20 A	1						2811	3880					6
7	UH-5 (5KW): STR S1-1...	30 A	1		5000	3880									8
9	UH-6 (5KW): STR S2-1...	30 A	1				5000	3880				3	30 A	AHU-4 RETURN FAN (10HP) 3#10, #10G IN 3/4"C	10
11	SPARE	20 A	1	--					0	3880					12
13	SPARE	20 A	1	--	0	5820									14
15	SPARE	20 A	1	--			0	5820				3	50 A	AHU-4 SUPPLY FAN (15HP) 3#8, #10G IN 3/4"C	16
17	SPARE	20 A	1	--					0	5820					18
19	SPARE	20 A	1	--	0	5820									20
21	SPARE	20 A	1	--			0	5820				3	50 A	AHU-4 SUPPLY FAN (15HP) 3#8, #10G IN 3/4"C	22
23	SPARE	20 A	1	--					0	5820					24
25	SPARE	20 A	1	--	0	0									26
27	SPARE	20 A	1	--			0	0			--	3	20 A	SPARE	28
29	SPARE	20 A	1	--					0	0					30
	CONNECTED LOAD:				27495 VA		25019 VA		22211 VA						
	CONNECTED AMPS:				101 A		92 A		80 A						
	DEMAND AMPS:				109 A		99 A		87 A						

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PANEL NOTES:

LOAD CLASSIFICATION	CONNECTED LOAD	Demand Factor	ESTIMATED DEMAND	PANEL TOTALS
Lighting	6524 VA	125.00%	8155 VA	**TOTAL LOAD:** 74724 VA
Motor	58200 VA	107.50%	62565 VA	**DEMAND FACTOR:** 108.02%
Heating	10000 VA	100.00%	10000 VA	**DEMAND LOAD:** 80720 VA
				DEMAND AMPS: 97 A

PANEL: 2PA2

LOCATION: PREP ROOM A209A | **VOLTS:** 208Y/120V 3PH | **MAINS TYPE:** MCB
SUPPLY FROM: 2PA1 | **PHASES:** 3 | **BREAKER RATING:** 60 A
MOUNTING: RECESSED | **WIRES:** 4 | **BUS RATING:** 100 A
ENCLOSURE: Type 1 | **SE RATED:** NO | **NEUTRAL RATING:** 100.00%
CALCULATED Isc: | **MINIMUM KAIC:** 10

CKT	LOAD SERVED	CB	P	*	A		B		C		*	P	CB	LOAD SERVED	CKT
1	REC: SCIENCE A209	20 A	1	1	360	960					1	1	20 A	REC: FRIDGE STG A209A	2
3	REC: SCIENCE A209	20 A	1	1			360	720			1	1	20 A	REC: STORAGE A209A	4
5	REC: SCIENCE A209	20 A	1	1					360	1260	1	1	20 A	REC: SCIENCE A213, A211	6
7	REC: SCIENCE A209	20 A	1	1	360	360					1	1	20 A	REC: SCIENCE A213	8
9	REC:SCIENCE A209	20 A	1	1			360	360			1	1	20 A	REC: SCIENCE A213	10
11	REC:SCIENCE A209	20 A	1	1					1080	360	1	1	20 A	REC: SCIENCE A213	12
13	REC: GOGGLE CABINET SCI A213	20 A	1	1	180	360					1	1	20 A	REC: SINK COUNTER SCI A213	14
15	REC: GOGGLE CABINET SCI A209	20 A	1	1			180	360			1	1	20 A	REC: SCIENCE A213	16
17	PWR: SOLENOID SCIENCE A209	20 A	1						1000	1000		1	20 A	PWR: SOLENOID SCIENCE A213	18
19	SPARE	20 A	1	--	0	0					--	1	20 A	SPARE	20
21	SPARE	20 A	1	--			0	0			--	1	20 A	SPARE	22
23	SPARE	20 A	1	--					0	0	--	1	20 A	SPARE	24
25	SPARE	20 A	1	--	0	--					--	1	--	SPACE	26
27	SPARE	20 A	1	--			0	--			--	1	--	SPACE	28
29	SPARE	20 A	1	--					0	--	--	1	--	SPACE	30
	CONNECTED LOAD:				2580 VA		2340 VA		5060 VA						
	CONNECTED AMPS:				22 A		20 A		42 A						
	DEMAND AMPS:				22 A		20 A		42 A						

BREAKER NOTES:
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PANEL NOTES:
PROVIDE MAIN WITH SHUNT TRIP CONNECT TO EPO BUTTONS IN SCIENCE ROOMS. PROVIDE WITH HALF SPARE GFI BREAKERS.

LOAD CLASSIFICATION	CONNECTED LOAD	Demand Factor	ESTIMATED DEMAND	PANEL TOTALS
Receptacle	7620 VA	100.00%	7620 VA	**TOTAL LOAD:** 9980 VA
Power	2360 VA	100.00%	2360 VA	**DEMAND FACTOR:** 100.00%
				DEMAND LOAD: 9980 VA
				DEMAND AMPS: 28 A

PANEL: GEN PNL

LOCATION: | **VOLTS:** 208Y/120V 3PH | **MAINS TYPE:** MCB
SUPPLY FROM: SPD | **PHASES:** 3 | **BREAKER RATING:** 60 A
MOUNTING: Surface | **WIRES:** 4 | **BUS RATING:** 100 A
ENCLOSURE: Type 1 | **SE RATED:** no | **NEUTRAL RATING:** 100.00%
CALCULATED Isc: | **MINIMUM KAIC:** 10

CKT	LOAD SERVED	CB	P	*	A		B		C		*	P	CB	LOAD SERVED	CKT
1	BLOCK HEATER	20 A	2		500	500						1	20 A	BATTERY CHARGER	2
3							500								4
5															6
7															8
9															10
11															12
13															14
15															16
17															18
19															20
21															22
23															24
	CONNECTED LOAD:				1000 VA		500 VA		0 VA						
	CONNECTED AMPS:				9 A		5 A		0 A						
	DEMAND AMPS:				9 A		5 A		0 A						

BREAKER NOTES:
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PANEL NOTES:
FURNISHED IN PRE PURCHASE PACKAGE

LOAD CLASSIFICATION	CONNECTED LOAD	Demand Factor	ESTIMATED DEMAND	PANEL TOTALS
Power	500 VA	100.00%	500 VA	**TOTAL LOAD:** 1500 VA
Heating	1000 VA	100.00%	1000 VA	**DEMAND FACTOR:** 100.00%
				DEMAND LOAD: 1500 VA
				DEMAND AMPS: 4 A

PANEL: 1SPC

LOCATION: MDF C109 | **VOLTS:** 208Y/120V 3PH | **MAINS TYPE:** MCB
SUPPLY FROM: SPD | **PHASES:** 3 | **BREAKER RATING:** 100 A
MOUNTING: Surface | **WIRES:** 4 | **BUS RATING:** 100 A
ENCLOSURE: Type 1 | **SE RATED:** NO | **NEUTRAL RATING:** 100.00%
CALCULATED Isc: | **MINIMUM KAIC:** 18

CKT	LOAD SERVED	CB	P	*	A		B		C		*	P	CB	LOAD SERVED	CKT
1	EF-6: CORR. C101A	15 A	1		696	0					--	1	20 A	SPARE	2
3	SPARE	15 A	1	--			0	0			--	1	20 A	SPARE	4
5	VAV 3.05,13,14,15,19:...	20 A	1						250	0	--	1	20 A	SPARE	6
7	VAV 3.05,06,07,08,09,12...	20 A	1		250	0					--	1	20 A	SPARE	8
9	REC: RECEPTION C101	20 A	1				1440	0			--	1	20 A	SPARE	10
11	REC: RECEPTION C101	20 A	1						900	0	--	1	20 A	SPARE	12
13	REC: C105, C101A	20 A	1		900	0					--	1	20 A	SPARE	14
15	REC: OFFICE WORK RM C103	20 A	1				180	0			--	1	20 A	SPARE	16
17	REC: OFFICE WORK RM C103	20 A	1						180	0	--	1	20 A	SPARE	18
19	REC: DATA MANAGER C107	20 A	1		720	0					--	1	20 A	SPARE	20
21	REC: ASST PRINCIPAL C113	20 A	1				720	500			9	1	20 A	PWR: FIRE ALARM MDF C109	22
23	REC: NURSE C115	20 A	1						900	180		1	20 A	REC: MDF C109	24
25	REC: C111, C101A, C103	20 A	1		1260	360						1	20 A	REC: MDF C109	26
27	REC: C117, C101A	20 A	1				900	360				1	20 A	REC: MDF C109	28
29	FLR BX: CONF. C121	20 A	1						900	360		1	20 A	REC: MDF C109	30
31	REC: TEACHER WORKROOM...	20 A	1		180	180						1	20 A	REC: MDF C109	32
33	REC: C119, C127, C125, C115A,...	20 A	1				1440	180				1	20 A	REC: MDF C109	34
35	SPARE	20 A	1	--					0	960		1	20 A	REC: MICRO - LOUNGE C123	36
37	SPARE	20 A	2	--	0	360						1	20 A	REC: TEACHER LOUNGE C123	38
39							0	1440			1	1	20 A	REC: FRIDGE - LOUNGE C123	40
41	CU-1/DMSS-1 3#12, #12G IN 3/4"C	20 A	2						1000	1440	1	1	20 A	REC: TEACHER LOUNGE C123	42
43					1000	1440					1	1	20 A	REC: FRIDGE - LOUNGE C123	44
45	SPARE	30 A	2	--			0	1440			1	1	20 A	REC: FRIDGE - NURSE C115	46
47									0	180					48
49	PANEL "SPA" REFER TO RISER DIAGRAM	50 A	3		1540	180						2	20 A	REC: MDF C109 2#12, #12G IN 3/4"C	50
51							540	180							52
53									1080	180		2	20 A	REC: MDF C109 2#12, #12G IN 3/4"C	54
	CONNECTED LOAD:				9066 VA		9320 VA		8510 VA						
	CONNECTED AMPS:				76 A		78 A		71 A						
	DEMAND AMPS:				61 A		62 A		56 A						

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PANEL NOTES:

LOAD CLASSIFICATION	CONNECTED LOAD	Demand Factor	ESTIMATED DEMAND	PANEL TOTALS
HVAC	500 VA	100.00%	500 VA	**TOTAL LOAD:** 26896 VA
Motor	2696 VA	118.55%	3196 VA	**DEMAND FACTOR:** 79.51%
Receptacle	22020 VA	72.71%	16010 VA	**DEMAND LOAD:** 21386 VA
Power	680 VA	100.00%	680 VA	**DEMAND AMPS:** 59 A
Equipment	1000 VA	100.00%	1000 VA	

PANEL: SK2

LOCATION: TRASH ROOM... | **VOLTS:** 208Y/120V 3PH | **MAINS TYPE:** MCB
SUPPLY FROM: SK1 | **PHASES:** 3 | **BREAKER RATING:** 100 A
MOUNTING: RECESSED | **WIRES:** 4 | **BUS RATING:** 100 A
ENCLOSURE: Type 1, SS COVER | **SE RATED:** NO | **NEUTRAL RATING:** 100.00%
CALCULATED Isc: | **MINIMUM KAIC:** 10

CKT	LOAD SERVED	CB	P	*	A		B		C		*	P	CB	LOAD SERVED	CKT
1	REC: P.O.S #37 D106	20 A	1		1800	720						1	20 A	REC: DINING D104	2
3	REC: P.O.S #37 D106	20 A	1	1			1800	900				1	20 A	REC: DINING D104	4
5	REC: SERVING COLD #34 D106	20 A	1						840	720		1	20 A	REC: DINING D104	6
7	REC: SERVING COLD #34 D106	50 A	1	1	840	1375					1	1	20 A	REC: Room D106	8
9	MOTOR DOOR - D106	20 A	1				500	275			1	1	20 A	REC: MILK #32 D106	10
11	MOTOR DOOR SERVING D106	20 A	1						500	275	1	1	20 A	REC: MILK #32 D106	12
13	EF-2:WASH D114	20 A	1		696	960					1	1	20 A	REC: EWC DINING D104	14
15	EF-5: STUDENT SERVICES D103	20 A	1				696	360			1	1	20 A	REC: TRASH ROOM 1225A	16
17	EF-1: STG 1232B (3/4HP)	25 A	1						1625	700		1	20 A	LTS/HEAT: FREEZER D122	18
19	SPARE	20 A	1	--	0	1800					2	1	20 A	HEAT TAPE FREEZER D122	20
21	SPARE	20 A	1	--			0	1250				2	20 A	EVAP. COIL - FREEZER D122 2#12, #12N, #12G IN 3/4"C	22
23	SPARE	20 A	1	--					0	1250					24
25	SPARE	20 A	1	--	0	2100									26
27	LGT: COOLER D124	20 A	1	1			300	2100				3	30 A	FREEZER COND. UNIT (01G) 3#10, #10N, #12G IN 3/4"C	28
29	EVAP. COIL - COOLER D124	20 A	1						240	2100					30
31	COOLER COND. UNIT (01C) 3#12, #12N, #12G IN 3/4"C	20 A	3		850	0									32
33							850	0			--	2	20 A	SPARE	34
35									850	3000					36
37	SPARE	20 A	3	--	0	3000					1	2	50 A	REC: HEAT COUNTER #33 D106 2#8, #8N, #10G IN 1"C	38
39							0	3000							40
41									0	3000	1	2	50 A	REC: HEAT COUNTER #33 D106 2#8, #8N, #10G IN 1"C	42
	CONNECTED LOAD:				14141 VA		12031 VA		15100 VA						
	CONNECTED AMPS:				121 A		100 A		129 A						
	DEMAND AMPS:				97 A		81 A		104 A						

BREAKER NOTES:
* INDICATES BREAKER TYPE: 1 =GFCI (6mA), 2= GECB (30mA/100mA), 3=SHUNT TRIP, 4=AFCI, 5=SUBFEED BREAKER, 6=LI, 7=LSI, 8=LSIG, 9= LOCKING DEVICE, 10=NEW BREAKER IN EXISTING, 11=EXISTING BREAKER.

PANEL NOTES:

LOAD CLASSIFICATION	CONNECTED LOAD	Demand Factor	ESTIMATED DEMAND	PANEL TOTALS
Lighting	1000 VA	125.00%	1250 VA	**TOTAL LOAD:** 41272 VA
Motor	4017 VA	110.11%	4423 VA	**DEMAND FACTOR:** 80.61%
Receptacle	22685 VA	72.04%	16343 VA	**DEMAND LOAD:** 33268 VA
Power	180 VA	100.00%	180 VA	**DEMAND AMPS:** 92 A
Heating	1800 VA	100.00%	1800 VA	
Kitchen Equipment - Non-Dwelling Unit	11590 VA	80.00%	9272 VA	

PANEL: SK1 — PRE PURCHASE

LOCATION: KITCHEN D118 | **VOLTS:** 208Y/120V 3PH | **MAINS TYPE:** MCB
SUPPLY FROM: SPD | **PHASES:** 3 | **BREAKER RATING:** 300 A
MOUNTING: RECESSED | **WIRES:** 4 | **BUS RATING:** 400 A
ENCLOSURE: Type 1, SS COVER | **SE RATED:** NO | **NEUTRAL RATING:** 100.00%
CALCULATED Isc: 6,280 | **MINIMUM KAIC:** 10

CKT	LOAD SERVED	CB	P	*	A		B		C		*	P	CB	LOAD SERVED	CKT
1	KEF-1 (ROUTE THROUGH UDS) 3#12, #12G IN 1"C	20 A	3		1334	2500						1	2	35 A	REC: DRYER LAUNDRY/STG 1235 2#10, #10G IN 3/4"C	2
3							1334	2500								4
5									1334	0						6
7	REC: HEATED PASS THRU #39 2#12, #12G IN 3/4"C	20 A	2	1	750	0					--	2	30 A	SPARE		8
9							750	750								10
11	REC: KITCHEN 1232A	20 A	1	1					180	750	1	2	20 A	REC: HEATED PASS THRU #39 2#12, #12G IN 3/4"C		12
13	PWR: AIR CURTAIN #16 1232A	20 A	1	1	320	180					1	1	20 A	REC: ITEM #12 SLICER		14
15	REC: Room 1237, 1236, 1231	20 A	1	1			1440	1200			1	1	20 A	PWR: HOOD KITCHEN 1232A		16
17	REC: KITCHEN 1232A	20 A	1	1					540	1430	1	1	20 A	PWR: ICE MAKER #28 132A		18
19	REC: LOADING DOCK	20 A	1	1	180	720					1	1	20 A	REC: DRY STORAGE 1232B		20
21	REC: OFFICE RM 1234, 1232A	20 A	1	1			900	540			1	1	20 A	REC: DISH ROOM 1233, 1232a		22
23	REC: WASHER LAUNDRY/STG...	20 A	1	1					1440	830	1	1	20 A	REC: FRIDGE PASS THRU #38		24
25	SPARE	20 A	1	--	0	2300					1	1	20 A	REC: PROOFER #06 - KITCHEN...		26
27	SPARE	20 A	1	--			0	420			1	1	20 A	REC: REACH-IN FRIDGE #15...		28
29	SPARE	20 A	1	--					0	0	--	1	20 A	SPARE		30
31	SPARE	20 A	1	--	0	0					--	1	20 A	SPARE		32
33	SPARE	20 A	1	--			0	0			--	1	20 A	SPARE		34
35	SPARE	20 A	1	--					0	0	--	1	20 A	SPARE		36
37	PANEL SK2 REFER TO RISER DIAGRAM	100 A	3	6	14141	16600					6	3	200 A	PANEL UDS REFER TO RISER DIAGRAM		38
39							12031	16600								40
41									15100	16600						42
	CONNECTED LOAD:				39025 VA		38465 VA		38204 VA							
	CONNECTED AMPS:				326 A		321 A		318 A							
	DEMAND AMPS:				295 A		291 A		289 A							

BREAKER NOTES:
* INDICATES BREAKER TYPE: 1 =GFCI (6mA), 2= GECB (30mA/100mA), 3=SHUNT TRIP, 4=AFCI, 5=SUBFEED BREAKER, 6=LI, 7=LSI, 8=LSIG, 9= LOCKING DEVICE, 10=NEW BREAKER IN EXISTING, 11=EXISTING BREAKER.

PANEL NOTES:
PROVIDE ALL SPARE BREAKERS AS GFI.

LOAD CLASSIFICATION	CONNECTED LOAD	Demand Factor	ESTIMATED DEMAND	PANEL TOTALS
Lighting	1000 VA	125.00%	1250 VA	**TOTAL LOAD:** 115694 VA
Motor	8339 VA	112.00%	9340 VA	**DEMAND FACTOR:** 90.77%
Receptacle	29225 VA	67.11%	19613 VA	**DEMAND LOAD:** 105014 VA
Kitchen Equipment Non-Dwelling Unit	57360 VA	100.00%	57360 VA	**DEMAND AMPS:** 291 A
Power	1380 VA	100.00%	1380 VA	
Electric Clothes Dryer	5000 VA	100.00%	5000 VA	
Heating	1800 VA	100.00%	1800 VA	
Kitchen Equipment - Non-Dwelling Unit	11590 VA	80.00%	9272 VA	

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SEALS

NORTH CAROLINA PROFESSIONAL SEAL 041410 ENGINEER WILLIAM A KANE
1/10/2025

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PANEL SCHEDULES

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STANDARD FEEDER CHART

THREE PHASE, NEUTRAL, & EQUIPMENT GROUND

FEEDER TAG	AMPACITY (A)1	COPPER FEEDER SIZE2,3
50Y	50	3#8, 1#8N, 1#10G IN 1"C
60Y	60	3#6, 1#6N, 1#10G IN 1"C
100Y	100	3#3, 1#3N, 1#8G IN 1-1/4"C
125Y	130	3#1, 1#1N, 1#6G IN 1-1/2"C
150Y	150	3#1/0, 1#1/0N, 1#6G IN 1-1/2"C
200Y	200	3#3/0, 1#3/0N, 1#6G IN 2"C
225Y	230	3#4/0, 1#4/0N, 1#4G IN 2-1/2"C
250Y	255	3-250kcmil, 1-250kcmil N, 1#4G IN 2-1/2"C
300Y	300	3-350kcmil, 1-350kcmil N, 1#4G IN 2-1/2"C
350Y	380	3-500kcmil, 1-500kcmil N, 1#3G IN 4"C
400Y	460	2 SETS OF 3#4/0, 1#4/0N, 1#3G IN 2-1/2"C EACH SET
500Y	500	2 SETS OF 3-250kcmil, 1-250kcmil N, 1#2G IN 2-1/2"C EACH SET
600Y	600	2 SETS OF 3-350kcmil, 1-350kcmil N, 1#1G IN 2-1/2"C EACH SET
800Y	800	3 SETS OF 3-300kcmil, 1-300kcmil N, 1#1/0G IN 2-1/2"C EACH SET

THREE PHASE, NEUTRAL, & GROUNDING ELECTRODE

FEEDER TAG	AMPACITY (A)1	COPPER FEEDER SIZE2,3
50YT	100	3#8, 1#8N, 1#10G IN 1"C
100YT	100	3#3, 1#3N, 1#8G IN 1-1/4"C
150YT	150	3#1/0, 1#1/0N, 1#6G IN 1-1/2"C
225YT	230	3#4/0, 1#4/0N, 1#2G IN 2-1/2"C
350YT	380	3-500kcmil, 1-500kcmil N, 1#1/0G IN 4"C
400YT	400	2 SETS OF 3#3/0, 1#3/0N, 1#2G IN 2"C EACH SET
500YT	500	2 SETS OF 3-250kcmil, 1-250kcmil N, 1#1/0G IN 2-1/2"C EACH SET
600YT	600	2 SETS OF 3-350kcmil, 1-350kcmil N, 1#2/0G IN 2-1/2"C EACH SET
800YT	800	3 SETS OF 3-300kcmil, 1-300kcmil N, 1#2/0G IN 2-1/2"C EACH SET

THREE PHASE & EQUIPMENT GROUND (NO NEUTRAL)

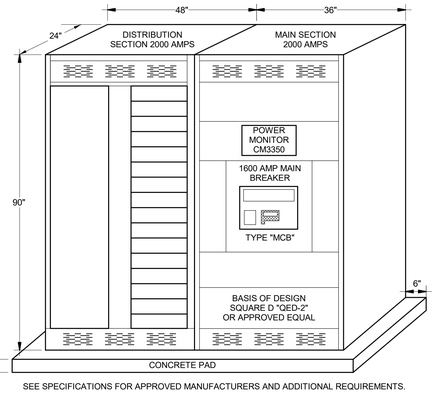
FEEDER TAG	AMPACITY (A)1	COPPER FEEDER SIZE2,3
25Δ	30	3#10, 1#10G IN 3/4"C
50Δ	50	3#8, 1#10G IN 3/4"C
70Δ	65	3#6, 1#8G IN 3/4"C
80Δ	85	3#4, 1#8G IN 1"C
90Δ	85	3#4, 1#8G IN 1"C
100Δ	100	3#3, 1#8G IN 1"C
110Δ	115	3#2, 1#6G IN 1-1/4"C
125Δ	130	3#1, 1#6G IN 1-1/4"C
150Δ	150	3#1/0, 1#6G IN 1-1/2"C
175Δ	175	3#2/0, 1#6G IN 1-1/2"C
200Δ	200	3#3/0, 1#6G IN 2"C
250Δ	255	3-250kcmil, 1#4G IN 2"C

THREE PHASE & GROUNDED NEUTRAL (SERVICE)

FEEDER TAG	AMPACITY (A)1	COPPER FEEDER SIZE2,3
1600SE	1600	5 SETS OF 3-400kcmil, 1-400kcmil GN IN 4"C EACH SET

NOTES:

1. AMPACITY LISTED IS BASED ON NEC TABLE 310.15(B)(16) AND THE 75°C RATING COLUMN UNLESS LIMITED BY EQUIPMENT GROUNDING CONDUCTOR PER NEC TABLE 250.122. IF TERMINALS OR SPLICES RATED LESS THAN 75°C ARE ENCOUNTERED CONTRACTOR SHALL RESIZE PHASE CONDUCTOR AND EQUIPMENT GROUND ACCORDINGLY.
2. IF PHASE CONDUCTORS ARE INCREASED ABOVE SIZE LISTED FOR ANY REASON, THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE INCREASED PROPORTIONALLY BASED ON CIRCULAR MIL AREA PER NEC 250.122(B).
3. CONDUIT SIZE IS BASED ON THHN/THWN CONDUCTORS IN EMT. CONTRACTOR SHALL ADJUST CONDUIT SIZE PER NEC CHAPTER 9, TABLE 1.



SEE SPECIFICATIONS FOR APPROVED MANUFACTURERS AND ADDITIONAL REQUIREMENTS.

3 NEW SWITCHBOARD ELEVATION
Scale: N.T.S.

SWITCHBOARD: MDS

LOCATION: ELEC D113
SUPPLY FROM:
MOUNTING: FLOOR
ENCLOSURE: NEMA 1
VOLTS: 480Y/277V 3PH
PHASES: 3
WIRES: 4
SE RATED: yes
CALCULATED Isc: 21.11
MAINS TYPE: MCB
MCB RATING: 1600 A
BUS RATING: 2000 A
NEUTRAL RATING: 100.00%
MINIMUM KAIC: 65

CKT	LOAD SERVED	P	FRAME SIZE	TRIP RATING	*	SECTION #	A	B	C	NOTES
1	SPD	3	250 A	60 A	--		0 VA	0 VA	0 VA	
2	SPARE	3	400 A	250 A	8		0 VA	0 VA	0 VA	
3	CH-1	3	400 A	250 A	8		63560 VA	63560 VA	63560 VA	
4	CH-2	3	400 A	250 A	8		63560 VA	63560 VA	63560 VA	
5	1HA	3	400 A	400 A	8		90183 VA	91941 VA	90583 VA	
6	SPARE	3	400 A	400 A	8		0 VA	0 VA	0 VA	
7	SHD VIA ATS	3	1000 A	800 A	8		172866 VA	164556 VA	157447 VA	
8	SPARE	3	1000 A	800 A	8		0 VA	0 VA	0 VA	
							390168 VA	383617 VA	375150 VA	
							1413 A	1390 A	1354 A	

BREAKER NOTES (N):
* INDICATES BREAKER TYPE: 3 =SHUNT TRIP, 6=LI, 7=LSI, 8=LSIG, 9=LOCKING DEVICE, 10=NEW BREAKER IN EXISTING, 11=EXISTING BREAKER.

PANEL NOTES:
PROVIDE ALL BREAKERS WITH LSIG TRIP UNITS. PROVIDE MAIN WITH LSIG AND ARC FLASH REDUCTION. REFER TO SPECIFICATIONS FOR ADDITIONA INFORMATION ON SWITCHBAORD.

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
HVAC	2400 VA	100.00%	2400 VA	**TOTAL LOAD:** 1148936 VA
Lighting	38741 VA	125.00%	48426 VA	**DEMAND FACTOR:** 97.47%
Motor	754238 VA	106.32%	801908 VA	**DEMAND LOAD:** 1119873 VA
Other	500 VA	100.00%	500 VA	**DEMAND AMPS:** 1347 A
Receptacle	178199 VA	52.81%	94100 VA	
Kitchen Equipment Non-Dwelling Unit	57360 VA	100.00%	57360 VA	
Power	27140 VA	100.00%	27140 VA	
Appliance - Dwelling Unit	125 VA	100.00%	125 VA	
Electric Clothes Dryer	15000 VA	100.00%	15000 VA	
Heating	54668 VA	100.00%	54668 VA	
Equipment	1000 VA	100.00%	1000 VA	
Kitchen Equipment - Non-Dwelling Unit	11590 VA	80.00%	9272 VA	
Kitchen Equipment	8000 VA	100.00%	8000 VA	

ELEC - DRY TYPE TRANSFORMER SCHEDULE1

ID	VA	POLE	PRIMARY VOLTAGE	PRIMARY PH	SECONDARY VOLTAGE	SECONDARY PH	CORE MATL	MOUNTING	NEMA
STD	150000 VA	3	480 V	3	208 V	3	COPPER	FLOOR	Type 2
STE	150000 VA	3	480 V	3	208 V	3	COPPER	FLOOR	Type 2
TA	112500 VA	3	480 V	3	208 V	3	COPPER	FLOOR	Type 2
TC	30000 VA	3	480 V	3	208 V	3	COPPER	FLOOR	Type 2

DISCONNECT SWITCH SCHEDULE (BY DIV 26)

ID	Voltage	POLE	Size _ Switch	Size _ Fuse	VOLTAGE	NEMA
KILN	480	3	200	60	480 V	Type 1
FUSS	480	3	800	800	480 V	Type 1
FREEZER EVAP.	240	2	200	N/A	208 V	Type 4X
FREEZER COND.	208	3	200	N/A	208 V	Type 4X
ELEVATOR DISCONNECT**	480	3	100	100	480 V	Type 1
COOLER EVAP.	240	1	200	N/A	120 V	Type 4X
COOLER COND.	208	3	200	N/A	208 V	Type 4X
CAB LIGHTS DISCONNECT	240	1	30	20	120 V	Type 1

GENERAL NOTES:

1. ELECTRICAL CONTRACTOR TO PREPARE BREAKER OVERCURRENT/GROUND FAULT SETTING COORDINATION, FAULT CURRENT ANALYSIS, AND ARC FLASH REPORTS AS INDICATED IN SPECIFICATION SECTION 260571 – POWER SYSTEM STUDY. INITIAL SUBMITTAL SHALL BE PROVIDED WITH INITIAL SWITCHGEAR SUBMITTAL. GEAR SUBMITTALS WITHOUT THE INITIAL SUBMITTAL FAULT CURRENT, COORDINATION, AND ARC FLASH REPORT WILL BE REJECTED.
2. PROVIDE ENGRAVED PHENOLIC LABEL WITH AVAILABLE FAULT CURRENT (AS PROVIDED BY UTILITY COMPANY) ON THE MDP PER NEC REQUIREMENTS. SIGN SHALL BE DATED.
3. CONTRACTOR SHALL PROVIDE FAULT-CURRENT LABELING ON ALL OTHER ATS AND PANELBOARDS PER NEC 406.6.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ALL PREPURCHASED EQUIPMENT. CONTRACTOR SHALL BE PROVIDED WITH SHOP DRAWINGS OF REVIEWED ELECTRICAL EQUIPMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL EQUIPMENT PADS, INCLUDING THE GENERATOR.

KEYED NOTES: (#)

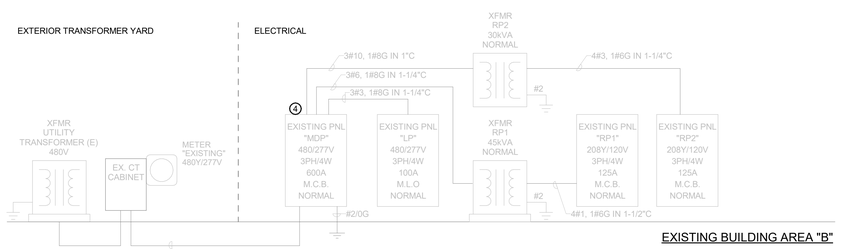
1. UTILITY TRANSFORMER PAD BY EC. PAD PER UTILITY REQUIREMENTS.
2. PROVIDE 600V, 3-POLE, 300A DISCONNECT FUSED AT 250A IN NEMA 4X ENCLOSURE.
3. REMOVE BONDING JUMPER.
4. PROVIDE SIGNAGE ON MAIN ELECTRICAL ROOM B107, D113, AND AT THE MDS AND MDP SWBD/PANELS. SIGNAGE IN ACCORDANCE TO NEC 230.2 (E) IDENFITICATION. SIGNAGE TO STATE "SCHOOL BUILDING CAMPUS FED FROM MULTIPLE SOURCES. ALL CIRCUITS IN "AREA B" OR ROOMS THAT START WITH "B" ARE FED FROM "MDP" DISTRIBUTION SERVICE LOCATED IN B107. ALL OTHER POWER FOR THE REMAINDER OF THE ROOMS IN THE MAIN SCHOOL BUILDING IS FED FROM "MDS" LOCATED IN ELECTRICAL ROOM D113.
5. INSTALL ONE OF THE CHILLER FEEDERS FROM THE TOP OF THE SWITCHBOARD TO A JUNCTION BOX IN THE ELECTRICAL ROOM AND THEN CONTINUE ROUTING TO CHILLER FROM BELOW NEW SLAB. JUNCTION BOX SHALL ALLOWFOR CHILLER TO EASILY BE ADDED TO DISTRIBUTION PANEL AT A FUTURE DATE. LABEL JUNCTION BOX IN ELECTRICAL ROOM AS "CHILLER FEEDER"

ADDREVIATIONS LEGEND:

ECB	ENCLOSED CIRCUIT BREAKER
NFS	NON-FUSED SWITCH
FS	FUSED SWITCH

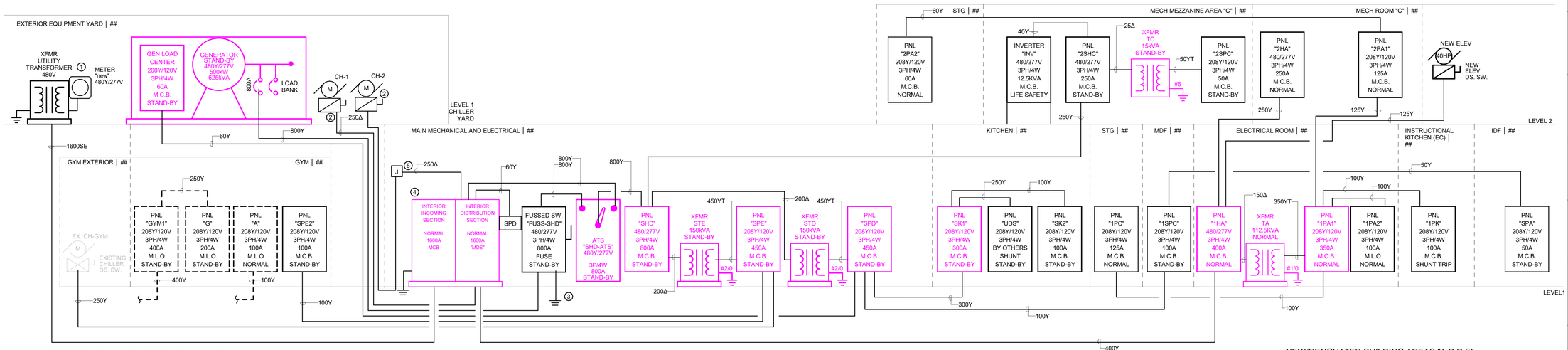
LINETYPE LEGEND:

- NEW WORK
- PRE-PURCHASE EQUIPMENT
- DEMOLITION WORK
- EXISTING EQUIPMENT TO REMAIN
- BUILDING FLOOR
- BUILDING AREA BOUNDARY



EXISTING BUILDING AREA "B"

2 ELECTRICAL RISER DIAGRAM EXISTING CLASSROOM BUILDING "B"
Scale: N.T.S.



1 ELECTRICAL RISER DIAGRAM1
Scale: N.T.S.

NEW/RENOVATED BUILDING AREAS "A,B,D,E"

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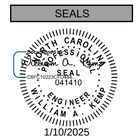

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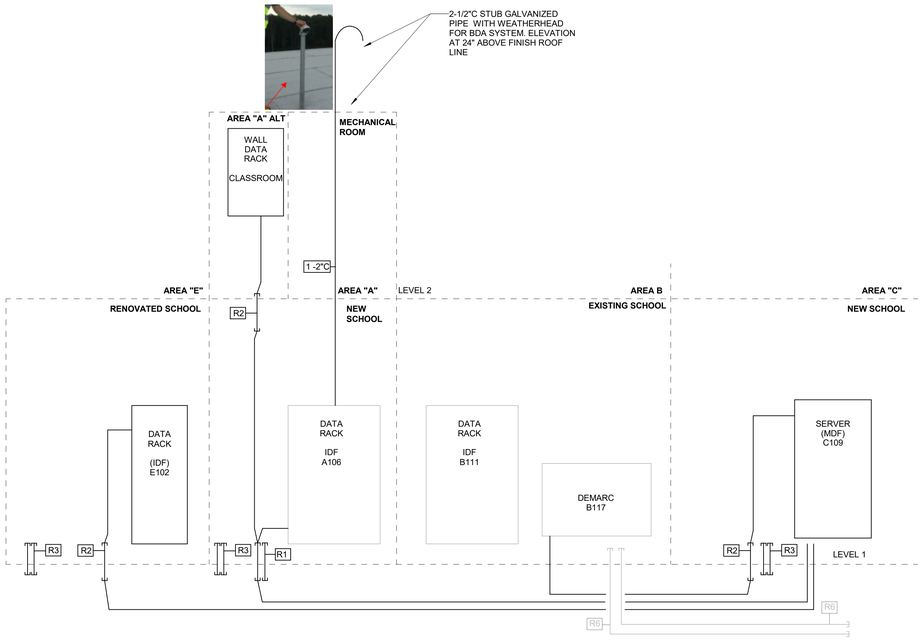


GENERAL NOTES:

1. PROVIDE CONDUIT FOR FIBER SERVICE AND CONDUIT FOR FIBER TO CONNECT THE NEW DATA RACKS.
2. DATA RACKS AND FIBER CABLING PROVIDED BY OTHERS.
3. PROVIDE ALL CONDUIT WITH PULL STRINGS AND LABEL ON THE SIDE OF THE CONDUIT WITH TERMINATION LOCATION.

CONDUIT TAG	DESCRIPTION
R1	2-4"C FOR FIBER TO TWO CLOSETS.
R2	1-4"C FOR FIBER TO IDF CLOSETS
R3	2-3"C W/ MAXCELL INTERDUCT IN EACH FROM IDF 1142 (MDF CLOSET) TO ALL IDF CLOSETS IN NEW ADDITION AS INDICATED.
R5	1-3"C W/ MAXCELL INTERCUCT IN EACH FROM IDF 1142 (MDF) CLOSET TO ELEC RM IN CONCESSIONS BUILDING
R6	EXISTING CONDUIT AND SERVICE SHALL REMAIN.

3 TELECOM RISER DIAGRAM

Scale: N.T.S.

SYSTEM OUTPUTS

SYSTEM INPUTS

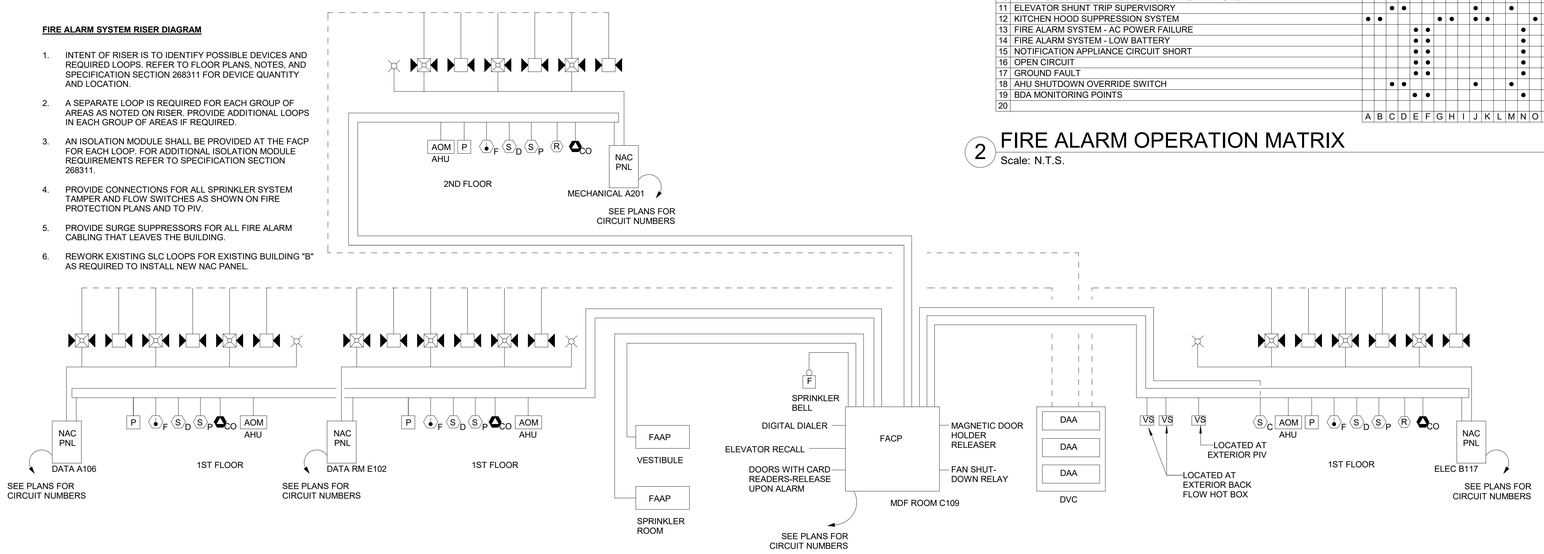
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1	MANUAL FIRE ALARM BOXES	●	●					●	●		●	●				●								
2	AREA SMOKE & HEAT DETECTORS	●	●					●	●		●	●				●								
3	CARBON MONOXIDE DETECTORS			●	●						●			●								●	●	●
4	SMOKE DETECTOR ELEVATOR LOBBY - FIRST FLOOR	●	●					●	●		●	●						●						
5	SMOKE DETECTOR ELEVATOR LOBBY - SECOND FLOOR	●	●					●	●		●	●						●						
6	SMOKE DETECTORS - ELEVATOR HOISTWAY/MACHINE ROOM	●	●					●	●		●	●						●		●				
7	HEAT DETECTORS - ELEVATOR HOISTWAY/MACHINE ROOM	●	●					●	●		●	●							●					
8	DUCT DETECTORS	●	●	●	●			●	●		●	●				●					●			
9	SPRINKLER SYSTEM - WATER FLOW SWITCHES	●	●					●	●	●	●	●												
10	SPRINKLER SYSTEM - PRESSURE & TAMPER SWITCHES			●	●						●		●											
11	ELEVATOR SHUNT TRIP SUPERVISORY			●	●						●		●											
12	KITCHEN HOOD SUPPRESSION SYSTEM	●	●					●	●		●	●				●								
13	FIRE ALARM SYSTEM - AC POWER FAILURE					●	●						●											
14	FIRE ALARM SYSTEM - LOW BATTERY					●	●						●											
15	NOTIFICATION APPLIANCE CIRCUIT SHORT					●	●						●											
16	OPEN CIRCUIT					●	●						●											
17	GROUND FAULT					●	●						●											
18	AHU SHUTDOWN OVERRIDE SWITCH			●	●					●			●											
19	BDA MONITORING POINTS					●	●						●											
20																								

2 FIRE ALARM OPERATION MATRIX

Scale: N.T.S.

FIRE ALARM SYSTEM RISER DIAGRAM

1. INTENT OF RISER IS TO IDENTIFY POSSIBLE DEVICES AND REQUIRED LOOPS. REFER TO FLOOR PLANS, NOTES, AND SPECIFICATION SECTION 268311 FOR DEVICE QUANTITY AND LOCATION.
2. A SEPARATE LOOP IS REQUIRED FOR EACH GROUP OF AREAS AS NOTED ON RISER. PROVIDE ADDITIONAL LOOPS IN EACH GROUP OF AREAS IF REQUIRED.
3. AN ISOLATION MODULE SHALL BE PROVIDED AT THE FACP FOR EACH LOOP. FOR ADDITIONAL ISOLATION MODULE REQUIREMENTS REFER TO SPECIFICATION SECTION 268311.
4. PROVIDE CONNECTIONS FOR ALL SPRINKLER SYSTEM TAMPER AND FLOW SWITCHES AS SHOWN ON FIRE PROTECTION PLANS AND TO PIV.
5. PROVIDE SURGE SUPPRESSORS FOR ALL FIRE ALARM CABLING THAT LEAVES THE BUILDING.
6. REWORK EXISTING SLC LOOPS FOR EXISTING BUILDING "B" AS REQUIRED TO INSTALL NEW NAC PANEL.



1 FIRE ALARM RISER DIAGRAM

Scale: N.T.S.

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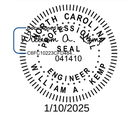

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FIRE ALARM RISER DIAGRAM

E09.02