Renovations to

Bogue Sound Elementary School

Carteret County Schools NCDSP Unit 160 - School 306

3323 Hwy. 24 / Newport / North Carolina



STRUCTURAL CONSULTANT:

QUEEN ENGINEERING & DESIGN, P.A.

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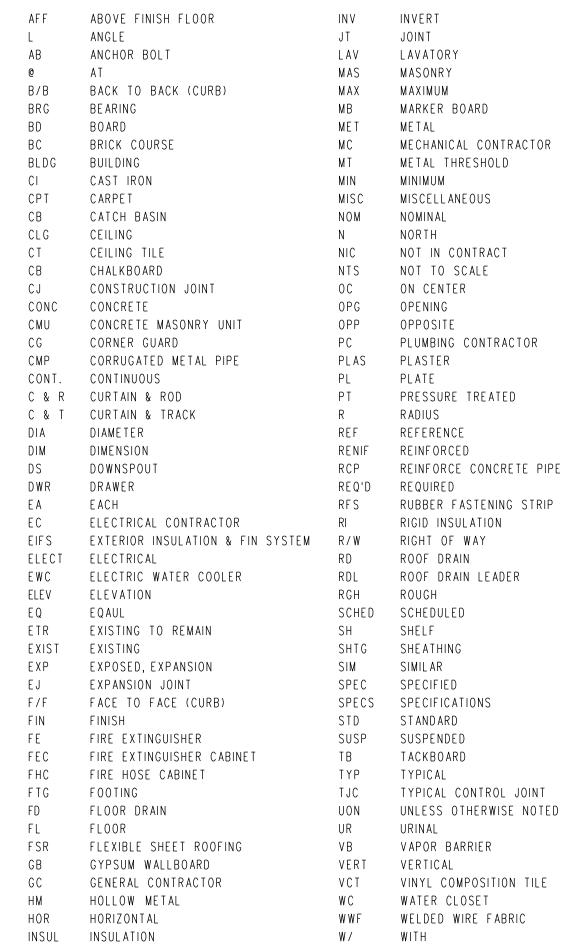
MEPT ENGINEERING CONSULTANT:

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102 Regency Boulevard Greenville, North Carolina 27834 tel (252) 439-0338

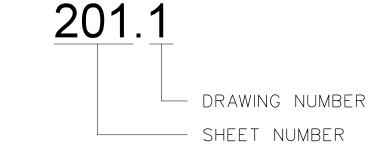
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ABBREVIATIONS



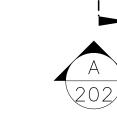
DRAWING SYMBOLS

DRAWING IDENTIFICATION MARKERS





SECTION MARKER



ELEVATION (DRAWINGS)



DOOR MARKER/NUMBER

HIDDEN LINE OR ABSTRACT LINE

----- LINE ABOVE

----- CENTERLINE

MATERIAL SYMBOLS

EARTH

MORTAR OR GROUT

CONCRETE

BRICK

CONCRETE MASONRY UNIT

STEEL

ROUGH WOOD (CONTINUOUS)

ROUGH WOOD (INTERMITTENT)

FINISH WOOD

PLYWOOD

BATT OR BLOWN INSULATION

RIGID INSULATION

METAL STUD / GYPBOARD WALL

DRAWING INDEX

INDEX / LEGEND / ABBREVIATIONS

LIFE SAFETY PLAN

BCS-700 BUILDING CODE SUMMARY

OVERALL FLOOR PLAN

FLOOR PLAN / ROOF PLAN / RCP / EXTERIOR ELEVATIONS DOOR SCHEDULE / FINISH SCHEDULE / DOOR ELEVATIONS

SECTION / DETAILS

S-101 ADDITION FOUNDATION PLAN

ME-101 100 AND 300 WING DEMO PLAN 100 AND LOWER 200 WING PLATFORM DEMO PLAN

ENLARGED 300 WING DEMO PLAN 300 AND 400 WING PLATFORM DEMO PLAN

GENERAL NOTES / CONTROL DIAGRAMS

NOTES / SCHEDULES M-003 NOTES / DETAILS

M-004

100 AND 300 WING MECHANICAL PLAN 100 AND 200 WING PLATFORM MECHANICAL PLAN / UPPER 200 WING PLATFORM MECHANICAL PLAN

ENLARGED 300 WING MECHANICAL PLAN

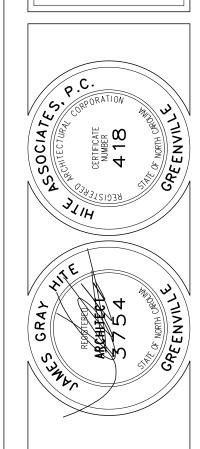
300 AND 400 WING PLATFORM MECHANICAL PLAN M-401

ELECTRICAL RISER / SCHEDULES / DETAILS 100 AND 300 WING ELECTRICAL PLAN

100 AND 200 WING PLATFORM ELECTRICAL PLAN / UPPER 200 WING PLATFORM ELECTRICAL PLAN

ENLARGED LOWER 300 WING ELECTRICAL PLAN 300 AND 400 WING PLATFORM ELECTRICAL PLAN





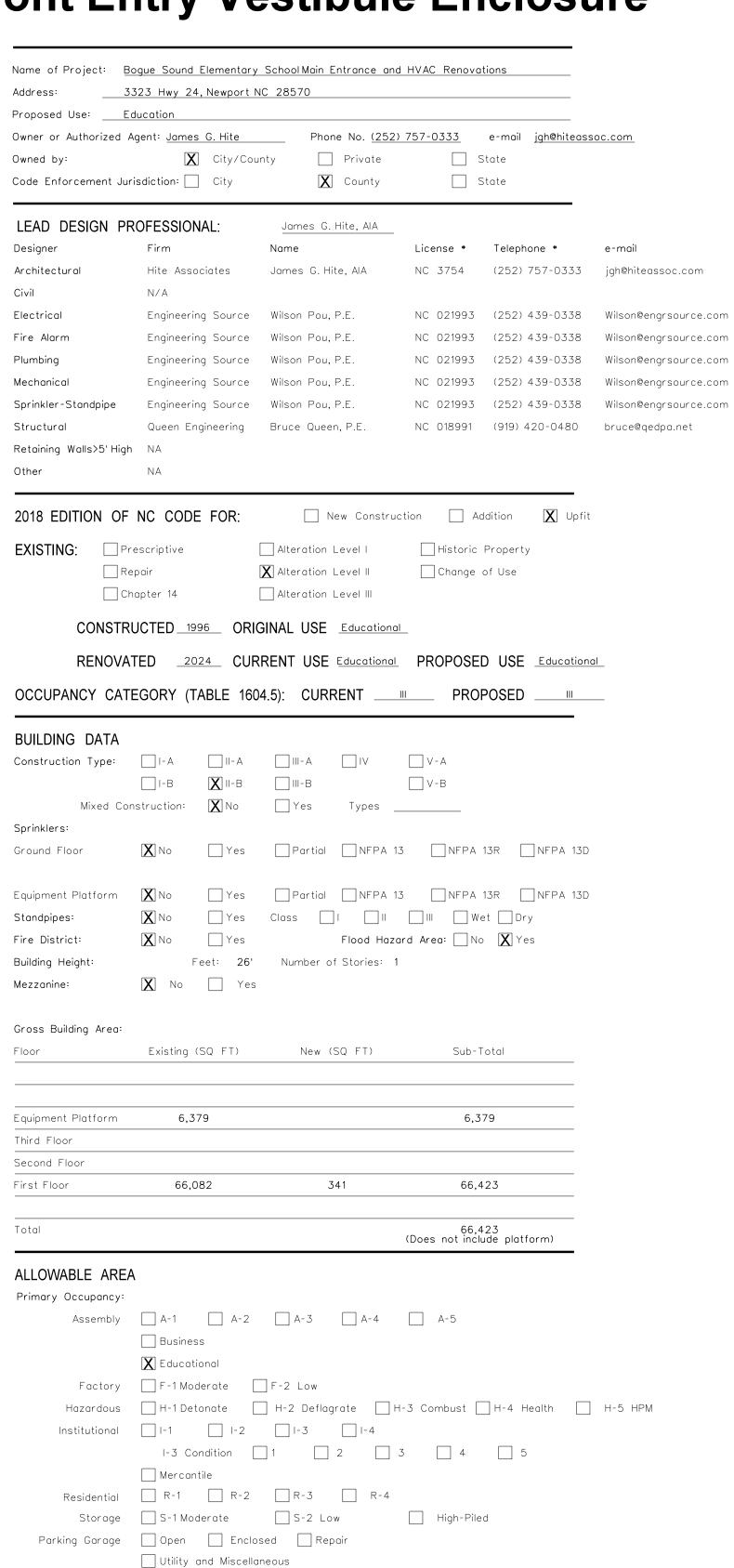
School

Rer Ound 3323 Hwy. 2 arteret Count

Bog



Building Code SummaryFront Entry Vestibule Enclosure



Accessory Occupancy Classification(s): <u>S-1, S-2, A-3</u>

Special Uses (Chapter 4 - List code Sections): NA

Special Provisions (Chapter 5 - List code Sections): <u>NA</u>

This Separation is not exempt as a Non-Separated Use (see exceptions)

Incidental Uses (Table 509): NA

Mixed (Occupancy:	No	XYes	Separation:	Hr:	Exception:	
X	Non-Separated			huilding shall be	determined by	, applying the height.	and

The required type of construction of the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.

Separated Use (508.4) - See below for area calculations For each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1. Actual Area of Occupancy A Actual Area of Occupancy B

	0		0		0 < 1.00
	0	,	0		0 \(\) 1.00
STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2 AREA ₄	(C) AREA FOR OPEN SPACE INCREASE 1,5	(D) ALLOWABLE AREA OR UNLIMITED 2,3
1	Education	66,082	34,000		UNLIMITED

Allowable Area of Occupancy A Allowable Area of Occupancy B

1 Frontage increases from Section 506.2 are computed thus:

a. Perimeter which fronts a public way or open space having 20 feet minimum width = 0 (F)

b. TotalBuilding Perimeter = 0 (P) c. Ratio (F/P) = 0

d. W= Minimum width of public way = 0 (W)

2 Unlimited area applicable under conditions of Section 507.

3 Maximum Building Area = total number of stories in the building x D (506.2)

4 The maximum area of parking garages must comply with 406.5.4. The maximum area of air traffic control towers must comply with 412.3.1.

5 Frontage increase is based on the unsprinkled area value in Table 506.2.

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE
Building Height in Feet (Table 504.3)	Feet 75	26	
Building Height in Stories (Table 504.4)	Stories 3	1	

FIRE PROTECTION REQUIREMENTS

BUILDING	FIRE	F	RATING	DETAIL NO.	DESIGN NO.	DESIGN NO.	DESIGN
ELEMENT	SEPARATION DISTANCE (FEET)	REQ'D	PROVIDED (W/ * REDUCTION)	AND SHEET NO.	FOR RATED ASSEMBLY	FOR RATED PENETRATION	NO. FOI RATED JOIST
Structural frame, including columns, girders, trusses		NA	NA	NA	NA	NA	NA
Bearing walls							
Exterior							
North	NA	NA	NA	NA	NA	NA	NA
East	NA	NA	NA	NA	NA	NA	NA
West	NA	NA	NA	NA	NA	NA	NA
South	NA	NA	NA	NA	NA	NA	NA
Interior	NA	NA	NA	NA	NA	NA	NA
Nonbearing walls and partitions Exterior							
North	NA	NA	NA	NA	NA	NA	NA
East	NA	NA	NA	NA	NA	NA	NA
West	NA	NA	NA	NA	NA	NA	NA
South	NA	NA	NA	NA	NA	NA	NA
Interior	NA	NA	NA	NA	NA	NA	NA
Floor construction including support beams and joist		NA	NA	NA	NA	NA	NA
Above Corridor		NA	NA	NA	NA	NA	NA
Columns Supporting Floors							
Roof construction including support beams and joist		NA	NA	NA	NA	NA	NA
Roof Ceiling Assembly		NA	NA	NA	NA	NA	NA
Columns Supporting Roof		NA	NA	NA	NA	NA	NA
Shafts - Exit		NA	NA	NA	NA	NA	NA
Shafts - Other		NA	NA	NA	NA	NA	NA
Corridor Separation		1	1	NA	U419	NA	NA
Occupancy Separation		NA	NA	NA	NA	NA	NA
Party/Fire Wall Separation		NA	NA	NA	NA	NA	NA
Smoke Barrier Separation		NA	NA	NA	NA	NA	NA
Smoke Partition		NA	NA	NA	NA	NA	NA
Tenant Separation		NA	NA	NA	NA	NA	NA
Incidental Use Separation		NA	NA	NA	NA	NA	NA

DEDCENTAGE OF WALL AREA CALCULATIONS

Indicate section number permitting reduction

PERCENTAGE OF WAL	L AREA CALCULA	TIONS	
FIRE SEPARATION DISTANCE FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA	ACTUAL SHOWN ON PLANS
NA			

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lig	hting:	No	X	Yes	
Exit Signs:		No	X	Yes	
Fire Alarm:		No	X	Yes	
Smoke Detecti	on Systems:	No	X	Yes	
Carbon Monoxi	de Detesction:	No	X	Yes	

Life Safety Plan Sheet *: __LS-001

 $\overline{\mathbf{X}}$ Fire and/or smoke rated wall-locations (Chapter 7)

Assumed and real property line locations

Exterior wall opening area with respect to distance to assumed property lines (705.8) 🗶 Occupancy types for each area as it relates to occupant load calculation (Table 1004.1.2)

X Occupant loads for each area

X Exit access travel distances (1017)

Common path of travel distances (Tables 1006.2.1 & 1006.3.2(1))

Dead end lengths (1020.4) X Clear exit widths for each exit door

 $\overline{\mathbf{X}}$ Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3) X Actual occupant load for each exit door

A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation

 $\overline{\mathbf{X}}$ Location of doors with panic hardware (1010.1.10) Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)

Location of doors with electromagnetic egress locks (1010.1.9.9)

X Location of doors equipped with hold-open devices Location of emergency escape windows (1030)

 $\overline{\mathbf{X}}$ The square footage of each fire area (202)

☐ The square footage of each smoke compartment for Occupancy Classification I-2 (407.5) Note any code exceptions or table notes that may have been utilized regarding the items above

ACCESSIBLE DWELLING UNITS (SECTION 1107)

LOT OR PARKING AREA	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED

ACCESSIBLE PARKING (SECTION 1106)

LOT OR	TOTAL PARKING	NO. OF SPACES	NO. OF ACCESSIBI	NO. OF ACCESSIBLE SPACES REQUIRED / PROVIDED								
PARKING AREA	REQUIRED	PROVIDED	REGULAR WITH 5' ACCESS AISLE	VAN SPA	CES WITH	ACCESSIBLE PROVIDED						
	ACCESS AISLE		132" ACCESS AISLE	8' ACCESS AISLE								
TOTAL												

PLUMBING FIXTURE REQUIREMENTS

LICE		WATERO	CLOSETS	URINALS	LAVA	TORIES	SHOWERS/	DRINKING	FOUNTAINS
USE		MALE	FEMALE		MALE	FEMALE	TUBS -	REGULAR	ACCESSIBLE
	NEW								
	EXISTING								
	REQ'D								
	NEW								
	EXISTING								
	REQ'D								
	NEW								
E	EXISTING								
	REQ'D								

SPECIAL APPROVALS

Special approval: (Local Jurisdiction, Department of Insurance, SBCCI, ICC, etc., describe below)

ENERGY SUMMARY

ENERGY REQUIREMENTS:

The following data shallbe considered minimum and any special attribute required to meet the energy code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs. annual energy cost for the proposed design.

Method of Compliance:

Prescriptive (Energy Code) X Performance (Energy Code) Prescriptive (ASHRAE 90.1)

Performance (ASHRAE 90.1)

THERMAL ENVELOPE

Roof/ceiling Assembly (each assembly) Description of assembly N/A U-Value of total assembly N/A R-Value of insulation N/A Skylights in each assembly NONE U-Value of skylight

Exterior Walls (each assembly)

N/A Description of assembly U-Value of total assembly N/A R-Value of insulation N/A Openings (windows or doors with glazing) Openings (windows) 0.32 U-Value of total assembly

total square footage of skylights in each assembly N/A

solar heat gain coefficient projection factor

Door R-Values N/A

Exterior Walls (each assembly) Description of assembly

U-Value of total assembly R-Value of insulation

Openings (windows or doors with glazing) U-Value of total assembly shading Coefficient

projection factor Door R-Values

Walls below grade -Description of assembly - Block, foam filled cells, 7.5R C.I.

U-Value of total assembly R-Value of insulation

Floor over unconditioned space (each assembly) - NOT USED Description of assembly - 8" Block, foam filled cells, 2" c.i. U-Value of total assembly - 0.11

R-Value of insulation - 7.5R

Floor slab on grade

Description of assembly = 4" thick concrete slab

U-Value of total assembly = 0.21 R-Value of insulation - N/A

Horizontal/vertical requirement

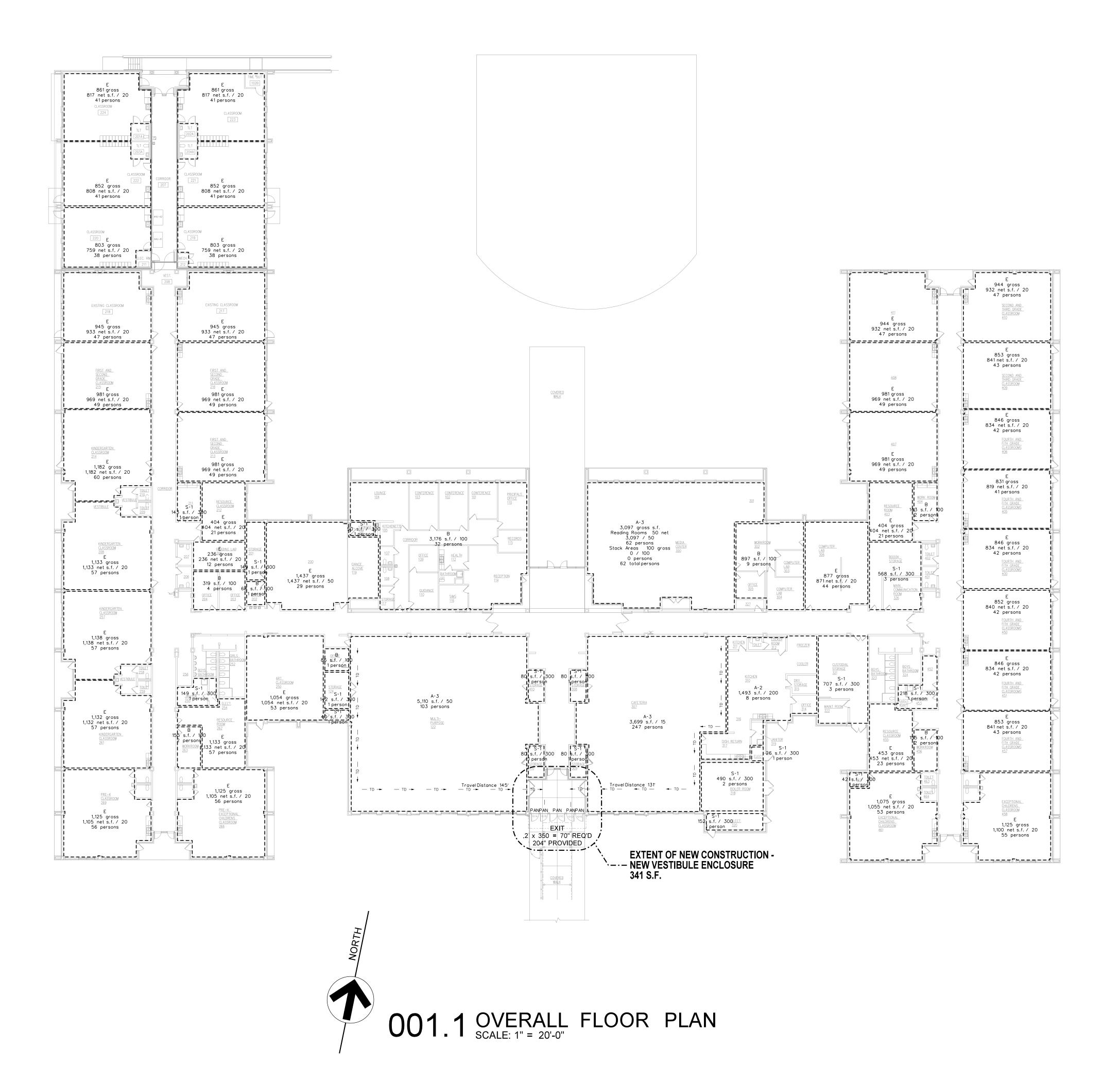
slab heated - NO



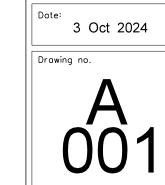
Bog

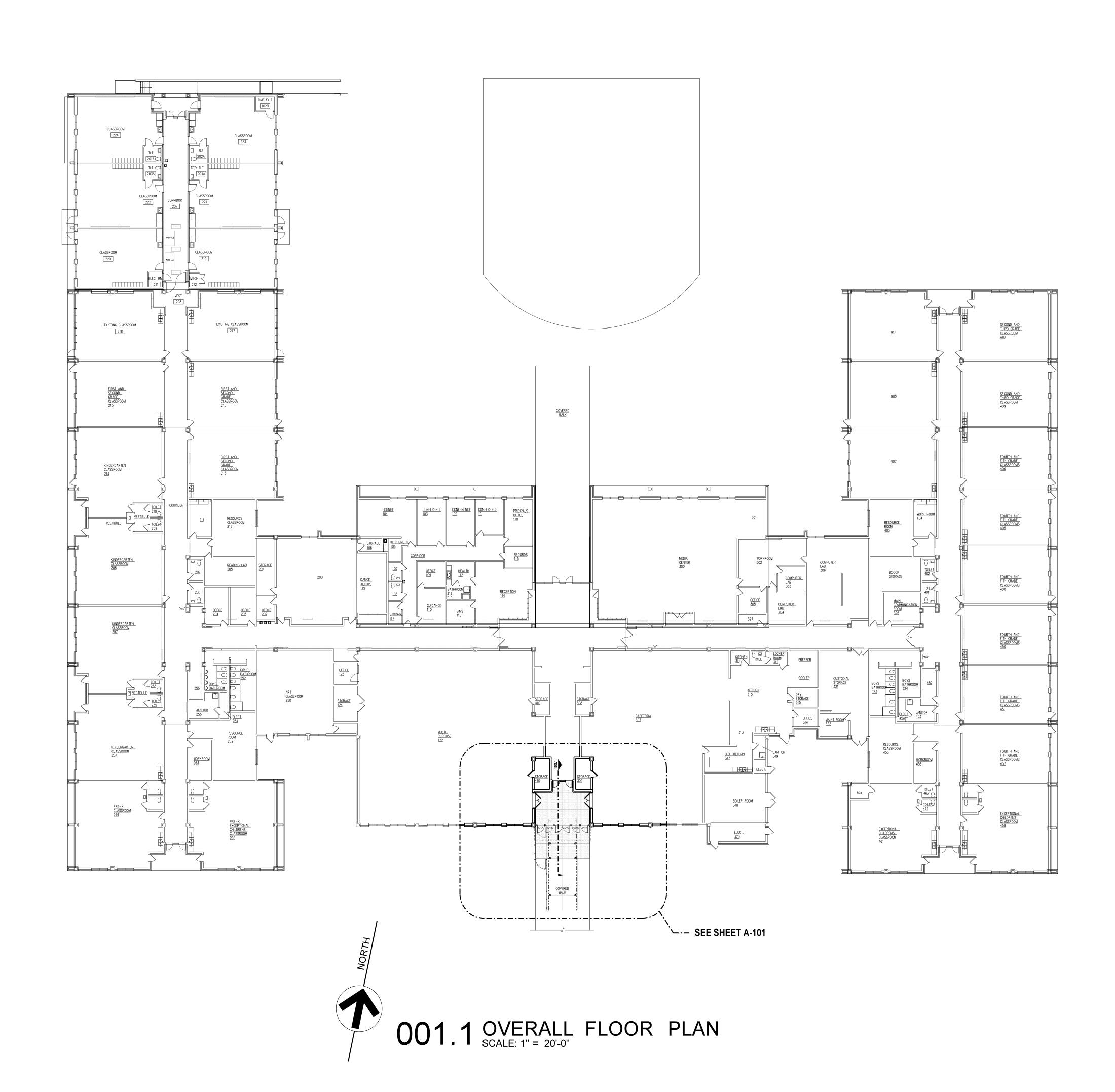
BCS 700

Bog



Bog





Bog

No Date: Revision

EXISTING GUTTER

.032 PRE-FINISHED ALUMINUM RAKE TRIM

FLAT PANEL SIDING
AS SPECIFIED

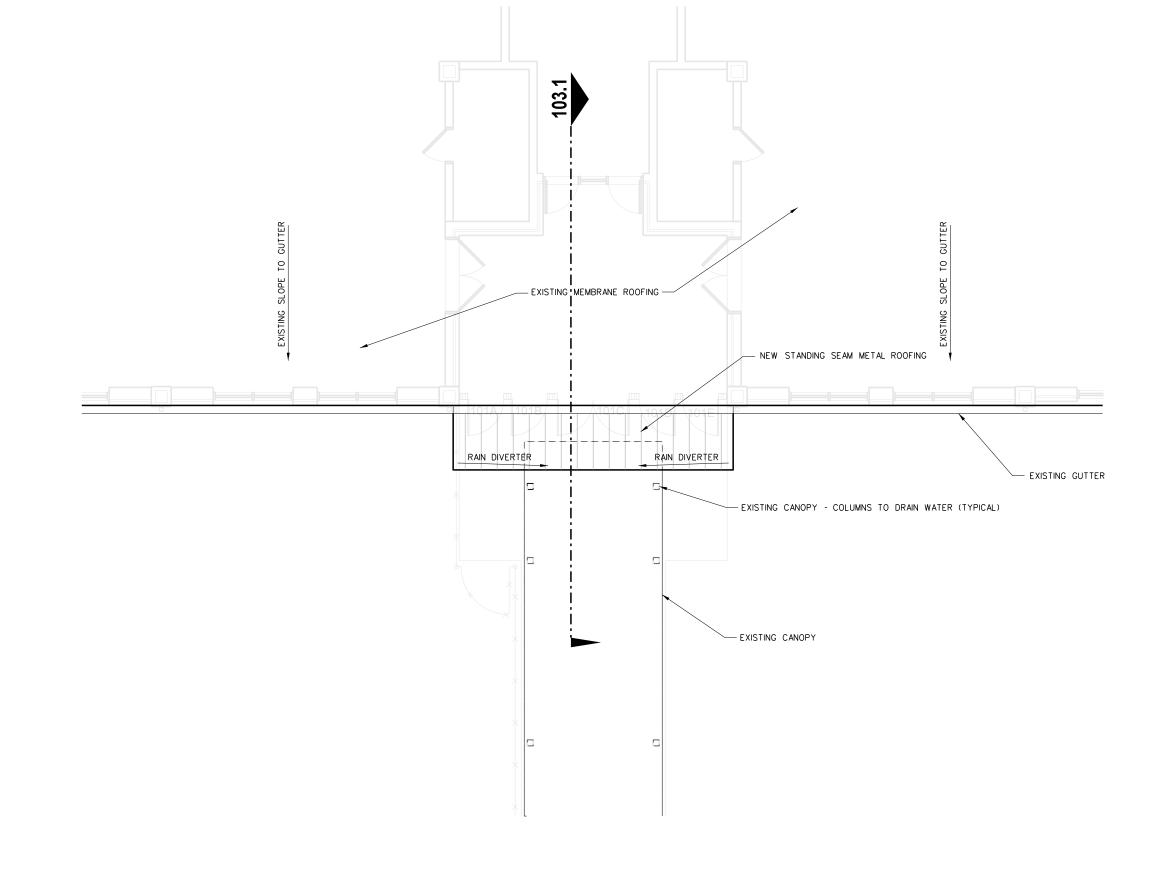
.032 PRE-FINISHED ALUMINUM FASCIA TRIM

EXISTING CANOPY - COLUMNS TO DRAIN WATER

.032 PRE-FINSHED ALUMINUM EAVE TRIM

RAN DIVERTER

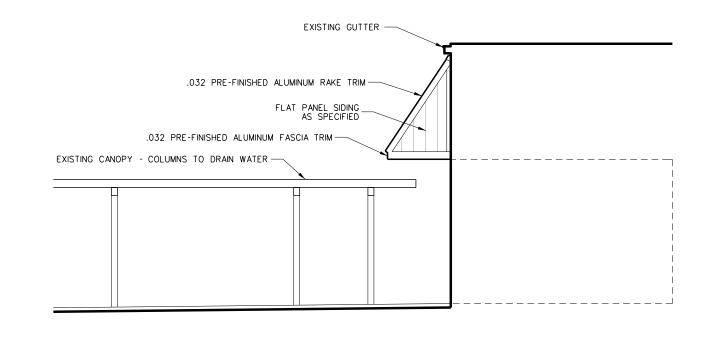
RAN DIV

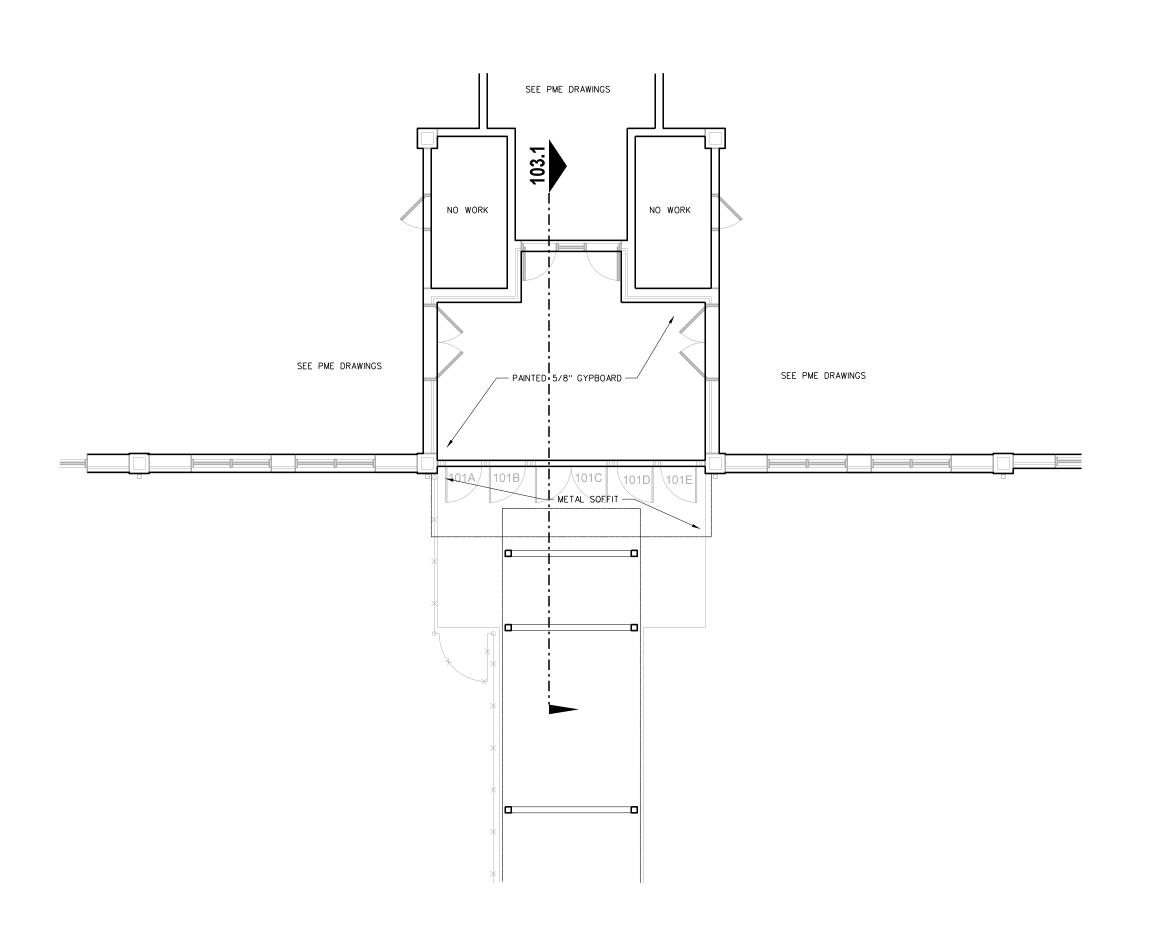


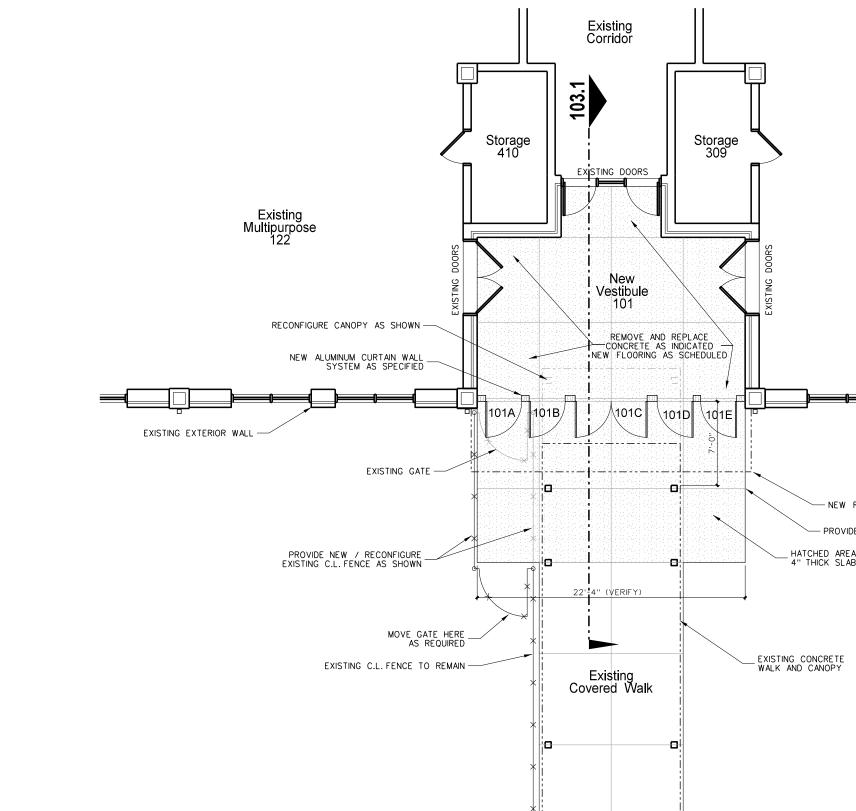
101.6 PARTIAL WEST ELEVATION SCALE: 1/8" = 1'-0"

101.4 PARTIAL SOUTH ELEVATION SCALE: 1/8" = 1'-0"

101.3 PARTIAL ROOF PLAN SCALE: 1/8" = 1'-0"







101.5 PARTIAL EAST ELEVATION SCALE: 1/8" = 1'-0"

101.2 PARTIAL REFLECTED CEILING PLAN



NOTES AND	GENERAL AN	ID SPECIAL	HARDWARE	REQUIRED

- 1 ALL DOORS TO RECEIVE HINGES AS SPECIFIED
 2 ALL DOORS TO RECEIVE WALL OR OVERHEAD STOPS TO SUIT CONDITION OF USE. DOORS WITH MAGNETIC HOLD OPENS TO RECEIVE FLOOR STOPS.
- 3 PROVIDE CLOSERS WITH BACKSTOPS EXTERIOR DOORS AND TO SUIT CONDITION OF USE, ALL CLOSERS TO BE THROUGH-BOLTED
- 4 ALL STEEL FRAMES TO BE PROVIDED WITH SILENCERS
 5 EXTERIOR AND IDF ROOM DOORS TO BE PROVIDED WITH WEATHERSTRIPPING AND THRESHOLDS
- 6 EXIT DEVICES TO BE PROVIDED WITH CYLINDERS, LOCKS, AND CD CYLINDER DOGGING
- 7 AT PAIRS OF DOORS DUIL SIDE PROVIDE DUIL OR LEVER BOTH SIDES ONLY UNLESS OTHERWISE NOTE
- 7 AT PAIRS OF DOORS, PULL SIDE, PROVIDE PULL OR LEVER BOTH SIDES ONLY UNLESS OTHERWISE NOTED
- 8 ALUMINUM DOORS SEE SPECIFICATIONS FOR HARDWARE NOT INDICATED ABOVE
- 9 PROVIDE CYLINDERS FOR KEYED MULLIONS SUPPLIED BY ALUMINUM DOOR SUPPLIER
 10 PROVIDE SOLID WOOD BLOCKING FOR DOOR STOPS AND HOLD OPEN DEVICES
- 11 EVIT DEVICES AT EXTERIOR DOORS TO BE NILWITH BUILD LINESS OTHERWISE INDICATE
- 11 EXIT DEVICES AT EXTERIOR DOORS TO BE NL WITH PULL, UNLESS OTHERWISE INDICATED

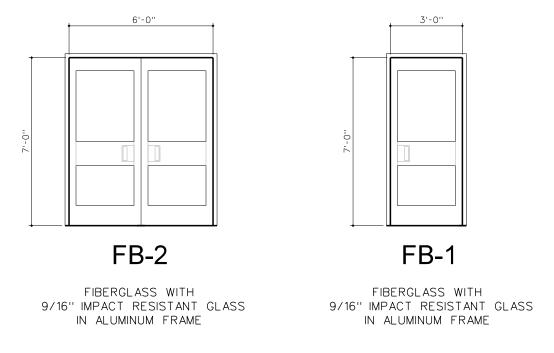
 12 EXIT DEVICES AT INTERIOR DOORS TO BE CLASSROOM FUNCTION WITH LEVER
- 13 PROVIDE 4" WIDE STEEL JAMBS FOR DOORS ABUTTING STEEL COLUMNS AND SPECIAL CONDITIONS AS NOTED

ROOM FINISH SCHEDULE

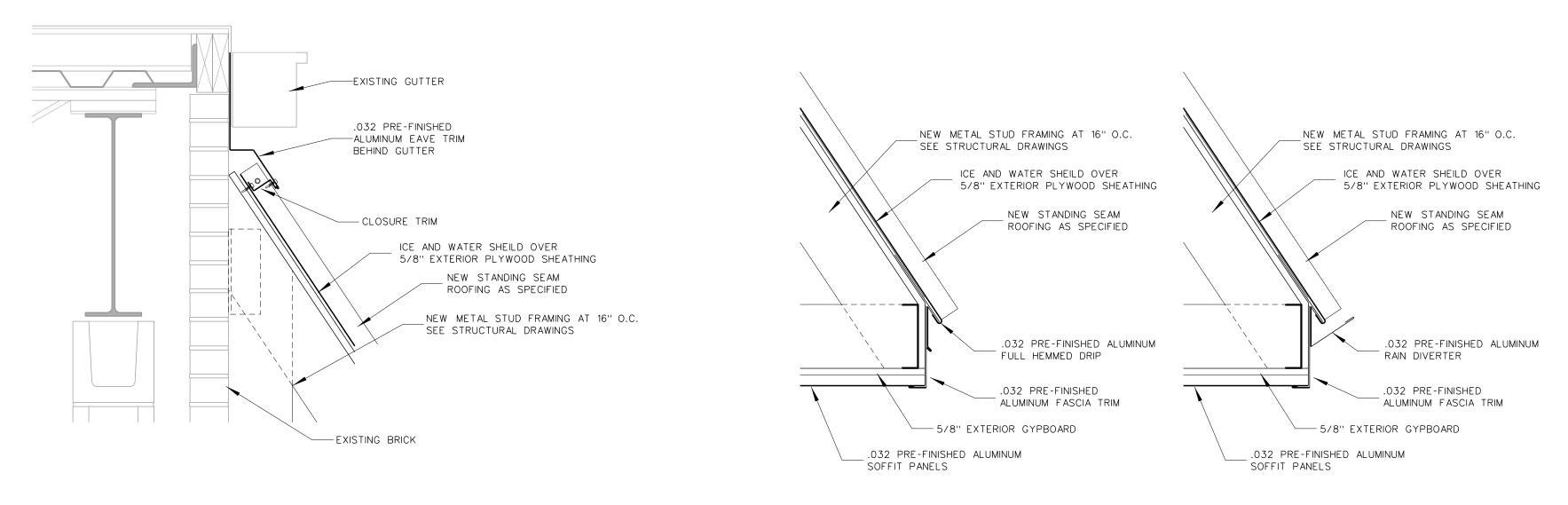
MARK	AREA	FLOOR	BASE	WALLS	CEILING	CLG HEIGHT	REMARKS
101	VESTIBULE	CONCRETE	4" RUBBER	EXISTING BRICK TO REMAIN	PAINTED 5/8" GYPBD	12'-0"	

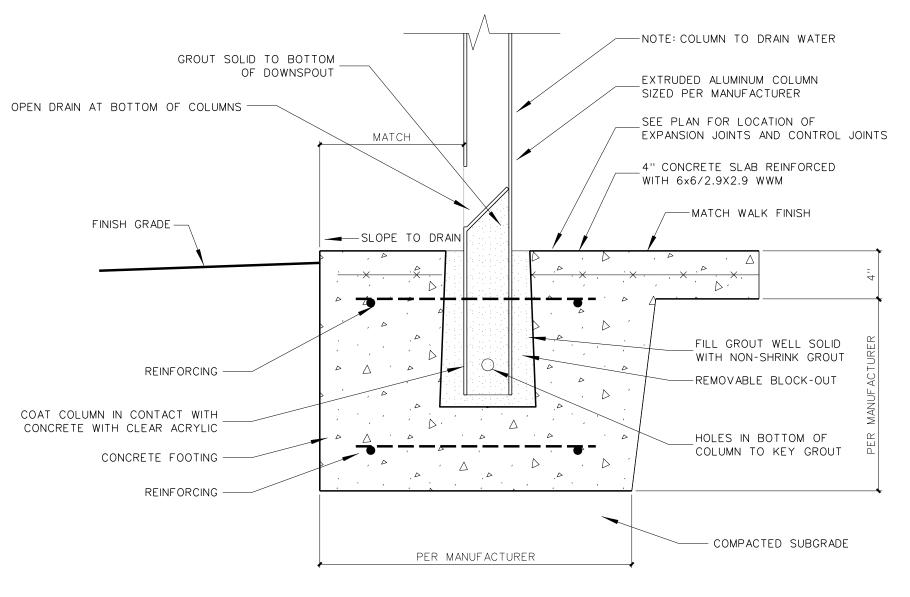
NOT

- 1 OVERHEAD PLATFORM AND ACCESS AREAS: PAINT STEEL STAIRS AND RAILS AS SPECIFIED AND PROVIDE (2) COATS GRAY TINT GLOSS POLYURETHANE FLOOR SEALER AS SPECIFIED FOLLOWING FINAL CLEAN AND APPROVAL OF ARCHITECT
- 2 GYPBOARD CEILINGS AND BULKHEADS: PAINT FLAT WHITE LATEX, NO TEXTURE, USE STRAIGHT
- CORNER BEADS, NO BULLNOSE.
- 3 PAINT GYPBOARD BULKHEADS AND STRUCTURE ABOVE FELT BAFFLE SYSTEMS BLACK



102.1 DOOR ELEVATIONS SCALE: 1/4" = 1'-0"

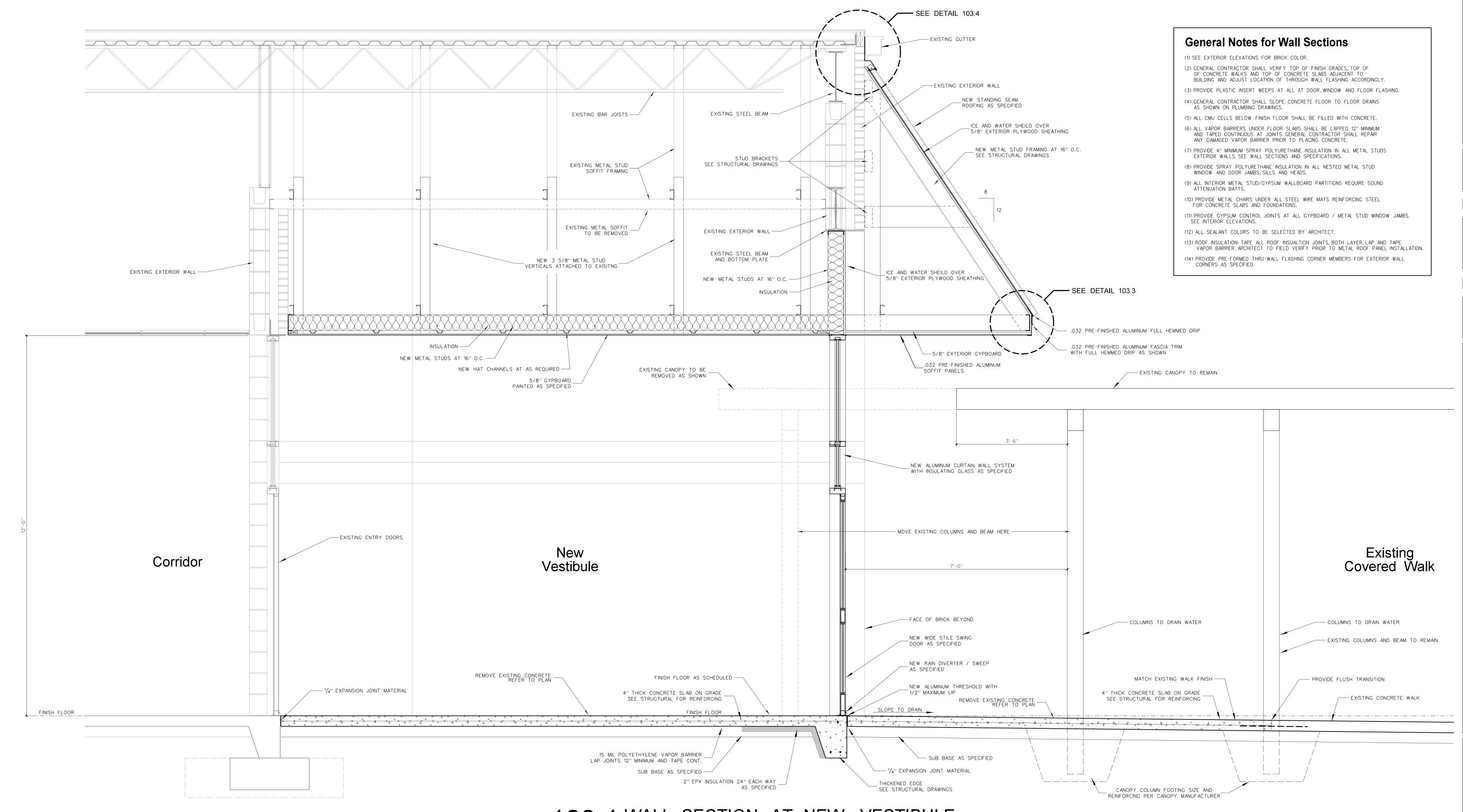




103.4 HIGH EAVE DETAIL SCALE: 1 1/2" = 1'-0"

103.3 FASCIA DETAILS SCALE: 1 1/2" = 1'-0"

103.2 CANOPY FOOTING DETAIL SCALE: 1 1/2" = 1'-0"



103.1 WALL SECTION AT NEW VESTIBULE

25 SOCIATESRE / PLANNING / TECHNOLOGY

REGRETER TO NORTH CROWN LE CORE ENVILLE

ue Sound Elementary Schools 3323 Hwy. 24, Newport, NC 28570

0

Project No.
22419

Date:
3 Oct 2024

Drawing no.

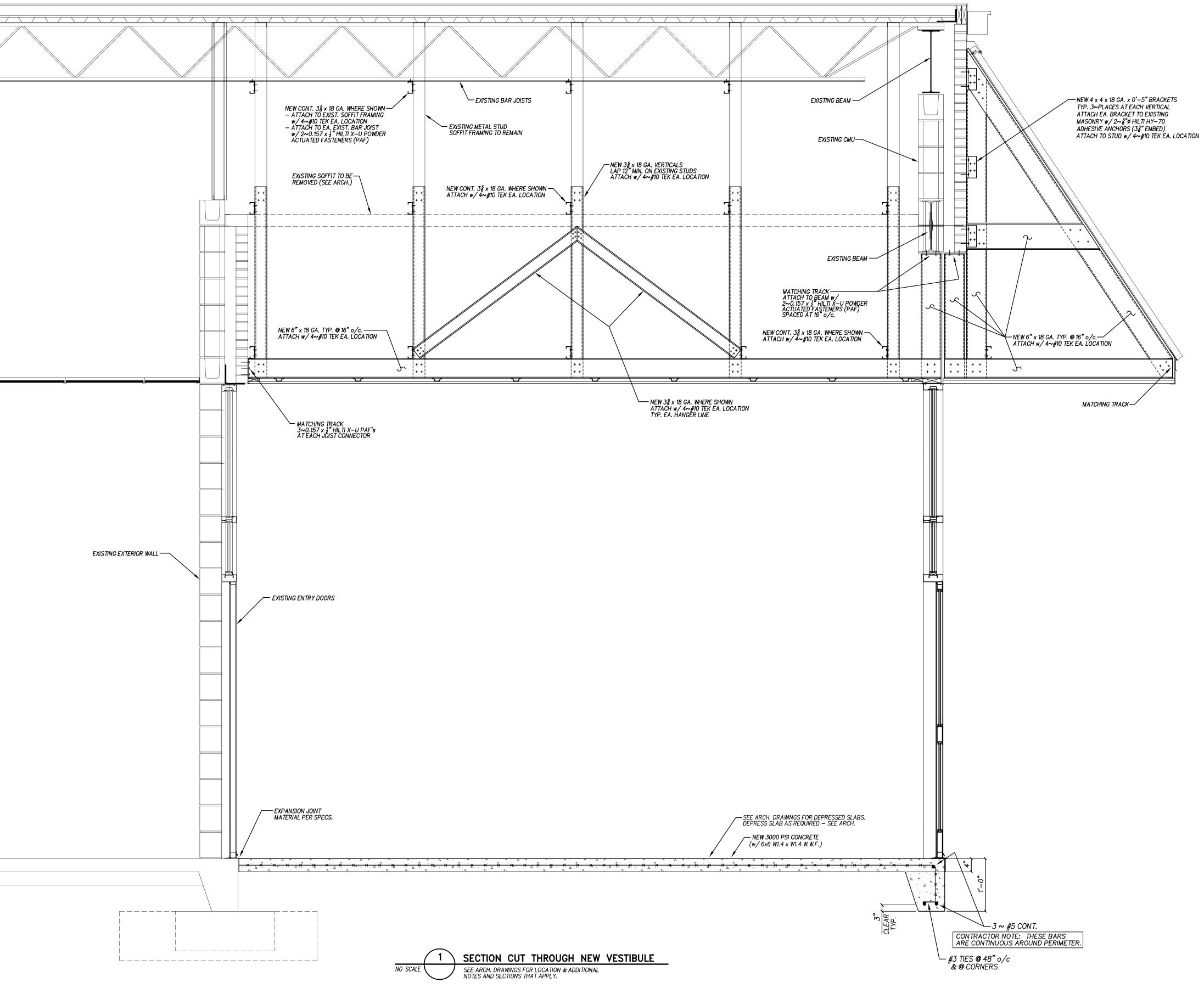
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Drawing no.

A

103

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NEW VESTIBULE NOTES

- 1.) FOOTING DESIGN BASED ON AN ASSUMED SOIL BRG. CAPACITY OF 2000 PSF. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER OF RECORD IF UNSTABLE, ORGANIC, WEAK OR OTHERWISE UNACCEPTABLE SOIL CONDITIONS ARE ENCOUNTERED DURING EXCAVATIONS OR SUBSEQUENT GEOTECHNICAL INVESTIGATIONS. 2.) ELEV. NOTED (-) ARE BELOW REFERENCE FINISHED FLOOR TO TOP/FOOTING.
- 3.) SLAB ON GRADE IS NORMAL WEIGHT CONCRETE WITH REINFORCED WITH 6x6 W1.4 x W1.4 WWM ON A 4" NO. 57/67 WASHED STONE AND 15 MIL POLY VAPOR BARRIER, TYP. U.O.N.
- 4.) ALL CONCRETE SHALL BE A MINIMUM STRENGTH OF 3000 PSI MEETING ACI 301 AND ACI 318. ALL CONCRETE SHALL BE MIXED, HANDLED, SAMPLED, TESTED, AND PLACED IN ACCORDANCE WITH ACI STANDARDS. ALL SAMPLES SUBJECT TO PUMPING SHALL BE TAKEN AT THE EXIT END OF THE PUMP AT THE ELEVATION OF PLACEMENT. (REFERENCE ACI MANUAL OF CONCRETE PRACTICE).
- 5.) ALL REINFORCING BARS SHALL BE GRADE 60 CONFORMING TO ASTM 615. LAP BARS WHERE REQUIRED USING CLASS B TENSION LAP SPLICES, OR 40 BAR DIAMETERS. DEVELOPMENT LENGTHS SHALL BE CRSI MINIMUM UON.
- 7.) REFERENCE ARCHITECTURAL AND PLUMBING DRAWINGS FOR COORDINATION OF SLOPED FLOORS AT FLOOR DRAINS, AND DEPRESSED FLOOR SLAB LOCATIONS.
- 8.) LOCATE ALL WALLS AND OPENINGS PER ARCHITECTURAL DRAWINGS.
- 9.) ARCHITECTURAL BACKGROUND IS SHOWN FOR REFERENCE ONLY.
- REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF WALLS. 10.) THE CONTRACTOR SHALL COORDINATE AND VERIFY ALL DIMENSIONS & ELEVATIONS PRIOR TO STARTING CONSTRUCTION AND ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD.

GENERAL NOTES

CONCRETE

1. CONCRETE SHALL DEVELOP THE FOLLOWING MINIMUM COMPRESSIVE STRENGTHS AT 28 DAYS:

A) FOOTINGS AND PEDESTALS B) INTERIOR SLABS ON GRADE - 3000 PSI OTHER INTERIOR CONCRETE – 3000 PSI

EXPOSED EXTERIOR CONCRETE - 4000 PSI 2. CONCRETE FOR FOOTINGS AND SLABS ON GRADE SHALL BE REGULAR STONE CONCRETE.

- 3. CONCRETE TO BE PERMANENTLY EXPOSED TO WEATHER SHALL HAVE 5%
- (+/-1%) AIR ENTRAINMENT.
- 4. CONCRETE NOT PERMANENTLY EXPOSED TO THE WEATHER SHALL NOT HAVE AIR ADDED BY ENTRAINMENT. THIS REQUIREMENT SHALL BE VERIFIED AND REPORTED BY LABORATORY TESTS.
- 5. ALL CONCRETE WORK SHALL CONFORM TO "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE," ACI 318.
- 6. OBSERVE ALL AND STRICTLY FOLLOW ALL ACI 305 AND 306 REQUIREMENTS RESPECTIVELY FOR PROTECTION OF CONCRETE IN HOT AND COLD WEATHER.
- 7. ALL CONCRETE SLAB WORK SHALL BE PROPERLY CURED IN CONFORMANCE WITH ACI 308. EITHER WATER CURING, WATERPROOF PAPER CURING, PLASTIC SHEET, OR SPRAY-ON SEALING MATERIALS METHOD MAY BE USED PROVIDED THAT THE METHOD CHOSEN HAS NO DETRIMENTAL FFFECT ON THE FINAL FINISH SPECIFIED FOR THE RESPECTIVE AREAS. THE PROPOSED CURING METHOD TO BE USED SHALL BE APPROVED BY THE ARCHITECT.
- 8. BUILDING SLABS ON GRADE SHALL BE 4" MINIMUM THICKNESS.
- 9. PLACE 1/4" PRE-FORMED, IMPREGNATED EXPANSION JOINT FILLER FULL DÉPTH OF SLAB ON GRADE AT ABUTTING WALL SURFACES UNLESS OTHERWISE NOTED.
- 10. PROVIDE CONSTRUCTION OR CONTROL JOINTS IN SLABS ON GRADE IN LOCATIONS AS SHOWN ON FOUNDATION PLAN OR AT OTHER LOCATIONS APPROVED OR REQUIRED BY THE ARCHITECT. BUT SPACING OF JOINTS SHALL NOT EXCEED 12' IN ANY DIRECTION.
- 11. THE TYPE OF JOINT USED WHETHER CONTROL JOINT OR CONSTRUCTION JOINT IS THE OPTION OF THE CONTRACTOR UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- 12. SAW JOINTS AT CONTROL JOINTS IN THE CONCRETE SLABS SHALL BE MADE AS SOON AS THE CONCRETE HAS SUFFICIENT STRENGTH TO PREVENT SPALLING OF THE JOINT DUE TO THE ACTION OF THE SAW, BUT IN NO CASE GREATER THAN 4 HOURS AFTER INITIAL PLACEMENT OF THE CONCRETE.
- 13. SLAB JOINT FILLER SHALL BE OF THE TYPE COMPATIBLE WITH THE FINAL FLOOR COVERING USED. SLAB JOINTS UNDER PERMANENT PARTITIONS OR CASE WORK NEED NOT BE FILLED.
- 14. CHAMFER EXPOSED EDGES AND CORNERS OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.
- 15. SEE ARCHITECTURAL DRAWINGS FOR REQUIRED FLOOR FINAL FINISHES AND PROVIDE NECESSARY SLOPES, DEPRESSIONS, AND SLAB FINISH AS REQUIRED TO ACCEPT THE SPECIFIED FINAL FINISHES.

DIMENSIONS

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING ALL DIMENSIONS IN THE DRAWINGS AND ADVISING THE ARCHITECT OF ANY DIFFERENCES IN THE DIMENSIONS ON THE DRAWINGS PRIOR TO

COMMENCING CONSTRUCTION. **EXISTING CONDITIONS**

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING ALL EXISTING JOB CONDITIONS. ANY ADVERSE EXISTING CONDITIONS AFFECTING WORK SHOWN ON THESE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR POSSIBLE CLARIFICATION OF

CONSTRUCTION SAFETY

1. THESE DRAWINGS DO NOT CONTAIN THE REQUIREMENTS FOR JOB SAFETY. ALL PROVISIONS FOR SAFETY SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

LIGHT GAGE METAL FRAMING

- 1. LIGHT GAGE METAL STUD LOCATIONS SHALL BE AS NOTED ON THE
- 2. ALL MATERIAL SHALL BE GALVANIZED AND ALL SCREWS SHALL BE SUITABLE GRADE STAINLESS STEEL OR ZINC PLATED.
- 3. ALL WELDS AND ABRASIONS IF ANY SHALL BE TOUCHED UP WITH ZINC
- 4. ALL MULTIPLE MEMBERS SHALL BE INTERCONNECTED SO AS TO ACT AS A COMPOSITE UNIT. ALL INDIVIDUAL MEMBERS COMPRISING A
- MULTIPLE MEMBER SHALL BE FULL LENGTH UNSPLICED MATERIAL. 5. ALL CONNECTIONS SHALL BE SCREWED OR WELDED TOGETHER BOTH
- SIDES WITH SUFFICIENT WELDS OR SCREWS TO SAFELY SUPPORT THE LOADS TO BE IMPOSED ON THE CONNECTIONS. 6. ALL CONNECTIONS SHALL BE ACCOMPLISHED WITH STANDARD ACCESSORY COMPONENTS SUPPLIED FOR THAT PURPOSE.

DESIGN CODE DATA (NEW CONSTRUCTION)

1. IMPORTANCE FACTORS: WIND SNOW SEISMIC /w = 1.0ls = 1.1le = 1.252. LIVE LOAD: R00F

20 PSF 3. DEAD LOAD: R00F **24** PSF 4. SNOW LOAD:

5. WIND LOAD: $V_{ULT}=150\,$ 3 SEC PEAK GUST MPH (ASCE 7 - 10) $V_{ASD}=116.2\,$ MPH

DESIGN WIND PRESSURES (PSF):

EXPOSURE C INTERNAL PRES. COEFF. (ENCLOSED) MWFRS DESIGN WIND PRES. 49.0 PSF WIND BASE SHEARS COMPONENTS & CLADDING

WIND BASE SHEARS (SEE TABLE) \longrightarrow V_X (KIPS) V_Y (KIPS)

LOAD CASE 1 2 3 4 5 1 | -60.9 | -78.6 | -136.0 | -56.5 | -87.4 2 | 25.6 | 25.6 | 25.6 | 52.1 | 52.1

INCREASED LATERAL FORCES IMPOSED ON THE EXISTING STRUCTURE AS A RESULT OF INCREASED MEAN ROOF HEIGHT AND EXPOSED ROOF AREA WILL NOT OVERSTRESS THE EXISTING LATERAL FORCE RESISTING SYSTEM OF THE STRUCTURE AT RETROFIT ROOF AREAS.

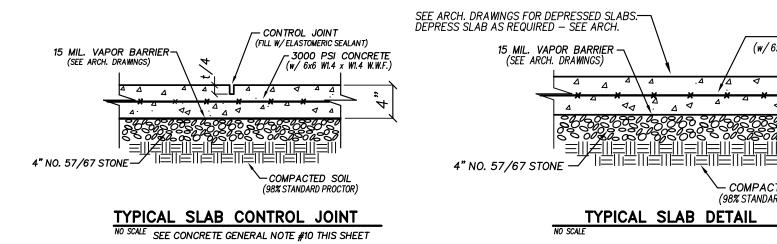
7. SOIL BEARING VALUE 2000 PSF. (ASSUMED)

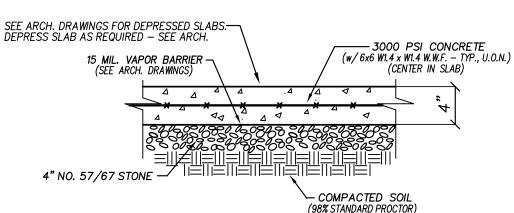
NOTE: ALL METAL STUDS AND METAL SYSTEM TO BE MANUFACTURED BY DIETRICH INDUSTRIES OR EQUAL CONNECTION SCHEDULE #10 TEK SCREWS (U.N.O) CONNECTION TYPE COMMENTS BOTTOM TRACK TO FLOOR 2 ~ POWDER DRIVEN FASTENERS @ 24" o/c STUD TO BOTTOM TRACK ONE SCREW IN EA. FLANGE, U.O.N. STUD TO TOP TRACK ONE SCREW IN EA. FLANGE, U.O.N. PLYWOOD TO STUDS SCREW @ 6" o/c ALONG EA. STUD TOP PL TO TRACK #10 TEK AT 12" o/c. FC TO STUD 4∼#10 TEK FC TO SLAB ¹"ø EXP. ANCH. JOIST TO TOP TRACK (BEARING) (2) SCREWS IN FLANGE PLYWOOD FLOORING TO JOIST SCREW @ 12" o/c ALONG EA. JOIST BRIDGING TO JOISTS 16 GA. CLIP ANGLE w/ 4 SCREWS BLOCKING TO JOISTS 16 GA. CLIP ANGLE w/ 4 SCREWS (4) #10 TEK SCREWS IN WEB 8d, 12" o/c AT SUPPORTS, 6" o/c. AT EDGES

TREAD TO VERTICAL STUD WOOD SHEATHING #10 TEK AT 12" o/c. STAGGERED (WEB TO WEB) HEADER TO HEADER HEADER TO CRIPPLE SA18 GA. w/ 4#8 TEK PER LEG CRIPPLE TO LOWER TRACK 2~#8 TEK EA. FL. HEADER TO BEARING STUD SA 18 GA. w/4~#8 TEK PER LEG BEARING STUD TO CRC BRACE BRIDGE CLIP BEARING STUD TO BRIDGE CLIP 4∼#10 TEK 4∼#10 TEK BRIDGE CLIP TO CRC STUD TO WALL 2 SCREWS IN EA. WEB @ 16" o/c JOIST TO JOIST INTERFACE ONE SCREW IN EA. FLANGE PLYWOOD FLOORING TO JOIST SCREW @ 12" o/c ALONG EA. JOIST BRIDGING TO JOISTS 16 GA. CLIP ANGLE w/ 4 SCREWS BLOCKING TO JOISTS 16 GA. CLIP ANGLE w/4 SCREWS

METAL STUD GENERAL NOTES

- 1. ALL METAL STUD MATERIAL SHALL BE MANUFACTURED BY DIETRICH INDUSTRIES
- OR APPROVED EQUAL. 2. CONTRACTOR SHALL INSTALL ALL COMPONENTS IN STRICT COMPLIANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
- 3. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND DETAILS PRIOR TO CONSTRUCTION.
- 4. ALL METAL STUD MEMBERS SHALL HAVE Fy = 33 KSI, MINIMUM.





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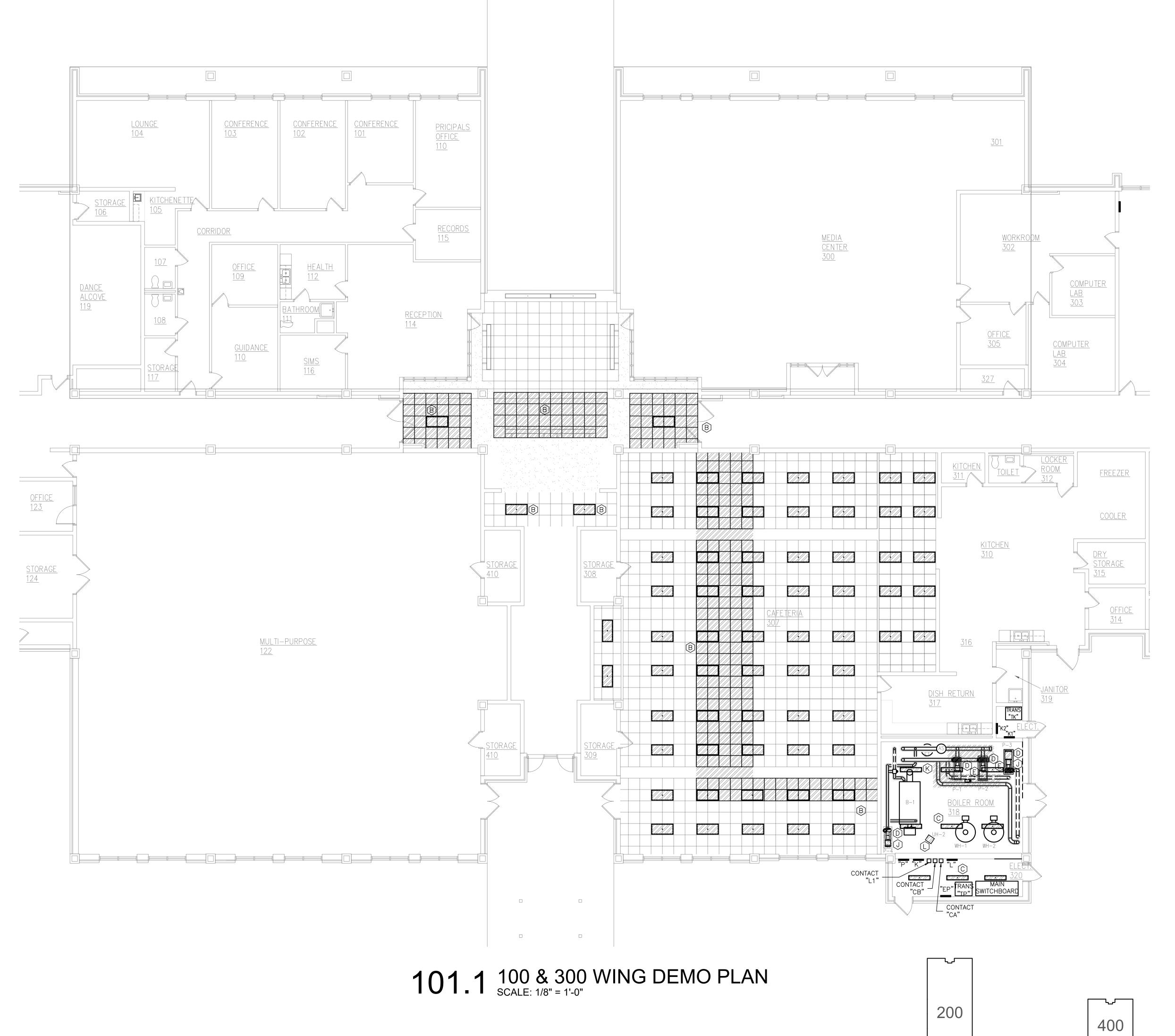
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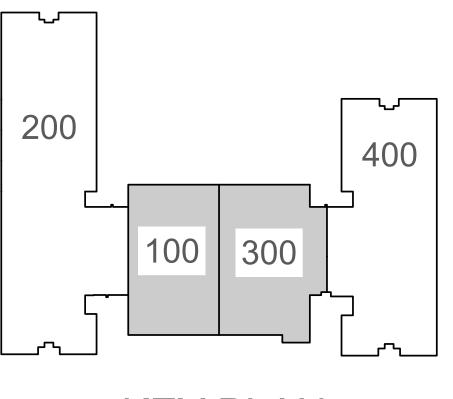
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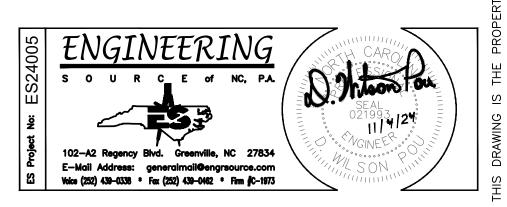
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- REMOVE EXISTING "PRE-COOLING" (PC) UNITS WITH ALL ASSOCIATED HYDRONIC PIPING BACK TO MAINS AND CAP. REPAIR OA DUCT WHERE UNIT IS REMOVED AND MAINTAIN FOR REUSE WITH
- REMOVE EXISTING CEILING TILES IN THIS AREA AND REWORK GRID AS NECESSARY TO ALLOW NEW CHILLED WATER PIPING TO BE
- REMOVE EXISTING FLUORESCENT LIGHTS IN THIS AREA AS INDICATED BY HATCHING. MAINTAIN POWER AND CONTROL WIRING FOR REUSE. INSTALL TEMPORARY LIGHTS AS NECESSARY TO MAINTAIN SAFE WORKING ENVIRONMENT UNTIL NEW LED LIGHTS ARE INSTALLED.
- REMOVE EXISTING PUMP AND ASSOCIATED PUMP TRIM. MAINTAIN SUPPLY AND RETURN PIPING DROPS FOR RECONNECTION TO NEW PUMP AND ASSOCIATED NEW TRIM.
- DISCONNECT EQUIPMENT BEING DEMOLISHED, REMOVE SWITCH AND ASSOC. FEEDER BACK TO PANEL. LABEL AS "SPARE" OR WITH RE-PURPOSED LOAD AS APPROPRIATE
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- REMOVE EXISTING BOILER ROOM UNIT HEATER AND ALL ASSOCIATED UNIT HEATER PIPING TO MAKE ROOM FOR NEW ELECTRIC UNIT





KEY PLAN SCALE: NTS

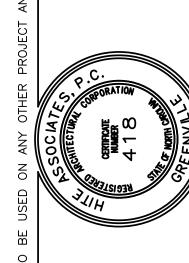


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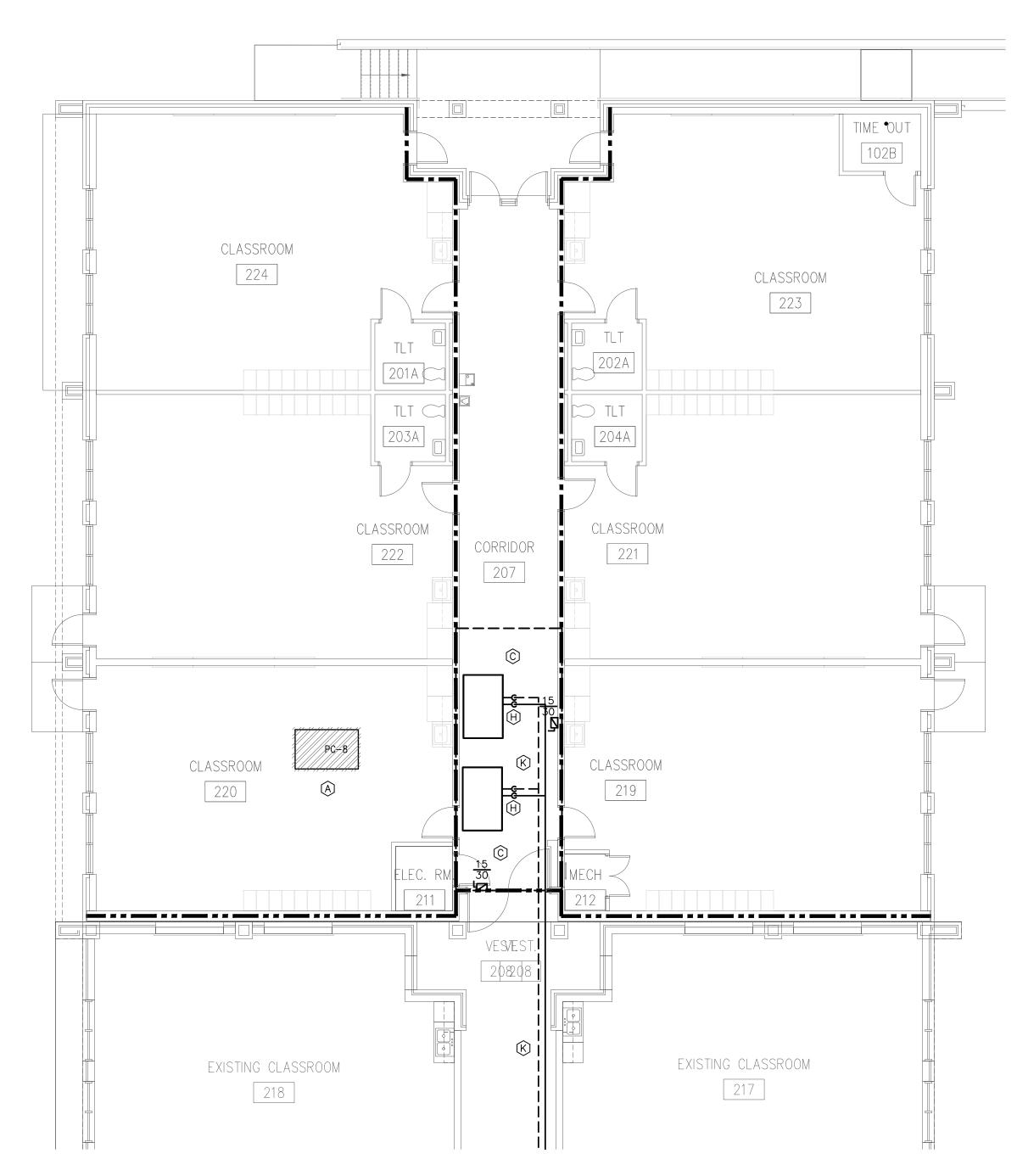


HVAC Renovations to
Elementary School

Project No. 22419

Date:
11 Nov 2024

Drawing no.
101



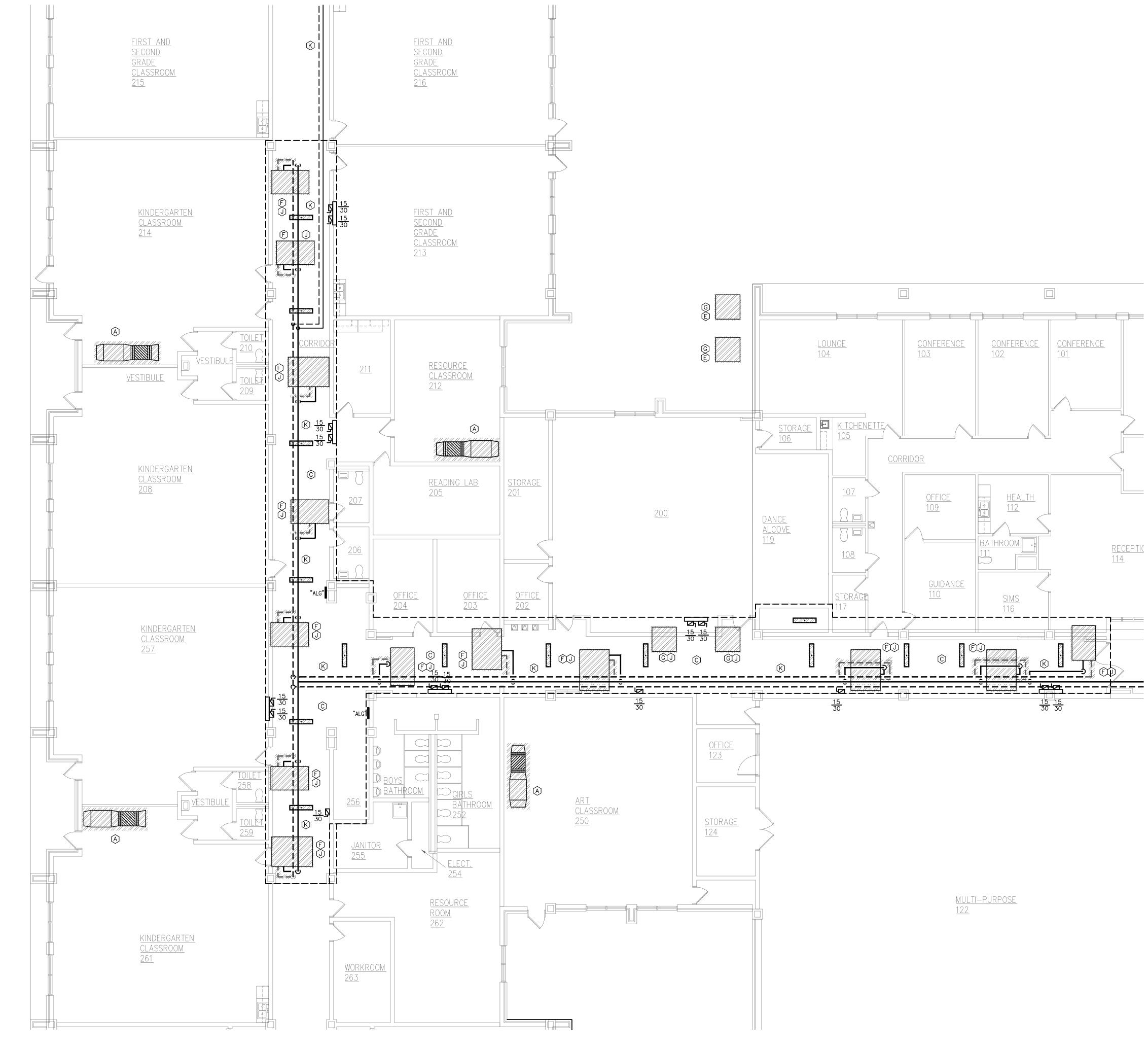
201.2 UPPER 200 WING PLATFORM DEMO PLAN SCALE: 1/8" = 1'-0"

MECH-ELEC DEMO KEY NOTES: GENERAL DEMOLITION KEY NOTE COMMENT: CONTRACTORS ARE RESPONSIBLE FOR READING, UNDERSTANDING AND FOLLOWING WORK SEQUENCING/PHASING PLAN WITH REGARDS TO WHEN THE FOLLOWING DEMOLITION WORK IS TO TAKE PLACE.

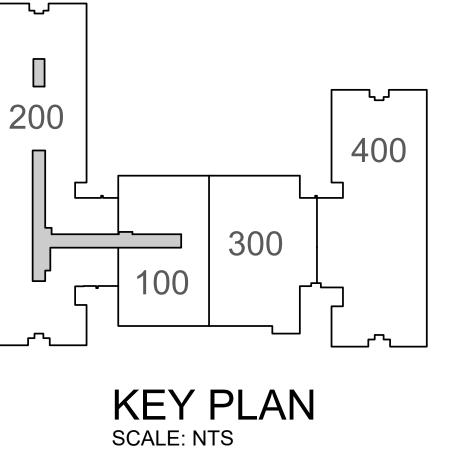
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201.1 100 & LOWER 200 WING PLATFORM DEMO PLAN SCALE: 1/8" = 1'-0"

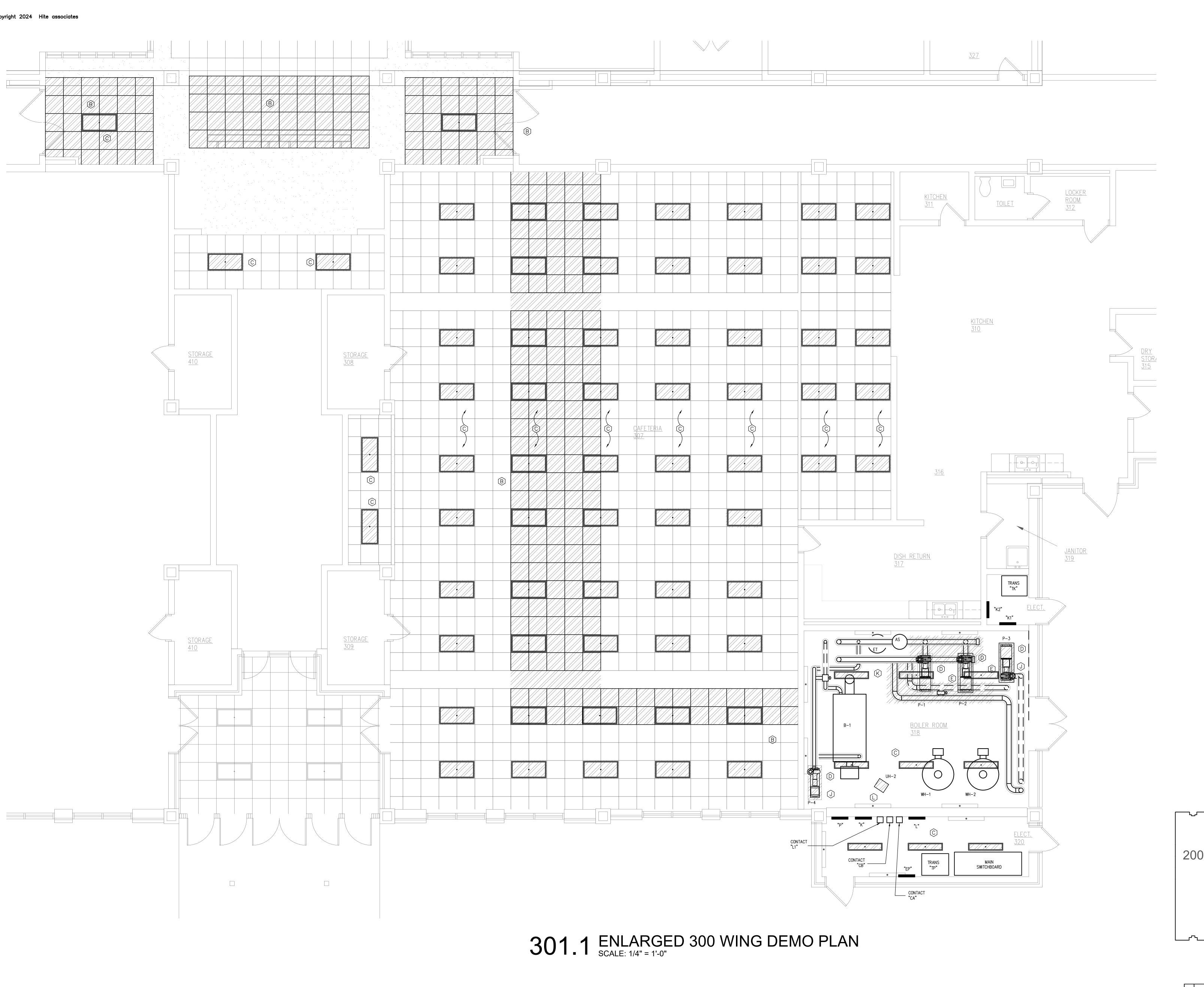


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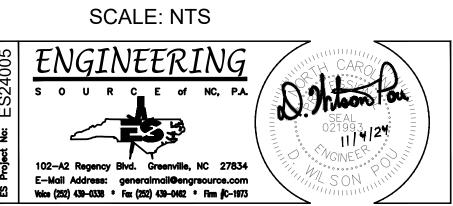


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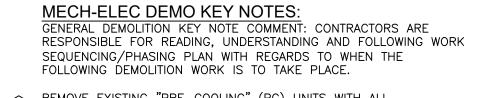
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401.1 300 & 400 WING PLATFORM DEMO PLAN SCALE: 1/8" = 1'-0"



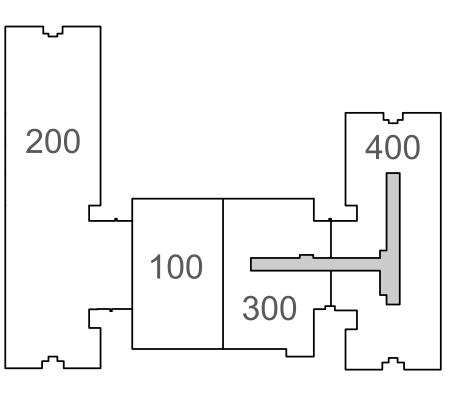
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1. REFERENCE THE FULL AND COMPLETE SET OF DRAWINGS, AND SPECIFICATIONS PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF WORK WITH OTHER CONTRACTORS ON SITE. CONTRACTOR SHALL VISIT SITE AND WALK THROUGH THE PROJECT SCOPE OF WORK AREA PRIOR TO SUBMITTING BID.

2. ALL WORK SHALL BE IN STRICT ACCORDANCE WITH THE NC BUILDING CODE & CONTR. SHALL NOTIFY ENGINEER IN WRITING REGARDING ANY CODE DISCREPANCIES FOUND ON PLANS. CONTR. IS RESPONSIBLE FOR PERMITS, INSPECTIONS AND FEES. THE CONTROLS CONTRACTOR (C.C.) SHALL PROVIDE ALL CONTROL VALVES, ACTUATORS, DAMPERS, FAN COIL COMBINATION STARTERS. C.C. SHALL PROVIDE ALL LOAD SIDE WIRING ASSOCIATED WITH ALL FAN COIL COMBINATION STARTERS. VALVE TAGS AND LABELING SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR (M.C.).

3. DO NOT SCALE THESE DRAWINGS; REFER TO LARGEST SCALE ARCHITECTURAL DRAWINGS. THESE DRAWINGS ARE DIAGRAMMATIC ONLY & ARE NOT INTENDED TO SHOW MINOR DETAILS & EXACT LOCATIONS. DESIGN ADJUSTMENTS SHALL BE ANTICIPATED BY THE CONTRACTORS TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM.

4. "PROVIDE" IS DEFINED AS FURNISH & INSTALL AS PER MANUFACTURERS RECOMMENDATIONS.

5. THE MECHANICAL & CONTROLS CONTRACTOR SHALL COORDINATE THE INSTALLATION OF HVAC EQUIPMENT & CONTROLS WITH EXISTING CONDITIONS, FIELD VERIFY PRIOR TO INSTALLATION TO AVOID CONFLICT. CONTACT ENGINEER IF ALTERNATE INSTALLATION METHOD IS REQUIRED.

6. SYSTEMS INDICATED ON PLANS ARE DIAGRAMMATIC IN NATURE. CONTRACTOR SHALL EXAMINE SITE CONDITIONS PRIOR TO DUCT CONSTRUCTION AND COORDINATE INSTALLATION WITH OTHER TRADES. CONTRACTOR SHALL PROVIDE NECESSARY HANGERS, FASTENERS ETC. TO PROVIDE A COMPLETE AND WORKING SYSTEM.

7. CONTRACTOR SHALL SEAL ALL DUCTWORK WITH A PAINT ON MASTIC. ALL WALL PENETRATIONS SHALL BE SEALED AIR TIGHT.

9. CONTRACTOR SHALL INSTALL BALANCING DAMPERS IN EACH MAIN RETURN AND VENTILATION AIR DUCT TO PROVIDE PROPER AIRFLOW BALANCE TO EACH UNIT.

10. LOCATE THERMOSTATS AND TEMPERATURE SENSORS AT 4'-0" A.F.F. (CENTER OF BOX FOR GYP BRD, TOP OF BOX FOR MASONRY) IN LOCATIONS INDICATED ON PLANS.

11. ALL DUCT DIMENSIONS ARE INSIDE CLEAR DIMENSIONS.

12. CONTRACTOR SHALL COORDINATE ALL WALL, ROOF AND FLOOR PENETRATION LOCATIONS AND SIZES. SEAL ALL OPENINGS. MAINTAIN WALL RATINGS WHEN PENETRATING FIRE OR SMOKE RATED WALLS.

13. FABRICATE AND INSTALL ALL DUCT WORK PER SMACNA 1.5" W.C. PRESSURE. ALL ELBOWS SHALL HAVE 1.5R CENTERLINE. ALL DUCT UNDER SLAB SHALL BE FIBERGLASS.

16. ALL SUPPLY AND RETURN DUCT SHALL BE INSULATED WITH A MINIMUM OF 2-3/16" 3/4 LB. OR 2" OF 1.0 LB. DENSITY FIBERGLASS WRAP. INSULATED DOUBLE WALLED SPIRAL DUCT SHALL HAVE A MINIMUM INSULATION THICKNESS OF 2" OF 1.5 LB. DENSITY. PIPING INSULATION (REFRIGERANT OR WATER) SHALL BE A MINIMUM OF 1-1/2" THICK OR PER LATEST NC ENERGY CODE, WHICHEVER IS

18. CABLE TRAY HAS RIGHT-OF-WAY OVER DUCTWORK; SEE ELECTRICAL DRAWINGS FOR LOCATION.

20. PROVIDE FLEXIBLE CONNECTORS ON SUPPLY AND RETURN CONNECTIONS TO HVAC UNITS.

21. PROVIDE AUXILIARY CONDENSATE DRAIN PAN FOR ALL AIR HANDLING UNITS, FAN COIL UNITS, FURNACE WITH COOLING COIL, ETC. CONTRACTOR SHALL PROVIDE AND INSTALL WATER LEVEL FLOAT SWITCH IN AUXILIARY DRAIN PAN. FLOAT SWITCH SHALL SHUT DOWN INDOOR AND ASSOCIATED OUTDOOR UNIT WHEN ACTIVATED.

22. CONDENSATE PIPE SHALL BE SCHEDULE 40 PVC OR HARD DRAWN COPPER. INSTALL WITH PROPER SLOPE AND NO SAGS. CONDENSATE PIPE SHALL BE INSULATED WITH 1/2" THICK CLOSED CELL INSULATION.

23. ALL DUCTWORK AND PIPING SHALL BE CONCEALED ABOVE CEILINGS, TRUSSES AND SOFFITS EXCEPT IN MECHANICAL ROOMS, UTILITY PLATFORMS, AREAS WITH EXPOSED STRUCTURE (NO CEILINGS), AND WHERE NOTED OTHERWISE.

24. CONTROLS CONTRACTOR IS RESPONSIBLE FOR ALL CONTROLLERS, CONTACTORS, PROGRAMMING, CONTROL WIRING, CONDUIT AND CONNECTIONS TO MECHANICAL EQUIPMENT AS REQUIRED TO MEET THE SEQUENCES OF OPERATION FOR ALL NEW AND EXISTING EQUIPMENT BEING CONTROLLED BY THE BMS.

25. MECHANICAL CONTRACTOR MAY REUSE EXISTING UNIT DISCONNECT SWITCHES WHERE THEY ARE IN GOOD WORKING ORDER AND THE CORRECT SIZE FOR THE UNIT. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL NEW DISCONNECTS THAT MAY BE REQUIRED FOR EQUIPMENT PROVIDED UNDER THIS CONTRACT. MECHANICAL CONTRACTOR SHALL FURNISH ALL REQUIRED FUSES FOR ALL FUSED DISCONNECT SWITCHES. COORDINATE DISCONNECT AND FUSE INSTALLATION WITH ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING DISCONNECT SWITCHES AND FUSES. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL LINE SIDE WIRING AND CONDUIT TO EXTERNALLY OR INTERNALLY MOUNTED DISCONNECTS AND SHALL PROVIDE AND INSTALL LOAD SIDE WIRING AND CONDUIT FROM EXTERNALLY MOUNTED DISCONNECT SWITCHES TO MECHANICAL EQUIPMENT. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FINAL ELECTRICAL CONNECTIONS TO EQUIPMENT PROVIDED BY THE MECHANICAL CONTRACTOR. SEE "MECHANICAL EQUIPMENT ELECTRICAL CONNECTION DETAIL".

26. ALL EXPOSED GAS PIPE IN BOILER ROOM (NEW AND EXISTING) SHALL BE PAINTED OSHA YELLOW. ALL GAS PIPING SHALL BE LABELED WITH THE TYPE OF GAS AND SUPPLY PRESSURE. GAS PIPING CONCEALED IN WALL CAVITY SHALL NOT BE REQUIRED TO BE PAINTED YELLOW. CONTRACTOR SHALL INSTALL NEW GAS PIPE PER INSTALLATION STANDARD MSS SP-58. M.C. SHALL PROVIDE MAPA PRODUCTS PIPE SUPPORTS WITH E-6000 ADHESIVE OR APPROVED EQUALS.

28. MECHANICAL CONTRACTOR SHALL PROVIDE ENGR. WITH AN INDEPENDENT AIR AND WATER BALANCE REPORT. REPORT SHALL INDICATE INITIAL AND FINAL READINGS OF UNIT SUPPLY, RETURN AND VENT AIR CFM, AS WELL AS GPM PER UNIT, AND PER PUMP. INCLUDE IN DOCUMENTS PROVIDED TO OWNER AT JOB CLOSEOUT.

29. MECHANICAL CONTRACTOR SHALL LABEL ALL EQUIPMENT WITH ENGRAVED PLASTIC LAMINATE, SCREWED TO PIECE OF EQUIPMENT.

MODE.

CLOSEOUT.

ROUTE ACCORDINGLY.

33. BMS UNIT CONTROLLER SHALL HAVE 7 DAY PROGRAMING, 2 DEGREE LOCAL ADJUSTMENT, LOCAL TIMED OVER—RIDE AND THE ABILITY TO RUN FANS IN OCCUP. MODE & CYCLE FANS IN UN—OCCUP.

34. THE M.C. & C.C. SHALL PROTECT EQUIPMENT DURING CONSTRUCTION, WELDING & BRAZING AS REQ'D. CLEAN ALL EQUIP. SURFACES OF GREASE, DIRT, DUST, & OTHER FOREIGN MATERIALS PRIOR TO PROJECT

35. MECHANICAL CONTRACTOR SHALL CHANGE NEW UNIT FILTERS AFTER EACH MONTH OF RUN TIME, AND SHALL LEAVE ONE CHANGE OF FILTERS FOR EACH UNIT FOR OWNER TO USE FOR NEXT FILTER CHANGE

CHANGE.

36. MECHANICAL CONTRACTOR SHALL NOT ALLOW DUCTWORK TO CONTACT LAY—IN LIGHT FIXTURES.

KITCHEN-DINING & MULTI-PURPOSE UNIT CONTROL SEQUENCE

START/STOP: EMS shall index system during School's specified occupied and setback periods.

Unit fans shall run continuously during occupied times and cycle during unoccupied times.

TEMPERATURE CONTROL: Each unit is provided with combination temp/humidity sensors w/temperature sensors.

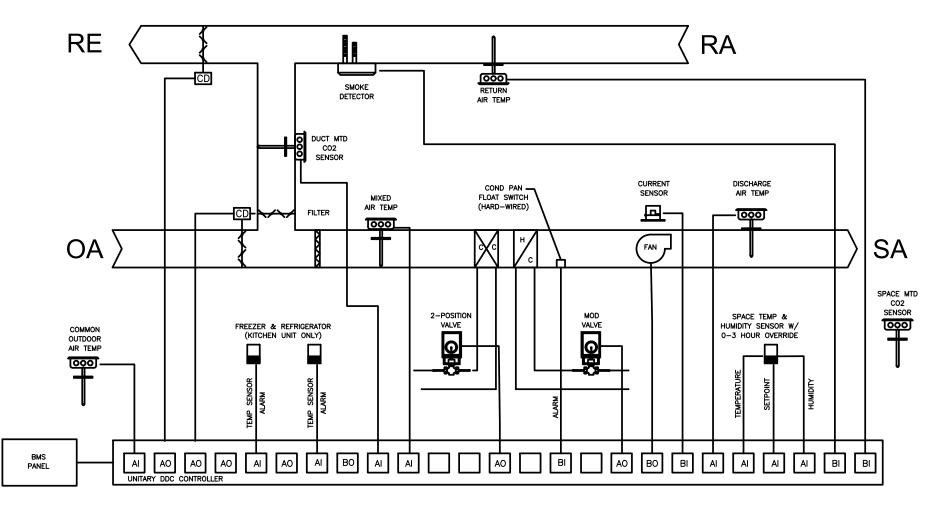
TEMPERATURE CONTROL: Each unit is provided with combination temp/humidity sensors w/temperature setpoint adjust capabilities and timed local over—ride in their respective zones. The EMS will monitor the supply air temperature. The space sensor controls, the modulating heating valve and the cooling valve to maintain temperature for scheduled hours and night setback setpoint after scheduled hours.

DEHUMIDIFICATION CYCLE: Upon the space temp being satisfied and sensing a humidity level above set point (60% RH) the supply air (SA) fan shall be set to heating CFM, the chilled water valve shall index open, and the hot water valve (coil in the re—heat position) shall modulate as required to maintain a 70°F discharge air temperature until space humidity falls below set point.

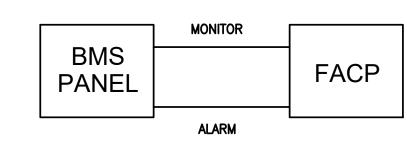
SAFETIES: The electrical contractor to provide duct type smoke detector to be installed in return air duct per NFPA 72 item 5—10.5.2.2 for fan shut—down. M.C. shall provide float cut—off switch in each drain pan and a freeze stat (remote reset capable) at the chilled water coil to shut—down unit and place into alarm status. C.C. shall provide a freeze—stat reset and a fan status input to the BMS.

VENTILATION:
(Dining & MP) EMS shall index common building outside air control damper open during occupied school hours. System fan shall run continuously during occupied hours. Unit damper shall start at minimum position. Unit damper shall drive to max position upon the CO2 monitor sensing a level above set point (700 PPM) after system start—up. Unit OA dampers shall close during night setback and morning warm—up (verify sched. w/Owner).

(Kitchen) System fan shall run continuously during occupied hours. Unit damper shall start at minimum position. Unit damper shall drive to max position upon the kitchen hood exhaust and make—up unit being energized and return to minimum upon hood being de—energized. Unit OA damper shall close during night setback and morning warm—up.



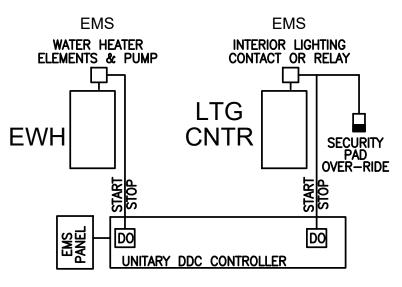
001.7 DINING CONTROL DIAGRAM



UPON RECEIPT OF AN ALARM SIGNAL FROM THE FACP OR ACTIVATION OF THE GLOBAL FAN SHUT-DOWN SWITCH, THE BMS SHALL SHUT DOWN ALL AIR MOVING UNITS (AHU, FC, RTU, ETC.) IN A SAFE MANNER THAT WILL PREVENT ANY DAMAGE TO CHILLERS, PUMPS, CONDENSING UNITS, BOILERS, ETC. SYSTEM SHALL RETURN TO NORMAL OPERATION UPON CANCELLATION OF ALARM.

FIRE DRILL MODE SHALL NOT ACTIVATE GLOBAL FAN SHUT DOWN.

001.6 GLOBAL FAN SHUT-DOWN



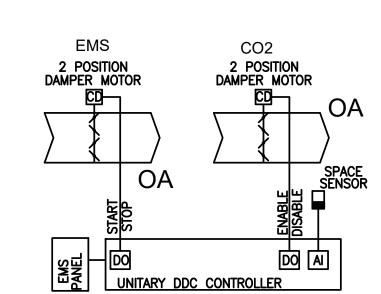
WATER HEATER CONTROL SEQUENCES:

EMS SHALL INDEX WATER HEATER ELEMENTS AND RECIRCULATION PUMPS ON 1 HOUR PRIOR TO OWNER—SPECIFIED OCCUPIED HOURS AND INDEX OFF DURING UNOCCUPIED TIMES

INTERIOR LIGHTING CONTACTOR:

EMS SHALL INDEX LIGHTS ON DURING OCCUPIED HOURS BASED ON OWNER PROVIDED SCHEDULE AND OFF WHEN UNOCCUPIED. OVER—RIDE BUILDING TO OCCUPIED MODE UPON SECURITY SYSTEM BEING DISARMED DURING UNOCCUPIED TIME AND RESET WHEN RE—ARMED. CONTROLS CONTRACTOR SHALL PROVIDE AND INSTALL LTG CONTACTORS OR RELAYS IN EACH WING AS REQ'D TO CONTROL THE LIGHTS IN THAT WING. CLOSELY COORDINATE WITH E.C. PRIOR TO ROUGH—IN.

001 5 EQUIPMENT ON TIME CLOCK CONTROL



OUTSIDE AIR DAMPER CONTROL SEQUENCES:

EMS CONTROL: EMS SHALL INDEX DAMPER OPEN DURING OWNER—SPECIFIED OCCUPIED HOURS AND DRIVE DAMPER CLOSED DURING UNOCCUPIED TIMES. MAINTAIN CLOSED POSITION DURING MORNING WARM—UP. (SEE ALSO UNIT SEQ.)

CO2 CONTROL: EMS SHALL INDEX DAMPER OPEN DURING OWNER—SPECIFIED OCCUPIED HOURS TO COINCIDE WITH UNIT OUTDOOR AIR DAMPER CONTROL AND DRIVE DAMPER CLOSED DURING UNOCCUPIED TIMES. DAMPER SHALL BE INDEXED OPEN REGARDLESS OF SCHEDULE UPON SPACE CO2 SENSOR SENSING A CO2 LEVEL ABOVE SET POINT (700 PPM).

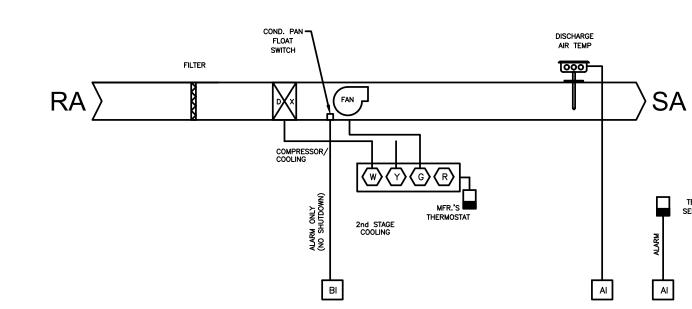
001 4 OUTSIDE AIR LOUVER DAMPER CONTROL

MDF UNIT CONTROL SEQUENCE:

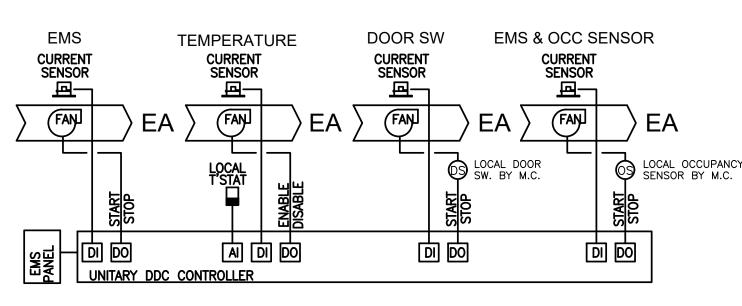
START/STOP: Unit shall run to maintain min. 68°F (adj) year—round temperature.

TEMPERATURE CONTROL: Unit is provided with manufacturer's thermostat which controls the DX condenser and SA fan to maintain space temperature.

SAFETIES: A condensate pan float switch will activate an alarm upon being activated; however the unit shall continue to operate.



001.3 MDF/IDF UNIT CONTROL DIAGRAM



001.2 MISC FAN CONTROLS SCALE: NONE

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

PRESCRIPTIVE ENERGY COST BUDGET CLIMATE ZONE: IBC - 4A (CARTERET CO.) THERMAL ZONE WINTER DRY BULB: 18.8°F SUMMER DRY BULB: 91.7°F INTERIOR DESIGN CONDITIONS WINTER DRY BULB: 70°F SUMMER DRY BULB: 75°F RELATIVE HUMIDITY: 50% BUILDING HEATING LOAD: BUILDING COOLING LOAD: MECHANICAL SPACE CONDITIONING SYSTEM DESCRIPTION OF UNIT HEATING EFFICIENCY: COOLING EFFICIENCY: HEAT OUTPUT OF UNIT: COOLING OUTPUT OF UNIT: TOTAL BOILER OUTPUT: 2,400 MBH (If oversized, state reason) (EXISTING BOILER TO REMAIN) TOTAL CHILLER OUTPUT: 225 TONS (If oversized, state reason) (EXISTING CHILLERS TO REMAIN) LIST EQUIPMENT EFFICIENCIES EQUIPMENT SCHEDULES WITH MOTORS (Not used for mechanical systems) MOTOR HORSEPOWER: NUMBER OF PHASES: MINIMUM EFFICIENCY: # OF POLES:

DESIGNER STATEMENT:

To the best of my knowledge and belief, the design of this building complies with the mechanical systems, service systems and equipment requirements of the 2012 North Carolina energy conservation code.

GNED: D. WILSON POU, P.E.

CLASSROOM FAN COIL CONTROL SEQUENCE:

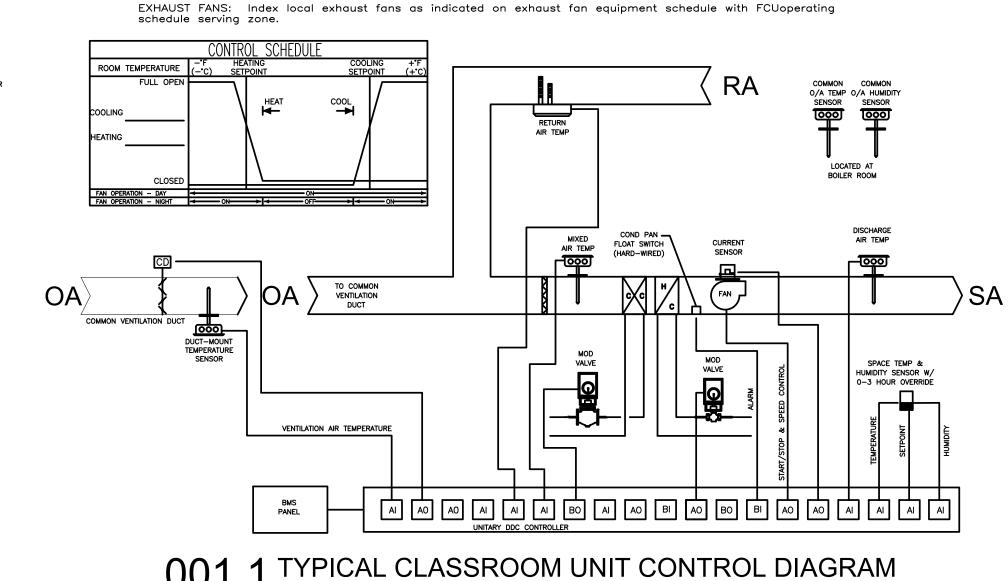
START/STOP: Building Management System (BMS) shall index fan coils on during School's specified occupied periods to run continuously. The Fan Coil units will be indexed by zones with each building unit being a zone for start/stop and timed override operation. Timed override operation will be programmed and indexed

TEMPERATURE CONTROL: Each unit is provided with combination temp/humidity sensors w/temperature setpoint adjust capabilities and timed local over—ride in their respective zones. The EMS will monitor the supply air temperature. The space sensor controls, the modulating heating valve and the cooling valve to maintain temperature for scheduled

DEHUMIDIFICATION CYCLE: Upon the space temp being satisfied and sensing a humidity level above set point (60% RH) the supply air (SA) fan shall be set to 50% cooling CFM, the chilled water valve shall modulate to maintain 52°F discharge air temp. Upon sensing a space temp 1.5°F below set point the hot water valve (coil in the re—heat position) shall modulate as required to maintain a 72°F discharge air temperature until space temperature returns to cooling set point or until space humidity falls below humidity set point.

VENTILATION: EMS shall index common building outside air control damper open during occupied school hours. System fan shall run continuously during occupied hours. OA dampers shall close during night setback and morning warm—up (verify sched. w/Owner)

SAFETIES: Provide a Remote Relay (RR) to shutdown all FCU's with remote switch located adjacent to the Fire Alarm System. Activation of a duct smoke detector, fire alarm initiating device, or manual emergency fan shut—down switch shall shut down fan in accordance with NFPA 72. The fire alarm panel shall have a reset / defeat switch (Provided E.C.) for fan reactivation; C.C. shall perform final connections to BMS system Controls contractor shall provide float cut—off switch in each drain pan to shut—down unit and place into alarm status. C.C. shall provide all fan coil unit switch and input to the BMS indicating fan status.



CONTROL SYSTEM GENERAL DESCRIPTION OF WORK

BASE BID:
MECHANICAL CONTRACTOR SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, PROGRAMMING, SOFTWARE AND WARRANTIES
NECESSARY TO TIE THE NEW EQUIPMENT IN THE AREAS BEING RENOVATED BACK INTO THE EXISTING JCI CONTROL SYSTEM SUCH
THAT IT WILL BE A FULLY FUNCTIONAL SINGLE SYSTEM. MODIFY EXISTING EQUIPMENT WITH EXPANSION CARDS, NEW GRAHICS AND
PROGRAMMING AS REQUIRED TO CONTROL NEW AHUS, PUMPS, ETC TO MEET THE NEW SEQUENCE OF OPERATIONS FOR SEAMLESS

CONTROLS ALTERNATE BID
MECHANICAL CONTRACTOR SHALL INCLUDE ALL DEMOLITION, LABOR, MATERIALS, EQUIPMENT, NECESSARY TO REMOVE THE EXISTING JCI SYSTEM COMPLETE. INCLUDING ALL ASSOCIATED WIRING, CABLING, CONTROLLERS, PROGRAMMING, SOFTWARE, ETC. DOWN TO EMPTY RACEWAY AND OUTLET BOXES. RACEWAY AND OUTLET BOXES MAY BE REUSED FOR PULLING NEW WIRING AND CABLING. PROVIDE A NEW TRIDIUM NIAGARA FRONT END AND COMPATIBLE CONTROLS SYSTEM EQUIPMENT, HARDWARE, SOFTWARE, PROGRAMMING, ETC. BY SIEMENS, DISTECH, LYNXSPRING, OR RELIABLE TO CONTROL THE ENTIRE CAMPUS, SUCH THAT IT WILL BE A FULLY FUNCTIONAL SINGLE SYSTEM. SEE LIST OF EXISTING EQUIPMENT BELOW THAT WILL NEED TO BE CONTROLLED BY THE

EXISTING EQUIPMENT LIST: (INCLUDING BUT NOT LIMITED TO)

2 – CHILLERS 1 – BOILER

NEW SYSTEM.

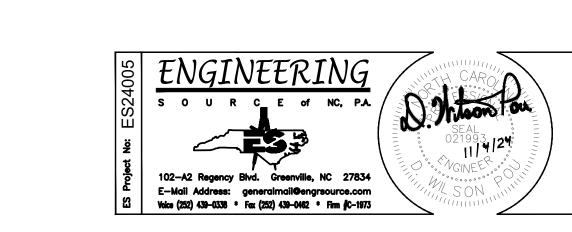
6 — PUMPS 34 — AIR HANDLERS (HOT AND CHILLED WATER COILS)

2 - MINI SPLITS 20 - FANS

2 - ELECTRIC UNIT HEATERS
3 - ELECTRIC WATER HEATERS AND ASSOCIATED RE-CIRCULATION PUMPS CORRIDOR AND BATHROOM LIGHTS

BUILDING EXTERIOR LIGHTS
PARKING LOT POLE LIGHTS (IF NOT DUSK TO DAWN LIGHTS)

* THIS LIST WAS CREATED FROM RECORD DRAWINGS PROVIDED BY THE OWNER, IT MAY OR MAY NOT CONSTITUTE A COMPLETE LIST. IT IS THE MECHANICAL AND CONTROLS CONTRACTORS' RESPONSIBILITY TO FIELD VERIFY EXISTING CONDITIONS AND ALL EQUIPMENT TO BE CONTROLLED PRIOR TO BID.





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Renovations to mentary School

Project No.
22419

Date:

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Project No. 22419

Date: 11 Nov 2024

Drawing no. 11 Nov 2024

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CHILLED WATER PIPING AND AIR HANDLER REPLACEMENT PHASING

Fall 2024 Cooling Season (Late July through October): Contractor may work in any/all mechanical rooms, platforms, pump rooms, electrical rooms or boiler rooms during normal hours throughout the school year to install the new chilled water piping, replace the AHUs and Pumps. Any work located in the school occupied areas (Classrooms, Corridors, Offices, Cafeteria, etc.) may be run after school hours during the week, on weekends and/or on holidays. Work to accomplish during this period is as follows:

- 1. Removal of all existing Pre-Conditioning (PC) units and associated piping, circulators, and duct. Cap or blank off connections to piping and duct that is to
- 2. Install Differential Pressure Sensor on the Dual Temp piping where indicated on plans. Sensor to be used to control Dual Temp Water Loop pumps. 3. Install new Chilled Water piping over vaulted area of entry lobby and insulate. Stub
- out on Mechanical platforms on each side of the entry lobby.
- 4. Hang New Chilled Water piping above Cafeteria ceiling and in Mechanical platforms to be fused/joined in Fall of 2024. Ceilings may remain open during school hours so long as the lighting is in place and functional.
- 5. Begin install of new LED Light's in Cafeteria, Electrical Room, Boiler Room and Mechanical Platforms.
- 6. Rework existing controls programming for minor changes (DP Sensors, VFD on Pumps, Etc).
- 7. Install new chiller pump CP-1 and change the chiller settings from a 10°F temperature change $(45^{\circ}F-55^{\circ}F)$ to a $14^{\circ}F$ temperature differential $(42^{\circ}F-56^{\circ}F)$.
- 8. Remove and Replace existing Boiler pump (BP-1). 9. Remove existing DT Loop pumps and install new Chilled Water Pumps to temporarily flow water through the DT loop. Install associated VFDs to control new pump speed based on loop Diff Pressure (DP)
- 10. Maintain DT water loop to provide chilled water to the existing AHUs.
- 11. Complete install of chilled water system piping on mechanical platforms, over Cafeteria and into boiler room ready for connection to CHW pumps (CHW-1 & 2).
- 12. Install Hot Water loop Pumps (HW1 & 2), VDFs and maintenance pads in Boiler room. Prep for connection to Dual Temp Loop once New Chilled water loop piping is completely installed and ready to be connected to chilled water pumps.
- 13. Electrical lighting replacement/relocation may begin.

The existing Dual Temp water systems must remain operational during cooling season. Contractor is responsible for patching/repairing any DT loop piping insulation that gets damaged during this phase of the project to maintain thermal protection and to prevent any of the piping from sweating during cooling season.

Fall 2024—2025 Heating Season (November through March): Contractor may work in any/all mechanical rooms, platforms, pump rooms, electrical rooms or boiler rooms during normal hours throughout the school year to install the new chilled water piping, replace the AHUs and Pumps. Any work located in the school occupied areas (Classrooms, Corridors, Offices, Cafeteria, etc.) may be run after school hours during the week, on weekends and/or on holidays. Work to accomplish during this period is as follows:

- 1. Temporarily shut—down the Dual Temp Loop (Coordinate shut—down with owner) to make pump change over to Hot Water Pumps (HW-1 & 2).
- 2. Bring Hot Water Loop back up to be fully operational.
- 3. Tie Chilled Water pumps into new chilled water loop piping system and have it ready for filling and activation once AHUs have been replaced.
- 4. Systematically remove and replace all existing air handlers and DX air cooled split system units with new (2) coil, 4 pipe hydronic air handlers. Coordinate with owner to free up rooms as required to replace (2) units per week. New units shall be fully functional in the heating mode when installed. Tie all new unit chilled water coils into the new empty chilled piping system.
- 5. Temporarily tie the new HW 2-way control valve to the existing controls system. Leave CHW 2-Way control valve to be connected to controls for cooling season.
- 6. Insulate all new chilled water main and branch line piping and wrap with PVC jacket (Blue) in Mechanical Platform and Boiler Room areas.
- 7. Fill, Treat and activate New Chilled water system loop.
- 8. Electrical work associated with AHU and Pump replacements as well as lighting relocations shall be done during this period.

Rooms being occupied by students and/or staff shall remain operational in heating mode during this period. Only unoccupied rooms given over to the contractor for AHU

replacement may be without heat during the period of time required for unit switchout.

Spring of 2025 Cooling Season (April through Mid-June): Contractor may work in any/all mechanical rooms, platforms, pump rooms, electrical rooms or boiler rooms during normal hours throughout the school year to install the new chilled water piping, replace the AHUs and Pumps. Any work located in the school occupied areas (Classrooms, Corridors, Offices, Cafeteria, etc.) may be run after school hours during the week, on weekends and/or on holidays. Work to accomplish during this period is as follows:

- 1. Remove all existing piping insulation from the HW loop (Old DT Loop) and install new pipe insulation with PVC jacket (Red) in the Mechanical Platforms and Boiler Room per the specifications.
- 2. Complete removal of the existing Controls System and installation, programming and testing of the new Tridium Niagra based Controls system per specifications. 3. Install new lay—in ceiling tiles and repair any damaged ceiling grid or gyp. board ceilings in Cafeteria, Entry Lobby, Boiler Room or other areas damaged during
- construction. 4. Provide water and air TAB reports for final closeout of the mechanical re-piping and AHU replacement portion of the project.

Contractor is responsible for patching/repairing any HW or CHW loop piping insulation that gets damaged during this phase of the project to maintain thermal protection and to prevent any of the piping from sweating during cooling season. Project completion is expected in June of 2025. The summer months shall be available for Project closeout and final testing/verification of proper operation of new system and new controls. All Hydronic (Hot & Chilled) water systems <u>MUST</u> be back online and fully operational before teachers report back to the school End of July of 2025.

When school is in session, only move in materials and equipment during weekends, nights, and holidays.

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	SYSTEM	A	AIR DATA	4					COOLIN	G DATA								HEATING	G DATA					мот	OR DA	ГА		EQUIPMENT DATA			
TAG	ZONE	CFM	O.A. MIN	O.A. MAX	TCL	SC	EATdb	EATwb	LATdb	LATwb	GPM	LWT	CONN	PD	CFM	HEAT	EAT	LAT	LWT	GPM	CONN	PD	ESP	HP	МСА	ELECT	DESCRIPTION	MFR./MODEL NO.	ROWS	NOTES	WEIGHT
AHU-218	CLASSROOM 217 & 218	3000	500		110.0	79.1	77.7	65.5	53.4	53.3	15.7		1-1/2"				62.7						0.75	2	81.5	460V/3PH		6			
AHU-214	CLASSROOM 214 & 215	3050	500		115.0	81.4	77.6	65.5	53.0	52.9	16.4		1-1/2"				62.8						0.60	2	81.5	460V/3PH		6			
AHU-213	CLASSROOM 213 & 216	2700	800		105.0	73.5	78.0	65.8	52.9	52.8	15.0		1-1/2"				61.9						0.60	1-1/2	81.5	460V/3PH		6			
AHU-212	RM 203-207 & 211-212	1450	325		60.0	40.6	78.6	66.4	52.8	52.7	8.6		1-1/4"				60.1						0.60	1	80.0	460V/3PH		3			
AHU-208	CLASSROOM 208	1700	250		60.0	44.1	77.4	65.2	53.5	53.4	8.6		1-1/4"				63.5						0.60	1-1/2	81.5	460V/3PH		3			
AHU-257	CLASSROOM 257 & 261	3400	500		120.0	87.4	77.4	65.2	53.7	53.4	17.1		2"				63.5						0.65	2	81.5	460V/3PH		6			
AHU-269	CLASSROOM 266 & 269	3700	500		125.0	93.9	77.2	65.0	53.8	53.7	17.9		2"				64.1						0.75	3	84.0	460V/3PH		8			
AHU-255	RM 252, 254, 255, 262, 263	1575	175		50.0	38.5	76.8	64.7	54.3	54.1	7.1		1-1/4"				65.1						0.60	1-1/2	81.5	460V/3PH		3			
AHU-200	CLASSROOM 250	1700	250		60.0	44.1	77.4	65.2	53.5	53.4	8.6		1-1/4"				63.5						0.60	1-1/2	81.5	460V/3PH		3			
AHU-250	CLASSROOM 219 & 220	2200	375		80.0	57.3	77.7	65.6	53.7	53.5	11.4		1-1/2"				62.5						0.60	1-1/2	81.5	460V/3PH		6			
AHU-110	RM 101-105, 110	1600	175								5.25						65.2				1"		0.55	1/2		460V/3PH		3			
AHU-114	RM 107-116	1200	100								3.75						66.3				3/4"		0.65	1/2		460V/3PH		3			
AHU-122A	MULTI-PURPOSE 122	2725	375		90.0	67.4	72.2	65.1	54.4	54.1	12.9		1-1/2"				63.9						0.90	2	81.5	460V/3PH		6			
AHU-122B	MULTI-PURPOSE 122	2725	375		90.0	67.4	72.2	65.1	54.4	54.1	12.9		1-1/2"				63.9						0.90	2	81.5	460V/3PH		6			
AHU-410	FRONT ENTRY COOR'D	1100	200		25.0	23.8	79.9	65.7	58.0	57.8	3.6		1"				62.0						0.75	1	80.0	460V/3PH		3			
AHU-307A	CAFETERIA 307	2825	675		122.5	81.2	78.8	66.6	52.3	52.2	17.5		2"				59.5						1.00	2	81.5	460V/3PH		6			
AHU-307B	CAFETERIA 307	2825	675		122.5	81.2	78.8	66.6	52.3	52.2	17.5		2"				59.5						1.00	2	81.5	460V/3PH		6			
AHU-300	MEDIA CENTER 300	3600	550		130.0	93.7	77.4	65.3	53.4	53.2	18.6		2"				63.3						0.90	3	84.0	460V/3PH		6			
AHU-310B		2275	2275		-	_	_	-	-	-	-		-				-						1.00	1	80.0	460V/3PH		6			
AHU-310A	KITCHEN 310	3000	750		100.0	73.6	79.0	66.8	56.4	56.2	14.3		1-1/2"				59.0						0.75	3	84.0	460V/3PH		6			
AHU-302	WORKROOM 302	1000	125		35.0	25.8	77.0	64.9	53.2	53.1	5.0		1"				64.5						0.70	1	80.0	460V/3PH		3			
AHU-306	COMPUTER LAB 306	2200	250		70.0	53.9	76.8	64.7	54.2	54.1	10.0		1-1/4"				65.0						0.60	1-1/2	81.5	460V/3PH		6			
AHU-455	CLASSROOM 455 & RR	1575	175		50.0	38.5	76.8	64.7	54.3	54.1	7.1		1-1/4"				65.1						0.60	1-1/2	81.5	460V/3PH		3			
AHU-410	CLASSROOM 410 & 411	3000	500		110.0	79.1	77.7	65.5	53.4	53.3	15.7		1-1/2"				62.7						0.75	2	81.5	460V/3PH		6			
AHU-409	CLASSROOM 406 & 409	2700	500		105.0	73.5	78.0	65.8	52.9	52.8	15.0		1-1/2"				61.9						0.60	1-1/2	81.5	460V/3PH		6			
AHU-407	CLASSROOM 407 & 408	2700	500		105.0	73.5	78.0	65.8	52.9	52.8	15.0		1-1/2"				61.9						0.65	2	81.5	460V/3PH		6			
AHU-403	CLASSROOM 403 & BOOK STORAGE	1450	325		60.0	40.6	78.6	66.4	52.8	52.7	8.6		1-1/4"				60.1						0.60	1	80.5	460V/3PH		3			
AHU-400	CLASSROOM 400 & 405	2700	500		105.0	73.5	78.0	65.8	52.9	52.8	15.0		1-1/2"				61.9						0.65	2	81.5	460V/3PH		6			
AHU-450	CLASSROOM 450	1350	250		52.5	36.8	78.0	65.8	52.9	52.8	7.5		1-1/4"				61.9						0.60	1	80.0	460V/3PH		3			
AHU-451	CLASSROOM 451 & 457	2700	500		105.0	73.5	78.0	65.8	52.9	52.8	15.0		1-1/2"				61.9						0.60	1-1/2	81.5	460V/3PH		6			
AHU-461	CLASSROOM 458 & 461	3700	500		125.0	93.9	77.2	65.0	53.8	53.7	17.9		2"				64.1						0.75	3	84.0	460V/3PH		8			

1) TOTAL COOLING LOAD, SENSIBLE COOLING LOAD, AND HEATING LOAD UNITS ARE MBtuh. COOLING LOADS INCLUDES VENTILATION, HEAT FAN, & PLENUM HEAT GAIN DURING NON-SIMULTANEOUS PEAK OPERATION w/o INCLUSION OF ZONE DIVERSITY. 2) REFERENCE SPECIFICATION SECTIONS 15850, 15855, 15857 FOR EQUIPMENT AND ACCESSORIES.
3) M.C. SHALL PROVIDE MANUFACTURERS COMBINATION STARTER WHEN AVAILABLE; SEE ALSO EQUIPMENT INSTALLATION DETAILS FOR ACCESSORIES, OPTIONS, ETC. 4) CHILLED WATER: EWT = 42.0, LWT = 56.0

5) HOT WATER: EWT = 160.0, LWT = 130.0, ENTERING AIR TEMP. = 55 F (AVG.) (INSTALL IN REHEAT POSITION) B) CONTRACTOR RESPONSIBLE FOR LEFT OR RIGHT HAND COIL CONNECTION AND MOTOR/BLOWER ASS'Y SELECTION 8) FAN COIL UNITS; CHILLED WATER VALVES PROVIDED AS TWO POSITION, HOT WATER VALVES PROVIDED AS MODULATING FOR RE-HEAT.

10) PROVIDE UNIT WITH AUXILIARY EMERGENCY DRAIN PAN AND CONDENSATE FLOAT SWITCH MOUNTED TO DRAIN PAN. FLOAT SWITCH SHALL SHUT DOWN UNIT FAN AND CLOSE HYDRONIC VALVES UPON ACTIVATION.

SYS = SYSTEM
TCL = TOTAL COOLING LOAD (MBtuH) SC = SENSIBLE COOLING (MBtuH) HEAT = HEAT LOAD (MBtuH)

GPM = GALLONS PER MINUTE CONN = PIPE SIZE (in.) / SEE MANUF. FOR FINAL CONN RLA = RATED LOAD AMPS LRA = LOCKED ROTOR AMPS FLA = FAN MOTOR FULL LOAD AMPS CFM = CUBIC FOOT PER MINUTE OA = OUTSIDE AIR (cfm)
MCA = MINIMUM CIRCUIT AMPACITY (AMPS)

LATdb = LEAVING DRY BULB AIR TEMP ("F) LATWD = LEAVING WET BULB AIR TEMP ('F)
EATDD = ENTERING DRY BULB AIR TEMP ('F) EATWD = ENTERING WET BULB AIR TEMP. (°F) FC = FAN COIL UNIT AHU = AIR HANDLER UNIT ESP = EXTERNAL STATIC PRESSURE (IN WG)
LWT = ESTIMATED LEAVING WATER TEMP (*F) HP = AHU MFR STD MOTOR ROWS = No. COIL ROWS C/HW HORIZ.= HORIZONTAL UNIT POSITION KW = POWER INPUT (WATTS X 1000)

1/6* = QUANTITY OF TWO

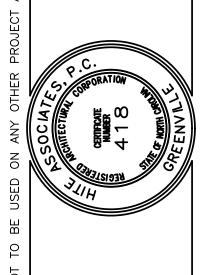
PUMP SCHEDULE												
TAG	TYPE	SERVICE	GPM	HEAD	% EFF	HP	RPM	ELECT	FLA	CONTROL	MFR/MODEL	NOTES
CWP-1	END SUCTION CENTRIFUGAL	CW SYSTEM PUMP	180	50	55.8	3.0	1750	480V/3PH	4.8	VAR. SPEED	B&G SERIES 1510 2BD	1-4
CWP-2	END SUCTION CENTRIFUGAL	CW SYSTEM PUMP	180	50	55.8	3.0	1750	480V/3PH	4.8	VAR. SPEED	B&G SERIES 1510 2BD	1-4
HWP-1	END SUCTION CENTRIFUGAL	HW SYSTEM PUMP	120	37	56.0	0.75	1750	480V/3PH	1.6	VAR. SPEED	B&G 1510 1.25AD-es	1-4
HWP-2	END SUCTION CENTRIFUGAL	HW SYSTEM PUMP	120	37	56.0	0.75	1750	480V/3PH	1.6	VAR. SPEED	B&G 1510 1.25AD-es	1-4
CHP-1	END SUCTION CENTRIFUGAL	CHILLER 1	360	30	78.1	1.5	1750	480V/3PH	3.0	CHILLER ON	B&G e-1510 2AD-es	1-4
BP-1	END SUCTION CENTRIFUGAL	BOILER CIRCULATOR	240	25	64.4	1	1750	480V/3PH	2.1	BOILER ON	B&G SERIES e-60	1,2,4
(NOTES: (1) REFERENCE SPECIFICATION SECTION 15750. (2) IMPELLER SIZING RESPONSIBILITY OF PUMP MANUFACTURER (3) SYSTEM PUMPS SHALL OPERATE IN LEAD/LAG ROTATION (4) MAXIMUM HP INDICATED ABBREVIATIONS: HEAD= FRICTION LOSS (ft) EFF = MIN. PUMP EFFICIENCY (%) GPM = FLOW RATE FLA = PUMP MOTOR FULL LOAD AMPS											

ELECTRIC UNIT HEATER SCHEDULE

MFR / MODEL NO. NOTES WEIGHT BOILER ROOM | 7.5 kW | 25.6 | 700 MARKEL NO. P3P5107CA1N 480V/3PH/9.1A 1-3 54 LBS

NOTES:
(1) PROVIDE MFR'S DISCONNECT AND LOW VOLTAGE THERMOSTAT
(2) UL LISTED HYDRONIC HEATERS MEETING OR EXCEEDING SPECIFICATIONS MANUFACTURED BY STERLING SHALL BE CONSIDERED EQUAL
(3) M.C. SHALL PROVIDE HORIZONTAL CEILING BRACKET WITH DUST SHIELD

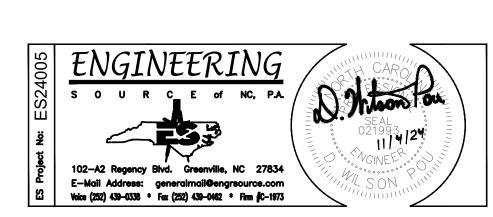




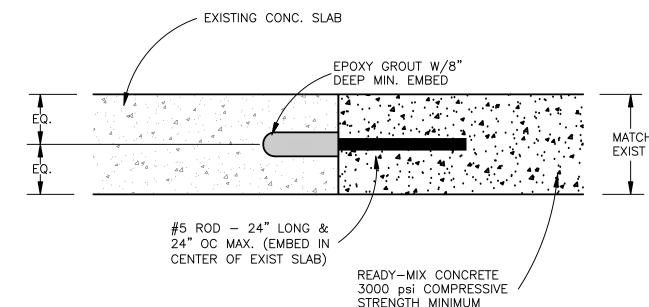
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003.1 EQUIPMENT PAD DETAIL SCALE: N.T.S.



003.2 PAD CONNECTION DETAIL
SCALE: N.T.S.

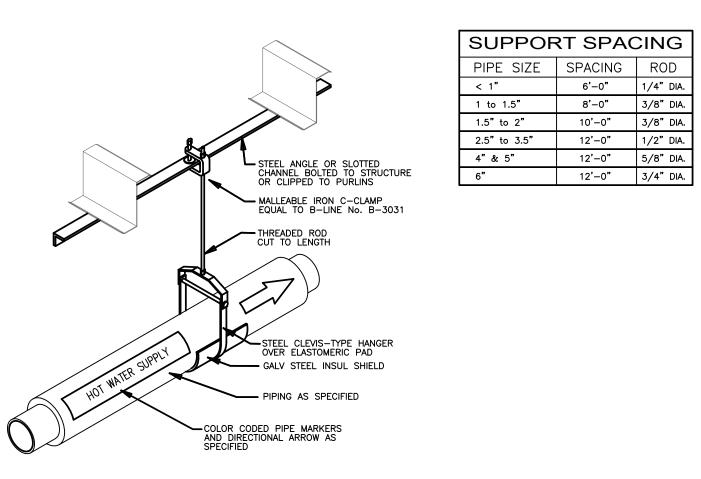
IT IS THE INTENT OF THESE PLANS AND SPECIFICATIONS TO SHOW THE THE REMOVAL AND COMPLET REPLACEMENT OF THE EXISTING DUAL TEMP AIR HANDLERS, THE BUILDING LOOP PUMPS AND THE INSTALLATION OF A NEW CHILLED WATER BUILDING LOOP PIPING SYSTEM. THE NEW EQUIPMENT SHALL BE TIED INTO THE CONTROLS SYSTEM SHALL BE ACCESSIBLE BY THE OWNER FOR PROGRAMMING AND MAINTENANCE AND SHALL NOT HAVE ANY PASSWORDS OR LOCK-OUTS THAT PREVENT THE OWNER FROM MAKING DESIRED MODIFICATIONS TO SET POINTS, SCHEDULES, RUN TIMES, ETC. THE NEW CHILLED WATER PIPING SYSTEM SHALL BE INSULATED NON-METALLIC PIPING (SEE SPECIFICATIONS).

CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ALL EXISTING HYDRONIC AIR HANDLERS WITH ASSOCIATED COIL TRIM, SPLIT DX UNITS AND LOOP PUMPS AS INDICATED. THE OLD EQUIPMENT SHALL BE OFFERED TO OWNER FOR SALVAGE. DISPOSE OF ANY EQUIPMENT NOT CLAIMED BY OWNER PROPERLY OFF SITE. CONTRACTOR SHALL INCLUDE ANY AND ALL EQUIPMENT, CRANES, TRANSPORT, LABOR AND MATERIALS ASSOCIATED WITH DISCONNECTING THE UNITS FROM THE EXISTING PIPING, MAINTENANCE PADS AND POWER CIRCUITS. CONTRACTOR SHALL REMOVE ANY AND ALL CONTROL DEVICES ON EXISTING EQUIPMENT AS WELL AS ANY PIPING THAT IS SHOWN TO BE REMOVED. ALL EXISTING CONTROL DEVICES SHALL BE KEPT FOR RE-USE ON NEW EQUIPMENT OR FOR SURPLUS BY OWNER IF NOT REUSED OR IF ALTERNATE TRIDIUM COMPATIBLE CONTROLS BID IS ACCEPTED.

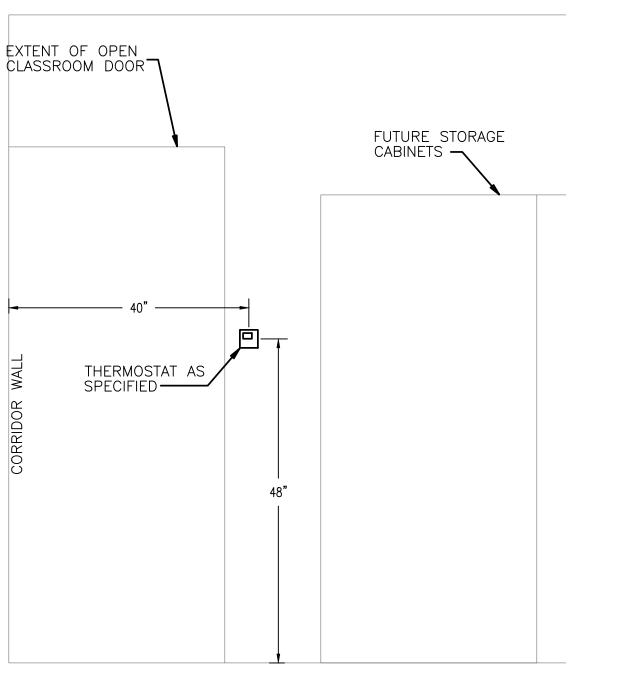
CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF HYDRONIC PIPING AS INDICATED/REQUIRED TO REMOVE AND INSTALL NEW UNITS AND PUMPS. CONTRACTOR SHALL FIELD VERIFY EXACT INSTALLATION LOCATION OF THE AIR HANDLERS AND PUMPS AND SHALL MODIFY HYDRONIC PIPING AS REQUIRED TO CONNECT NEW EQUIPMENT BACK TO EXISTING PIPING AT POINTS INDICATED. NEW ISOLATION VALVES SHALL BE PROVIDED AND INSTALLED WHERE INDICATED ON PLANS AND NEW COIL TRIM SHALL BE PROVIDED FOR HHW & CHW AT EACH UNIT. DRAIN HYDRONIC SYSTEM AS REQUIRED AND RE-FILL AFTER NEW EQUIPMENT IS INSTALLED. SEE SPECIFICATIONS FOR WATER TREATMENT REQUIREMENTS. MC IS RESPONSIBLE FOR UNDERSTANDING AND SCHEDULING THE WORK TO MEET THE PHASING SCHEDULE AS INDICATED.

ELECTRICAL CONTRACTOR SHALL DISCONNECT ELECTRICAL FEEDERS FROM EXISTING PIECES OF EQUIPMENT THAT ARE SHOWN TO BE REPLACED. MAINTAIN ALL EXISTING DISCONNECT SWITCHES AND FEEDERS INDICATED FOR RE-USE. REMOVE WIRING/FEEDER BACK TO BREAKER IF NOT REUSED. TURN OFF ANY UNUSED EXISTING BREAKERS AND LABEL AS "SPARE" ON NEW TYPED DIRECTORY. CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIALS NECESSARY FOR ANY MODIFICATIONS THAT NEED TO BE DONE TO THE EXISTING FEEDERS FOR RECONNECTION TO NEW UNITS AND PUMPS.

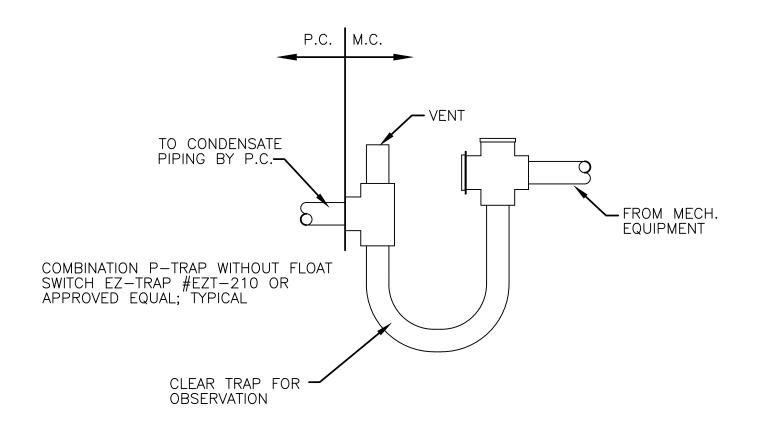
PLEASE MAKE ENGINEER AWARE OF ANY DIFFERENCES BETWEEN THIS SCOPE OF WORK AND THE WORK INDICATED ON THE BID DOCUMENTS PRIOR TO BID. IF NO NOTICE IS RECEIVED IT IS UNDERSTOOD THAT THE CONTRACTOR HAS A FULL UNDERSTANDING OF THE SCOPE OF WORK AND THAT THESE DOCUMENTS HAVE SUFFICIENT INFORMATION INCLUDED IN THEM TO PRODUCE THE DESIRED SCOPE.



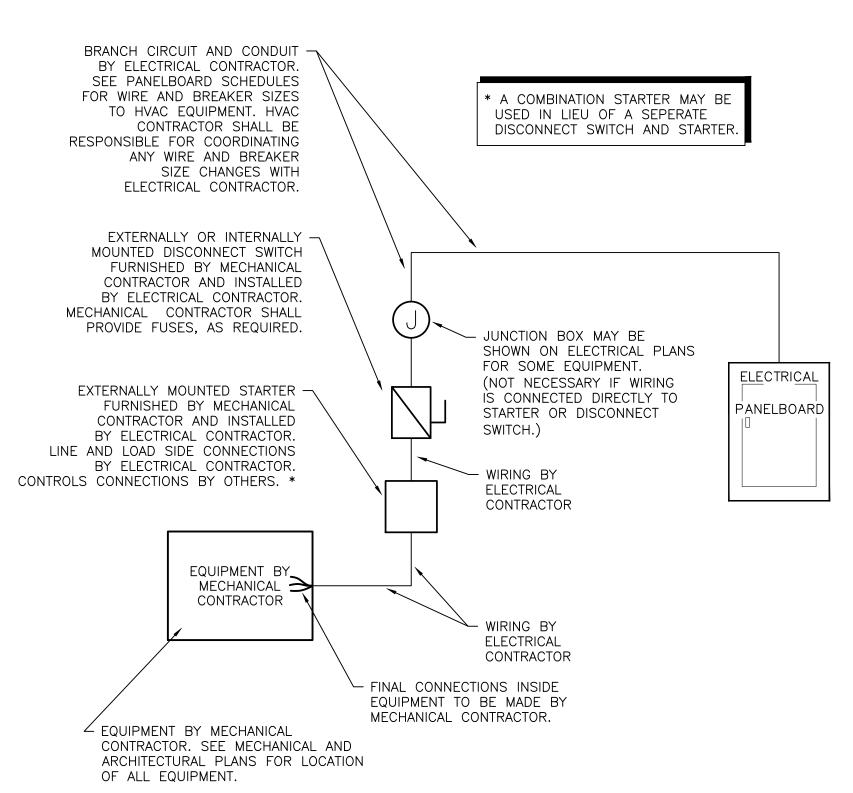
003.3 HYDRONIC PIPE HANGAR DETAIL



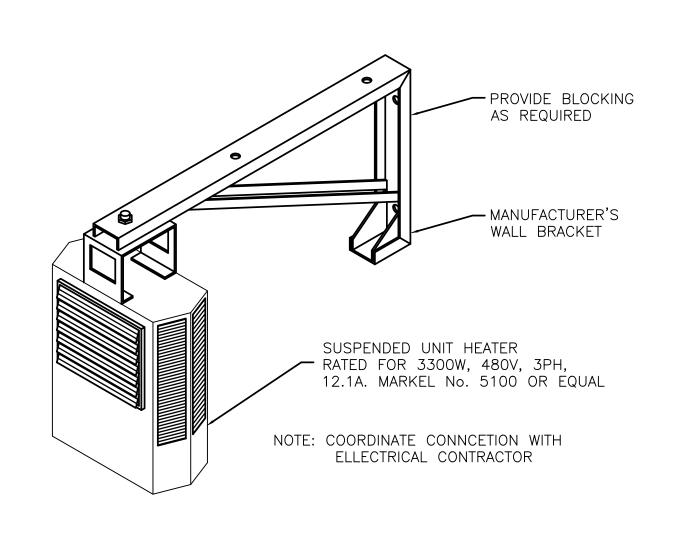
003.4 THERMOSTAT INSTALLATION DETAIL



003.5 CONDENSTATE TRAP DETAIL

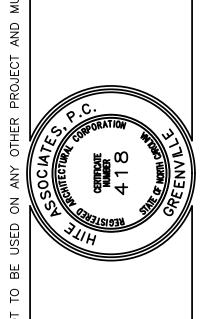


MECHANICAL EQUIPMENT 003.6 ELECTRICAL CONNECTION DETAIL

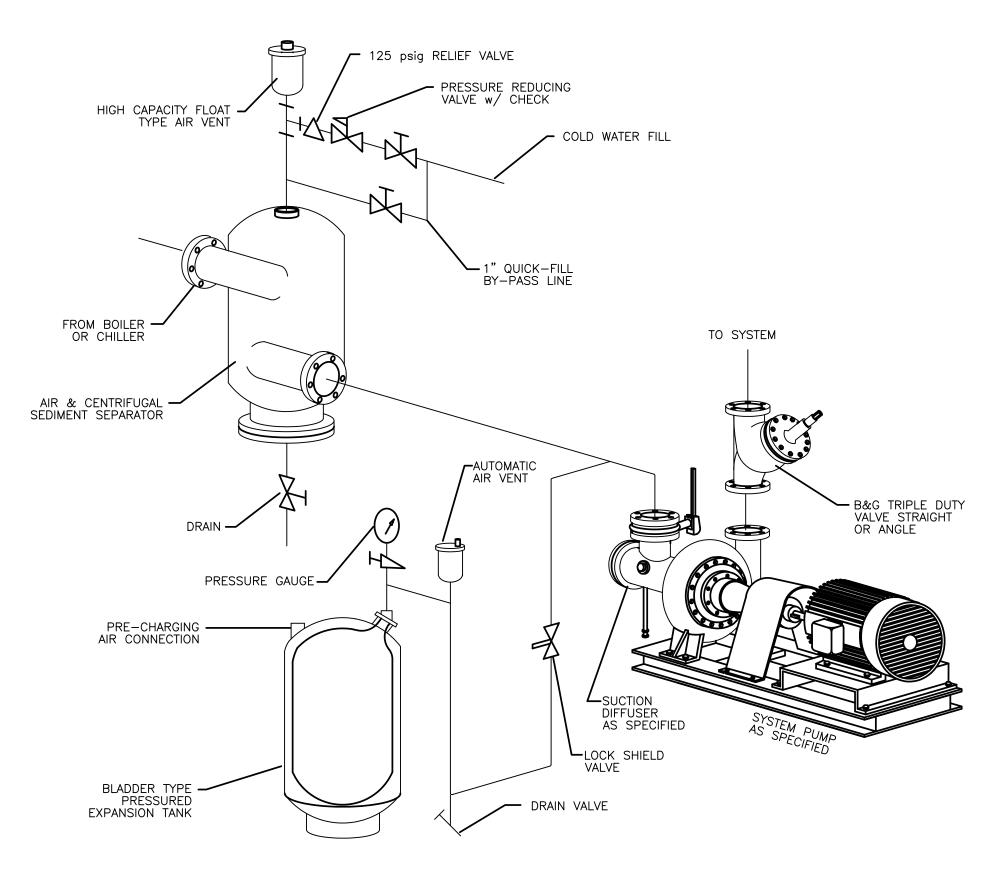


003.7 UNIT HEATER INSTALLATION DETAIL

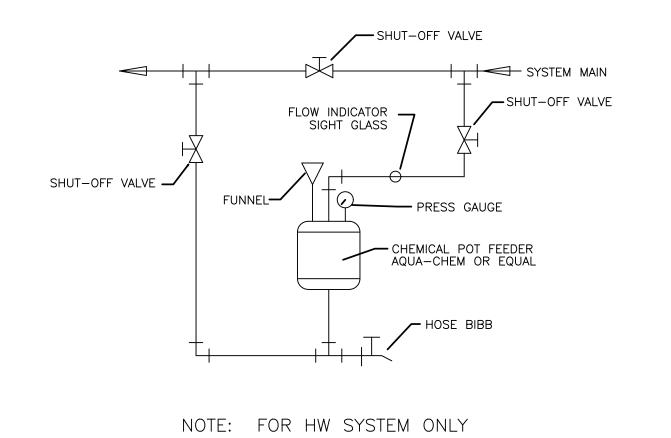
ENGINEERING E-Mail Address: generalmail⊕engrsource.com Voice (252) 439-0338 * Fax (252) 439-0462 * Firm #C-1973



004.1 BASE MOUNTED END SUCTION PUMP DETAIL SCALE: N.T.S.



004.2 AIR CONTROL DETAIL SCALE: N.T.S.



004.3 CHEMICAL SHOT FEEDER DETAIL SCALE: N.T.S.

Project No.
22419

Date:
11 Nov 2024

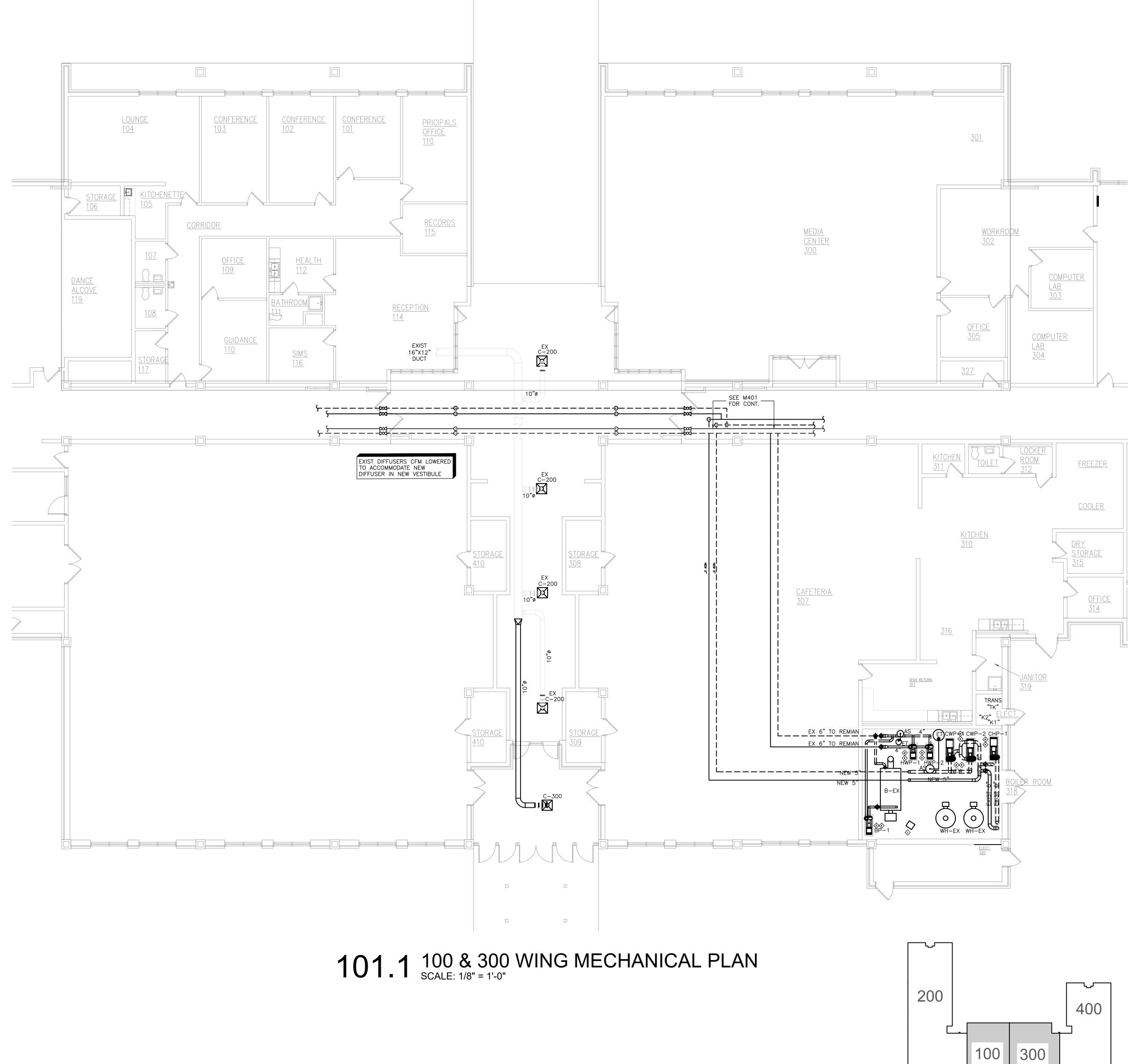
Drawing no.

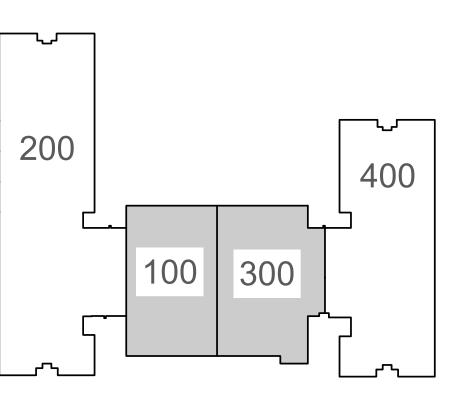
No.
22419

- TIE EXISTING OA DUCT WHERE PRE-CONDITIONING UNIT WAS REMOVED INTO NEW AHU MIXING BOX OR RETURN AIR DUCT IF IT DOESN'T HAVE A MIXING BOX. INSTALL DAMPERS FOR AIR BALANCE IF MIXING BOX IS NOT PRESENT.
- REPLACE CEILING TILES IN THIS AREA AFTER NEW CHILLED WATER PIPING IS INSTALLED, INSULATED, INSPECTED AND ACCEPTED. INSTALL NEW LIGHTS IN GRID AND TIE BACK TO LOCAL POWER & CONTROL CIRCUITS AS INDICATED.
- INSTALL NEW FLUORESCENT LIGHTS IN THIS AREA AS INDICATED. CONNECT BACK TO EXISTING POWER AND CONTROL WIRING AS SHOWN. MODIFY SWITCH-LEG AS NECESSARY. REMOVE ANY TEMPORARY LIGHTS THAT WERE INSTALLED ONCE NEW LIGHTS ARE INSTALLED AND FUNCTIONING.
- INSTALL NEW PUMP AND ASSOCIATED PUMP TRIM BACK TO EXISTING SUPPLY AND RETURN PIPING DROPS MAINTAINED FOR
- RECONNECT NEW EQUIPMENT BACK TO EXISTING DISCONNECT SWITCH AND FEEDER MAINTAINED FOR REUSE. LABEL PANEL DIRECTORY WITH NEW EQUIPMENT ID AS APPROPRIATE

RECONNECTION DURING DEMOLITION.

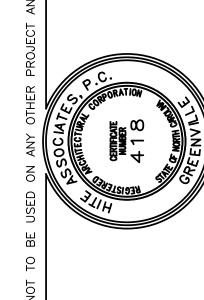
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- INSTALL NEW HYDRONIC UNIT IN PLACE OF EXISTING DX AIR COOLED SPLIT SYSTEM REMOVED. PROVIDE NEW HYDRONIC SUPPLY & RETURN PIPING BACK TO MAINS WITH ASSOCIATED COIL TRIM
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- INSTALL NEW ELECTRIC UNIT HEATER AS INDICATED.
- REMOVE EXISTING RECESSED CAN LIGHTS IN THIS AREA, MAINTAIN POWER AND CONTROL TO ALL UP AND DOWN STREAM LIGHTING TO REMAIN. TIE NEW LAY-IN LIGHTS TO UNSWITCHED LEG OF EXISTING CORRIDOR LIGHTS. (CKT L-12 PER RECORD DWGS.)

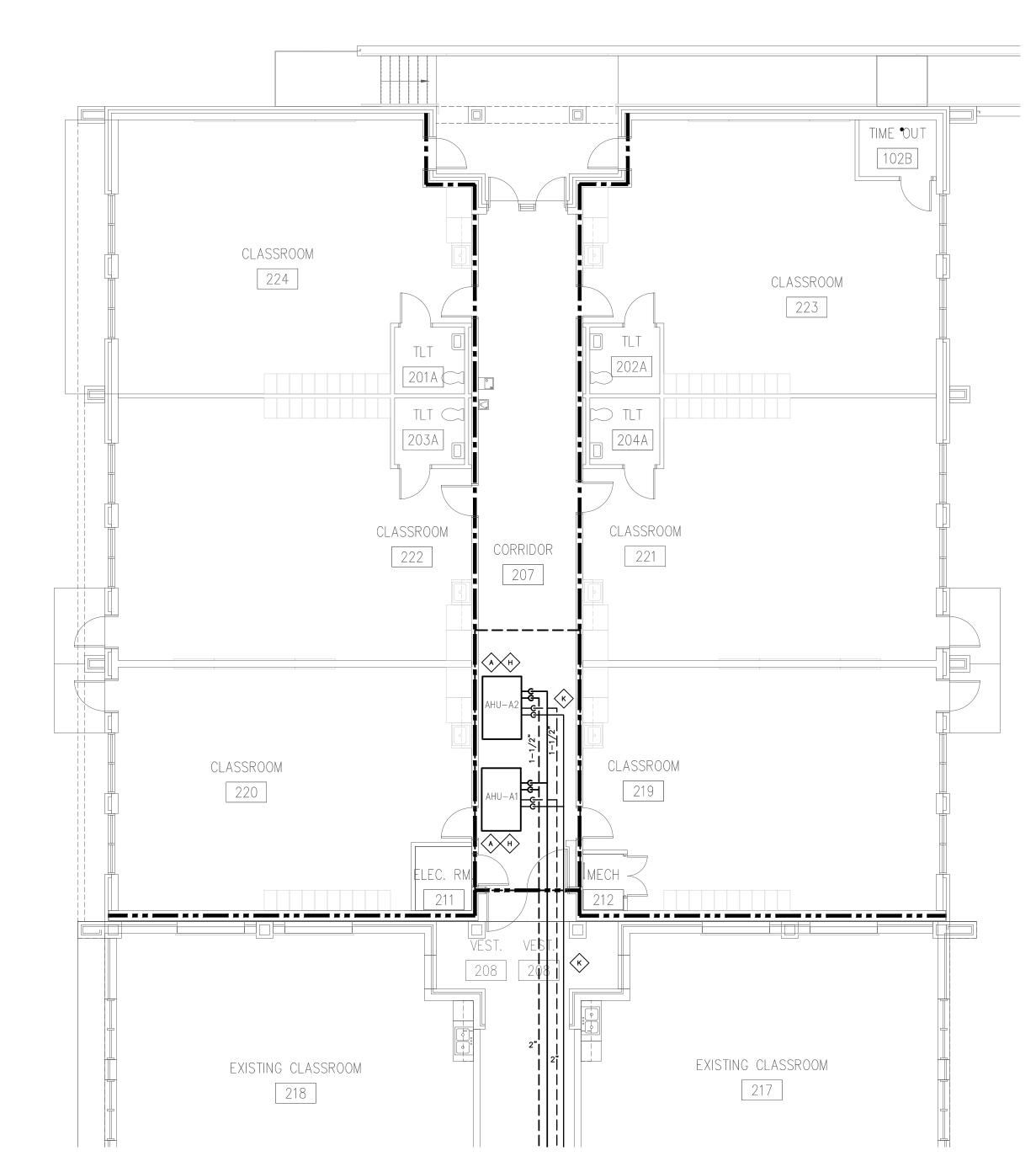




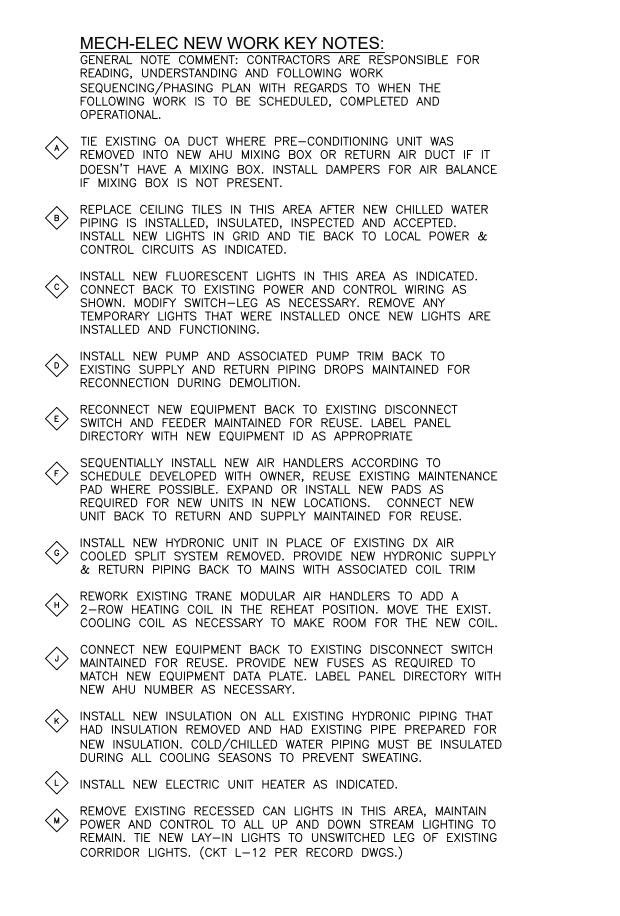
KEY PLAN SCALE: NTS

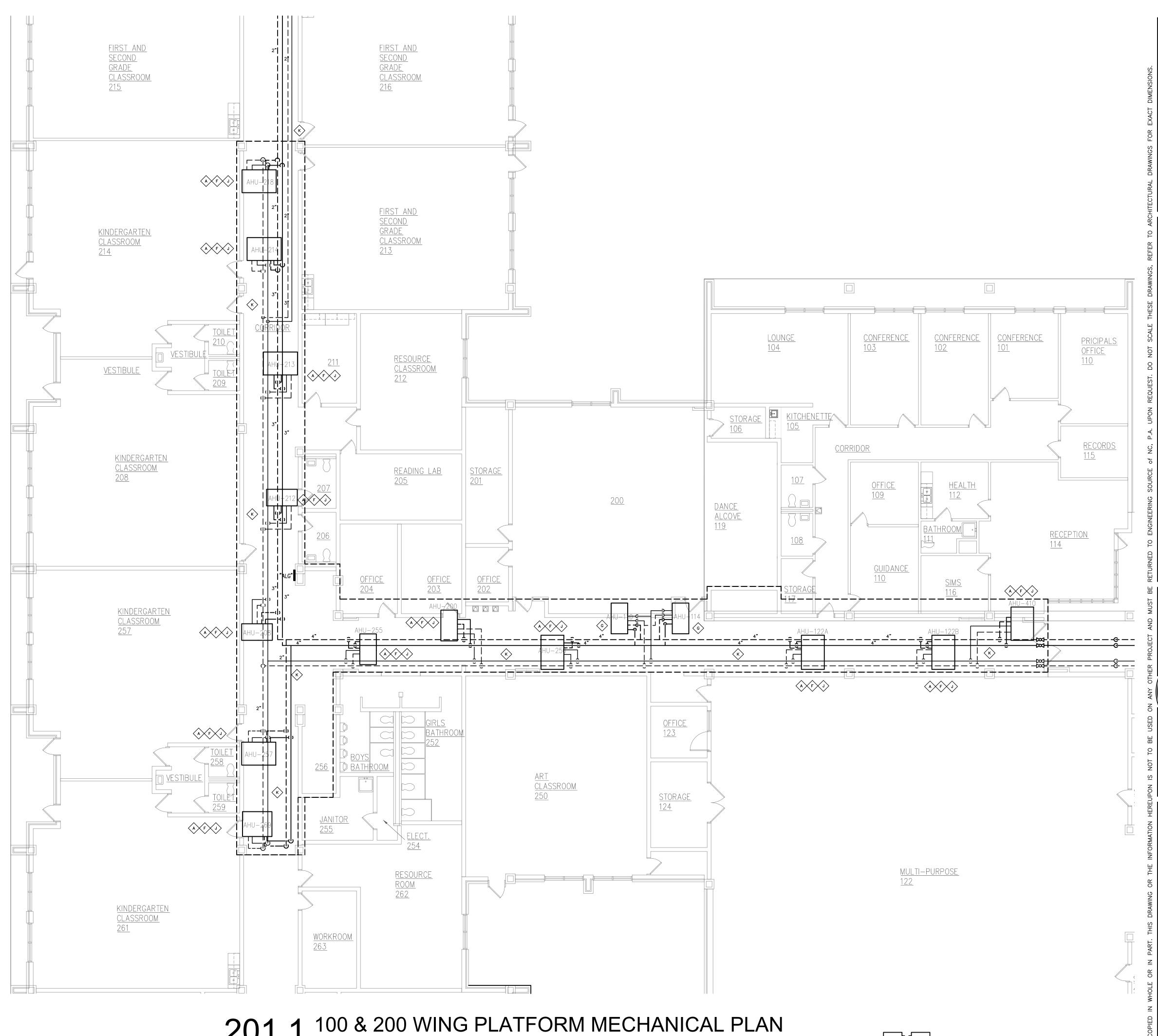




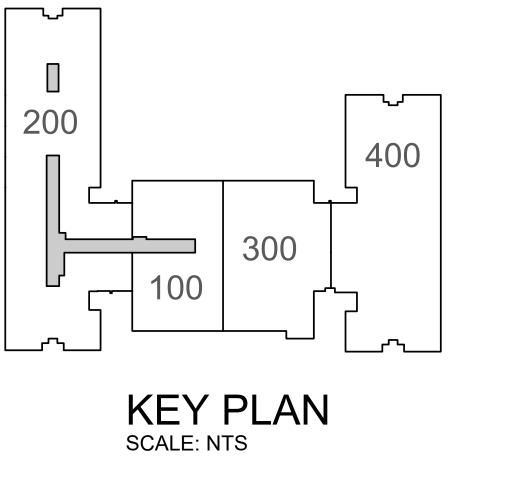


201.2 UPPER 200 WING PLATFORM MECHANICAL PLAN SCALE: 1/8" = 1'-0"

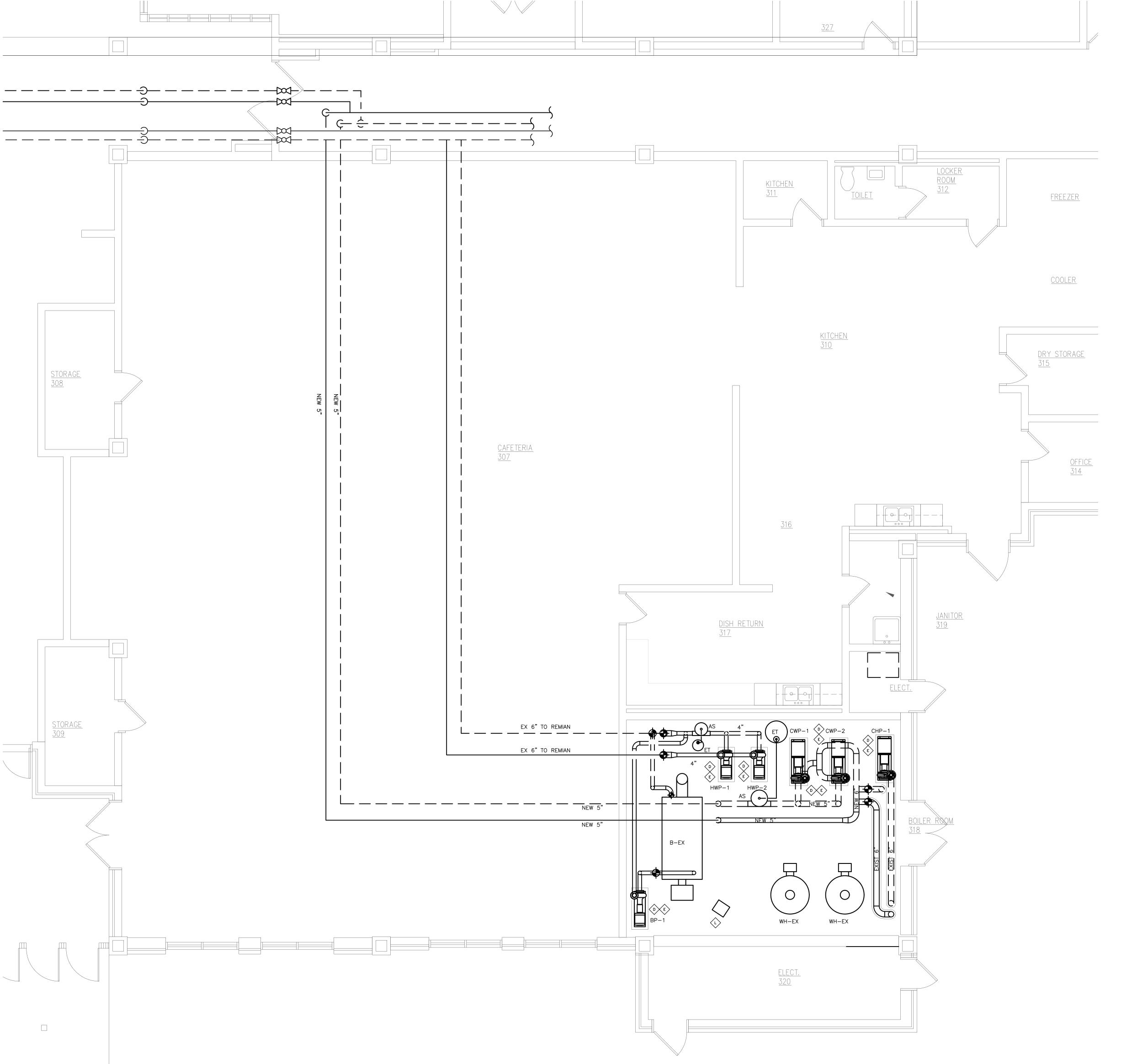




201.1 100 & 200 WING PLATFORM MECHANICAL PLAN SCALE: 1/8" = 1'-0"



22419 11 Nov 2024 ENGINEERING E-Mail Address: generalmail@engrsource.com Voice (252) 439-0338 * Fax (252) 439-0462 * Firm #C-1973



301.1 ENLARGED 300 WING MECHANICAL PLAN SCALE: 1/4" = 1'-0"

MECH-ELEC NEW WORK KEY NOTES:

GENERAL NOTE COMMENT: CONTRACTORS ARE RESPONSIBLE FOR READING, UNDERSTANDING AND FOLLOWING WORK

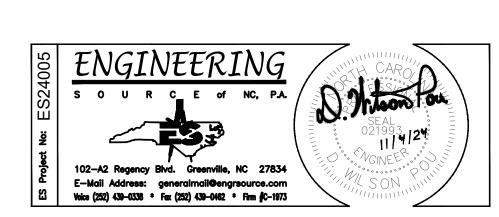
SEQUENCING/PHASING PLAN WITH REGARDS TO WHEN THE FOLLOWING WORK IS TO BE SCHEDULED, COMPLETED AND

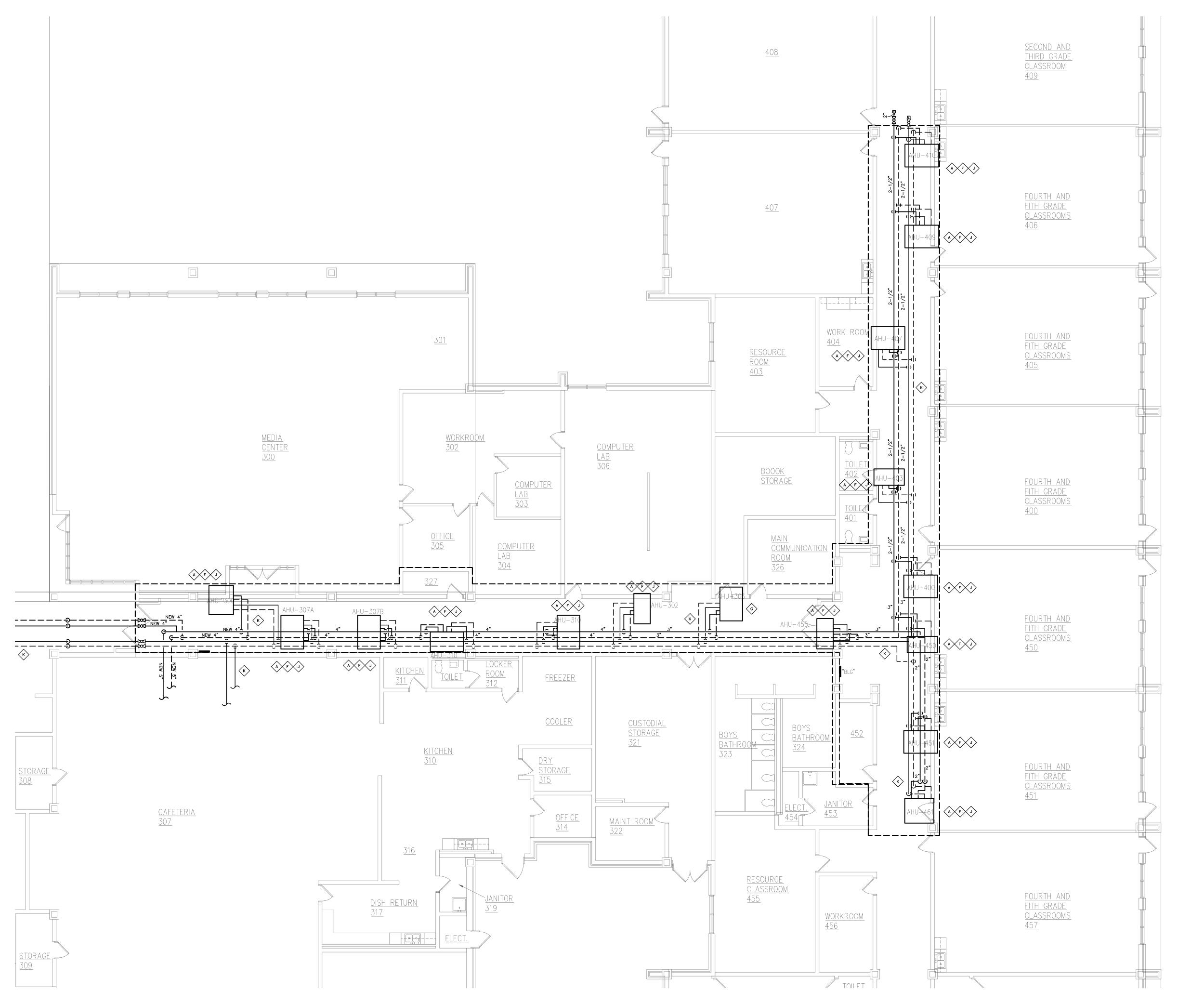
- TIE EXISTING OA DUCT WHERE PRE—CONDITIONING UNIT WAS REMOVED INTO NEW AHU MIXING BOX OR RETURN AIR DUCT IF IT DOESN'T HAVE A MIXING BOX. INSTALL DAMPERS FOR AIR BALANCE
- IF MIXING BOX IS NOT PRESENT.

 REPLACE CEILING TILES IN THIS AREA AFTER NEW CHILLED WATER PIPING IS INSTALLED, INSULATED, INSPECTED AND ACCEPTED. INSTALL NEW LIGHTS IN GRID AND TIE BACK TO LOCAL POWER & CONTROL CIRCUITS AS INDICATED.
- INSTALL NEW FLUORESCENT LIGHTS IN THIS AREA AS INDICATED.
 CONNECT BACK TO EXISTING POWER AND CONTROL WIRING AS
 SHOWN. MODIFY SWITCH-LEG AS NECESSARY. REMOVE ANY
 TEMPORARY LIGHTS THAT WERE INSTALLED ONCE NEW LIGHTS ARE
 INSTALLED AND FUNCTIONING.
- INSTALL NEW PUMP AND ASSOCIATED PUMP TRIM BACK TO EXISTING SUPPLY AND RETURN PIPING DROPS MAINTAINED FOR RECONNECTION DURING DEMOLITION.
- RECONNECT NEW EQUIPMENT BACK TO EXISTING DISCONNECT SWITCH AND FEEDER MAINTAINED FOR REUSE. LABEL PANEL DIRECTORY WITH NEW EQUIPMENT ID AS APPROPRIATE
- SEQUENTIALLY INSTALL NEW AIR HANDLERS ACCORDING TO SCHEDULE DEVELOPED WITH OWNER, REUSE EXISTING MAINTENANCE PAD WHERE POSSIBLE. EXPAND OR INSTALL NEW PADS AS REQUIRED FOR NEW UNITS IN NEW LOCATIONS. CONNECT NEW UNIT BACK TO RETURN AND SUPPLY MAINTAINED FOR REUSE.
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200 400

KEY PLAN SCALE: NTS





401.1 300 & 400 WING PLATFORM MECHANICAL PLAN SCALE: 1/8" = 1'-0"

MECH-ELEC NEW WORK KEY NOTES:

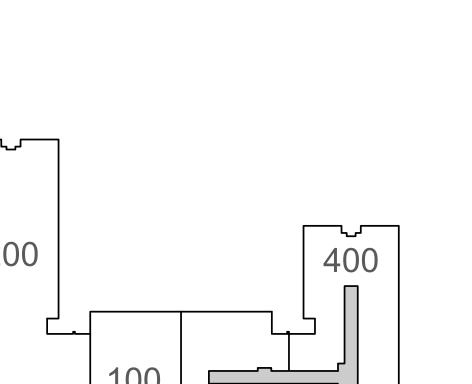
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OPERATIONAL.

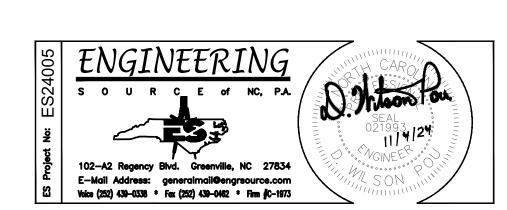
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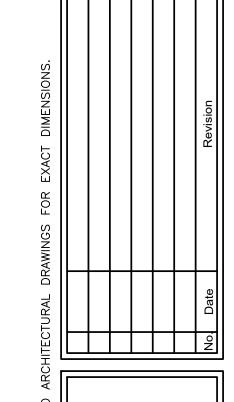
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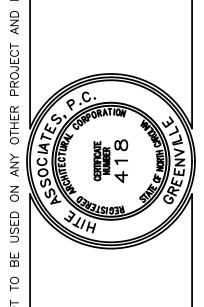


KEY PLAN SCALE: NTS





TETURE / PLANNING / TECHNOLOGY Pridian Drive / Greenville, NC 27834 / tel (252) 757-0333



HVAC Renovations to

Flementary School
SES Hwy. 24, Newport, NC 28570

Project No. 22419

Date:
11 Nov 2024

Drawing no.

401

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22419

11 Nov 2024

BUILDING EXTERIOR COMPUTER ----4-------EXIST DISC SWITCH ----*+*-----400A, 3-POLE EXIST EXIST PNL "K1" | MDP−1 | MDP−2 | EXIST PNL "2A" EXIST PNL "2B" PNL "2BB" | 225A MLO | | 225A MLO | 400A MLO | 225A MLO | 100A MLO 400A MLO | 400A MLO | | 225A MLO | | 400A MLO | PROTECTED | MDP-5 | MDP-6 | ______ MDP-7 | MDP-8 120/208V 120/208V 3ø, 4W 3ø, 4W 277/480V 3ø, 4W TRANS "TP" TRANS "TK" TRANS "ITB" TRANS "ITA" BLANK BLANK SUPPRESSOR L-----

001.1 ELECTRICAL RISER SCALE: N.T.S.

ELECTRICAL RISER NOTES: EXISTING UNDERGROUND SERVICE ENTRANCE

LIGHT FIXTURE SCHEDULE

2'x4' LAY-IN STEP-DIMMING FLAT PANEL LED WITH ACRYLIC LENS.

LITHONIA#: EPANL-2X4-4000LM-80CRI-40K-MVOLT-SLD OR

' SURFACE MOUNTED WRAP AROUND LED WITH ACRYLIC LENS.

CEILING OR WALL MOUNTED LED EXIT LIGHT CONFORMING TO

CHARGER, SELF DIAGNOSTICS w/ A TEST CYCLE EVERY 30

WHITE FACE/BODY, ABS THERMOPLASTIC HOUSING, PILOT &

DAYS MINIMUM, SELF—CONTAINED, DOUBLE OR SINGLE

EMERGENCY RUN TIME; EXIT SIGN SHALL HAVE 5 YEAR

MAINTENANCE FREE 2-HEAD EMERGENCY LIGHT. UL 924

LISTED AND NFPA 101 COMPLIANT, ABS THERMOPLASTIC HOUSING, PILOT & STATUS INDICATING LIGHTS. SELF

DIAGNOSTICS SHALL INCLUDE CONTINUOS SELF CHECKS AND 30 MINUTE FULL LOAD TEST WITH CHARGER OFF EVERY 30

EMERGENCY LIGHT CONFORMING TO NFPA 101 STANDARDS, w/ BATTERY & SOLID STATE CHARGER, SELF DIAGNOSTICS

ABS THERMOPLASTIC HOUSING, PILOT & STATUS INDICATING

LIGHTS, TEST SWITCH, & 90 MIN. EMERGENCY RUN TIME, EXIT LIGHT SHALL CONTINUE TO OPERATE FOR 24 HOURS FOLLOWING POWER OUTAGE; EXIT SIGN SHALL HAVE 5 YEAR

STATUS INDICATING LIGHTS, TEST SWITCH, & 90 MIN.

WARRANTY. PROVIDE HUBBELL #: CER50 OR

LITHONIA #: LQM-S-W-3-R-120/277-ELN-SD

AUTOMATIC, SELF-CONTAINED, SELF DIAGNOSTIC,

CEILING OR WALL MOUNTED LED EXIT & 2—HEAD

w/ A TEST CYCLE EVERY 30 DAYS MINIMUM, SELF-CONTAINED, DOUBLE OR SINGLE WHITE FACE/BODY,
ARS THERMOPIASTIC HOUSING BUILDE & STATUS INDICATION

> WARRANTY. PROVIDE HUBBELL #: CCRSD OR LITHONIA #: LHQM-LED-R-HO-SD OR

PROVIDE HUBBELL #: CUWZ-PC OR WILLIAMS #: EMER/DECO-DBR-LT OR

_ITHONIA #: AFN-DB-EXT

WILLIAMS #: EXIT/EM/LED-SF-R-WHT-HL-SDT

WALL MOUNTED SCONCE LIGHT WITH PREMIUM MARINE GRADE DIE-CAST ALUMINUM HOUSING AND POLYCARBONATE

GASKETED LENS TO WITHSTAND EXTREME WEATHER CONDITIONS. MOUNT ABOVE EXTERIOR DOOR. EMERGENCY

LIGHT SHALL CONFORM WITH NFPA 101 STANDARDS AND

WILLIAMS #: EXIT-R-EM-WHT-SDT OR

DAYS. PROVIDE HUBBELL #: CU2SD OR WILLIAMS #: EMER/LED-WHT-HL-SDT OR

LITHONIA #: EU2-LED-M12

NFPA 101 STANDARDS, w/ BATTERY & SOLID STATE

COLUMBIA#: SRP24-3050T-LW-G-ESD-U OR

WILLIAMS#: 50-G-S24-L59/840-SD50-UNV

.ITHONIA#: FMLWL-LNK-48-ALO4-8SWW2 WILLIAMS#: 39-4-L52/835-A-UNIV

COLUMBIA#: CRW4-LSCS

LAMPS | VOLTS | WATTS | B. F

UNV

UNV

277/6VDC

ENGINEERING

E-Mail Address: generalmail@engrsource.com Voice (252) 439-0338 * Fax (252) 439-0462 * Firm #C-1973

12W

40W

38W

3.5W

N/A

N/A

N/A

LED

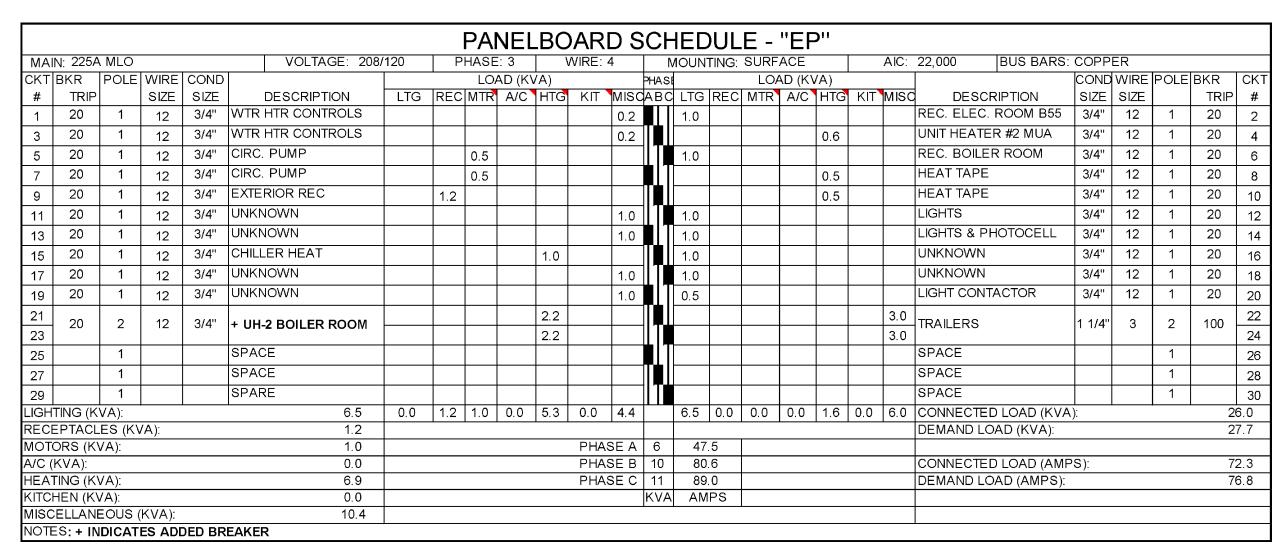
LED

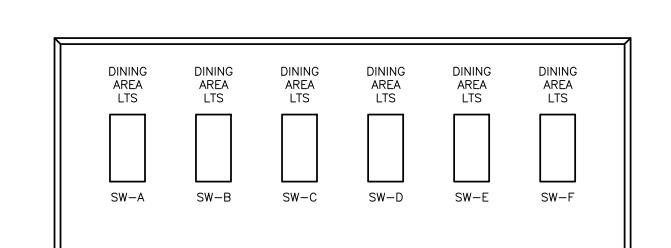
RED LED

2 - 10W

-10W HALOGEN

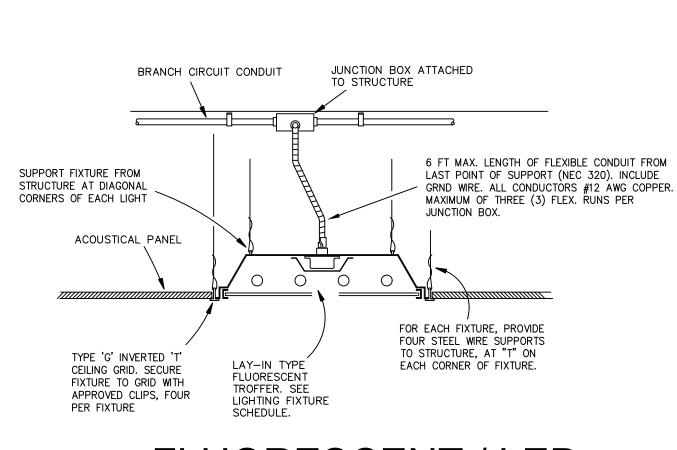
2-6W





001.2 DINING AREA MULTI-SWITCH DETAIL

	EP [)EM	AN[)	CA	۱L	<u>.CS</u>)
LIGHTING		6.50	KVA	Χ	125	%	=	8.1 KVA
RECEPTAC	TOTAL	1.20	KVA					
	1ST	10.00	KVA	Х	100	%	=	1.2 KVA
	REMAIN	0.00	KVA	Χ	50	%	=	0.0 KVA
MOTORS		1.00	KVA	Х	100	%	=	1.0 KVA
	LARGEST	0.00	KVA	Χ	125	%	=	0.0 KVA
A/C		0.00	KVA	Χ	100	%	=	0.0 KVA
HEATING		6.95	KVA	Х	100	%	=	6.9 KVA
EXIST CKTS	3		_KVA	Х	100	%	=	0.0 KVA
KITCHEN		0.00	KVA	Х	65	%	=	0.0 KVA
MISCELLAN	NEOUS	10.40	KVA	Χ	100	%	=	10.4 KVA
TOTAL	=	76.8	3 amps				=	27.7 KVA



001.3 FLUORESCENT / LED TROFFER INSTALLATION SCALE: N.T.S.

BRANCH CIRCUIT AND CONDUIT BY ELECTRICAL CONTRACTOR. SEE PANELBOARD SCHEDULES FOR WIRE AND BREAKER SIZES TO HVAC AND PLUMBING EQUIPMENT. HVAC AND PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ANY WIRE AND BREAKER SIZE CHANGES WITH ELECTRICAL CONTRACTOR.		* A COMBINATION STARTER MAY USED IN LIEU OF A SEPERATE DISCONNECT SWITCH AND STAR	
EXTERNALLY OR INTERNALLY MOUNTED DISCONNECT SWITCH FURNISHED BY MECHANICAL, PLUMBING, OR OTHER CONTRACTORS, AND INSTALLED BY ELECTRICAL CONTRACTOR. MECHANICAL, PLUMBING, AND OTHER CONTRACTORS SHALL PROVIDE FUSES, AS REQUIRED. EXTERNALLY MOUNTED STARTER FURNISHED BY MECHANICAL, PLUMBING, OR OTHER CONTRACTORS, AND INSTALLED BY ELECTRICAL CONTRACTOR. LINE AND LOAD SIDE CONNECTIONS BY ELECTRICAL CONTRACTOR. CONTROLS CONNECTIONS BY OTHER. *		JUNCTION BOX MAY BE SHOWN ON ELECTRICAL PLANS FOR SOME EQUIPMENT. (NOT NECESSARY IF WIRING IS CONNECTED DIRECTLY TO STARTER OR DISCONNECT SWITCH.) WIRING BY ELECTRICAL CONTRACTOR	ELECTRICAL PANELBOARD
EQUIPMENT BY MECHANICAL, PLUMBING, OR OTHER CONTRAC SEE MECHANICAL, PLUMBING, AI ARCHITECTURAL PLANS FOR LOC OF ALL EQUIPMENT.	ND	BE MADE BY LUMBING, OR	

001.4 ELECTRICAL CONNECTION DETAIL

<u>SCOPE OF WORK STATEMENT:</u>

IT IS THE INTENT OF THESE PLANS AND SPECIFICATIONS TO SHOW THE THE REMOVAL AND COMPLETE REPLACEMENT OF THE EXISTING DUAL TEMP AIR HANDLERS, THE BUILDING LOOP PUMPS AND THE INSTALLATION OF A NEW CHILLED WATER BUILDING LOOP PIPING SYSTEM. THE NEW EQUIPMENT SHALL BE TIED INTO THE EXISTING JCI CONTROL SYSTEM (BASE BID) OR INTO NEW TRIDIUM NIAGARA COMPATIBLE SYSTEM (ALTERNATE BID). CONTROLS SYSTEM SHALL BE ACCESSIBLE BY THE OWNER FOR PROGRAMMING AND MAINTENANCE AND SHALL NOT HAVE ANY PASSWORDS OR LOCK-OUTS THAT PREVENT THE OWNER FROM MAKING DESIRED MODIFICATIONS TO SET POINTS, SCHEDULES, RUN TIMES, ETC. THE NEW CHILLED WATER PIPING SYSTEM SHALL BE INSULATED NON-METALLIC PIPING (SEE SPECIFICATIONS).

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CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ALL EXISTING HYDRONIC AIR HANDLERS WITH ASSOCIATED COIL TRIM, SPLIT DX UNITS AND LOOP PUMPS AS INDICATED. THE OLD EQUIPMENT SHALL BE OFFERED TO OWNER FOR SALVAGE. DISPOSE OF ANY EQUIPMENT NOT CLAIMED BY OWNER PROPERLY OFF SITE. CONTRACTOR SHALL INCLUDE ANY AND ALL EQUIPMENT, CRANES, TRANSPORT, LABOR AND MATERIALS ASSOCIATED WITH DISCONNECTING THE UNITS FROM THE EXISTING PIPING, MAINTENANCE PADS AND POWER CIRCUITS. CONTRACTOR SHALL REMOVE ANY AND ALL CONTROL DEVICES ON EXISTING EQUIPMENT AS WELL AS ANY PIPING THAT IS SHOWN TO BE REMOVED. ALL EXISTING CONTROL DEVICES SHALL BE KEPT FOR RE-USE ON NEW EQUIPMENT OR FOR SURPLUS BY OWNER IF NOT REUSED OR IF ALTERNATE TRIDIUM COMPATIBLE CONTROLS BID IS ACCEPTED.

CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF HYDRONIC PIPING AS INDICATED/REQUIRED TO REMOVE AND INSTALL NEW UNITS AND PUMPS. CONTRACTOR SHALL FIELD VERIFY EXACT INSTALLATION LOCATION OF THE AIR HANDLERS AND PUMPS AND SHALL MODIFY HYDRONIC PIPING AS REQUIRED TO CONNECT NEW EQUIPMENT BACK TO EXISTING PIPING AT POINTS INDICATED. NEW ISOLATION VALVES SHALL BE PROVIDED AND INSTALLED WHERE INDICATED ON PLANS AND NEW COIL TRIM SHALL BE PROVIDED FOR HHW & CHW AT EACH UNIT. DRAIN HYDRONIC SYSTEM AS REQUIRED AND RE-FILL AFTER NEW EQUIPMENT IS INSTALLED. SEE SPECIFICATIONS FOR WATER TREATMENT REQUIREMENTS. MC IS RESPONSIBLE FOR UNDERSTANDING AND SCHEDULING THE WORK TO MEET THE PHASING SCHEDULE AS INDICATED.

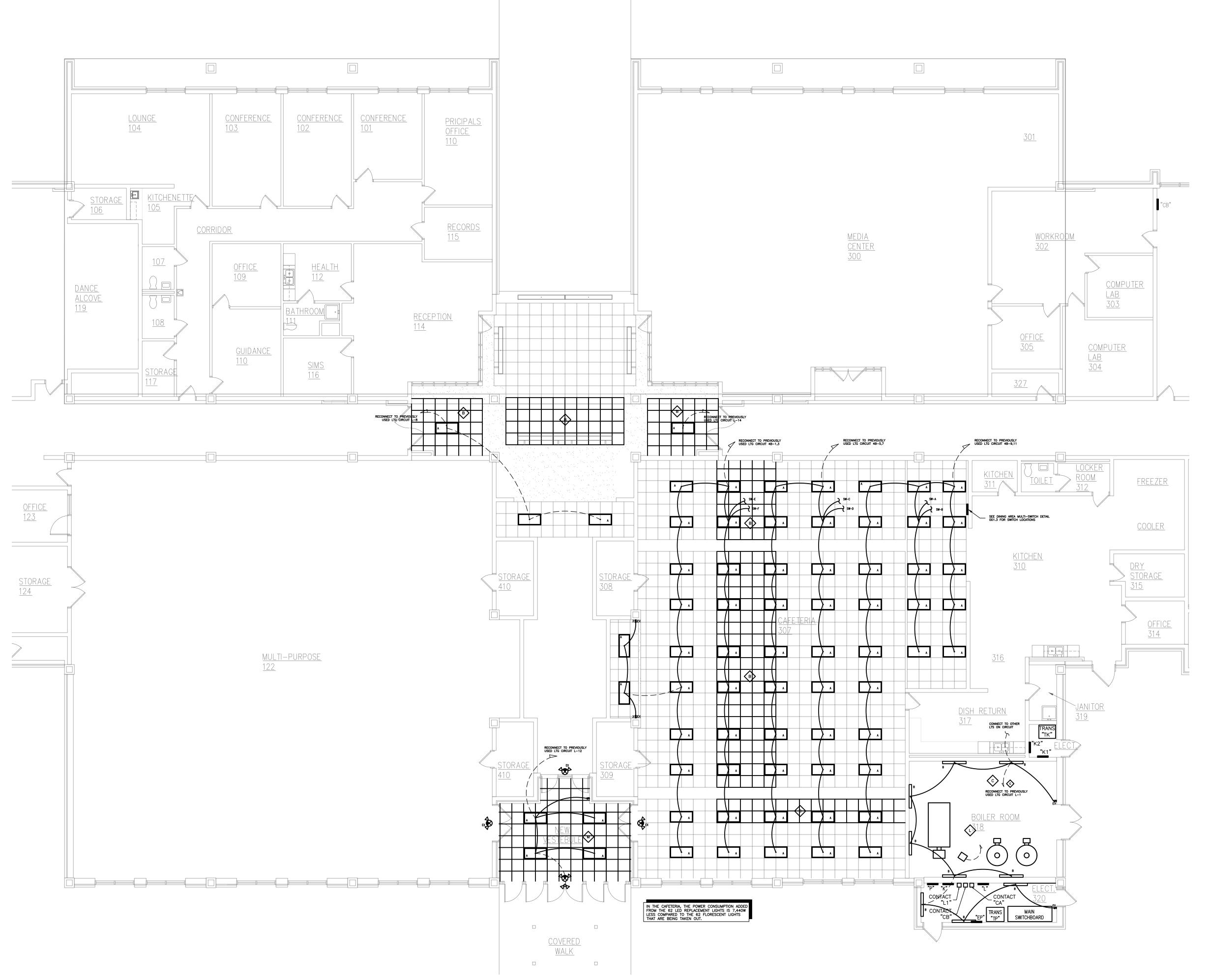
ELECTRICAL CONTRACTOR SHALL DISCONNECT ELECTRICAL FEEDERS FROM EXISTING PIECES OF EQUIPMENT THAT ARE SHOWN TO BE REPLACED. MAINTAIN ALL EXISTING DISCONNECT SWITCHES AND FEEDERS INDICATED FOR RE-USE. REMOVE WIRING/FEEDER BACK TO BREAKER IF NOT REUSED. TURN OFF ANY UNUSED EXISTING BREAKERS AND LABEL AS "SPARE" ON NEW TYPED DIRECTORY. CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIALS NECESSARY FOR ANY MODIFICATIONS THAT NEED TO BE DONE TO THE EXISTING FEEDERS FOR RECONNECTION TO NEW UNITS AND PUMPS.

PLEASE MAKE ENGINEER AWARE OF ANY DIFFERENCES BETWEEN THIS SCOPE OF WORK AND THE WORK INDICATED ON THE BID DOCUMENTS PRIOR TO BID. IF NO NOTICE IS RECEIVED IT IS UNDERSTOOD THAT THE CONTRACTOR HAS A FULL UNDERSTANDING OF THE SCOPE OF WORK AND THAT THESE DOCUMENTS HAVE SUFFICIENT INFORMATION INCLUDED IN THEM TO PRODUCE THE DESIRED SCOPE.

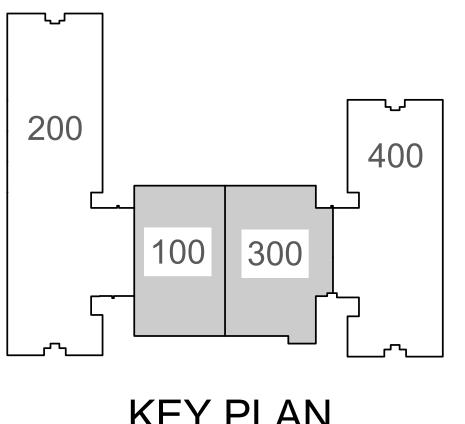
- TIE EXISTING OA DUCT WHERE PRE—CONDITIONING UNIT WAS REMOVED INTO NEW AHU MIXING BOX OR RETURN AIR DUCT IF IT DOESN'T HAVE A MIXING BOX. INSTALL DAMPERS FOR AIR BALANCE IF MIXING BOX IS NOT PRESENT.
- REPLACE CEILING TILES IN THIS AREA AFTER NEW CHILLED WATER PIPING IS INSTALLED, INSULATED, INSPECTED AND ACCEPTED. INSTALL NEW LIGHTS IN GRID AND TIE BACK TO LOCAL POWER &

CONTROL CIRCUITS AS INDICATED.

- INSTALL NEW FLUORESCENT LIGHTS IN THIS AREA AS INDICATED.
 CONNECT BACK TO EXISTING POWER AND CONTROL WIRING AS SHOWN. MODIFY SWITCH-LEG AS NECESSARY. REMOVE ANY TEMPORARY LIGHTS THAT WERE INSTALLED ONCE NEW LIGHTS ARE INSTALLED AND FUNCTIONING.
- INSTALL NEW PUMP AND ASSOCIATED PUMP TRIM BACK TO EXISTING SUPPLY AND RETURN PIPING DROPS MAINTAINED FOR RECONNECTION DURING DEMOLITION.
- RECONNECT NEW EQUIPMENT BACK TO EXISTING DISCONNECT SWITCH AND FEEDER MAINTAINED FOR REUSE. LABEL PANEL DIRECTORY WITH NEW EQUIPMENT ID AS APPROPRIATE
- SEQUENTIALLY INSTALL NEW AIR HANDLERS ACCORDING TO SCHEDULE DEVELOPED WITH OWNER, REUSE EXISTING MAINTENANCE PAD WHERE POSSIBLE. EXPAND OR INSTALL NEW PADS AS REQUIRED FOR NEW UNITS IN NEW LOCATIONS. CONNECT NEW UNIT BACK TO RETURN AND SUPPLY MAINTAINED FOR REUSE.
- INSTALL NEW HYDRONIC UNIT IN PLACE OF EXISTING DX AIR COOLED SPLIT SYSTEM REMOVED. PROVIDE NEW HYDRONIC SUPPLY & RETURN PIPING BACK TO MAINS WITH ASSOCIATED COIL TRIM
- REWORK EXISTING TRANE MODULAR AIR HANDLERS TO ADD A 2-ROW HEATING COIL IN THE REHEAT POSITION. MOVE THE EXIST. COOLING COIL AS NECESSARY TO MAKE ROOM FOR THE NEW COIL.
- CONNECT NEW EQUIPMENT BACK TO EXISTING DISCONNECT SWITCH MAINTAINED FOR REUSE. PROVIDE NEW FUSES AS REQUIRED TO MATCH NEW EQUIPMENT DATA PLATE. LABEL PANEL DIRECTORY WITH NEW AHU NUMBER AS NECESSARY.
- INSTALL NEW INSULATION ON ALL EXISTING HYDRONIC PIPING THAT HAD INSULATION REMOVED AND HAD EXISTING PIPE PREPARED FOR NEW INSULATION. COLD/CHILLED WATER PIPING MUST BE INSULATED DURING ALL COOLING SEASONS TO PREVENT SWEATING.
- INSTALL NEW ELECTRIC UNIT HEATER AS INDICATED.
- REMOVE EXISTING RECESSED CAN LIGHTS IN THIS AREA, MAINTAIN POWER AND CONTROL TO ALL UP AND DOWN STREAM LIGHTING TO REMAIN. TIE NEW LAY-IN LIGHTS TO UNSWITCHED LEG OF EXISTING CORRIDOR LIGHTS. (CKT L-12 PER RECORD DWGS.)



101.1 100 & 300 WING ELECTRICAL PLAN SCALE: 1/8" = 1'-0"

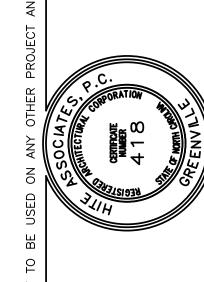


KEY PLAN SCALE: NTS



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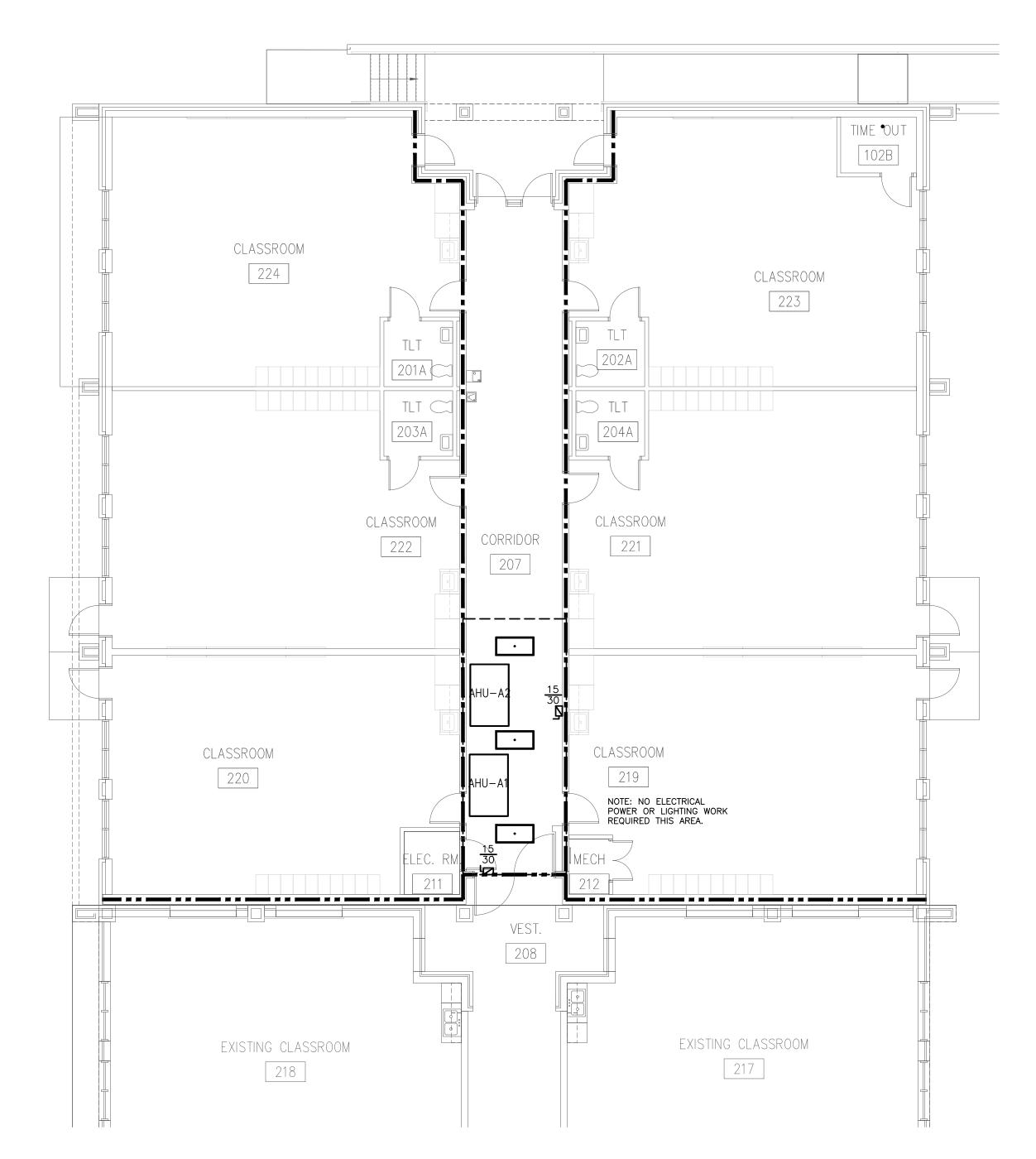
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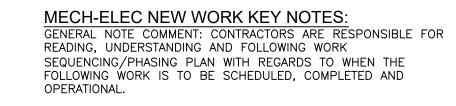
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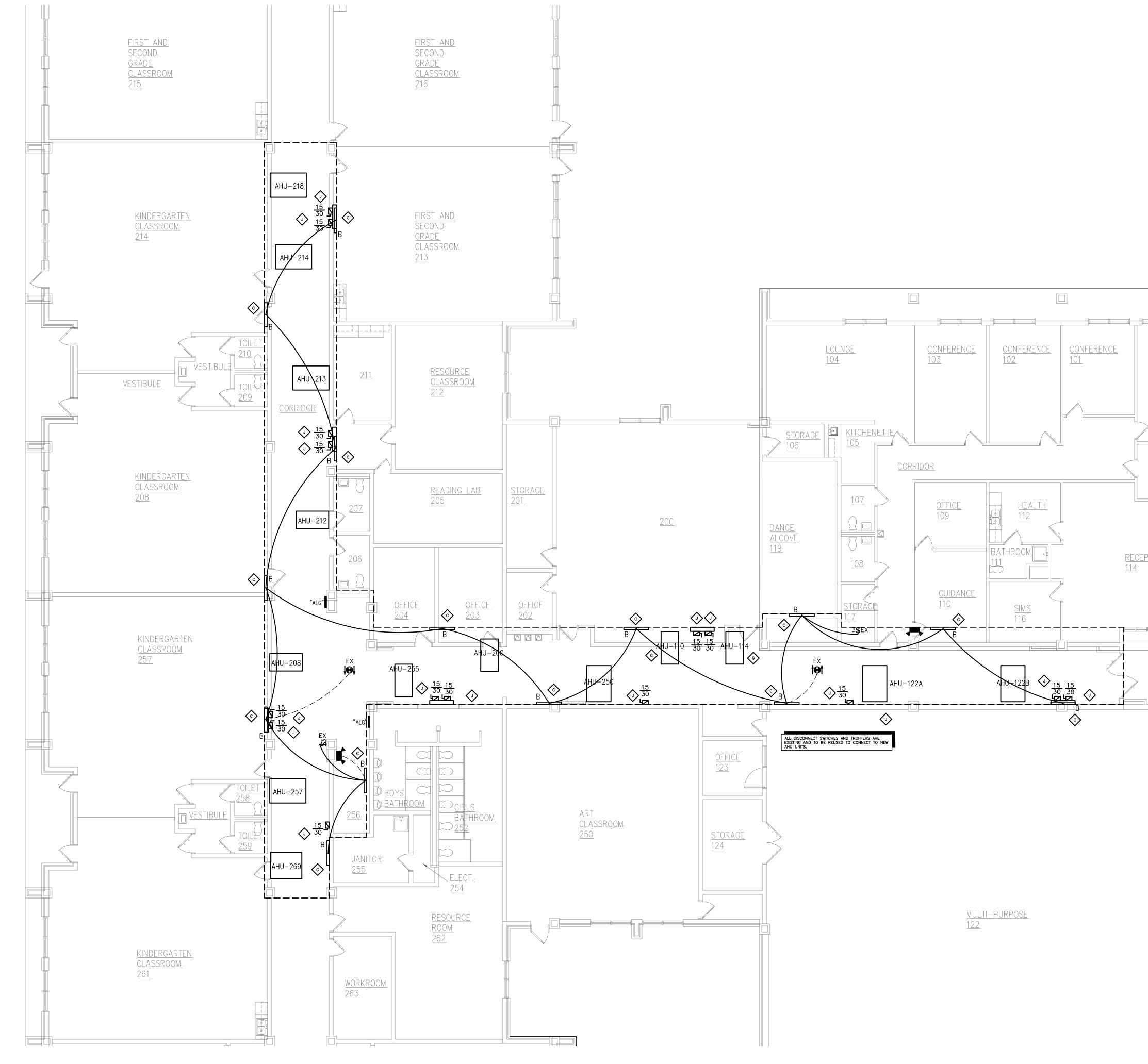
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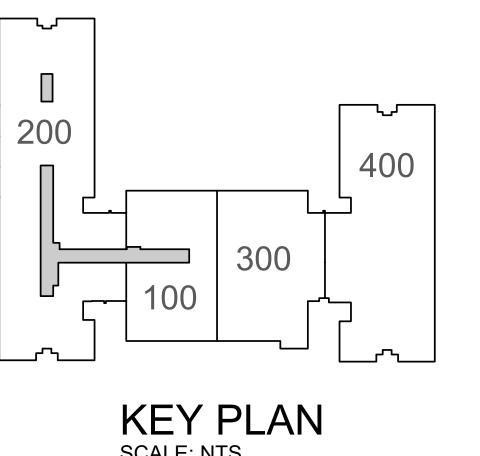
201.2 UPPER 200 WING PLATFORM ELECTRICAL PLAN SCALE: 1/8" = 1'-0"



- TIE EXISTING OA DUCT WHERE PRE-CONDITIONING UNIT WAS REMOVED INTO NEW AHU MIXING BOX OR RETURN AIR DUCT IF IT DOESN'T HAVE A MIXING BOX. INSTALL DAMPERS FOR AIR BALANCE IF MIXING BOX IS NOT PRESENT.
- REPLACE CEILING TILES IN THIS AREA AFTER NEW CHILLED WATER PIPING IS INSTALLED, INSULATED, INSPECTED AND ACCEPTED. INSTALL NEW LIGHTS IN GRID AND TIE BACK TO LOCAL POWER & CONTROL CIRCUITS AS INDICATED.
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- INSTALL NEW PUMP AND ASSOCIATED PUMP TRIM BACK TO EXISTING SUPPLY AND RETURN PIPING DROPS MAINTAINED FOR RECONNECTION DURING DEMOLITION.
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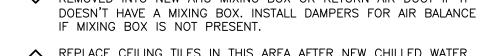


201.1 100 & 200 WING PLATFORM ELECTRICAL PLAN SCALE: 1/8" = 1'-0"



SCALE: NTS

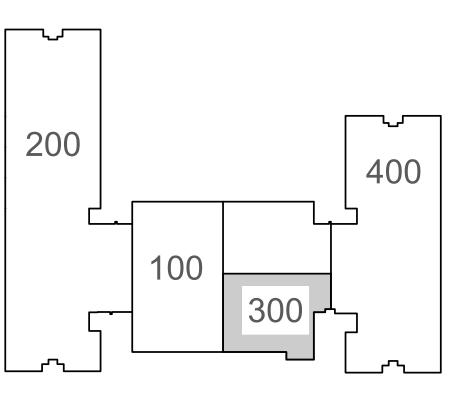




- REPLACE CEILING TILES IN THIS AREA AFTER NEW CHILLED WATER PIPING IS INSTALLED, INSULATED, INSPECTED AND ACCEPTED. INSTALL NEW LIGHTS IN GRID AND TIE BACK TO LOCAL POWER & CONTROL CIRCUITS AS INDICATED.
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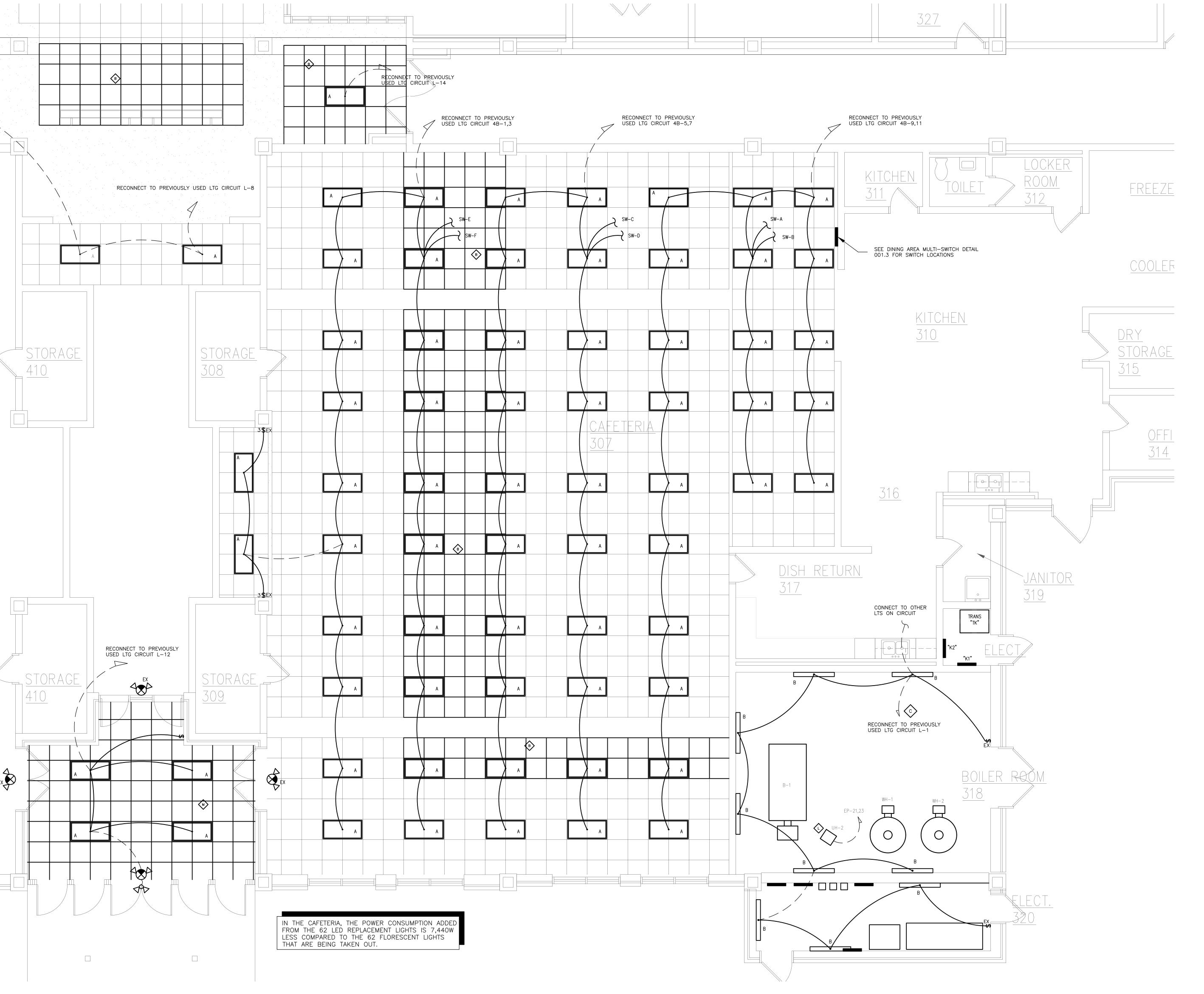
CORRIDOR LIGHTS. (CKT L-12 PER RECORD DWGS.)

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KEY PLAN SCALE: NTS





301.1 ENLARGED LOWER 300 WING ELECTRICAL PLAN SCALE: 1/4" = 1'-0"

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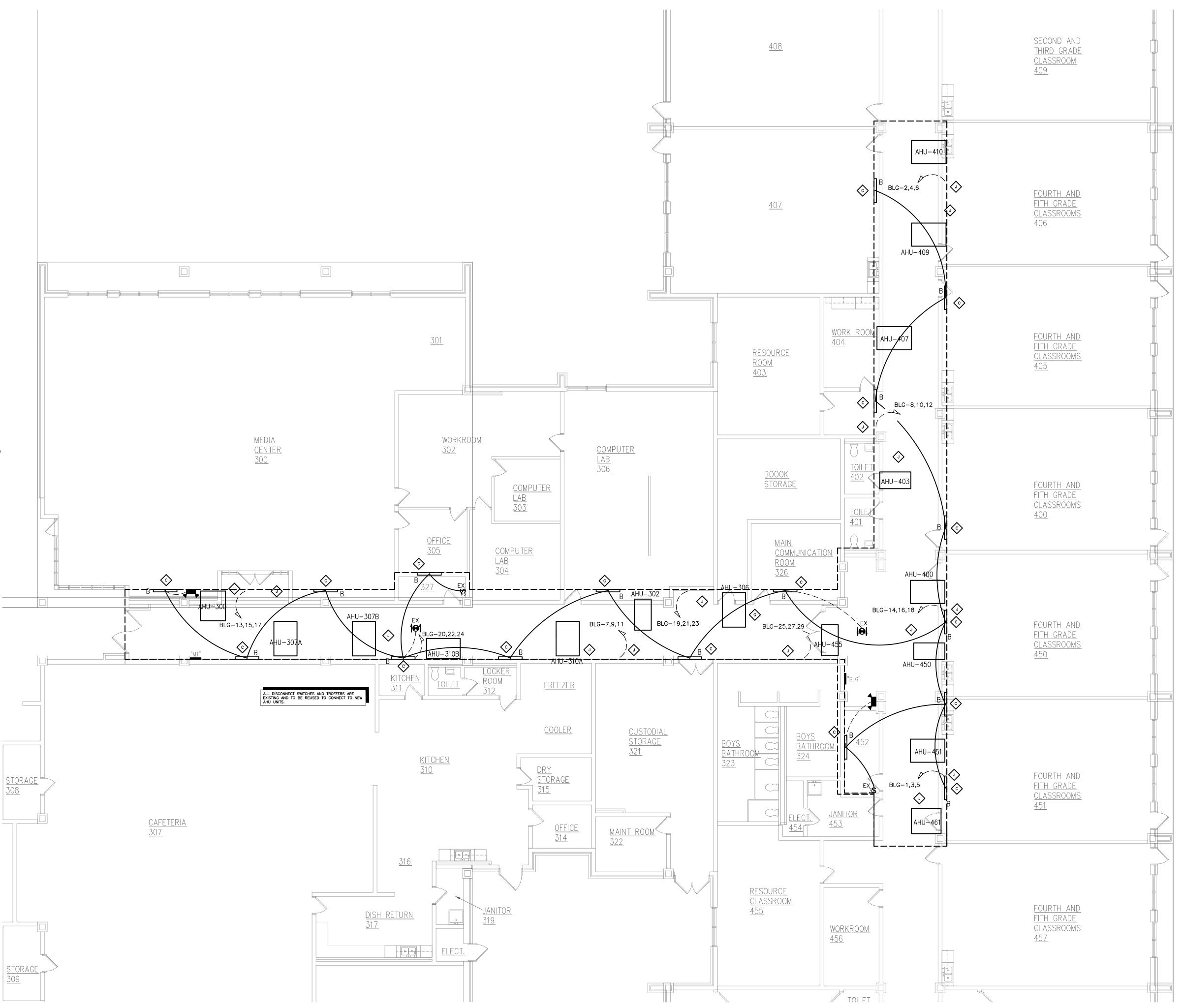
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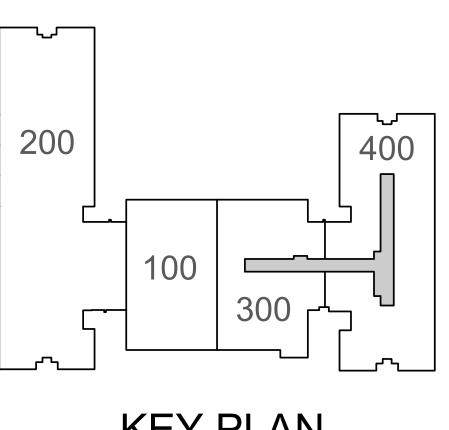
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401.1 300 & 400 WING PLATFORM ELECTRICAL PLAN SCALE: 1/8" = 1'-0"

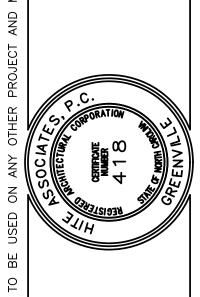


KEY PLAN SCALE: NTS



FER TO ARCHITECTURAL DRAWINGS FOR EXACT DIMENSIONS.

HITE 350 Meridian Drive / Greenville, NC 27834 / tel (252) 757-0



E Renovations to **Smentary School** 24, Newport, NC 28570

Project No. 22419

Date: 11 Nov 2024

11 Nov 2024

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