

NOTE: Remove existing ceiling and grids on this floor;  
existing drywall and metal bulkheads to remain  
**Demolition Plan**  
**Second Floor Plan**

**Grandview Elementary - Gym Addition & HVAC Renovation**  
500 Grandview Avenue, Bellevue, Kentucky 41073  
Bellevue Independent Schools Board of Education  
Misty Middleton - Superintendent



ADDENDA

SHEET TITLE

BG #  
24-059

REH #  
372-922

DATE  
10/13/23

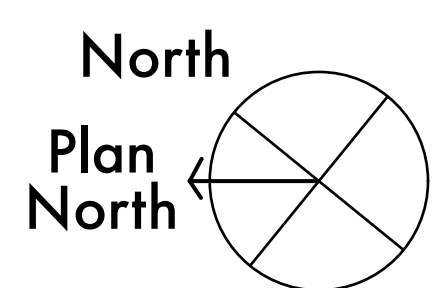
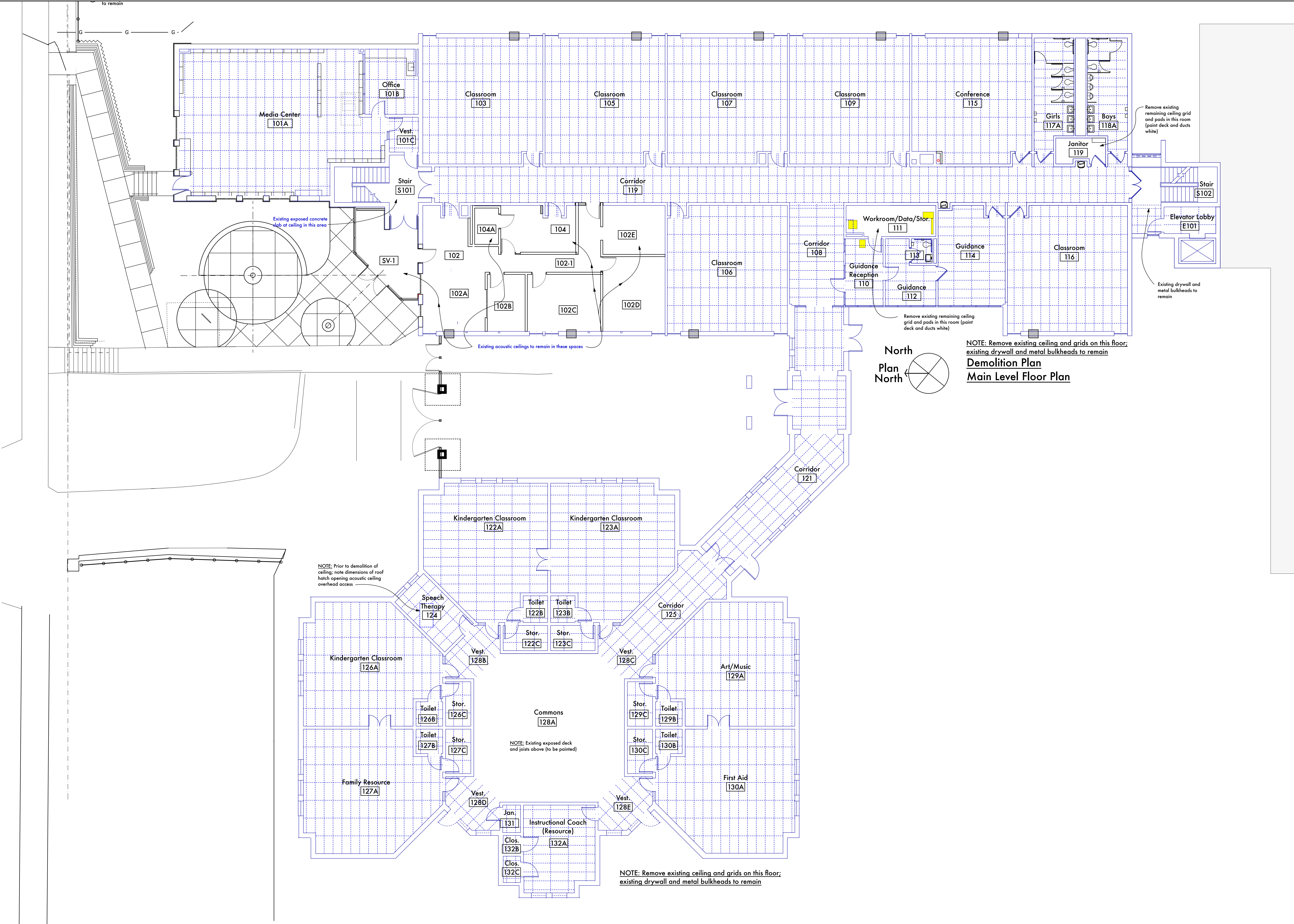
**D1.1**

**REH&A**  
**ARCHITECTS**  
ROBERT EHMET HAYES & ASSOCIATES, PLLC  
2512 DIXIE HIGHWAY - FORT MITCHELL, KENTUCKY 41071 - (859) 331-9121

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PROGRESS SET

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NOTE: Remove existing ceiling and grids on this floor; existing drywall and metal bulkheads to remain  
**Demolition Plan**  
**Main Level Floor Plan**

NOTE: Prior to demolition of ceiling, note dimensions of roof hatch opening acoustic ceiling overhead access

NOTE: Existing exposed deck and joists above (to be painted)

NOTE: Remove existing ceiling and grids on this floor; existing drywall and metal bulkheads to remain

Remove existing remaining ceiling grid and pads in this room (paint deck and ducts white)

Remove existing remaining ceiling grid and pads in this room (paint deck and ducts white)

Existing drywall and metal bulkheads to remain



ADDENDA

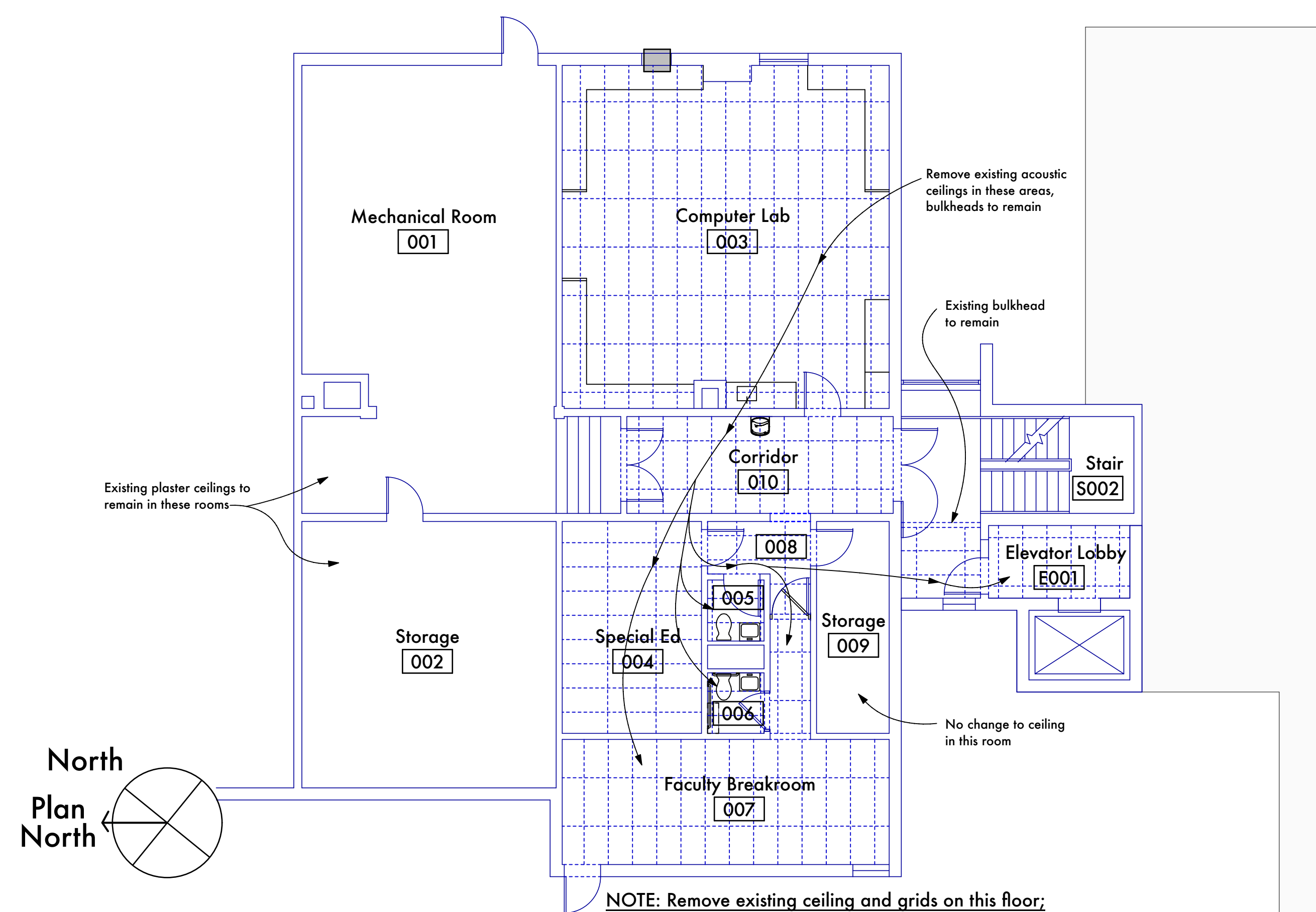
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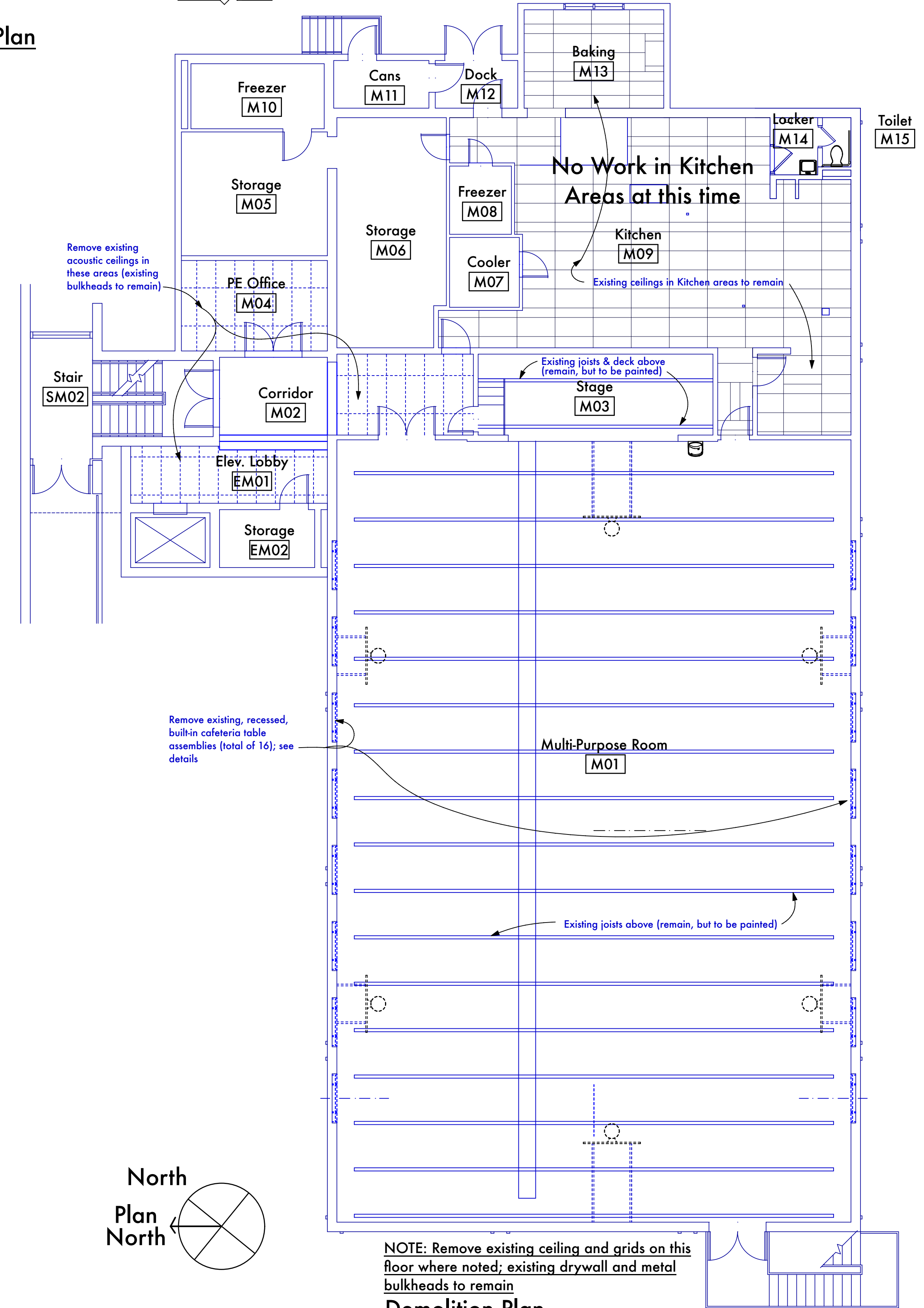
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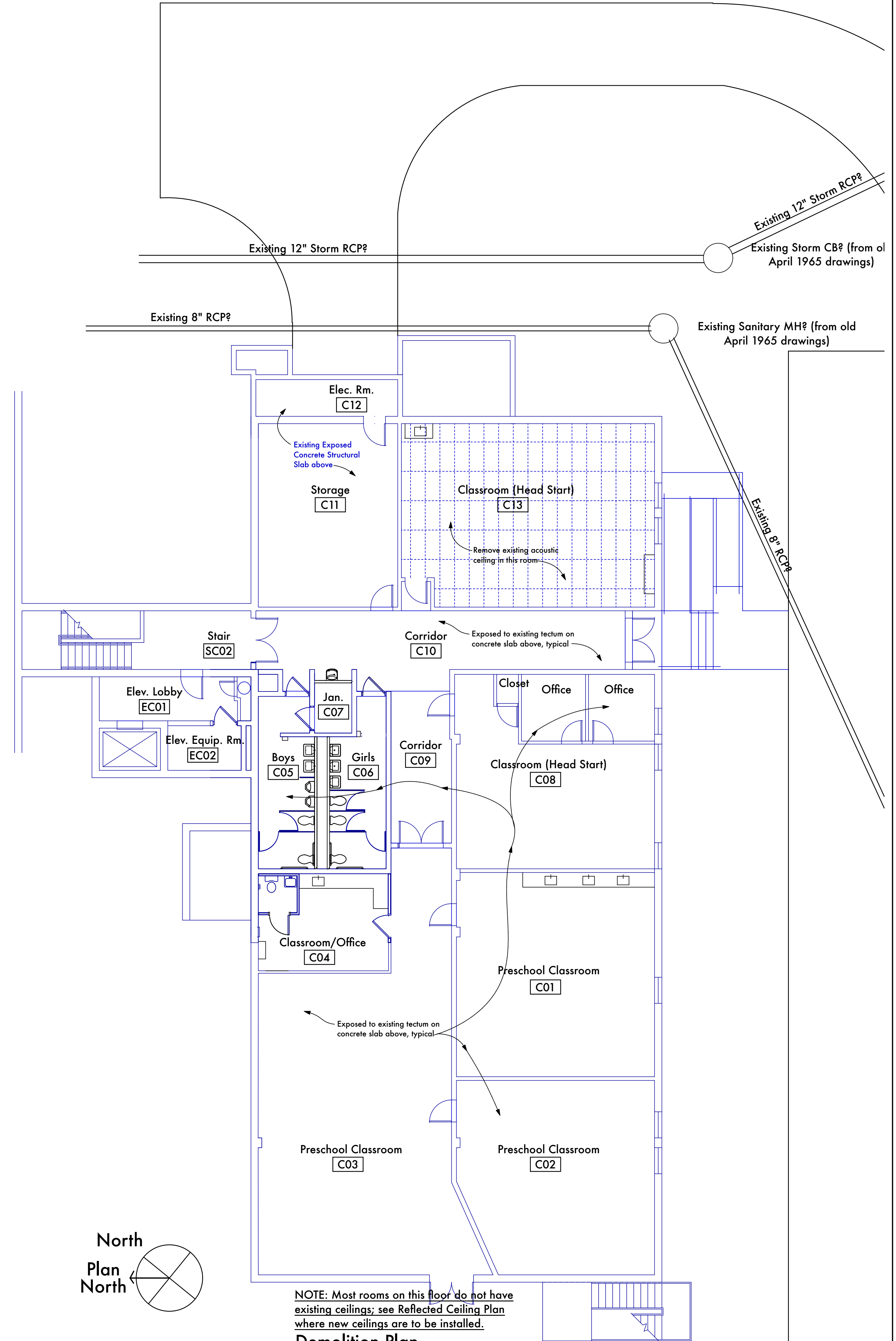
**D1.2**



NOTE: Remove existing ceiling and grids on this floor; existing drywall and metal bulkheads to remain  
**Demolition Plan**  
**Basement (Level "B") Floor Plan**



NOTE: Remove existing ceiling and grids on this floor where noted; existing drywall and metal bulkheads to remain  
**Demolition Plan**  
**Multi-purpose Room Level "M" Floor Plan**



NOTE: Most rooms on this floor do not have existing ceilings, see Reflected Ceiling Plan where new ceilings are to be installed.  
**Demolition Plan**  
**Lowest Level "C" Floor Plan**



ADDENDA

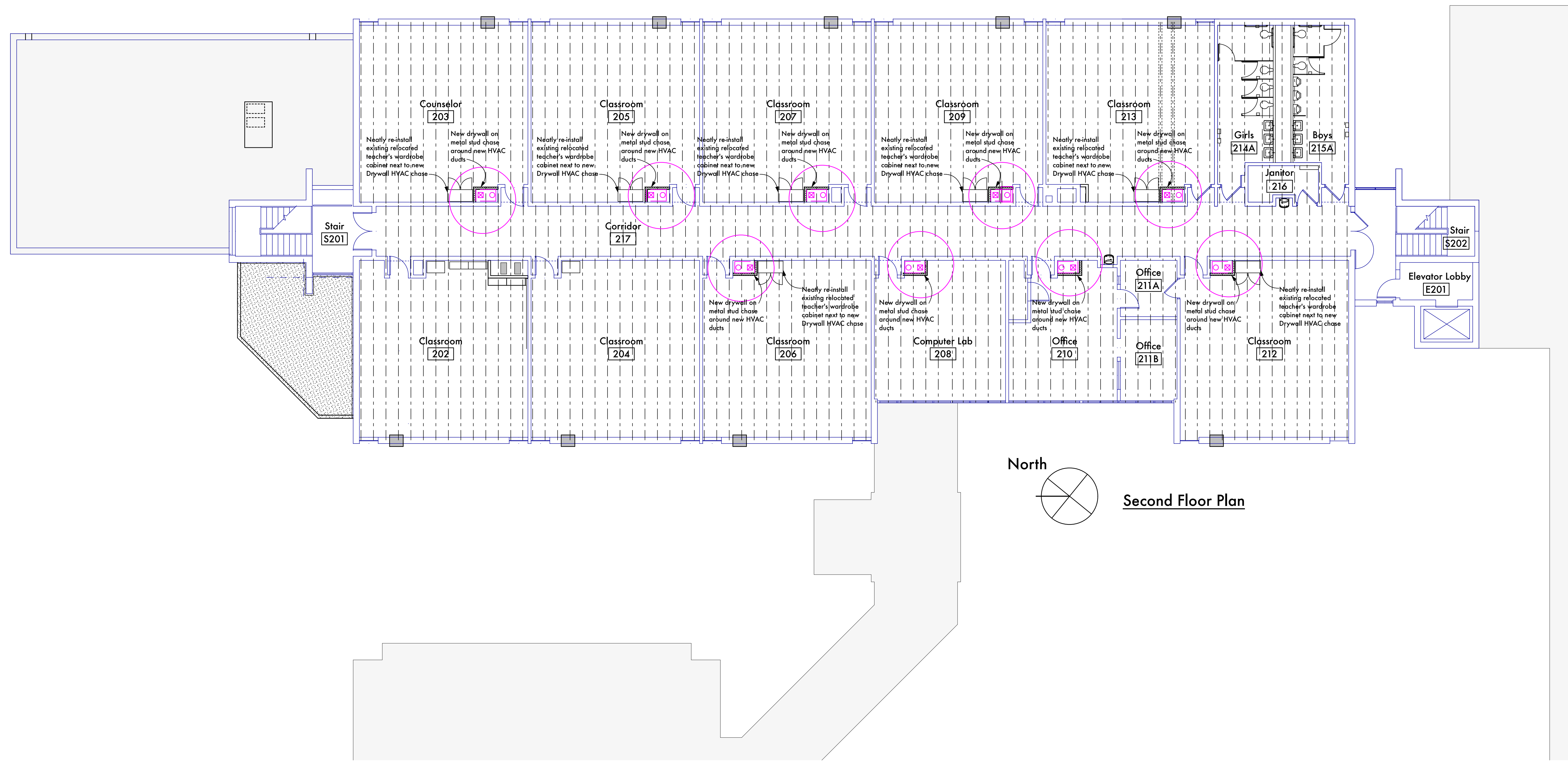
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24-059

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372-922

DATE  
10/13/23

**D1.3**



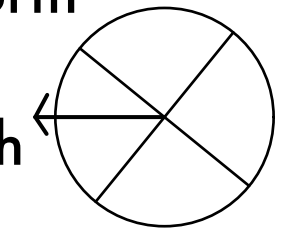
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DATE  
10/13/23

1.1



North  
Plan North  Main Level Floor Plan

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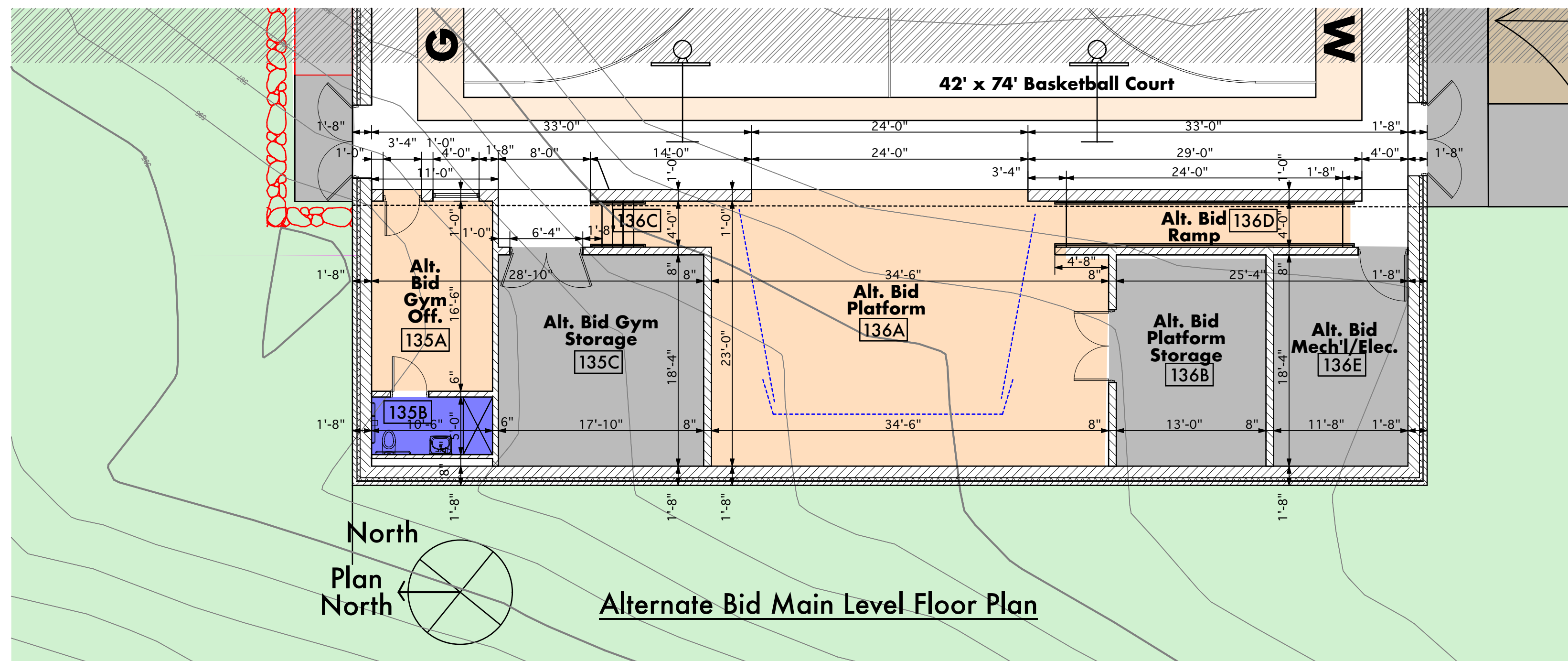
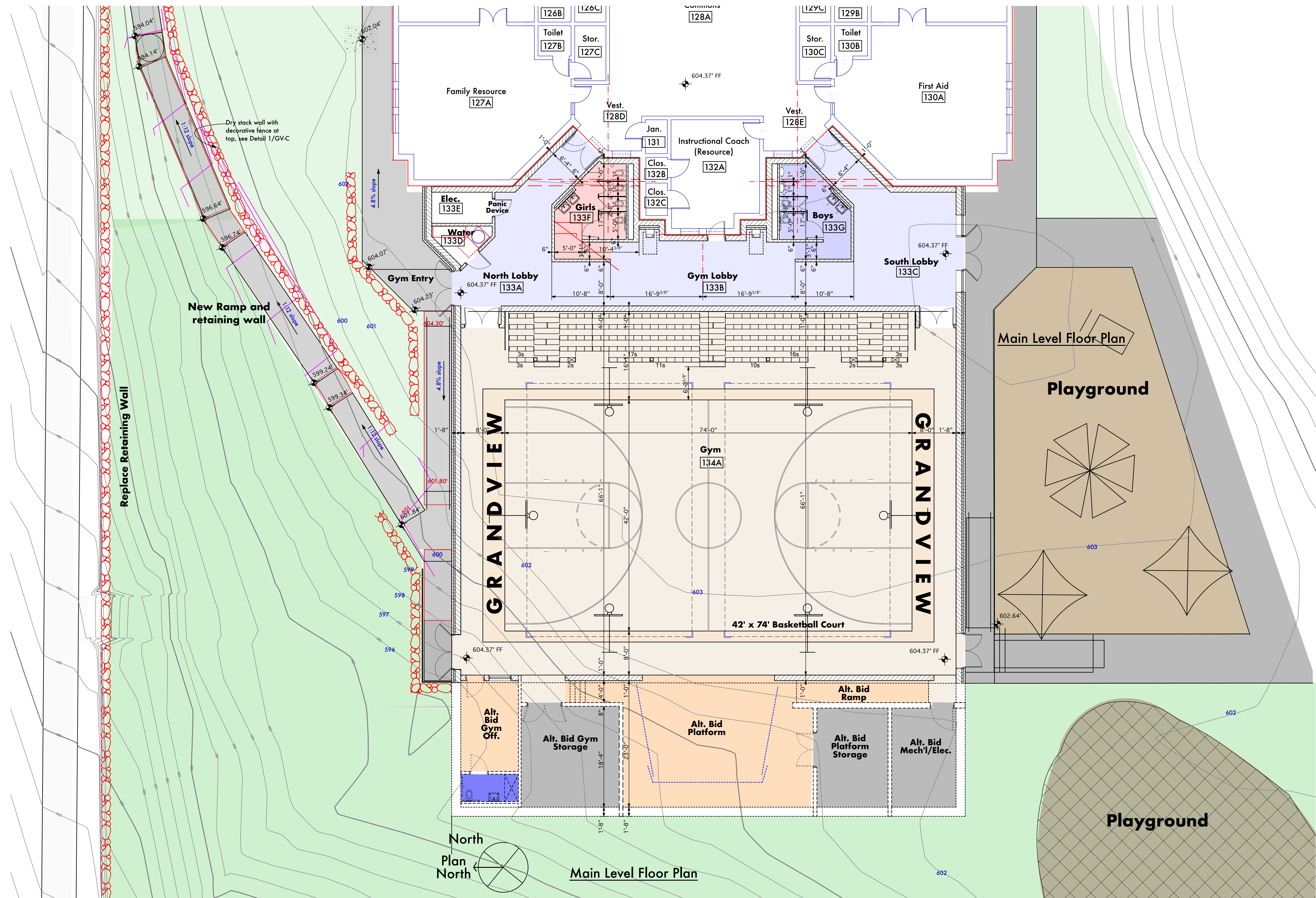
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500 Grandview Avenue, Bellevue, Kentucky 41073  
Bellevue Independent Schools Board of Education  
Misty Middleton - Superintendent

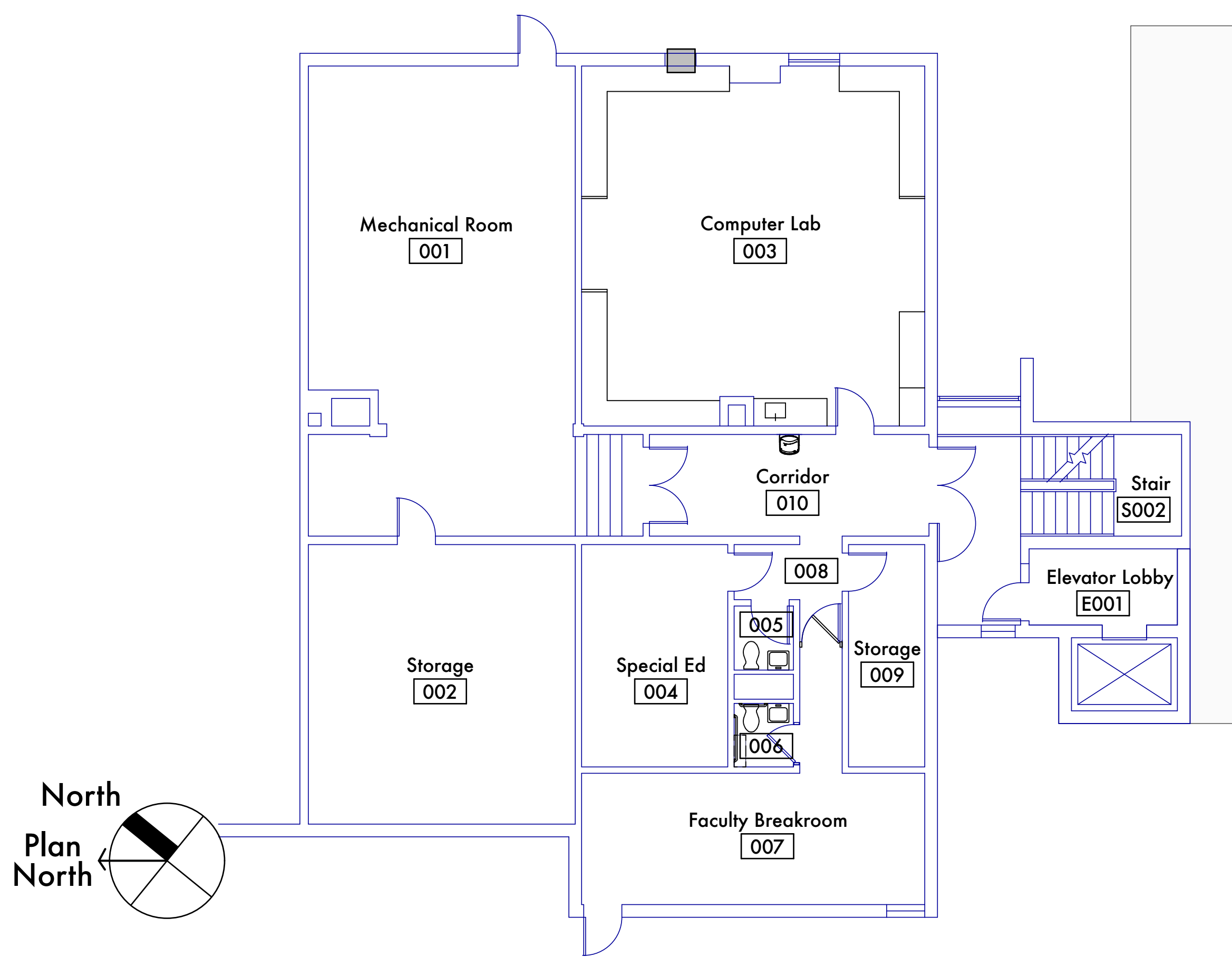


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SHEET TITLE
BG # 24-059
REH # 372-922
DATE 10/13/23

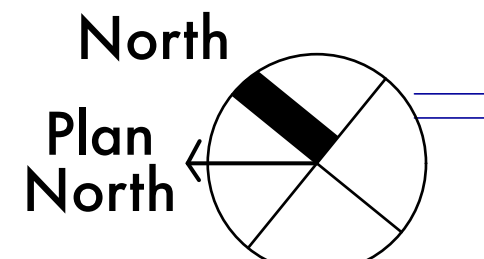
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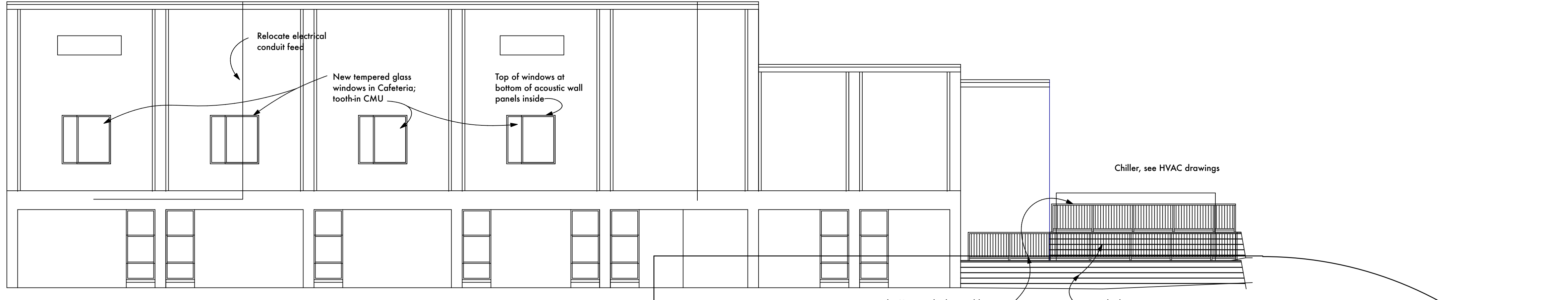




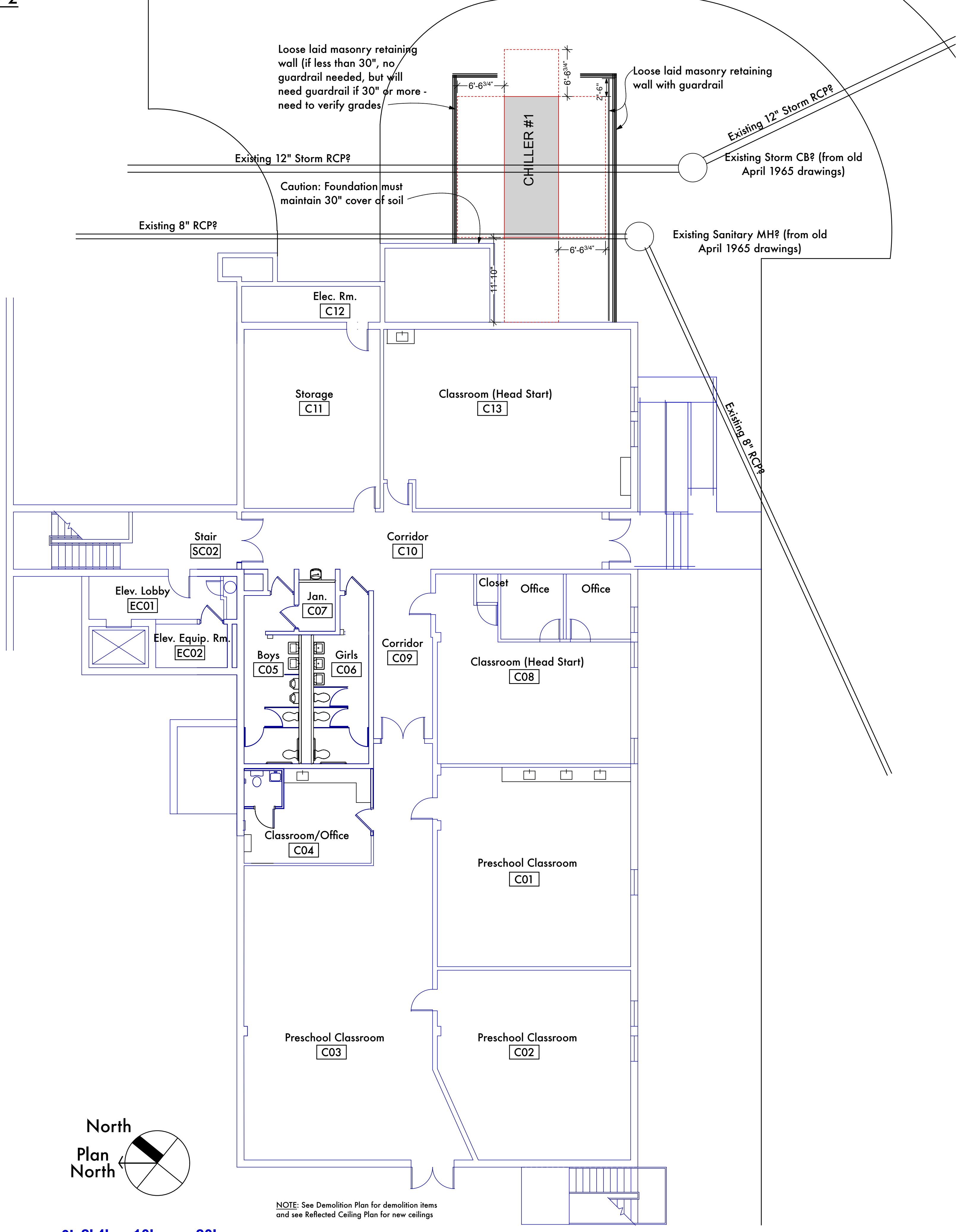
Basement (Level "B") Floor Plan



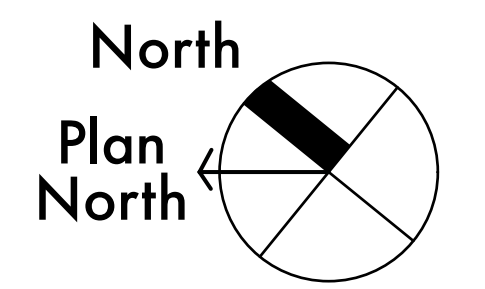
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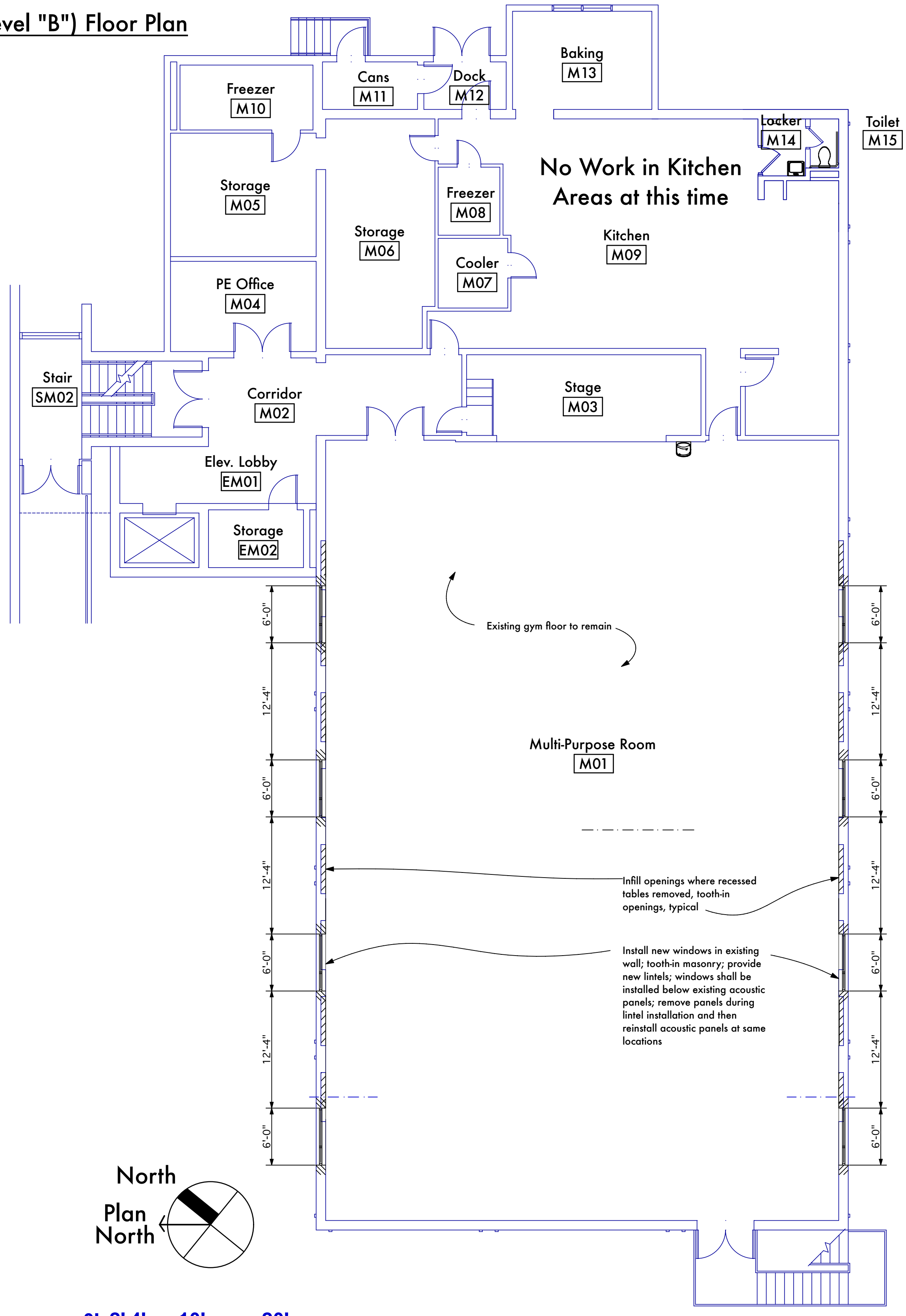
Rear Elevation Study 2



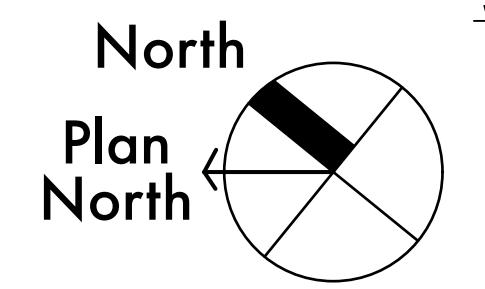
Lowest Level "C" Floor Plan



0' 2' 4' 10' 20'



Multi-purpose Room Level "M" Floor Plan



0' 2' 4' 10' 20'



ADDENDA

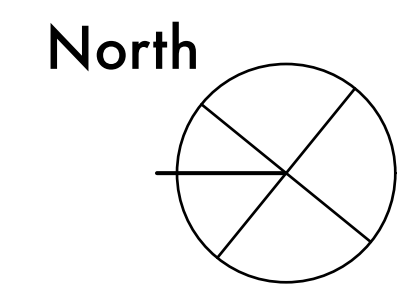
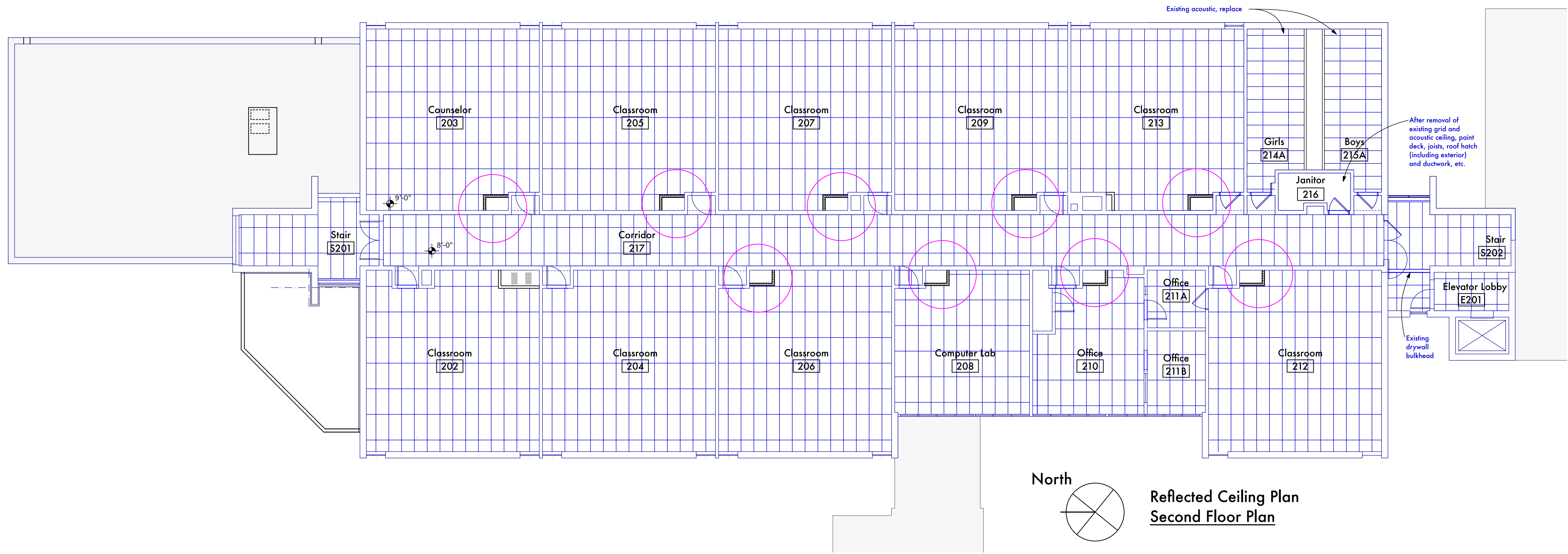
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BG #  
24-059

REH #  
372-922

DATE  
10/13/23

1.4



Reflected Ceiling Plan  
Second Floor Plan

**Grandview Elementary - Gym Addition & HVAC Renovation**  
 500 Grandview Avenue, Bellevue, Kentucky 41073  
 Bellevue Independent Schools Board of Education  
 Misty Middleton - Superintendent



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SHEET TITLE

BG #  
24-059

REH #  
372-922

DATE  
10/13/23

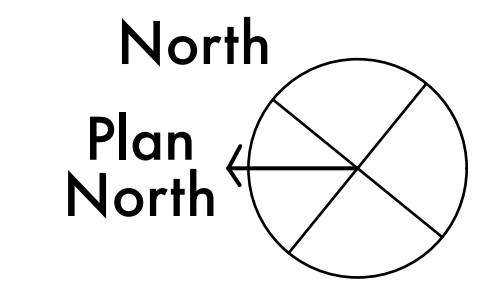
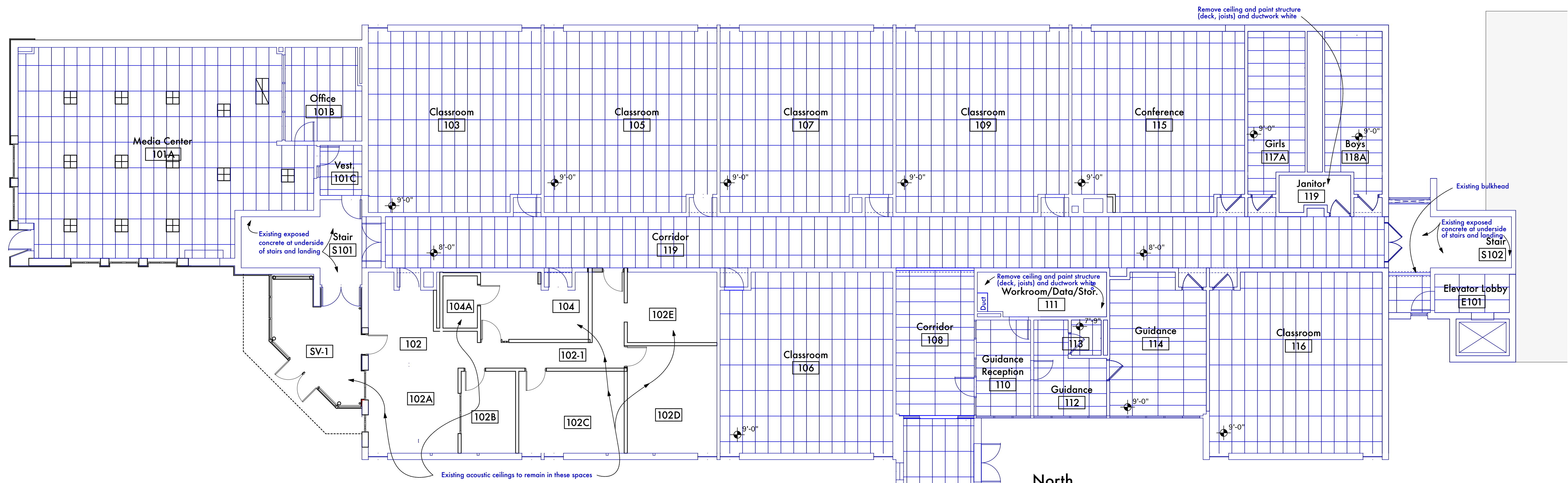
**2.1**

**REH&A**  
ARCHITECTS  
 ROBERT EHMET HAYES & ASSOCIATES, PLLC  
 2512 DIXIE HIGHWAY - FORT MITCHELL, KENTUCKY 41017 - (859) 331-3121

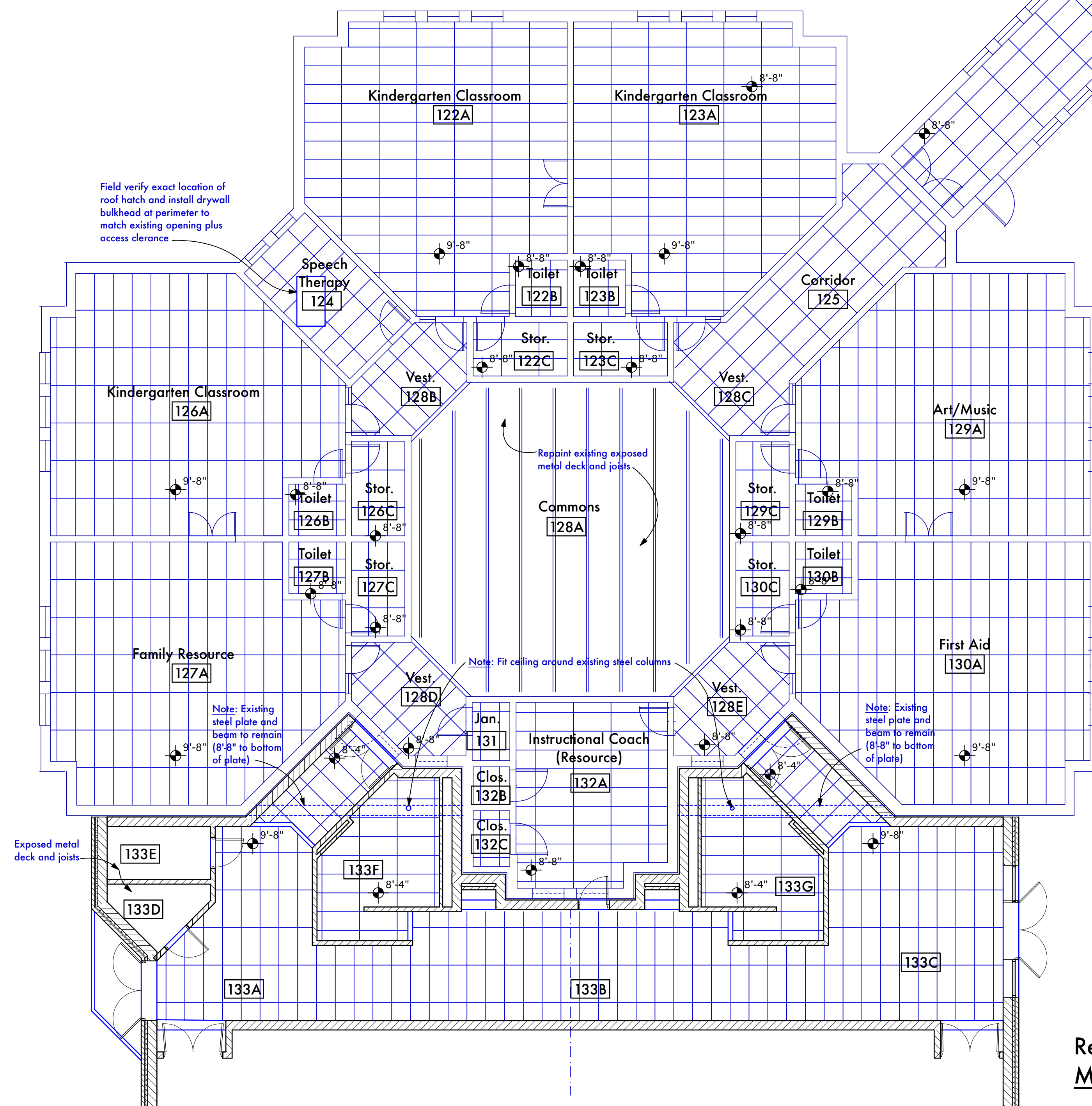
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PROGRESS SET





Reflected Ceiling Plan  
Main Level Floor Plan



Reflected Ceiling Plan  
Main Level Floor Plan

**Grandview Elementary - Gym Addition & HVAC Renovation**  
 500 Grandview Avenue, Bellevue, Kentucky 41073  
 Bellevue Independent Schools Board of Education  
 Misty Middleton - Superintendent



ADDENDA

SHEET TITLE

BG #  
24-059

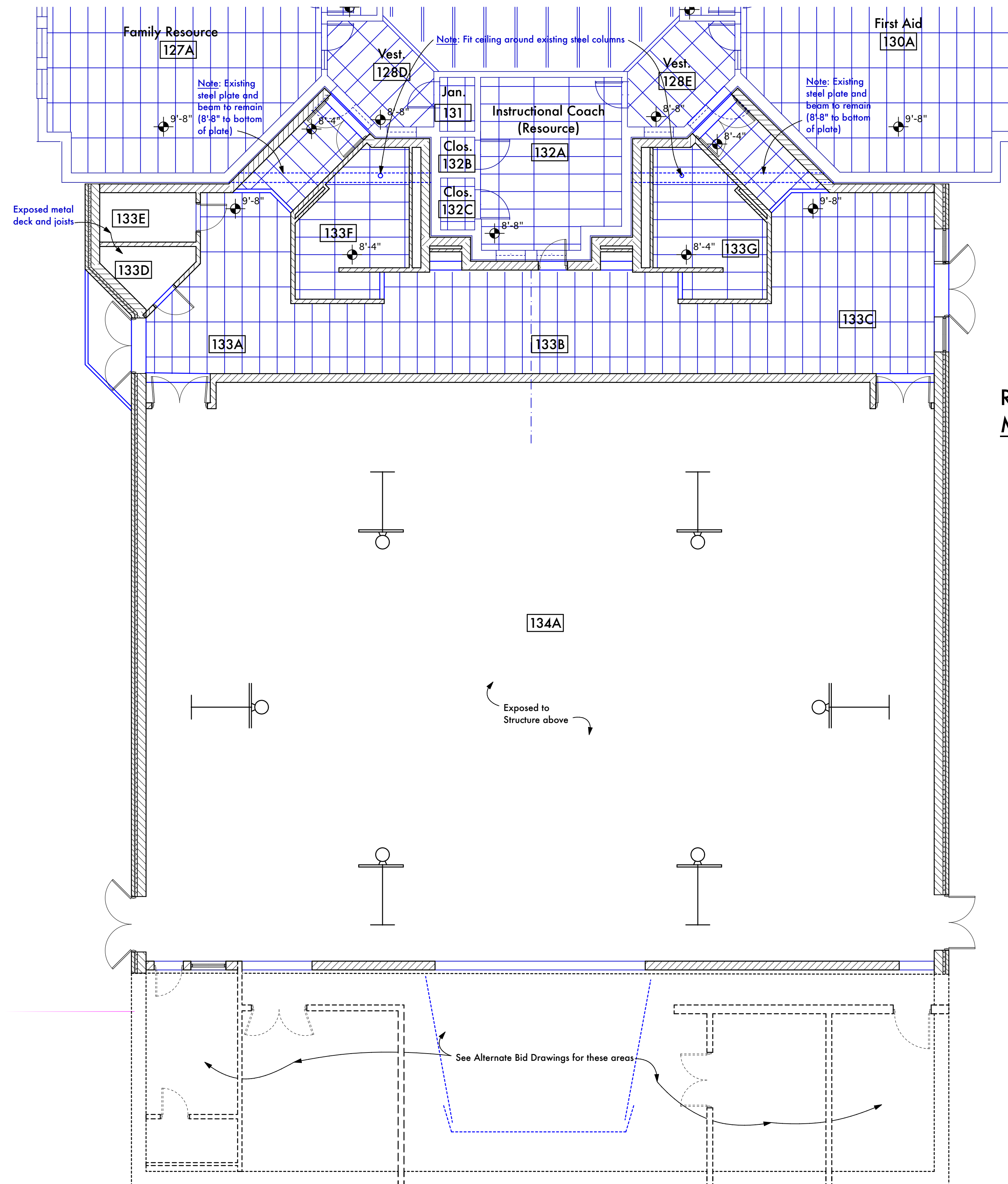
REH #  
372-922

DATE  
10/13/23

2.2

**REH & A**  
 ARCHITECTS  
 ROBERT EHMET HAYES & ASSOCIATES, PLLC  
 2512 DINE HIGHWAY - FORT MITCHELL, KENTUCKY 41017 - (859) 381-3121

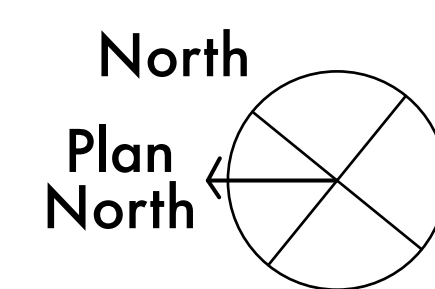
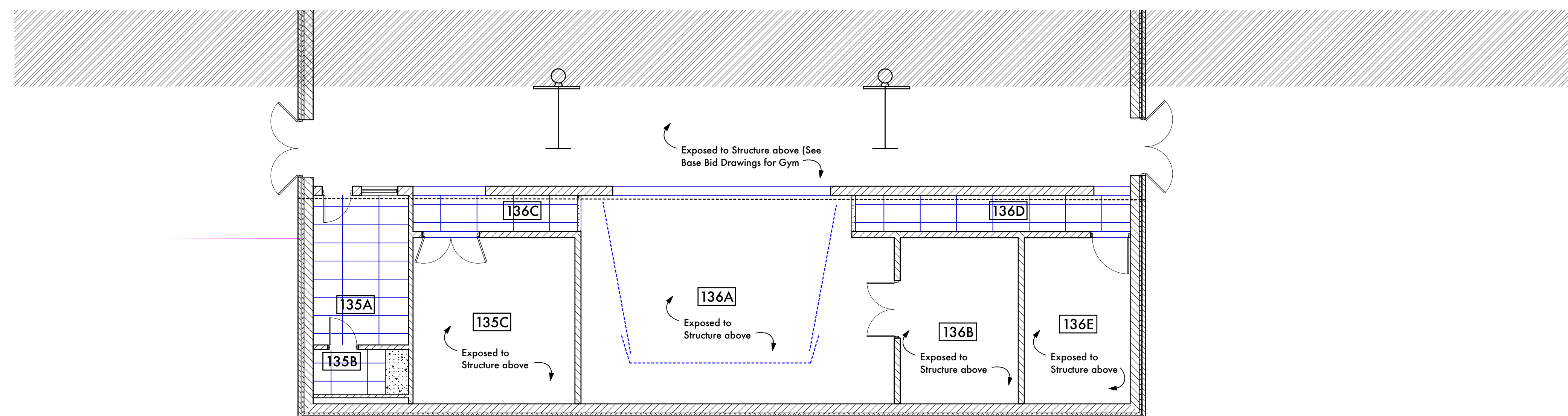
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Reflected Ceiling Plan  
Main Level Floor Plan



Reflected Ceiling Plan  
Main Level Floor Plan



Reflected Ceiling Plan  
Alternate Bid Main Level Floor Plan

Grandview Elementary - Gym Addition & HVAC Renovation  
500 Grandview Avenue, Bellevue, Kentucky 41073  
Bellevue Independent Schools Board of Education  
Misty Middleton - Superintendent



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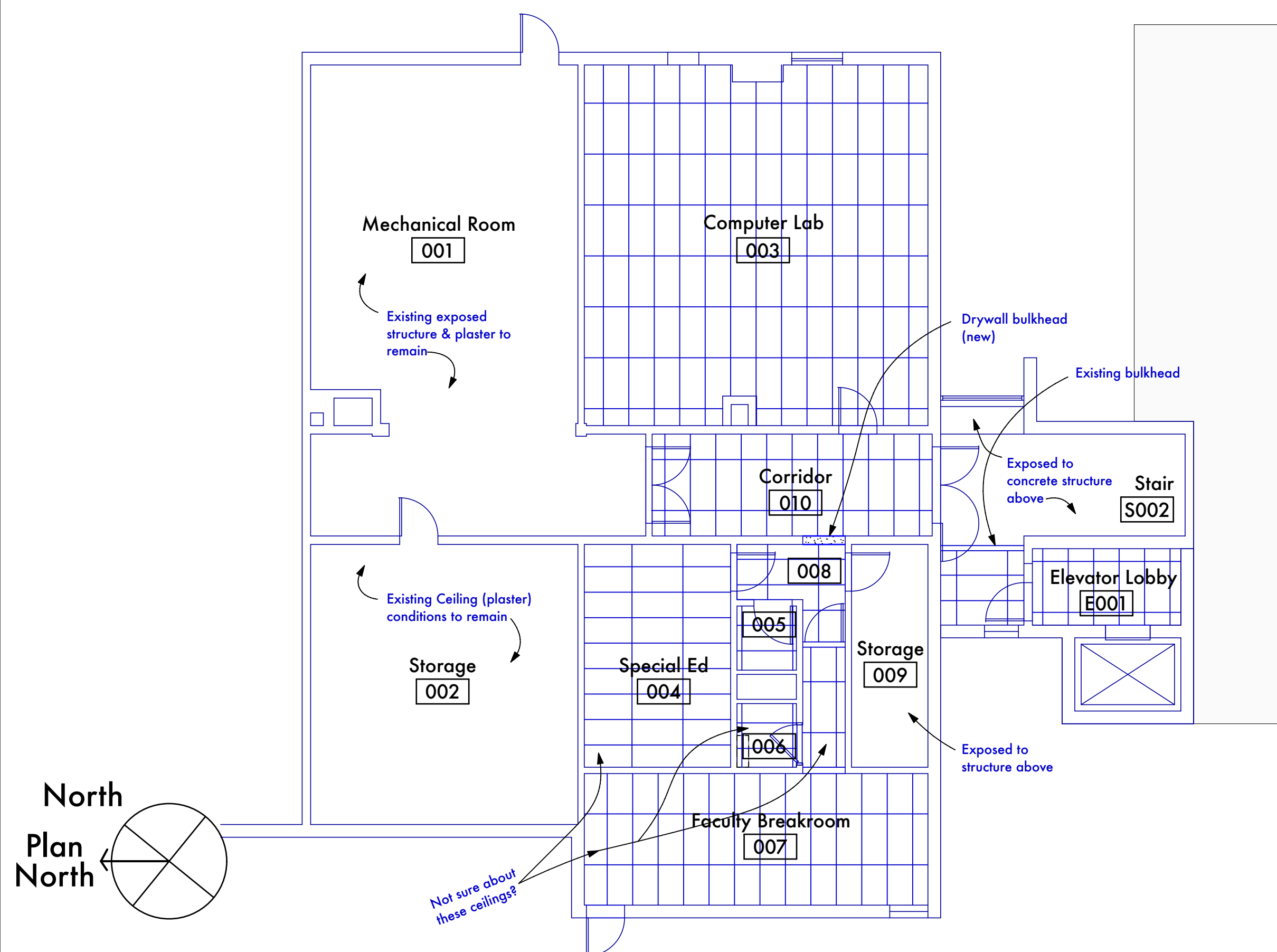
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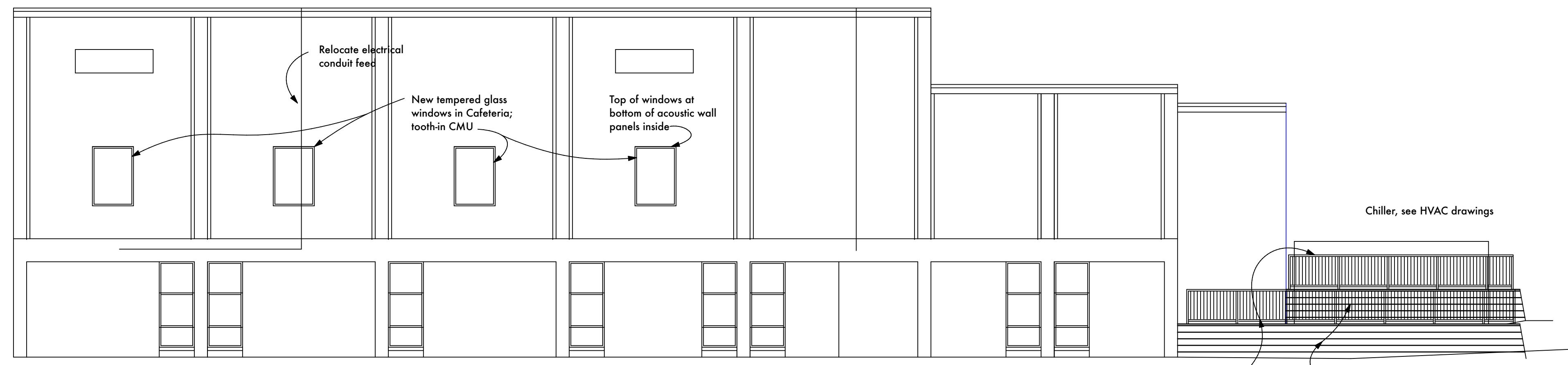
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10/13/23

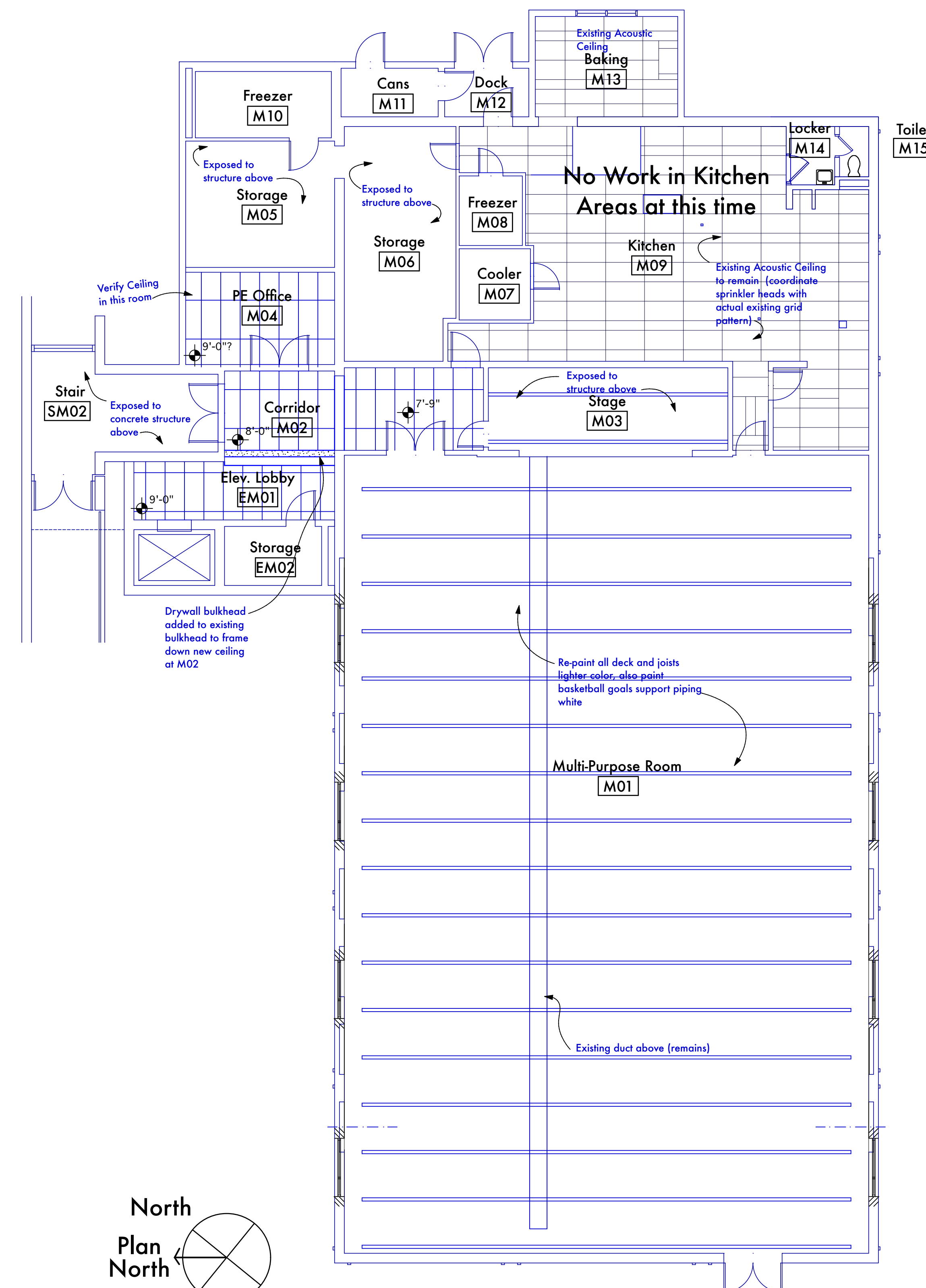
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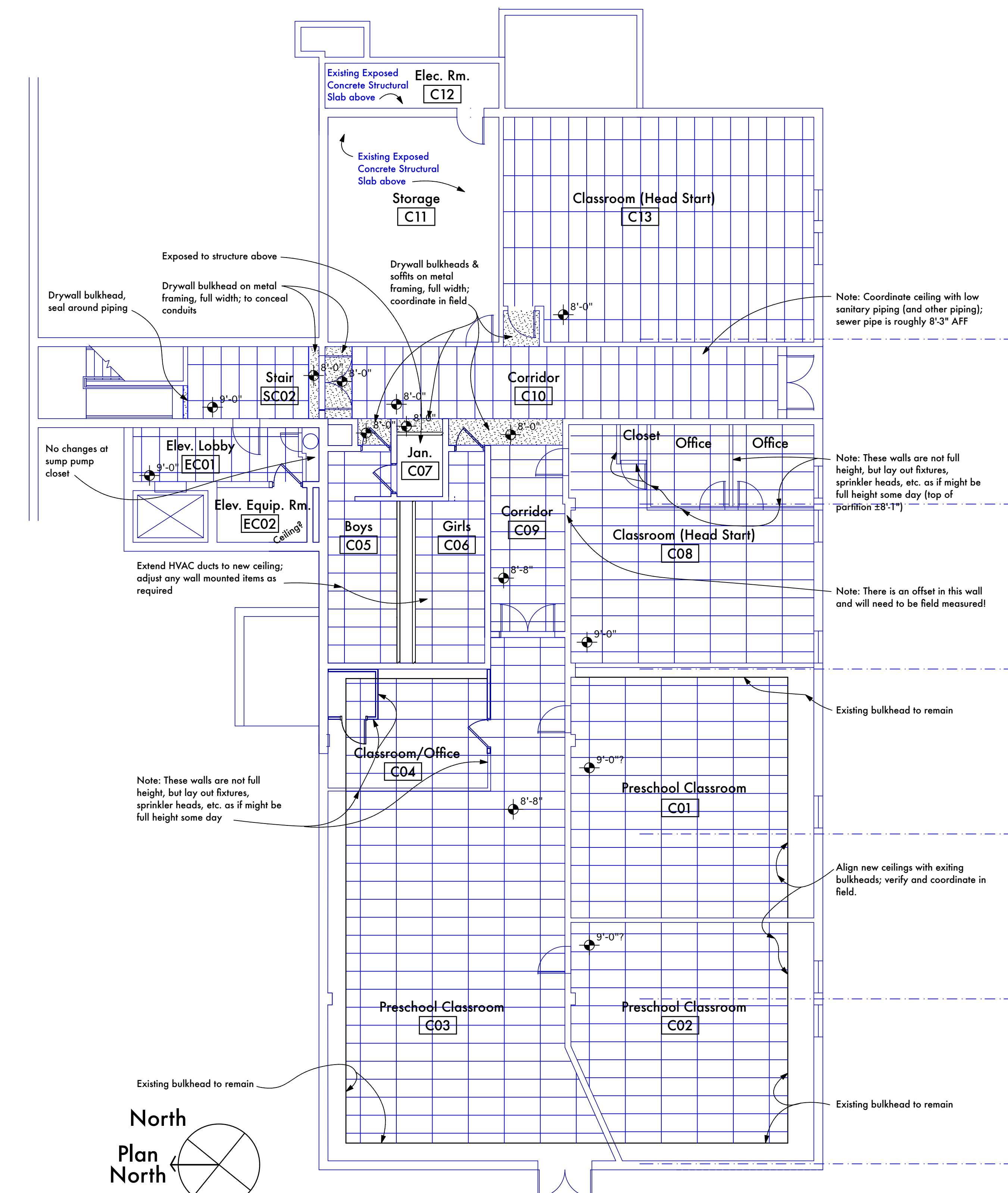
Reflected Ceiling Plan  
Basement (Level "B") Floor Plan



Rear Elevation Study 1



Reflected Ceiling Plan  
Multi-purpose Room Level "M" Floor Plan



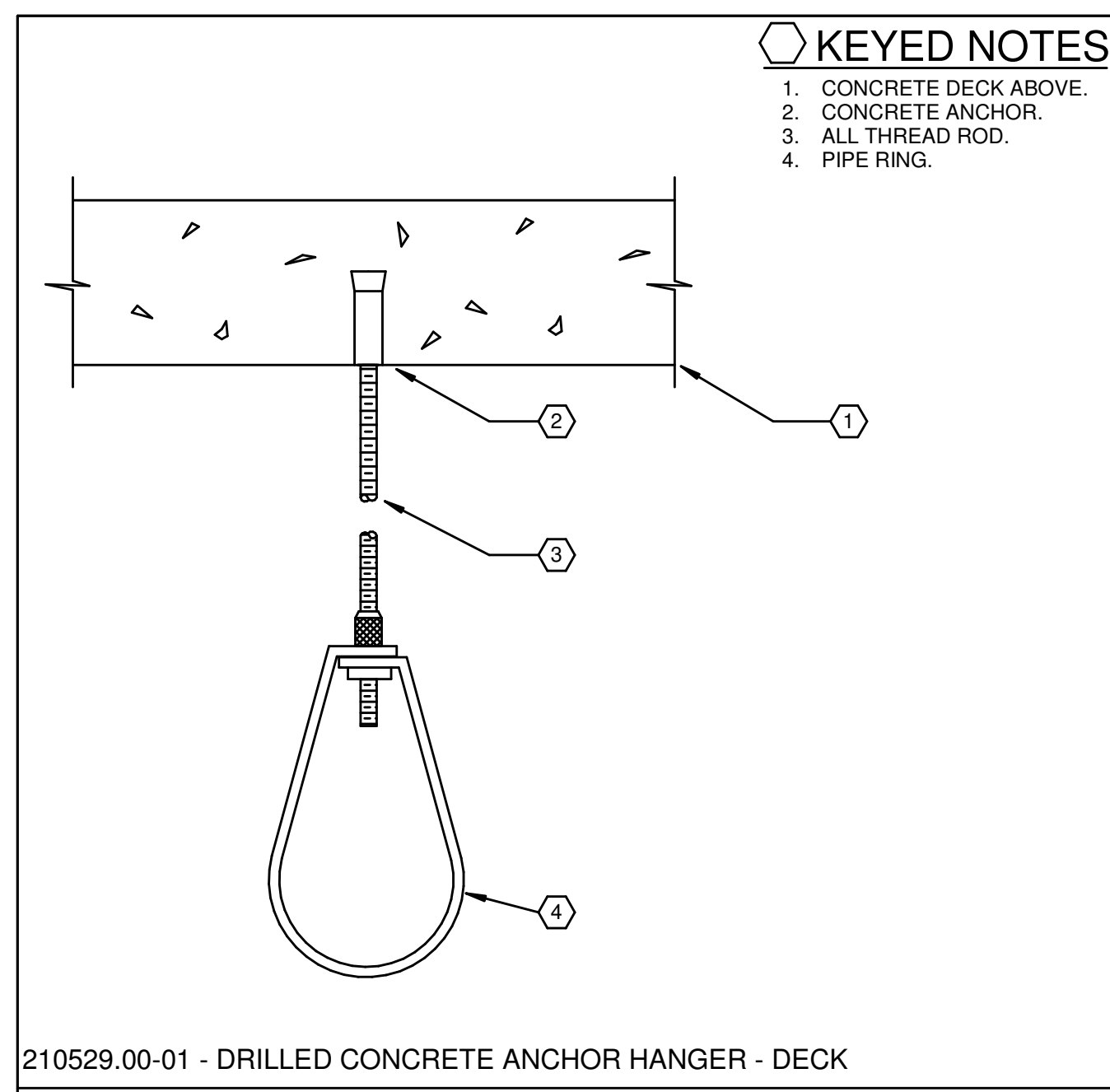
Reflected Ceiling Plan  
Lowest Level "C" Floor Plan



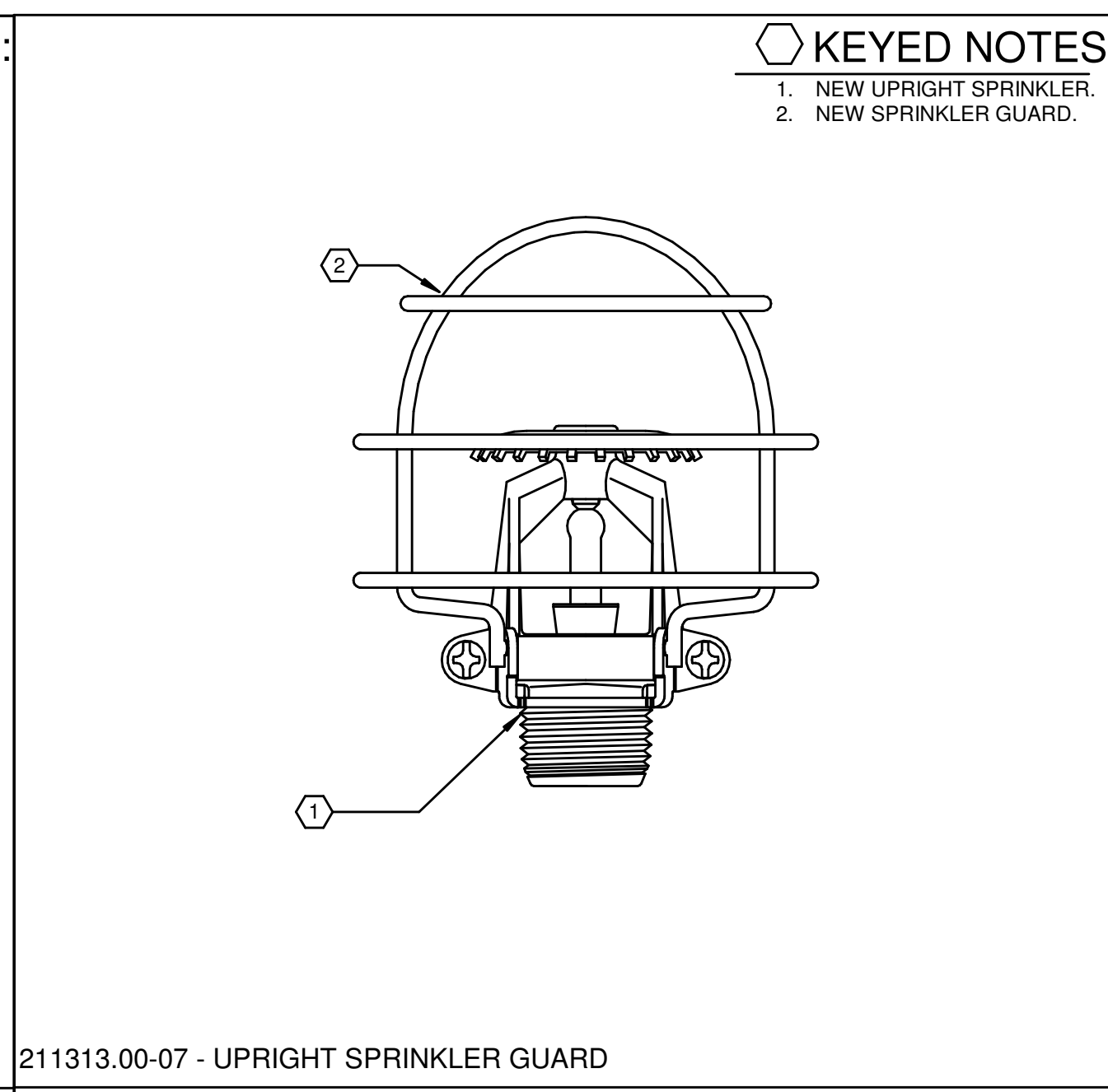
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DATE 10/13/23

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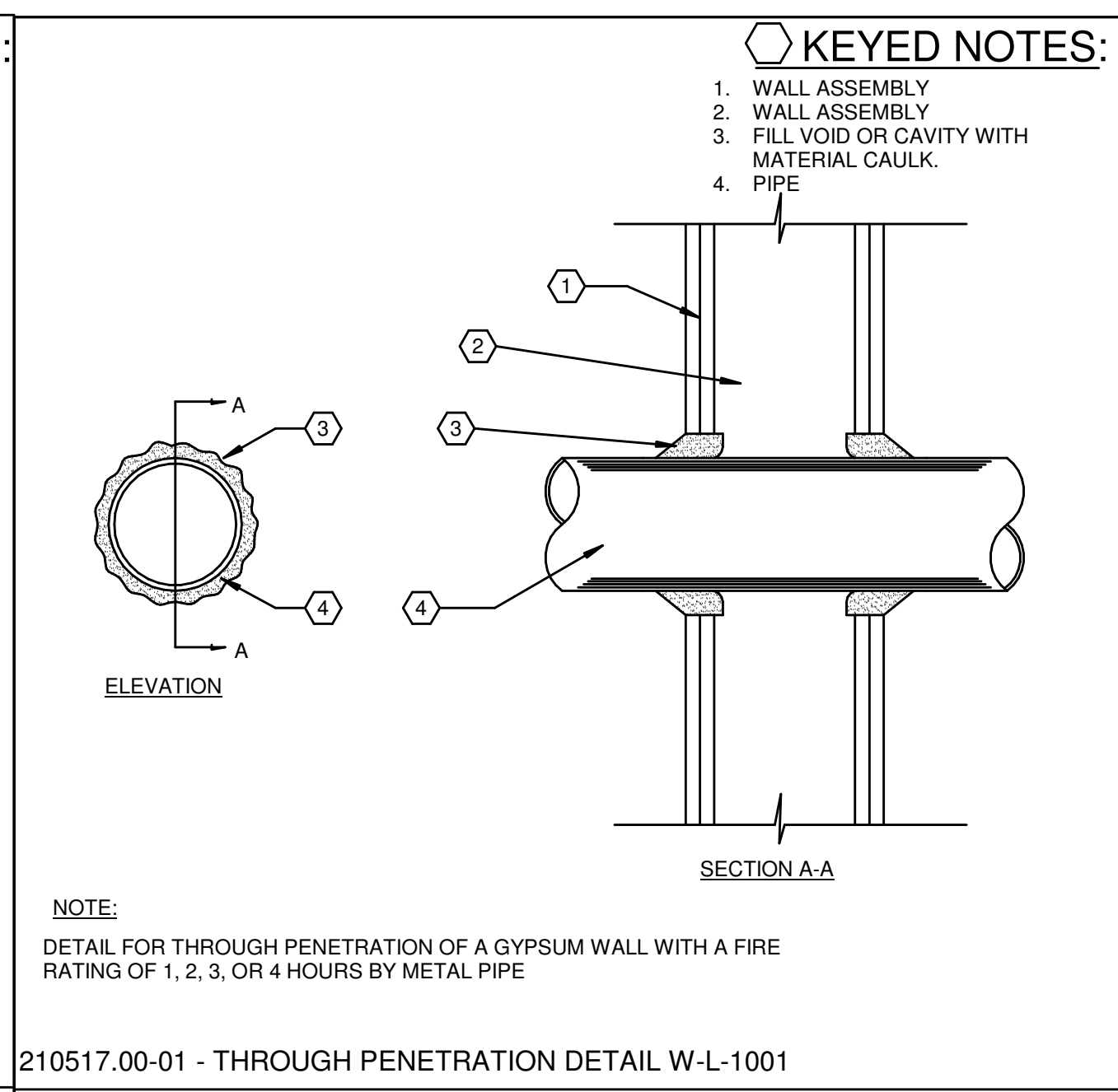
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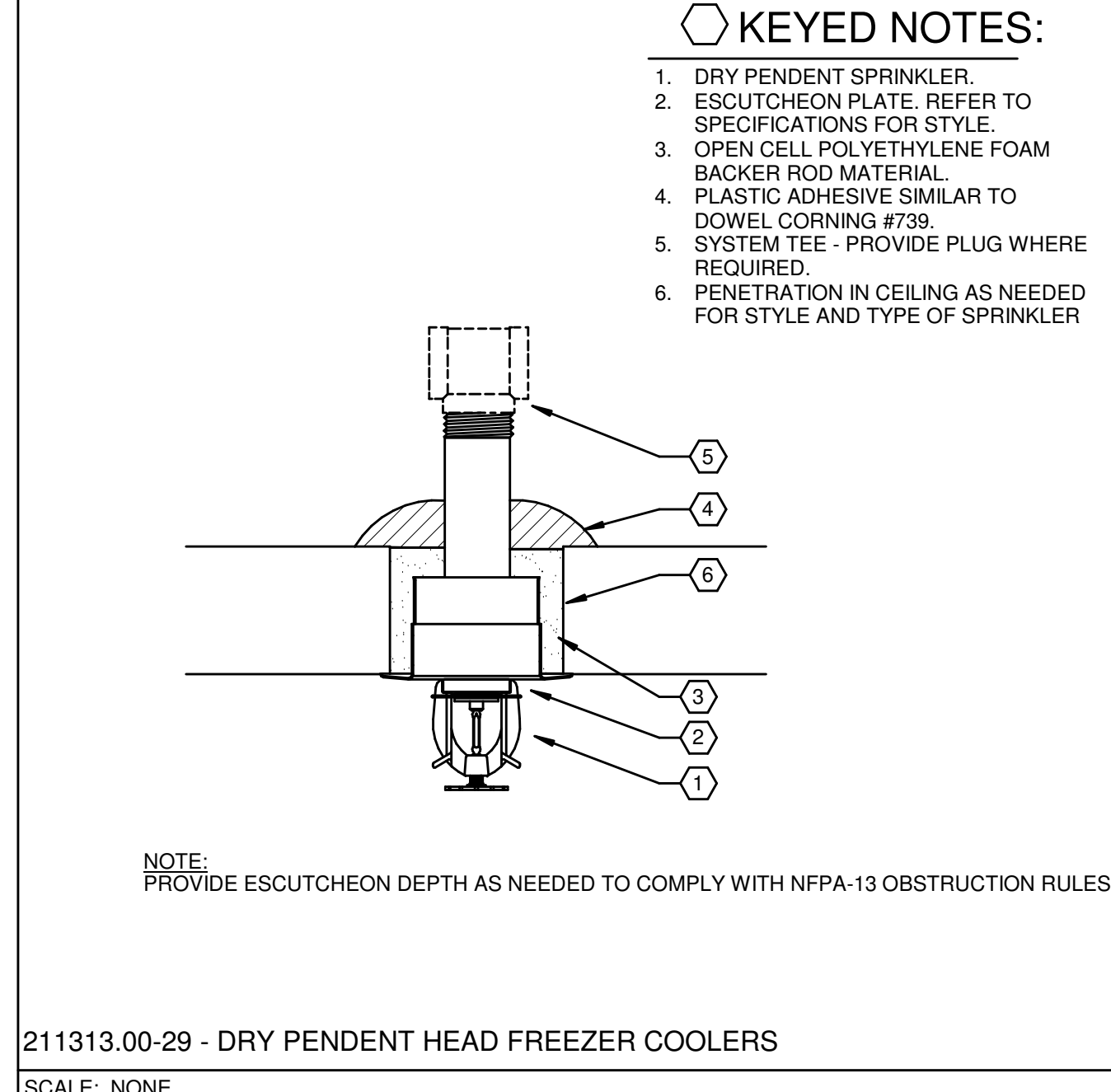
210529.00-01 - DRILLED CONCRETE ANCHOR HANGER - DECK  
SCALE: NONE



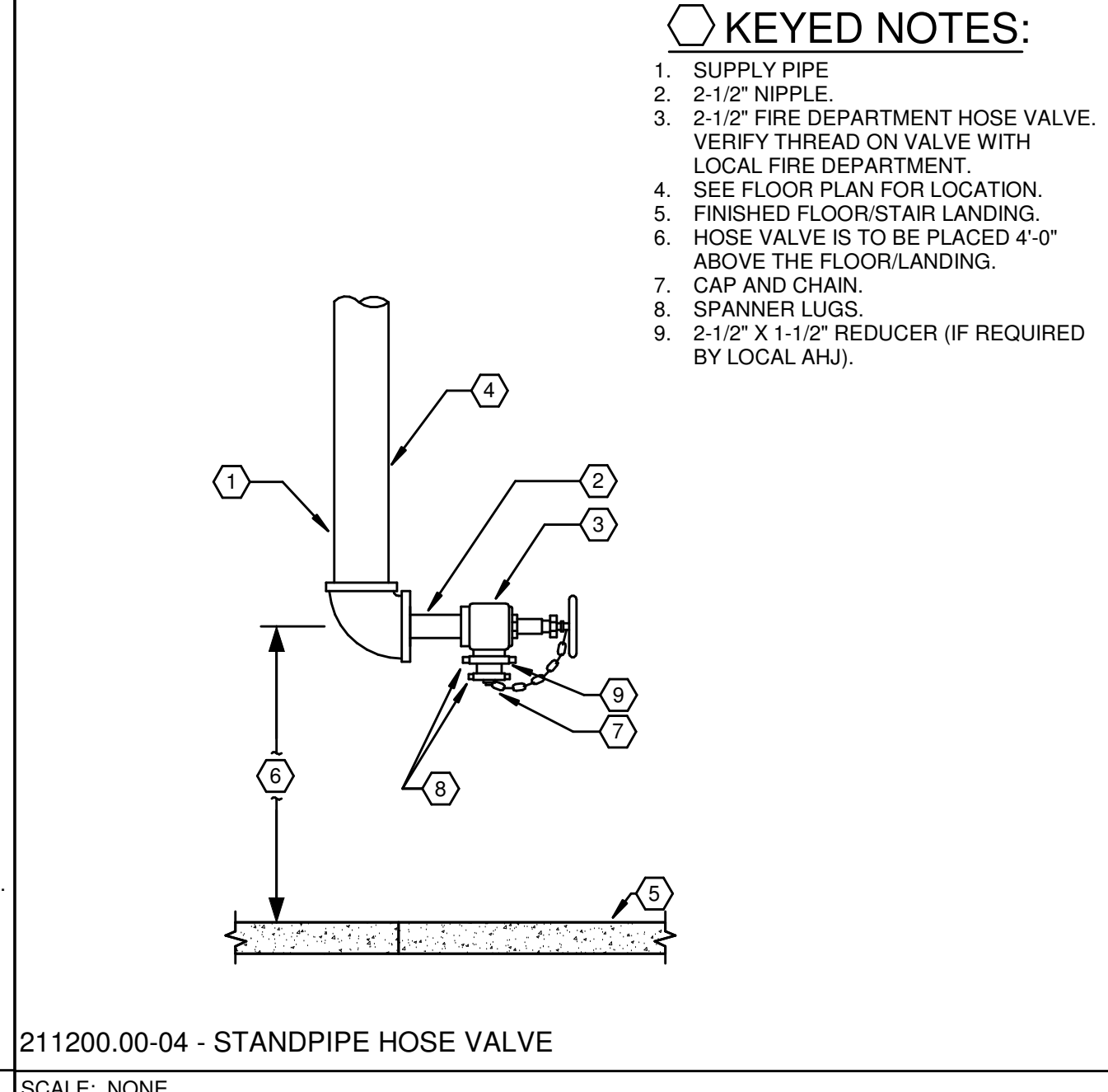
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SCALE: NONE



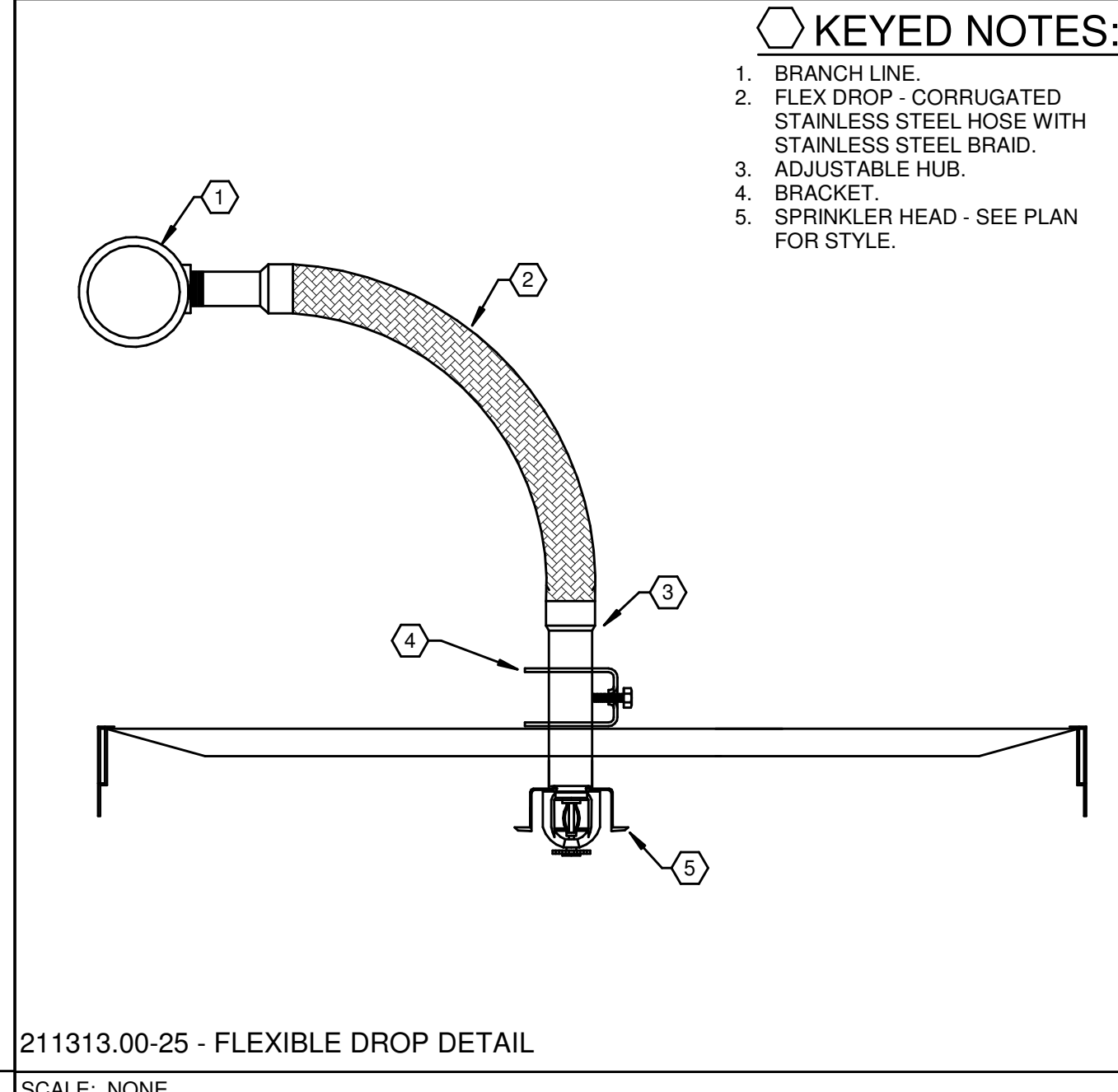
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SCALE: NONE



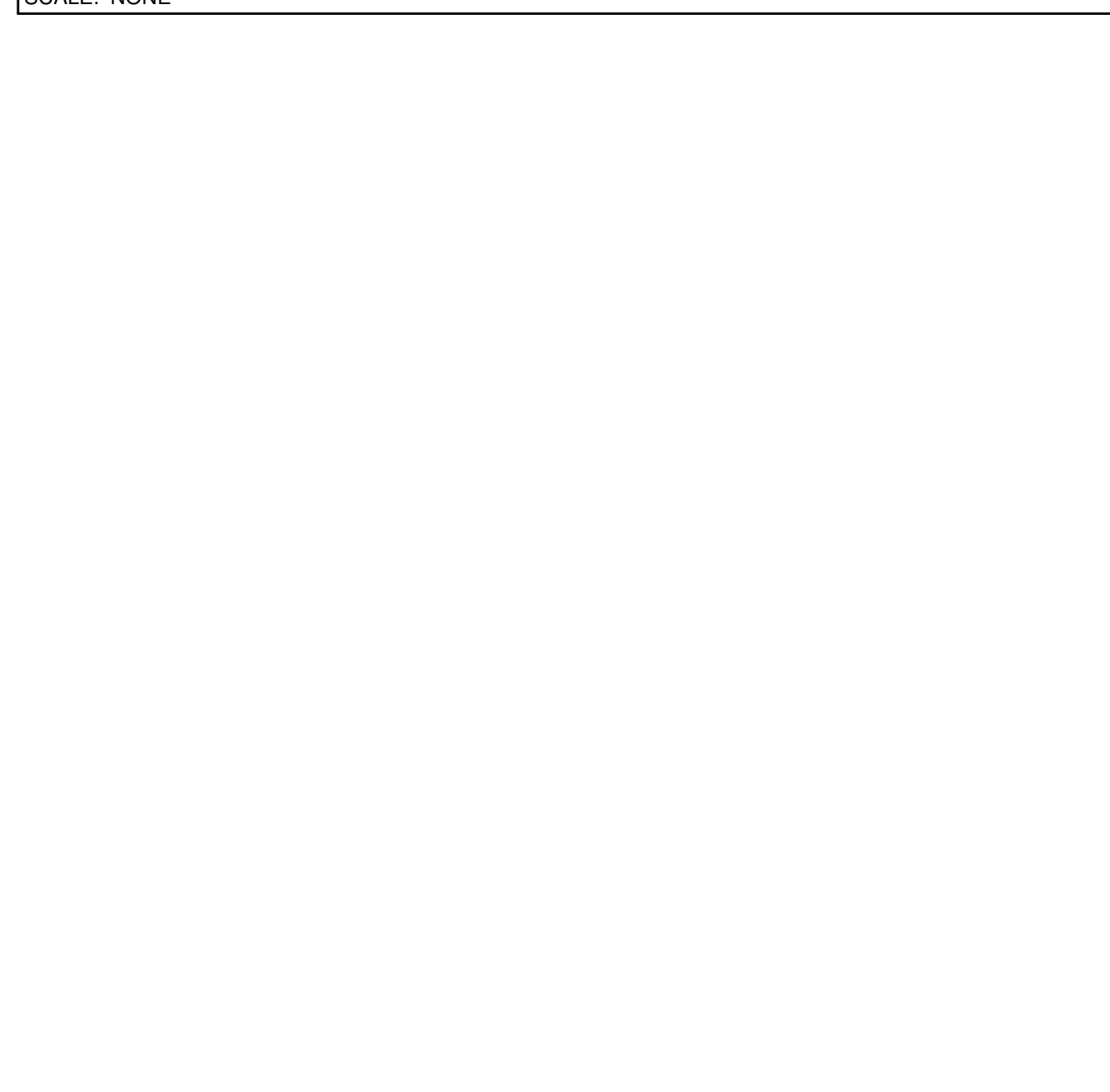
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SCALE: NONE



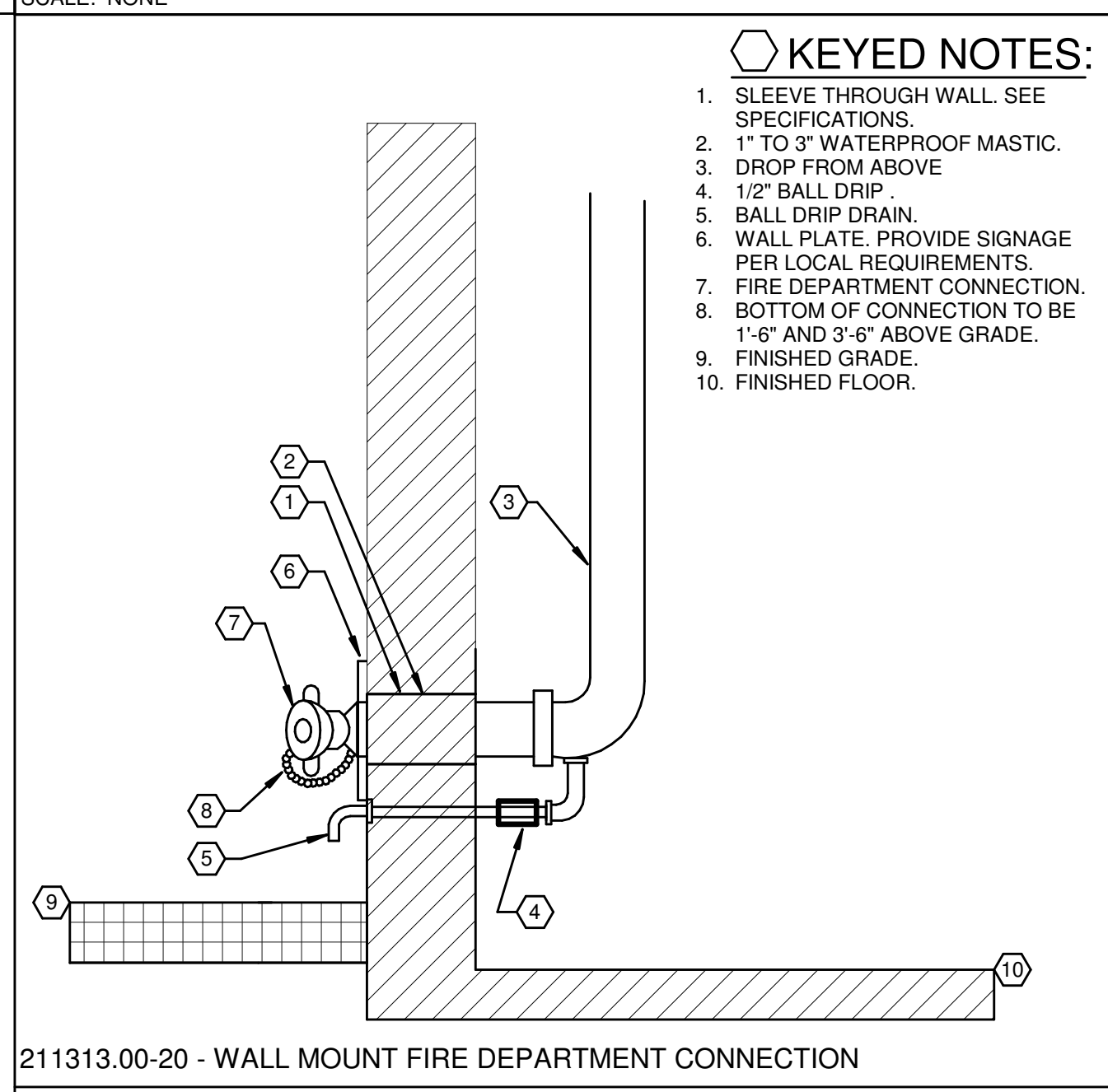
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SCALE: NONE



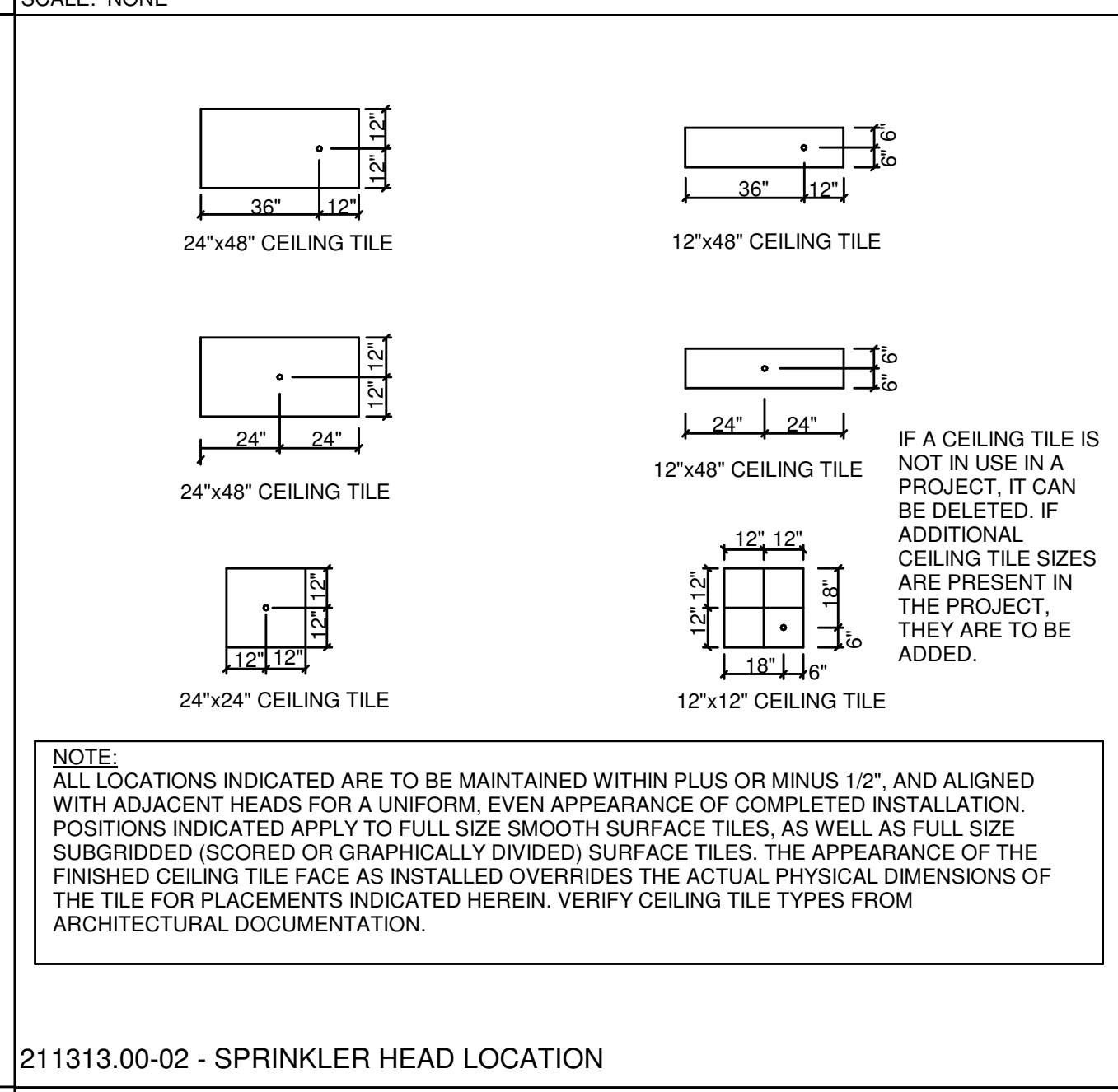
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SCALE: NONE



211313.00-20 - WALL MOUNT FIRE DEPARTMENT CONNECTION  
SCALE: NONE



211313.00-02 - SPRINKLER HEAD LOCATION  
SCALE: NONE



211200.00-05 - FLOOR CONTROL ASSEMBLY  
SCALE: NONE

FIRE PROTECTION LEGEND	
SYMBOL	DESCRIPTION
PIPING LINE TYPES	
	WORK SHOWN SOLID INDICATES NEW WORK BY OTHERS AS APPLICABLE
	WORK SHOWN BOLD-DASHED INDICATES SELECTIVE DEMOLITION WORK
	WORK SHOWN BOLD-CONTINUOUS INDICATES NEW WORK
	NEW WET FIRE PROTECTION PIPING

**DRAWING SET APPEARANCE**

TO BETTER COMMUNICATE SCOPE TO PERMIT AGENCIES AND CONTRACTORS, EACH DRAWING IN THIS DRAWING SET HAS BEEN CREATED IN BOTH "COLOR" AND "BLACK AND WHITE". THERE EXISTS A COLOR LAYER WITHIN EACH DRAWING WHERE VISIBILITY IS CONTROLLED THROUGH THE PDF LAYER MANAGER. THIS LAYER VISIBILITY CAN BE TOGGLED DISPLAYING EITHER "COLOR" OR "BLACK AND WHITE". TO MAINTAIN SCOPE BASED SHADING FLOOR PRINTING TO PAPER, BLACK AND WHITE NEEDS TO BE VISIBLE. FOR FURTHER INSTRUCTIONS, REFER TO CONTRACTOR RESOURCES ON OUR WEBSITE AND DOWNLOAD "DRAWING COLOR INSTRUCTIONS".  
WWW.KLHENGINEERS.COM - CONTRACTOR RESOURCES (RIGHT HAND SIDE OF PAGE).

SPRINKLER HEAD TYPES	
N, X, D	SPRINKLER TAG (NEW, EXISTING TO REMAIN, DEMOLITION)
	CONCEALED WHITE PLATE SPRINKLER
	RECESSED PENDENT SPRINKLER
	BRASS UPRIGHT SPRINKLER
	SIDEWALL SPRINKLER
	SIDEWALL CONCEALED SPRINKLER
	MISCELLANEOUS SPRINKLER
	EXTENDED COVERAGE CONCEALED WHITE PLATE SPRINKLER
	EXTENDED COVERAGE RECESSED PENDENT SPRINKLER
	EXTENDED COVERAGE BRASS UPRIGHT SPRINKLER
	EXTENDED COVERAGE SIDEWALL SPRINKLER
	DRY CONCEALED WHITE PLATE SPRINKLER
	DRY RECESSED PENDENT SPRINKLER
	DRY BRASS UPRIGHT SPRINKLER
	DRY SIDEWALL SPRINKLER
	EXTENDED COVERAGE DRY CONCEALED WHITE PLATE SPRINKLER
	EXTENDED COVERAGE DRY RECESSED PENDENT SPRINKLER
	EXTENDED COVERAGE DRY SIDEWALL SPRINKLER
	EXTENDED COVERAGE BRASS UPRIGHT SPRINKLER ON SPRIG
	BRASS UPRIGHT SPRINKLER ON SPRIG

PIPING ACCESSORIES	
	FIRE PROTECTION SYSTEM STANDPIPE WITH HOSE VALVES
	CONTROL VALVE WITH TAMPER SWITCH
	FLOW SWITCH
	FIRE DEPARTMENT CONNECTION
	ELECTRIC ALARM BELL

HAZARD OCCUPANCY	
	LIGHT HAZARD OCCUPANCY
	ORDINARY HAZARD OCCUPANCY GROUP 1
	ORDINARY HAZARD OCCUPANCY GROUP 2
	EXTRA HAZARD OCCUPANCY GROUP 1
	EXTRA HAZARD OCCUPANCY GROUP 2
	RESIDENTIAL OCCUPANCY GROUP
	ACOUSTIC CEILING TILE
	GYPSON BOARD CEILING
	EXPOSED CEILING

21T-008 - F LEGEND  
SCALE: NONE

**FIELD VERIFY ALL CONDITIONS**

DESIGN DRAWINGS ARE SCHEMATIC. THIS CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING OR AWARD OF CONTRACT TO INSURE EXISTING FIELD CONDITIONS. THIS CONTRACTOR SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS.

THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER, OR OWNER PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT, ENGINEER, OR OWNER AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTOR'S COST.

BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES, THE PLANS, AND SPECIFICATIONS NOT WITHSTANDING. THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER, OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.

21T-006 - FIELD VERIFY ALL CONDITIONS  
SCALE: NONE

**GENERAL FIRE PROTECTION NOTES**

A. RENOVATED AND NEW AREAS SHALL BE 100% SPRINKLERED.  
B. COORDINATE CLOSELY WITH OTHER TRADES. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.  
C. ALL SPRINKLER WORK SHALL BE INSTALLED PER NFPA 13, BUILDING CODE, AND OWNERS INSURANCE CARRIER REQUIREMENTS.  
D. MAKE PROVISIONS FOR DRAINING AND PROVIDE INSPECTOR TESTS AS REQUIRED. ALL DRAIN PIPING SHALL BE PIPED TO OUTSIDE OR INDIRECTLY TO SINK OR FLOOR DRAIN.  
E. COORDINATE EXACT LOCATION OF PIPING AND HEADS WITH REFLECTED CEILING PLANS, MECHANICAL, AND ELECTRICAL DRAWINGS.  
F. ALL HOSE VALVES AND FIRE DEPARTMENT CONNECTIONS SHALL MATCH LOCAL FIRE DEPARTMENT THREADS.  
G. ALL FIRE SUPPRESSION WORK SHALL BE PERFORMED BY A FIRE PROTECTION CONTRACTOR LICENSED IN THE STATE OF KENTUCKY.  
H. ALL SPRINKLER HEADS SHALL BE LOCATED IN CENTER OF CEILING TILE, PLUS OR MINUS ONE HALF INCH.  
I. SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CORE DRILLING, CUTTING AND PATCHING FOR SPRINKLER WORK IN ALL AREAS OF BUILDING. REFER TO SPECIFICATIONS.  
J. LOCAL FIRE DEPARTMENT IS REQUIRING 2 FDCS FOR THIS PROJECT. ONE IS TO BE LOCATED ON THE NORTH SIDE OF THE BUILDING AT THE NEW METER PIT. THE SECOND FDC IS TO BE LOCATED ON THE LOWEST LEVEL AT THE SOUTH SIDE OF THE BUILDING. COORDINATE ALL LOCATIONS WITH THE LOCAL FIRE CHIEF.  
K. FIRE PROTECTION CONTRACTOR TO PROVIDE ALL NECESSARY ADDITIONAL PIPING FOR THE PHASING OF THIS PROJECT. REFER TO THE ARCHITECT'S PHASING PLAN FOR ADDITIONAL INFORMATION.  
L. FLOW TEST WAS PERFORMED ON 9-2-2023 ON GRANDVIEW AVE. AT THE SCHOOL ENTRANCE BY KLH ENGINEERS AND NAY W.D. STATIC PRESSURE 86 PSI, RESIDUAL PRESSURE OF 78 PSI, AND A FLOW OF 1942 GPM.  
M. THESE PLANS ARE PROVIDED TO ASSIST CONTRACTORS IN DEVELOPING AN ACCURATE FIRE PROTECTION BID. THESE PLANS WERE NOT PREPARED FOR SUBMITTAL TO AHS FOR APPROVAL OF FIRE PROTECTION SYSTEMS.  
N. THE CONTRACTOR SHALL INCLUDE ALL WORK AND ADMINISTRATIVE COSTS OF INSTALLING THE FIRE PROTECTION SYSTEM. THESE COSTS INCLUDE, BUT ARE NOT LIMITED TO: ALL MATERIALS AND PHYSICAL LABOR REQUIRED TO INSTALL FIRE PROTECTION SYSTEMS, AS WELL AS PREPARATION OF DRAWINGS AND HYDRAULIC CALCULATIONS.  
O. CONTRACTOR SHALL PAY FOR PLAN APPROVAL FEES, OBTAIN PERMIT, AND SUBMIT COMPLETE SPRINKLER DRAWINGS AND HYDRAULIC CALCULATIONS TO THE AHJ.  
P. PRIOR TO SUBMITTING BID, THE FIRE PROTECTION CONTRACTOR SHALL EXAMINE THE PROJECT CONTRACT DOCUMENTS TO DEVELOP A COMPLETE UNDERSTANDING OF THE ENTIRE SCOPE OF WORK.

21T-005 - GENERAL SPRINKLER NOTES  
SCALE: NONE

MECHANICAL/ELECTRICAL ENGINEERS  
WWW.KLHENGINEERS.COM  
LEINGTON, KENTUCKY  
LOUISVILLE, KENTUCKY  
FT. THOMAS, KENTUCKY 41075  
855-446-8558 FAX  
855-446-8558 FAX

**Grandview Elementary School HVAC Reno.**  
500 Grandview Ave, Bellevue, KY 41073

PRELIMINARY  
NOT FOR CONSTRUCTION

REVISIONS	

DWN: GRS    CHK: SKV  
DATE: 10-13-2023  
PROJECT #: 24599.00

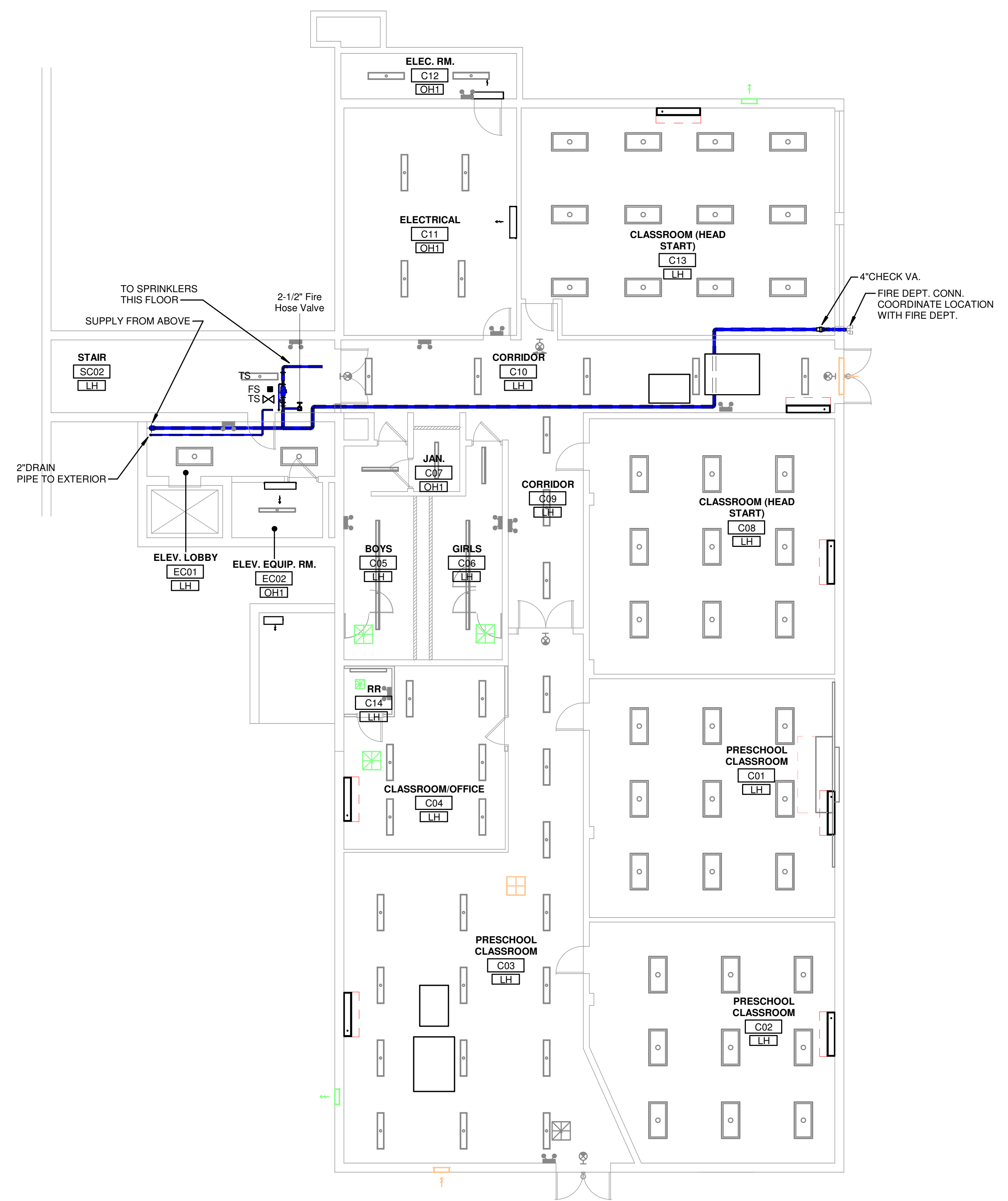
FIRE PROTECTION NOTES AND DETAILS

**F0-001**  
1" REFERENCE  
KLH PROJECT # 24599

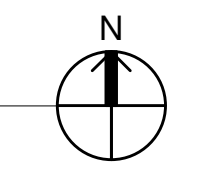
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**KEYED NOTES**



1 FIRE PROTECTION PLAN - LEVEL C - LEVEL C  
 1/8" = 1'-0"



**KLH ENGINEERS**  
 MECHANICAL/ELECTRICAL ENGINEERS  
 WWW.KLHENGINEERS.COM  
 KOHRS LONNEMANN HELL ENGINEERS, INC.  
 1558 ALEXANDRIA PIKE, SUITE 11  
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 LEWISTON, KENTUCKY  
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 NEW YORK, NEW YORK

**Grandview Elementary School HVAC Reno.**  
 500 Grandview Ave, Bellevue, KY 41073

PRELIMINARY  
 NOT FOR CONSTRUCTION

REVISIONS

NO.	DESCRIPTION	DATE

DWN: GRS    CHK: SKV  
 DATE: 10-13-2023  
 PROJECT #: 24599.00

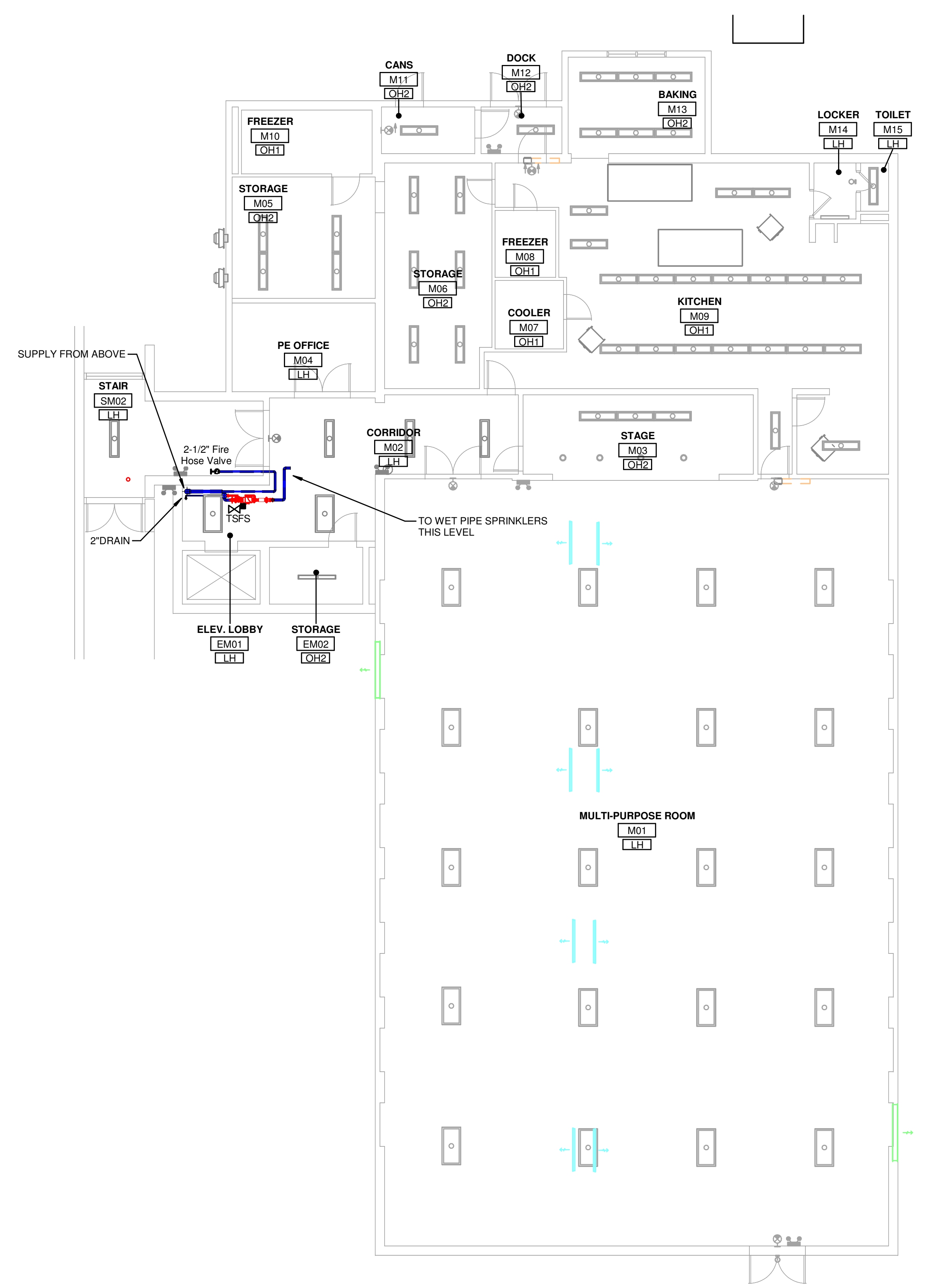
FIRE PROTECTION  
 LEVEL C PLAN  
 LEVEL C

**F3-100**  
 1" REFERENCE  
 KLH PROJECT #  
 24599

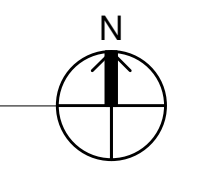
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**KEYED NOTES**



① FIRE PROTECTION PLAN - LEVEL M - LEVEL M  
 1/8" = 1'-0"



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REVISIONS

NO.	DESCRIPTION	DATE

DWN: GRS    CHK: SKV  
 DATE: 10-13-2023  
 PROJECT #: 24599.00

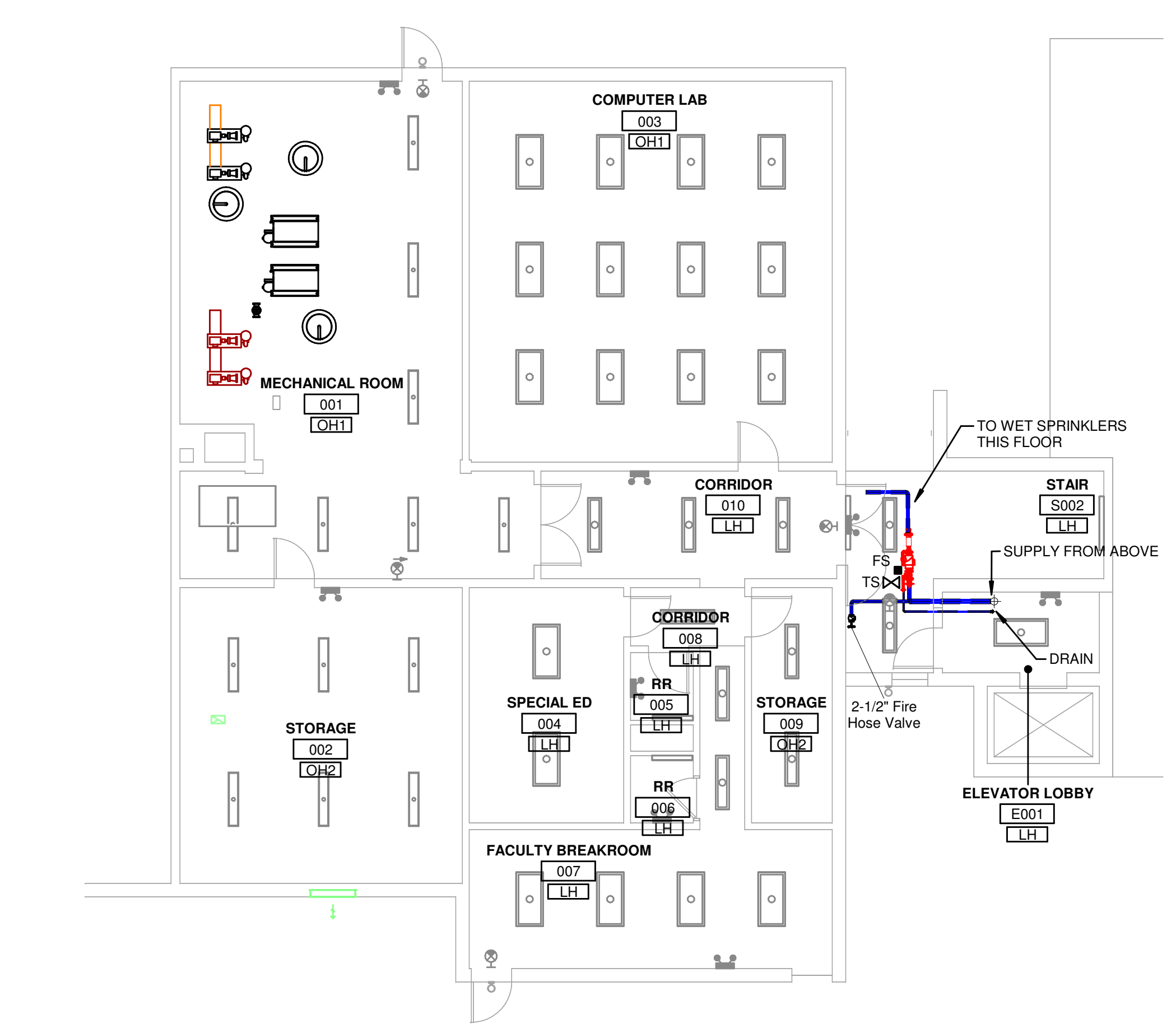
FIRE PROTECTION  
 LEVEL M PLAN  
 LEVEL M

**F3-101**

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1 FIRE PROTECTION PLAN - LEVEL B - LEVEL B  
 1/8" = 1'-0"

KEYED NOTES

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FIRE PROTECTION  
 LEVEL B PLAN  
 LEVEL B

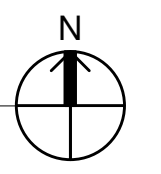
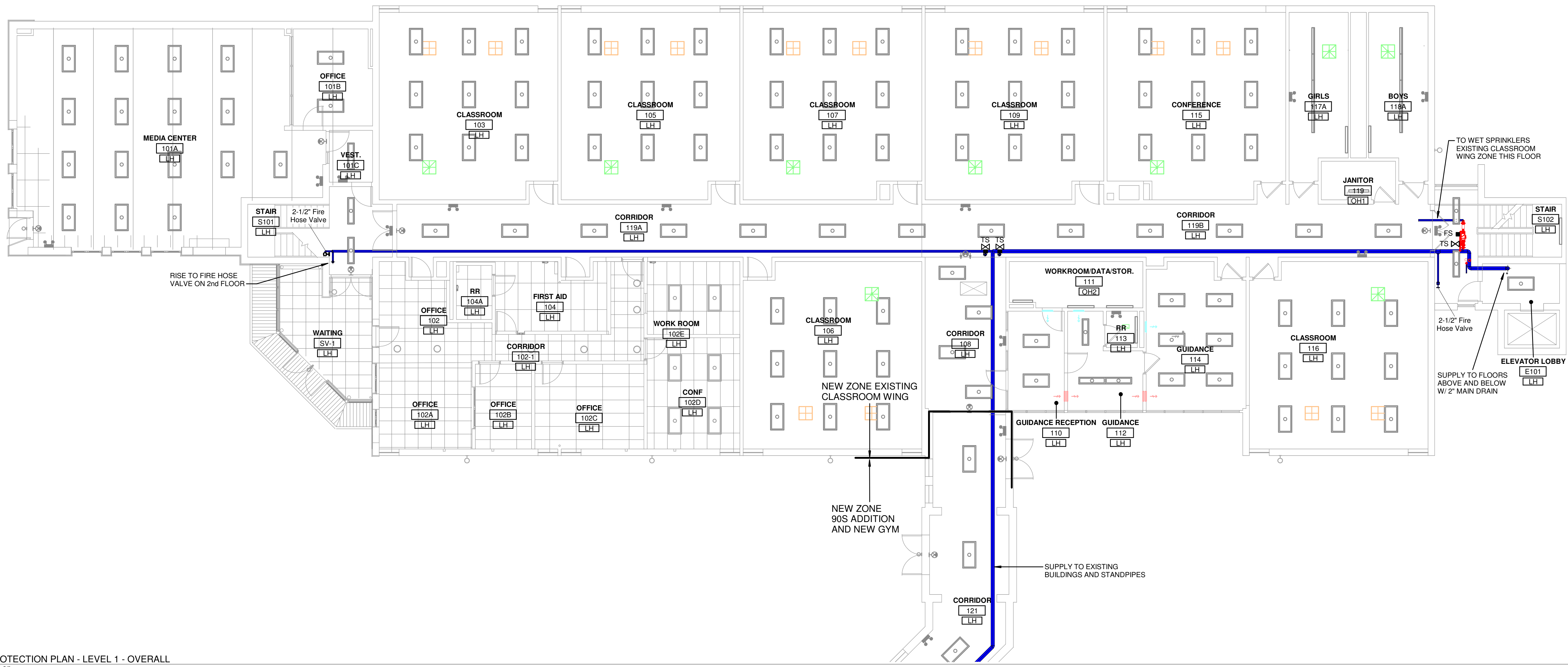
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1 FIRE PROTECTION PLAN - LEVEL 1 - OVERALL  
 1/8" = 1'-0"



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FIRE PROTECTION  
 LEVEL 1 PLAN  
 OVERALL

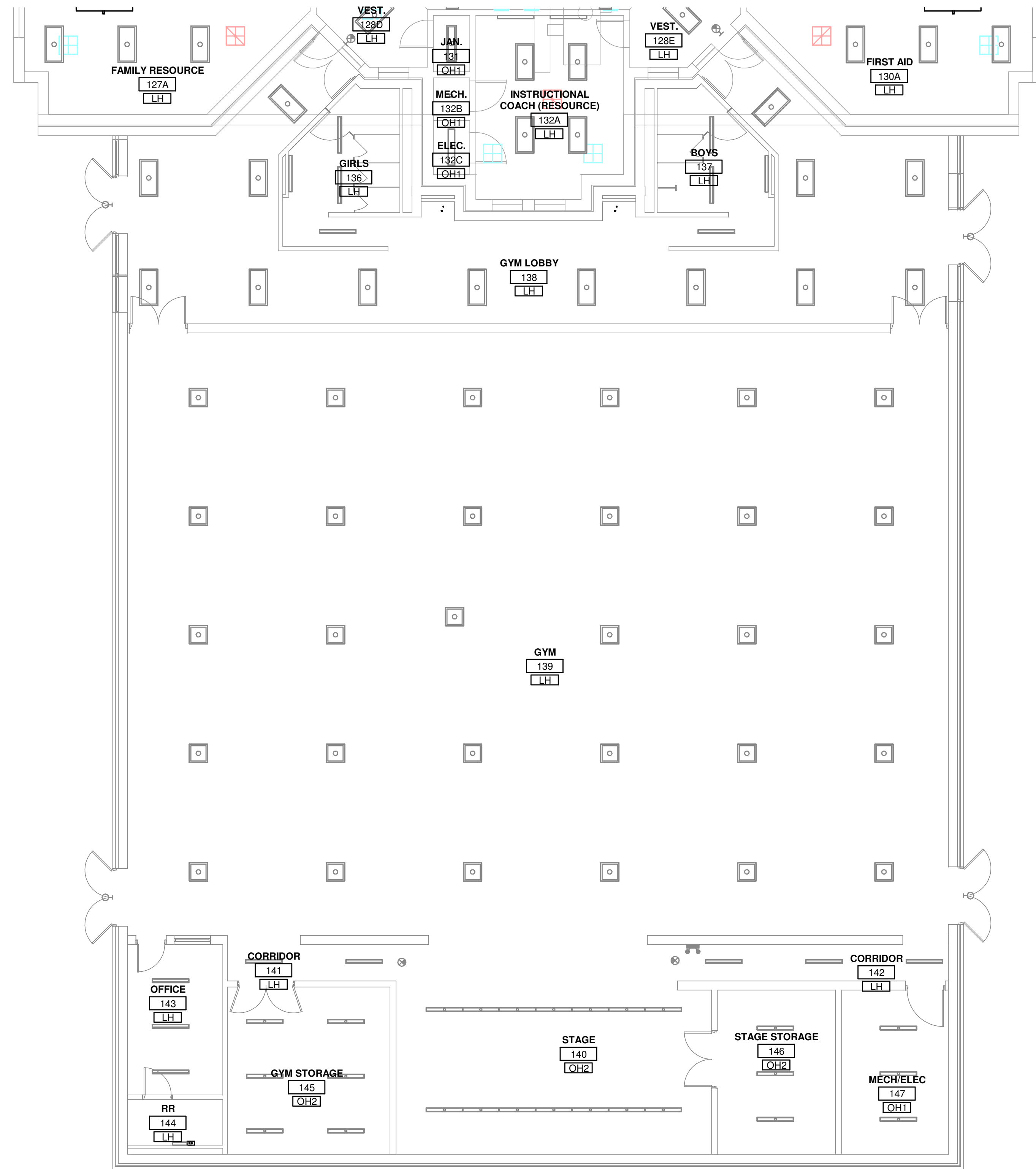
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 1" REFERENCE  
 KLH PROJECT #  
 24599



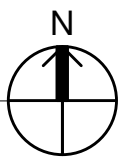
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KEYED NOTES



1 FIRE PROTECTION PLAN - LEVEL 1 - NEW GYM  
 1/8" = 1'-0"



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FIRE  
 PROTECTION  
 LEVEL 1 PLAN  
 NEW GYM

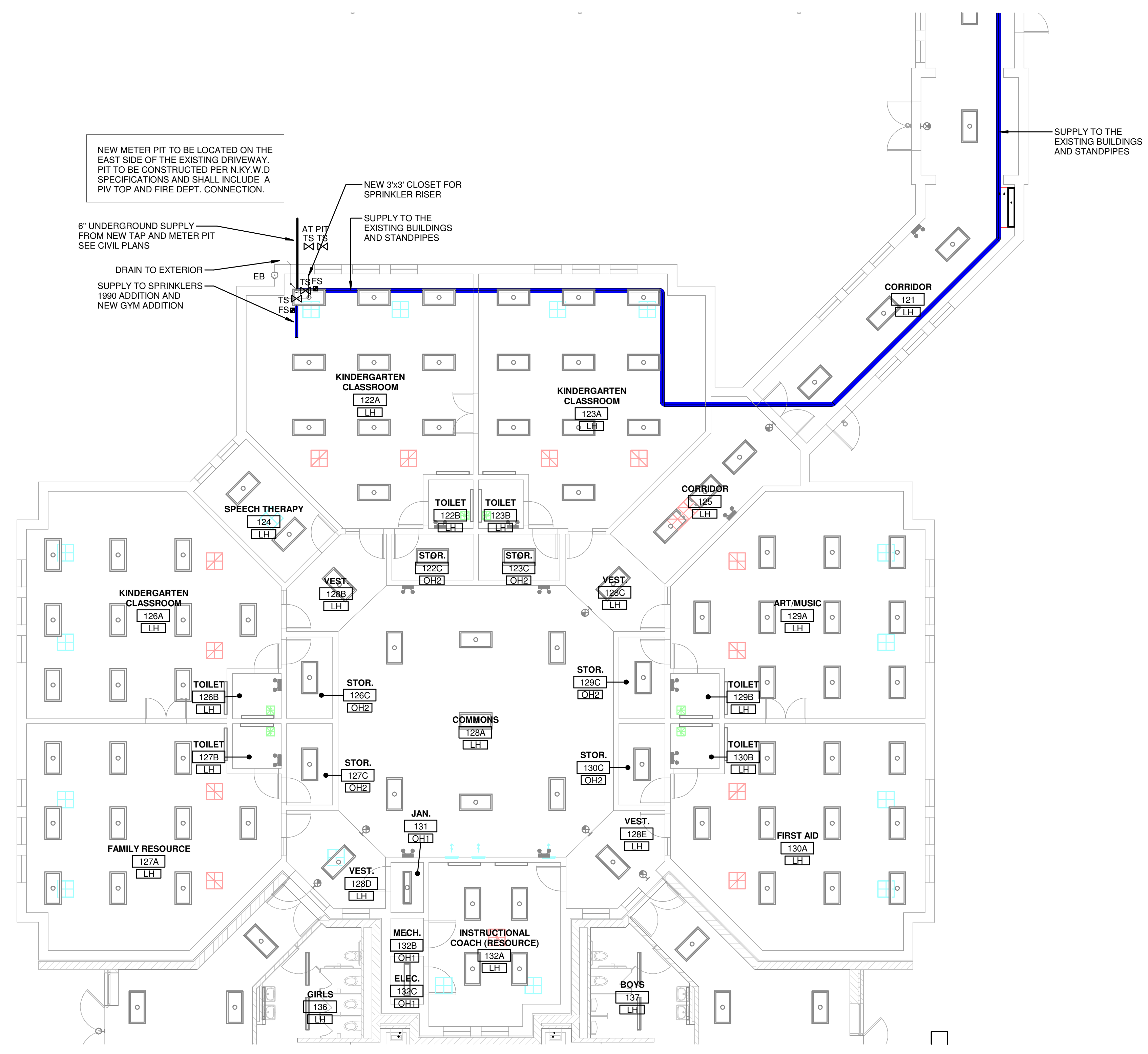
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**KEYED NOTES**



1 FIRE PROTECTION PLAN - LEVEL 1 - 90S ADDITION  
 1/8" = 1'-0"

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FIRE PROTECTION  
 LEVEL 1 PLAN  
 90S ADDITION

**F3-105**  
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1 FIRE PROTECTION PLAN - LEVEL 2 - OVERALL  
 1/8" = 1'-0"



KEYED NOTES

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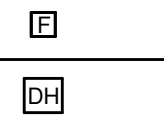
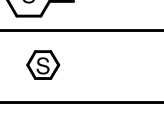

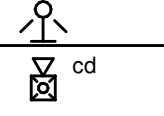
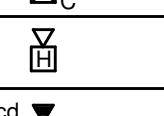
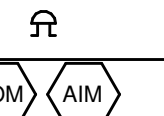
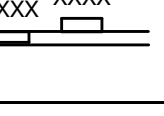
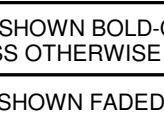
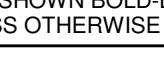






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FIRE PROTECTION  
 LEVEL 2 PLAN  
 OVERALL

F3-106  
 1" REFERENCE  
 KLH PROJECT #  
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FIRE ALARM LEGEND	
SYMBOL	DESCRIPTION
FIRE ALARM DEVICES	
	FIRE ALARM SYSTEM MANUAL PULL STATION
	FIRE ALARM SYSTEM ELECTROMAGNETIC DOOR HOLDER
	FIRE ALARM DUCT SMOKE DETECTOR AND SAMPLING TUBE
	FIRE ALARM SMOKE DETECTOR - CEILING MOUNTED - PHOTOELECTRIC
	FIRE ALARM SMOKE DETECTOR - WALL MOUNTED - PHOTOELECTRIC
	FIRE ALARM HEAT DETECTOR - CEILING MOUNTED - COMBINATION FIXED-TEMPERATURE AND RATE-OF-RISE
	CARBON MONOXIDE DETECTOR
	FIRE ALARM SYSTEM STROBE ONLY DEVICE (PROVIDE CANDELA (cd) RATING FOR STROBE AS INDICATED ON DRAWINGS)
	FIRE ALARM SYSTEM HORN / STROBE DEVICE (PROVIDE CANDELA (cd) RATING FOR STROBE AS INDICATED ON DRAWINGS)
	FIRE ALARM SYSTEM CEILING / OVERHEAD MOUNTED HORN / STROBE DEVICE (PROVIDE CANDELA (cd) RATING FOR STROBE AS INDICATED ON DRAWINGS)
	FIRE ALARM SYSTEM HORN DEVICE
	FIRE ALARM SYSTEM SPEAKER / STROBE DEVICE (PROVIDE CANDELA (cd) RATING FOR STROBE AS INDICATED ON DRAWINGS)
	FIRE SUPPRESSION SYSTEM WATER FLOW ALARM BELL AND ASSOCIATED CONTROL MODULE
	FIRE ALARM SYSTEM ADDRESSABLE OUTPUT MODULE (LEFT) FIRE ALARM SYSTEM ADDRESSABLE INPUT MODULE (RIGHT)
	FIRE ALARM PANELS (DIMENSIONS MAY VARY) FLUSH OR SURFACE MOUNTED AS INDICATED
	<b>FACP</b> - FIRE ALARM CONTROL PANEL <b>NSC</b> - NOTIFICATION BOOSTER PANEL <b>EVAC</b> - VOICE EVACUATION PANEL <b>SCP</b> - SMOKE CONTROL PANEL <b>SMP</b> - SPRINKLER MONITOR PANEL <b>FAA</b> - FIRE ALARM REMOTE ANNUNCIATOR <b>PRE</b> - PRE-ACTION SYSTEM CONTROL PANEL <b>FATC</b> - FIRE ALARM TERMINAL CABINET
PLAN-VIEW AND GRAPHIC LINE TYPES	
WORK SHOWN BOLD-CONTINUOUS INDICATES NEW WORK (UNLESS OTHERWISE INDICATED)	
WORK SHOWN FADED INDICATES EXISTING WORK TO REMAIN OR NEW WORK BY OTHERS AS APPLICABLE (UNLESS OTHERWISE INDICATED)	
WORK SHOWN BOLD-DASHED INDICATES SELECTIVE DEMOLITION WORK (UNLESS OTHERWISE INDICATED)	

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DATE: 10-13-2023  
PROJECT #: 24599.00

FIRE ALARM  
COVER SHEET

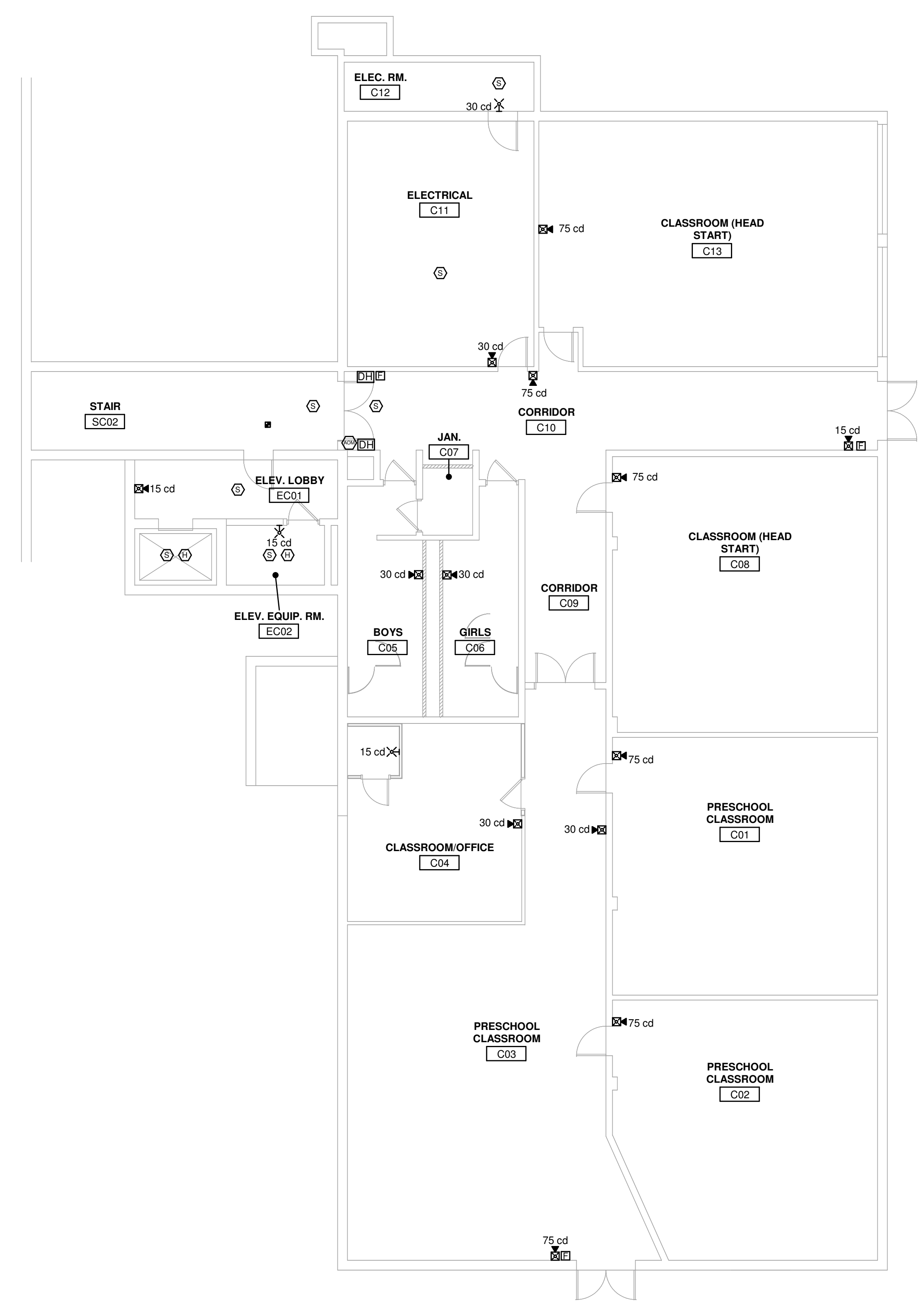
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KLH PROJECT #  
24599

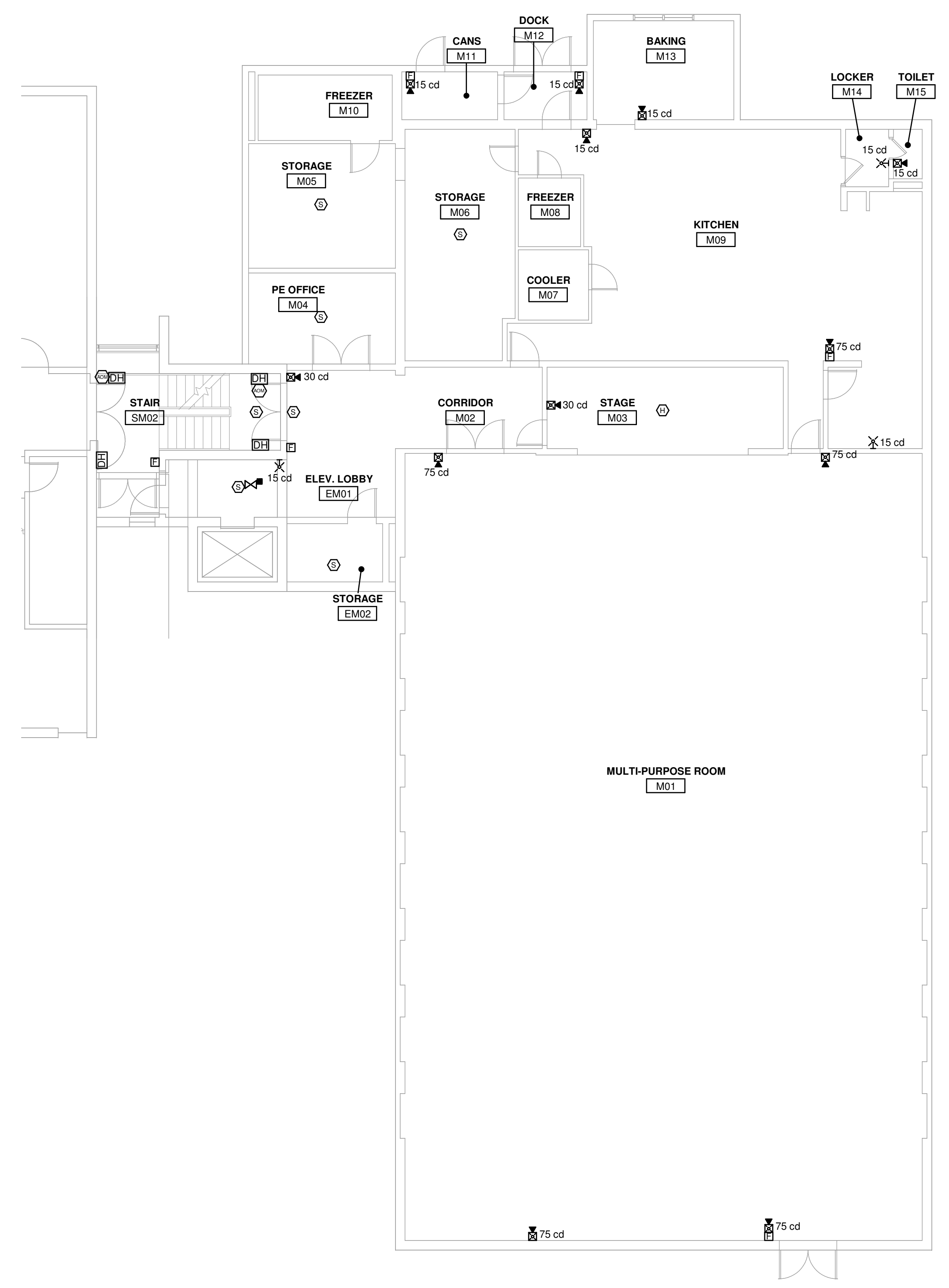
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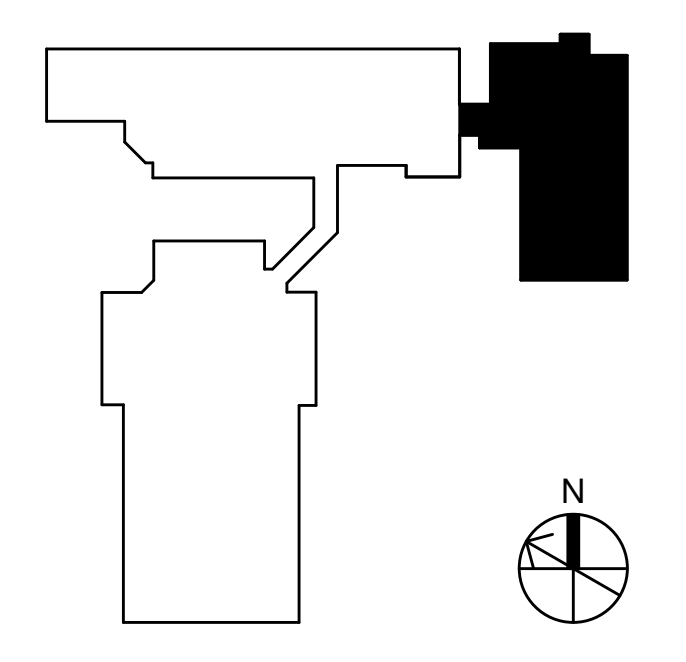
② FIRE ALARM PLAN - LEVEL C - (NEW CONSTRUCTION)  
 1/8" = 1'-0"



① FIRE ALARM PLAN - LEVEL M - (NEW CONSTRUCTION)  
 1/8" = 1'-0"



KEYED NOTES



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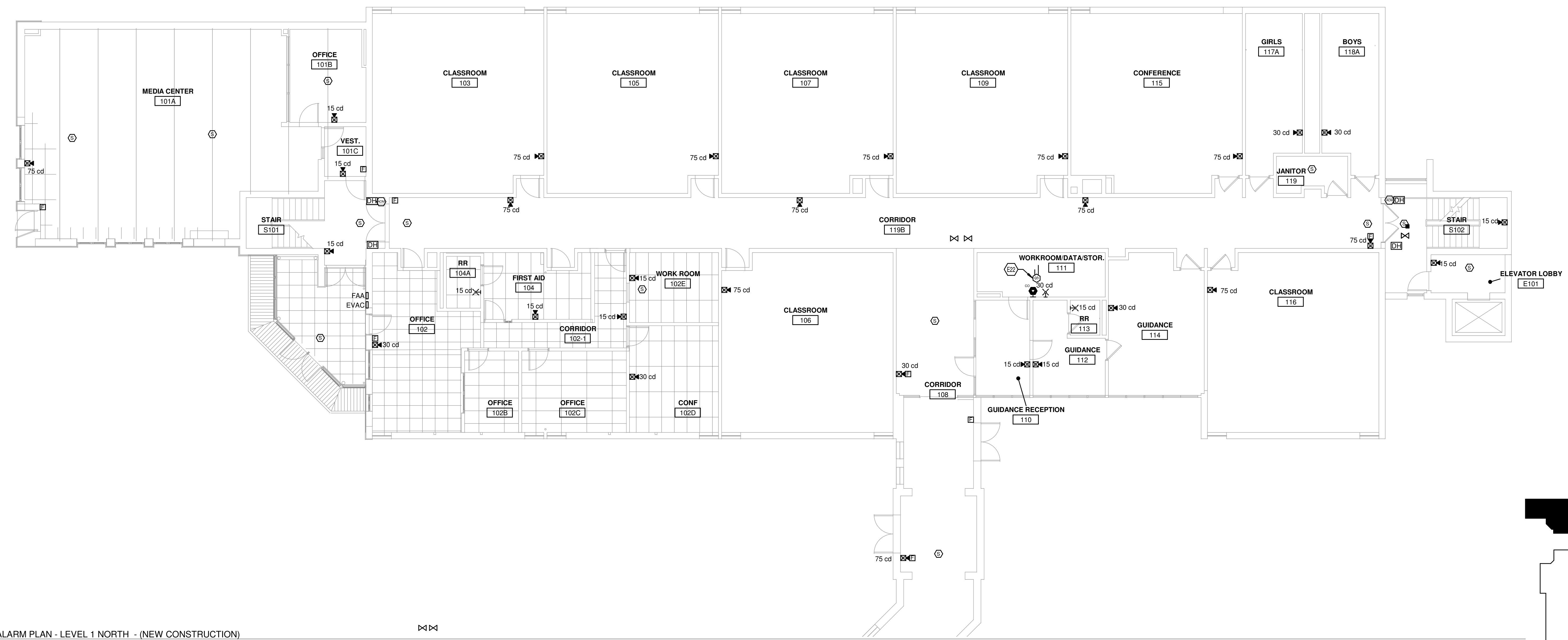
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 DATE: 10-13-2023  
 PROJECT #: 24599.00  
 FIRE ALARM PLAN LEVEL C & M

**FA-101**  
 1" REFERENCE  
 KLH PROJECT # 24599

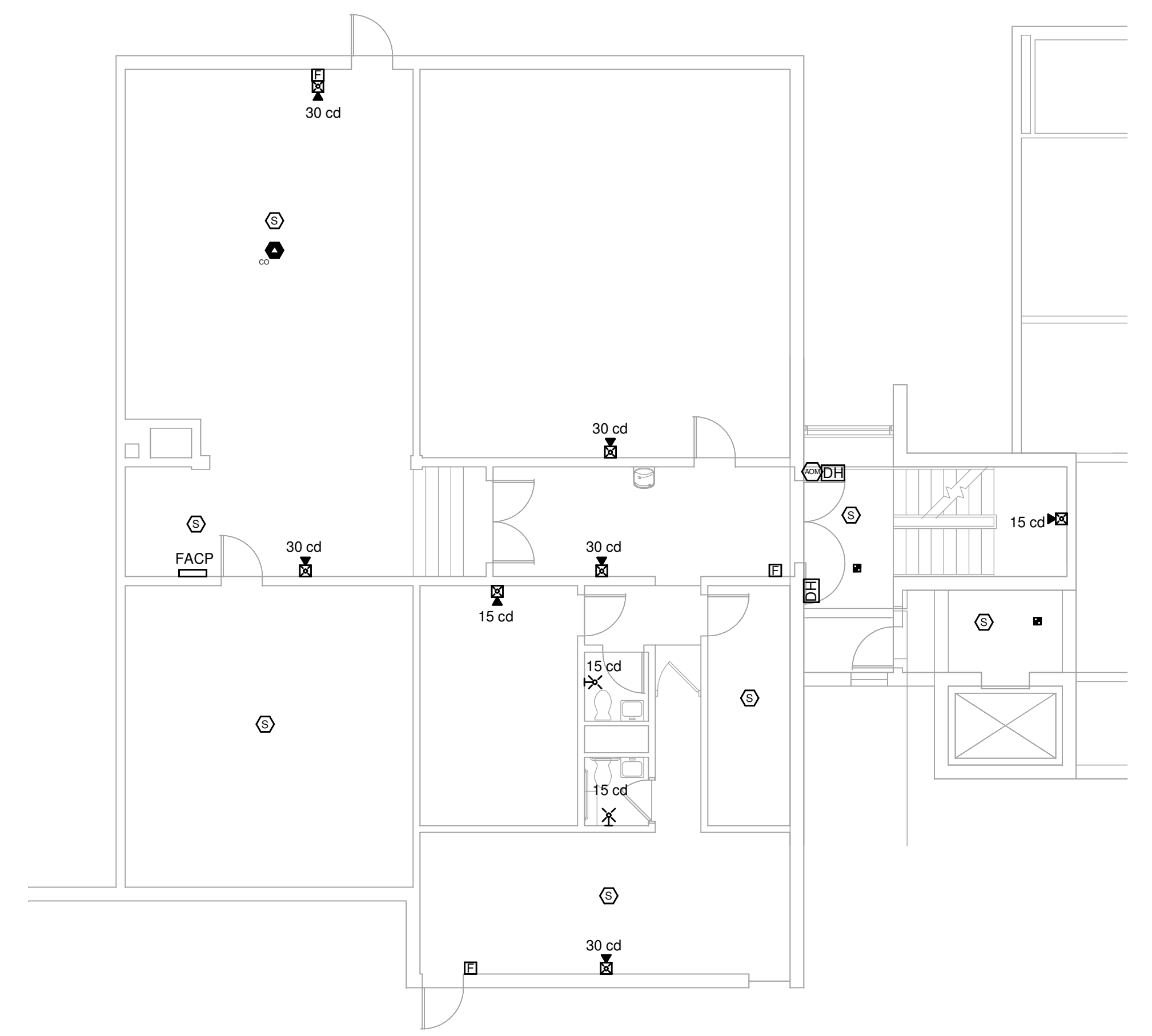
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② FIRE ALARM PLAN - LEVEL 1 NORTH - (NEW CONSTRUCTION)  
 1/8" = 1'-0"



① FIRE ALARM PLAN - LEVEL B - (NEW CONSTRUCTION)  
 1/8" = 1'-0"



**KEYED NOTES**

E22 SMOKE DETECTOR INDICATED IS FOR SHUTDOWN OF ASSOCIATED MECHANICAL EQUIPMENT (TAGGED ADJACENT TO THE DETECTOR). QUANTITY AND TYPE SHOWN IS SCHEMATIC ONLY. PROVIDE QUANTITIES AND TYPES AS NEEDED FOR THE SPECIFIC MEANS AND METHODS USED. MECHANICAL CONTRACTOR SHALL INSTALL ALL DETECTORS THAT ARE INSIDE OF DUCTWORK. PROVIDE ALL RELATED WORK SO THAT WHEN SMOKE IS DETECTED THE ASSOCIATED MECHANICAL EQUIPMENT SHUTS DOWN UNTIL ALARM IS CLEARED AT THE FIRE ALARM PANEL. REFER TO FIRE ALARM SPECIFICATIONS FOR MORE INFORMATION.

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 PROJECT #: 24599.00

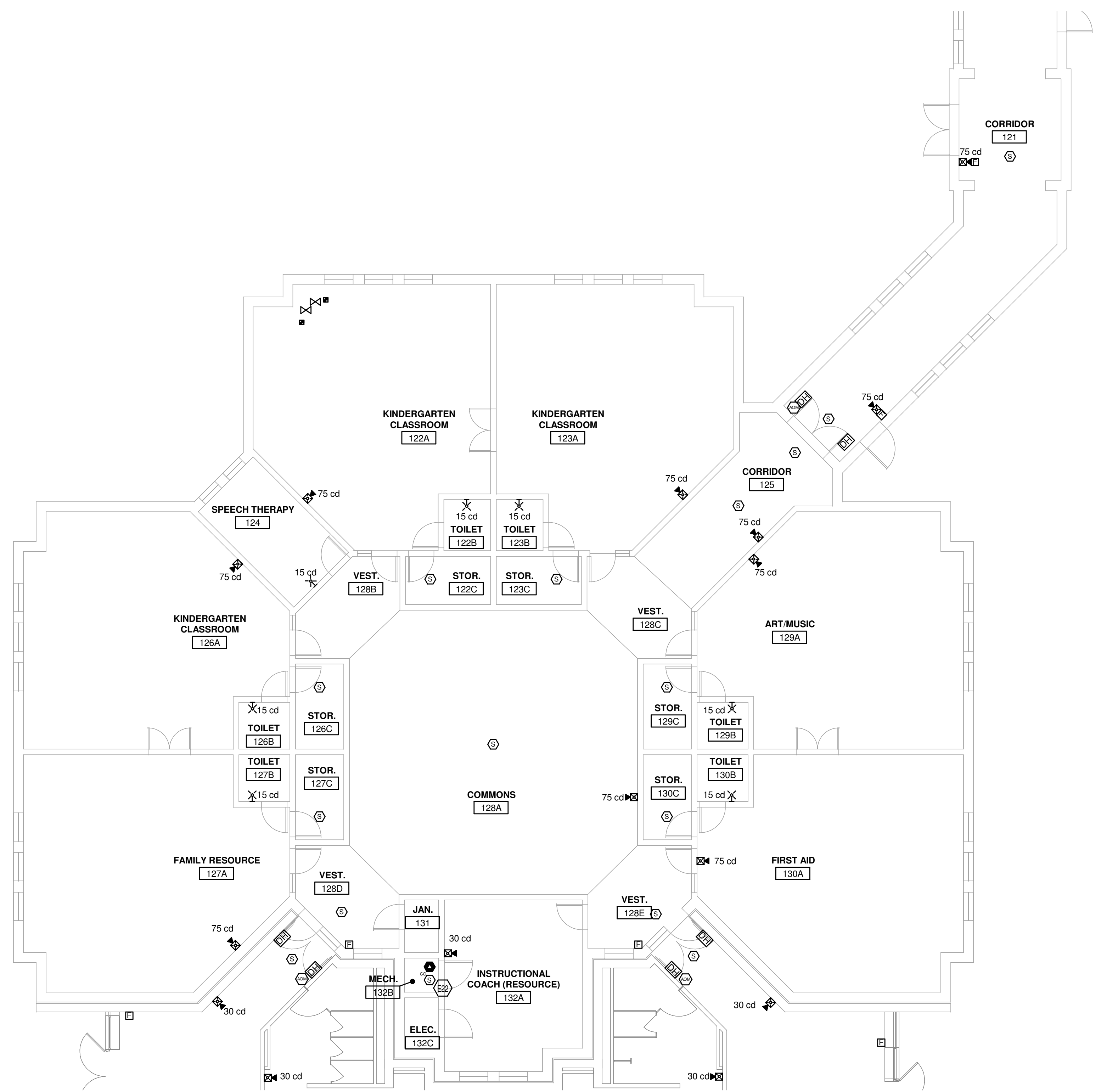
FIRE ALARM  
 LEVEL B & 1  
 NORTH PLAN

**FA-102**

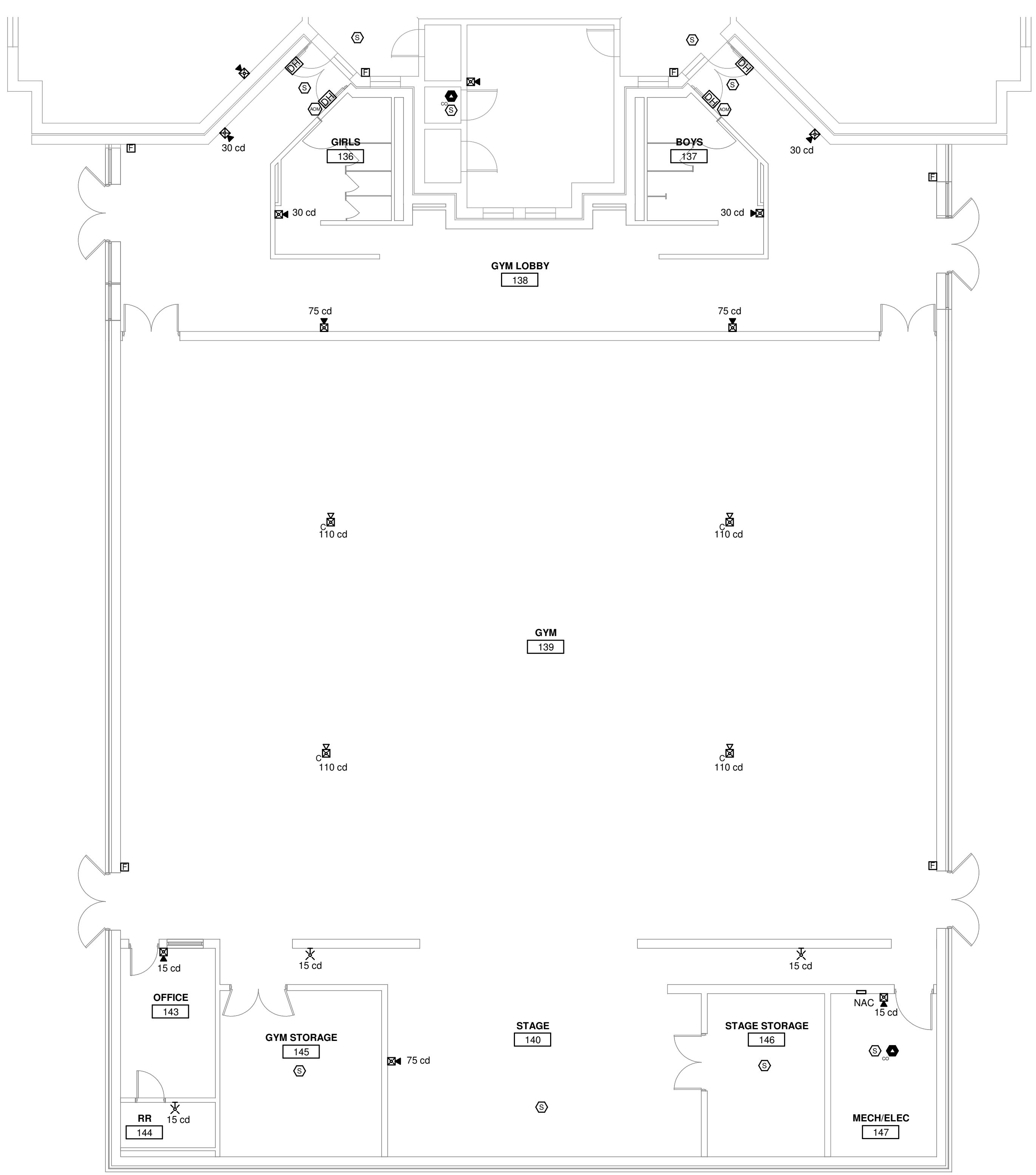
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② FIRE ALARM PLAN - LEVEL 1 90s ADDITION - (NEW CONSTRUCTION)  
 1/8" = 1'-0"



① FIRE ALARM PLAN - LEVEL 1 NEW GYM - (NEW CONSTRUCTION)  
 1/8" = 1'-0"

**KEYED NOTES**  
 E22 SMOKE DETECTOR INDICATED IS FOR SHUTDOWN OF ASSOCIATED MECHANICAL EQUIPMENT (TAGGED ADJACENT TO THE DETECTOR). QUANTITY AND TYPE SHOWN IS SCHEMATIC ONLY. PROVIDE QUANTITIES AND TYPES AS NEEDED FOR THE SPECIFIC MEANS AND METHODS USED. MECHANICAL CONTRACTOR SHALL INSTALL ALL DETECTORS THAT ARE INSIDE OF DUCTWORK. PROVIDE ALL RELATED WORK SO THAT WHEN SMOKE IS DETECTED THE ASSOCIATED MECHANICAL EQUIPMENT SHUTS DOWN UNTIL ALARM IS CLEARED AT THE FIRE ALARM PANEL. REFER TO FIRE ALARM SPECIFICATIONS FOR MORE INFORMATION.

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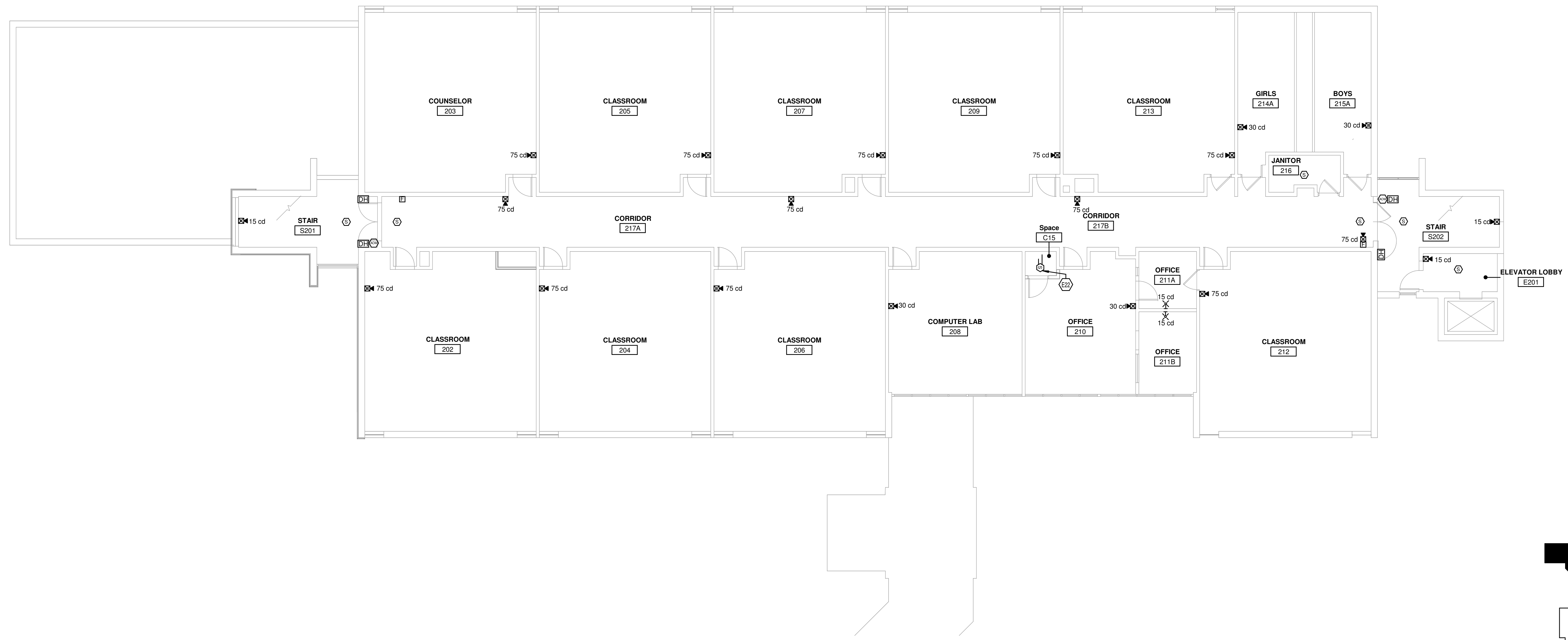
NO.	DATE	DESCRIPTION

DWN: GMN CHK: DTJ  
 DATE: 10-13-2023  
 PROJECT #: 24599.00  
 FIRE ALARM  
 LEVEL 1 90s  
 EDITION & NEW  
 GYM PLAN

FA-103  
 1" REFERENCE  
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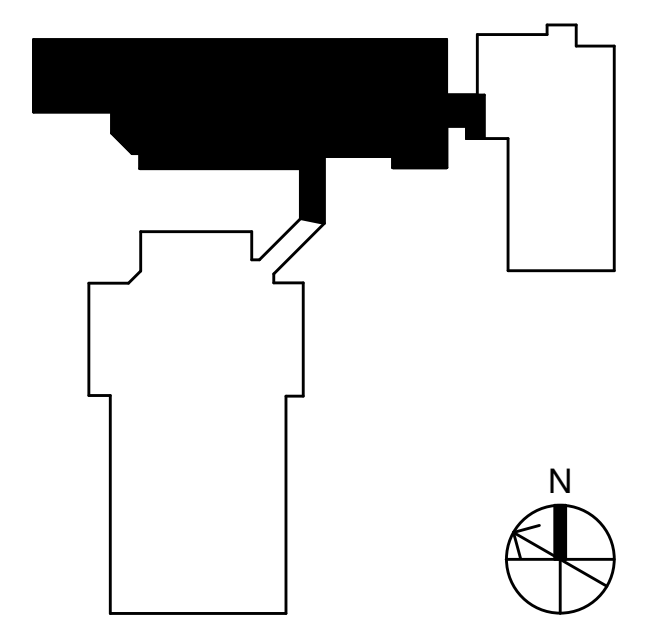
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 DATE: 10-13-2023  
 PROJECT #: 24599.00  
 FIRE ALARM  
 LEVEL 2 PLAN

**FA-104**  
 1" REFERENCE  
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① FIRE ALARM PLAN - LEVEL 2 - (NEW CONSTRUCTION)  
 1/8" = 1'-0"





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CODE INFORMATION	
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ENERGY CODE	20XX [ASHRAE 90.1] [INTERNATIONAL ENERGY CONSERVATION CODE] [TITLE 24]
FUEL GAS CODE	20XX [INTERNATIONAL FUEL GAS CODE] [NATIONAL FIRE PROTECTION ASSOCIATION 54]
PLUMBING LEGEND	
SYMBOL	DESCRIPTION
PLAN-VIEW LINE TYPES	
	WORK SHOWN DASHED INDICATES EXISTING WORK TO REMAIN OR NEW WORK BY OTHERS AS APPLICABLE
	WORK SHOWN BOLD-DASHED INDICATES SELECTIVE DEMOLITION WORK
	WORK SHOWN BOLD-SOLID INDICATES NEW WORK
	DIRECTION OF FLOW
DRAWING SET APPEARANCE	
TO BETTER COMMUNICATE SCOPE TO PERMIT AGENCIES AND CONTRACTORS, EACH DRAWING IN THIS DRAWING SET HAS BEEN CREATED IN BOTH "COLOR" AND "BLACK AND WHITE". THERE EXISTS A COLOR LAYER WITHIN EACH DRAWING WHERE VISIBILITY IS CONTROLLED THROUGH THE PDF LAYER MANAGER. THIS LAYER VISIBILITY CAN BE TOGGLED DISPLAYING EITHER "COLOR" OR "BLACK AND WHITE". TO MAINTAIN SCOPE BASED SHADING WHEN PRINTING TO PAPER, BLACK AND WHITE NEEDS TO BE VISIBLE. FOR FURTHER INSTRUCTIONS, REFER TO CONTRACTOR RESOURCES ON OUR WEBSITE AND DOWNLOAD "DRAWING COLOR INSTRUCTIONS". <small>WWW.KLHENGINEERS.COM - CONTRACTOR RESOURCES (RIGHT HAND SIDE OF PAGE).</small>	
PIPING LINE TYPES	
	SANITARY WASTE PIPING
	CONDENSATE DRAIN PIPING
	INDIRECT WASTE PIPING
	STORM PIPING (PRIMARY)
	STORM OVERFLOW PIPING (SECONDARY)
	VENT PIPING
	DOMESTIC COLD WATER PIPING
	DOMESTIC HOT WATER PIPING
	DOMESTIC HOT WATER RETURN PIPING
	NATURAL GAS PIPING
PLUMBING ACCESSORIES	
	UNION
	PIPE CAP
	STRAINER
	PRESSURE GAUGE
	THERMOMETER
	FCO - FLOOR CLEANOUT, GCO - GRADE CLEANOUT
	CO - CLEANOUT, WCO - WALL CLEANOUT
	FLOOR DRAIN, AREA DRAIN
	DOWNSPOUT (EXTERIOR)
	ROOF DRAIN (PRIMARY), OVERFLOW DRAIN (SECONDARY)
	EXPANSION TANK
PIPE VALVES	
	SHUT-OFF VALVE
	CHECK VALVE
	BALANCING VALVE
	PRESSURE REGULATOR VALVE
	PRESSURE AND TEMPERATURE RELIEF VALVE
	BACKFLOW PREVENTER
	FROST PROOF WALL HYDRANT (EXTERIOR)
	HOSE BIBB (INTERIOR)
	TRAP PRIMER VALVE
PLUMBING SYMBOLS	
	PIPE UP
	PIPE DOWN
	PIPE TEE DOWN
	PIPE TEE UP
	CONNECT TO EXISTING (FIELD VERIFY EXISTING UTILITY SERVICE TYPE, PRIOR TO MAKING CONNECTION)
	POINT OF DEMOLITION TO EXISTING (FIELD VERIFY EXISTING UTILITY SERVICE TYPE, PRIOR TO TERMINATING CONNECTION)
	VENT THROUGH ROOF
PLUMBING MISCELLANEOUS	
	CIRCULATION PUMP, RETURN PUMP

STANDARD PLUMBING ABBREVIATIONS			
AFF	ABOVE FINISHED FLOOR	IE	INVERT ELEVATION
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	IN WC	INCH WATER COLUMN
APPROX	APPROXIMATE	KW	KILOWATT
ASPE	AMERICAN SOCIETY OF PLUMBING ENGINEERS	KWH	KILOWATT HOUR
BAS	BUILDING AUTOMATION SYSTEM	LV	LAVATORY
BFP	BACKFLOW PREVENTER	MAX	MAXIMUM
BTU	BRITISH THERMAL UNIT	MBH	1000 BTUH
BTUH	BRITISH THERMAL UNIT PER HOUR	MIN	MINIMUM
CFH	CUBIC FEET PER HOUR	MMV	MASTER MIXING VALVE
CO	CLEAN OUT	MOCPP	MAXIMUM OVERCURRENT PROTECTION
CP	CIRCULATION PUMP	MS	MOP SINK
CW	DOMESTIC COLD WATER	NIC	NOT IN CONTRACT
DN	DOWNSPOUT	NOM	NOMINAL
DS	DOWNSPOUT	NTS	NOT TO SCALE
DSN	DOWNSPOUT NOZZLE	OCPP	OVER CURRENT PROTECTION
EC	ELECTRICAL CONTRACTOR	OD	OVERFLOW DRAIN
ET	EXPANSION TANK	PC	PLUMBING CONTRACTOR
EW	ELECTRIC WATER COOLER	PRV	PRESSURE REGULATING VALVE
EX	EXISTING	PSI	POUNDS PER SQUARE INCH
F	FAHRENHEIT	RD	ROOF DRAIN
FCO	FLOOR CLEAN OUT	RH	ROOF HYDRANT
FD	FLOOR DRAIN	RPZ	REDUCED PRESSURE ZONE
FFE	FINISHED FLOOR ELEVATION	RTU	ROOF TOP UNIT
FLA	FULL LOAD AMPERES	S	SANITARY
FT	FEET	SCCR	SHORT CIRCUIT CURRENT RATING
G	GAS (NATURAL)	SK	SINK
GCO	GRADE CLEAN OUT	SPEC	SPECIFICATION
GWH	GAS FIRED WATER HEATER	SQ FT	SQUARE FEET
GPH	GALLONS PER HOUR	ST	STORM PIPING
GPM	GALLONS PER MINUTE	TEMP	TEMPERATURE
HB	HOSE BIBB	TMV	THERMOSTATIC MIXING VALVE
HC	HVAC CONTRACTOR	TP	TRAP PRIMER
HP	HORSEPOWER	UR	URINAL
HW	DOMESTIC HOT WATER	VTR	VENT THRU ROOF
HWR	HOT WATER RETURN	WC	WATER CLOSET
		WCO	WALL CLEAN OUT
		WH	WALL HYDRANT

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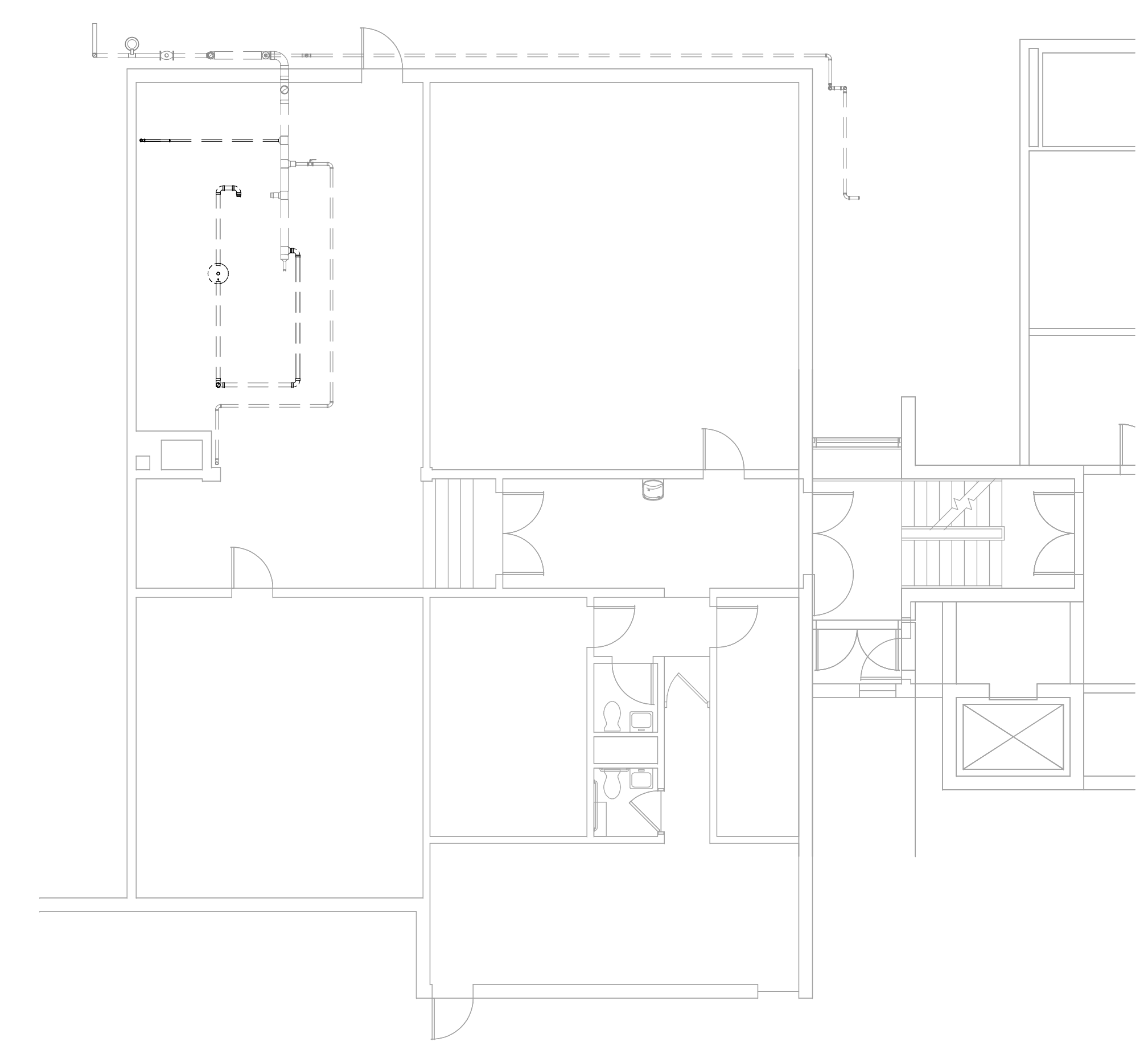
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PLUMBING  
 COVER SHEET

**P0-001**  
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1 PLUMBING DEMOLITION PLAN - LEVEL B - LEVEL B  
1/8" = 1'-0"

KEYED NOTES

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PLUMBING  
DEMOLITION  
LEVEL B PLAN  
LEVEL B

## P1-102

1" REFERENCE  
KLH PROJECT #  
24599



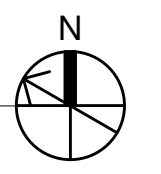
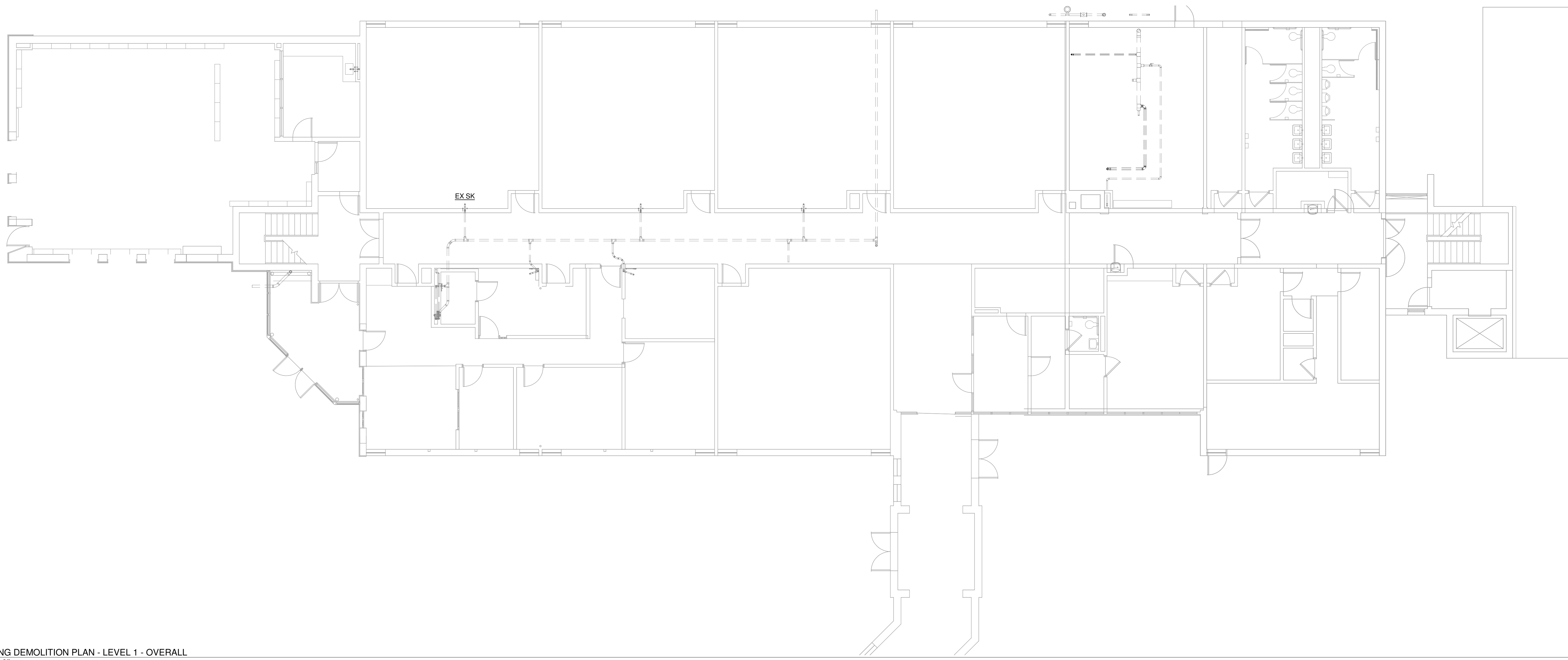
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1 PLUMBING DEMOLITION PLAN - LEVEL 1 - OVERALL  
1/8" = 1'-0"



KEYED NOTES

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KLH PROJECT #  
24599

P1-103

PLUMBING  
DEMOLITION  
LEVEL 1 PLAN  
OVERALL

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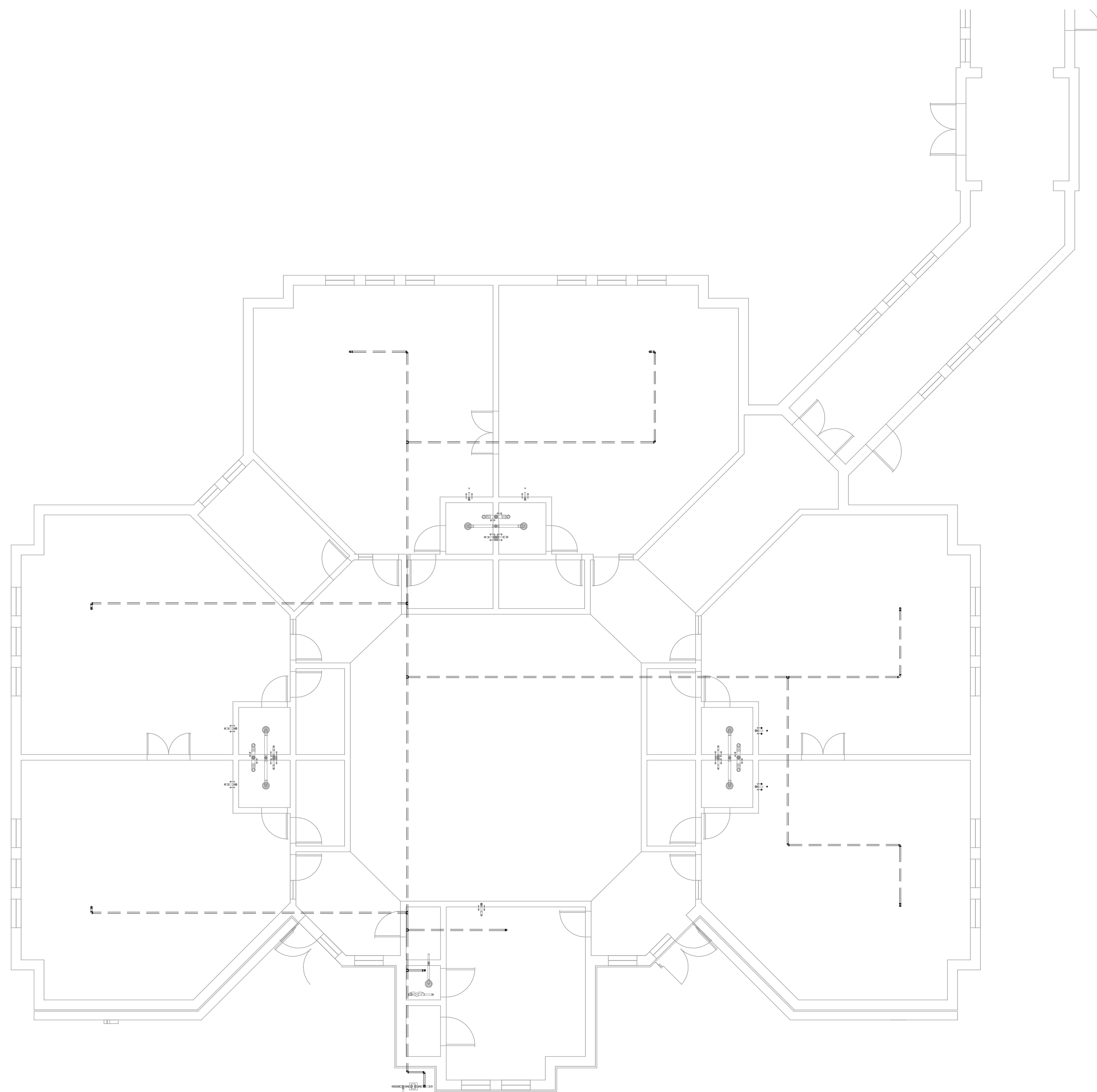
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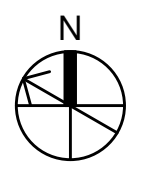
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1 PLUMBING DEMOLITION PLAN - LEVEL 1 - 90S ADDITION  
1/8" = 1'-0"



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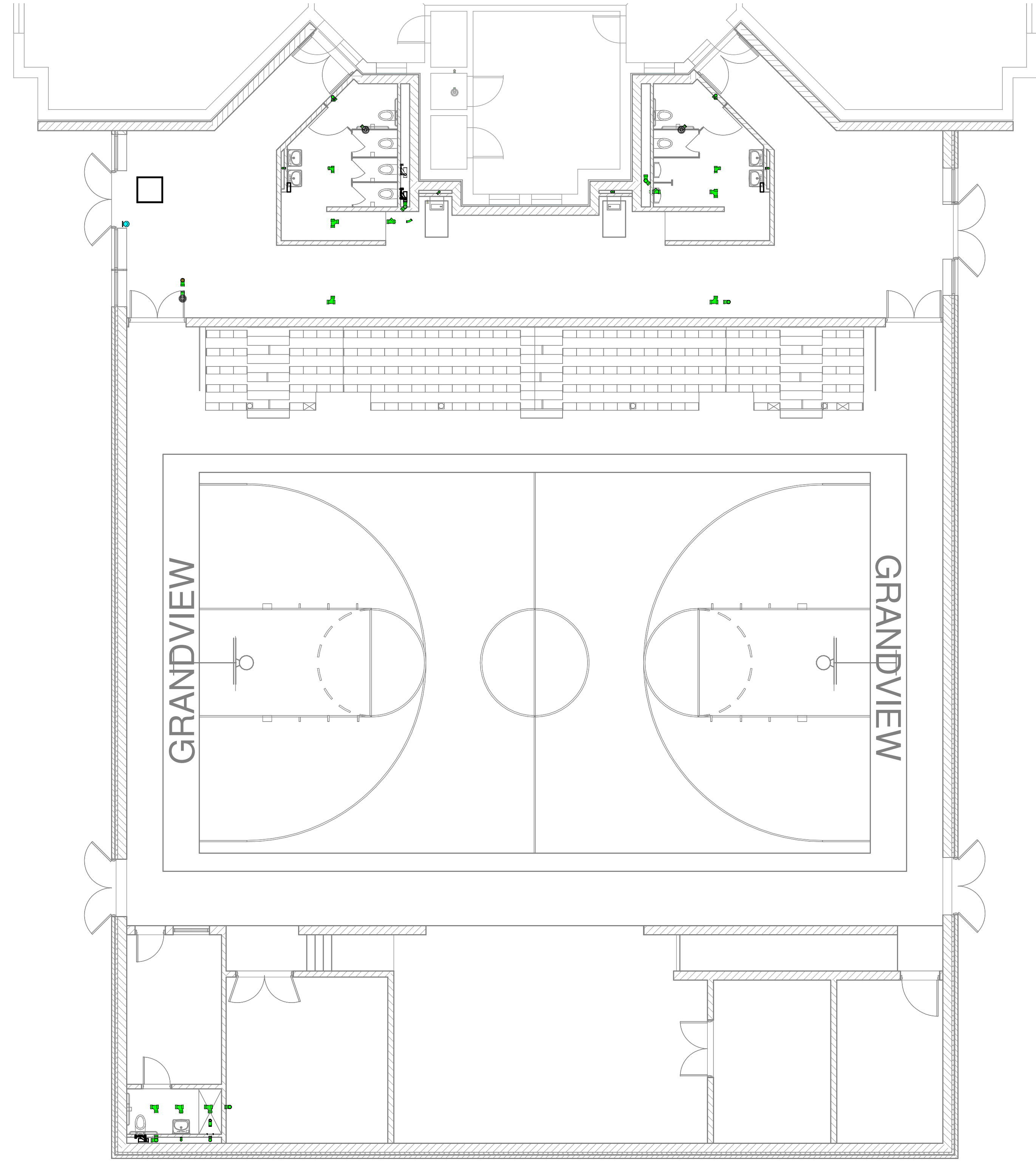
PLUMBING  
DEMOLITION  
LEVEL 1 PLAN  
90S ADDITION

## P1-104

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KLH PROJECT #  
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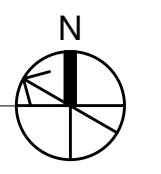
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KEYED NOTES

1 PLUMBING UNDERGROUND PIPING PLAN - LEVEL 1 - NEW GYM  
1/8" = 1'-0"



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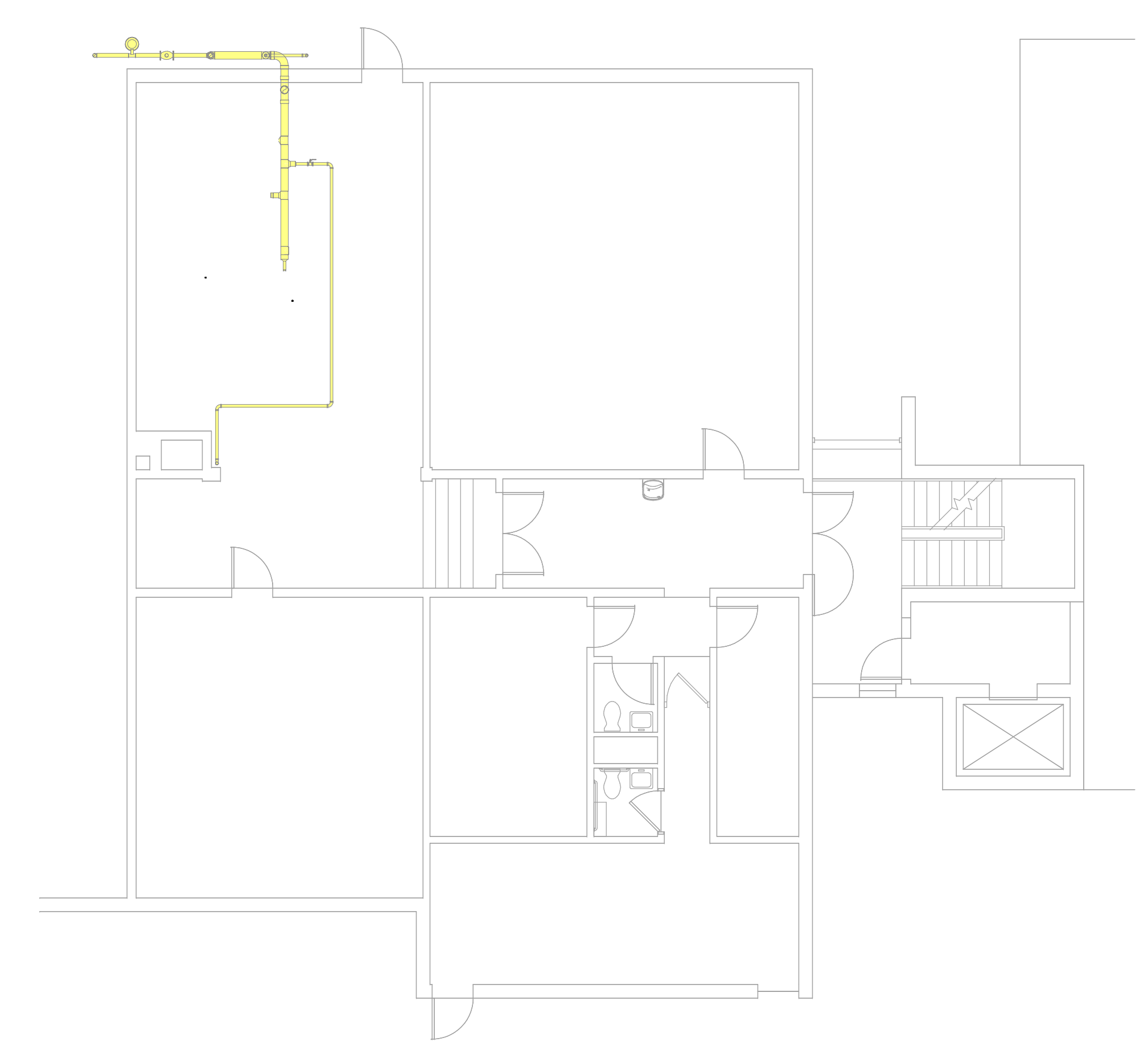
PLUMBING  
UNDERGROUND  
LEVEL 1 PLAN  
NEW GYM

P2-105

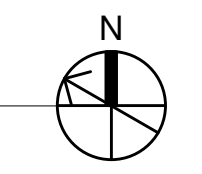
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1 PLUMBING ABOVE GROUND PIPING PLAN - LEVEL B - LEVEL B  
1/8" = 1'-0"



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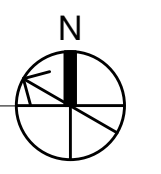
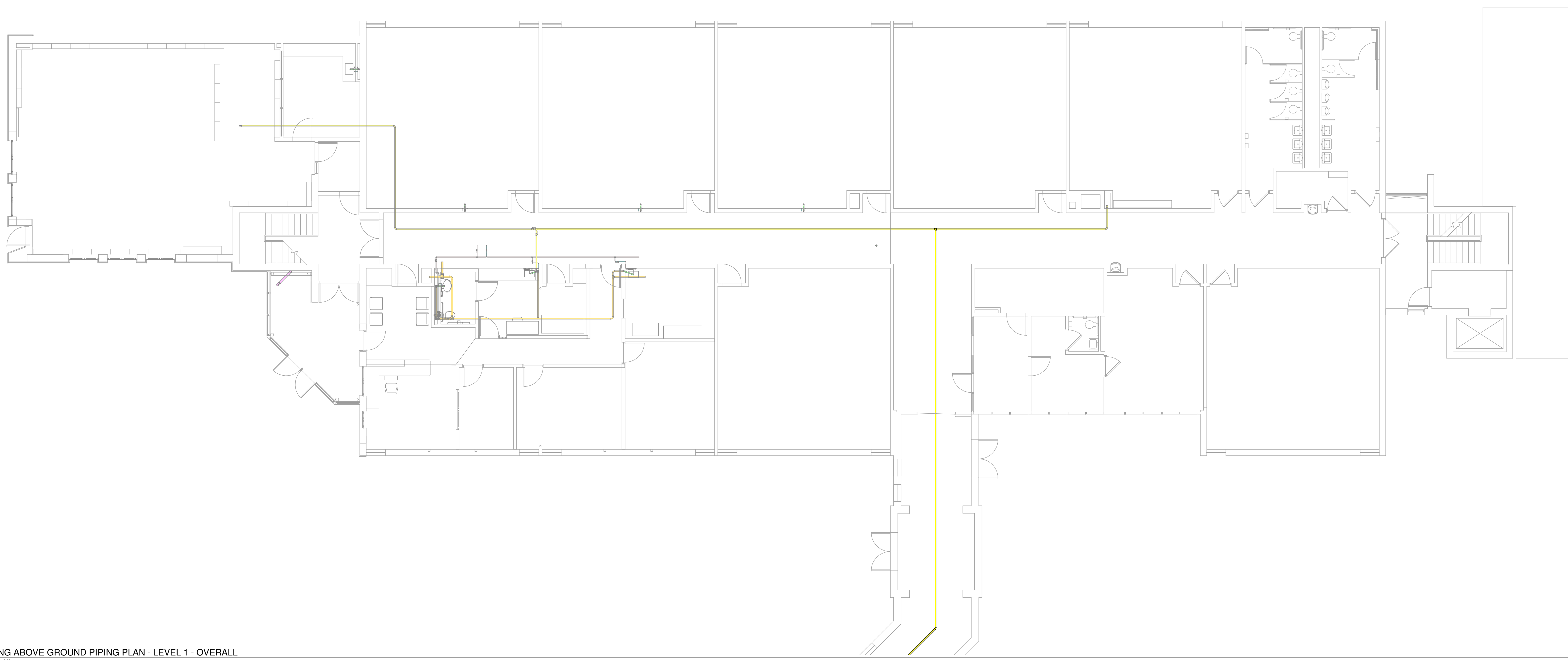
PLUMBING  
ABOVE  
GROUND  
LEVEL B PLAN  
LEVEL B

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1 PLUMBING ABOVE GROUND PIPING PLAN - LEVEL 1 - OVERALL  
1/8" = 1'-0"



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P3-103

PLUMBING  
ABOVE  
GROUND  
LEVEL 1 PLAN  
OVERALL

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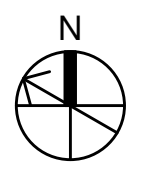
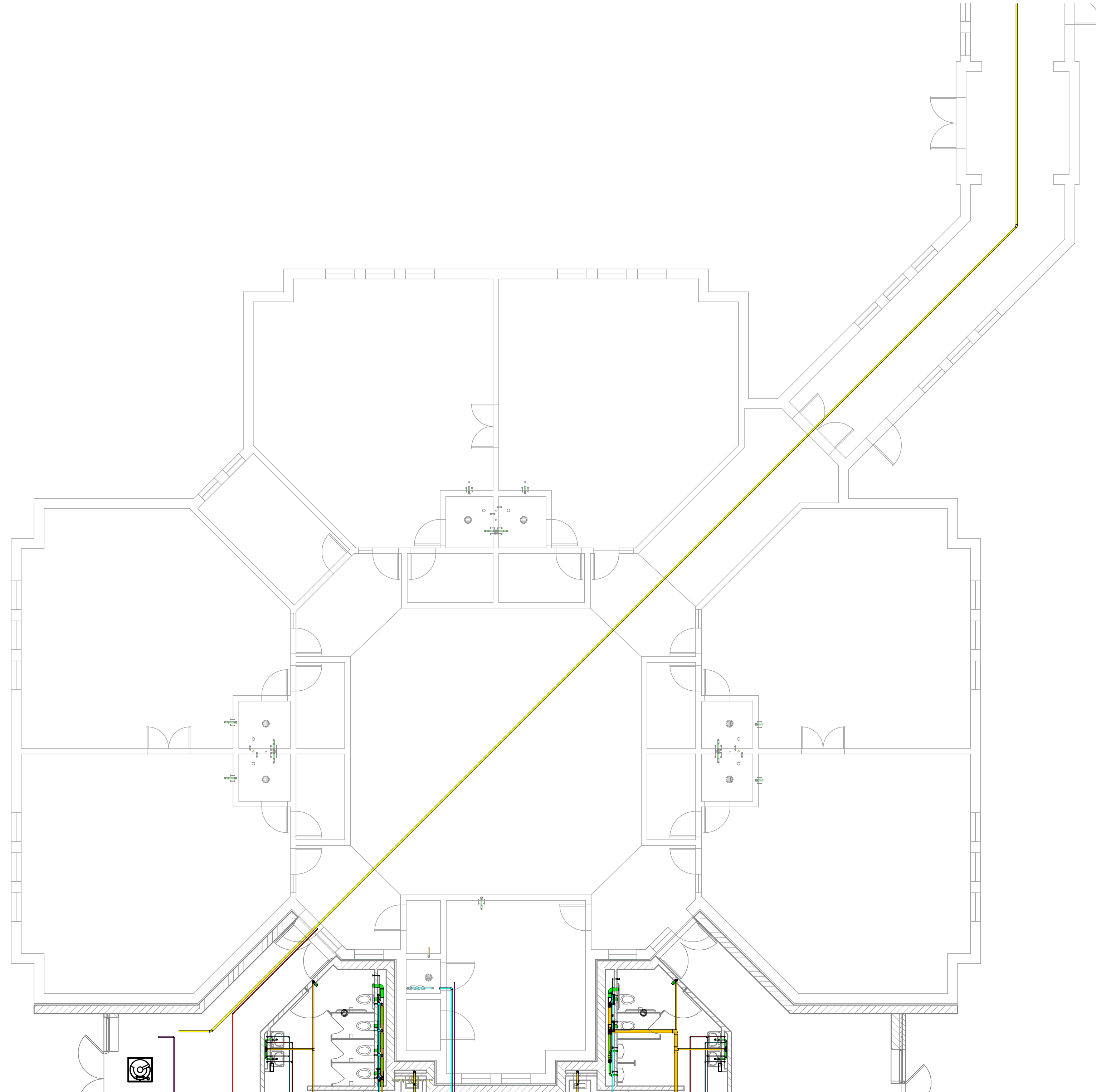
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1 PLUMBING ABOVE GROUND PIPING PLAN - LEVEL 1 - 90S ADDITION  
1/8" = 1'-0"

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ABOVE  
GROUND  
LEVEL 1 PLAN  
90S ADDITION

P3-104

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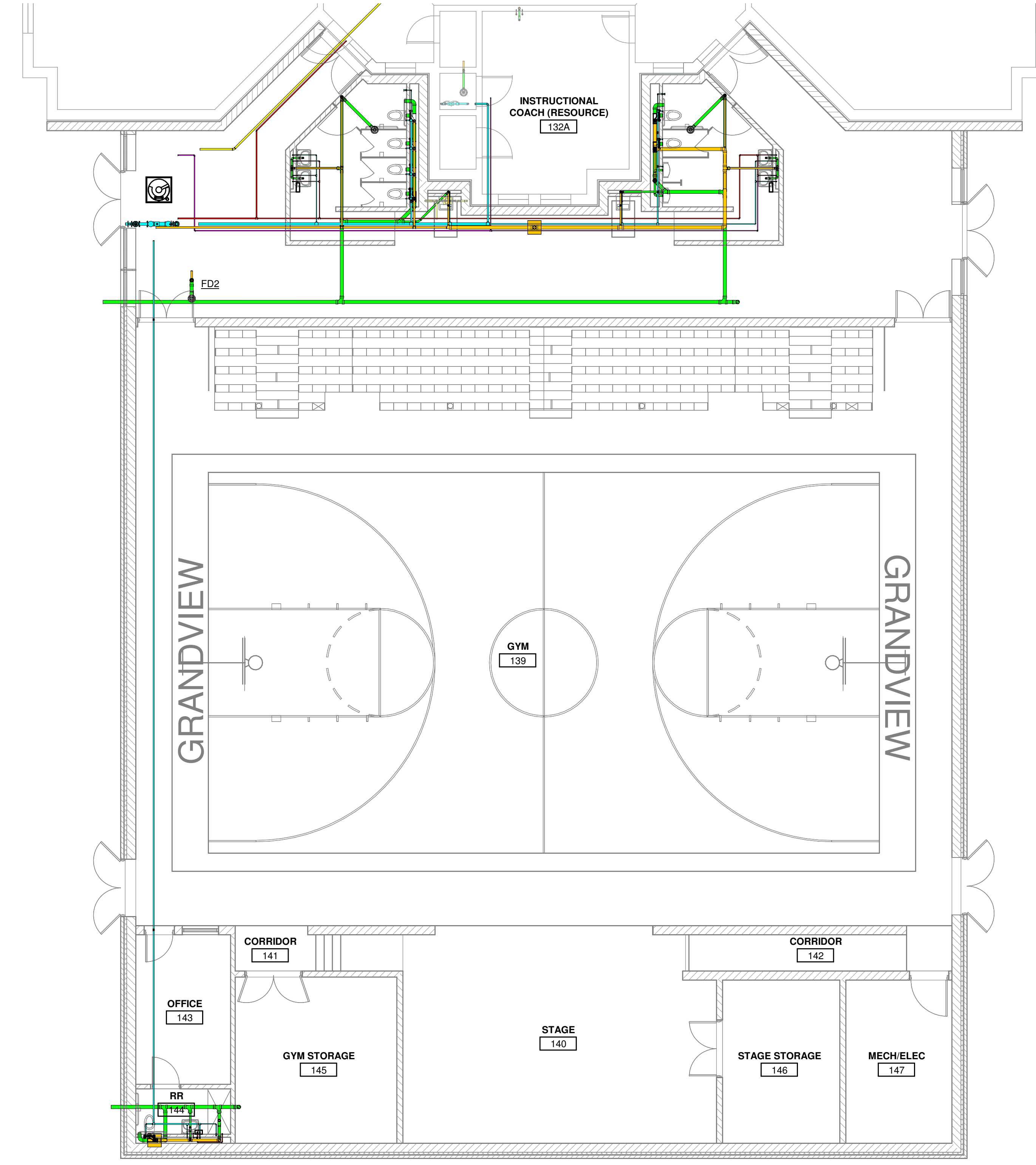
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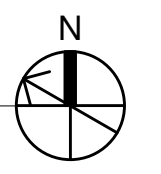
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1/8" = 1'-0"



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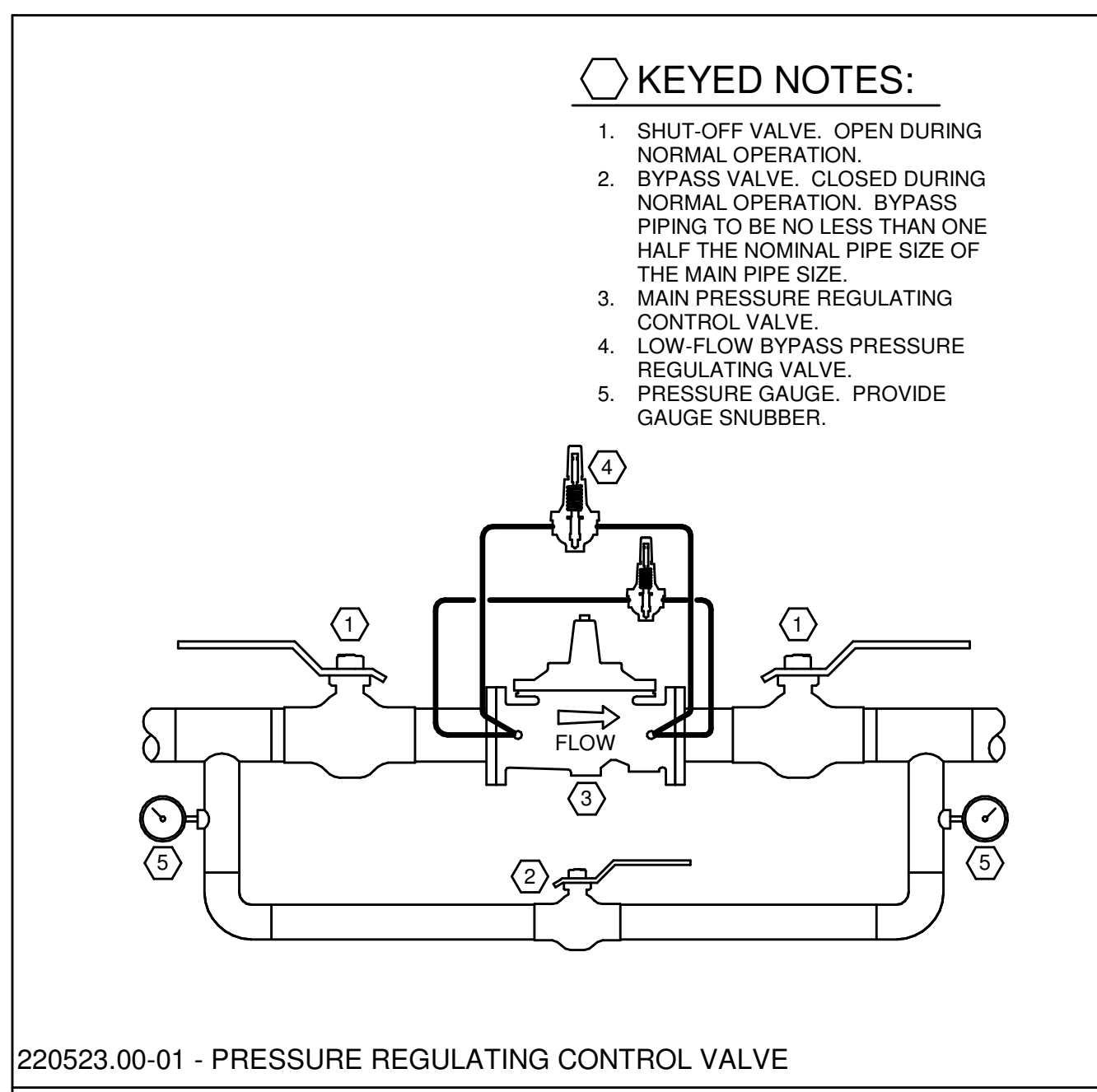
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ABOVE  
GROUND  
LEVEL 1 PLAN  
NEW GYM

P3-105

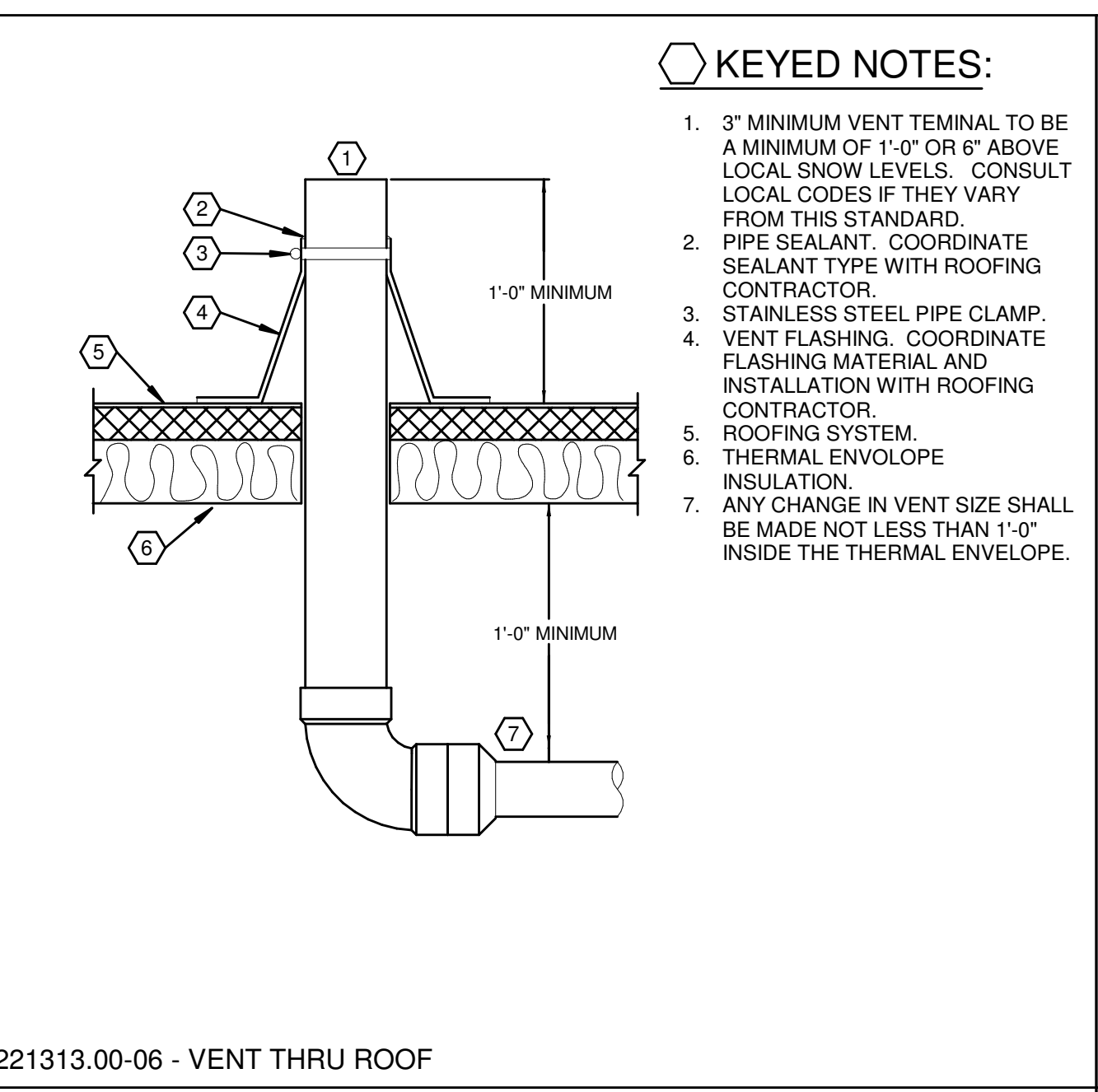
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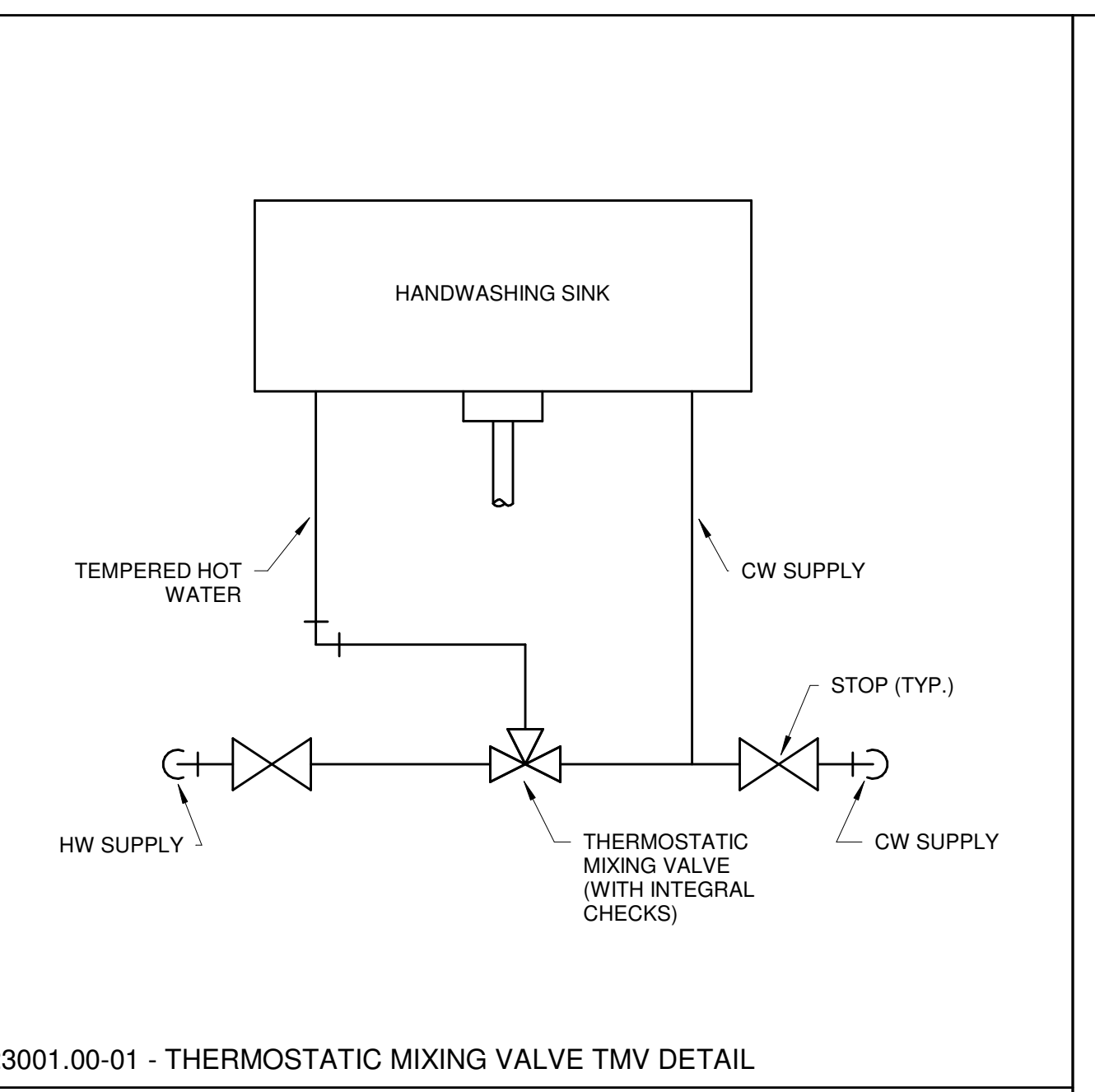
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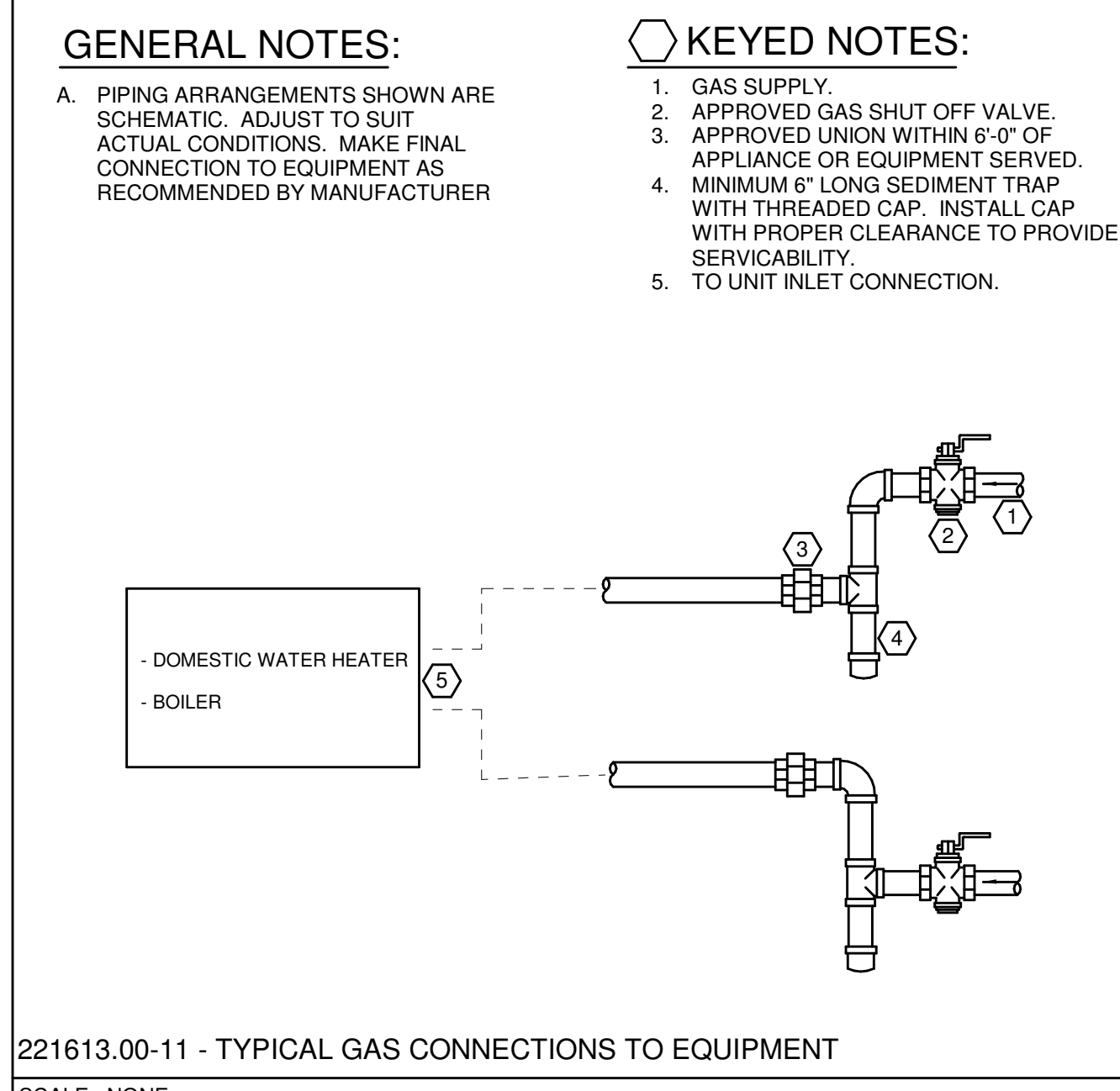
220523.00-01 - PRESSURE REGULATING CONTROL VALVE  
SCALE: NONE



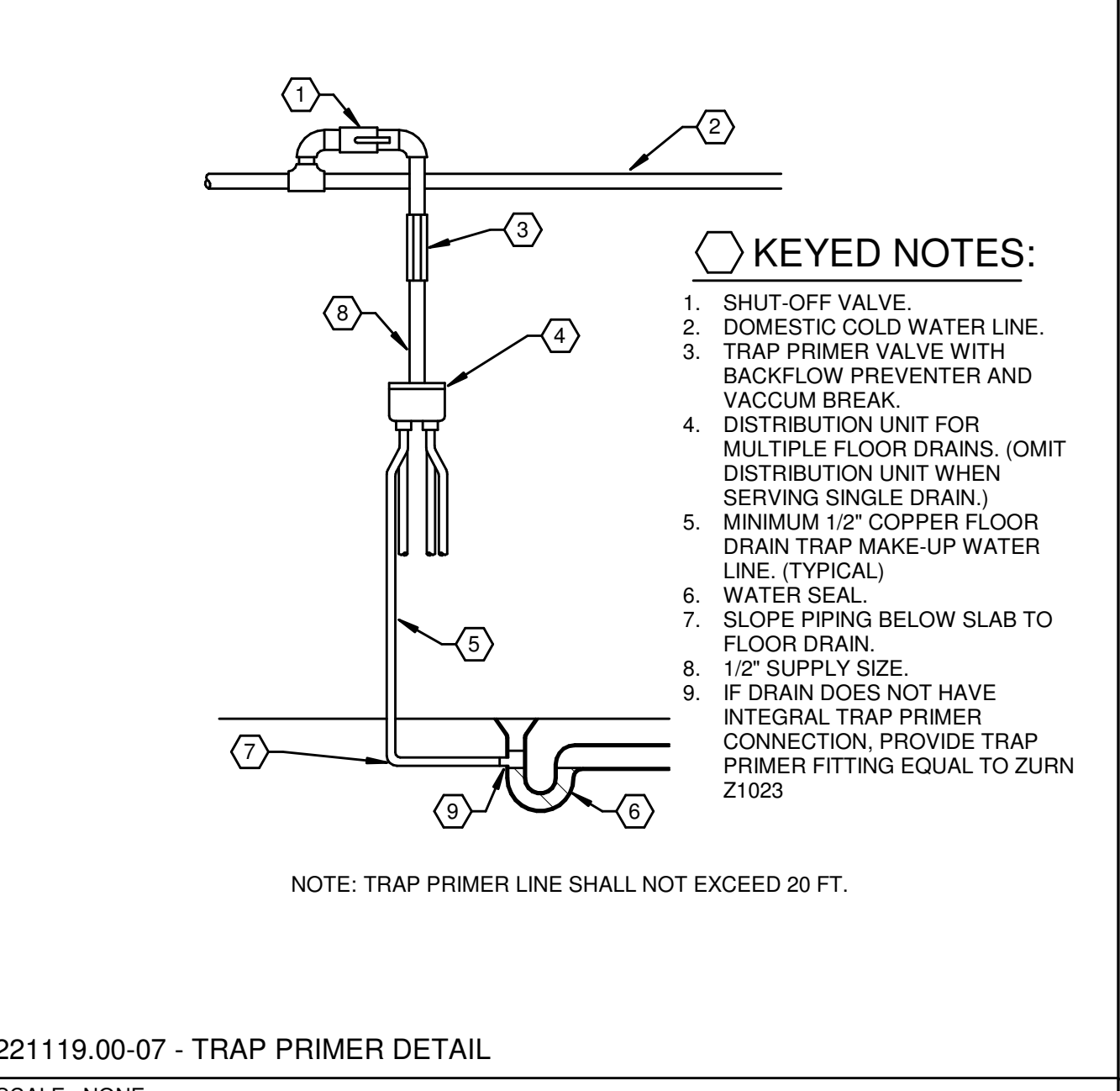
221313.00-06 - VENT THRU ROOF  
SCALE: NONE



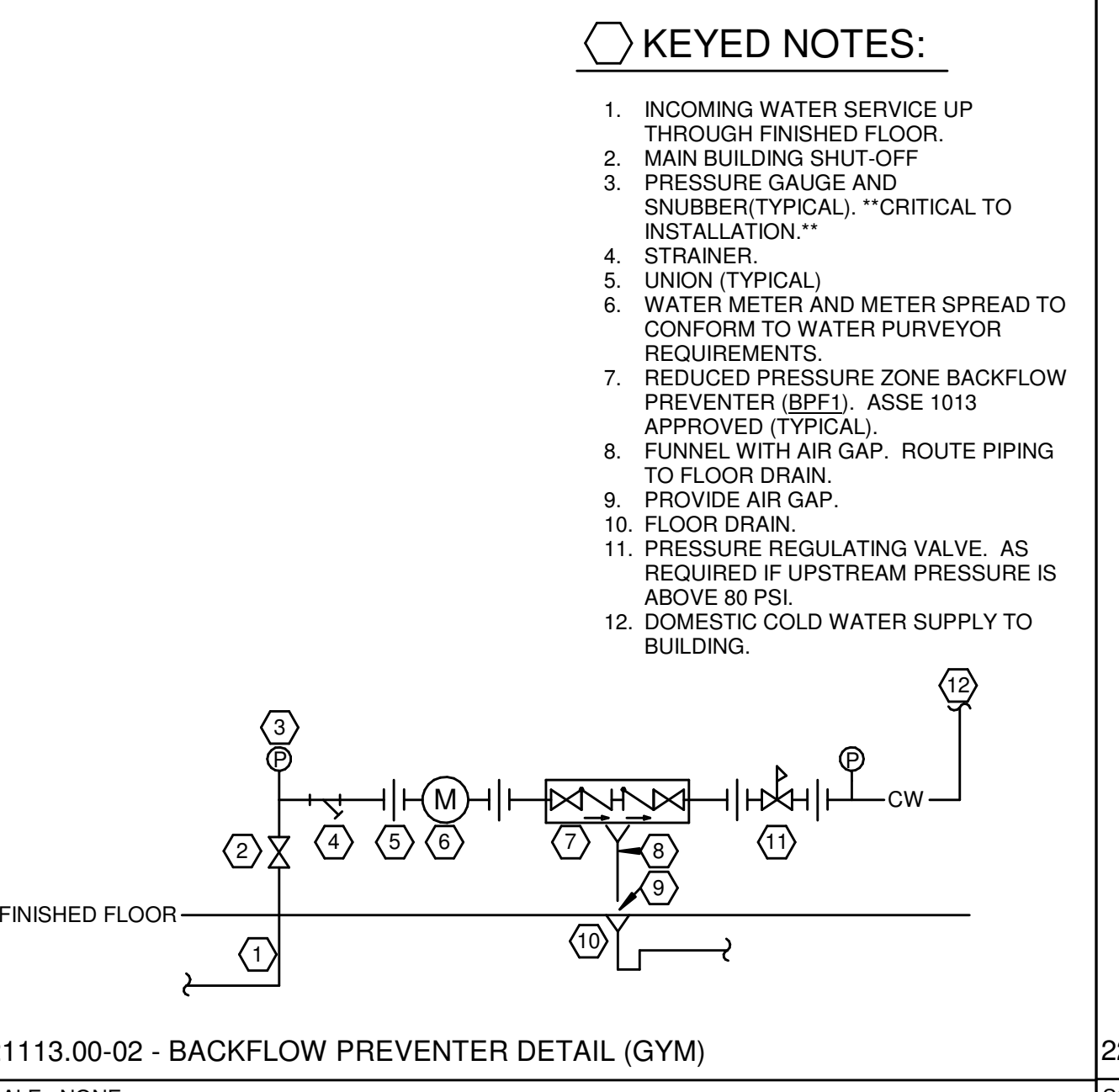
223001.00-01 - THERMOSTATIC MIXING VALVE TMV DETAIL  
SCALE: NONE



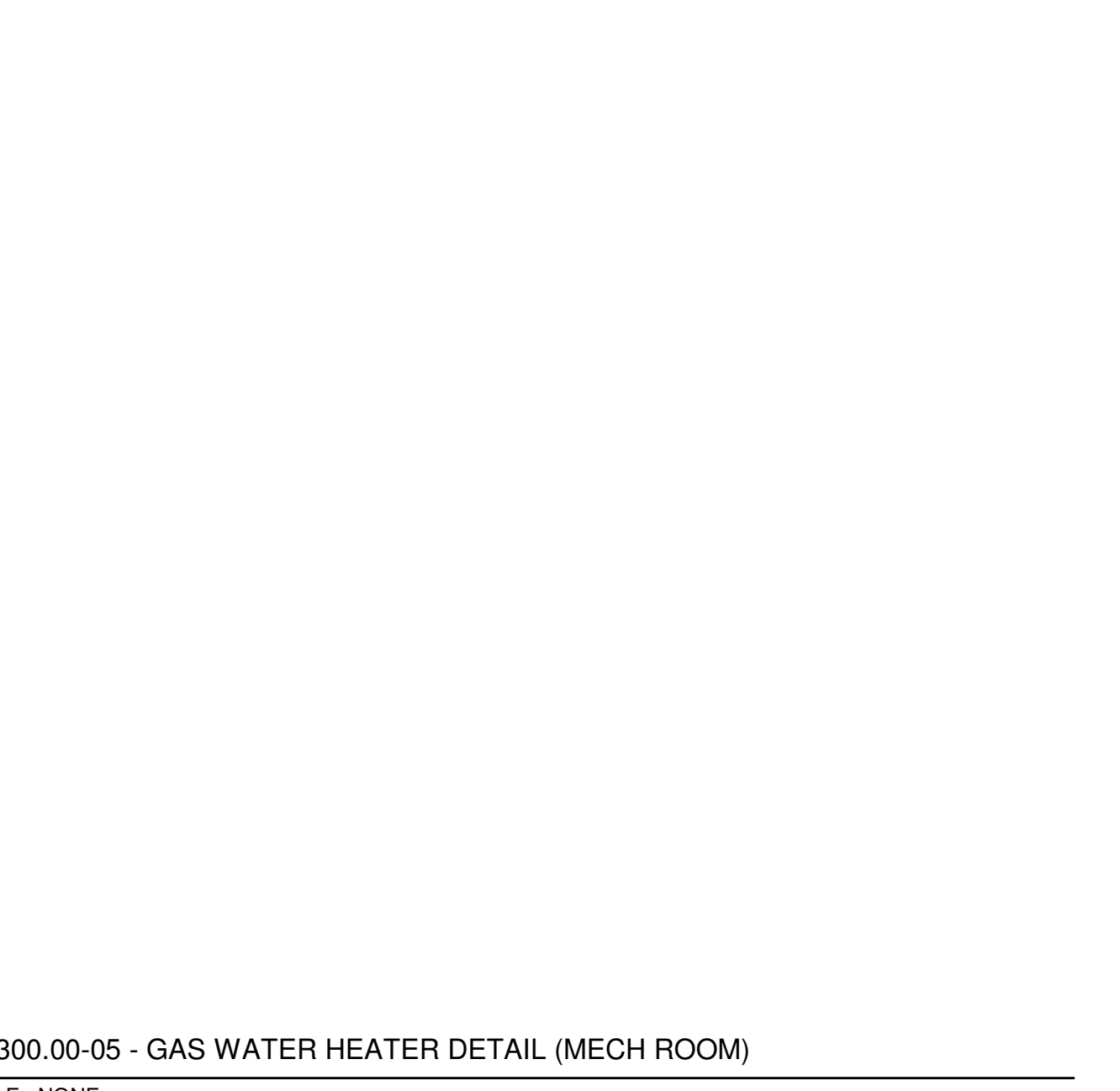
221613.00-11 - TYPICAL GAS CONNECTIONS TO EQUIPMENT  
SCALE: NONE



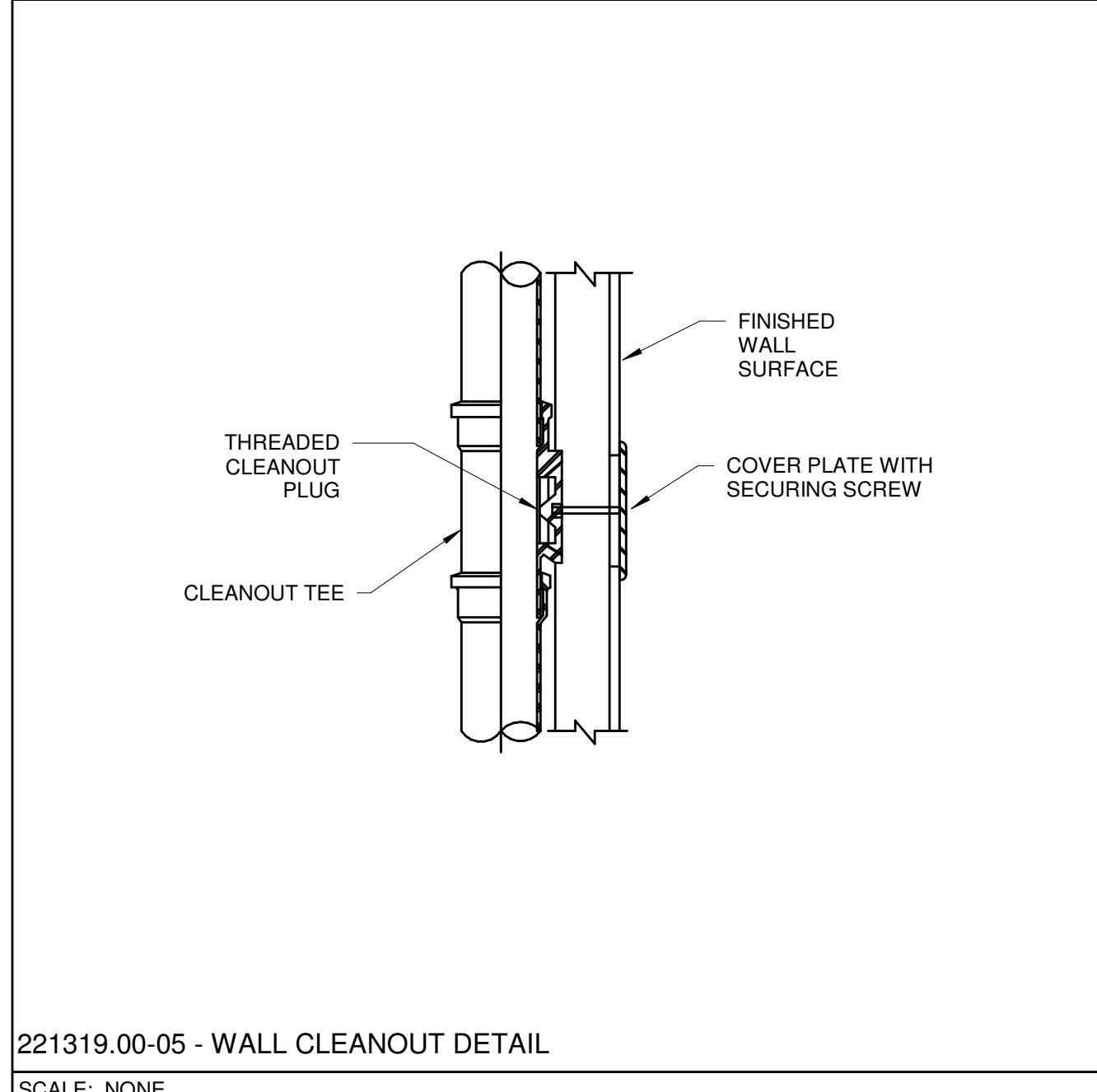
221119.00-07 - TRAP PRIMER DETAIL  
SCALE: NONE



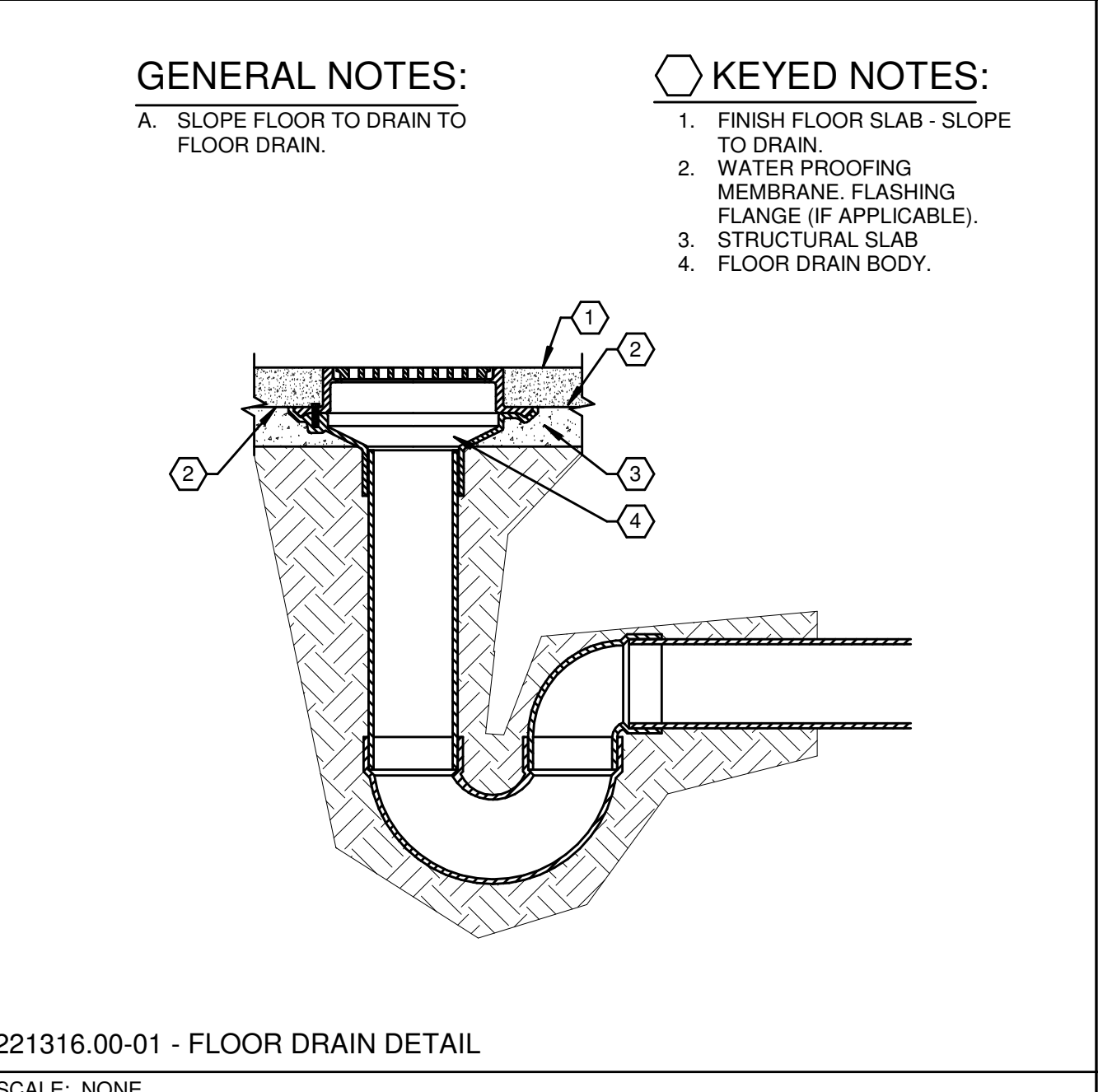
221113.00-02 - BACKFLOW PREVENTER DETAIL (GYM)  
SCALE: NONE



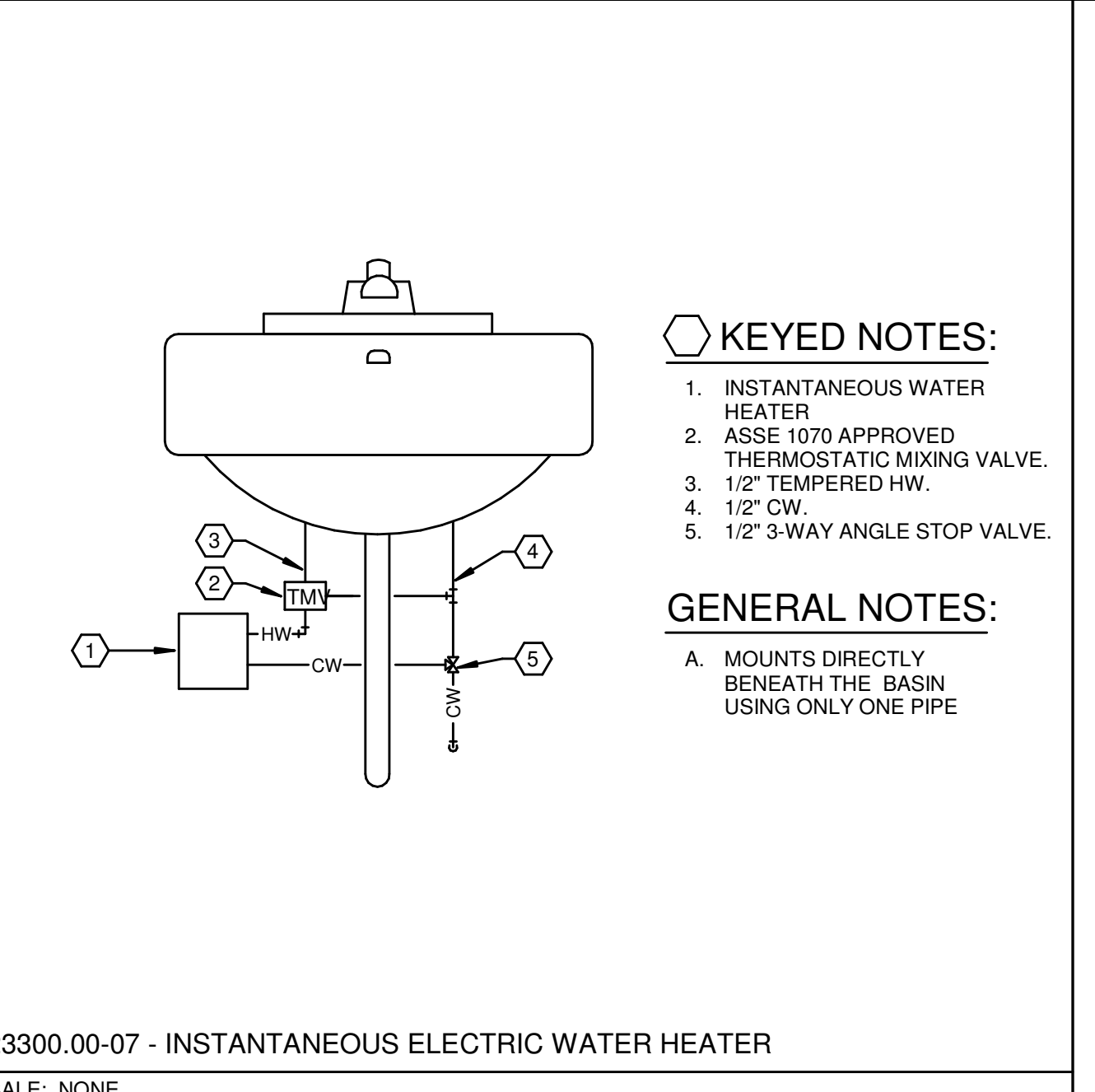
223300.00-05 - GAS WATER HEATER DETAIL (MECH ROOM)  
SCALE: NONE



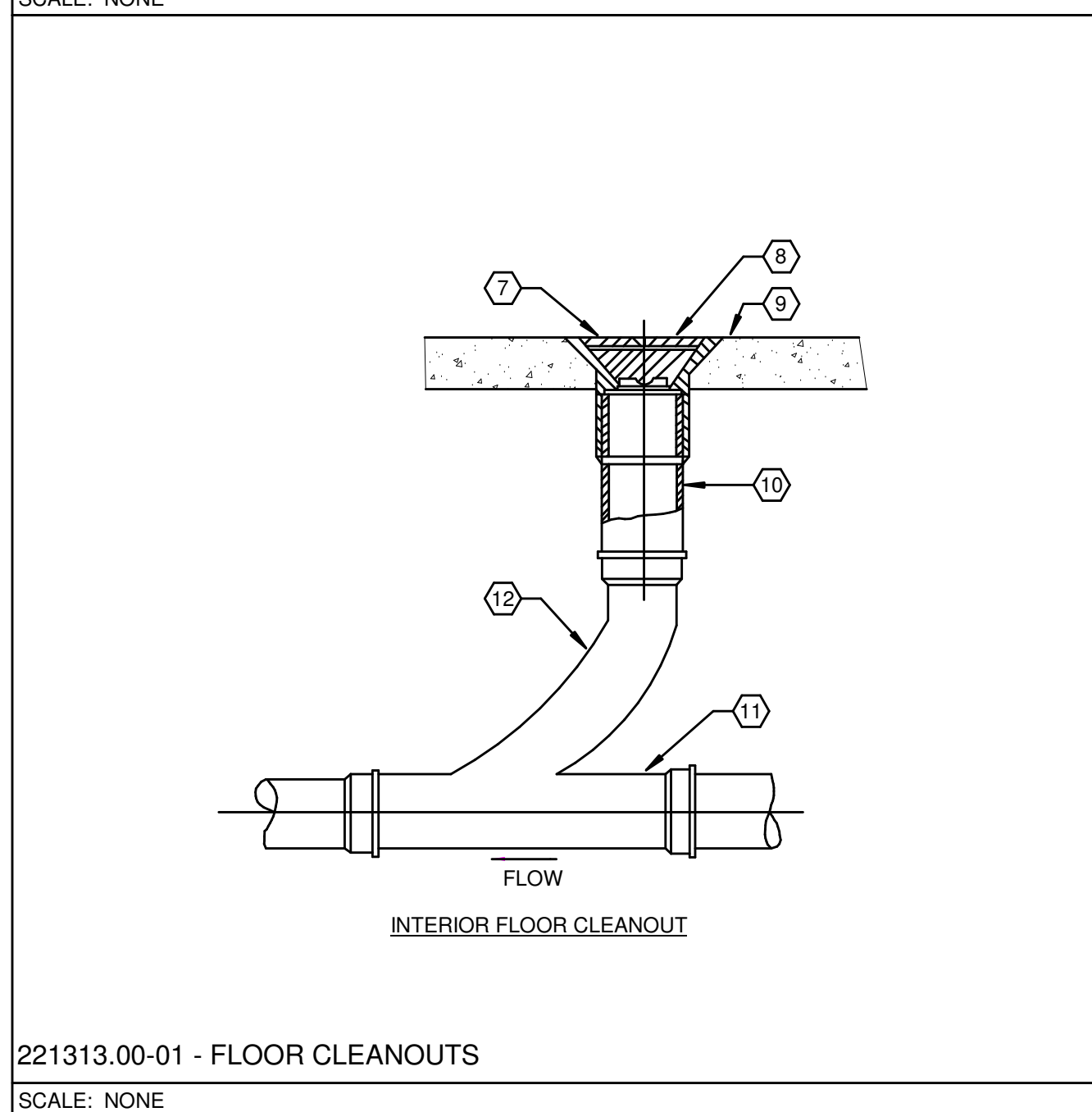
221319.00-05 - WALL CLEANOUT DETAIL  
SCALE: NONE



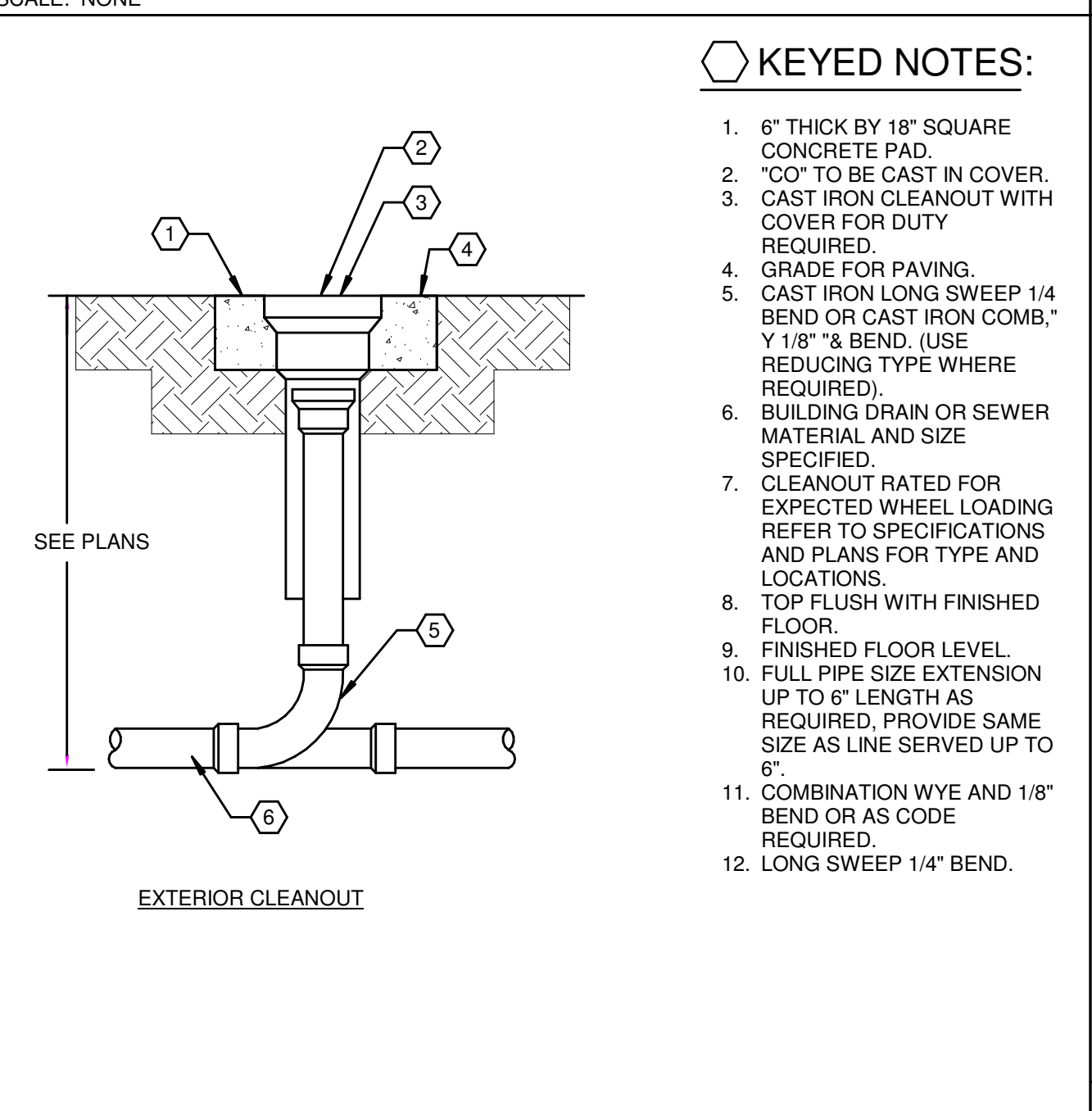
221316.00-01 - FLOOR DRAIN DETAIL  
SCALE: NONE



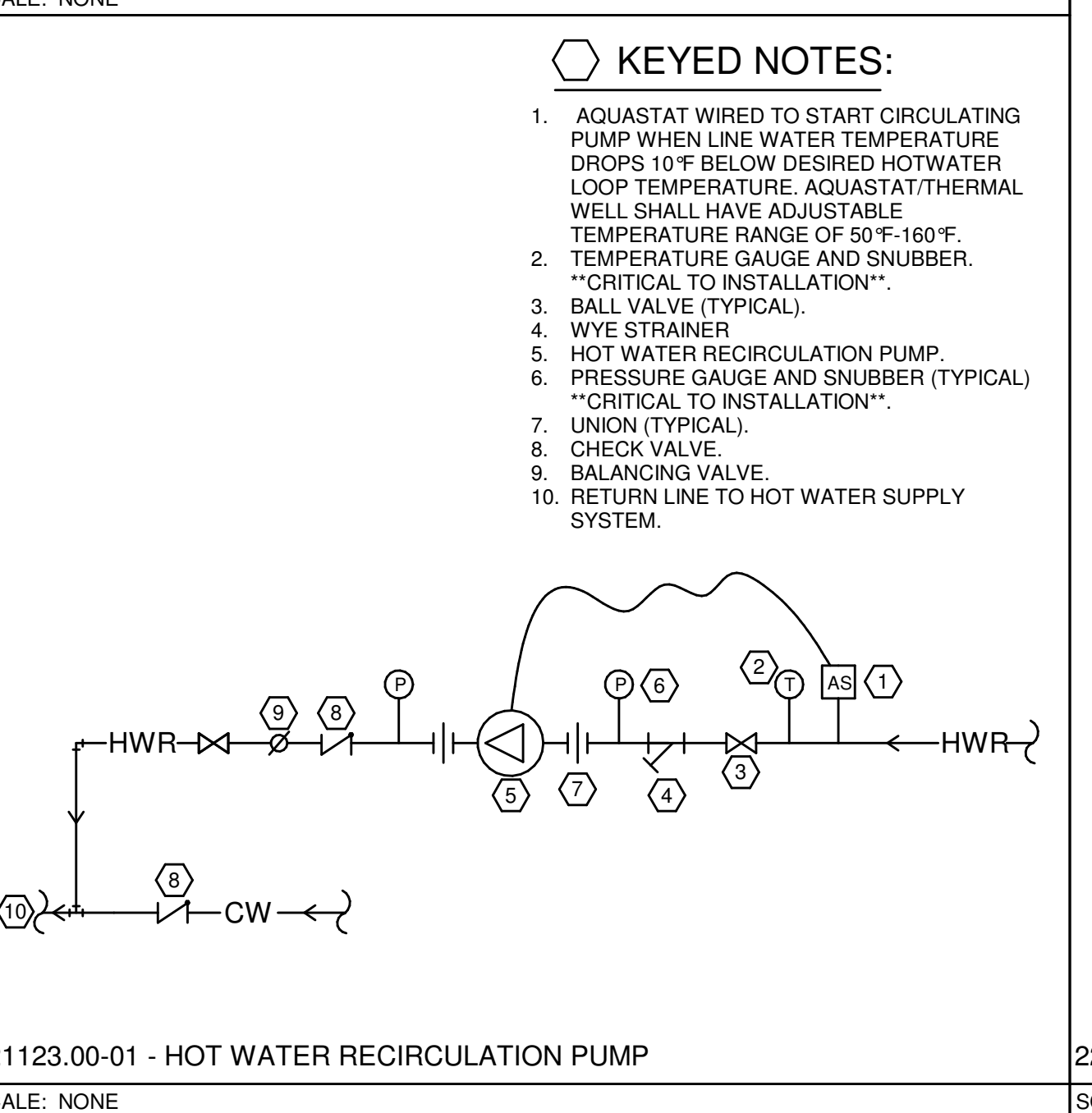
223300.00-07 - INSTANTANEOUS ELECTRIC WATER HEATER  
SCALE: NONE



221313.00-01 - FLOOR CLEANOUTS  
SCALE: NONE



221123.00-01 - HOT WATER RECIRCULATION PUMP  
SCALE: NONE



223300.00-05 - GAS WATER HEATER DETAIL (GYM)  
SCALE: NONE

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PLUMBING  
DETAILS

P5-501

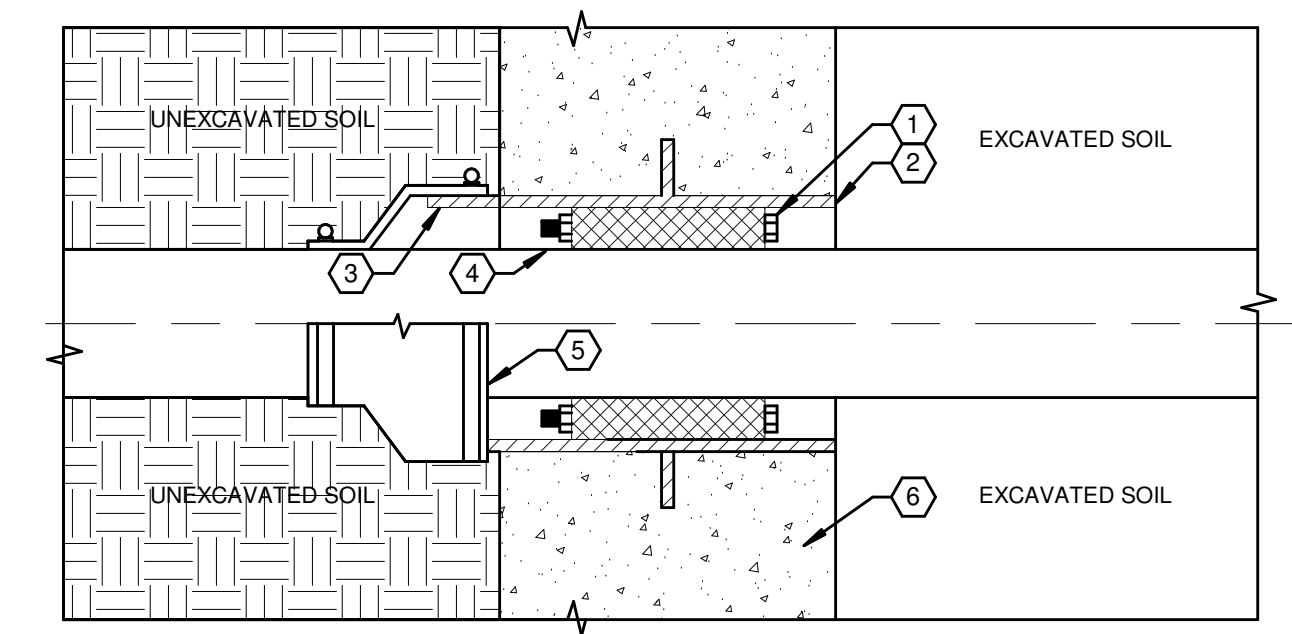
1" REFERENCE  
KLH PROJECT #  
24599

**GENERAL NOTES:**

1. REFER TO STRUCTURAL DRAWINGS FOR PENETRATION REQUIREMENTS THROUGH STRUCTURAL MEMBERS.

**KEYED NOTES:**

1. MODULAR MECHANICAL PIPE SEAL.
2. CAST-IN-PLACE STEEL SLEEVE WITH ANCHORING FLANGE (2 NOMINAL PIPE SIZES LARGER). FLUSH SLEEVE END WITH INTERIOR WALL SURFACE.
3. EXTEND SLEEVE TO ALLOW PROPER CONNECTION TO REDUCER COUPLING.
4. PIPE CENTERED IN SLEEVE.
5. FLEXIBLE REDUCER COUPLING.
6. CONCRETE WALL/FOUNDATION.

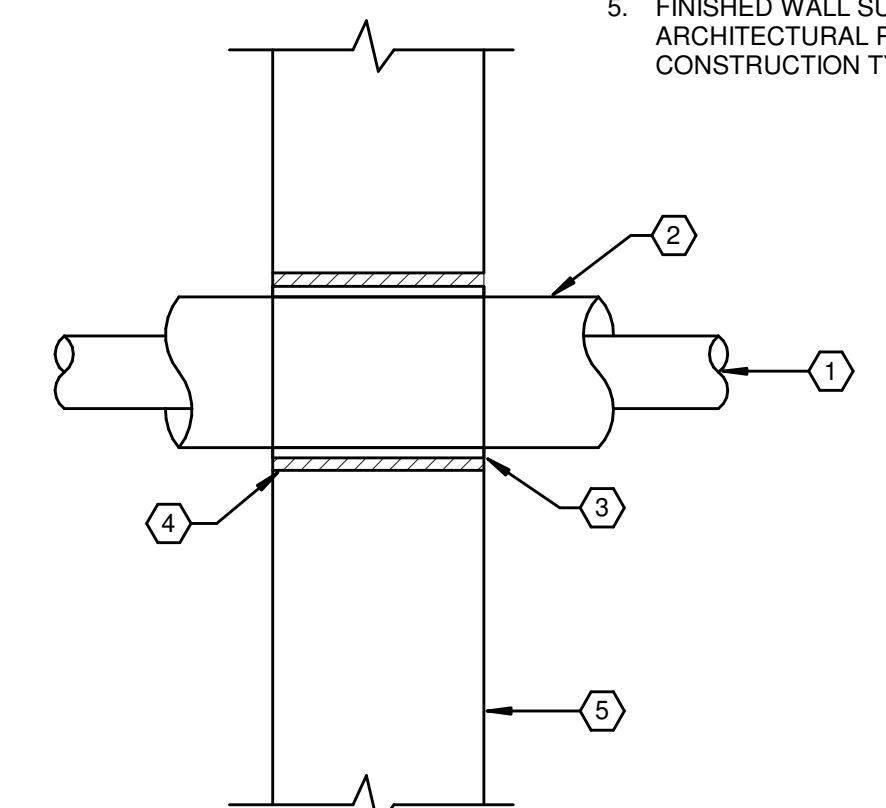


PIPE PENETRATION FROM AN UNEXCAVATED TO EXCAVATED SOIL CONDITION

220517.00-05 - BELOWGRADE PIPE PENETRATION THROUGH A FOUNDATION WALL  
 SCALE: NONE

**KEYED NOTES:**

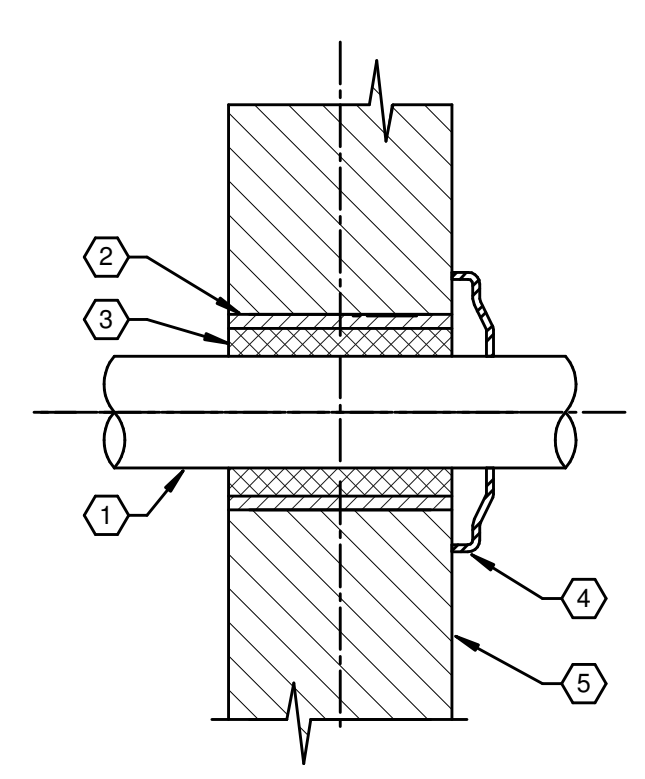
1. NON-COMBUSTIBLE PIPE.
2. PIPE INSULATION TO BE CONTINUOUS THROUGH WALL.
3. FLEXIBLE SEALANT OR FIRE RATED SEALANT FOR FIRE RATED PENETRATIONS.
4. SCHEDULE 40 STEEL PIPE SLEEVE TO BE 1" LARGER THAN THE OUTSIDE SURFACE OF PIPE INSULATION AND FLUSH TO WALL SURFACE. DO NOT SUPPORT PIPING WITH SLEEVE.
5. FINISHED WALL SURFACE. REFER TO ARCHITECTURAL PLANS FOR WALL CONSTRUCTION TYPE.



220517.00-02 - INTERIOR WALL PENETRATION  
 SCALE: NONE

**KEYED NOTES:**

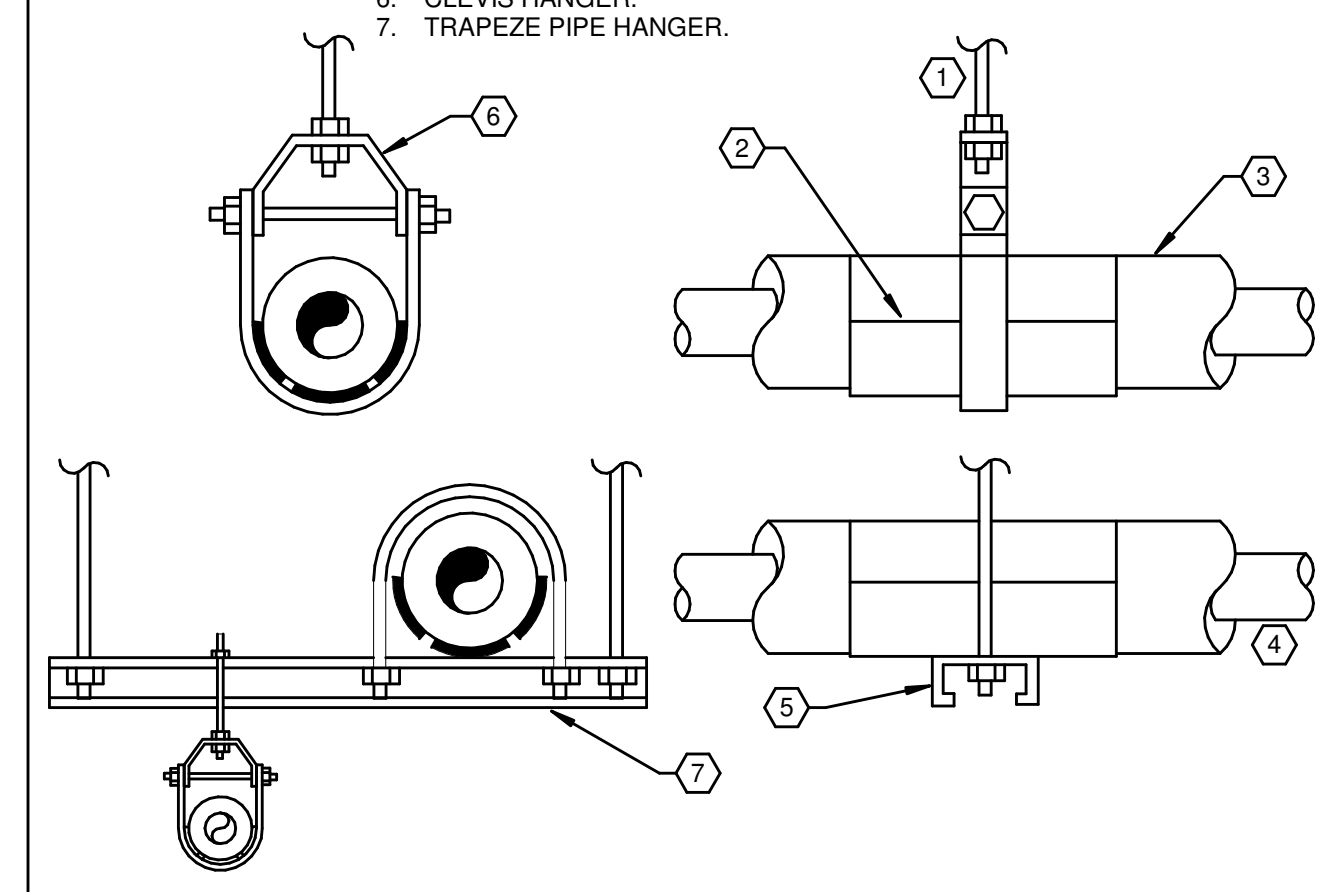
1. PIPE.
2. SCHEDULE 40 STEEL PIPE SLEEVE TO BE 1" LARGER THAN THE OUTSIDE SURFACE OF PIPE INSULATION AND FLUSH TO WALL SURFACE. DO NOT SUPPORT PIPING WITH SLEEVE.
3. FLEXIBLE SEALANT OR FIRE RATED SEALANT FOR FIRE RATED PENETRATIONS.
4. ESCUTCHEON PLATE TO COMPLETELY COVER OPENING.
5. FINISHED WALL SURFACE. REFER TO ARCHITECTURAL PLANS FOR WALL CONSTRUCTION TYPE.



220517.00-03 - PIPE PENETRATION WITHOUT INSULATION  
 SCALE: NONE

**KEYED NOTES:**

1. HANGER ROD.
2. GALVANIZED STEEL PIPE SHIELD AND 360° CALCIUM SILICATE INSULATION HANGER SUPPORT.
3. PIPE INSULATION.
4. PIPE.
5. UNISTRUT CHANNEL.
6. CLEVIS HANGER.
7. TRAPEZE PIPE HANGER.



220529.00-01 - PLUMBING PIPE HANGER INSTALLATION  
 SCALE: NONE

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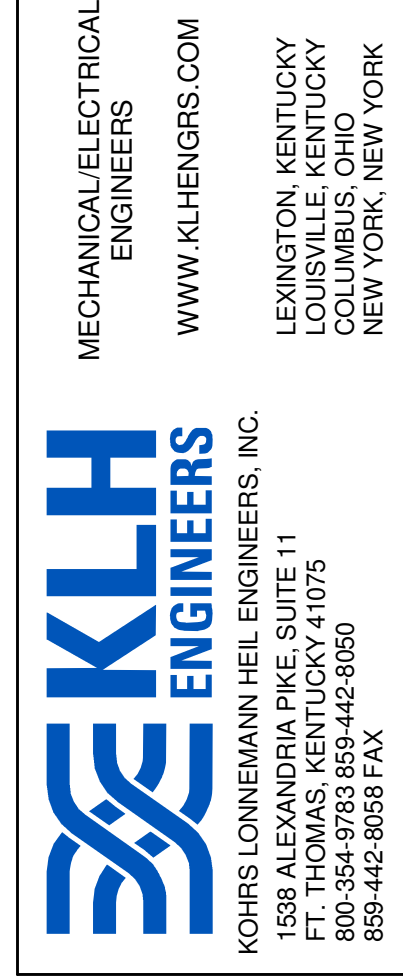
DWN: DMR    CHK: RAL  
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PLUMBING  
 DETAILS

**P5-502**

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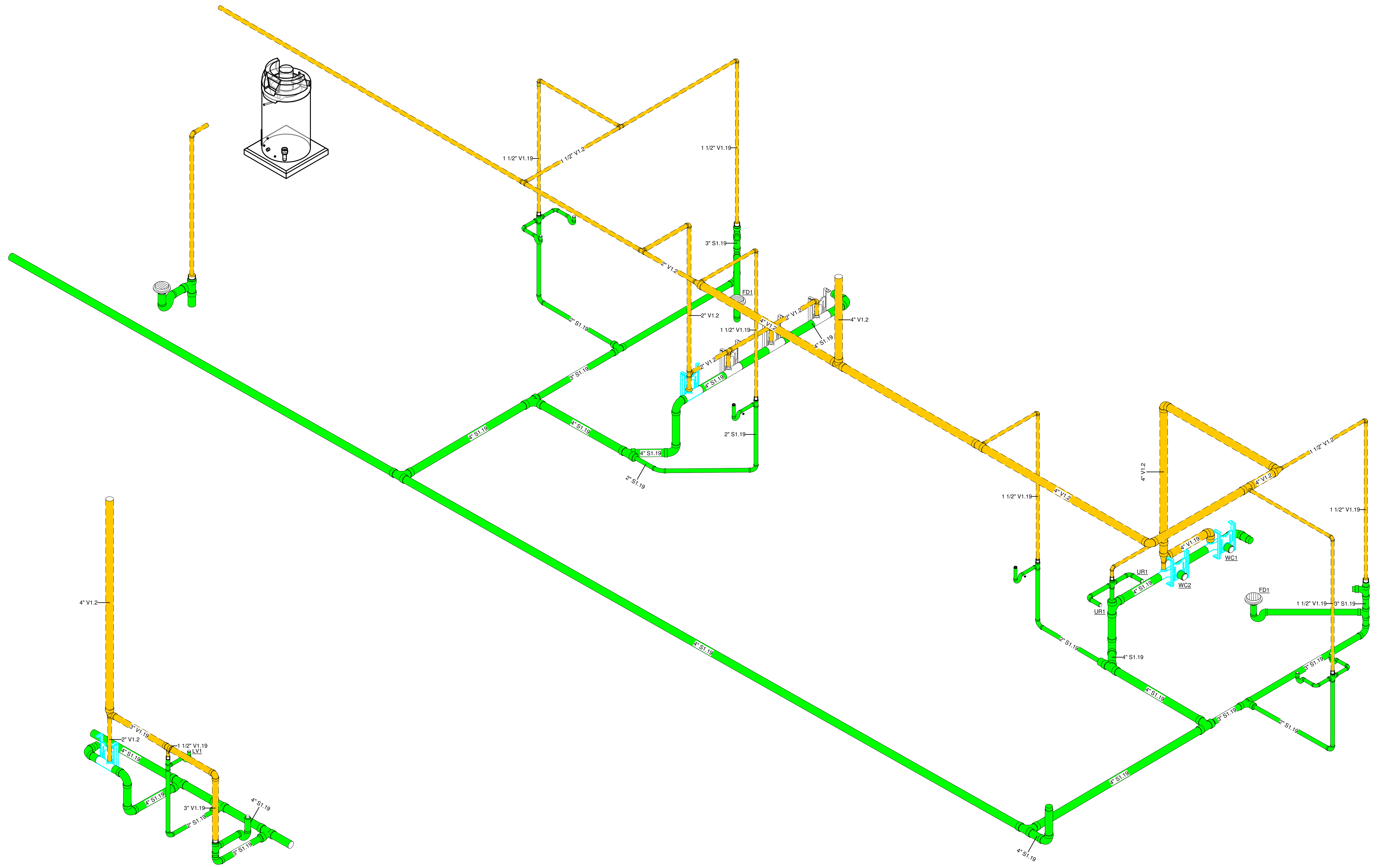
PLUMBING  
SCHEDULES

P6-601

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② PLUMBING - SANITARY ISOMETRIC - GYM RESTROOM ALTERNATE

① PLUMBING - SANITARY ISOMETRIC - GYM RESTROOMS

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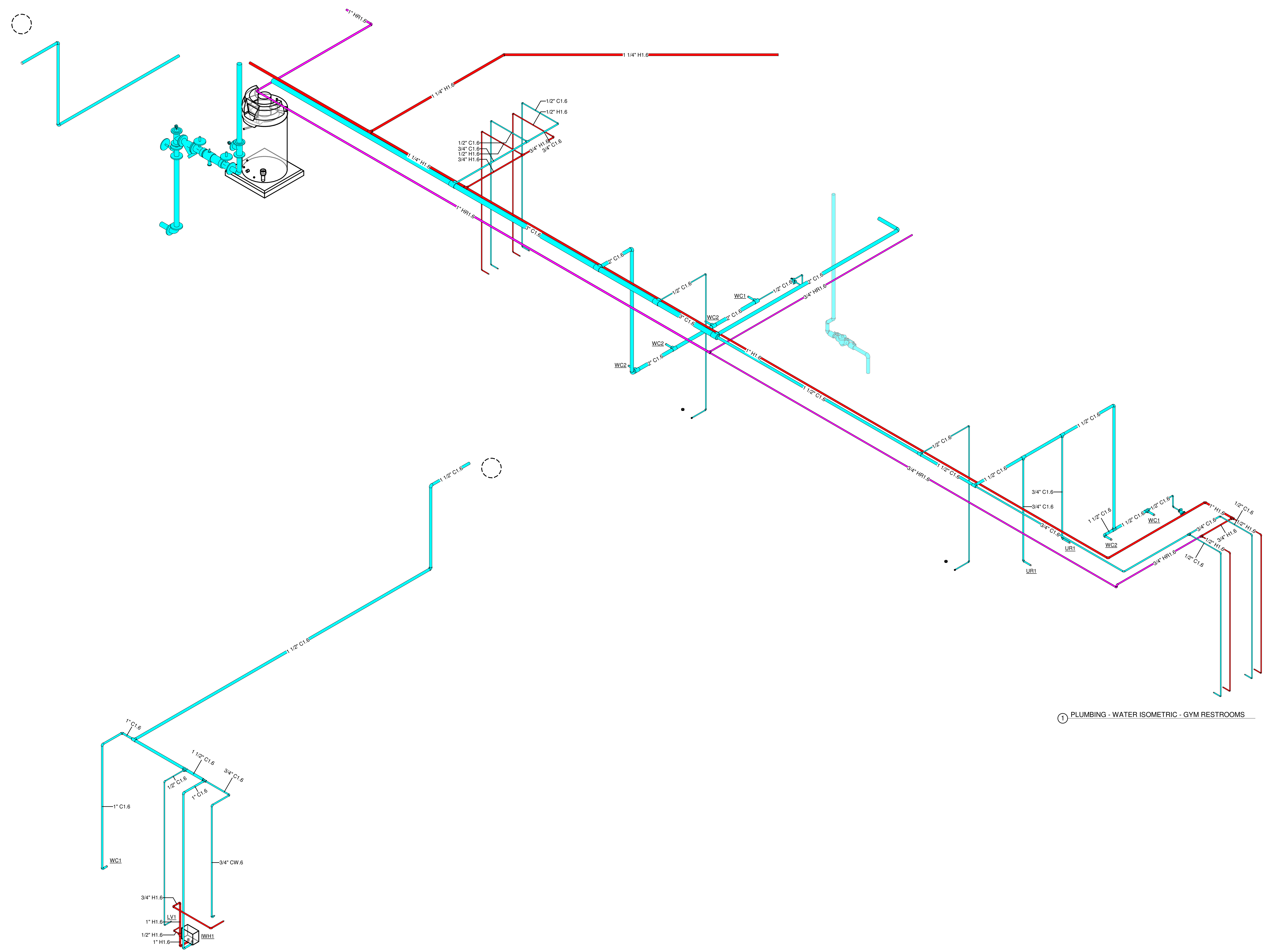
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 SANITARY  
 ISOMETRIC

P7-901

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② PLUMBING - WATER ISOMETRIC - GYM RESTROOM ALTERNATE

① PLUMBING - WATER ISOMETRIC - GYM RESTROOMS

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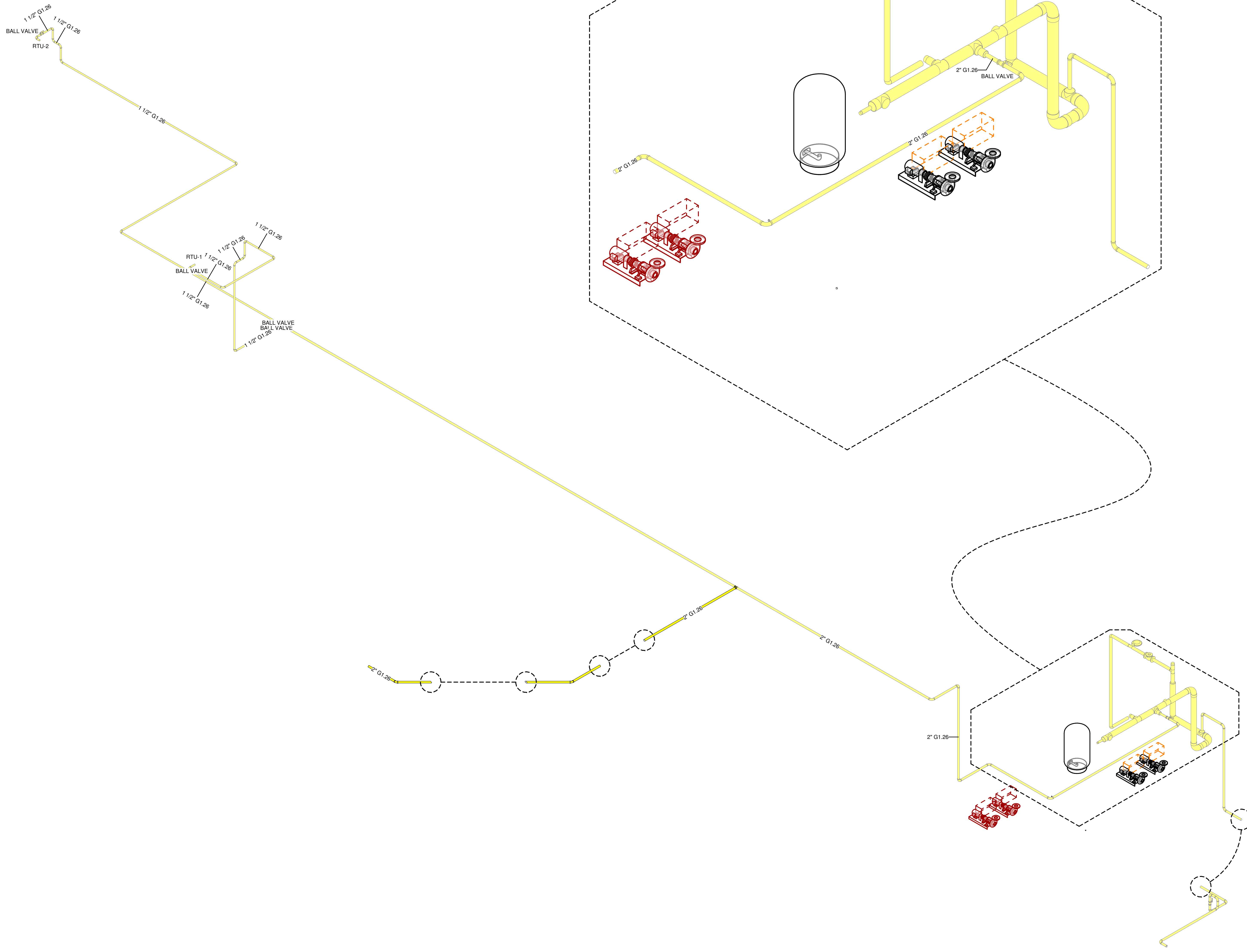
PLUMBING  
 WATER  
 ISOMETRIC

P7-902

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PLUMBING GAS  
ISOMETRIC

**P7-903**

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MECHANICAL LEGEND		MECHANICAL LEGEND	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
<b>PLAN-VIEW LINE TYPES</b>		<b>MECHANICAL DUCTWORK</b>	
	WORK SHOWN FADED INDICATES EXISTING WORK TO REMAIN OR NEW WORK BY OTHERS AS APPLICABLE		SUPPLY DUCT WITH ELBOW TURNED UP
	WORK SHOWN BOLD-DASHED INDICATES SELECTIVE DEMOLITION WORK		SUPPLY DUCT WITH ELBOW TURNED DOWN
	WORK SHOWN BOLD-CONTINUOUS INDICATES NEW WORK		RETURN DUCT WITH ELBOW TURNED UP
<b>DRAWING SET APPEARANCE</b>			RETURN DUCT WITH ELBOW TURNED DOWN
TO BETTER COMMUNICATE SCOPE TO PERMIT AGENCIES AND CONTRACTORS, EACH DRAWING IN THIS DRAWING SET HAS BEEN CREATED IN BOTH "COLOR" AND "BLACK AND WHITE". THERE EXISTS A COLOR LAYER WITHIN EACH DRAWING WHERE "VISIBILITY" IS CONTROLLED THROUGH THE "LAYER MANAGER". THIS LAYER VISIBILITY CAN BE TOGGLED DISPLAYING EITHER "COLOR" OR "BLACK AND WHITE". TO MAINTAIN SCOPE BASED SHADING WHEN PRINTING TO PAPER, BLACK AND WHITE NEEDS TO BE VISIBLE. FOR FURTHER INSTRUCTIONS, REFER TO CONTRACTOR RESOURCES ON OUR WEBSITE AND DOWNLOAD "DRAWING COLOR INSTRUCTIONS". WWW.KLHENGRS.COM - CONTRACTOR RESOURCES (RIGHT HAND SIDE OF PAGE).			
<b>PIPING LINE TYPES</b>			SUPPLY DUCT
	HWS HOT WATER SUPPLY		RETURN DUCT
	HWR HOT WATER RETURN		EXHAUST DUCT
	CHWS CHILLED WATER SUPPLY		OUTSIDE AIR DUCT
	CHWR CHILLED WATER RETURN		1" LINED DUCTWORK
	RL REFRIGERANT LIQUID		DUCT FLEX CONNECTOR
	RS REFRIGERANT SUCTION		FLEXIBLE DUCTWORK CONNECTION
	CD CONDENSATE DRAIN		BRANCH TAKEOFF
	SUPPLY MAIN OR BRANCH		REDUCER, CONCENTRIC
	RETURN MAIN OR BRANCH		REDUCER, NONCONCENTRIC
<b>MECHANICAL PIPING ACCESSORIES</b>		<b>MECHANICAL DUCTWORK ACCESSORIES</b>	
	MANUAL ISOLATION VALVE		DUCT WITH MANUAL VOLUME DAMPER
	CHECK VALVE (DIRECTION OF FLOW INDICATED)		ROUND ELBOW WITH TURNING VANES
	PRESSURE RELIEF VALVE		ELBOW WITH TURNING VANES
	PRESSURE REGULATING VALVE		MOTOR OPERATED DAMPER - LOW VOLTAGE
	AUTOMATIC BALANCING VALVE		DUCT MOUNTED SMOKE DETECTOR (HARD WIRE INTERLOCK TO FAN MOTOR BY E.C.) FURNISHED BY E.C., INSTALLED BY M.C.
	MANUAL BALANCING VALVE		FIRE DAMPER - 1.5 HR
	HEAT TRACING	<b>MECHANICAL STATS &amp; SENSORS</b>	
	UNION		TEMPERATURE SENSOR
	TEMPERATURE & PRESSURE TEST PORT		LOW VOLTAGE THERMOSTAT
	FLOW DIRECTION		LOW VOLTAGE THERMOSTAT WITH LOCKABLE GUARD
	FLEX PIPING CONNECTOR		CARBON MONOXIDE SENSOR
	THERMOMETER		CARBON DIOXIDE SENSOR
	PRESSURE GAUGE	<b>MECHANICAL MISCELLANEOUS</b>	
	SOLENOID VALVE		DIGITAL INPUT
	WATER METER		DIGITAL OUTPUT
	Y-STRAINER		ANALOG INPUT
	STRAINER WITH BLOW OFF		ANALOG OUTPUT
	DRAIN VALVE (3/4" UNLESS OTHERWISE NOTED)		HARD WIRE INTERLOCK
	MANUAL AIR VENT		ENVIRONMENTAL CONTROL PANEL
	2 WAY CONTROL VALVE (2 POSITION)		CONNECT TO EXISTING (FIELD VERIFY EXISTING UTILITY SERVICE TYPE, PRIOR TO MAKING CONNECTION)
<b>MECHANICAL AIR DEVICES</b>			1" DOOR UNDERCUT
	SUPPLY REGISTER		
	RETURN REGISTER		
	EXHAUST REGISTER		
	RETURN GRILLE		
	CEILING DIFFUSER		
	2x2 SQUARE CEILING DIFFUSER WITH 10" NECK		

**GENERAL DEMOLITION NOTE**  
MECHANICAL CONTRACTOR TO REMOVE EXISTING HVAC EQUIPMENT, WALL AIR CONDITIONERS, FLOOR MOUNTED HEATING VENTILATORS, DUCTWORK, HOT WATER PIPING, HANGERS, INSULATION, AIR DEVICES, CONTROLS, AND MISCELLANEOUS EQUIPMENT, ETC... NOT INTENDED FOR REUSE.

- NEW WORK GENERAL NOTES**
- PROVIDE ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO COMPLETELY FURNISH, INSTALL, AND PLACE INTO OPERATION, ALL SYSTEMS SHOWN ON THE DRAWINGS AND DELINEATED IN THE SPECIFICATIONS IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND ORDINANCES. REPORT ANY KNOWN DISCREPANCIES TO THE ARCHITECT/ENGINEER PRIOR TO INSTALLATION.
  - REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF CEILING DIFFUSERS, REGISTERS AND GRILLES.
  - DO NOT SCALE DRAWINGS; REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONED LOCATIONS OF WALLS, DOORS, WINDOWS, AND CABINETS.
  - COORDINATE WORK AND SPACE REQUIREMENTS IN CEILING SPACES WITH OTHER TRADES PRIOR TO INSTALLATION.
  - COORDINATE LOCATIONS AND ORIENTATION OF ROOF MOUNTED EQUIPMENT WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS. COORDINATE WALL LOUVERS WITH ARCHITECTURAL ELEVATIONS AND DETAILS.
  - PROVIDE VOLUME DAMPERS AT ALL SUPPLY, RETURN, AND EXHAUST DUCT BRANCH TAKE-OFFS.
  - PROVIDE TURNING VANES IN ALL 90 DEGREE MITERED ELBOWS. OMIT TURNING VANES IN ACOUSTIC LINED RETURN DUCT ELBOWS.
  - PROVIDE FLEXIBLE DUCT ON INLET TO EACH CEILING DIFFUSER. CUT FLEXIBLE DUCTS TO LENGTH NEEDED AND INSTALL WITHOUT KINKS OR SHARP BENDS (BENDS WITH CENTERLINE RADIUS LESS THAN DUCT DIAMETER). SUPPORT FLEXIBLE DUCTS WITH MINIMUM 1" WIDE METAL STRAPS OR SADDLES.
  - SIZES OF ACOUSTIC LINED DUCTS ARE NET INSIDE DIMENSION. INCREASE SHEET METAL SIZE ACCORDINGLY.
  - RUNOUTS TO CEILING DIFFUSERS ARE THE SAME SIZE AS THE DIFFUSER NECK UNLESS NOTED OTHERWISE.
  - INSTALL ALL EQUIPMENT WITH CODE REQUIRED AND MANUFACTURER RECOMMENDED MINIMUM CLEARANCES FOR SERVICE, ACCESS, AND FIRE PROTECTION.
  - MAINTAIN A MINIMUM OF 10 FEET BETWEEN ALL OUTSIDE AIR INTAKES AND ALL EXHAUST, VENT, AND FLUE OUTLETS.
  - ALL MATERIALS EXPOSED WITHIN PLENUMS SHALL BE NON-COMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84.
  - ALL FLOOR PENETRATIONS SHALL BE COORDINATED WITH THE CONCRETE RIBS IN THE FLOOR STRUCTURE.

**STANDARD HVAC ABBREVIATIONS**

AAV	AUTOMATIC AIR VENT	HD	HEAD	RO	REVERSE OSMOSIS
ACCESS	ACCESSORIES	HQA	HAND-OFF/AUTOMATIC	RPM	REVOLUTIONS PER MINUTE
AD	ACCESS DOOR	HP	HORSEPOWER	RS	REFRIGERANT SUCTION
AFF	ABOVE FINISHED FLOOR	HPR	HIGH PRESSURE RETURN	SA	SUPPLY AIR
AMP	AMPERE	HRTZ	HERTZ	SAT	SUPPLY AIR TEMPERATURE
AP	ACCESS PANEL	HSTAT	HUMIDISTAT	SCD	SMOKE CONTROL DAMPER
APD	AIR PRESSURE DROP	HTG	HEATING	SD	SMOKE DETECTOR
ARI	AIR CONDITIONING AND REFRIGERATION INSTITUTE	HWR	HEATING HOT WATER RETURN	SENS	SENSIBLE HEAT
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS	HWS	HEATING HOT WATER SUPPLY	SP	STATIC PRESSURE
SAS	BUILDING AUTOMATION SYSTEM	HZ	HERTZ	TAB	TESTING, ADJUSTING, BALANCE
BD	BACKDRAFT DAMPER	IO	INPUT/OUTPUT	TDR	TOTAL DYNAMIC HEAD
BHP	BRAKE HORSEPOWER	IAQ	INDOOR AIR QUALITY	TDS	TOTAL DISSOLVED SOLIDS
BTU	BRITISH THERMAL UNIT	IN HG	INCHES OF MERCURY	TSP	TOTAL STATIC PRESSURE
BTUH	BRITISH THERMAL UNIT PER HOUR	IN WC	INCH WATER COLUMN	TS/AT	THERMOSTAT
CD	CEILING DIFFUSER	IN WG	INCH WATER GAUGE	UL	UNDERWRITERS LABORATORY
CFM	CUBIC FEET PER MINUTE	IP/LV	INTERGRATED PART LOAD VALUE	VAV	VARIABLE AIR VOLUME
CFH	CUBIC FEET PER HOUR	INST	INSTALLED	VFD	VARIABLE FREQUENCY DRIVE
CHWR	CHILLED WATER RETURN	KW	KILOWATT	WB	WET-BULB (TEMPERATURE)
CHWS	CHILLED WATER SUPPLY	KWH	KILOWATT HOUR	WG	WATER GAGE
CI	CAST IRON	LAT	LEAVING AIR TEMPERATURE	WPD	WATER SIDE PRESSURE DROP
CLG	COOLING	LBS/HR	POUNDS PER HOUR	WIRE	WIRED
CO	CARBON MONOXIDE	LF	LINEAR FOOT (FEET)		
CO2	CARBON DIOXIDE	LPR	LOW PRESSURE RETURN		
COP	COEFFICIENT OF PERFORMANCE	LPS	LOW PRESSURE STEAM		
CV	CONSTANT VOLUME	LWT	LEAVING WATER TEMPERATURE		
CWR	CONDENSER WATER RETURN	LX	LEAVING WATER TEMPERATURE		
CWS	CONDENSER WATER SUPPLY	MAX	MAXIMUM		
DB	DECIBELS	MBH	1000 BTUH		
DB	DRY-BULB TEMPERATURE	MCA	MINIMUM BRANCH CIRCUIT AMPACITY		
DC	DISCONNECT	MERV	MINIMUM EFFICIENCY REPORTING VALUE		
DDC	DIRECT DIGITAL CONTROLS	MIN	MINIMUM		
DEG	DEGREE DELTA(CHANGE IN TEMPERATURE)	MOD	MOTOR OPERATED DAMPER		
DIA	DIAMETER	MPS	MEDIUM PRESSURE RETURN		
DW	DEW POINT WATER	MPP	MEDIUM PRESSURE STEAM		
DP	DEW POINT TEMPERATURE	MPS	MEDIUM PRESSURE STEAM		
DX	DIRECT EXPANSION	MRI	MAGNETIC RESONANCE IMAGING		
EAT	ENTERING AIR TEMPERATURE	MV/D	MANUAL VOLUME DAMPER		
EA	EXHAUST AREA	NA	NOT APPLICABLE		
EG	EXHAUST GRILLE	NC	NOISE CRITERIA		
EMERG	EMERGENCY POWER	NC	NORMALLY CLOSED		
ESP	EXTERNAL STATIC PRESSURE	NO	NORMALLY OPEN		
EWT	ENTERING WATER TEMPERATURE	NOT	NOT TO SCALE		
EX	EXISTING	O/S	OUTSIDE AIR		
F	FAHRENHEIT	OC	OVER CURRENT PROTECTION		
F&T	FLOAT AND THERMOSTATIC	PD	PRESSURE DROP		
FA	FIRE AREA	PPM	PARTS PER MILLION		
FD	FIRE DAMPER	PRS	PRESSURE REGULATING (VALVE) STATION		
FLA	FULL LOAD AMPERES	PRV	PRESSURE REGULATING VALVE		
FLM	FEET PER MINUTE	PSI	POUNDS PER SQUARE INCH		
FPS	FEET PER SECOND	PSIA	POUNDS PER SQUARE INCH - ABSOLUTE		
FURN	FURNISHED	PSIG	POUNDS PER SQUARE INCH - GAGE		
GAL	GALLONS	RA	RETURN AIR TEMPERATURE		
GPM	GALLONS PER MINUTE	RH	RELATIVE HUMIDITY		
		RL	REFRIGERANT LIQUID LINE		
		RLA	RUN LOAD AMPERE		

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10/13/23	Owner Review Set	

DWN: JJK CHK: RAL  
DATE: 10-13-2023

PROJECT #: 24599.00

**M0-001**  
MECHANICAL COVER SHEET

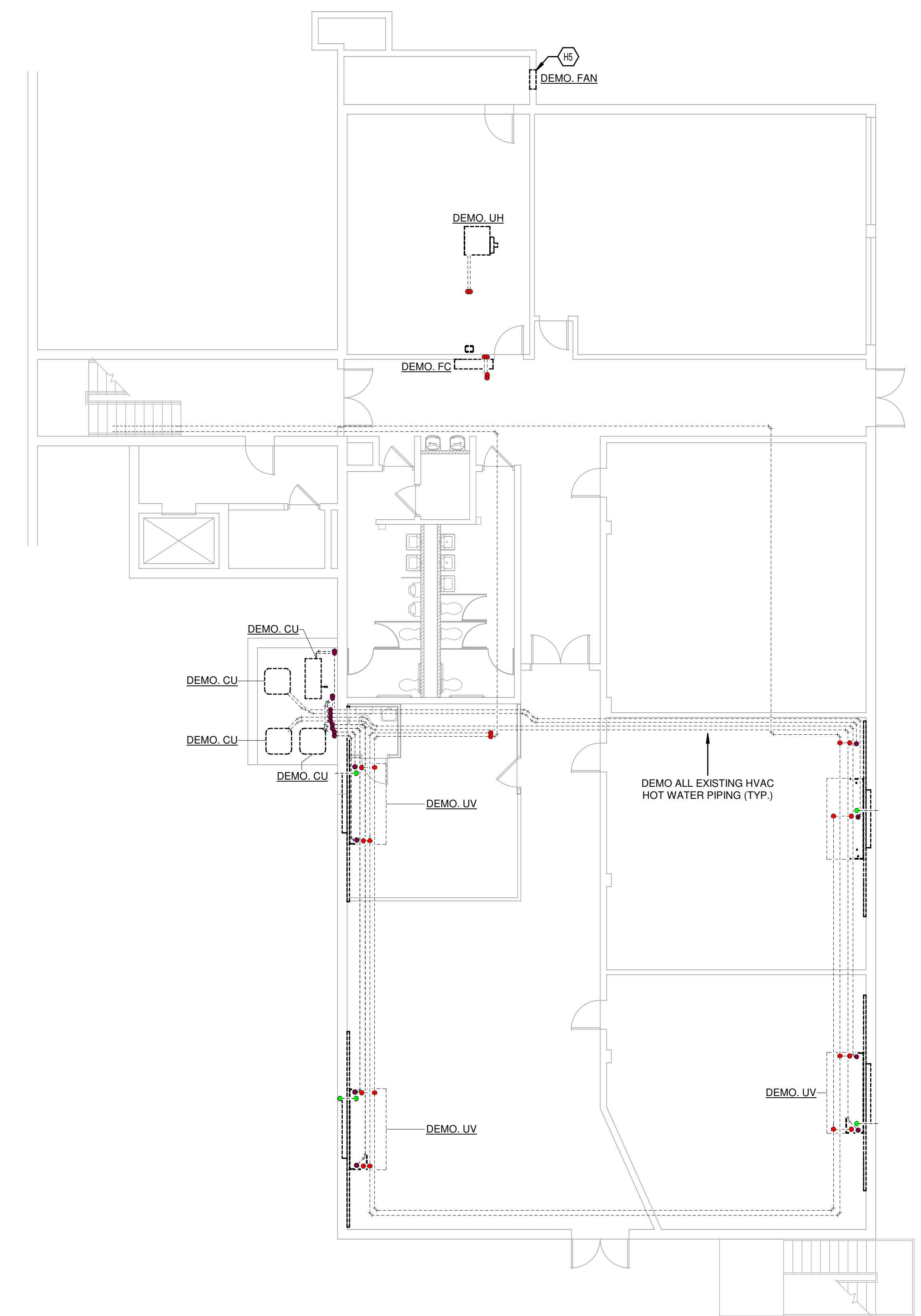
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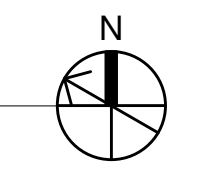
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MECHANICAL DEMOLITION PLAN - LEVEL C - LEVEL C  
1/8" = 1'-0"



**KEYED NOTES**  
HS DEMOLISH EXISTING LOUVER AND PATCH WALL.



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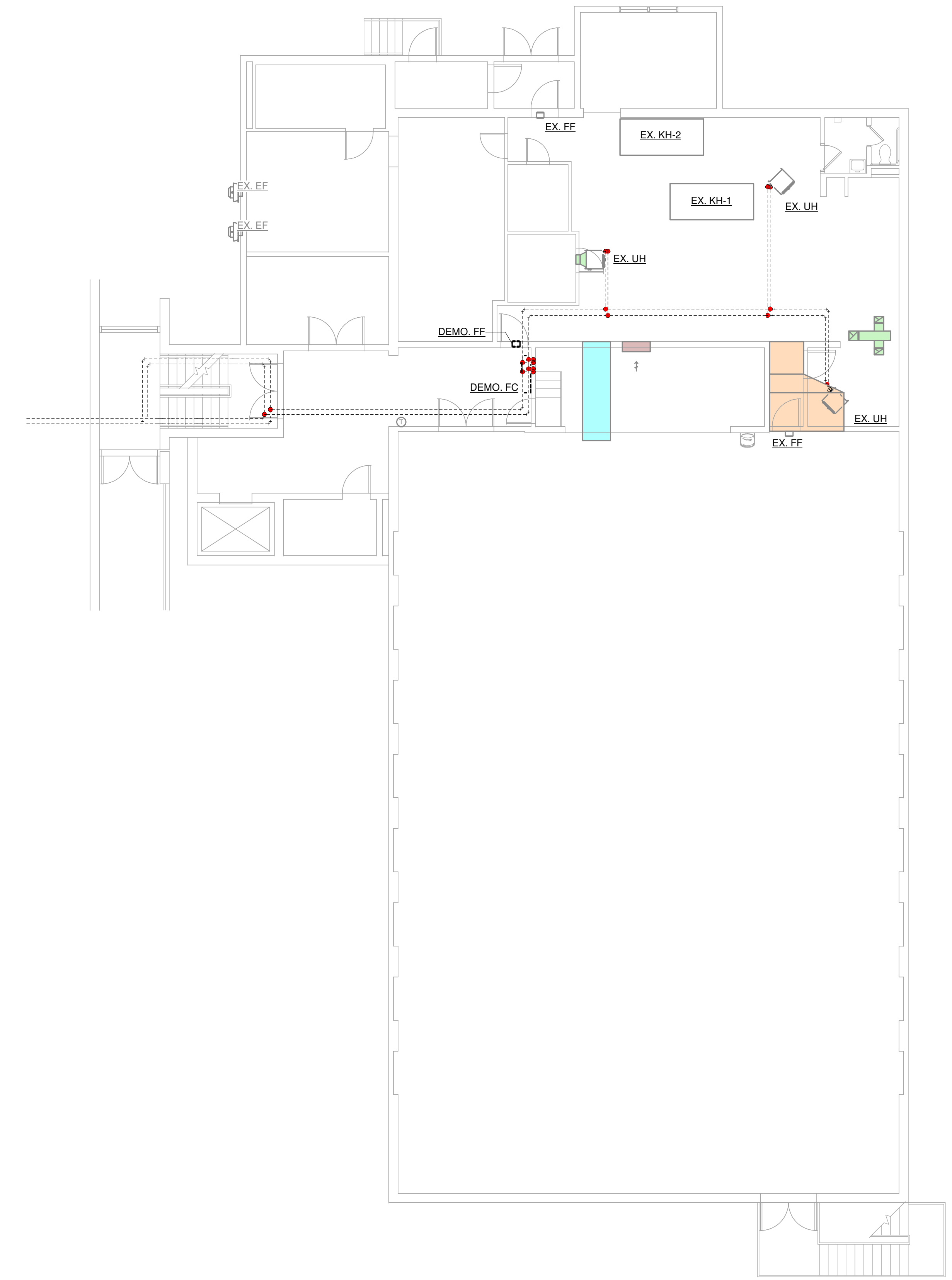
DWN: JJK CHK: RAL  
DATE: 10-13-2023  
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MECHANICAL  
DEMOLITION  
LEVEL C PLAN  
LEVEL C

M1-100  
1" REFERENCE  
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24599

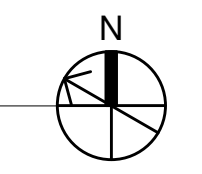
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KEYED NOTES

MECHANICAL DEMOLITION PLAN - LEVEL M - LEVEL M  
1/8" = 1'-0"



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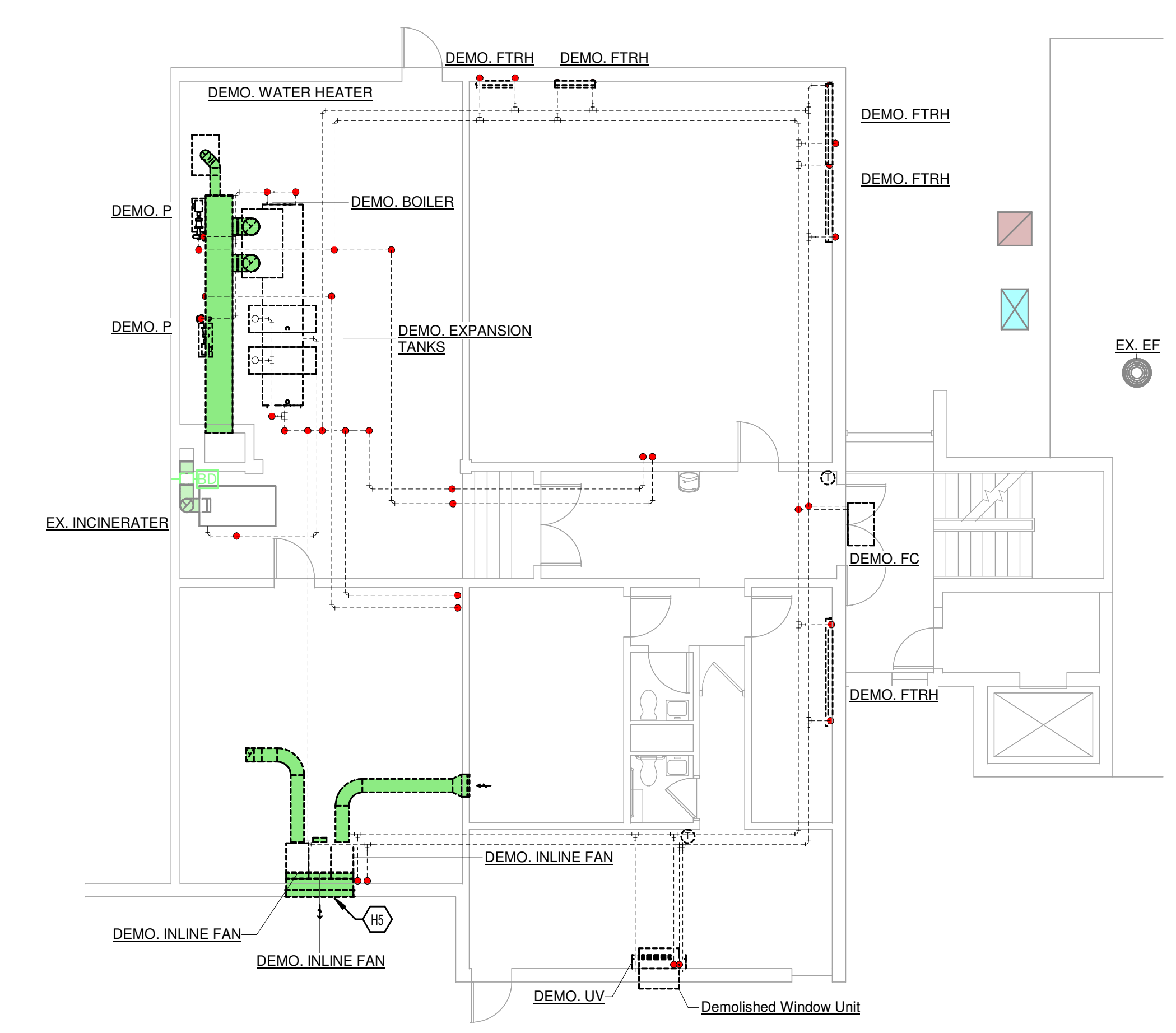
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DATE: 10-13-2023  
PROJECT #: 24599.00

MECHANICAL  
DEMOLITION  
LEVEL M PLAN  
LEVEL M

**M1-101**  
1" REFERENCE  
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10/13/2023 2:56:34(C:\Users\jkupser\Documents\Revit\24599.00-23-MEP-PRMO Grandview Elementary School\_kkupser.rvt)



1 MECHANICAL DEMOLITION PLAN - LEVEL B - LEVEL B  
1/8" = 1'-0"

**KEYED NOTES**  
HS DEMOLISH EXISTING LOUVER AND PATCH WALL.

# Grandview Elementary School HVAC Reno.

500 Grandview Ave, Bellevue, KY 41073

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REVISIONS

NO.	DESCRIPTION	DATE

DWN: JJK CHK: RAL  
DATE: 10-13-2023  
PROJECT #: 24599.00

MECHANICAL  
DEMOLITION  
LEVEL B PLAN  
LEVEL B

M1-102

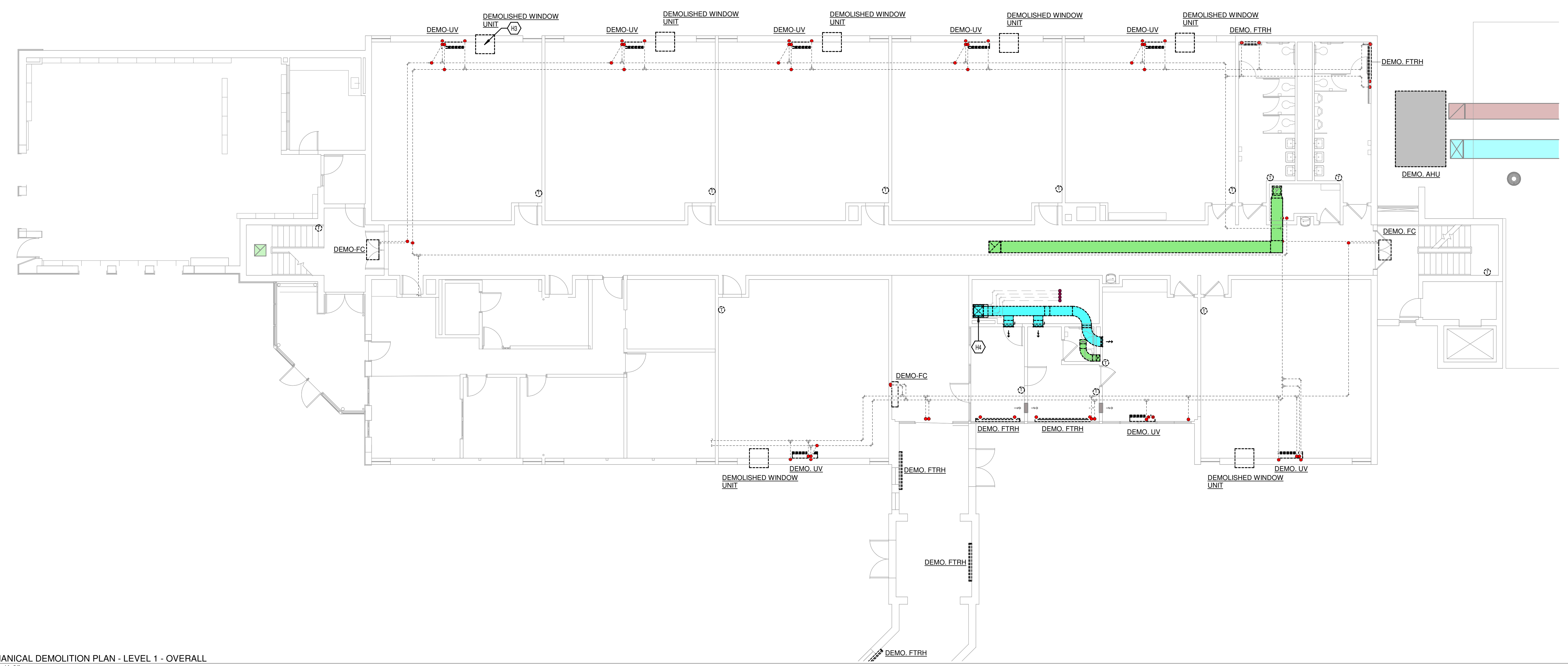
1" REFERENCE  
KLH PROJECT #  
24599

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1 MECHANICAL DEMOLITION PLAN - LEVEL 1 - OVERALL  
1/8" = 1'-0"



- KEYED NOTES**
- H3 DEMOLISH ALL WINDOW UNITS INSTALLED THROUGH WALL. COORDINATE PATCHING OF WALL WITH ARCHITECTURAL DRAWINGS. (TYP.)
  - H4 DEMOLISH EXISTING FANCOIL, DUCTWORK, AIR DEVICES, AND CONTROLS.

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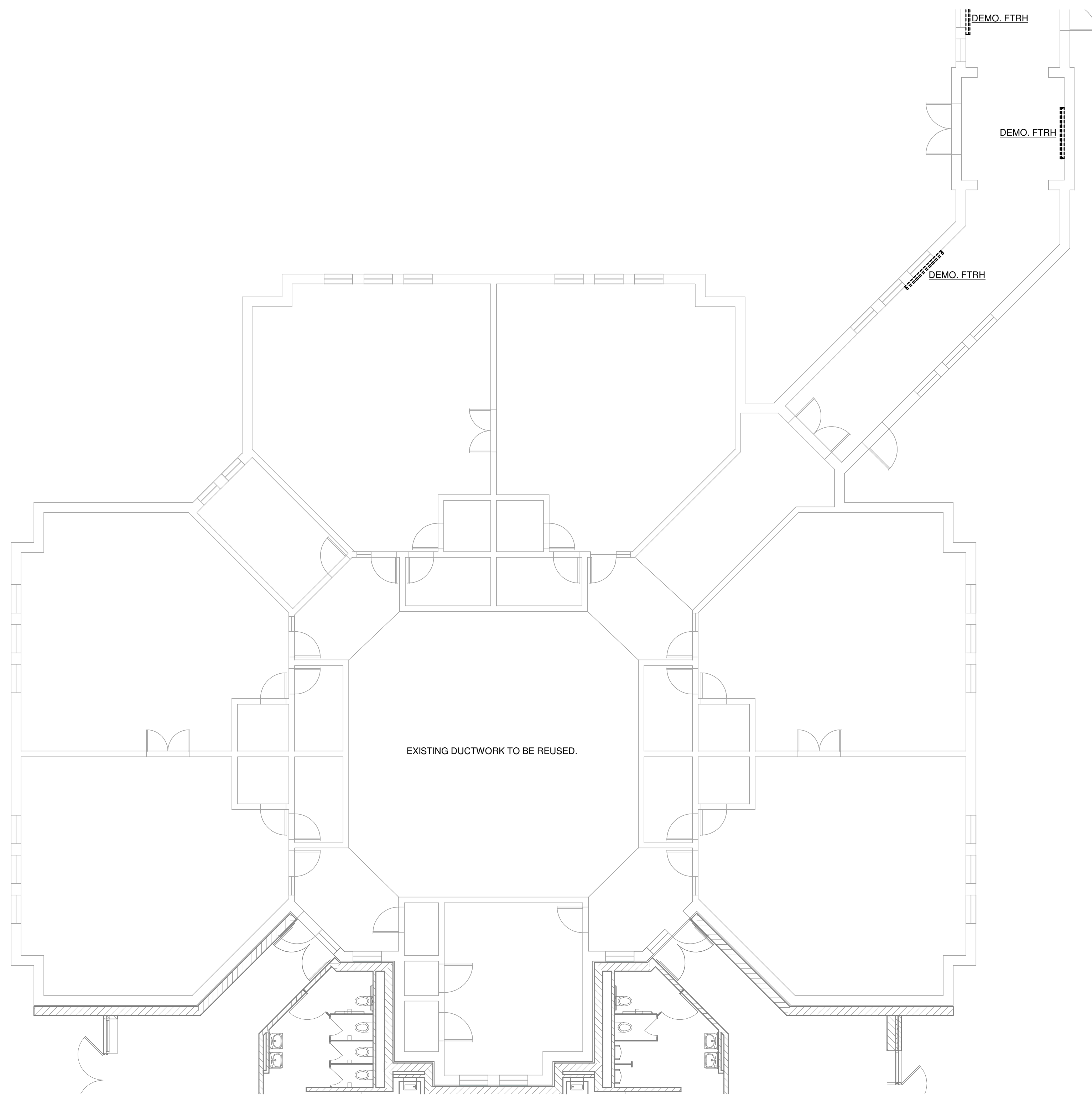
DWN: JJK CHK: RAL  
DATE: 10-13-2023  
PROJECT #: 24599.00

MECHANICAL  
DEMOLITION  
LEVEL 1 PLAN  
OVERALL

M1-103  
1" REFERENCE  
KLH PROJECT #  
24599

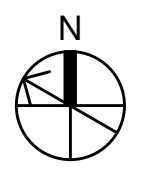
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KEYED NOTES

MECHANICAL DEMOLITION PLAN - LEVEL 1 - 90S ADDITION  
1/8" = 1'-0"



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PROJECT #: 24599.00

MECHANICAL  
DEMOLITION  
LEVEL 1 PLAN  
90S ADDITION

M1-104

1" REFERENCE  
KLH PROJECT #  
24599

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1 MECHANICAL DEMOLITION PLAN - LEVEL 2 - OVERALL  
1/8" = 1'-0"

**KEYED NOTES**  
H4 DEMOLISH EXISTING FANCOIL, DUCTWORK, AIR DEVICES, AND CONTROLS.  
H6 DEMOLISH EXISTING REGISTERS AND PATCH WALL.

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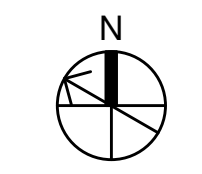
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CONSTRUCTION

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DATE: 10-13-2023  
PROJECT #: 24599.00

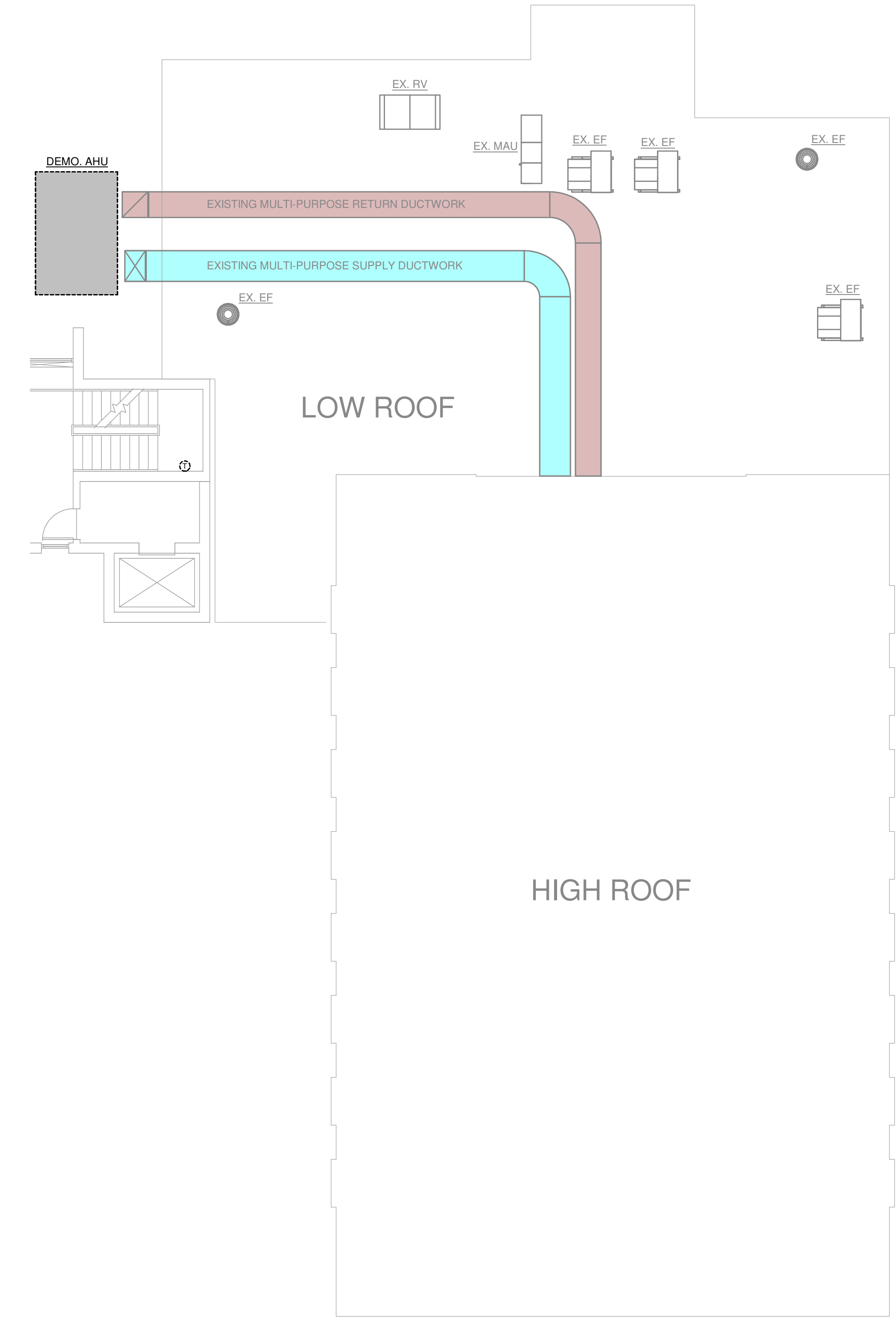
MECHANICAL  
DEMOLITION  
LEVEL 2 PLAN  
OVERALL

**M1-106**  
1" REFERENCE  
KLH PROJECT #  
24599

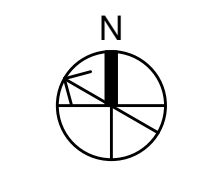


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1 MECHANICAL DEMOLITION PLAN - LOW ROOF - LEVEL M  
 1/8" = 1'-0"



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MECHANICAL  
 DEMOLITION  
 LOW ROOF  
 PLAN LEVEL M

**M1-107**

1" REFERENCE  
 KLH PROJECT #  
 24599

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1 MECHANICAL DEMOLITION PLAN - ROOF - OVERALL  
1/8" = 1'-0"



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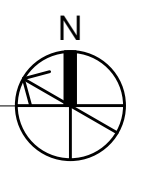
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DATE: 10-13-2023  
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MECHANICAL  
DEMOLITION  
ROOF PLAN  
OVERALL

**M1-108**  
1" REFERENCE  
KLH PROJECT #  
24599

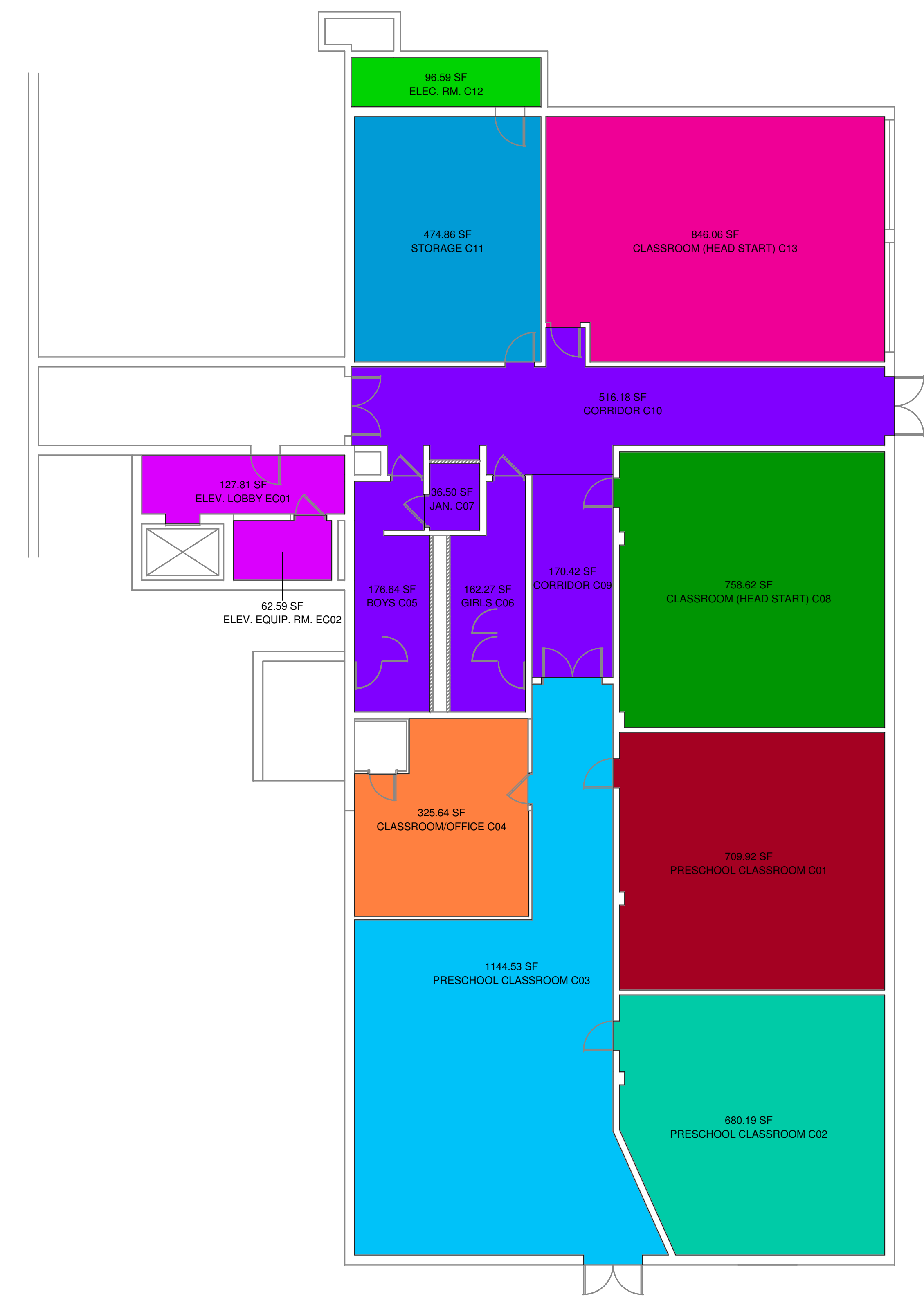




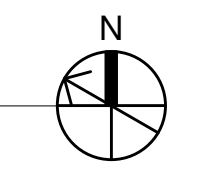
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KEYED NOTES



MECHANICAL SYSTEM ZONES PLAN - LEVEL C - OVERALL  
 1/8" = 1'-0"



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MECHANICAL ZONING LEVEL C PLAN OVERALL

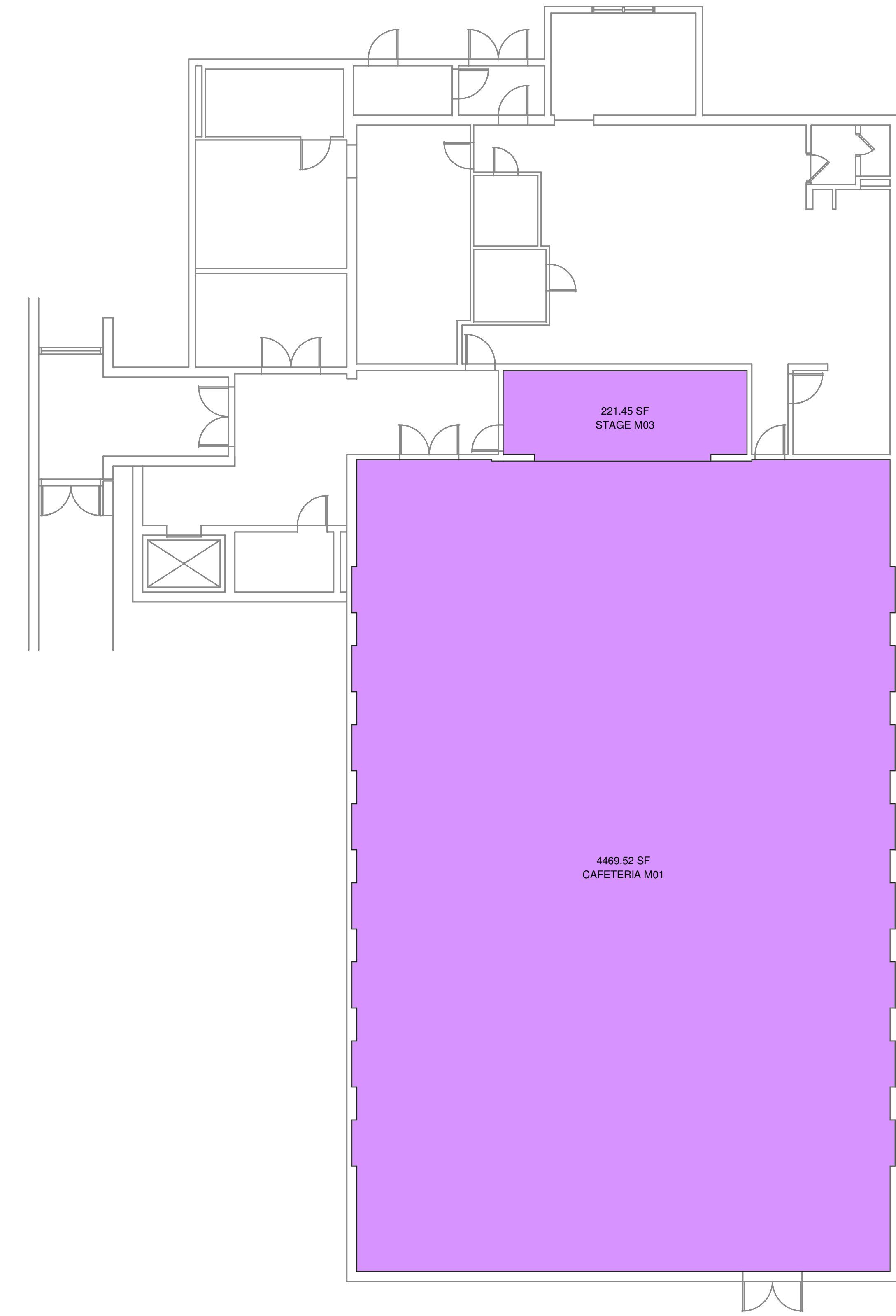
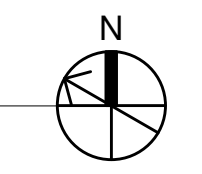
M2-100

1" REFERENCE  
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MECHANICAL SYSTEM ZONES PLAN - LEVEL M - OVERALL  
1/8" = 1'-0"



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PROJECT #: 24599.00

MECHANICAL  
ZONING LEVEL  
M PLAN  
OVERALL

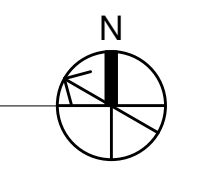
**M2-101**  
1" REFERENCE  
KLH PROJECT #  
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1 MECHANICAL SYSTEM ZONES PLAN - LEVEL B - OVERALL  
1/8" = 1'-0"



KEYED NOTES

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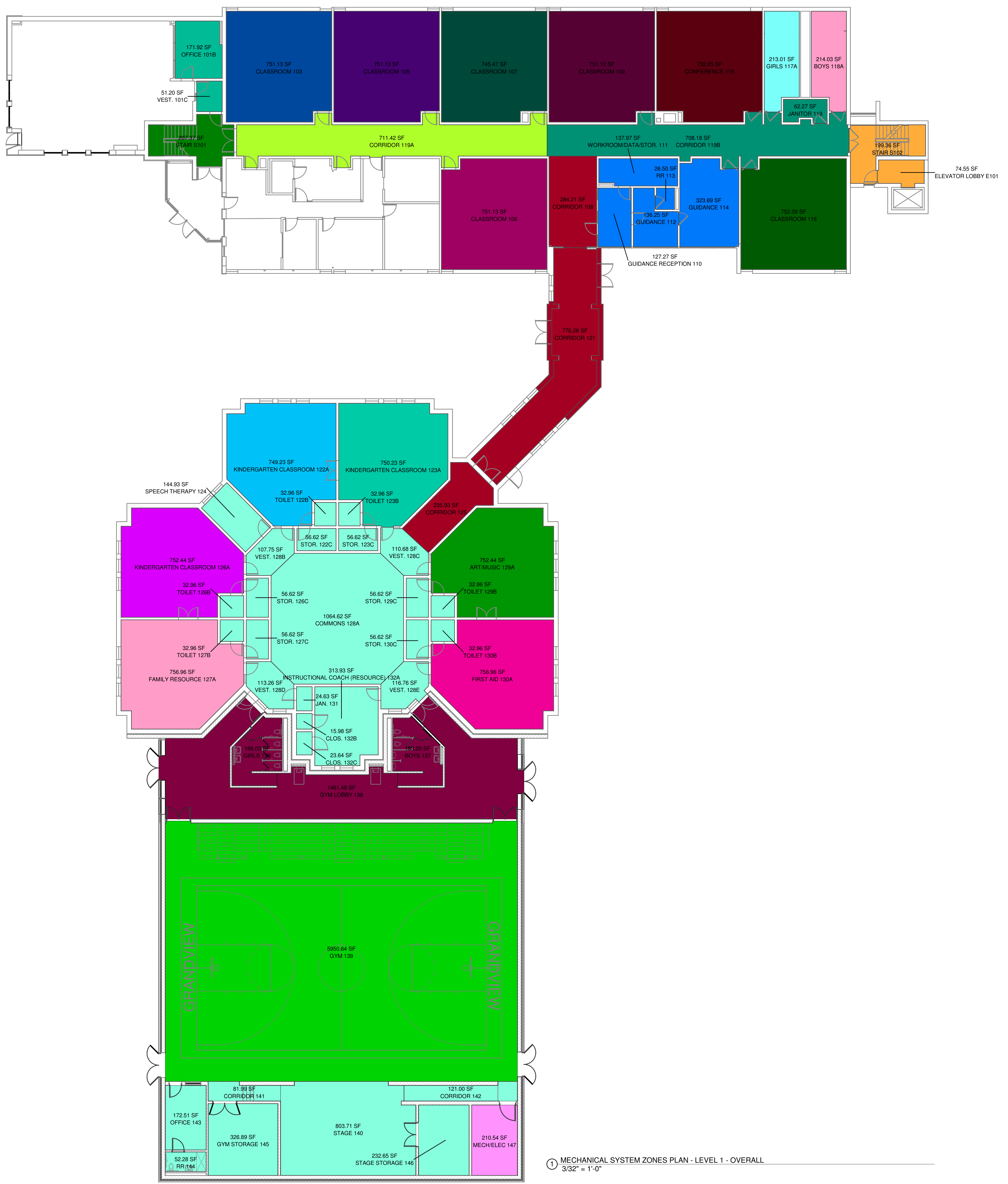
MECHANICAL  
ZONING LEVEL  
B PLAN  
OVERALL

## M2-102

1" REFERENCE  
KLH PROJECT #  
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1 MECHANICAL SYSTEM ZONES PLAN - LEVEL 1 - OVERALL  
 3/32" = 1'-0"

KEYED NOTES

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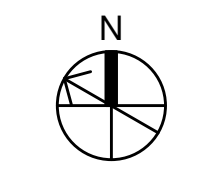
NO.	REVISIONS

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MECHANICAL ZONING LEVEL  
 1 PLAN  
 OVERALL

**M2-103**

1" REFERENCE  
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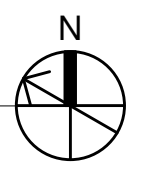
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① MECHANICAL SYSTEM ZONES PLAN - LEVEL 2 - OVERALL  
1/8" = 1'-0"



KEYED NOTES

FCU-1



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FCU-3

# Grandview Elementary School HVAC Reno.

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FCU-4

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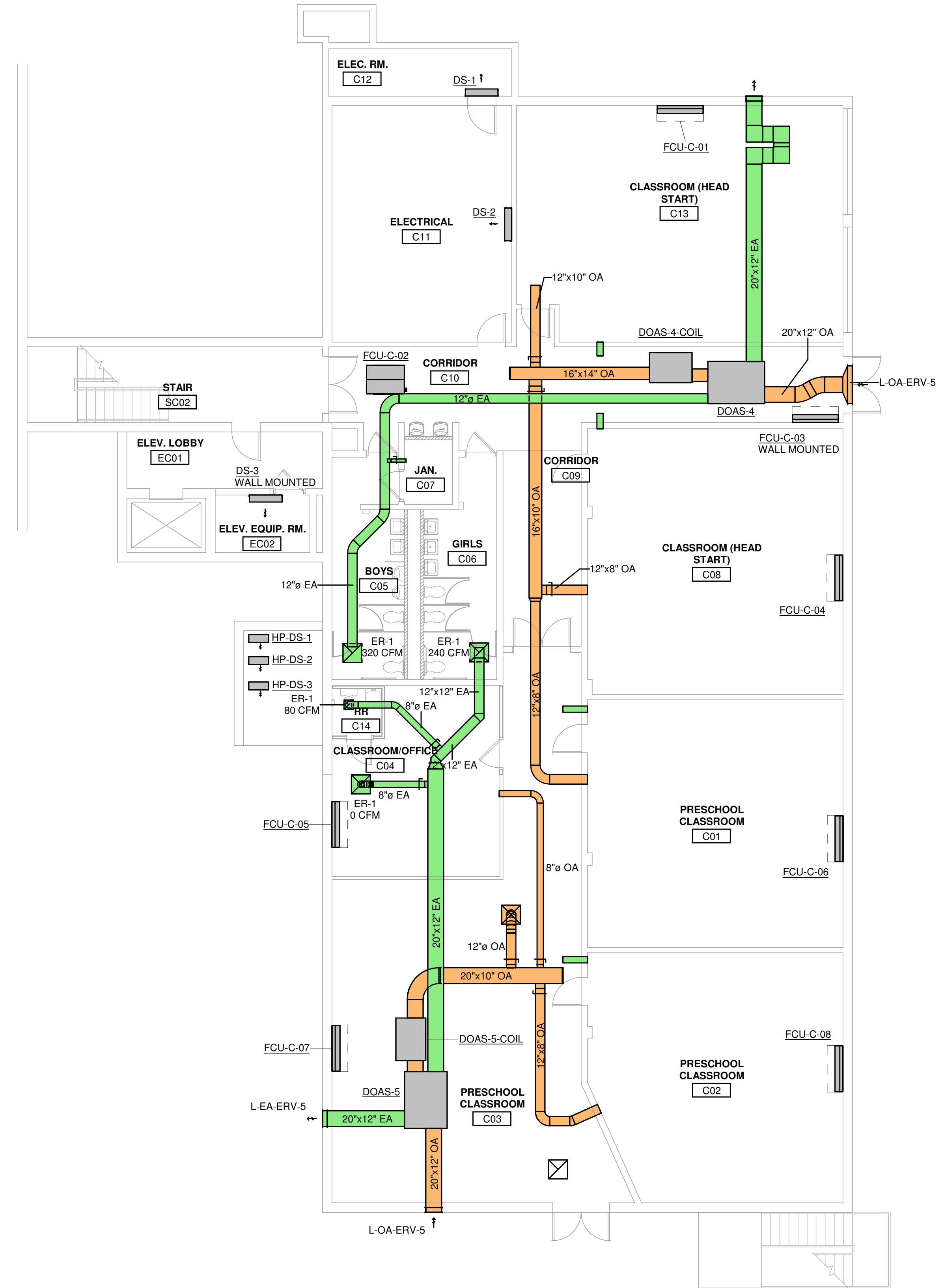
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PROJECT #: 24599.00

MECHANICAL  
ZONING LEVEL  
2 PLAN  
OVERALL

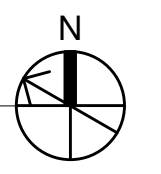
M2-104

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KEYED NOTES



MECHANICAL PLAN - LEVEL C - OVERALL  
 1/8" = 1'-0"



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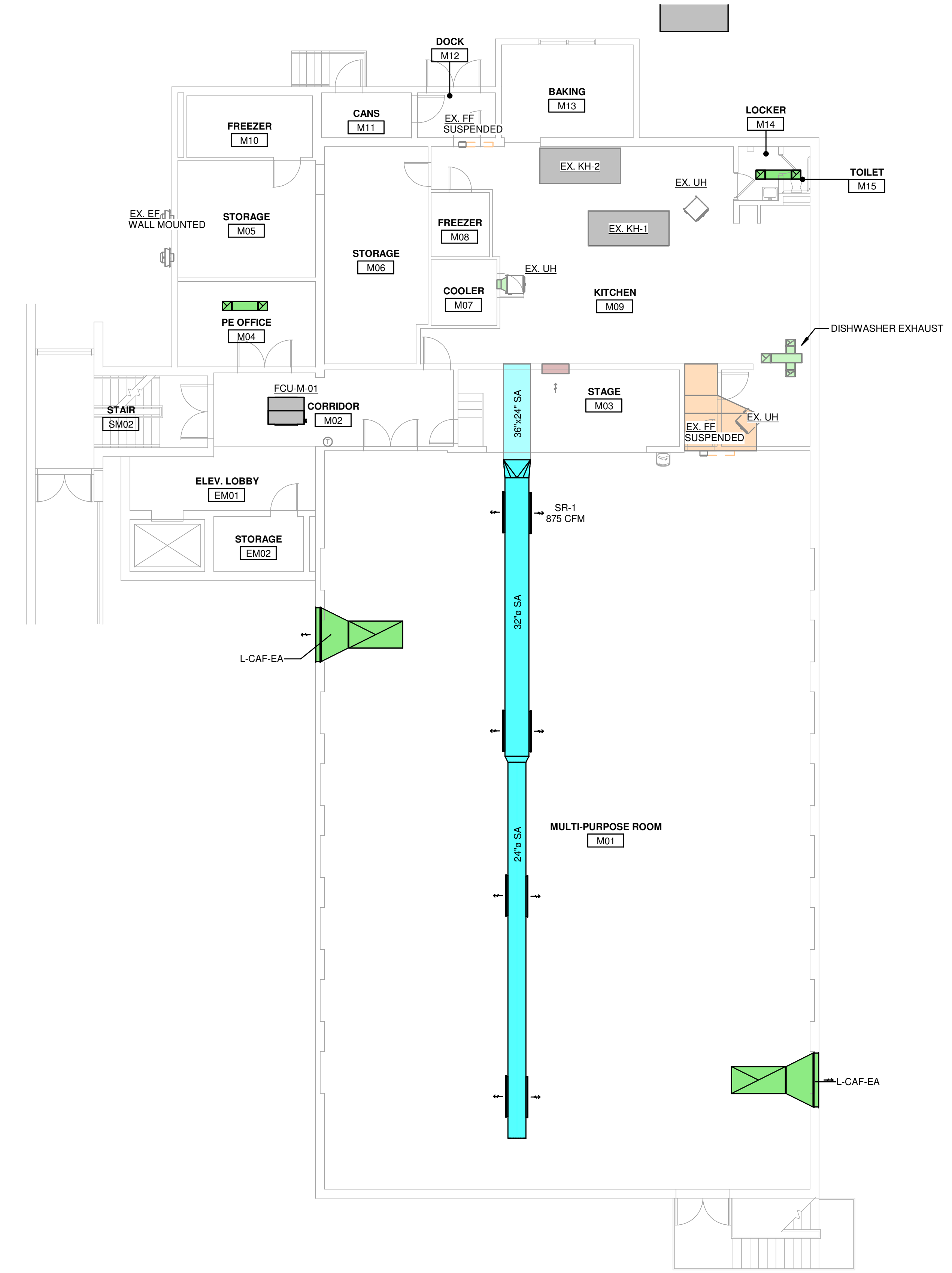
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MECHANICAL  
 DUCTWORK  
 LEVEL C PLAN  
 OVERALL

M3-100  
 1" REFERENCE  
 KLH PROJECT #  
 24599

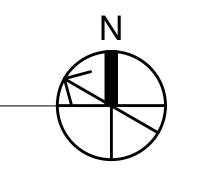
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KEYED NOTES

MECHANICAL PLAN - LEVEL M - OVERALL  
 1/8" = 1'-0"



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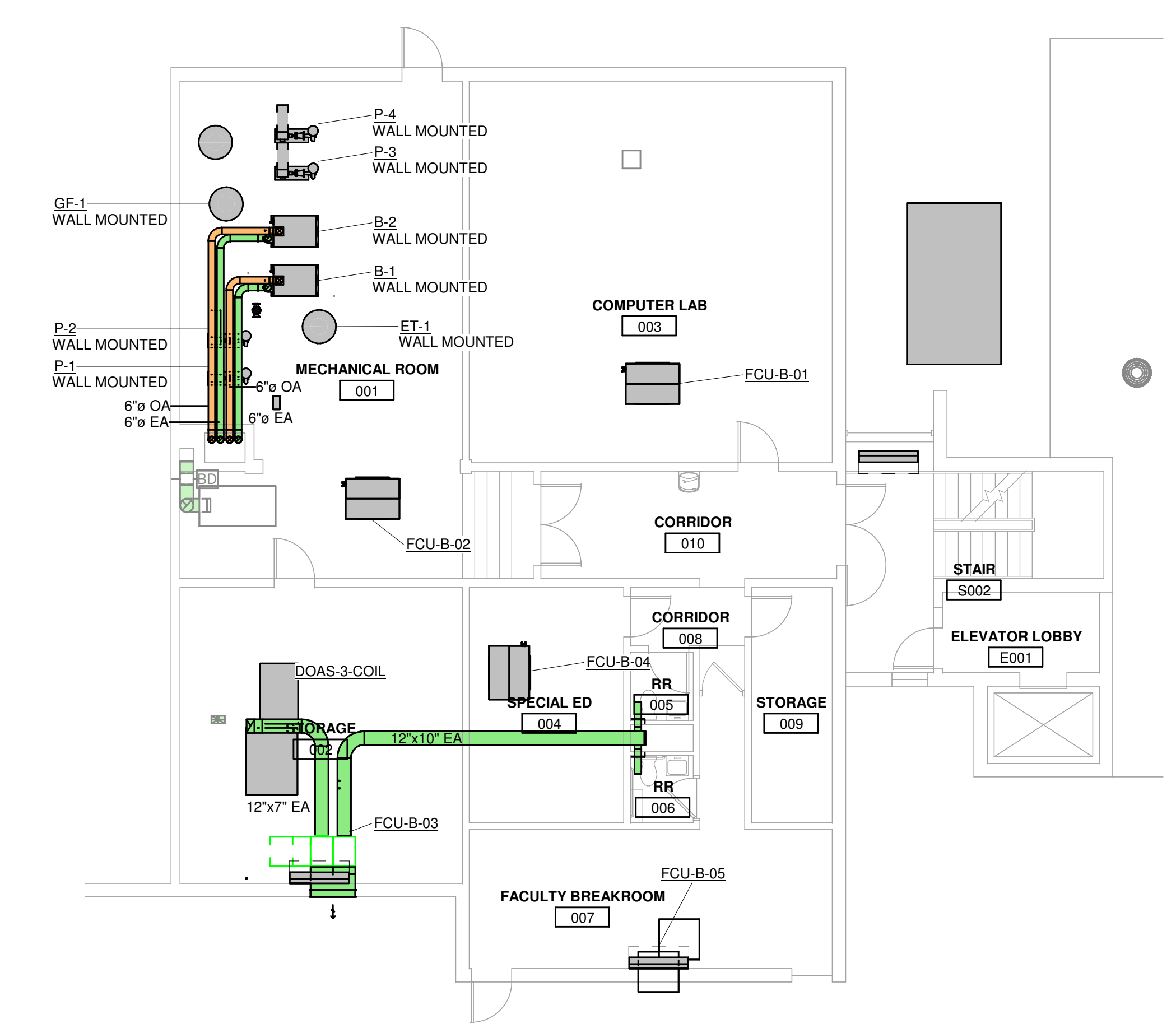
MECHANICAL DUCTWORK  
 LEVEL M PLAN  
 OVERALL

M3-101

1" REFERENCE  
 KLH PROJECT #  
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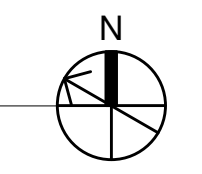
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KEYED NOTES

1 MECHANICAL PLAN - LEVEL B - OVERALL  
1/8" = 1'-0"



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MECHANICAL DUCTWORK  
LEVEL B PLAN  
OVERALL

M3-102

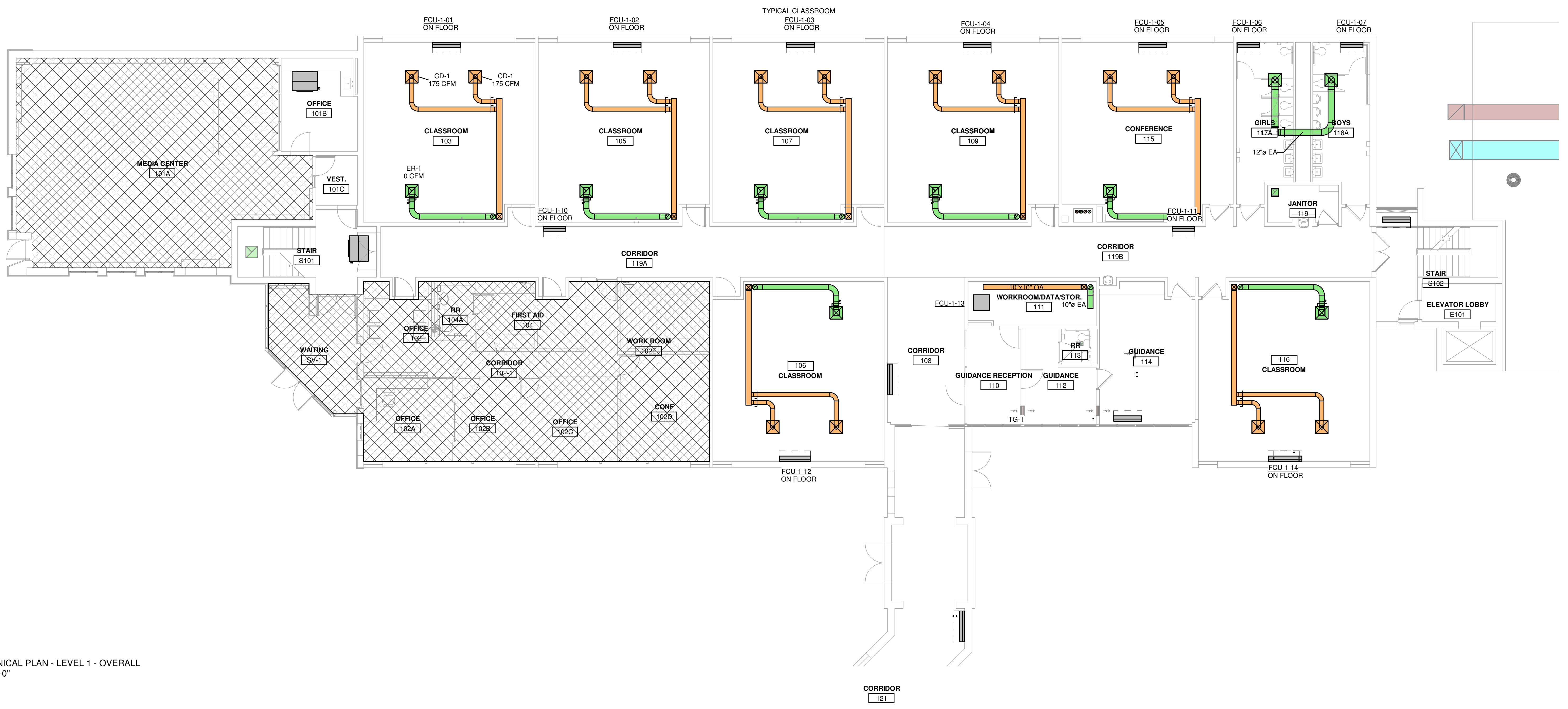
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1 MECHANICAL PLAN - LEVEL 1 - OVERALL  
1/8" = 1'-0"



KEYED NOTES

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MECHANICAL DUCTWORK  
LEVEL 1 PLAN  
OVERALL

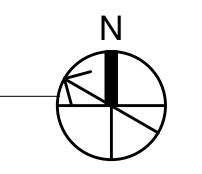
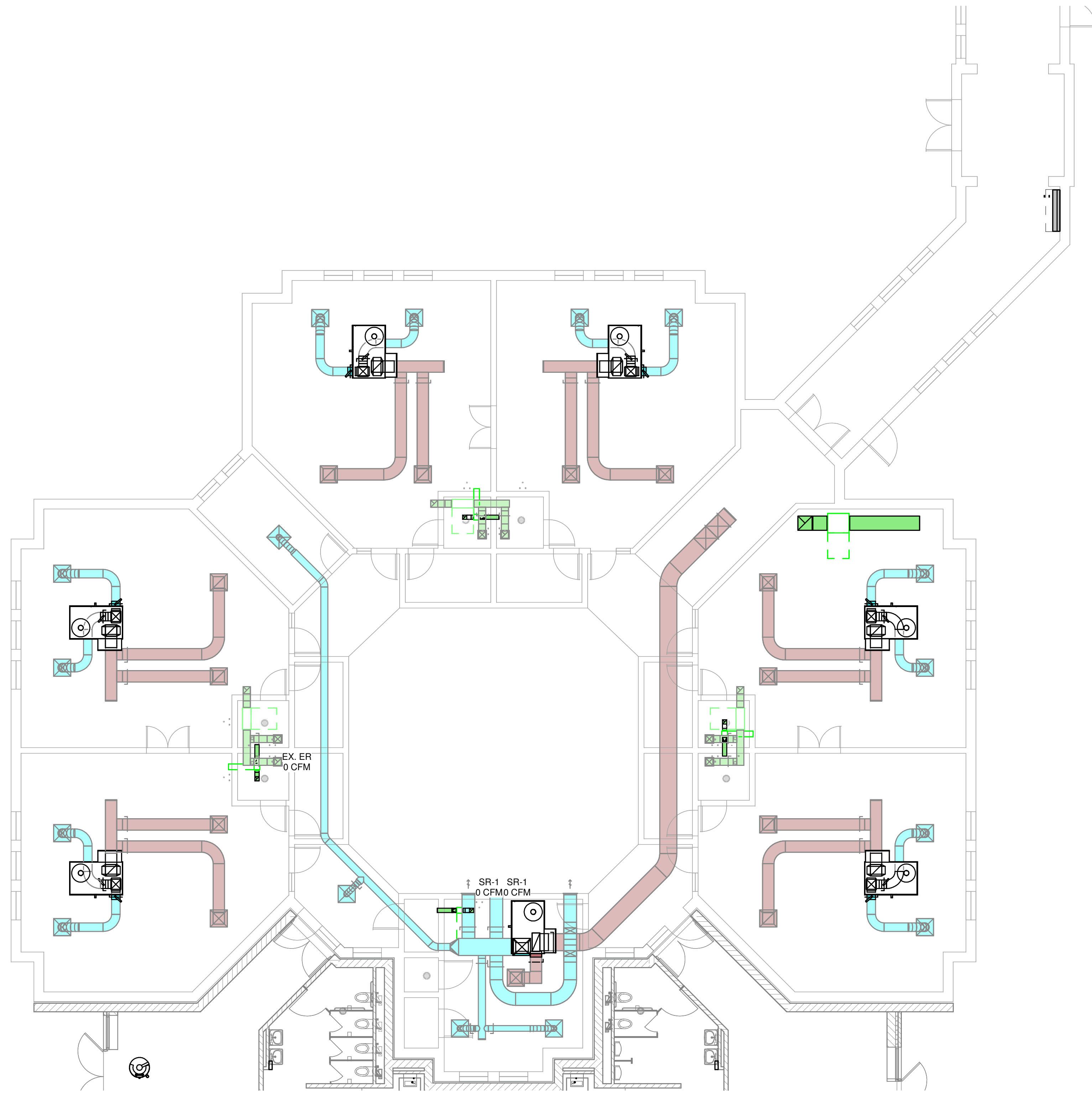
M3-103

1" REFERENCE  
KLH PROJECT #  
24599

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1 MECHANICAL PLAN - LEVEL 1 - 90S ADDITION  
1/8" = 1'-0"



KEYED NOTES

1" REFERENCE  
KLH PROJECT #  
24599

MECHANICAL  
DUCTWORK  
LEVEL 1 PLAN  
90S ADDITION

PROJECT #: 24599.00  
DATE: 10-13-2023  
DWN: JJK CHK: RAL

NO.	REVISIONS

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CONSTRUCTION

# Grandview Elementary School HVAC Reno.

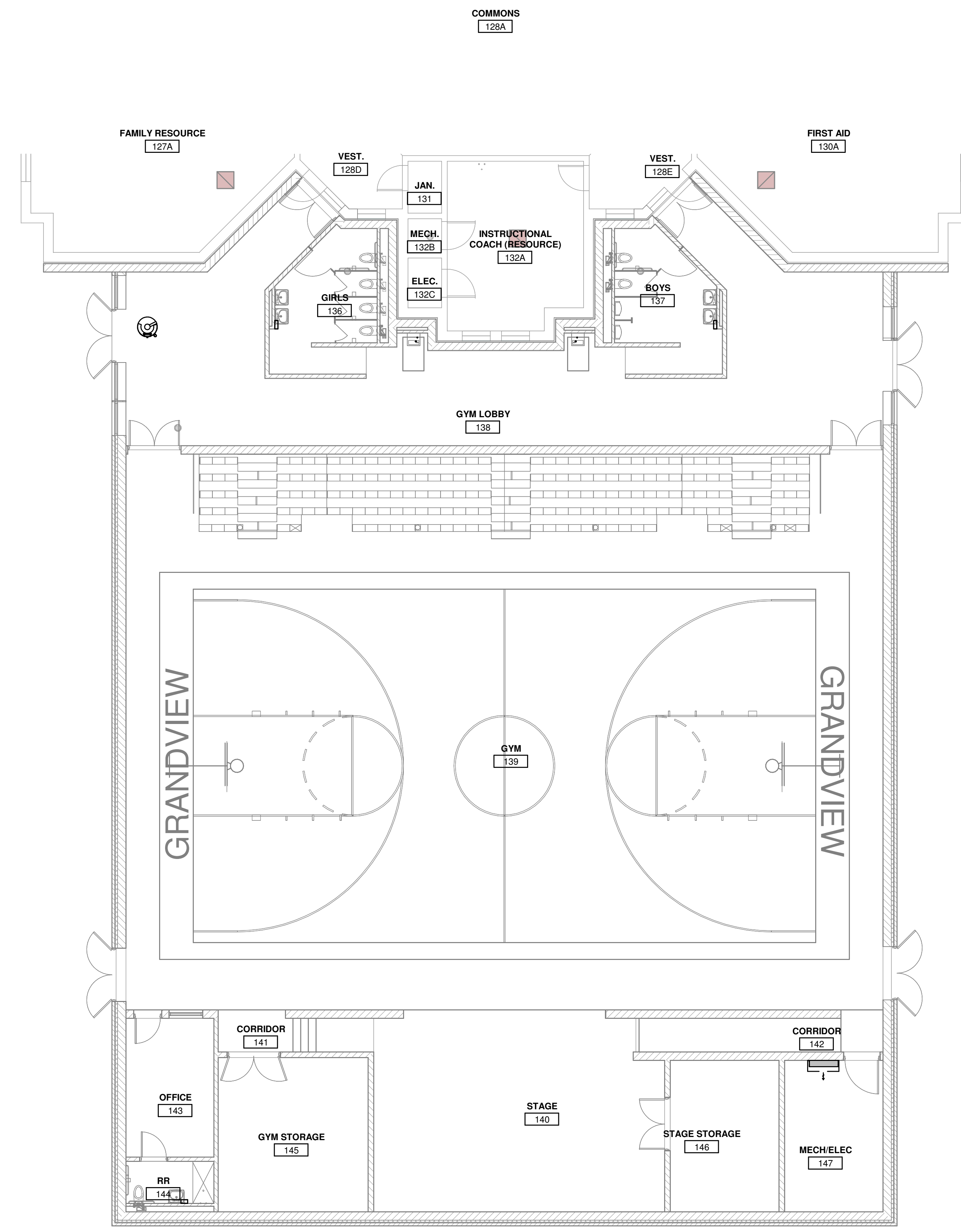
500 Grandview Ave, Bellevue, KY 41073

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LEWISTON, KENTUCKY  
LOUISVILLE, KENTUCKY  
FT. THOMAS, KENTUCKY 41075  
852-446-8556  
852-446-8558 FAX

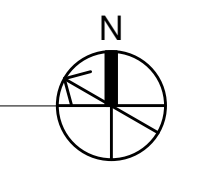
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KEYED NOTES



1 MECHANICAL PLAN - LEVEL 1 - NEW GYM  
 1/8" = 1'-0"



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DWN: JJK CHK: RAL  
 DATE: 10-13-2023  
 PROJECT #: 24599.00

MECHANICAL  
 DUCTWORK  
 LEVEL 1 PLAN  
 NEW GYM

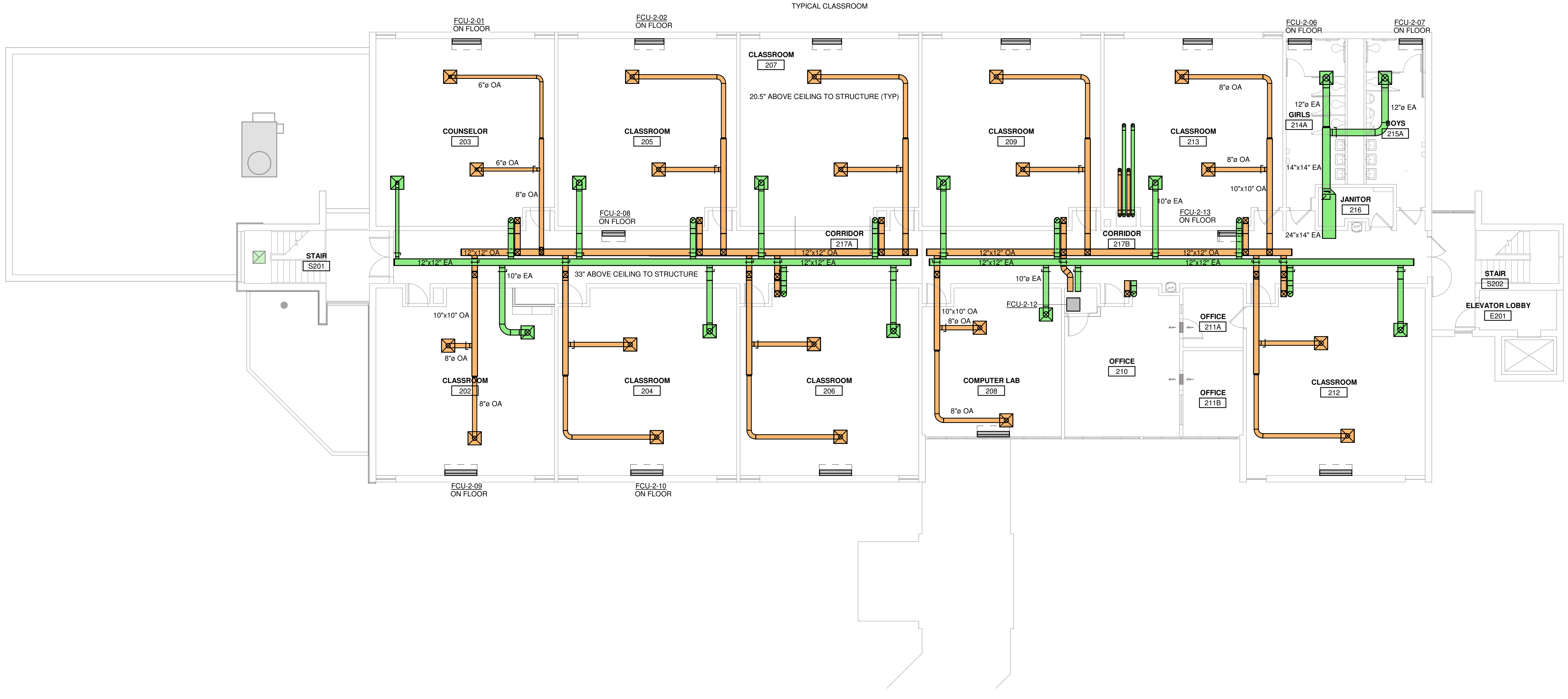
**M3-105**

1" REFERENCE  
 KLH PROJECT #  
 24599

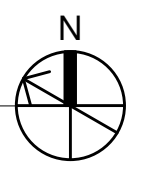
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1 MECHANICAL PLAN - LEVEL 2 - OVERALL  
1/8" = 1'-0"



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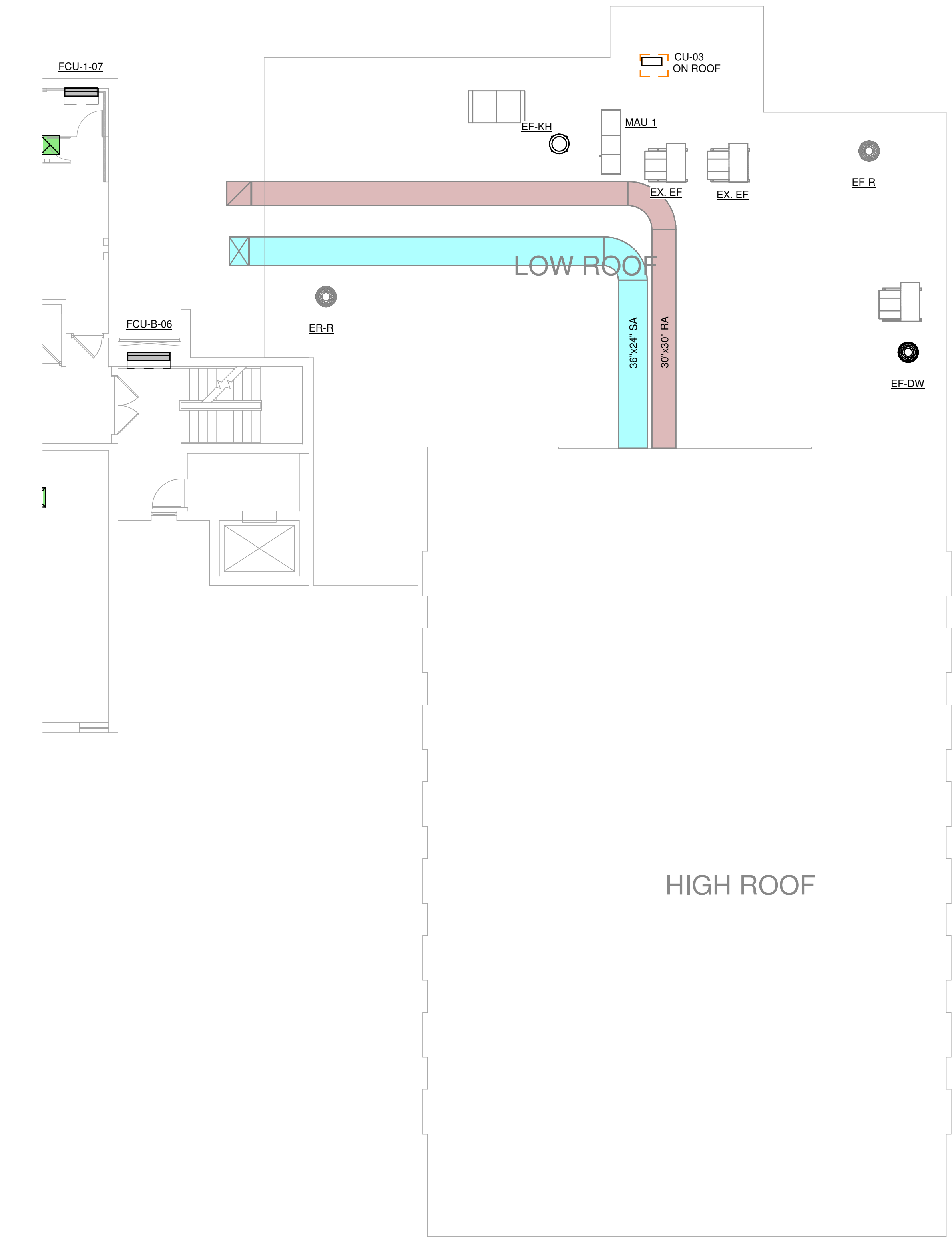
DWN: JJK CHK: RAL  
DATE: 10-13-2023  
PROJECT #: 24599.00

MECHANICAL  
DUCTWORK  
LEVEL 2 PLAN  
OVERALL

**M3-106**  
1" REFERENCE  
KLH PROJECT #  
24599

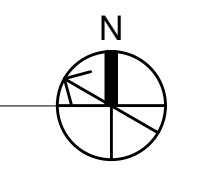
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KEYED NOTES

MECHANICAL PLAN - LOW ROOF - LEVEL M  
1/8" = 1'-0"



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500 Grandview Ave, Bellevue, KY 41073

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DATE: 10-13-2023  
PROJECT #: 24599.00

MECHANICAL  
DUCTWORK  
LOW ROOF  
PLAN LEVEL M

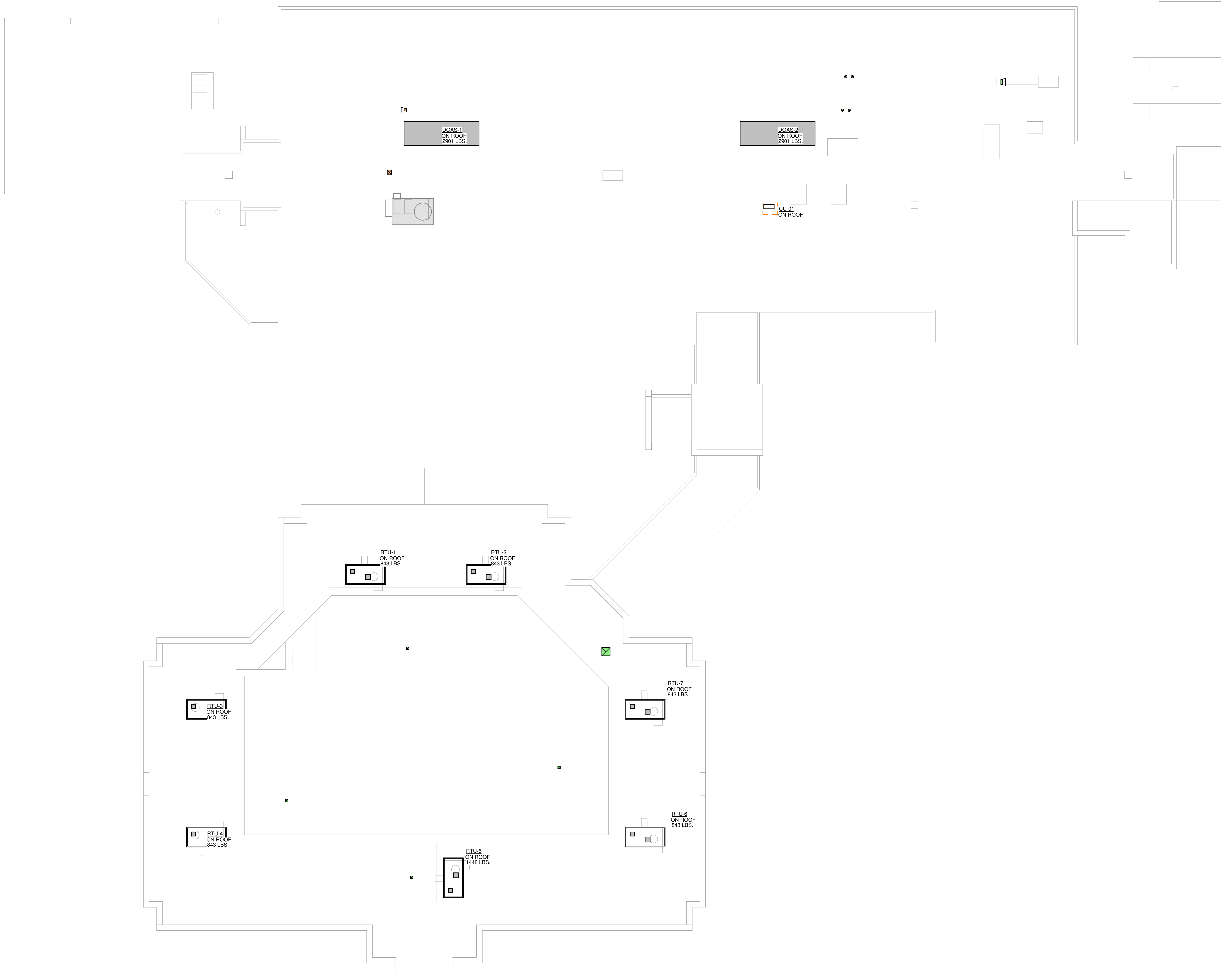
M3-107

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1 MECHANICAL PLAN - ROOF - OVERALL  
1/8" = 1'-0"



KEYED NOTES

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DATE: 10-13-2023  
PROJECT #: 24599.00

MECHANICAL  
DUCTWORK  
ROOF PLAN  
OVERALL

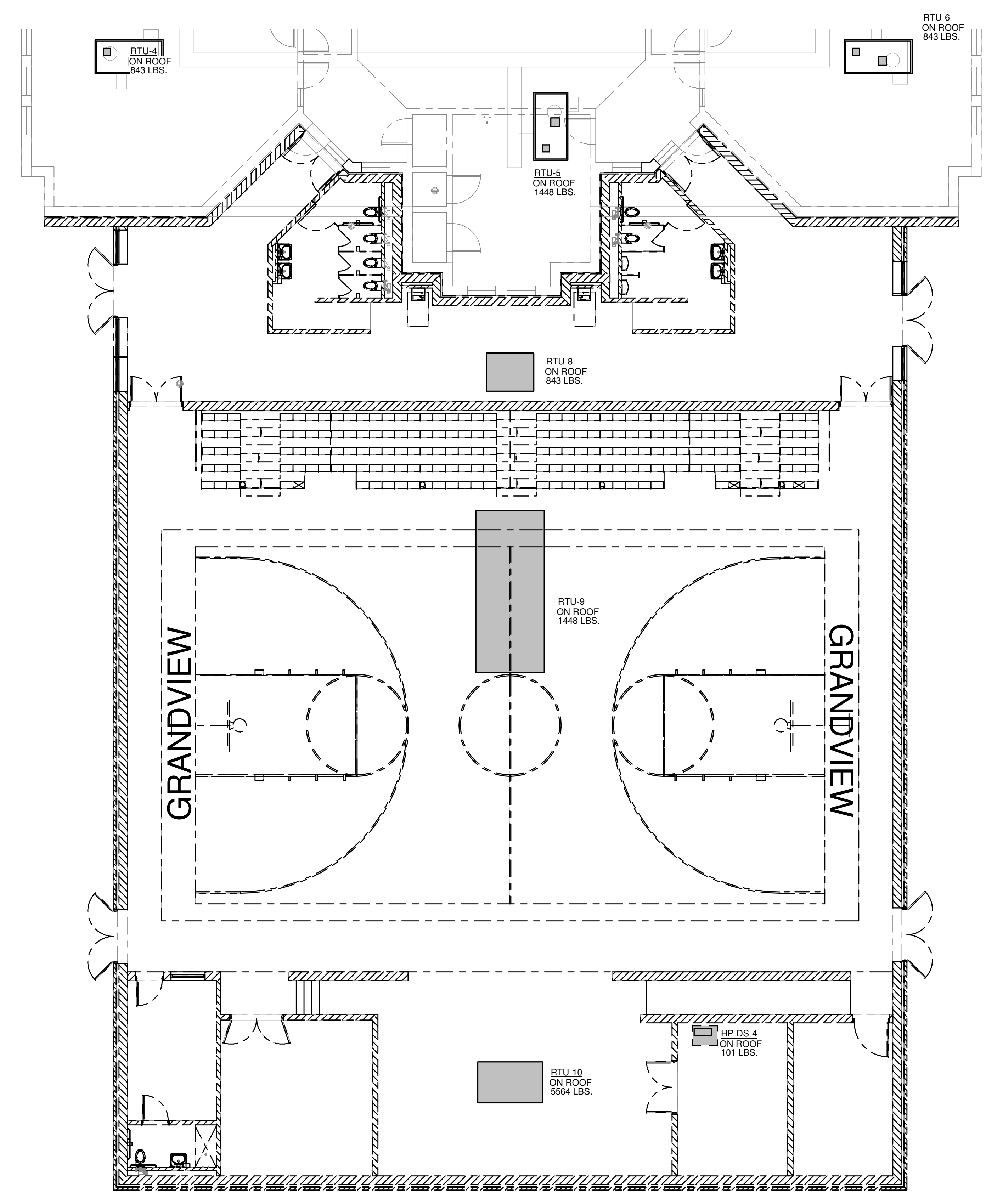
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1" REFERENCE  
KLH PROJECT #  
24599

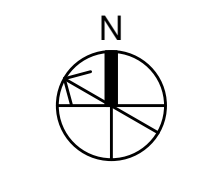
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1 MECHANICAL PLAN - GYM ROOF - OVERALL  
1/8" = 1'-0"



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MECHANICAL  
DUCTWORK  
GYM ROOF  
PLAN OVERALL

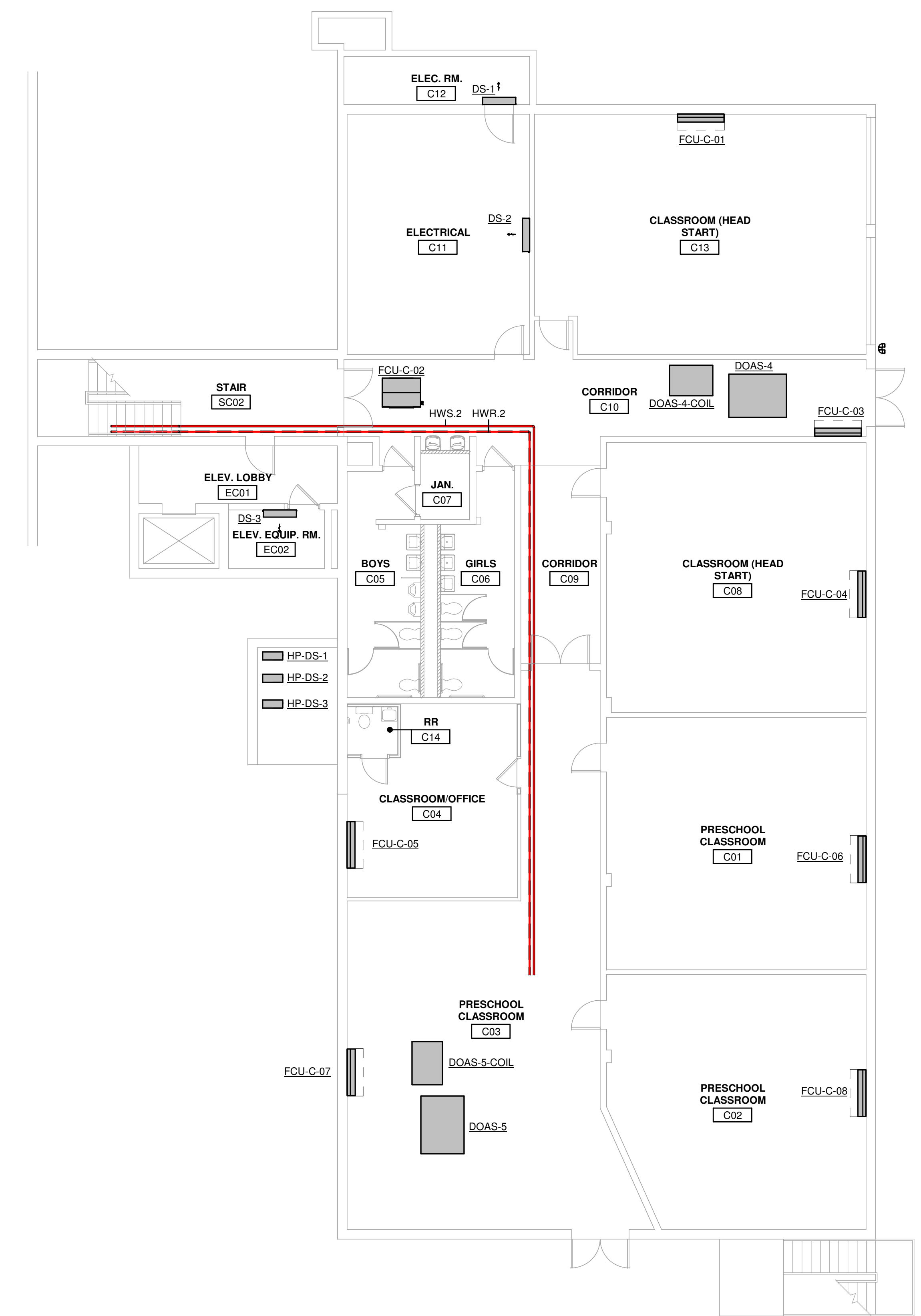
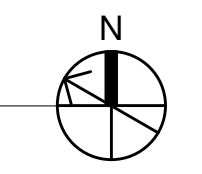
M3-109

1" REFERENCE  
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MECHANICAL PLAN - LEVEL C - OVERALL  
1/8" = 1'-0"



KEYED NOTES

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500 Grandview Ave, Bellevue, KY 41073

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PROJECT #: 24599.00

MECHANICAL  
PIPING LEVEL C  
PLAN OVERALL

## M4-100

1" REFERENCE  
KLH PROJECT #  
24599

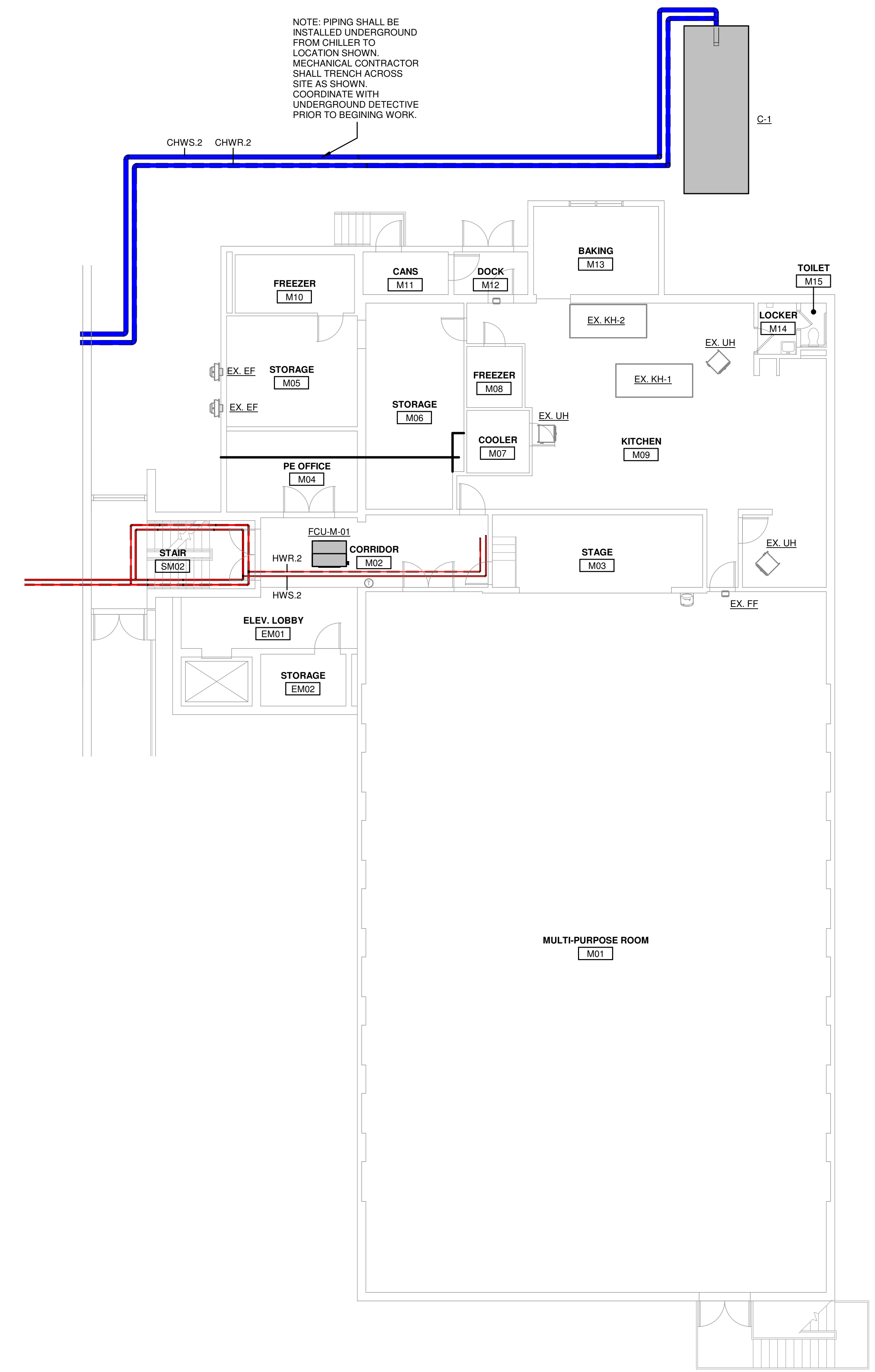


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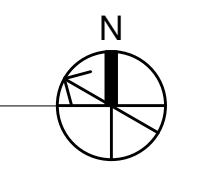
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**KEYED NOTES**

NOTE: PIPING SHALL BE INSTALLED UNDERGROUND FROM CHILLER TO LOCATION SHOWN. MECHANICAL CONTRACTOR SHALL TRENCH ACROSS SITE AS SHOWN. COORDINATE WITH UNDERGROUND DETECTIVE PRIOR TO BEGINNING WORK.



MECHANICAL PLAN - LEVEL M - OVERALL  
 1/8" = 1'-0"



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MECHANICAL  
 PIPING LEVEL  
 M PLAN  
 OVERALL

**M4-101**

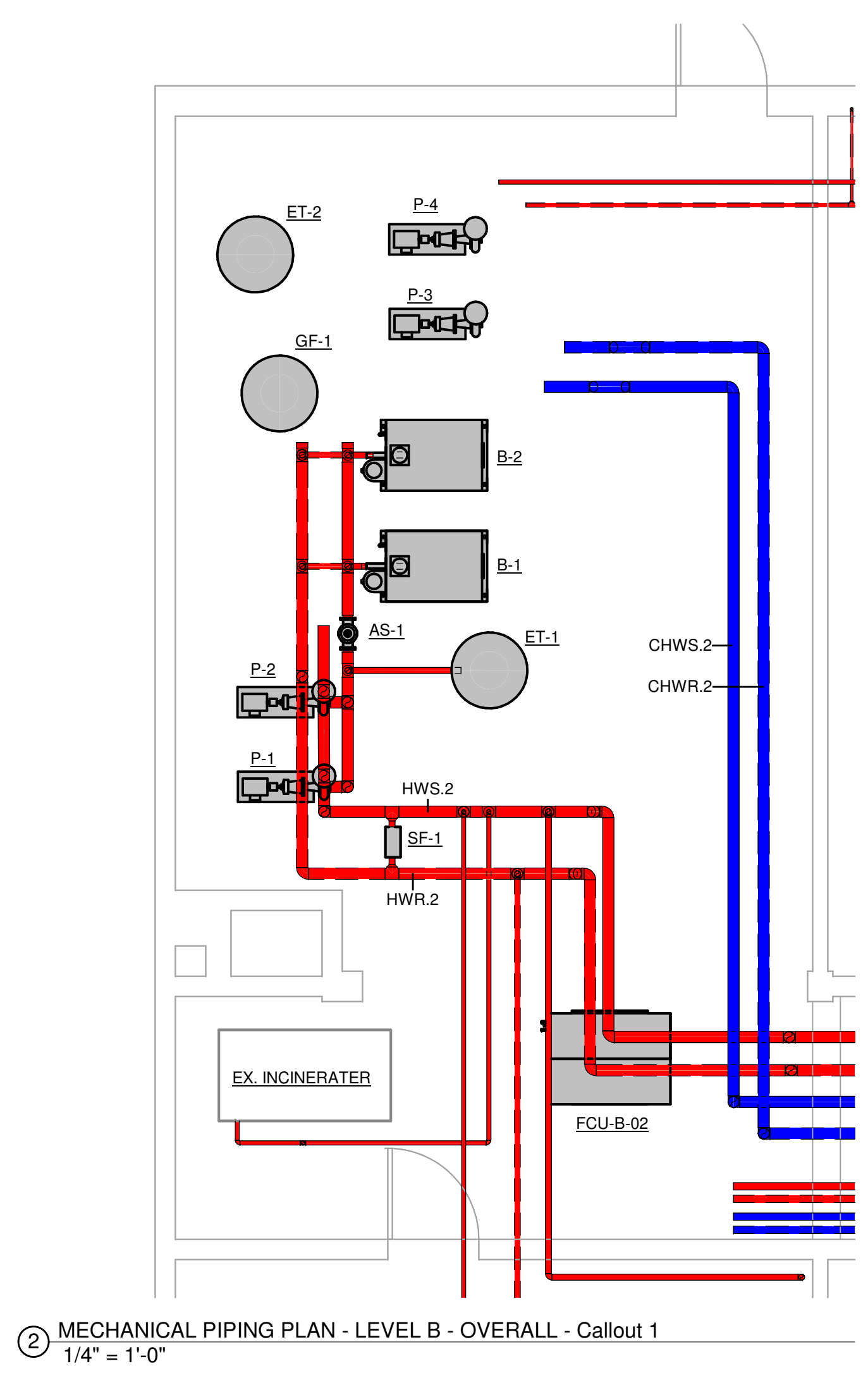
1" REFERENCE  
 KLH PROJECT #  
 24599

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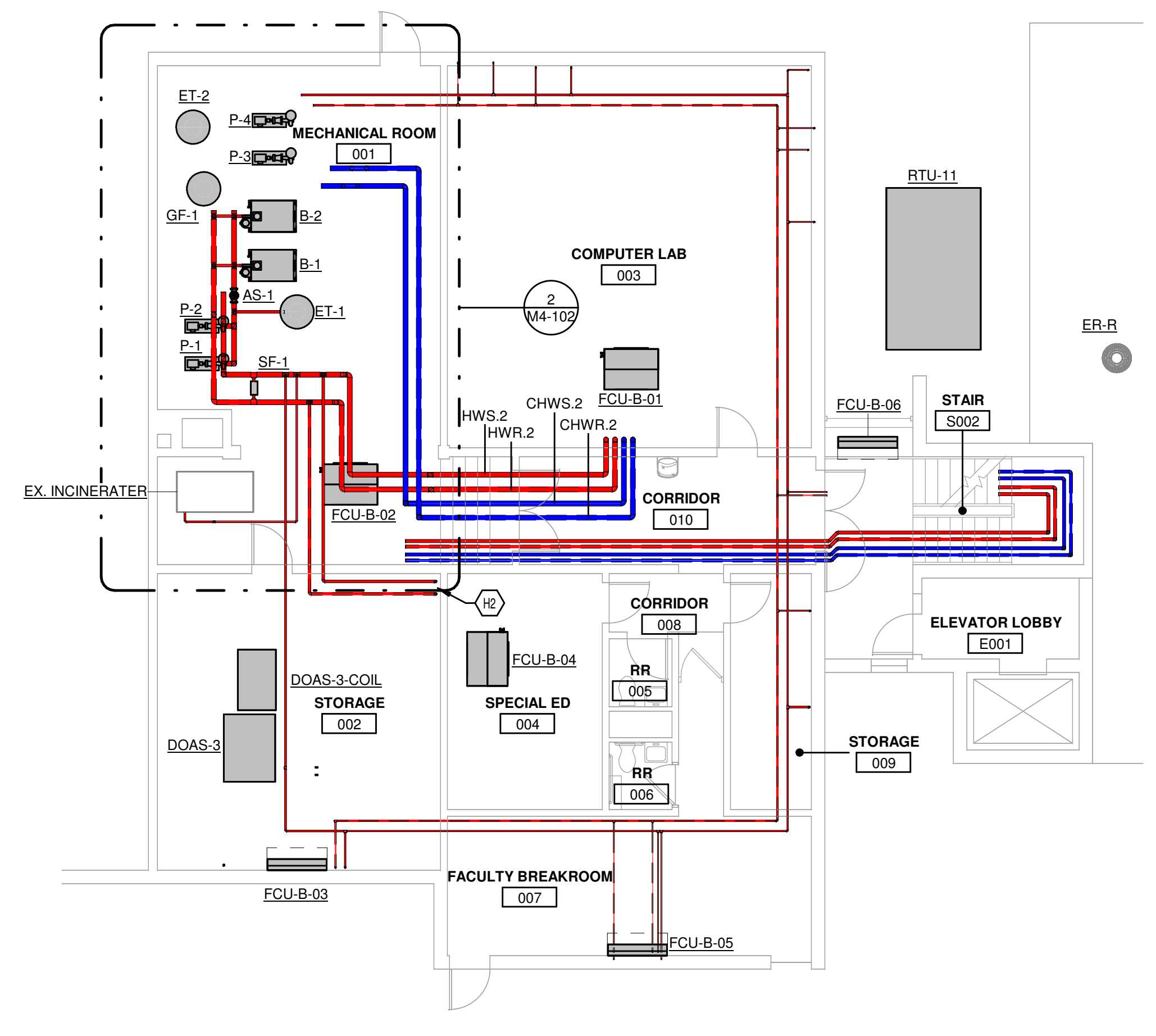
10/13/2023 2:59:34C:\Users\jkemp\Documents\Revit\24599-00-23-MEP-PRMO-Grandview Elementary School\_Revit.rvt

**KEYED NOTES**  
 H2 HW PIPING SUPPLYING PRESCHOOL, DROP BELOW GRADE AND TRAVEL DOWN STAIRWELL FOLLOWING EXISTING PIPING PATHWAYS

Pipe Type Legend			
Mark	Color	System Name	Pipe Material
HWR.2		HWR - Hot Water Return	2 - Black Steel - Schedule 10 - ASTM A-795
HWS.2		HWS - Hot Water Supply	2 - Black Steel - Schedule 10 - ASTM A-795



② MECHANICAL PIPING PLAN - LEVEL B - OVERALL - Callout 1  
 1/4" = 1'-0"



① MECHANICAL PLAN - LEVEL B - OVERALL  
 1/8" = 1'-0"

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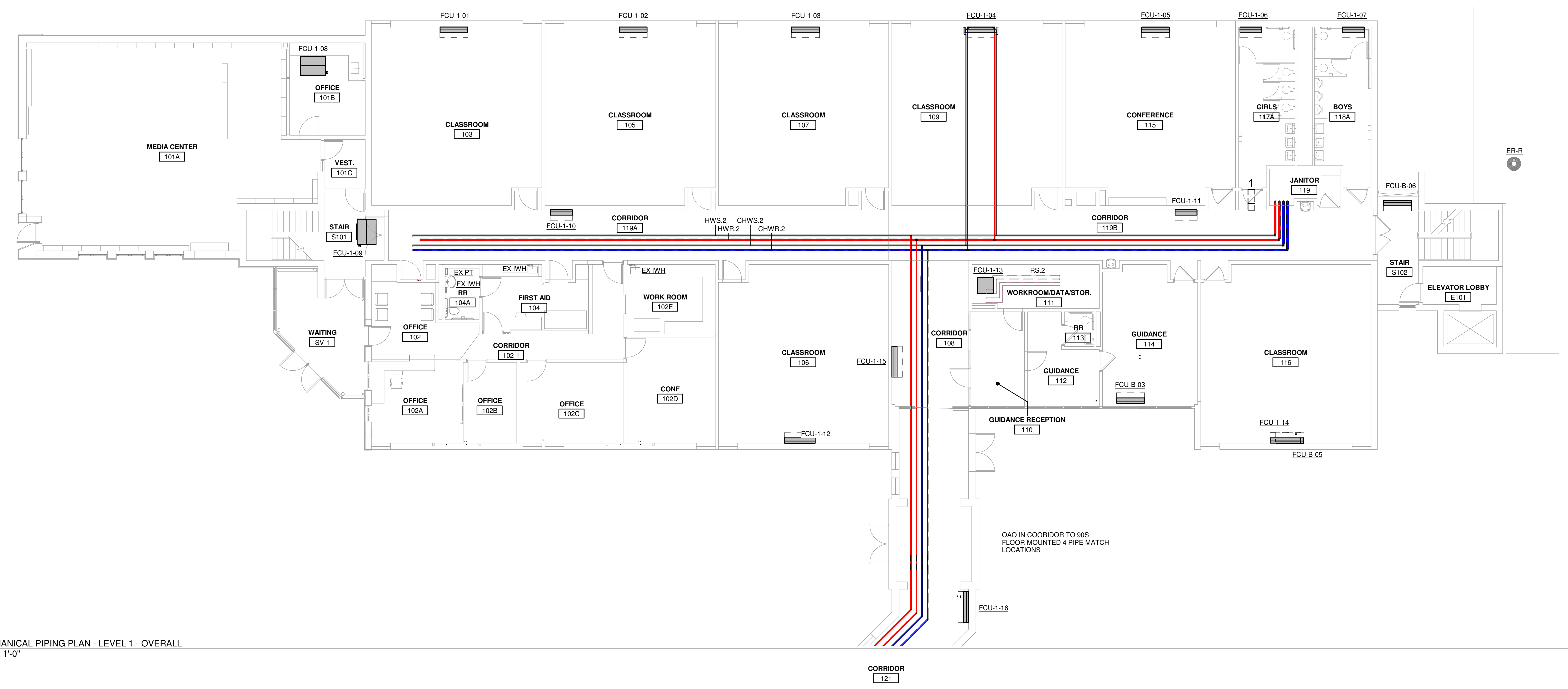
DWN: JJK CHK: RAL  
 DATE: 10-13-2023  
 PROJECT #: 24599.00  
 MECHANICAL PIPING LEVEL B PLAN OVERALL

**M4-102**  
 1" REFERENCE  
 KLH PROJECT # 24599

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1 MECHANICAL PIPING PLAN - LEVEL 1 - OVERALL  
 1/8" = 1'-0"



KEYED NOTES

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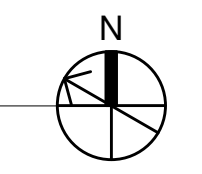
REVISIONS

NO.	DESCRIPTION	DATE

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 DATE: 10-13-2023  
 PROJECT #: 24599.00

MECHANICAL PIPING LEVEL 1 PLAN OVERALL

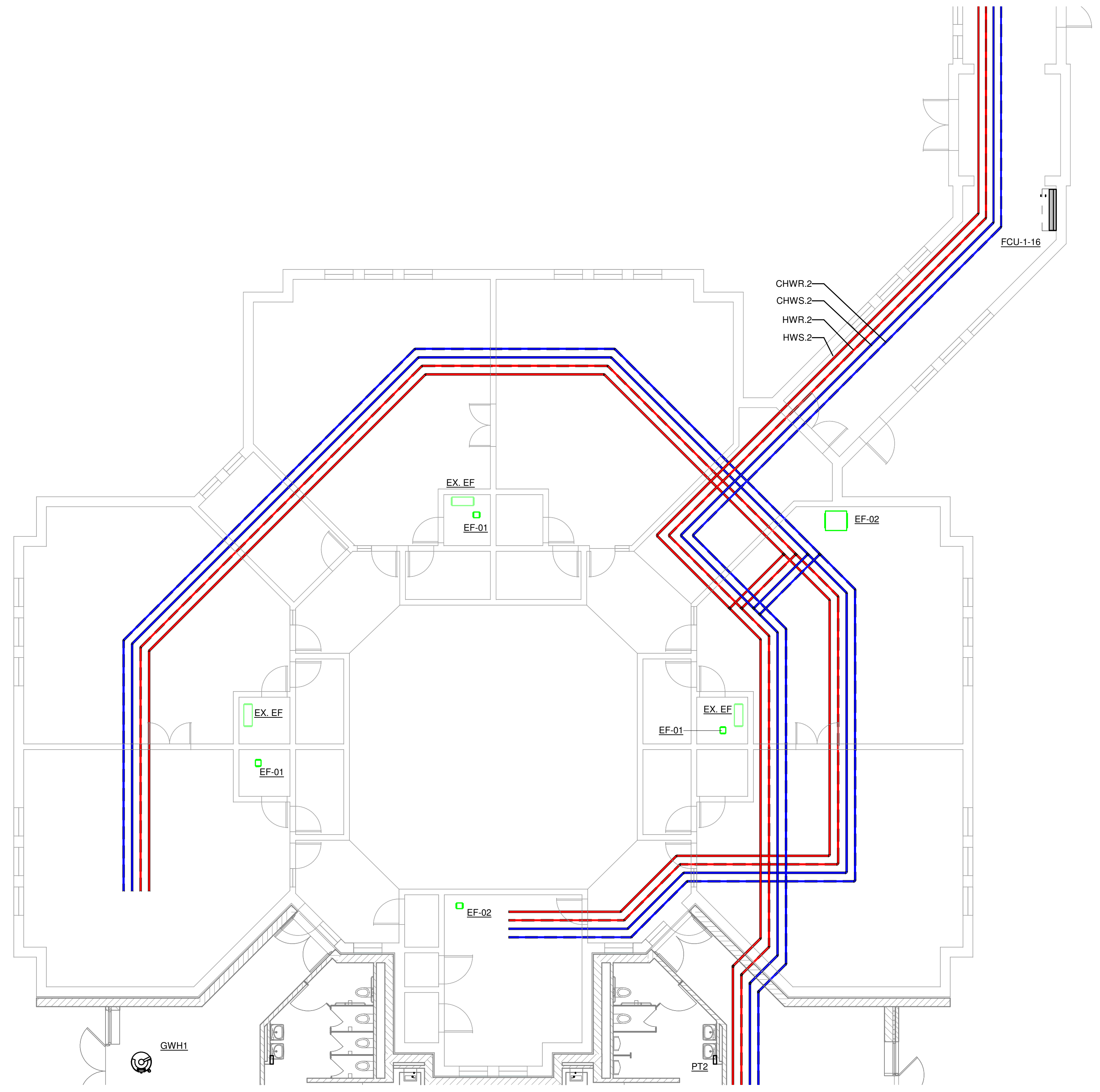
M4-103  
 1" REFERENCE  
 KLH PROJECT # 24599



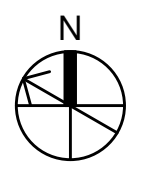
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1 MECHANICAL PIPING PLAN - LEVEL 1 - 90S ADDITION  
1/8" = 1'-0"



KEYED NOTES



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DWN: JJK CHK: RAL  
DATE: 10-13-2023  
PROJECT #: 24599.00

MECHANICAL  
PIPING LEVEL 1  
PLAN 90S  
ADDITION

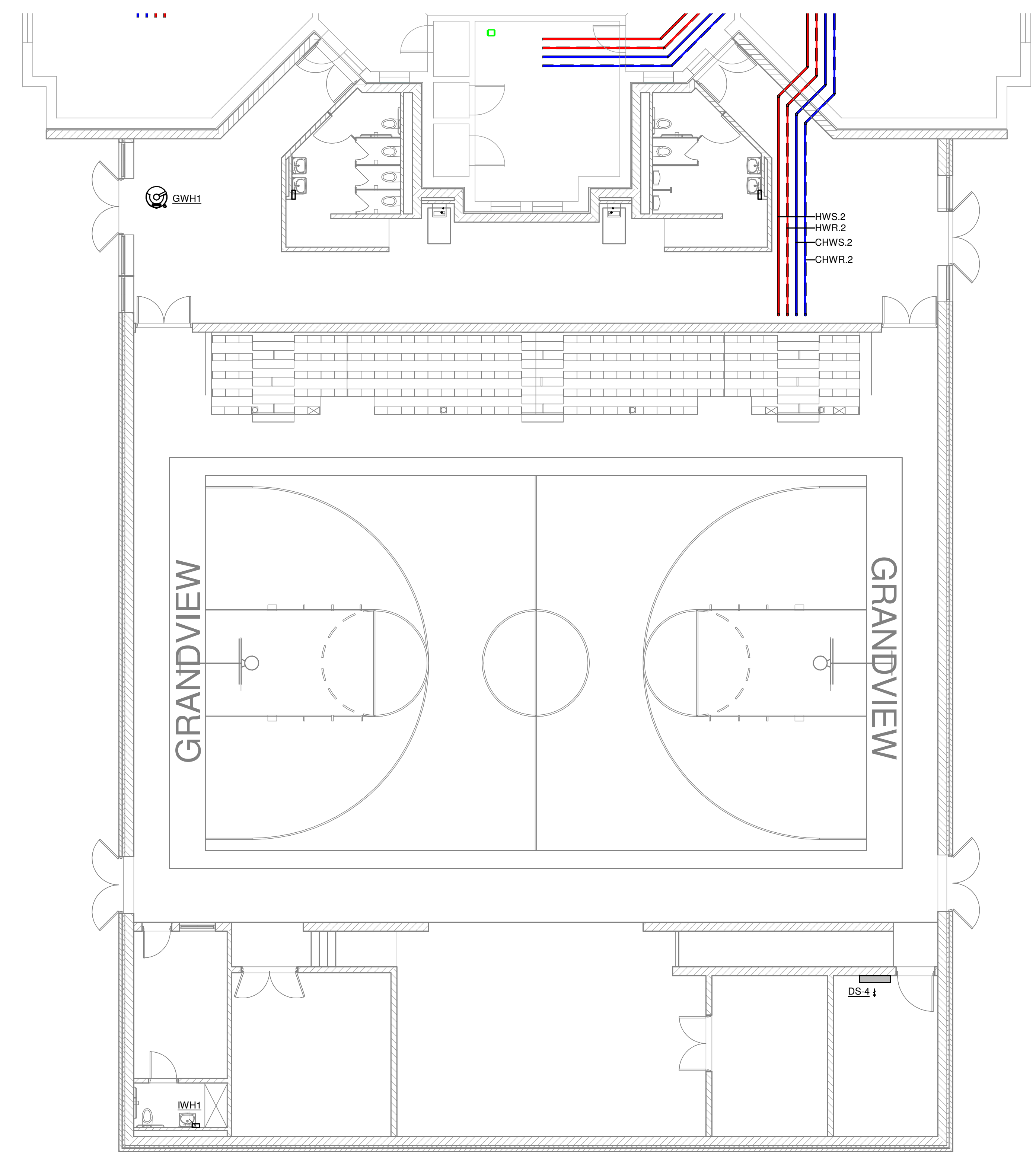
M4-104

1" REFERENCE  
KLH PROJECT #  
24599

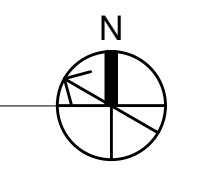
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1 MECHANICAL PIPING PLAN - LEVEL 1 - NEW GYM  
1/8" = 1'-0"



KEYED NOTES



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PROJECT #: 24599.00

MECHANICAL  
PIPING LEVEL 1  
PLAN NEW GYM

M4-105

1" REFERENCE  
KLH PROJECT #  
24599

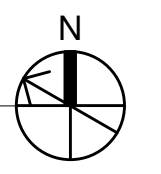
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1 MECHANICAL PLAN - LEVEL 2 - OVERALL  
1/8" = 1'-0"



KEYED NOTES



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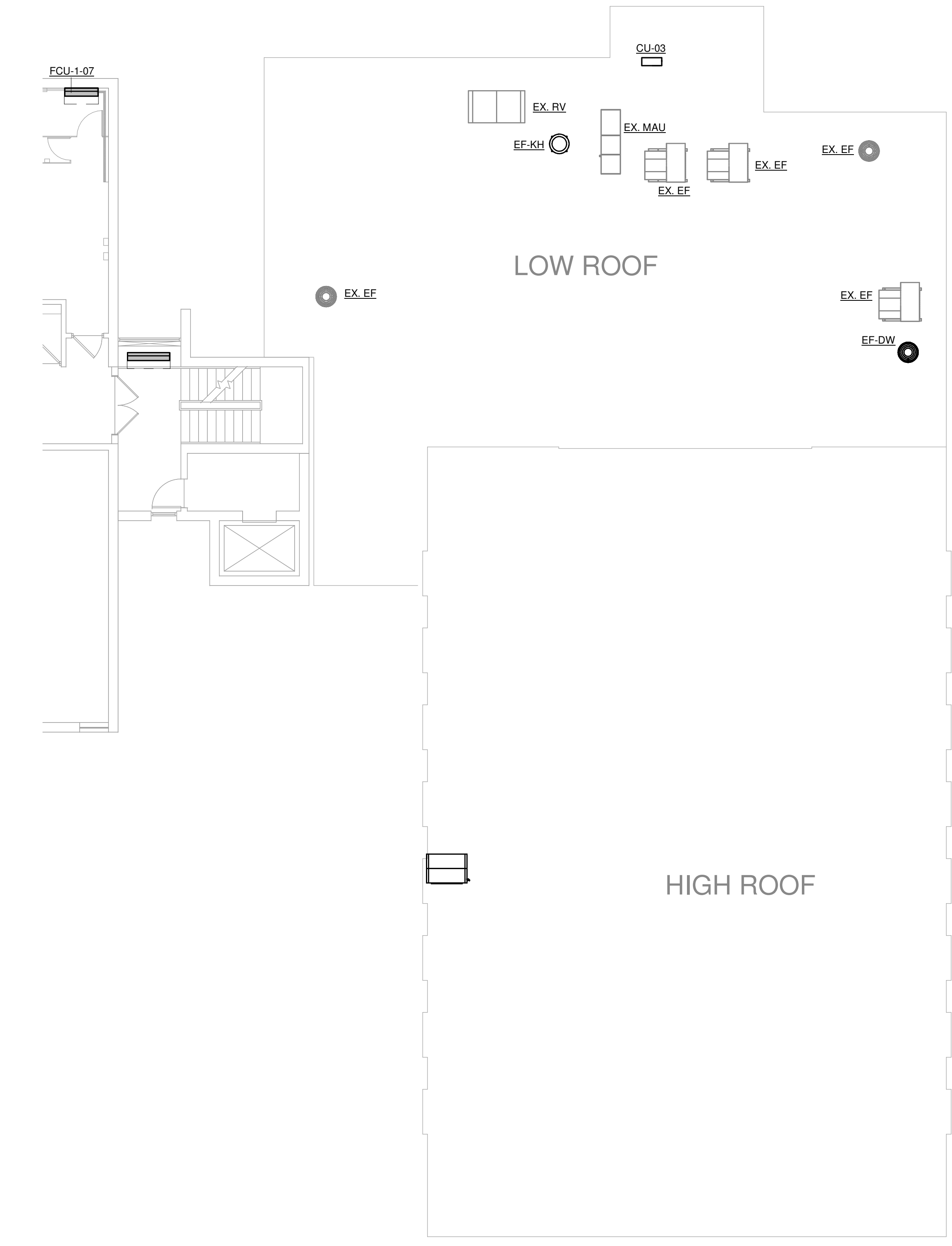
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MECHANICAL  
PIPING LEVEL 2  
PLAN OVERALL

**M4-106**  
1" REFERENCE  
KLH PROJECT #  
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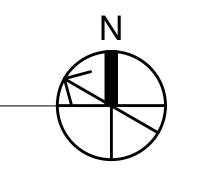
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KEYED NOTES

MECHANICAL PIPING PLAN - LOW ROOF - LEVEL M  
1/8" = 1'-0"



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LOUISVILLE, KENTUCKY  
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MECHANICAL  
PIPING LOW  
ROOF PLAN  
LEVEL M

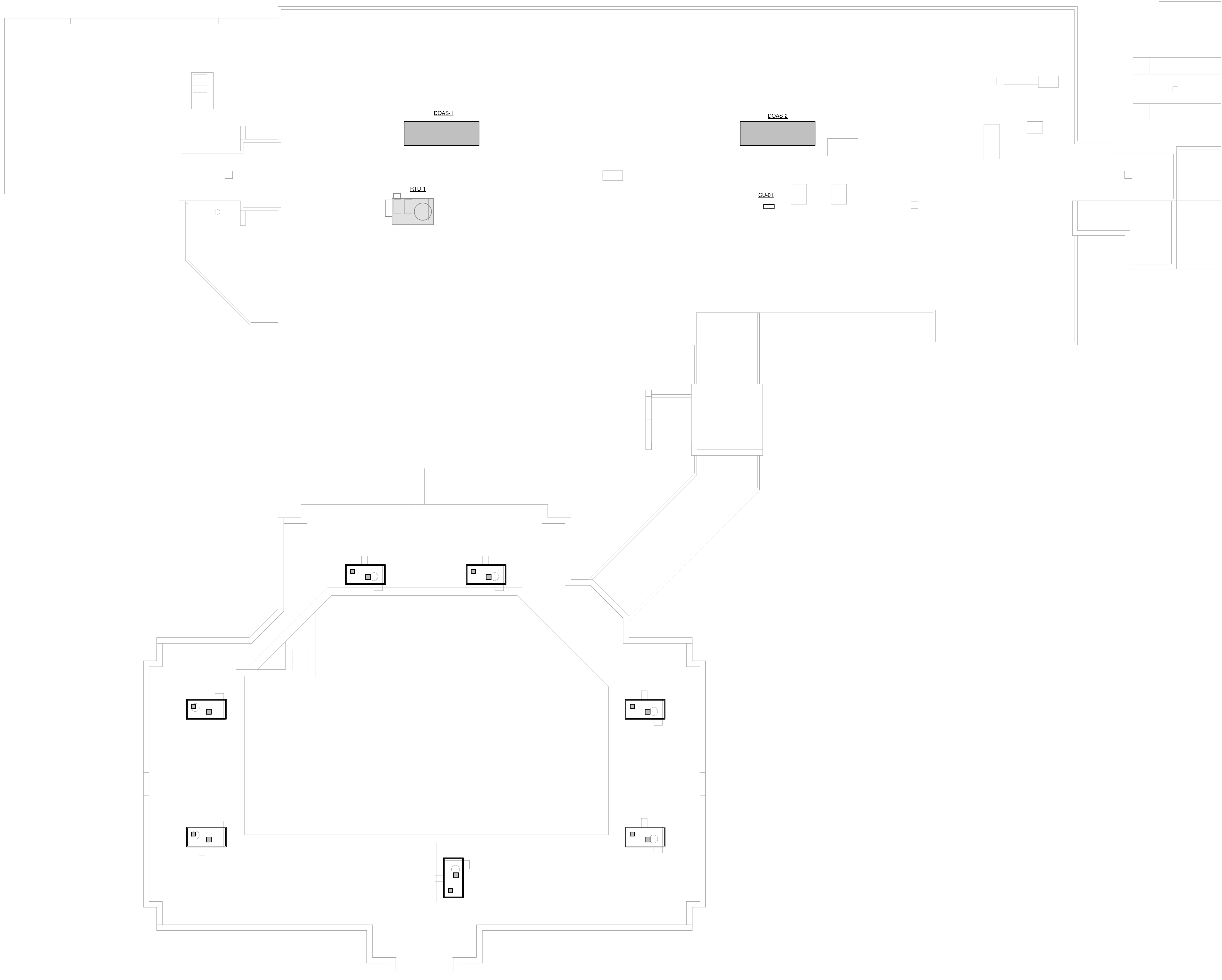
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1" REFERENCE  
KLH PROJECT #  
24599

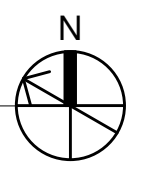
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1 MECHANICAL PLAN - ROOF - OVERALL  
1/8" = 1'-0"



KEYED NOTES



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# Grandview Elementary School HVAC Reno.

500 Grandview Ave, Bellevue, KY 41073

PRELIMINARY  
NOT FOR  
CONSTRUCTION

NO.	REVISIONS	DATE

DWN: JJK    CHK: RAL  
DATE: 10-13-2023  
PROJECT #: 24599.00

MECHANICAL  
PIPING ROOF  
PLAN OVERALL

M4-108

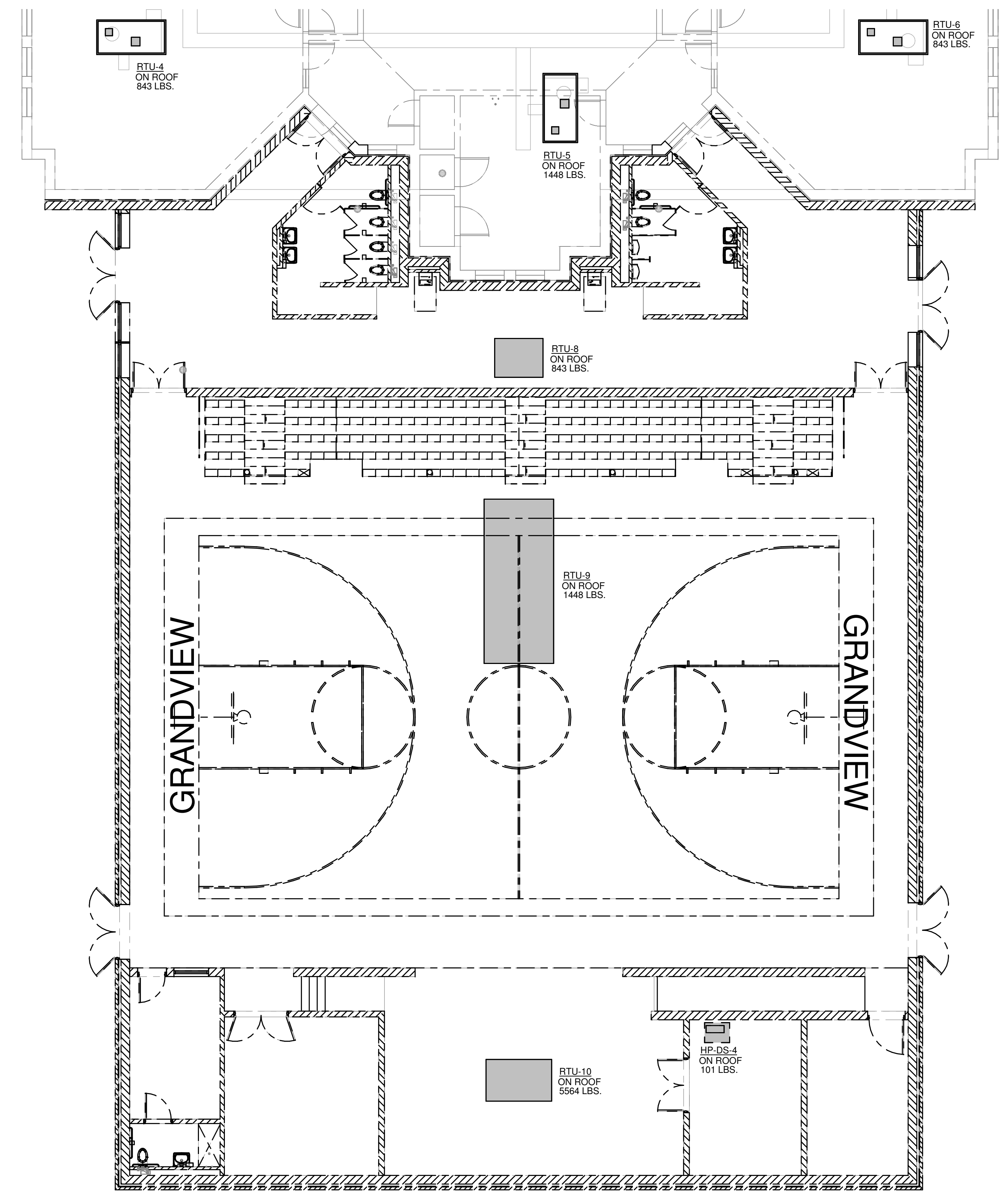
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KLH PROJECT #  
24599



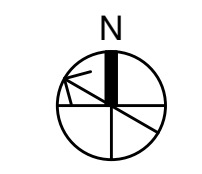
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1 MECHANICAL PLAN - GYM ROOF - OVERALL  
 1/8" = 1'-0"



KEYED NOTES



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**Grandview Elementary School HVAC Reno.**  
 500 Grandview Ave, Bellevue, KY 41073

PRELIMINARY  
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NO.	REVISIONS

DWN: JJK CHK: RAL  
 DATE: 10-13-2023  
 PROJECT #: 24599.00

MECHANICAL  
 PIPING GYM  
 ROOF PLAN  
 OVERALL

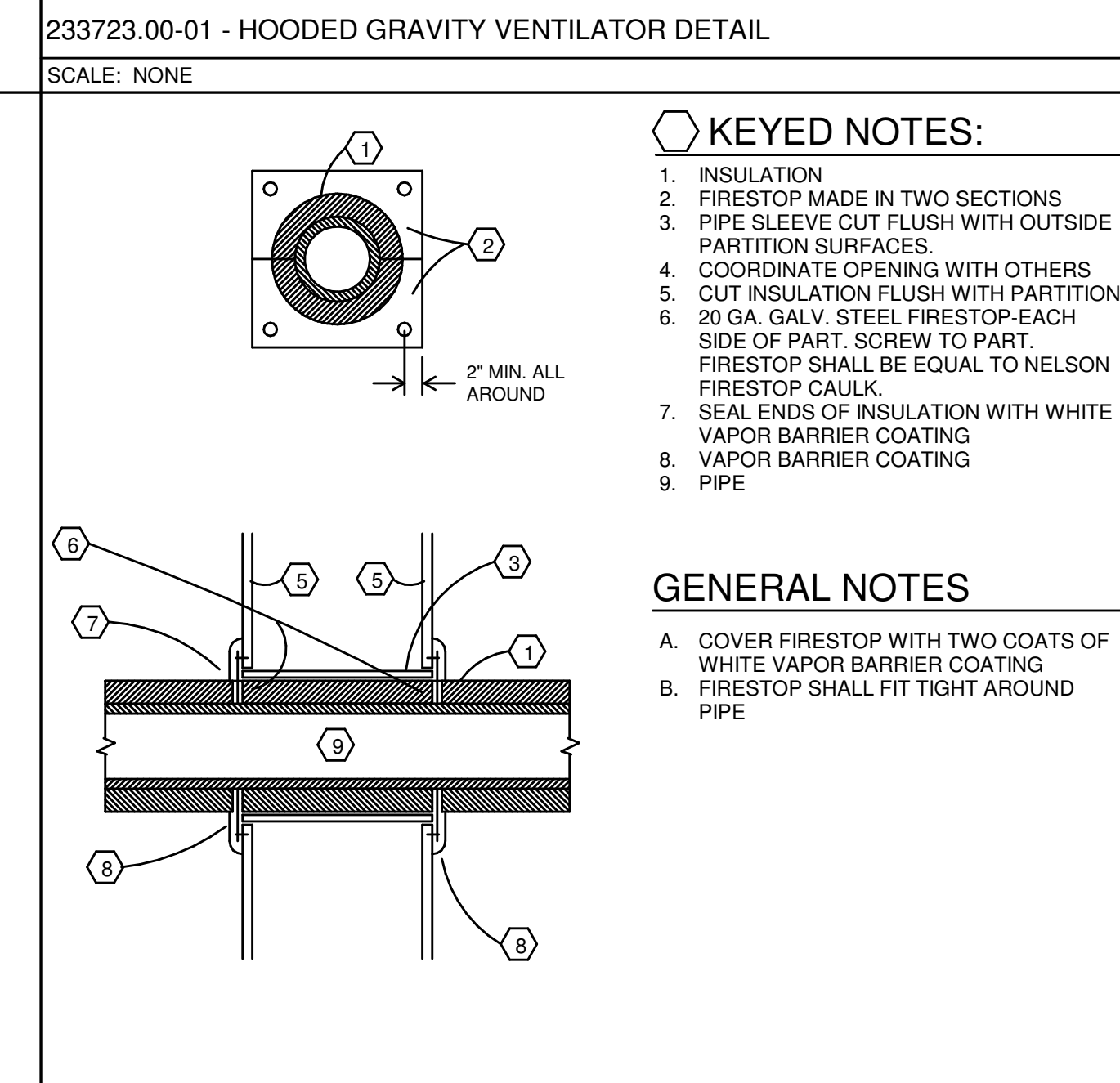
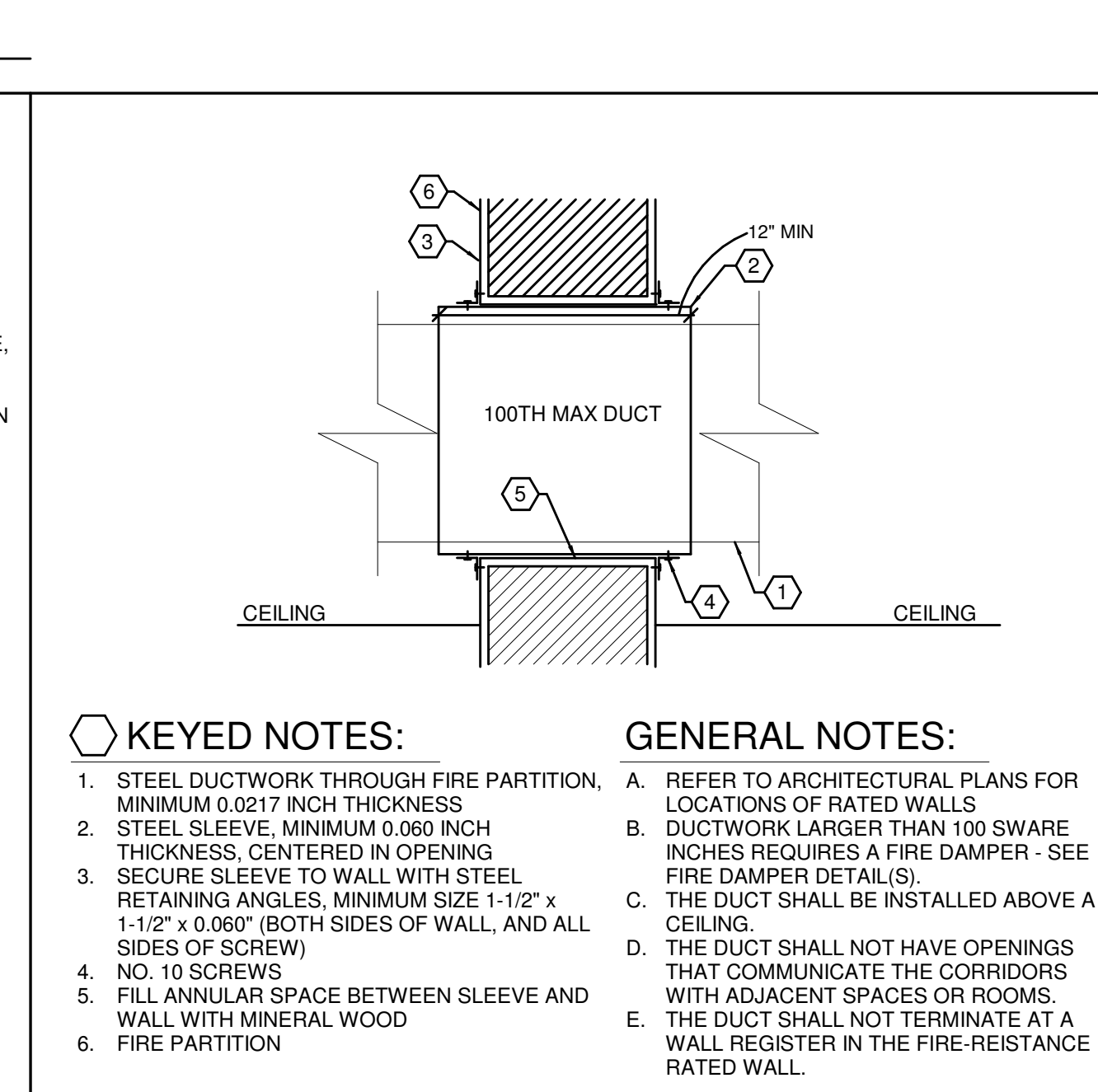
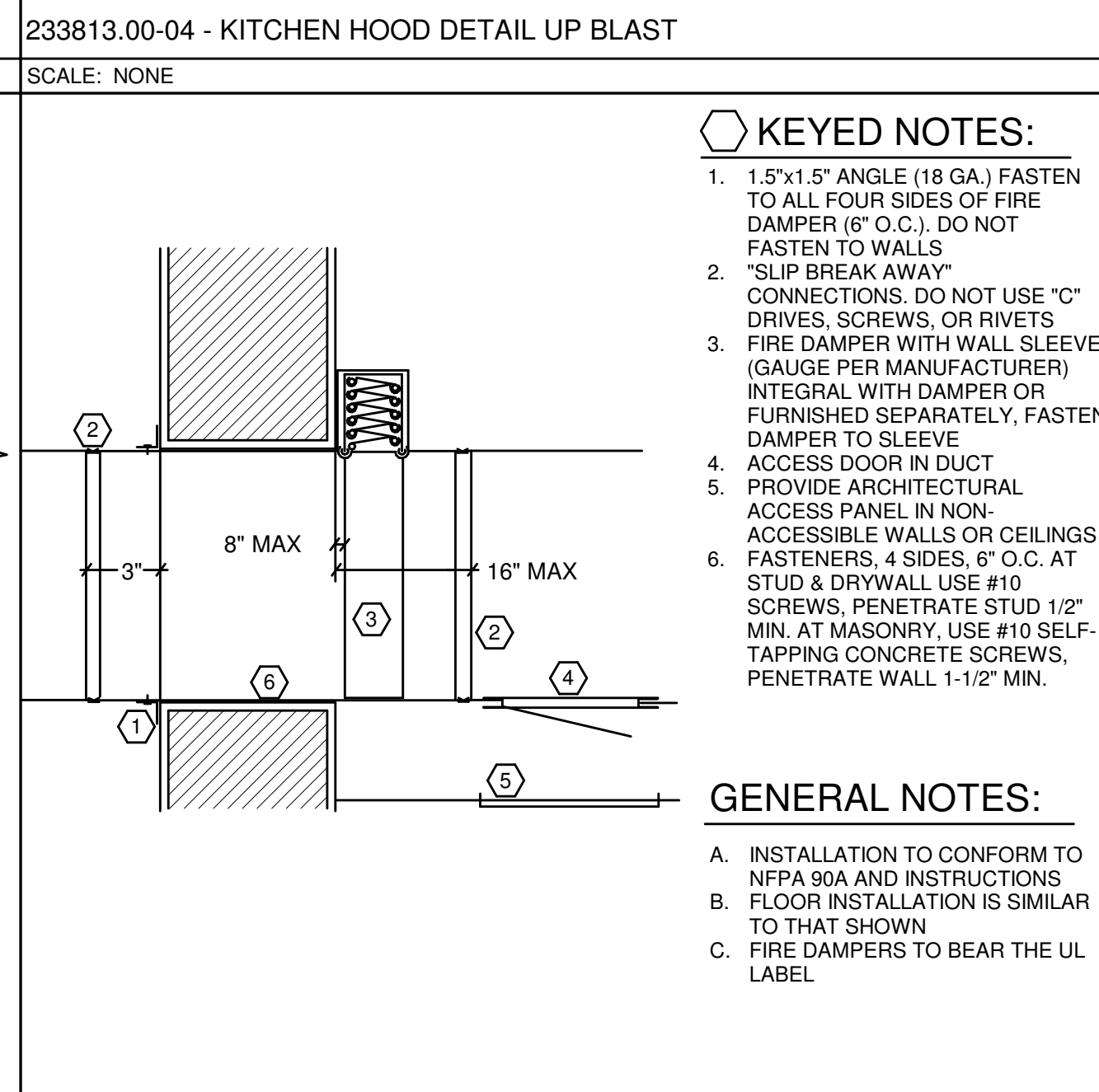
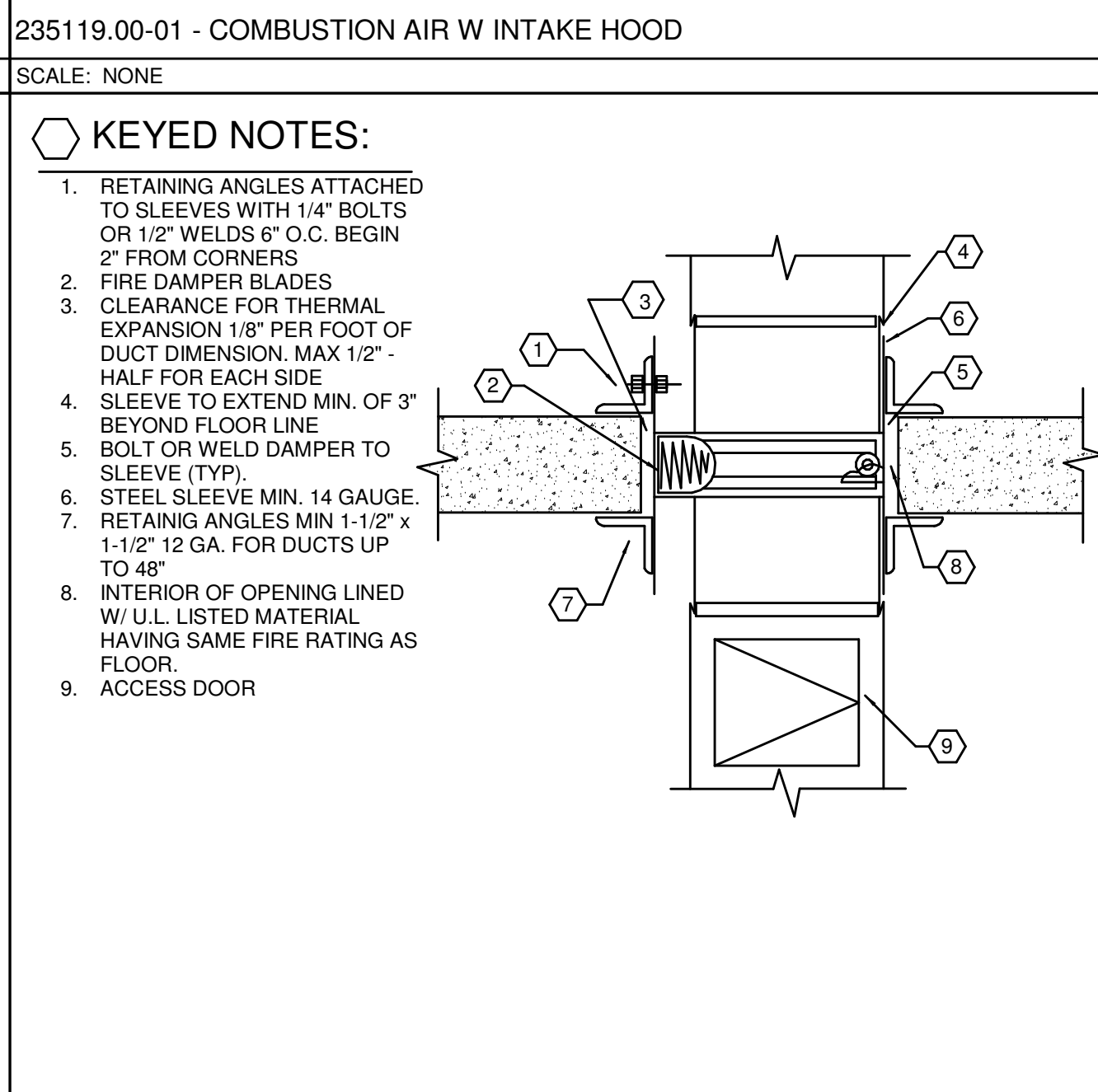
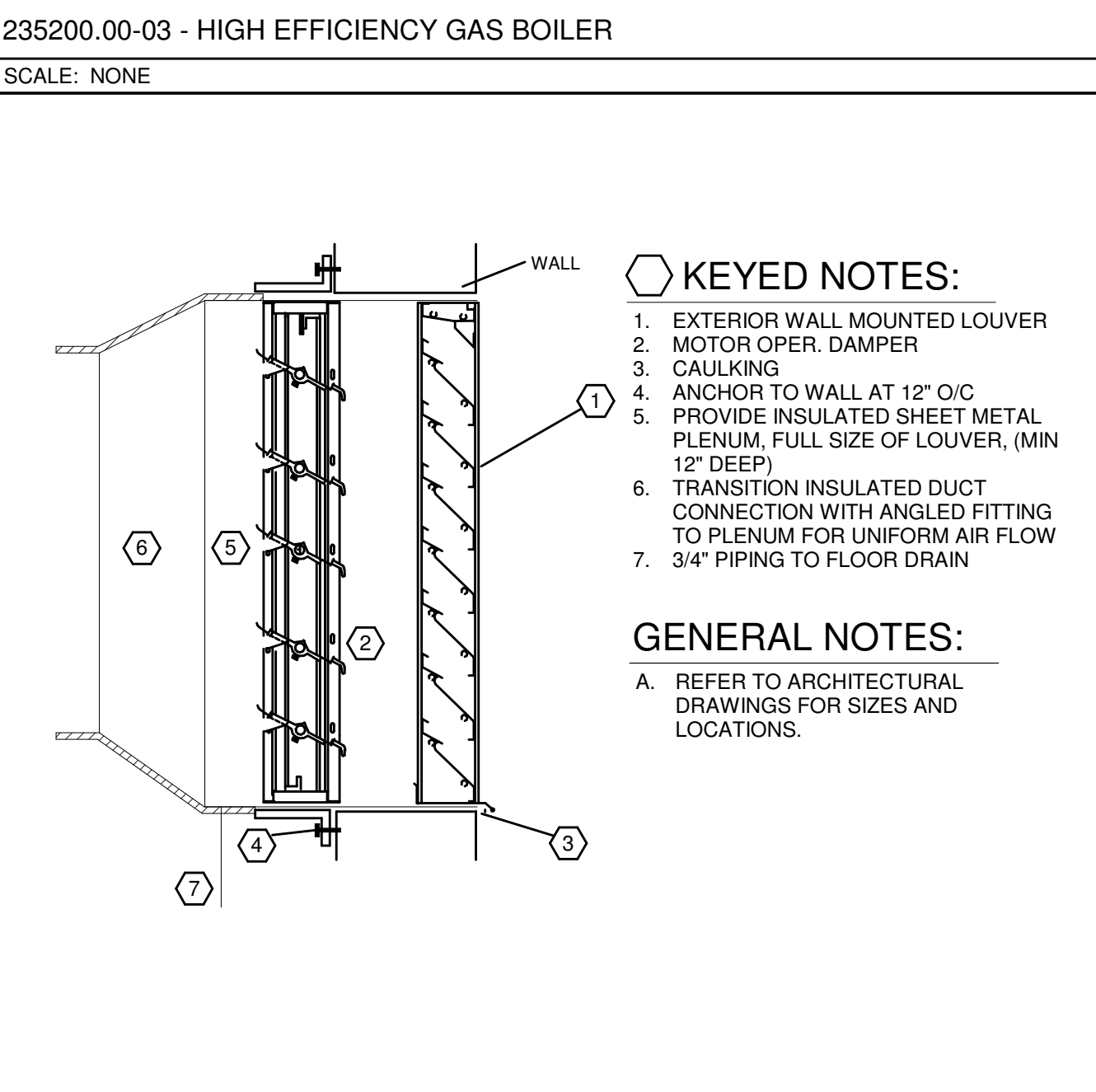
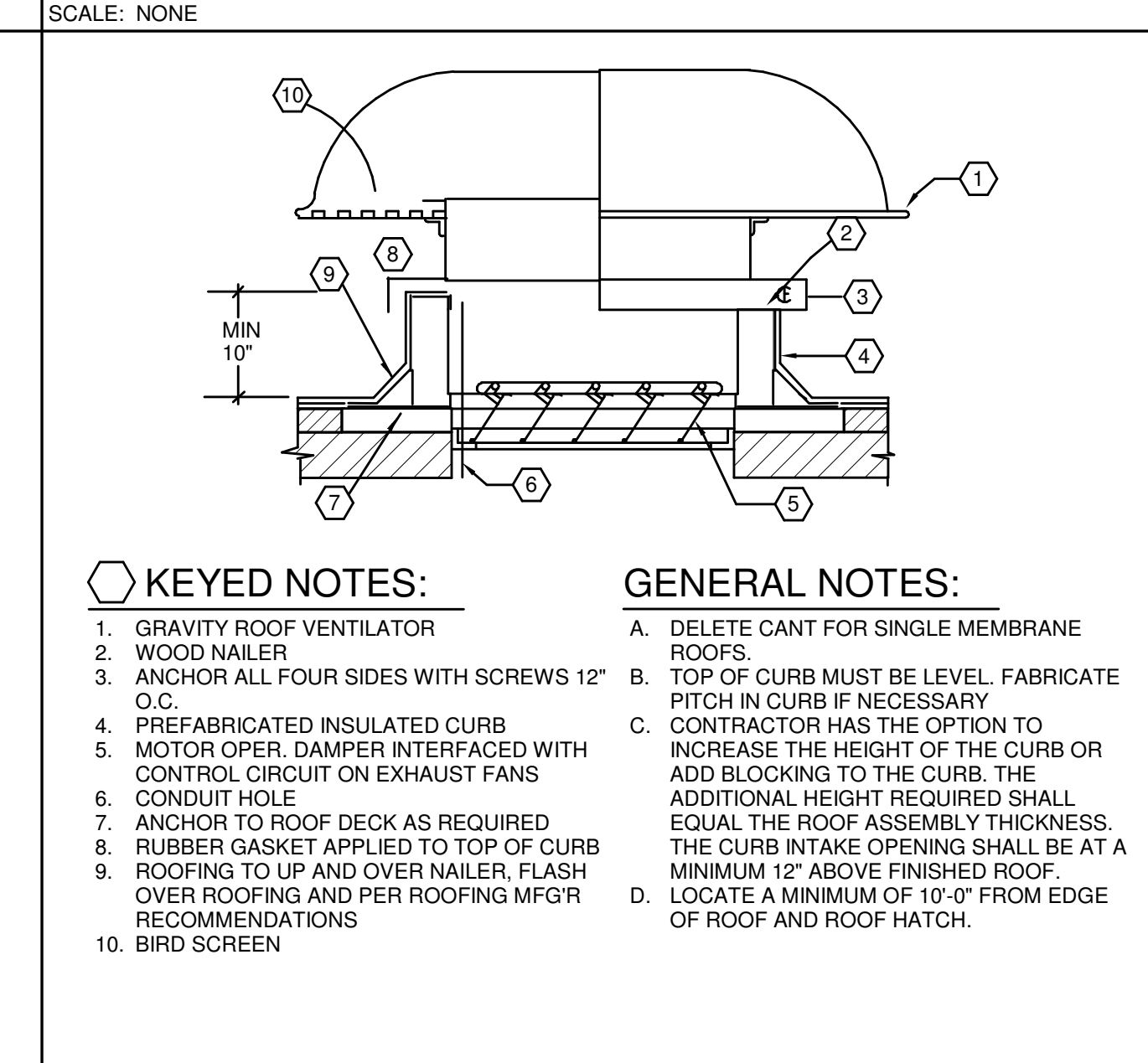
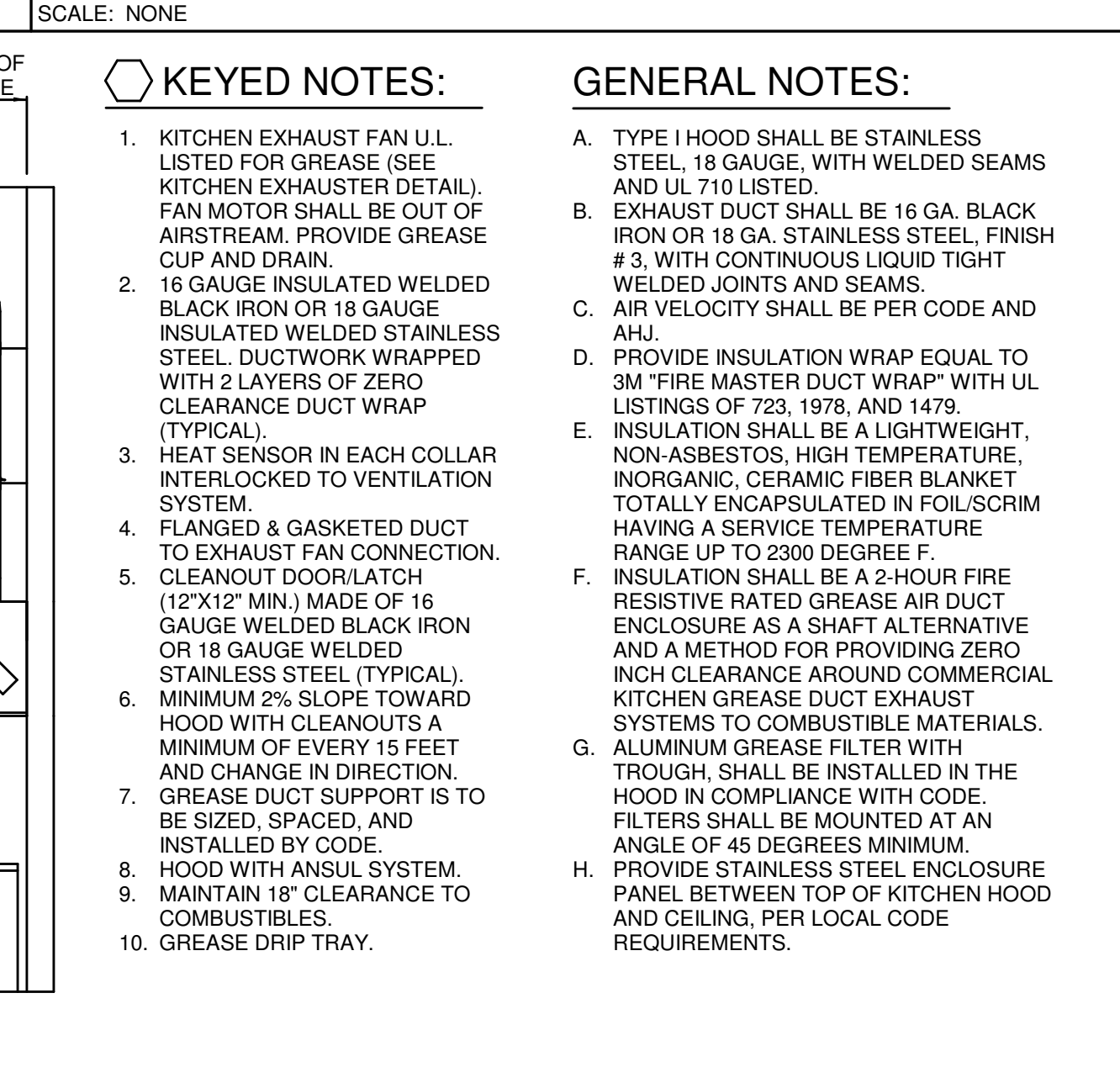
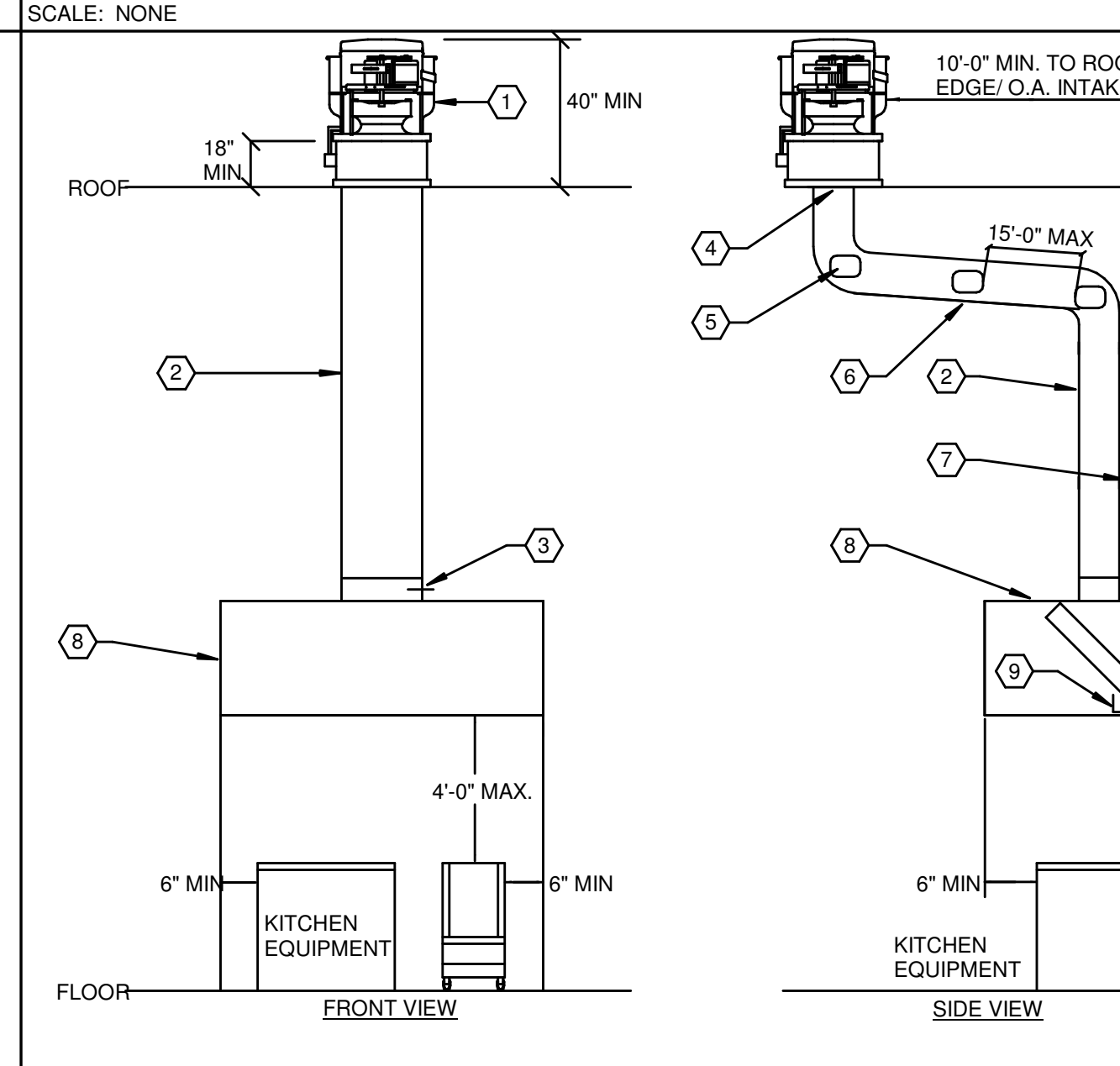
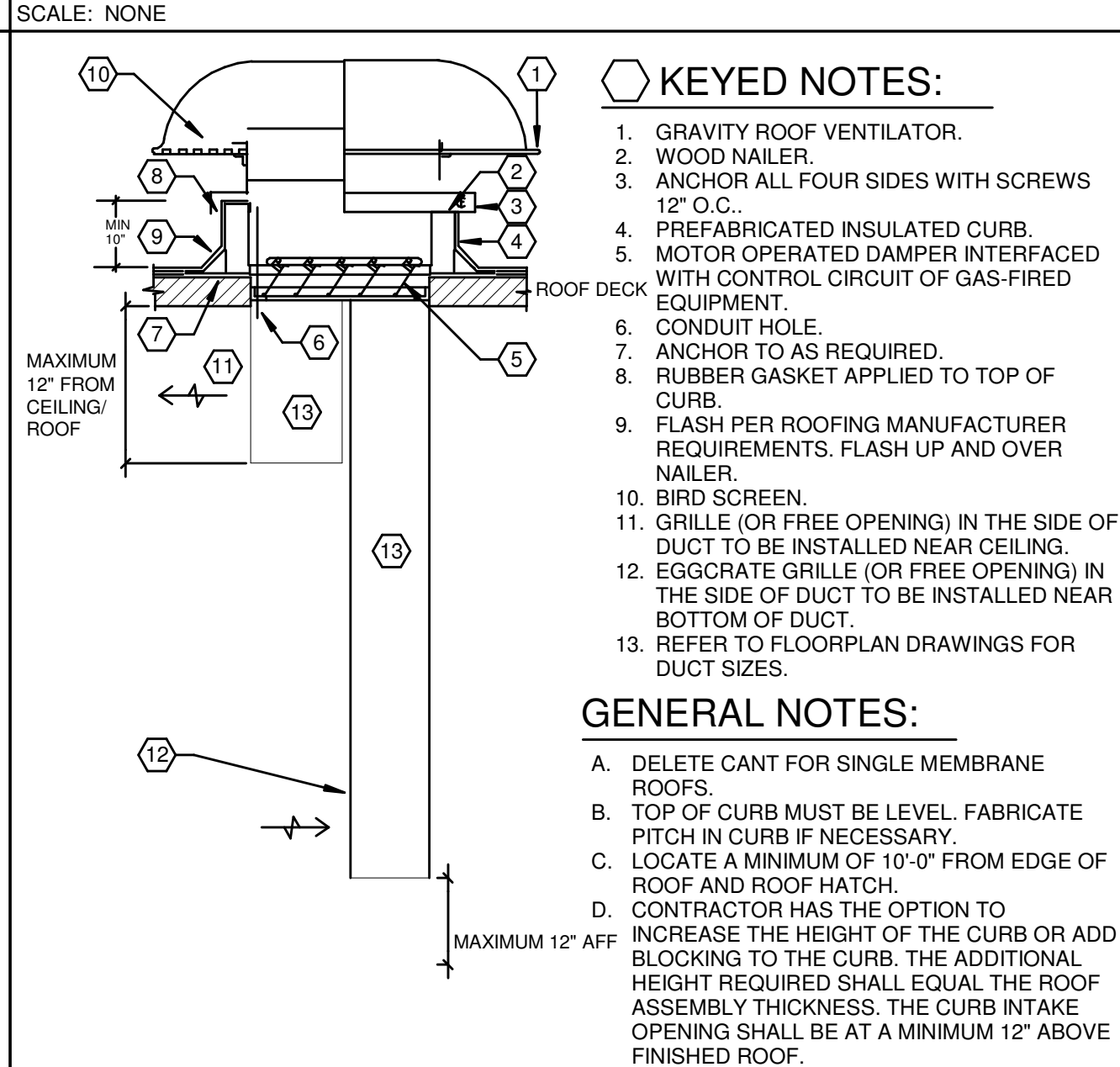
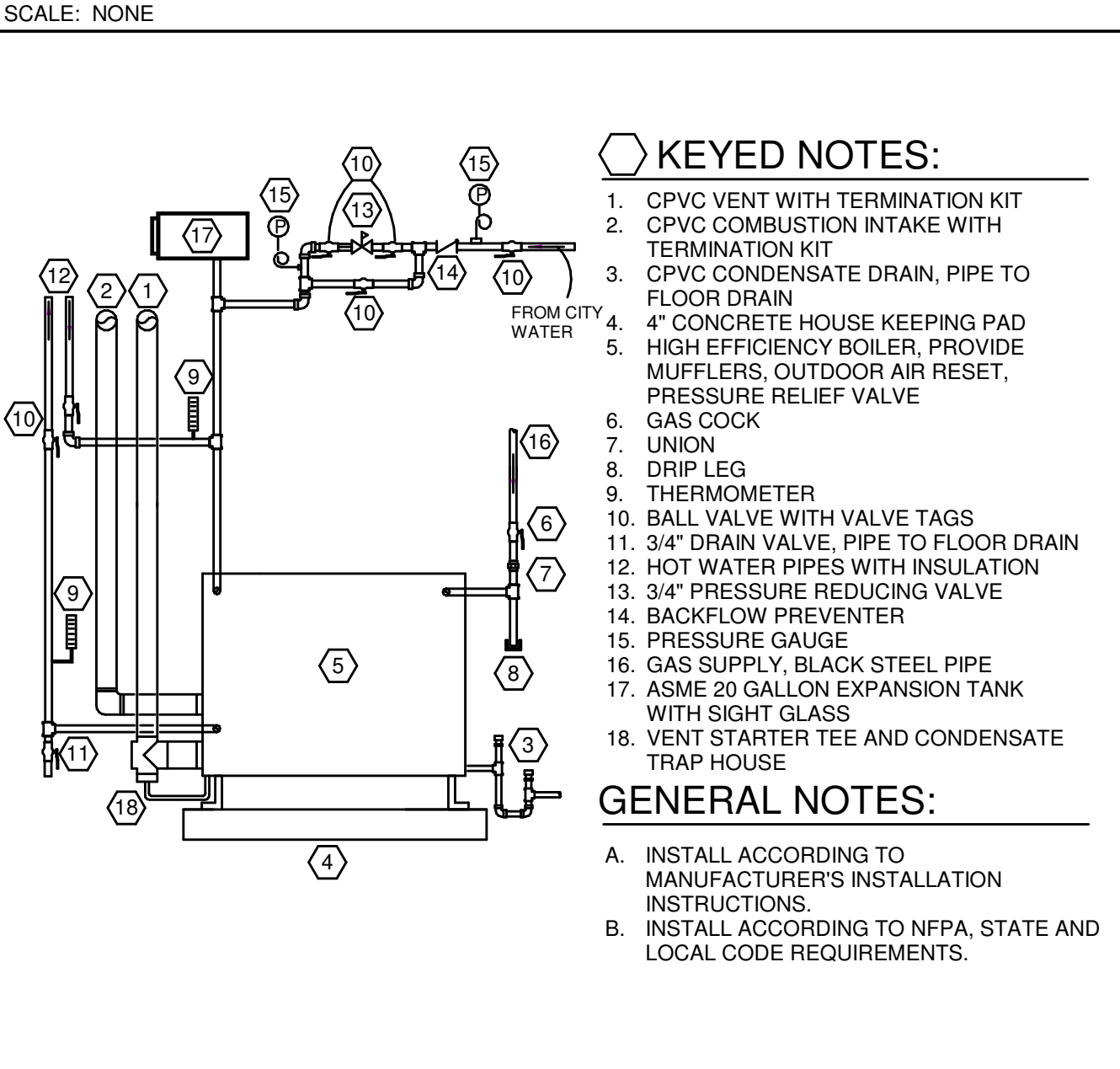
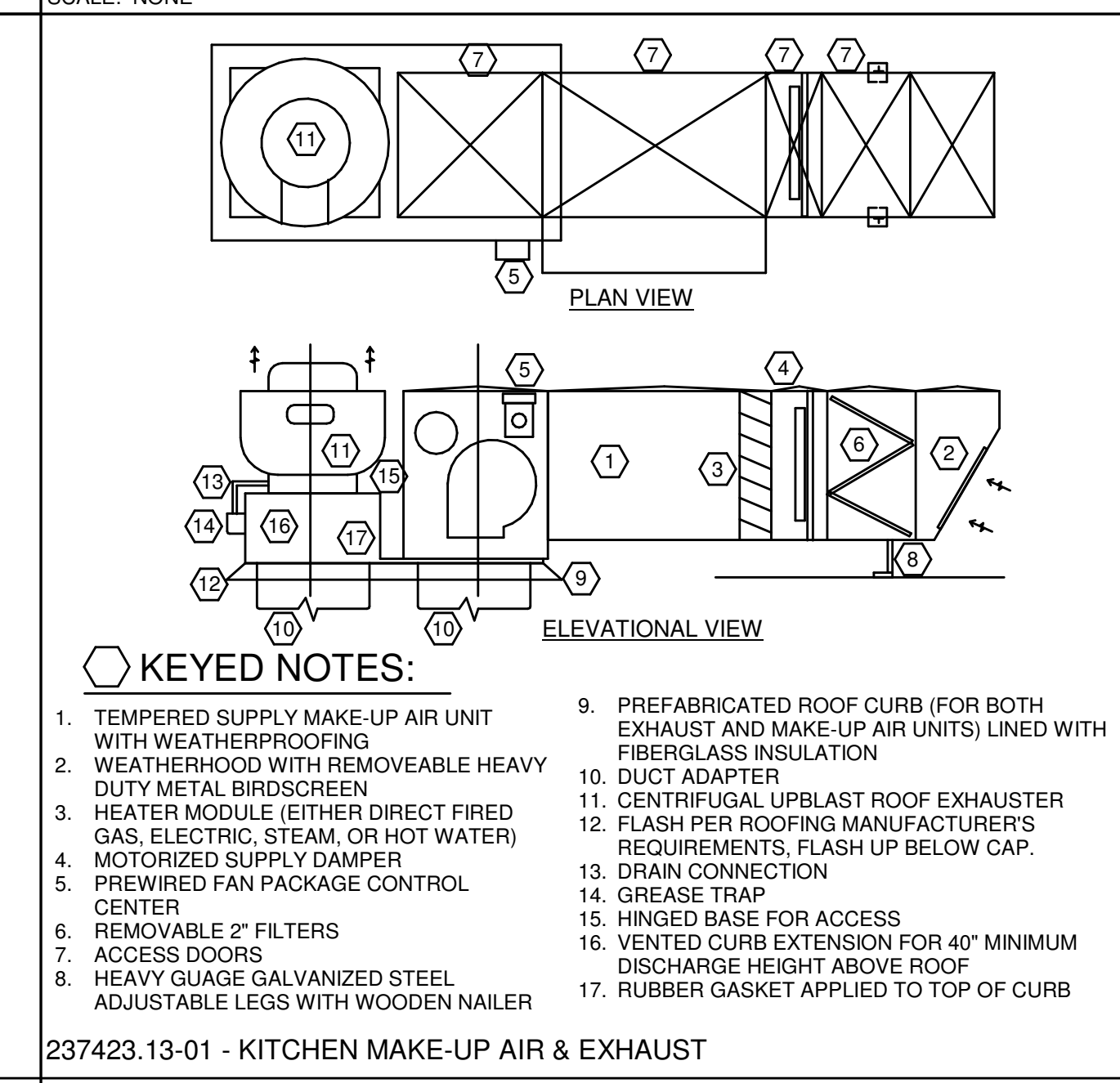
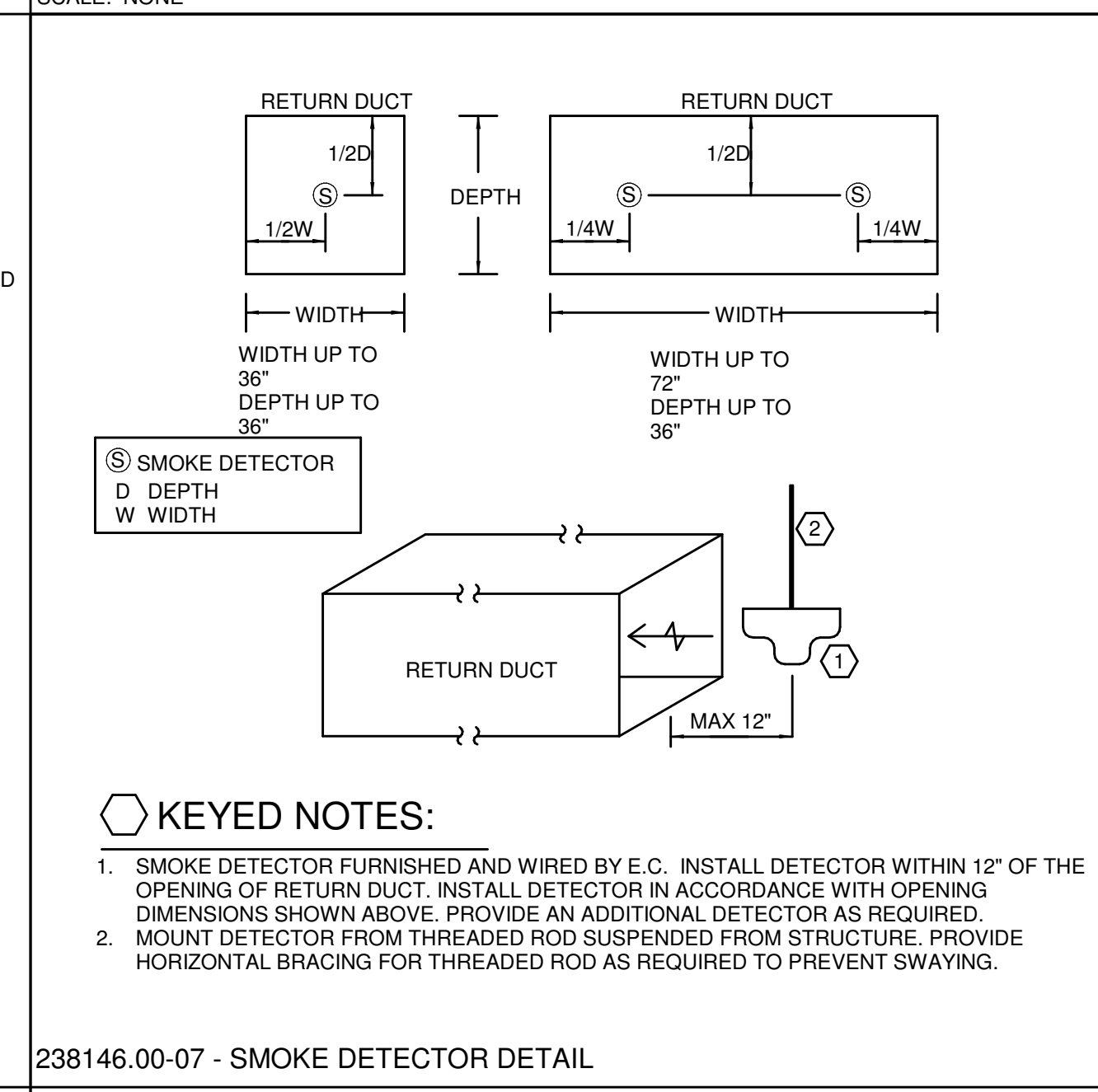
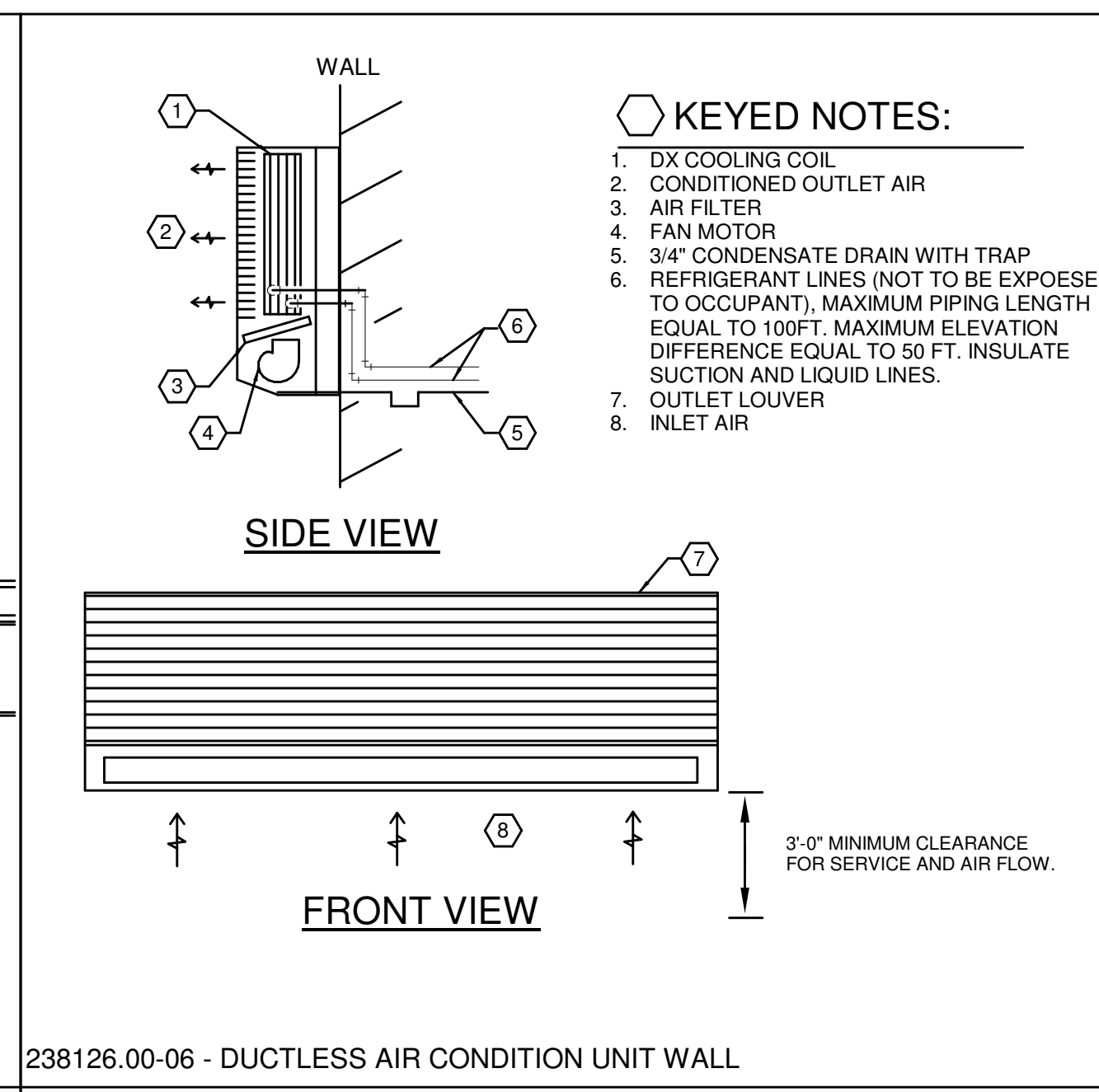
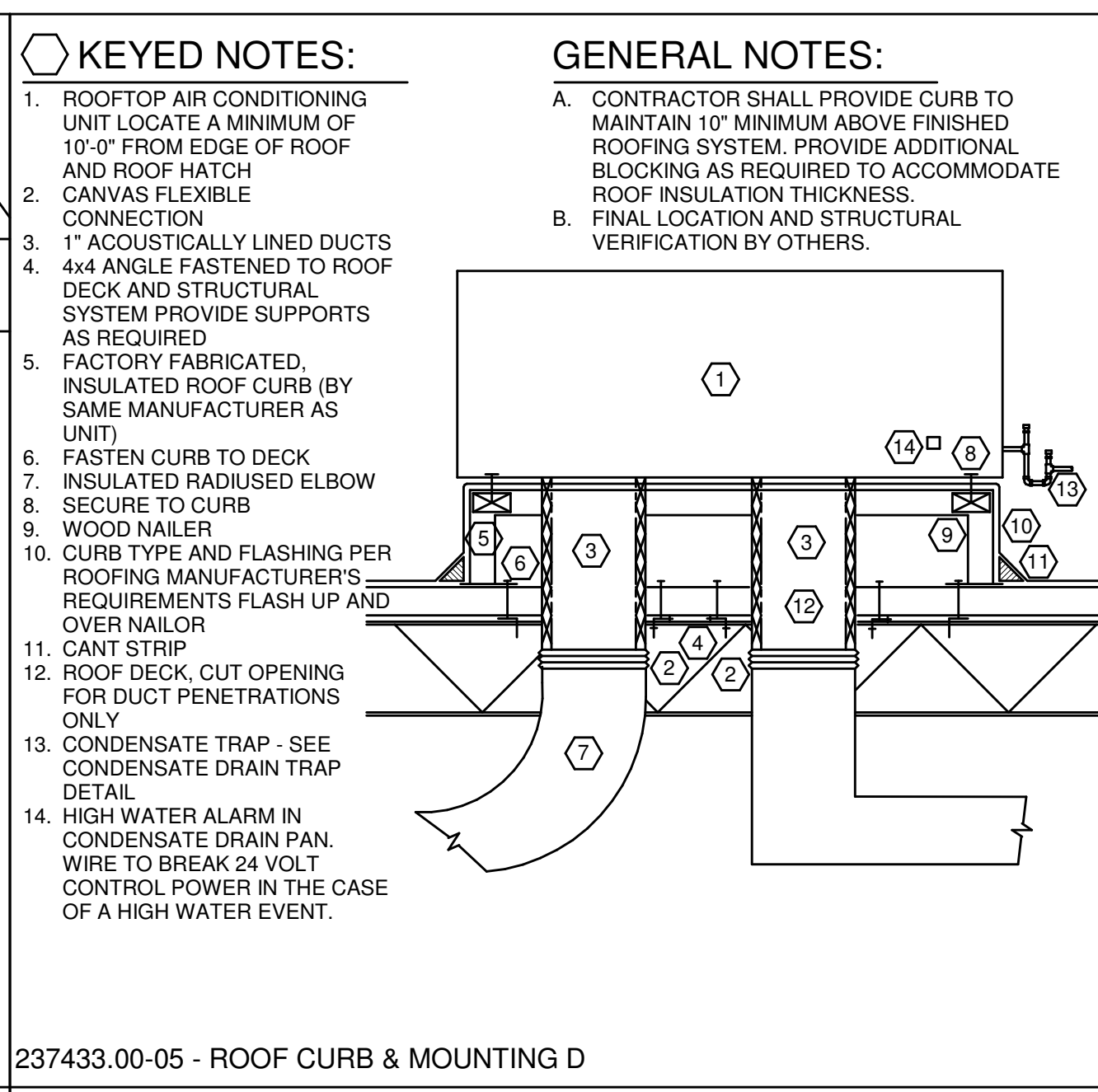
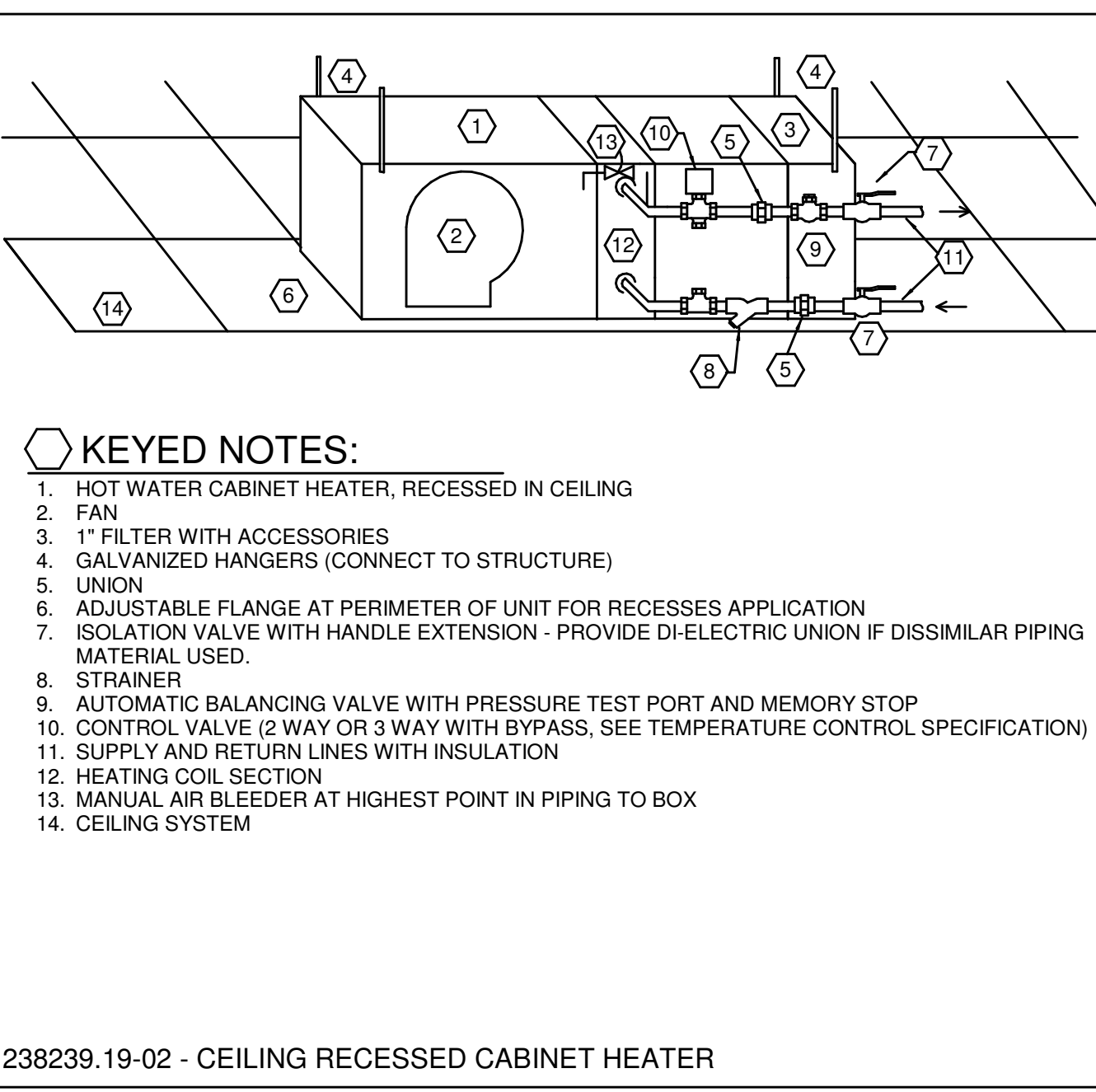
**M4-109**

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233713.00-11 - INTAKE LOUVER  
SCALE: NONE

233313.00-15 - FIRE DAMPER FLOOR PENETRATION  
SCALE: NONE

233313.00-12 - FIRE DAMPER TYPE A  
SCALE: NONE

233113.00-11 - DUCT PENETRATION AT FIRE PARTITION  
SCALE: NONE

232113.23-07 - INSULATED PIPE PENETRATION WITH FIRESTOPPING  
SCALE: NONE

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LOUISVILLE, KENTUCKY  
NEW YORK, NEW YORK

Grandview Elementary School HVAC Reno.  
500 Grandview Ave, Bellevue, KY 41073

PRELIMINARY  
NOT FOR  
CONSTRUCTION

REVISIONS	

DWN: JJK CHK: RAL  
DATE: 10-13-2023  
PROJECT #: 24599.00

MECHANICAL -  
DETAILS

M6-503  
1" REFERENCE  
KLH PROJECT #  
24599



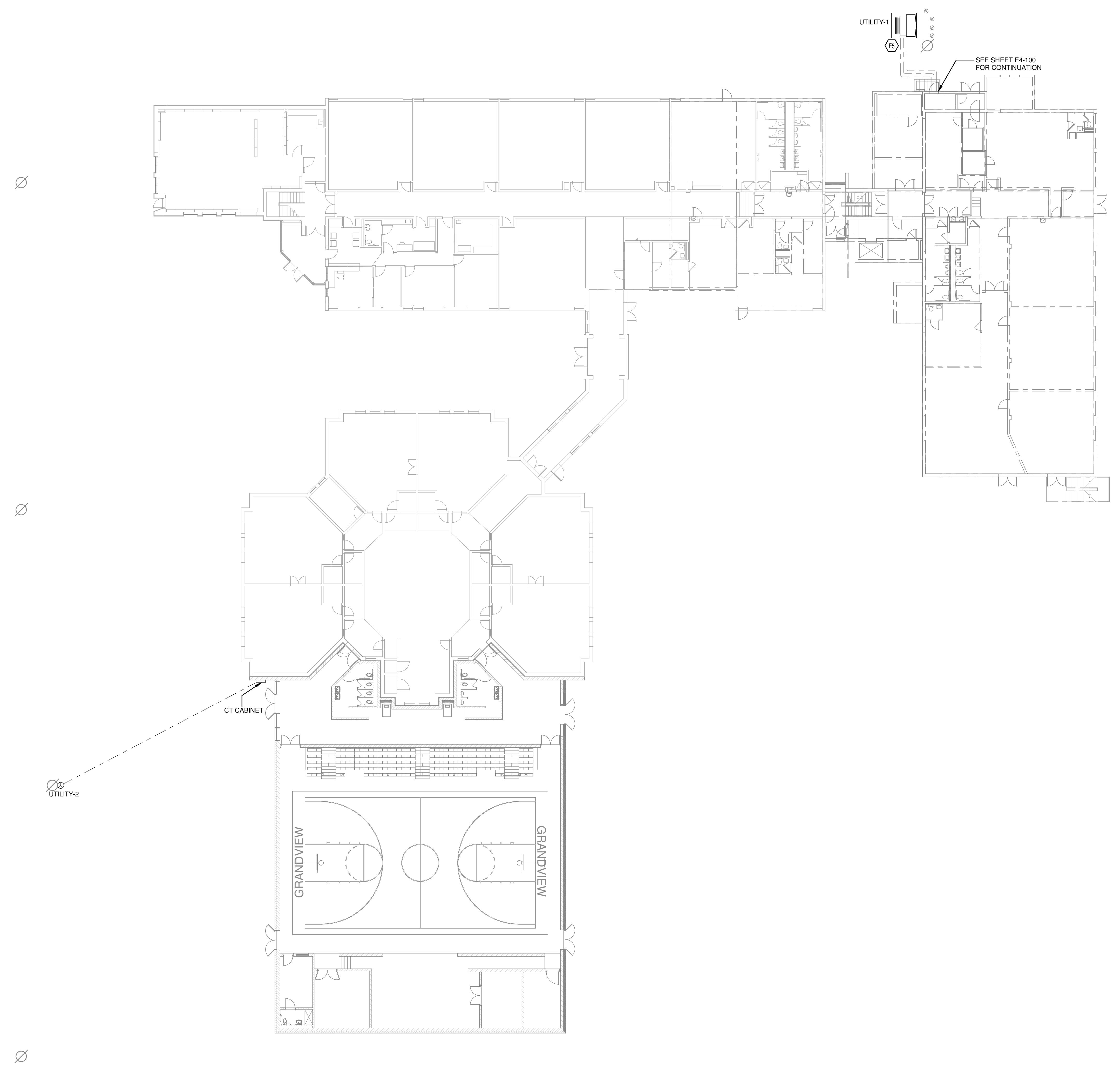




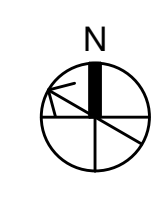


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① ELECTRIC SITE PLAN  
1/16" = 1'-0"



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# Grandview Elementary School HVAC Reno.

500 Grandview Ave, Bellevue, KY 41073

PRELIMINARY  
NOT FOR  
CONSTRUCTION

REVISIONS	

DWN: GMN    CHK: DTJ  
DATE: 10-13-2023  
PROJECT #: 24599.00

ELECTRIC SITE  
PLAN

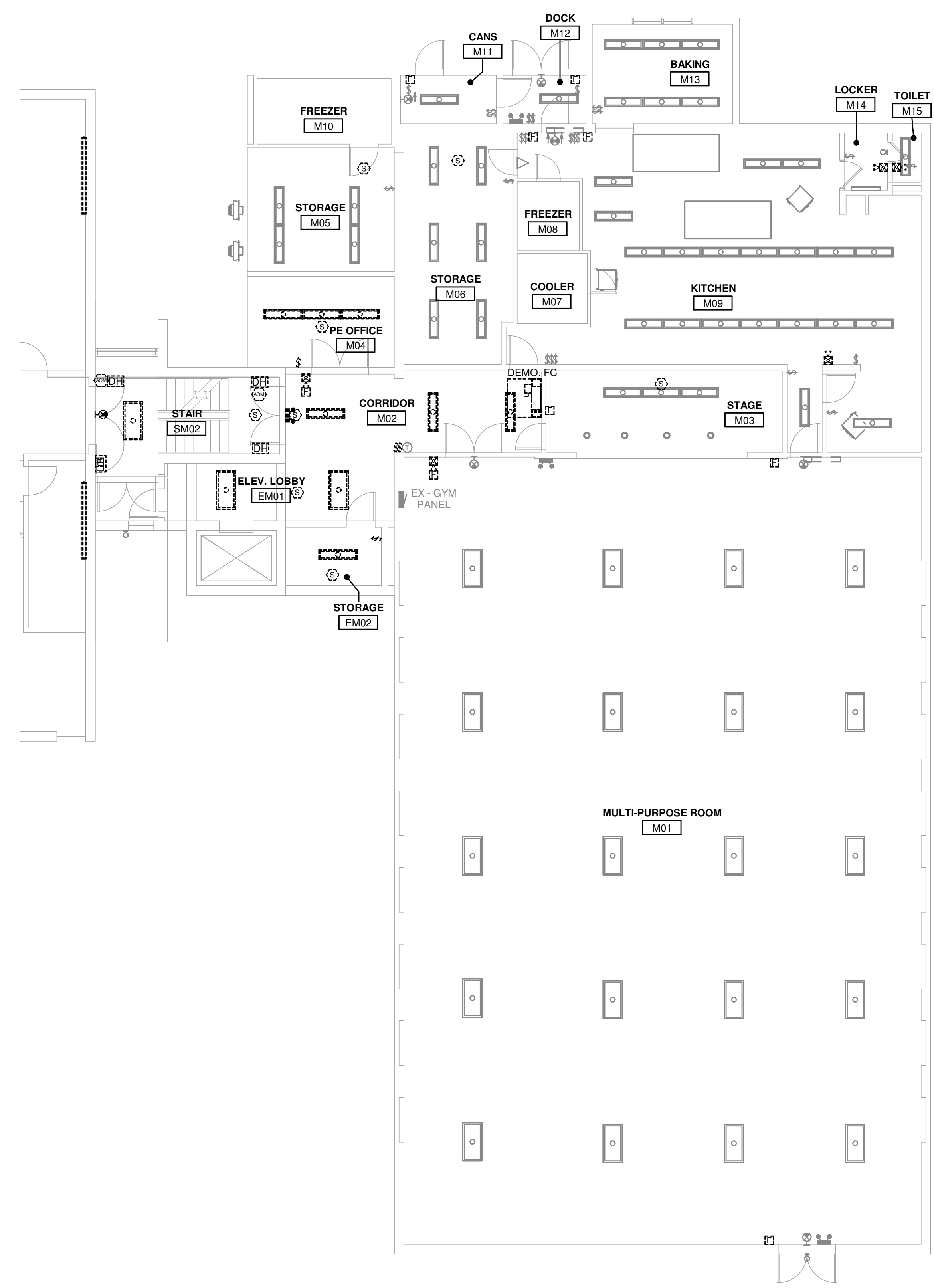
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1" REFERENCE  
KLH PROJECT #  
24599

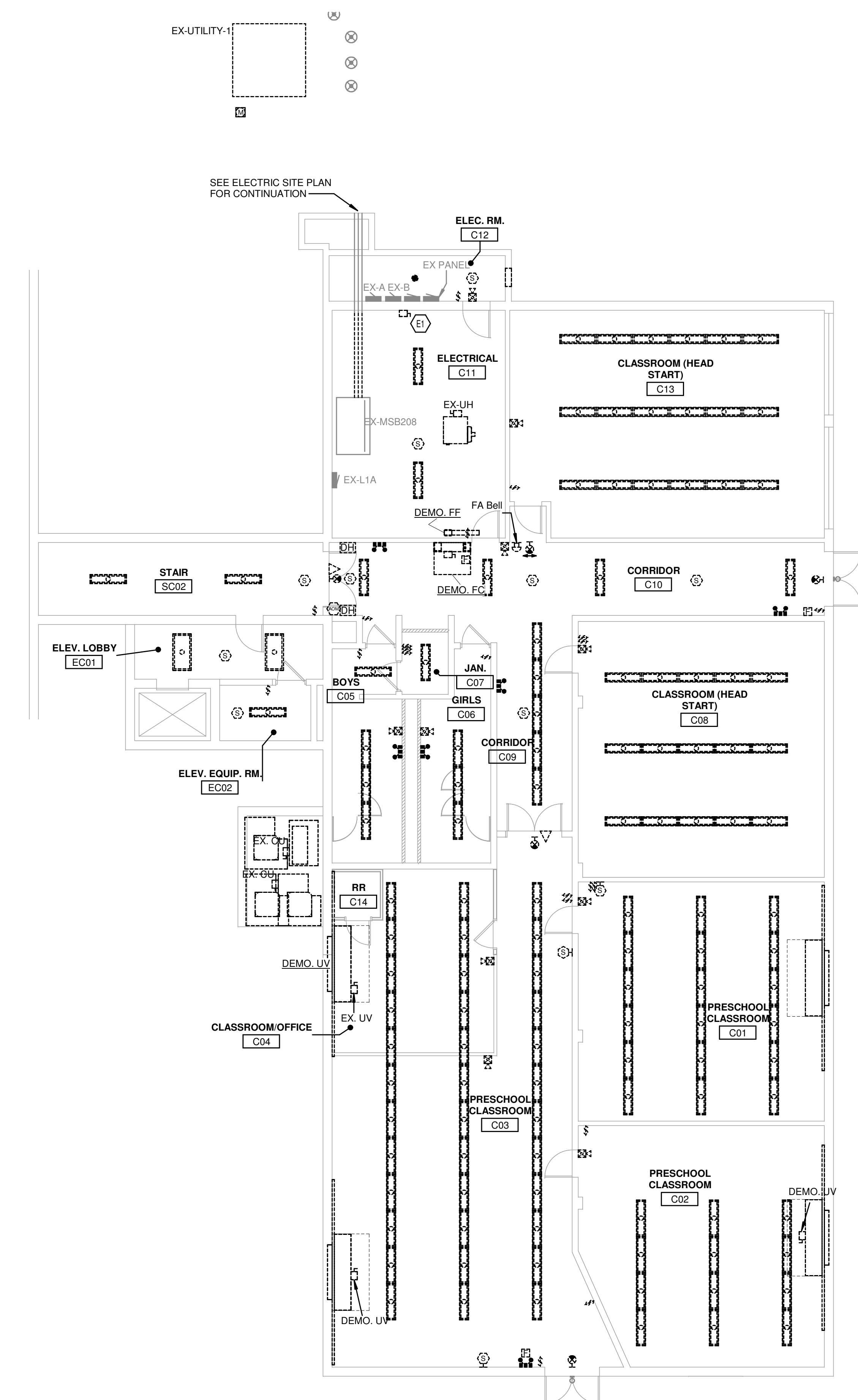


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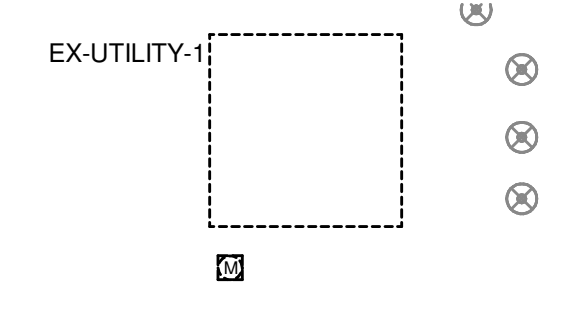
② ELECTRIC DEMOLITION PLAN - LEVEL M - OVERALL  
1/8" = 1'-0"



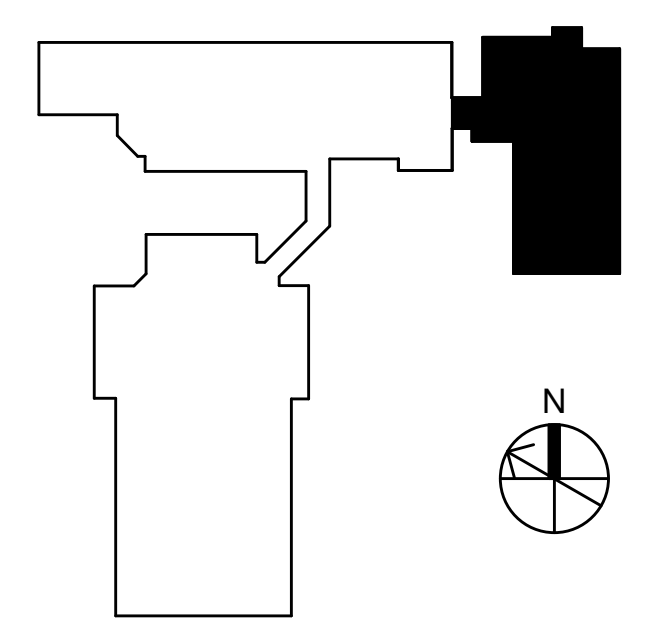
① ELECTRIC DEMOLITION PLAN - LEVEL C - OVERALL  
1/8" = 1'-0"

**KEYED NOTES**

E1 DISCONNECT AND REMOVE EXISTING DISCONNECT SWITCH AND CONDUIT FOR INSTALLATION OF NEW MAIN SWITCHBOARD. PRESERVE SWITCH FOR RELOCATION. SEE NEW ELECTRICAL POWER PLAN FOR NEW LOCATION.



SEE ELECTRIC SITE PLAN FOR CONTINUATION



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PROJECT #: 24599.00

ELECTRIC DEMOLITION  
LEVEL C & M  
PLAN

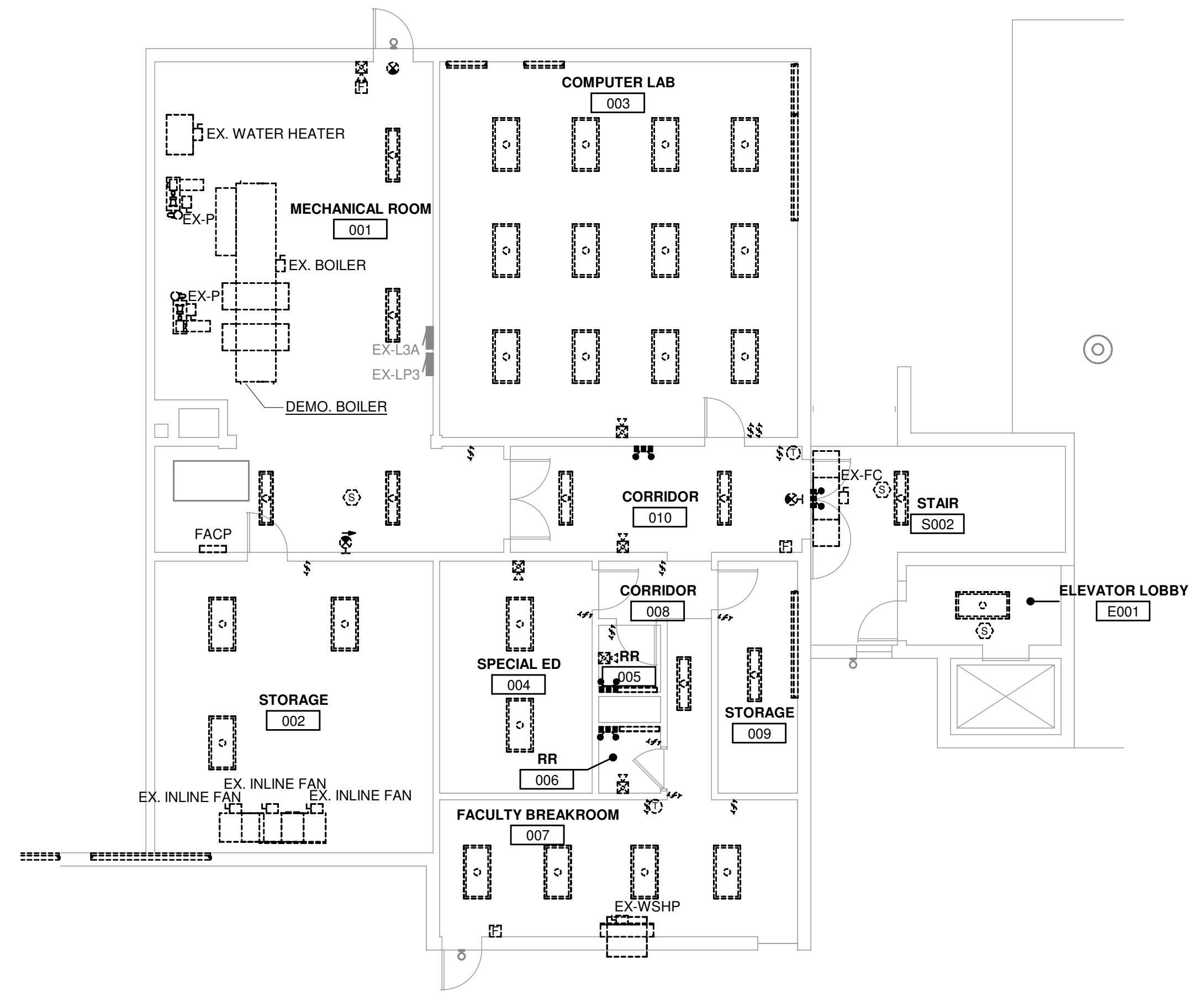
E1-100

1" REFERENCE  
KLH PROJECT #  
24599

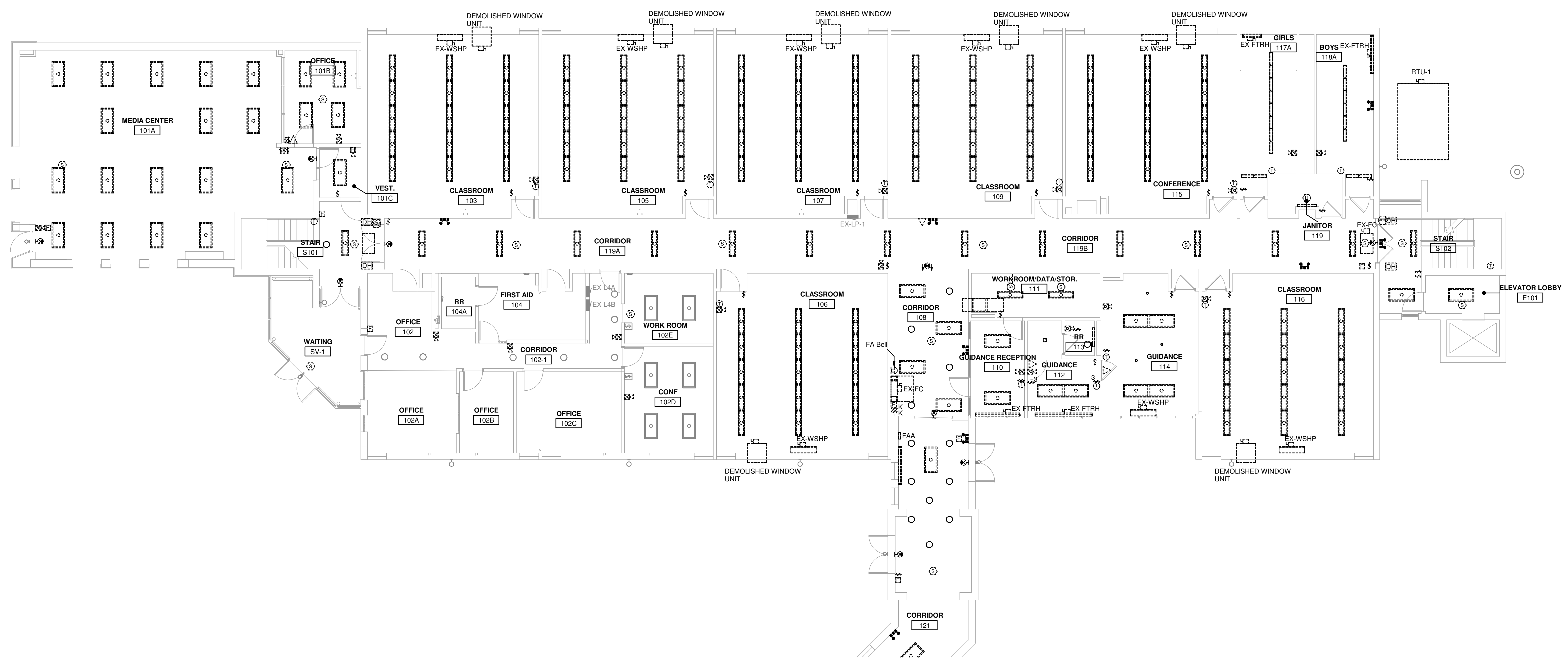
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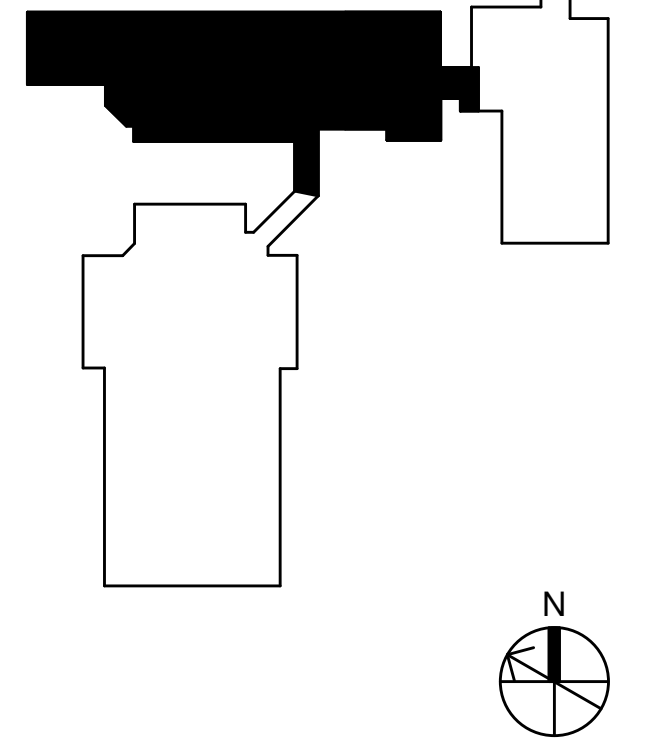
**KEYED NOTES**



1 ELECTRIC DEMOLITION PLAN - LEVEL B - OVERALL  
1/8" = 1'-0"



2 ELECTRIC DEMOLITION PLAN - LEVEL 1 - OVERALL  
1/8" = 1'-0"



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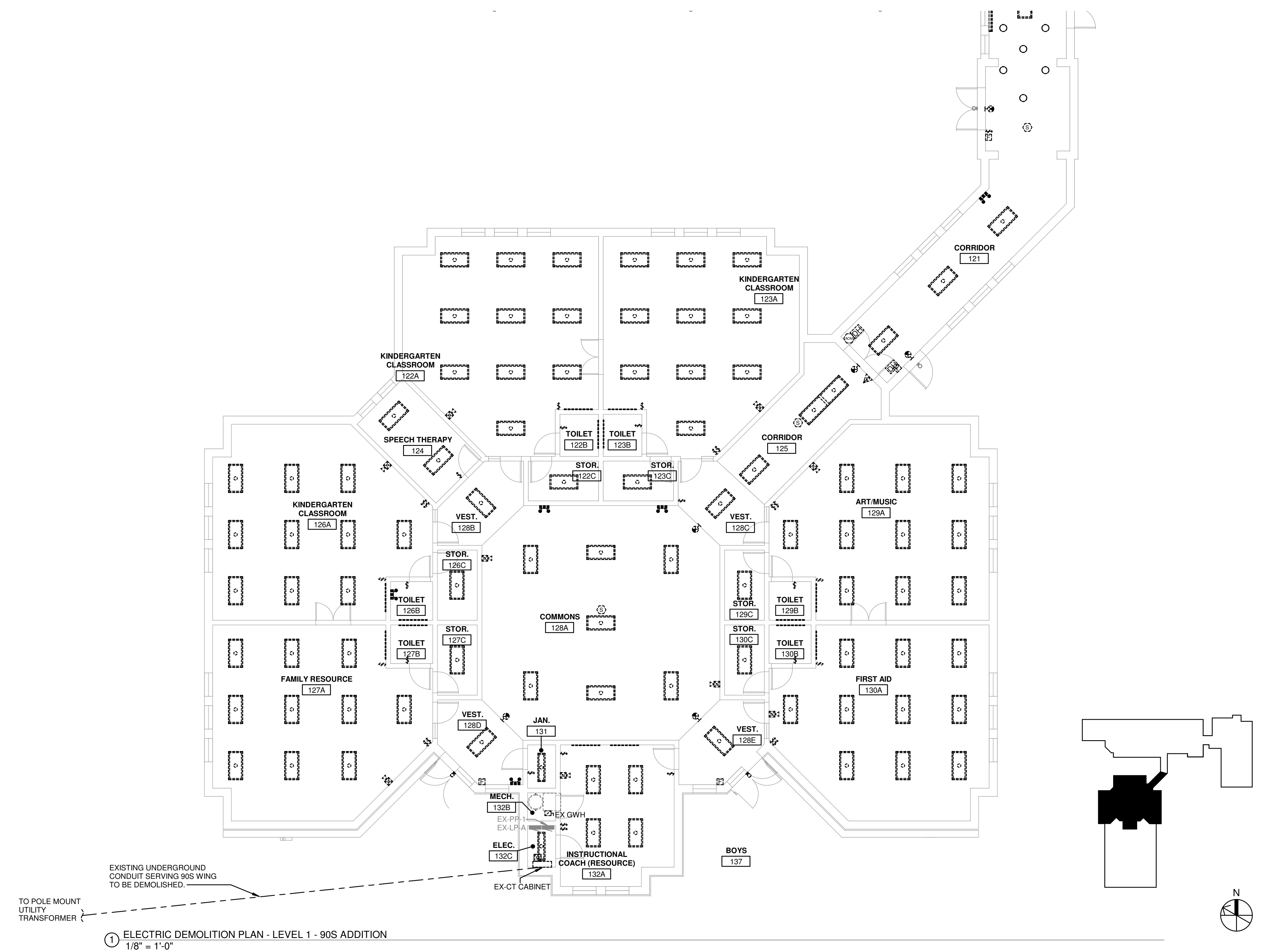
DWN: GMN    CHK: DTJ  
DATE: 10-13-2023  
PROJECT #: 24599-00  
ELECTRIC DEMOLITION LEVEL B & 1 NORTH PLAN

**E1-101**  
1" REFERENCE PROJECT # 24599

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KEYED NOTES



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500 Grandview Ave, Bellevue, KY 41073

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PROJECT #: 24599.00

ELECTRIC  
DEMOLITION  
LEVEL 1 90S  
EDITION PLAN

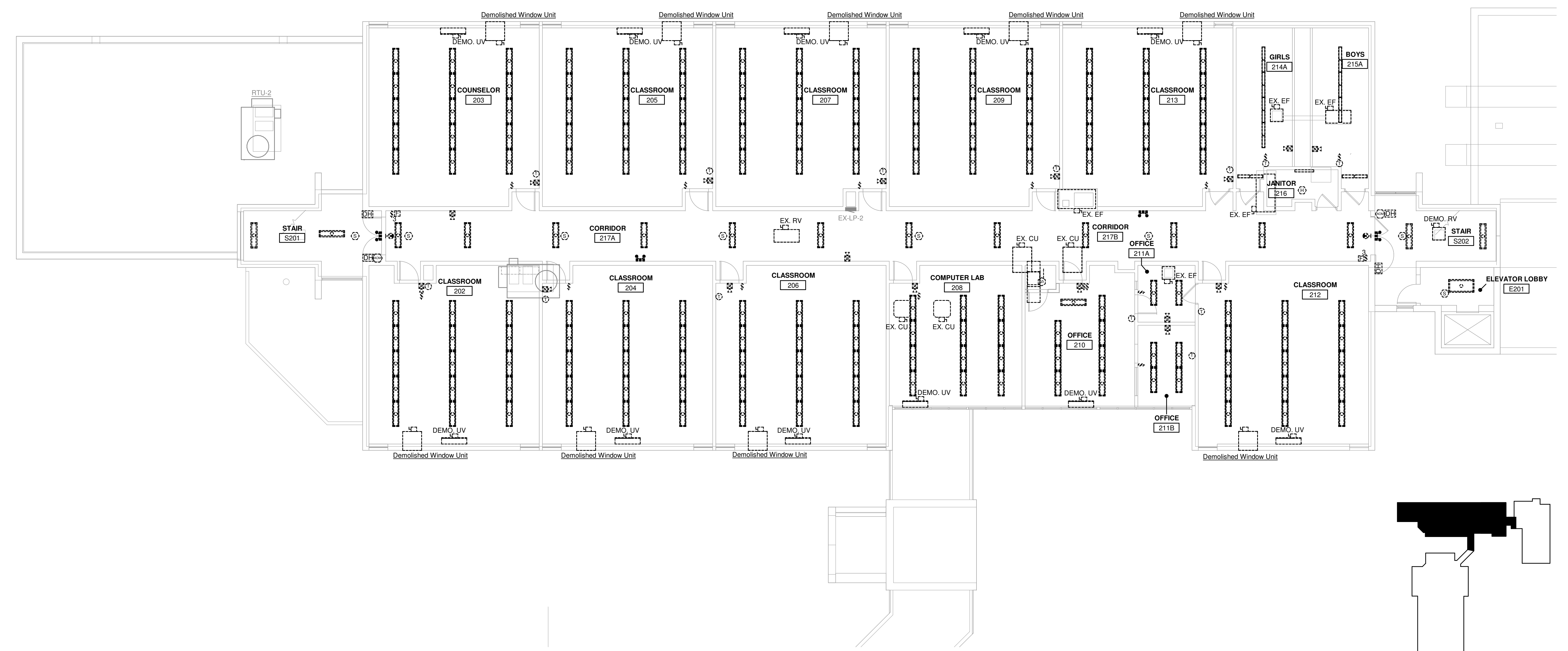
## E1-102

1" REFERENCE  
KLH PROJECT #  
24599

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1 ELECTRIC DEMOLITION PLAN - LEVEL 2 - OVERALL  
1/8" = 1'-0"



KEYED NOTES

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# Grandview Elementary School HVAC Reno.

500 Grandview Ave, Bellevue, KY 41073

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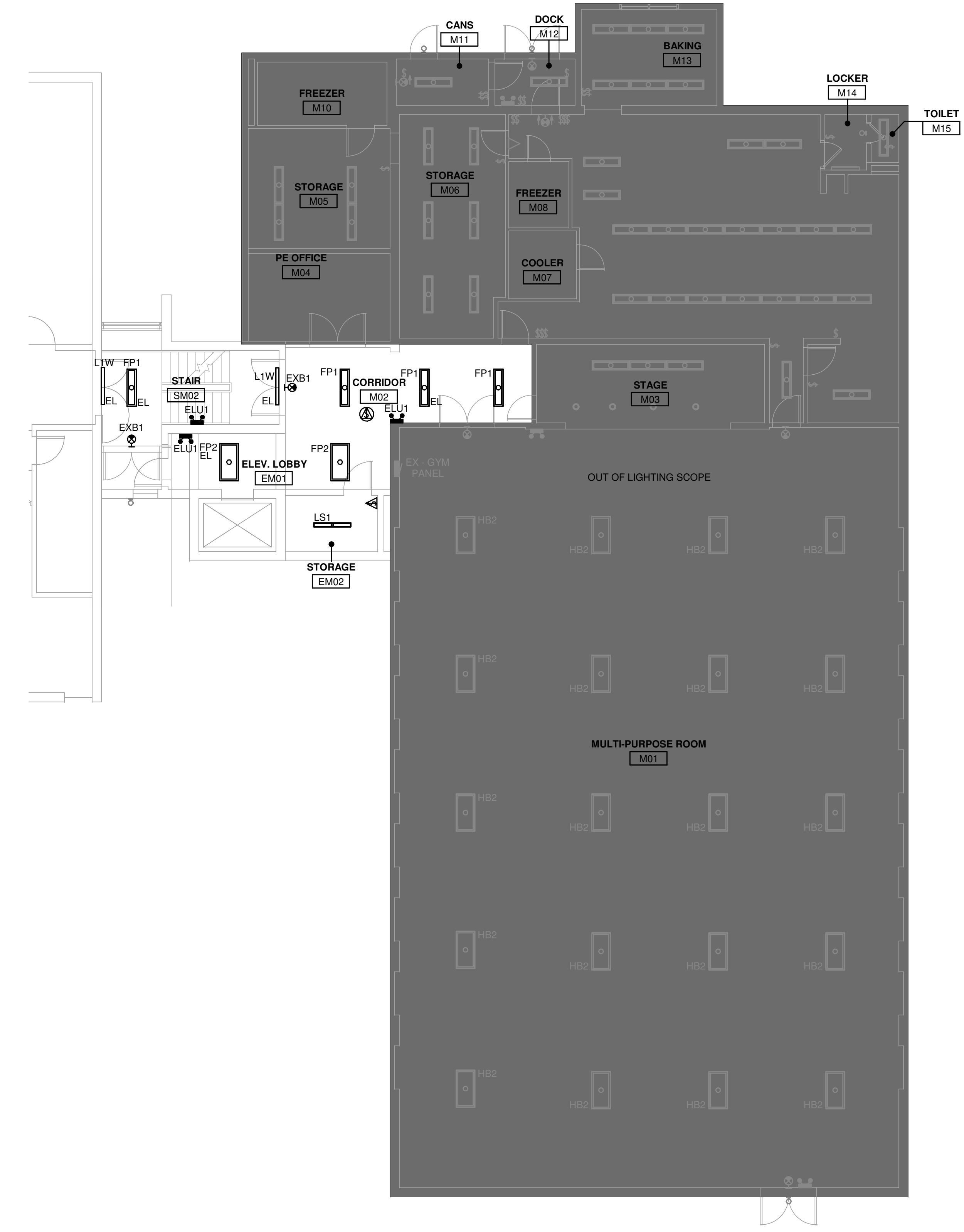
REVISIONS

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DATE: 10-13-2023  
PROJECT #: 24599.00

ELECTRIC DEMOLITION  
LEVEL 2 PLAN

E1-103  
1" REFERENCE  
KLH PROJECT #  
24599

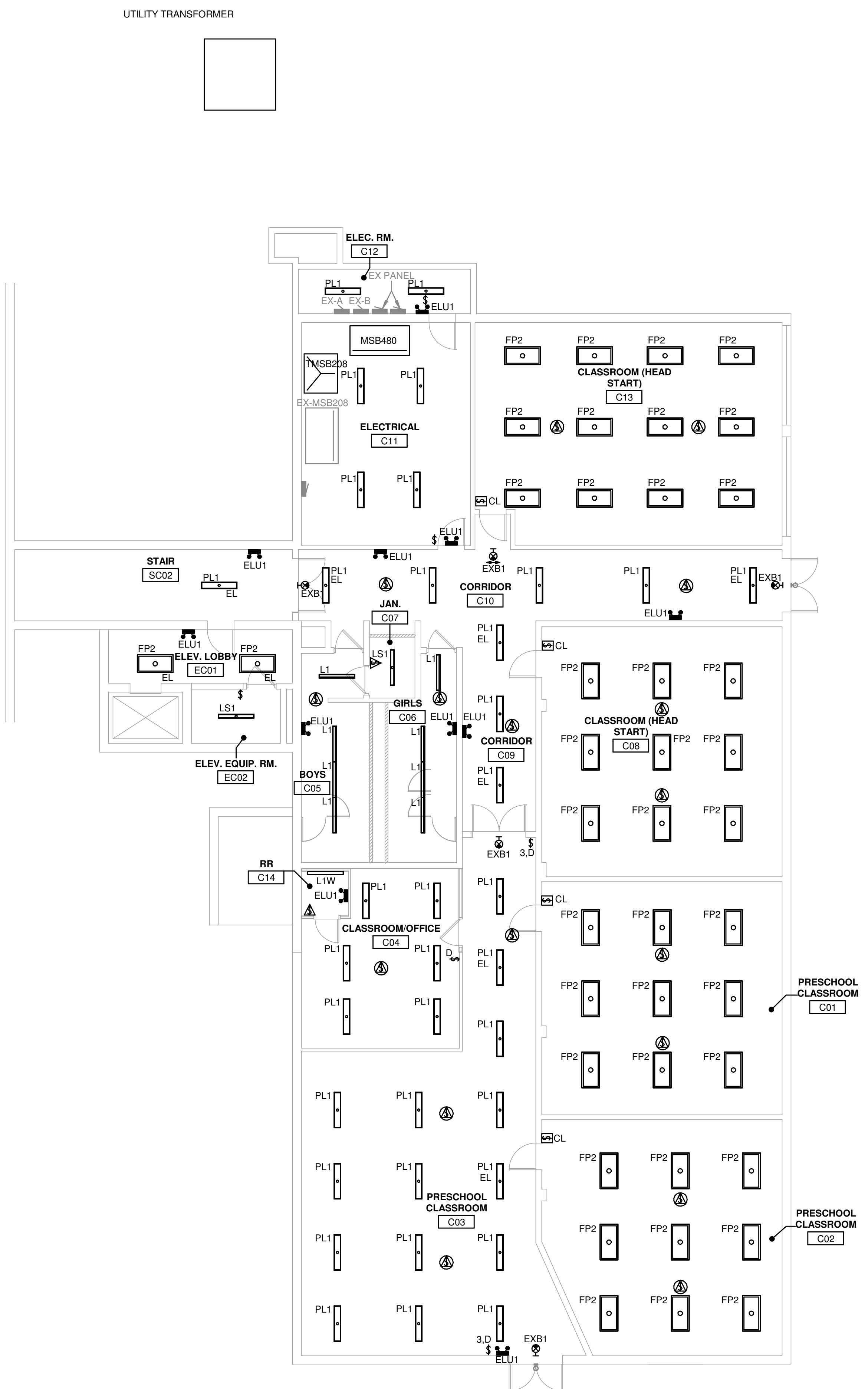


② ELECTRIC LIGHTING PLAN - LEVEL M (NEW CONSTRUCTION)  
 1/8" = 1'-0"

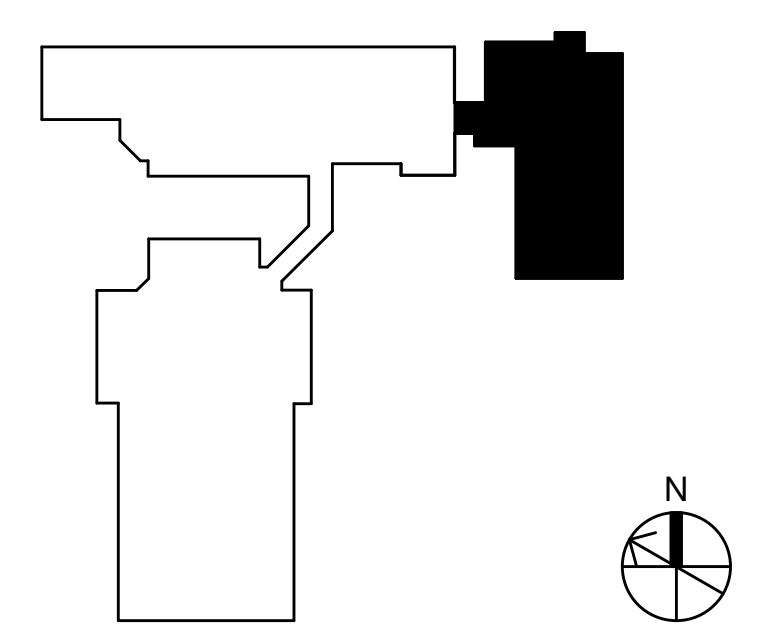
**GENERAL LIGHTING PLAN NOTES**

- EXIT SIGN CONNECTIONS: CONNECT ALL EXIT SIGNAGE AHEAD OF ANY SWITCHING.
- INDOOR EGRESS LIGHTING: CONNECT ALL INDOOR EGRESS LIGHTING, DESIGNATED "EL," AHEAD OF ANY SWITCHING, UNLESS CONTROL METHODS ARE INDICATED OTHERWISE FOR A GIVEN AREA.
- BATTERY BACKUP DEVICES: WHERE INDICATED IN DOCUMENTS, PROVIDE UL 824 LISTED BATTERY DEVICES, WHICH AUTOMATICALLY REVERT TO FULL ILLUMINATION FOR THE AFFECTED LUMINAIRES IN THE EVENT OF LOSS OF POWER FROM THE NORMAL POWER SUPPLY CIRCUIT. PROVIDE UNSWITCHED "HOT" TO SUCH COMPONENTS TO PROVIDE CONTINUOUS POWER EVEN IF LUMINAIRE IS TURNED OFF USING NORMAL LIGHTING CONTROLS.
- LIGHTING BRANCH CIRCUITS: ALL NEW LIGHTING INTENDED TO REPLACE EXISTING FIXTURES, REUSE CONDUIT AND WIRING FOR NEW FIXTURES. REWORK AND EXTEND WHERE NECESSARY. CONNECT NEW SWITCHING TO EXISTING CIRCUITRY. ALL NEW LIGHTING LOADS ARE LOWER THAN DEMOLISHED.

**KEYED NOTES**



① ELECTRIC LIGHTING PLAN - LEVEL C - OVERALL  
 1/8" = 1'-0"



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 500 Grandview Ave, Bellevue, KY 41073

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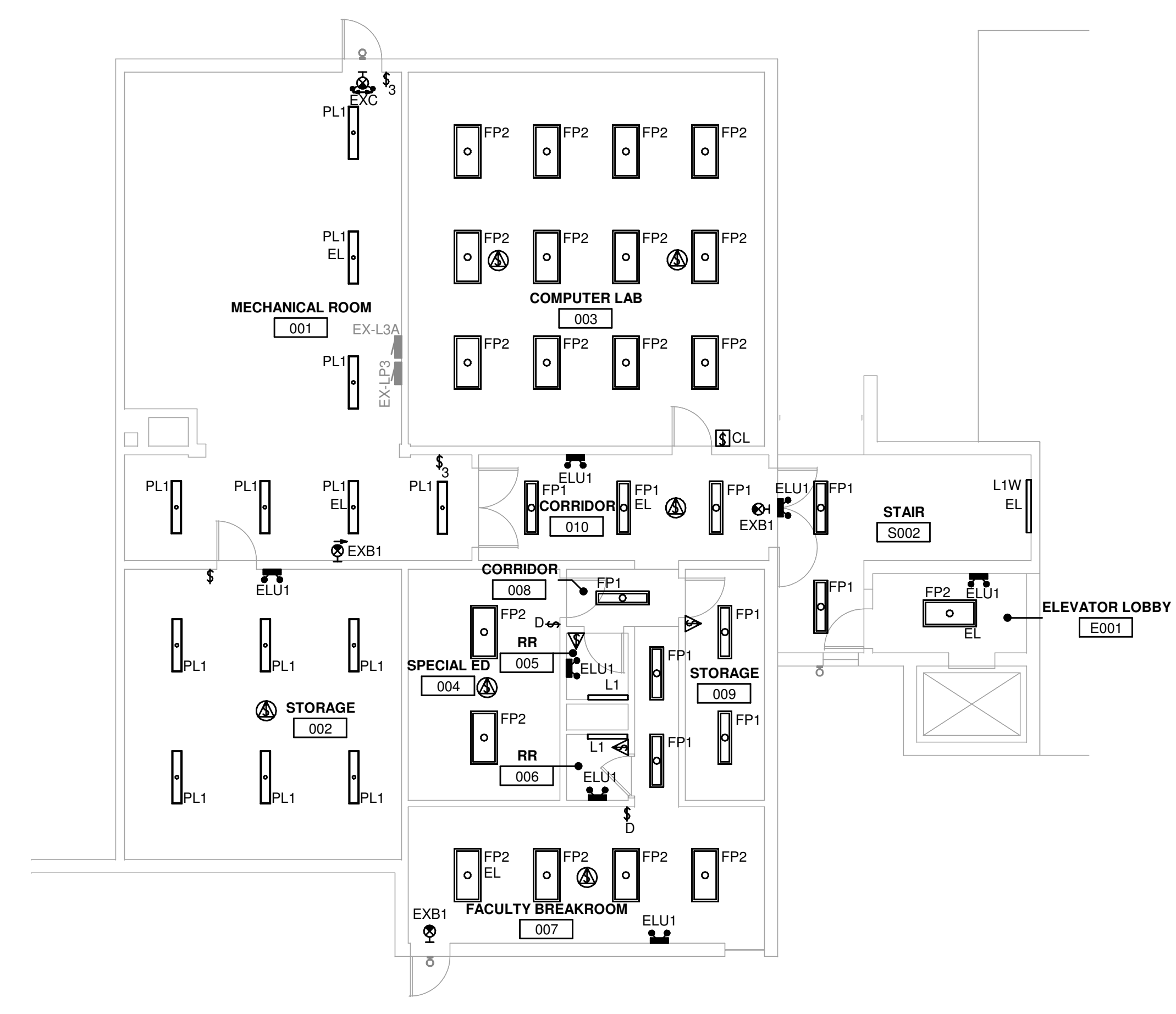
DWN: GMN CHK: DTJ  
 DATE: 10-13-2023  
 PROJECT #: 24599.00  
 ELECTRIC LIGHTING  
 LEVEL C & M  
 PLAN

**E3-100**  
 1" REFERENCE  
 KLH PROJECT #  
 24599

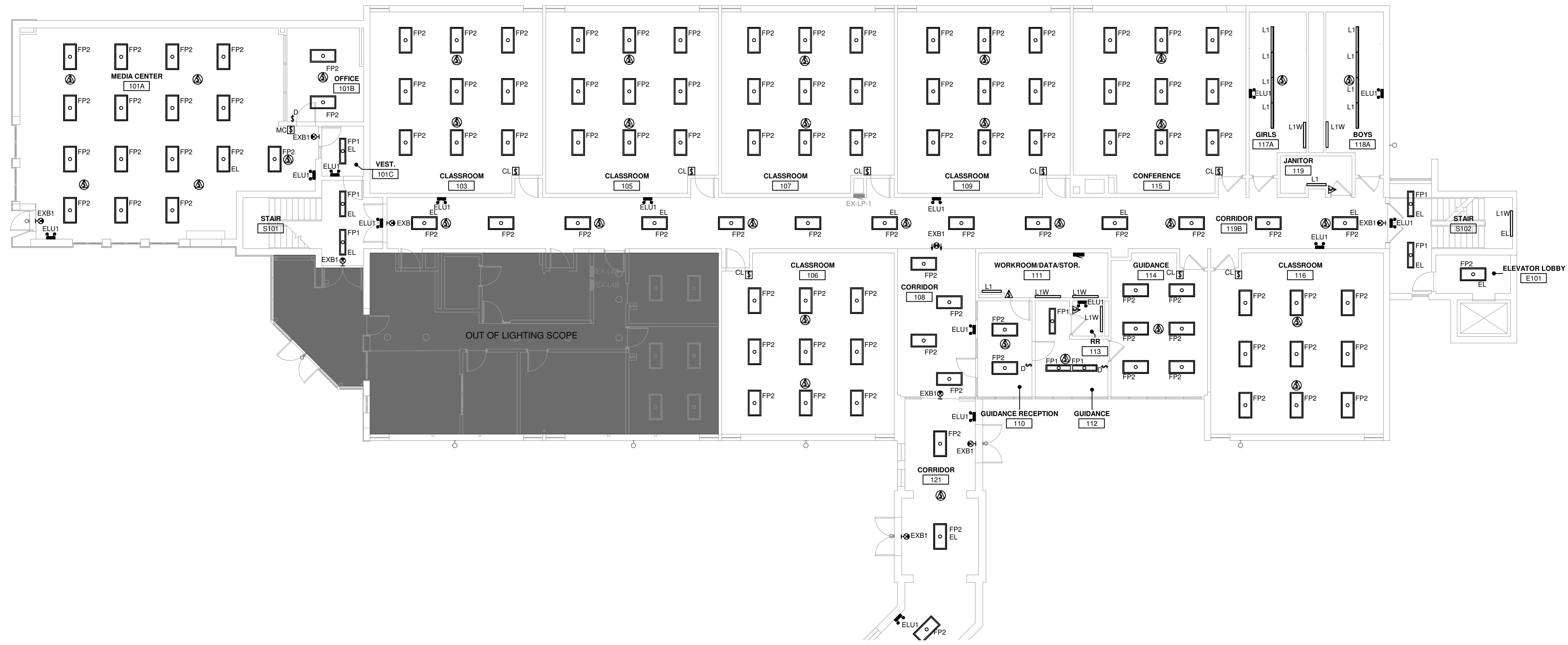
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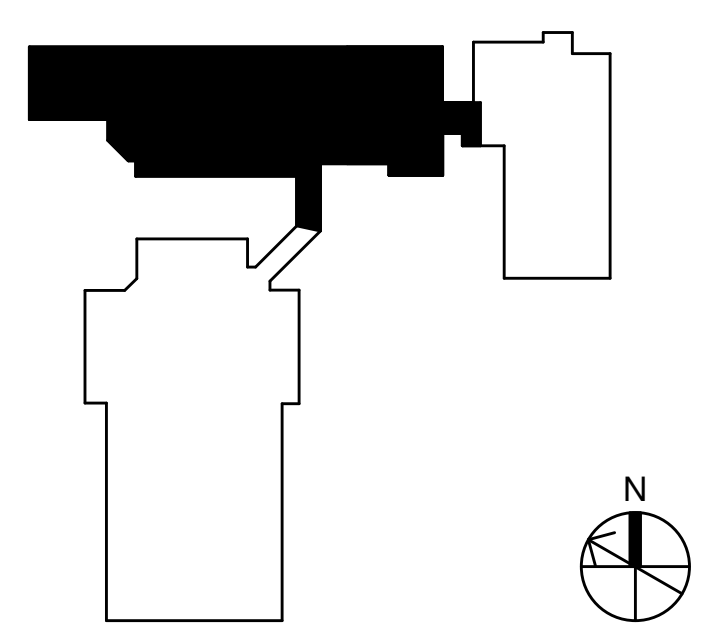
**KEYED NOTES**



① ELECTRIC LIGHTING PLAN - LEVEL B - OVERALL  
 1/8" = 1'-0"



② ELECTRIC LIGHTING PLAN - LEVEL 1 - OVERALL  
 1/8" = 1'-0"



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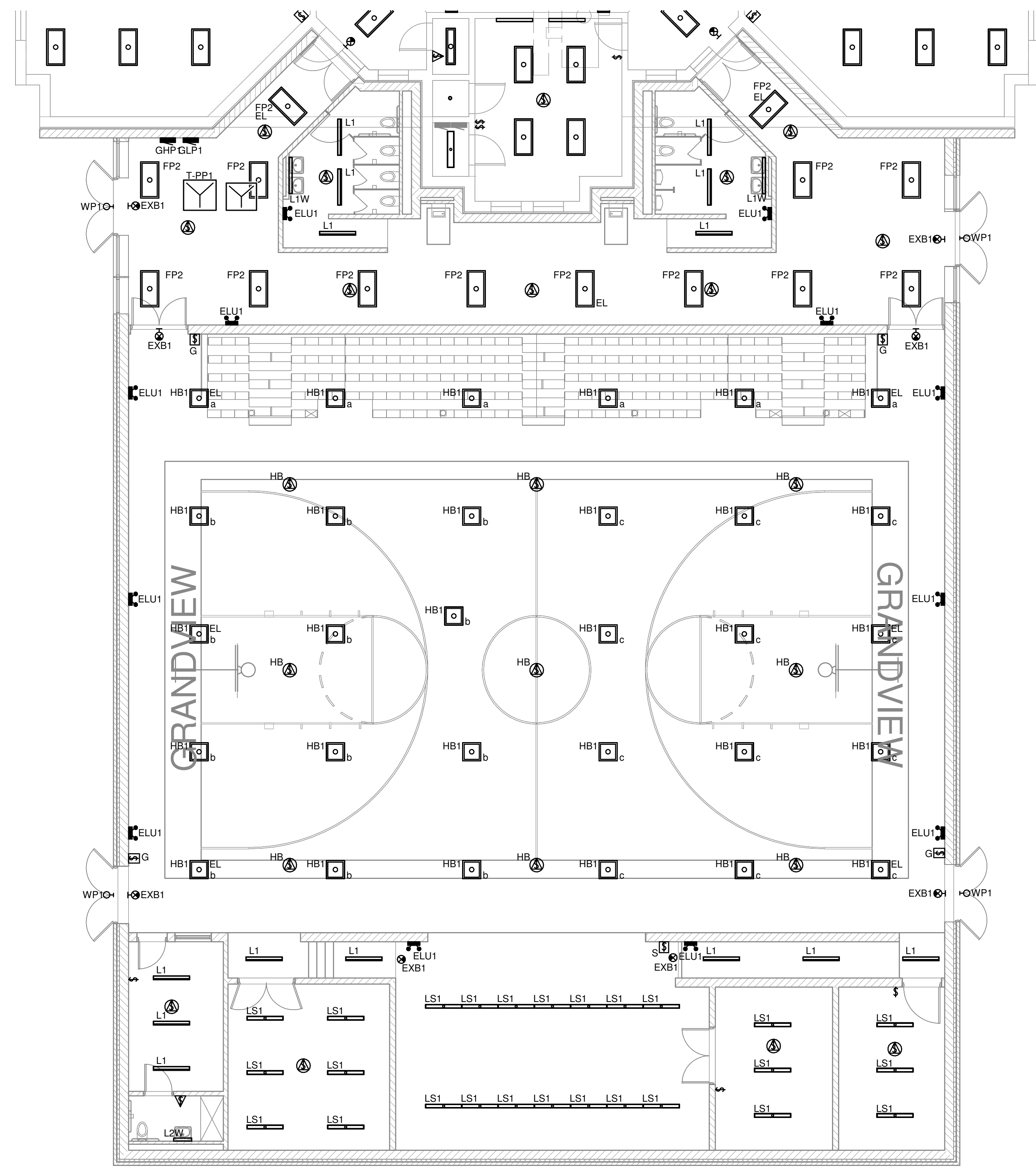
NO.	DESCRIPTION	DATE

DWN: GMN CHK: DTJ  
 DATE: 10-13-2023  
 PROJECT #: 24599.00  
 ELECTRIC LIGHTING  
 LEVEL B & 1  
 NORTH PLAN

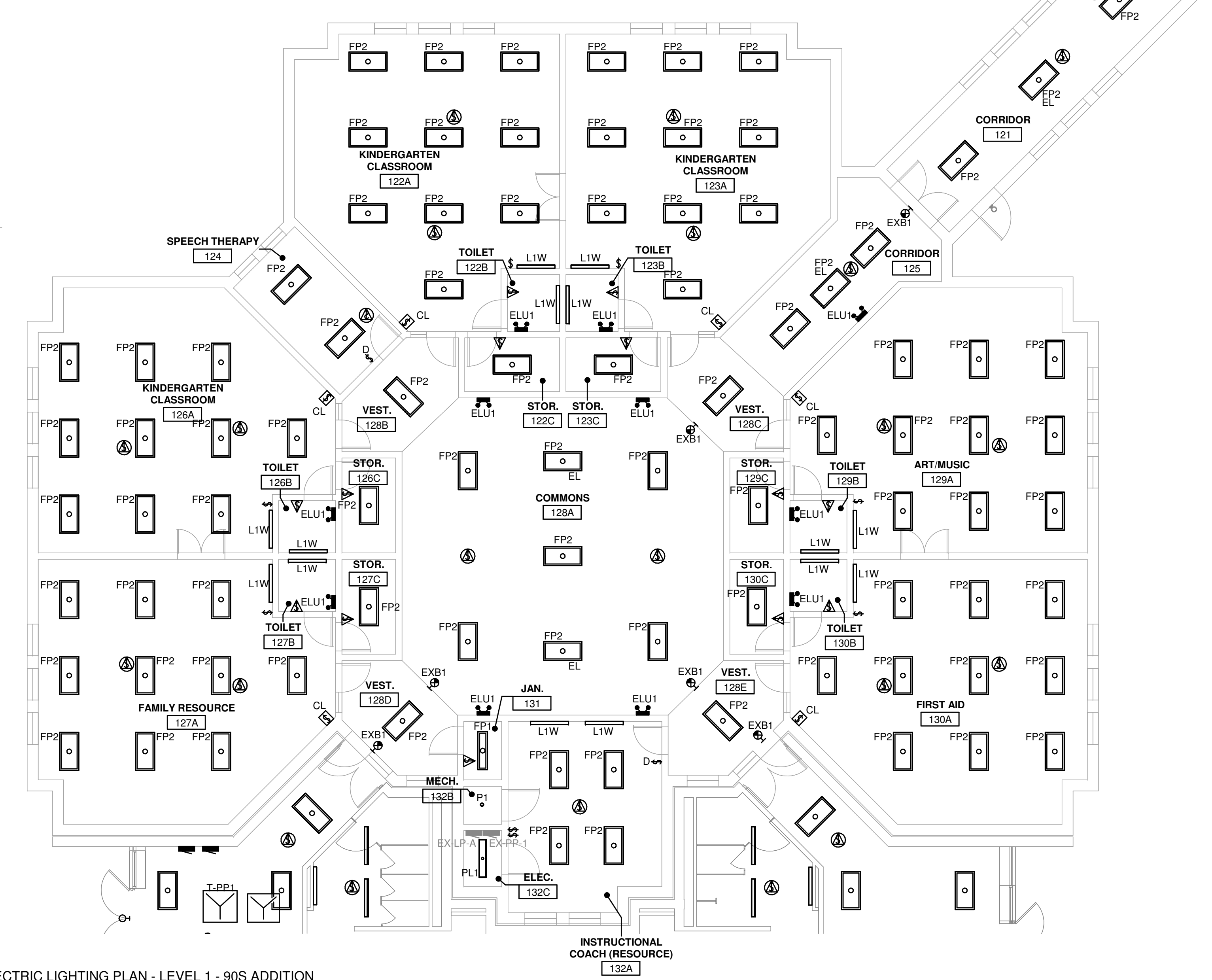
**E3-101**  
 1" REFERENCE  
 KLH PROJECT #  
 24599

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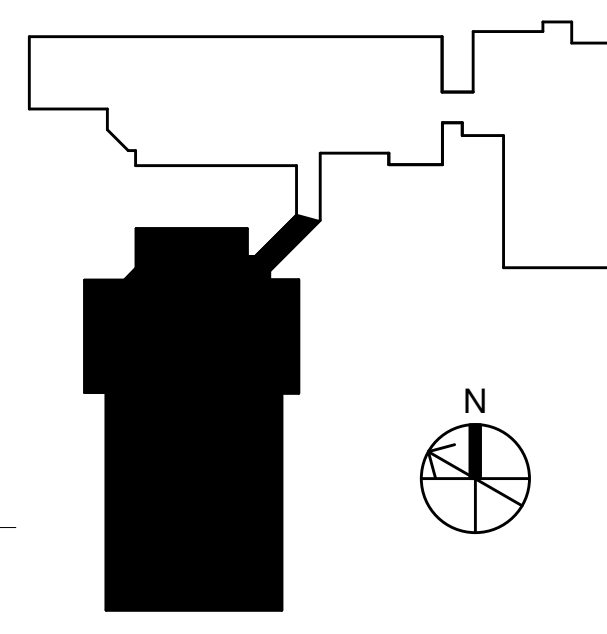


2 ELECTRIC LIGHTING PLAN - LEVEL 1 - NEW GYM  
 1/8" = 1'-0"



1 ELECTRIC LIGHTING PLAN - LEVEL 1 - 90S ADDITION  
 1/8" = 1'-0"

KEYED NOTES



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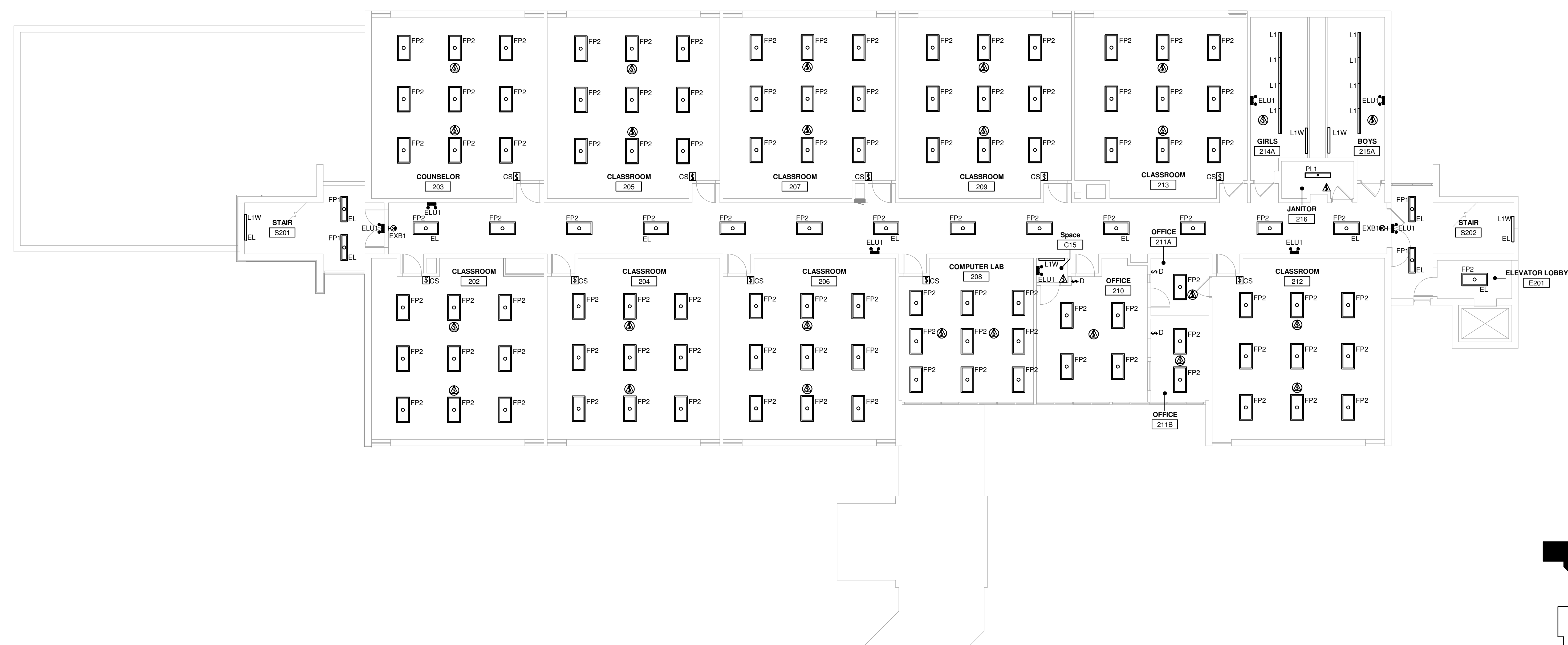
ELECTRIC LIGHTING  
 LEVEL 1 90S  
 ADDITION &  
 NEW GYM

E3-102

1" REFERENCE  
 K/LH PROJECT #  
 24599

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① ELECTRIC LIGHTING PLAN - LEVEL 2 - OVERALL  
1/8" = 1'-0"

KEYED NOTES

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NO.	DESCRIPTION	DATE

DWN: GMN    CHK: DTJ  
DATE: 10-13-2023  
PROJECT #: 24599.00

ELECTRIC LIGHTING  
LEVEL 2 PLAN

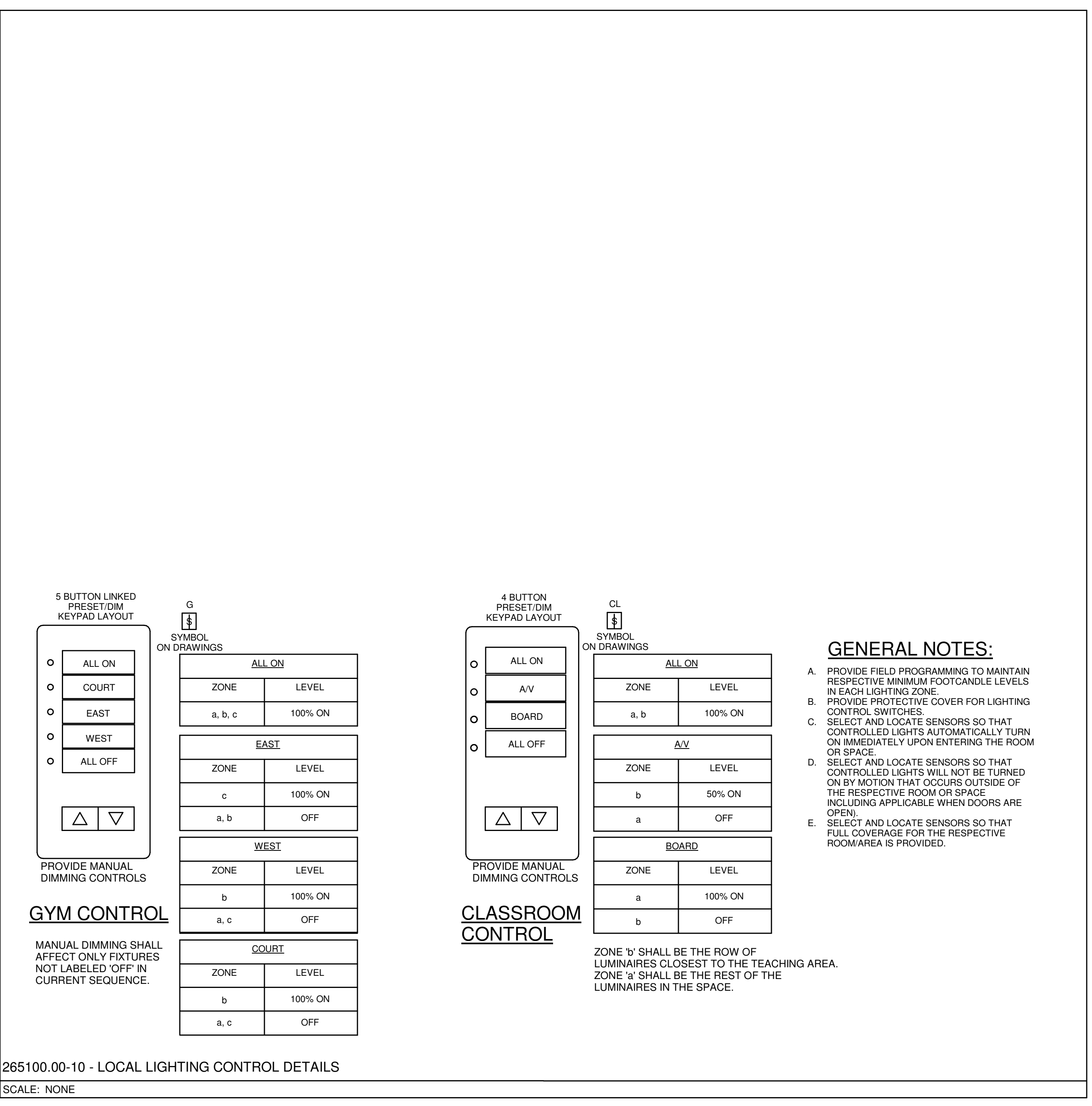
E3-103  
1" REFERENCE  
KLH PROJECT #  
24599



ELECTRIC LUMINAIRE SCHEDULE

GENERAL NOTES:  
 A. REFER TO DRAWINGS FOR MOUNTING TYPE, NUMBER OF FACES AND ARROWS OF EXIT SIGNS. VERIFY IN FIELD PRIOR TO INSTALLATION.  
 B. VERIFY COMPATIBILITY WITH VOLTAGE, CONTROLS, ETC. FOR ALL LUMINAIRE COMPONENTS.  
 C. COORDINATE EACH LUMINAIRE LOCATION WITH THE ARCHITECTURAL REFLECTED CEILING PLANS, CEILING INSTALLERS, ETC. AND PROVIDE APPROPRIATE MOUNTING SYSTEM REQUIRED FOR EACH LUMINAIRE. ALSO, PROVIDE PLASTER FRAMES, WALL BRACKETS, SUPPORTS, OR OTHER APPURTENANCES AS REQUIRED FOR PROPER AND COMPLETE INSTALLATIONS.  
 D. WEAR CLEAN WHITE COTTON GLOVES WHEN HANDLING EXPOSED REFLECTIVE LUMINAIRE SURFACES. REMOVE PLASTIC SHIPPING BAGS ONLY AFTER INTERIOR WORK IS COMPLETE, AND CLEAN ALL SURFACES WITH CLEAN DRY CHEESECLOTH.  
 E. MOUNTING HEIGHTS INDICATED ARE TO THE BOTTOM OF THE LUMINAIRE, UNLESS OTHERWISE NOTED.  
 F. PRODUCTS: PROVIDE PRODUCTS INDICATED ON DRAWINGS AND SCHEDULES. WHERE MULTIPLE MANUFACTURER SERIES/MODEL NUMBERS ARE LISTED FOR A SINGLE LUMINAIRE, PROVIDE ONE OF THOSE LISTED. WHERE A SPECIFIC MANUFACTURER SERIES/MODEL NUMBER IS LISTED AS BASIS-OF-DESIGN, AND WHERE IT IS STATED THAT EQUIVALENTS WILL BE CONSIDERED, ANY PROPOSED NON-LISTED LUMINAIRES ARE SUBJECT TO REVIEW BY DESIGN PROFESSIONAL(S), SUBMITTALS FOR WHICH SHALL BE FURNISHED AT LEAST 10 DAYS PRIOR TO BID DATE OR THEY WILL NOT BE CONSIDERED. THESE PRE-BID SUBMITTALS SHALL CLEARLY STATE EXACTLY WHAT IS BEING PROPOSED AND SHALL DEMONSTRATE COMPLIANT EQUIVALENCY. SIMILAR REQUESTS FOR PROPOSED SUBSTITUTIONS MAY BE MADE ONLY AFTER BIDS ARE RECEIVED, AND ONLY IF OWNER CHOOSES TO CONSIDER SUBSTITUTION REQUESTS. DESIGN PROFESSIONAL(S) AND OWNER RESERVE THE RIGHT TO REJECT ALL PRODUCTS THAT ARE NOT DEEMED TO BE FULLY EQUIVALENT TO THE BASIS-OF-DESIGN LISTING(S). SUBMIT ALL REQUESTS AND QUESTIONS THROUGH THE FORMALLY-ESTABLISHED BIDDING PROCESS, NOT DIRECTLY TO ENGINEER.

TYPE	DESCRIPTION	Manufacturer	Model	Accepted Equals	SIZE	Mounting	MATERIAL	Optics	Light Source	LAMP QTY	LAMP BASE	Color Temperature	CRI	Lumen Output	Driver	Driver Quantity	Battery	Battery Type	Dimming Protocol	FINISH	Options	FIXTURE LOAD	VOLTAGE	Comments
ELU1	EMERGENCY LIGHTING UNIT	LITHONIA	EV	DUAL-LITE-EV, EMERGI-LITE-EL2,LED	9" X 9" X 5"	WALL	THERMOPLASTIC		LED	2		3500	82	250	ELECTRONIC	1	No	REMOTE 90 MINUTE SELF-DIAGNOSTIC	NONE	WHITE		4 VA	120 V	
EXB1	EXIT SIGN - BATTERY - THERMOPLASTIC	CHLORIDE	CLX	DUAL-LITE-EVE, LITHONIA-EXR3, SURE-LITES-LPX7	13" X 8" X 8"	UNIVERSAL	THERMOPLASTIC		LED	1		3500	<varies>	0	ELECTRONIC	1	Yes	INTEGRAL 90 MINUTES SELF-DIAGNOSTIC	NONE	WHITE HOUSING, RED LETTERS		1 VA	120 V	
EXC	EXIT SIGN-EMERGENCY LIGHTING UNIT COMBO	CHLORIDE	CLC	DUAL-LITE-EVC, LITHONIA-ECR3, SURE-LITES-APC	14" X 9" X 9"	UNIVERSAL	THERMOPLASTIC		LED	1		3500		0	ELECTRONIC	1	Yes	INTEGRAL 90 MINUTES SELF-DIAGNOSTIC	NONE	WHITE HOUSING, RED LETTERS		4 VA	120 V	
FP1	FLAT PANEL	COLUMBIA LIGHTING	OFFP4	LITHONIA-EPANL, METALUX-14FP	48" X 12" X 2"	RECESSED GRID	ALUMINUM	SATIN WHITE FLAT LUMINOUS ACRYLIC LENS	LED	1		3500	80	3400	ELECTRONIC	1	No	NONE	0-10V	WHITE		21 VA	120 V	
FP2	FLAT PANEL	COLUMBIA LIGHTING	OFFP4	LITHONIA-EPANL, METALUX-14FP	48" X 24" X 2"	RECESSED GRID	ALUMINUM	SATIN WHITE FLAT LUMINOUS ACRYLIC LENS	LED	1		3500	80	6535	ELECTRONIC	1	No	NONE	0-10V	WHITE		48 VA	120 V	
HB1	HIGH BAY - SQUARE	DAYBRITE	FBX	LP-EDV, LITHONIA-IBS	24" X 24" X 2"	SUSPENDED	STEEL	FROSTED ACRYLIC LENS, WIDE	LED	1		3500	80	22868	ELECTRONIC	1	No	NONE	0-10V	WHITE	PROVIDE LUMINAIRE SAFETY CABLE	156 VA	120 V	
L1	LINEAR - SURFACE	LITHONIA	BLWP4	COLUMBIA LIGHTING-MPS, WILLIAMS-SL	36" X 6" X 4"	SURFACE	ALUMINUM	<varies>	LED	1		3500	80	4000	ELECTRONIC	1	No	NONE	0-10V	WHITE	PROVIDE ADJUSTABLE AIRCRAFT CABLE SUSPENSION, ADJUST IN FIELD.	40 VA	120 V	
L1W	LINEAR - WALL	LITHONIA	BLWP4	COLUMBIA LIGHTING-MPS, WILLIAMS-SL	48" X 6" X 4"	SURFACE WALL	ALUMINUM	CRESCENT SHAPED LINEAR FACETED LENS	LED	1		3500	80	4000	ELECTRONIC	1	No	NONE	0-10V	WHITE		40 VA	120 V	
L2W	LINEAR - WALL	LITHONIA	BLWP4	COLUMBIA LIGHTING-MPS, WILLIAMS-SL	24" X 6" X 4"	SURFACE WALL	ALUMINUM	CRESCENT SHAPED LINEAR FACETED LENS	LED	1		3500	80	4000	ELECTRONIC	1	No	NONE	0-10V	WHITE		40 VA	120 V	
LS1	LINEAR - SURFACE	COLUMBIA LIGHTING	MPS	LITHONIA-WLA, METALUX-SNLED	48" X 9" X 4"	SURFACE	STEEL	ACRYLIC PRISMATIC DIFFUSER	LED	1		3500	80	4000	ELECTRONIC	1	No	NONE	0-10V	WHITE		38 VA	120 V	
P1	PENDANT - ROUND	FINELITE	ST2 LED ID	AXIS LIGHTING BEAM 2, MARK ARCHITECTURAL LIGHTING-S2LD	48" X 9" X 4"	SURFACE	STEEL	ACRYLIC PRISMATIC DIFFUSER	LED	1		3500	82	0	ELECTRONIC	1	No	NONE	0-10V	WHITE		0 VA	120 V	
PL1	PENDANT - LINEAR	FINELITE	ST2 LED ID	AXIS LIGHTING BEAM 2, MARK ARCHITECTURAL LIGHTING-S2LD	96" X 9" X 3"	PENDANT	ALUMINUM	<varies>	LED	1		3500	<varies>	3721	ELECTRONIC	1	No	NONE	0-10V	WHITE		29 VA	120 V	
WP1	WALL PACK	HUBBELL	TRP2	LITHONIA-WEDGE 2	11.5" X 9" X 7.25"	SURFACE WALL	ALUMINUM	FLAT TEMPERED GLASS LENS, TYPE 3	LED	1		4000	70	5819	ELECTRONIC	1	No	NONE	NONE	BLACK	DUAL DRIVERS	50 VA	120 V	



- GENERAL NOTES:**
- PROVIDE FIELD PROGRAMMING TO MAINTAIN RESPECTIVE MINIMUM FOOTCANDLE LEVELS IN EACH LIGHTING ZONE.
  - PROVIDE PROTECTIVE COVER FOR LIGHTING CONTROL SWITCHES.
  - SELECT AND LOCATE SENSORS SO THAT CONTROLLED LIGHTS AUTOMATICALLY TURN ON IMMEDIATELY UPON ENTERING THE ROOM OR SPACE.
  - SELECT AND LOCATE SENSORS SO THAT CONTROLLED LIGHTS WILL NOT BE TURNED ON BY MOTION THAT OCCURS OUTSIDE OF THE RESPECTIVE ROOM OR SPACE, INCLUDING APPLICABLE WHEN DOORS ARE OPEN.
  - SELECT AND LOCATE SENSORS SO THAT FULL COVERAGE FOR THE RESPECTIVE ROOM/AREA IS PROVIDED.

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 LOUISVILLE, KENTUCKY  
 NEW YORK, NEW YORK

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 FAX: 502-446-8658

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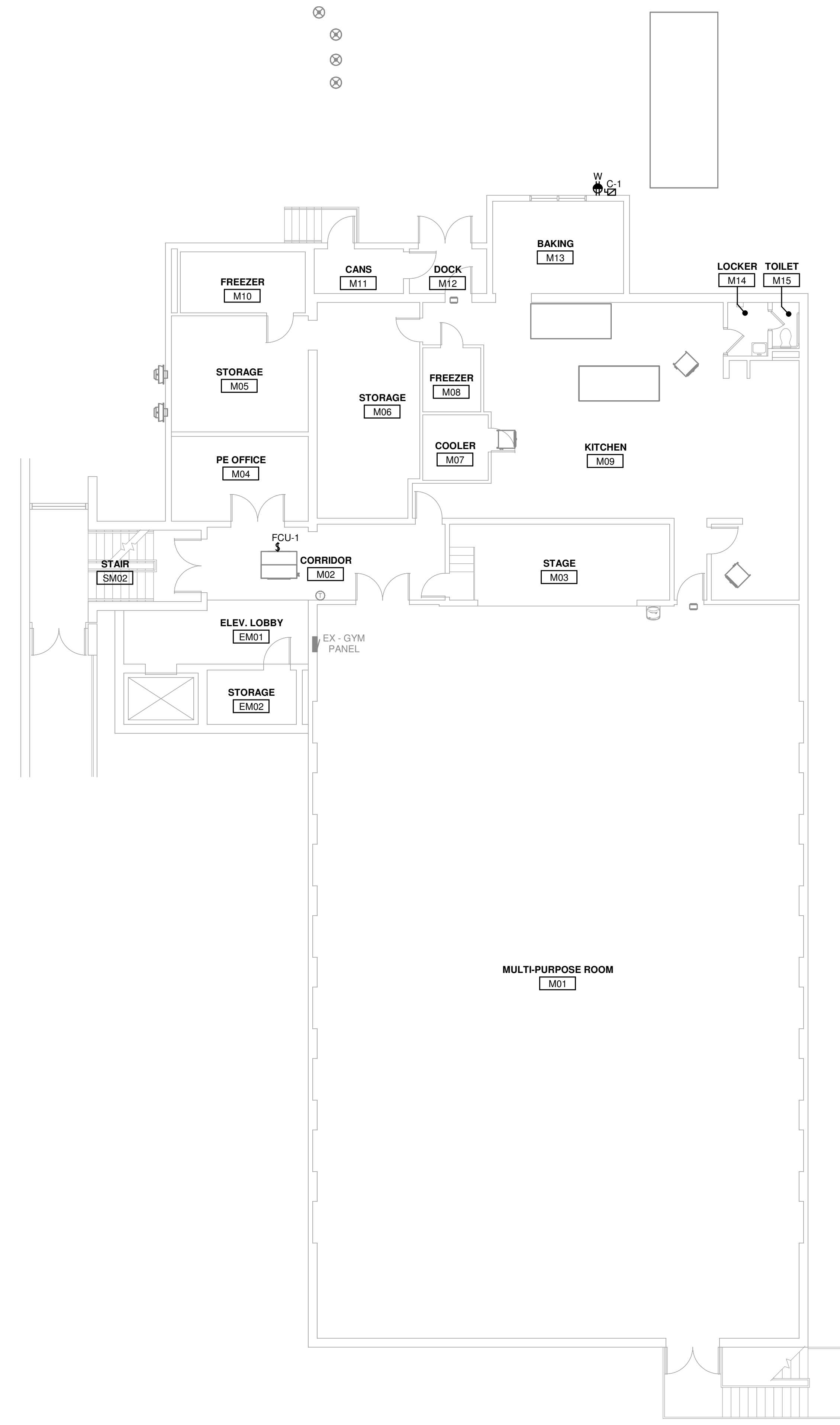
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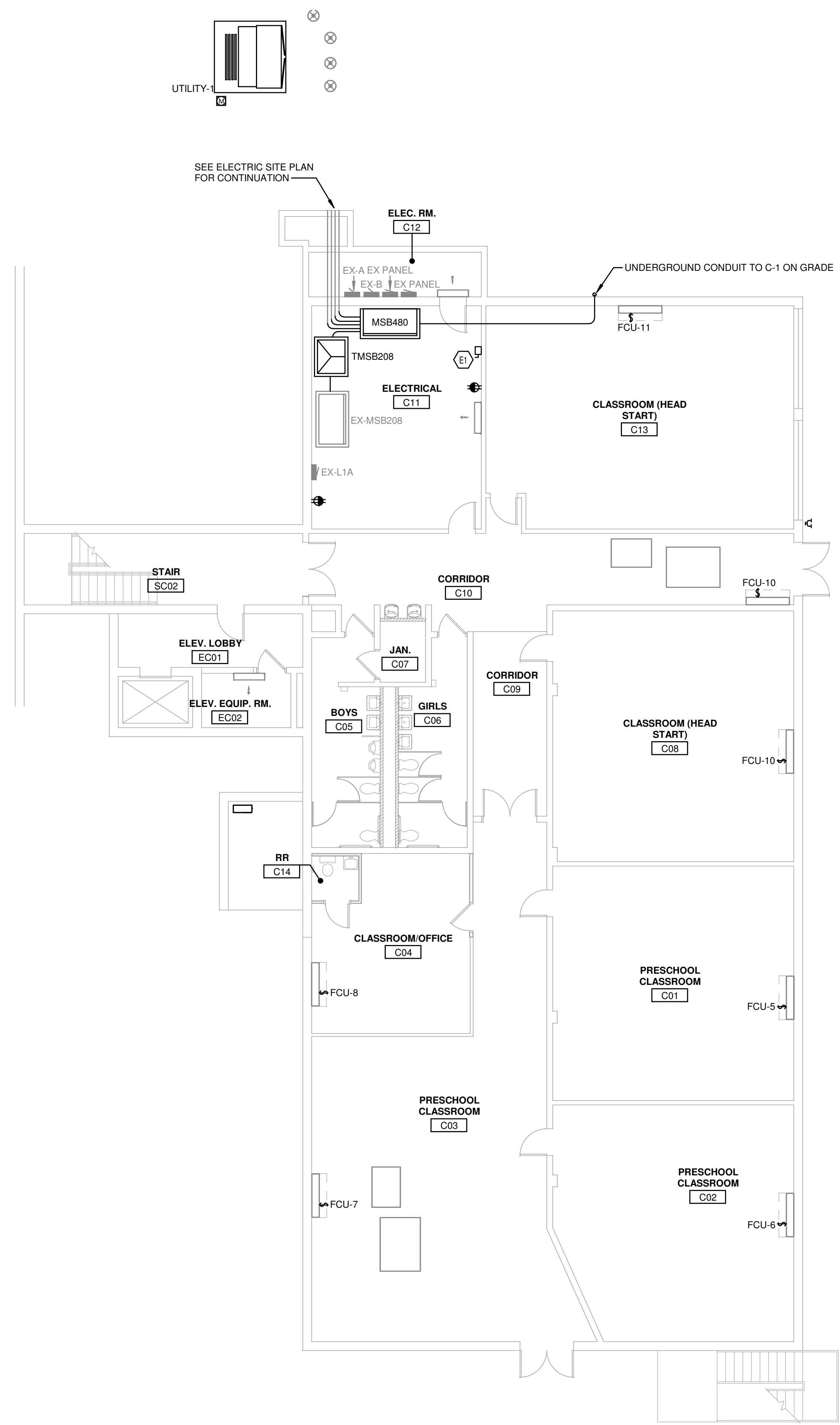

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 ELECTRIC LIGHTING - DETAILS

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② ELECTRIC POWER PLAN - LEVEL M - OVERALL  
1/8" = 1'-0"



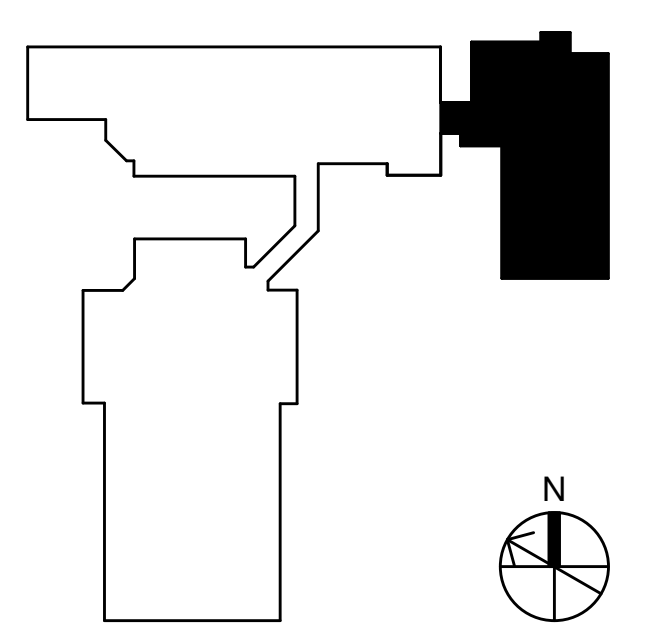
① ELECTRIC POWER PLAN - LEVEL C - OVERALL  
1/8" = 1'-0"

**GENERAL POWER PLAN NOTES**

A. EQUIPMENT COORDINATION SCHEDULES. REFER TO EQUIPMENT COORDINATION SCHEDULES FOR REQUIREMENTS ASSOCIATED WITH EQUIPMENT CIRCUITING, CONNECTIONS, ANCILLARY DEVICES AND EQUIPMENT. ETC. COORDINATE LOCATIONS AND REQUIREMENTS FOR ALL EQUIPMENT WITH RESPECTIVE EQUIPMENT SUPPLIERS AND INSTALLERS PRIOR TO ORDERING ANY RELATED MATERIALS OR COMMENCING WITH ANY RELATED ROUGH-IN WORK.

**KEYED NOTES**

E1 DISCONNECT AND REMOVE EXISTING DISCONNECT SWITCH AND CONDUIT FOR INSTALLATION OF NEW MAIN SWITCHBOARD. PRESERVE SWITCH FOR RELOCATION. SEE NEW ELECTRICAL POWER PLAN FOR NEW LOCATION.



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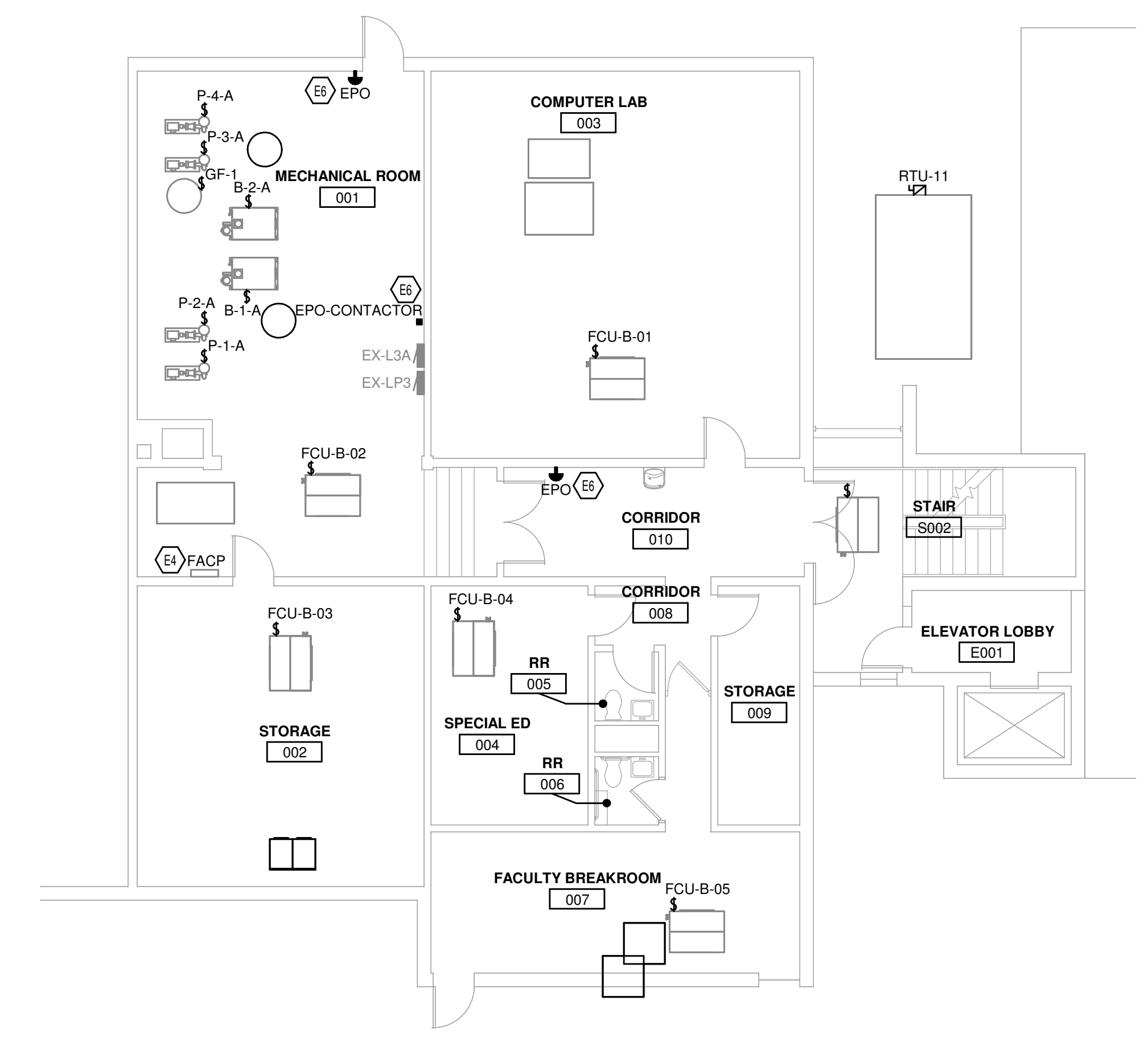
DWN: GMN CHK: DTJ  
DATE: 10-13-2023  
PROJECT #: 24599.00  
ELECTRIC POWER LEVEL C & M PLAN

**E4-100**  
1" REFERENCE  
KLH PROJECT # 24599



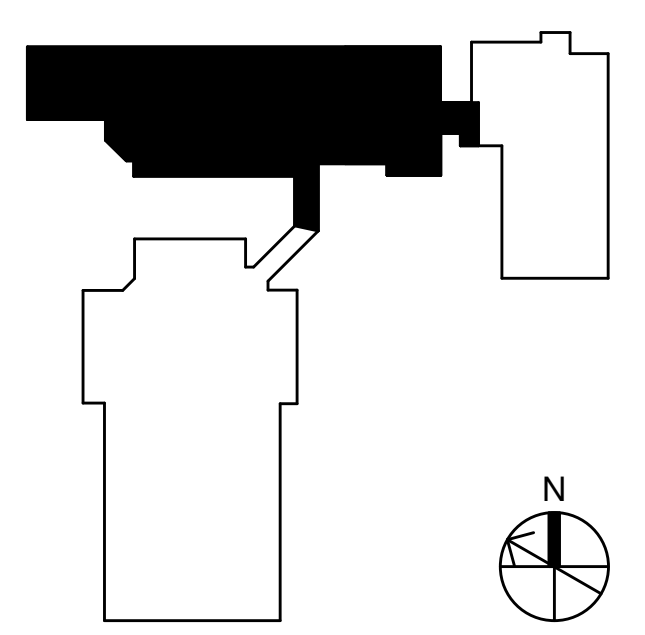
② ELECTRIC POWER PLAN - LEVEL 1 - OVERALL  
1/8" = 1'-0"

① ELECTRIC POWER PLAN - LEVEL B - OVERALL  
1/8" = 1'-0"



KEYED NOTES

- E4 REUSE EXISTING CIRCUIT, CONDUIT, AND WIRING FOR POWERING NEW FACP
- E6 PROVIDE EPO FOR GAS EQUIPMENT SHUTDOWN. REFER TO DETAILS 260580.00-07 (EP501).



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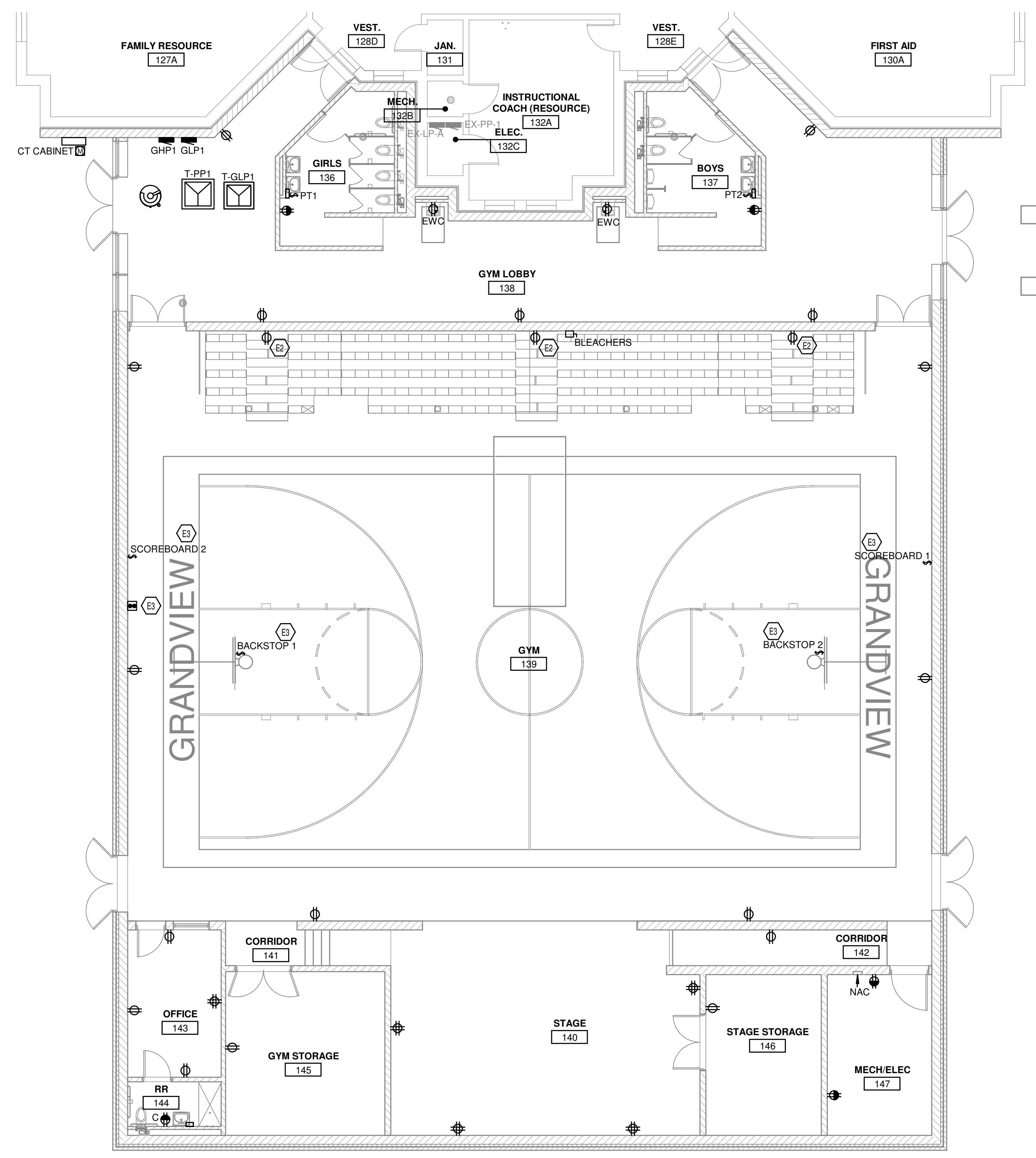
ELECTRIC POWER LEVEL B & 1 NORTH PLAN

**E4-101**

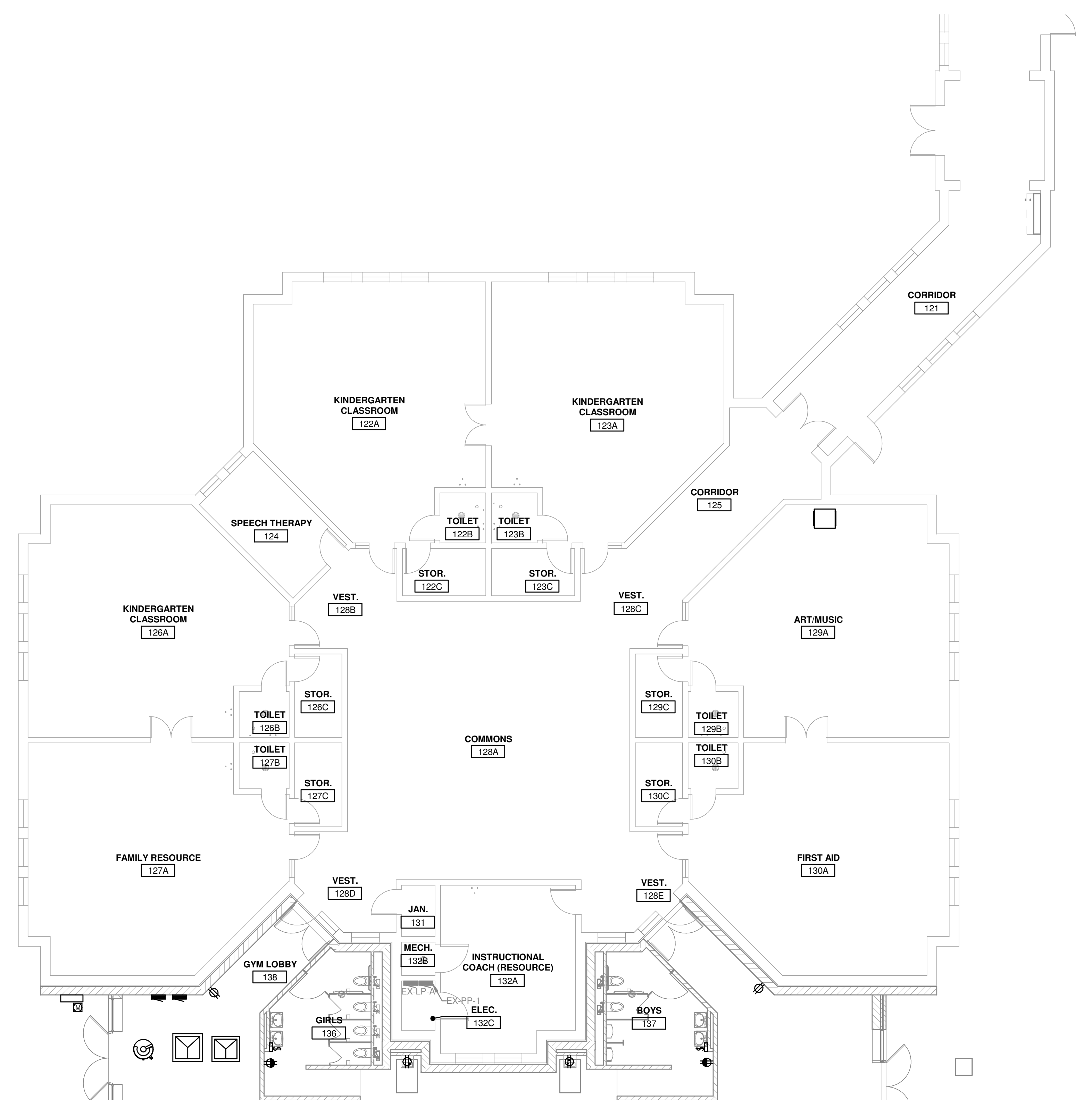
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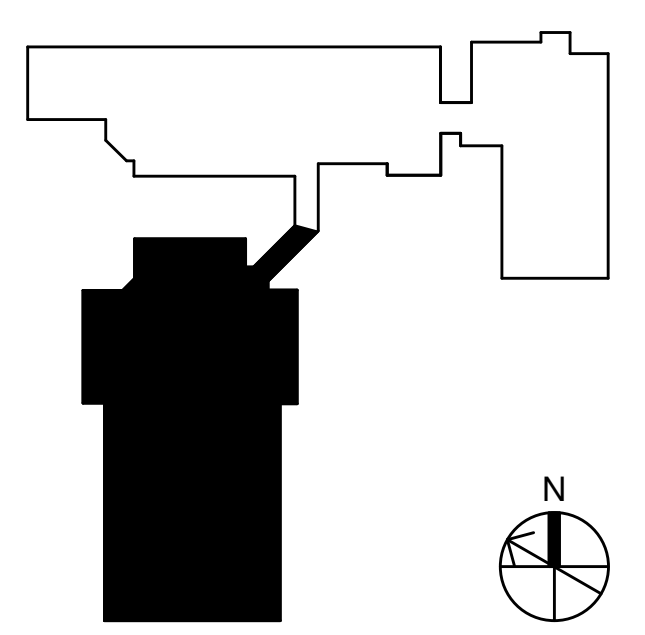


② ELECTRIC POWER PLAN - LEVEL 1 - NEW GYM  
 1/8" = 1'-0"



① ELECTRIC POWER PLAN - LEVEL 1 - 90S ADDITION  
 1/8" = 1'-0"

**KEYED NOTES**  
 E2 MOUNT RECEPTACLE 6" ABOVE TOP OF HIGHEST BLEACHER SEAT.  
 E3 PROVIDE GYMNASIUM CONTROLLER SYSTEM WITH TOUCH-PAD CONTROL ON WALL AS SHOWN. MOUNT CONTROLLERS UP HIGH, COORDINATE EXACT LOCATION IN FIELD. ROUTE ALL BACKSTOPS AND SCOREBOARDS THROUGH CONTROLLER. REFER TO DETAILS 260590.00-07 (EP901).



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 PROJECT #: 24599.00  
 ELECTRIC POWER LEVEL 1 90S ADDITION & NEW GYM

**E4-102**  
 1" REFERENCE  
 KLH PROJECT # 24599

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① ELECTRIC POWER PLAN - LEVEL 2 - OVERALL  
1/8" = 1'-0"

KEYED NOTES

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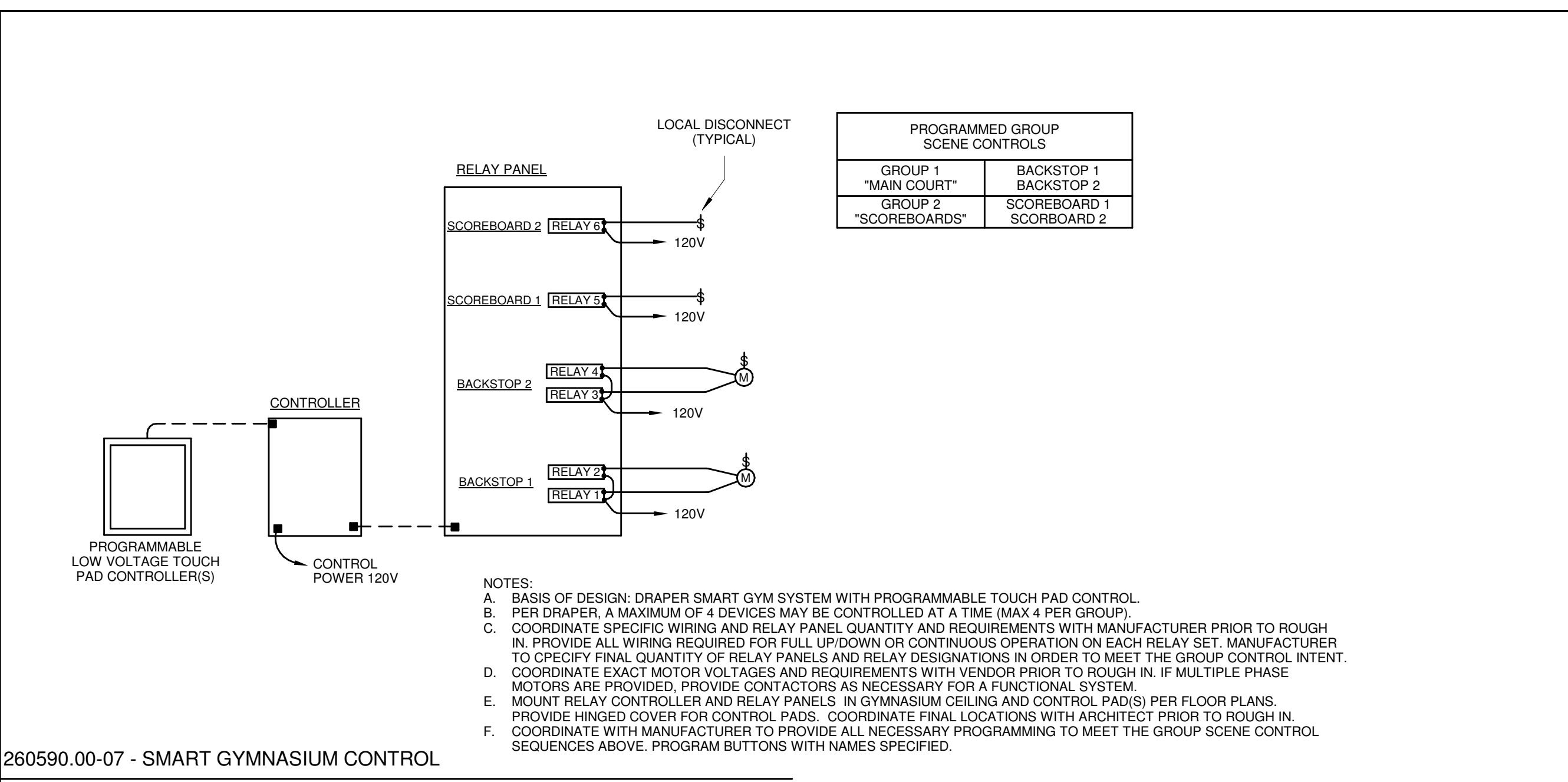
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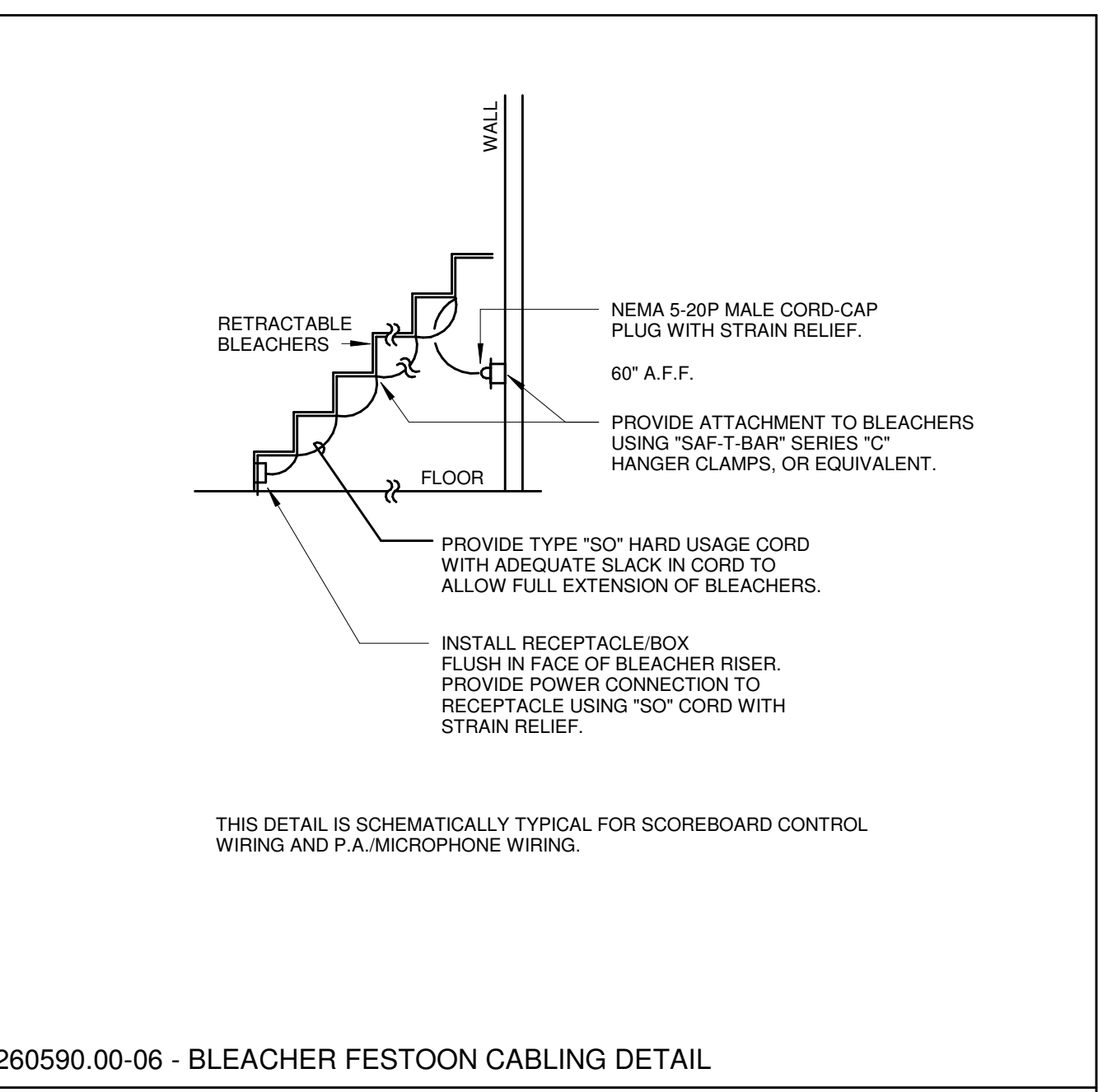
ELECTRIC  
POWER LEVEL  
2 PLAN

## E4-103

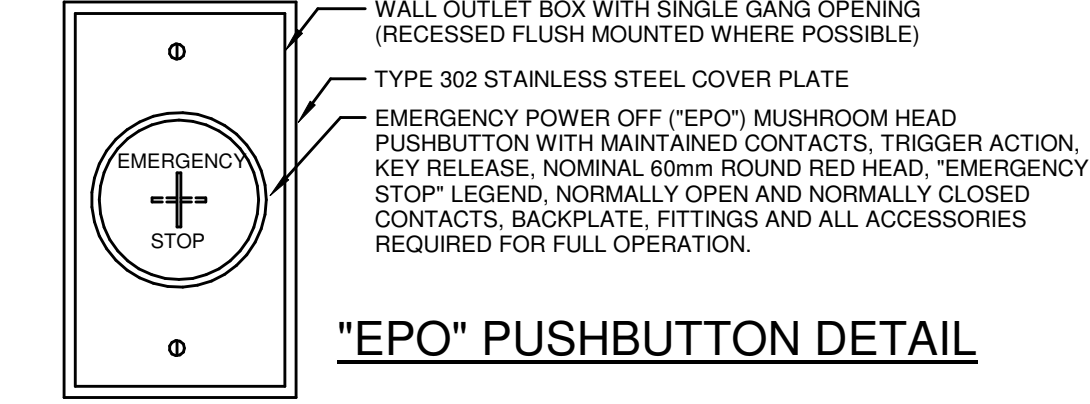
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260590.00-07 - SMART GYMNASIUM CONTROL  
SCALE: NONE

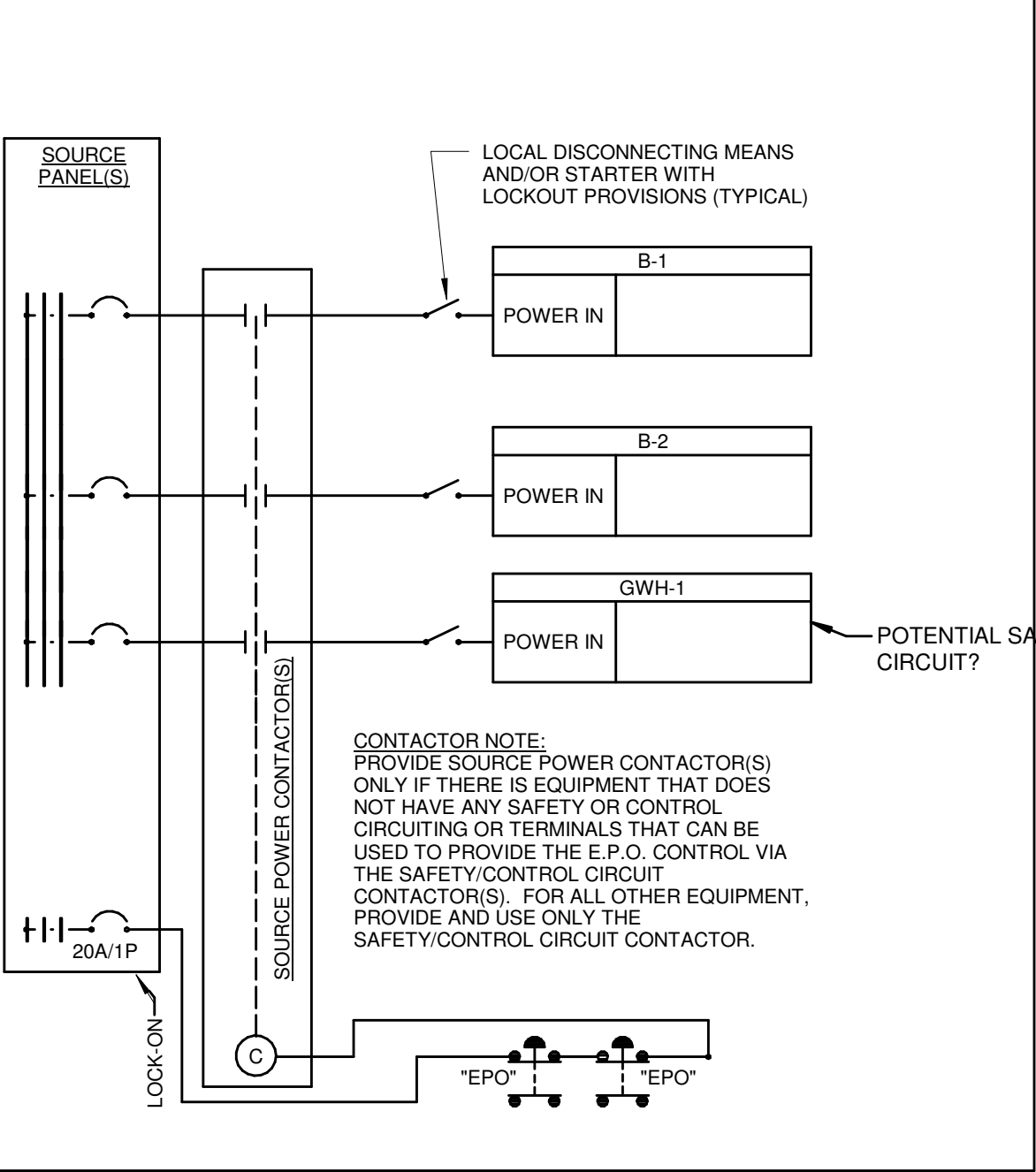


260590.00-06 - BLEACHER FESTOON CABLING DETAIL  
SCALE: NONE



- GENERAL NOTES:**
- A. PROVIDE ALL MATERIALS, LABOR AND COORDINATION AS REQUIRED TO RENDER THE EMERGENCY STOP SYSTEM(S) FULLY OPERATIONAL.
  - B. WORK SHOWN ON THIS DETAIL IS SCHEMATIC IN NATURE, INTENDED TO REPRESENT THE SCOPE OF WORK ANTICIPATED. COORDINATE ALL WORK IN ADVANCE WITH MECHANICAL EQUIPMENT INSTALLERS AND WITH AUTHORITIES HAVING JURISDICTION, INCLUDING BOILER INSPECTOR AND DETERMINE EXACT MEANS, METHODS, LOCATIONS, WIRING SPECIFICS, ETC. ACCORDINGLY, WORK INDICATED IN THIS DETAIL MAY NOT BE SHOWN ON THE FLOOR PLANS.
  - C. PRIOR TO INSTALLATION OF PUSHBUTTONS, COORDINATE EXACT INSTALLATION LOCATIONS WITH OWNER AND AUTHORITIES HAVING JURISDICTION. LOCATIONS HAVE BEEN SHOWN ON THE PLANS FOR PLANNING PURPOSES ONLY. PROVIDE NEMA 3R (OR EQUIVALENT LISTING) UV STABILIZED CLEAR POLYCARBONATE COVER, HINGED ON TOP, WITH INTEGRAL BATTERY OPERATED "SONALERT" ALARM DEVICE. INSTALL ONLY IN READILY ACCESSIBLE LOCATIONS.
  - D. PROVIDE MULTIPLE CONTACTORS AS REQUIRED FOR NUMBERS OF CONTACTS NEEDED. FOR APPLICATIONS WITH MULTIPLE VOLTAGES AND FOR APPLICATIONS WITH MULTIPLE BRANCHES OF POWER.
  - E. INSTALL LOCAL DISCONNECTING MEANS FOR ALL POWER CIRCUITS. AT EACH PIECE OF APPLICABLE MECHANICAL EQUIPMENT, DISCONNECTING MEANS SHALL BE CAPABLE OF BEING LOCKED IN THE OFF POSITION AND SHALL BE READILY ACCESSIBLE.
  - F. CONFIGURE WIRING TO SHUTDOWN THE FUEL OR ENERGY SUPPLY WHEN (1) OR MORE PUSHBUTTONS ARE ACTIVATED. THIS MAY BE ACCOMPLISHED WITH EQUIPMENT'S INTEGRAL SAFETY CIRCUITS, IF PROVIDED, OR BY DISCONNECTING LINE VOLTAGE POWER VIA THE CONTACTORS SHOWN. COORDINATE THE SPECIFIC REQUIREMENTS WITH THE EQUIPMENT INSTALLER PRIOR TO INSTALLATION OF ANY RELATED WORK.
  - G. SHUTDOWN THE FUEL OR ENERGY SUPPLY TO ALL GAS FIRED EQUIPMENT REGARDLESS OF SIZE THAT IS INSTALLED IN THE SAME ROOM EVEN IF NOT SPECIFICALLY NOTED HERE.
  - H. PROVIDE 6 SETS OF SPARE KEYS FOR ALL KEY TYPES, KEYED ALIKE, FOR ALL PUSHBUTTONS ON THE PROJECT.

260580.00-07 - BOILER EPO  
SCALE: NONE



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ELECTRIC POWER - DETAILS

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### ELECTRIC PANELBOARD AND SWITCHBOARD SCHEDULE

EQUIPMENT	PHASE	SPACE NUMBER	SPACE NAME	SUPPLY FROM	POWER BRANCH	TYPE	VOLTAGE	PHASE	WIRES	DEMAND (kVA)	DEMAND (A)	MAINS RATING (A)	MAINS FRAME RATING (A)	MAINS TYPE	BUSSING	MOUNTING	FEEDER	LUGS TYPE	SPD	ULSE	GEC	ENCLOSURE TYPE	FAULT CURRENT (A)	SHORT CIRCUIT RATING (A)	NOTES
EX-L1A	Existing	C11	ELECTRICAL		NORMAL	Branch Panelboard	208	3								SURFACE						NEMA 1			
EX-L3A	Existing	001	MECHANICAL ROOM		NORMAL	Branch Panelboard	208	3								SURFACE						NEMA 1			
EX-L4A	Existing	102-1	CORRIDOR		NORMAL	Branch Panelboard	208	3								RECESSED						NEMA 1			
EX-L4B	Existing	102-1	CORRIDOR		NORMAL	Branch Panelboard	208	3								RECESSED						NEMA 1			
EX-L4J	Existing	001	MECHANICAL ROOM		NORMAL	Branch Panelboard	208	3								SURFACE						NEMA 1			
EX-LP-1	Existing	119A	CORRIDOR		NORMAL	Branch Panelboard	208	3								RECESSED						NEMA 1			
EX-LP-2	Existing	217A	CORRIDOR		NORMAL	Branch Panelboard	208	3								RECESSED						NEMA 1			
EX-LP-A	Existing	132C	ELEC.		NORMAL	Branch Panelboard	208	3								SURFACE						NEMA 1			
EX-MSB208	Existing	C11	ELECTRICAL	TMSB208	NORMAL	Switchboard	208	3	4	0 VA	0 A	1600	1600	THERMAL MAGNETIC	COPPER	PAD	(5) SETS OF (4) #10 KCMIL CU, (1) #10 AWG CU GND. IN 3" CONDUIT EACH 75C RATED					NEMA 1		EXISTING	
EX-PP-1	Existing	132C	ELEC.	T-PP1	NORMAL	Branch Panelboard	208	3	4	0 VA	0 A	400	400	THERMAL MAGNETIC	COPPER	SURFACE	(2) SETS OF (4) #10 AWG CU IN 2" CONDUIT EACH 75C RATED					NEMA 1		EXISTING	
GHP1	New Construction	138	GYM LOBBY	CT CABINET	NORMAL	Branch Panelboard	480	3	4	0 VA	0 A	400	400	100% ELECTRONIC LSIG ERM WITH DEMAND METERING	COPPER OR ALUMINUM	SURFACE	(2) SETS OF (4) #30 AWG CU, (1) #3 AWG CU GND. IN 2-1/2" CONDUIT EACH 75C RATED		Yes	Yes	Yes	NEMA 1		EXISTING	
GLP1	New Construction	138	GYM LOBBY	T-GLP1	NORMAL	Branch Panelboard	208	3	4	0 VA	0 A	250	250	THERMAL MAGNETIC	COPPER OR ALUMINUM	SURFACE	(4) #250 KCMIL CU, (1) #2 AWG CU GND. IN 3" CONDUIT 75C RATED					NEMA 1		10000	
M1	New Construction	111	WORKROOM/DATA/STOR.		NORMAL	Branch Panelboard	480	3								SURFACE						NEMA 1			
MSB480	New Construction	C11	ELECTRICAL	UTILITY-1	NORMAL	Switchboard	480	3	4	251071 VA	302 A	2000	2000	100% ELECTRONIC LSIG ERM WITH DEMAND METERING	COPPER OR ALUMINUM	PAD	(4) SETS OF (4) #850 KCMIL CU IN 3" CONDUIT EACH 75C RATED		Yes	Yes	Yes	NEMA 1		14000	

### ELECTRIC ENCLOSED SWITCH AND CIRCUIT BREAKER SCHEDULE

NOTE: THIS SCHEDULE IS FOR SINGLE-LINE DIAGRAM ENCLOSED SWITCHES AND CIRCUIT BREAKERS ONLY AND MAY NOT INCLUDE ALL ENCLOSED SWITCHES AND CIRCUIT BREAKERS REQUIRED IN THESE CONSTRUCTION DOCUMENTS.

TYPICAL EQUIPMENT NAME NOMENCLATURE:  
 1 - POWER DISTRIBUTION SYSTEM (BLANK - NORMAL, E - EMERGENCY, S - STANDBY, L - LIFE SAFETY)  
 2 - DESCRIPTION (H - 480Y/277V, L - 208Y/120V)  
 3 - FLOOR / LEVEL  
 4 - SEQUENCE

EQUIPMENT	PHASE	SPACE NUMBER	SPACE NAME	SUPPLY FROM	POWER BRANCH	TYPE	VOLTAGE	PHASE	WIRES	DEMAND (kVA)	DEMAND (A)	TRIP RATING (A)	FRAME RATING (A)	OCB TYPE	FEEDER	ULSE	GEC	ENCLOSURE TYPE	FAULT CURRENT (A)	SHORT CIRCUIT RATING (A)	NOTES
C-1	New Construction			MSB480		Fused Switch	480	3	4	251071 VA	302 A	508	508		(2) SETS OF (4) #250 KCMIL CU, (1) #2 AWG CU GND. IN 3" CONDUIT EACH 75C RATED					14000	

### ELECTRIC TRANSFORMER SCHEDULE

TYPICAL EQUIPMENT NAME NOMENCLATURE:  
 1 - POWER DISTRIBUTION SYSTEM (BLANK - NORMAL, E - EMERGENCY, S - STANDBY, L - LIFE SAFETY)  
 2 - DESCRIPTION (H - 480Y/277V, L - 208Y/120V)  
 3 - FLOOR / LEVEL  
 4 - SEQUENCE

GENERAL TRANSFORMER NOTES:  
 A. FOR FLOOR-MOUNTED TRANSFORMERS, PROVIDE PERMANENT MARKING ON TRANSFORMER THAT READS 'STORING ITEMS ON TOP OF TRANSFORMER IS PROHIBITED.'

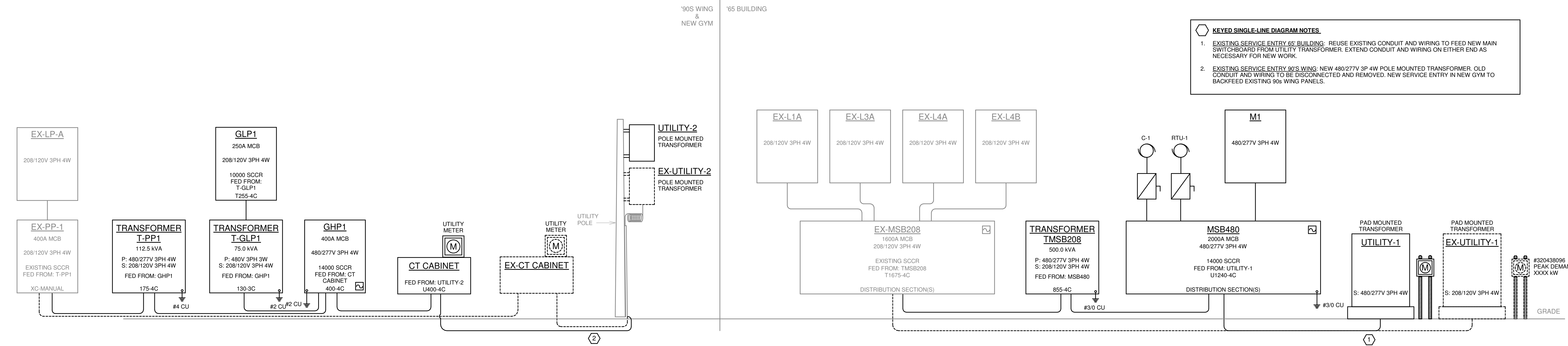
EQUIPMENT	PHASE	SPACE NUMBER	SPACE NAME	SUPPLY FROM	TYPE	RATING	DEMAND	PRIMARY VOLTAGE	PRIMARY WIRES	SECONDARY VOLTAGE	SECONDARY WIRES	WINDINGS	ENCLOSURE TYPE	K-RATING	MOUNTING	NOTES
T-GLP1	New Construction	138	GYM LOBBY	GHP1	Dry Type Transformers	75.0 kVA	0.0 kVA	480 V	3	208	4	COPPER OR ALUMINUM	NEMA 1		PAD	
T-PP1	New Construction	138	GYM LOBBY	GHP1	Dry Type Transformers	112.5 kVA	0.0 kVA	480 V	4	208	4	COPPER OR ALUMINUM			PAD	
TMSB208	New Construction	C11	ELECTRICAL	MSB480	Dry Type Transformers	500.0 kVA	0.0 kVA	480 V	4	208	4	COPPER OR ALUMINUM			PAD	

### ELECTRIC FEEDER SCHEDULE

NOTES:  
 ALL CONDUIT SIZES INDICATED ARE MINIMUM SIZES. INCREASE SIZES AS REQUIRED TO ACCOMMODATE CONDUCTOR PULLING EASE, FIELD CONDITIONS, ETC.  
 \*CU = COPPER CONDUCTOR, \*AL = ALUMINUM CONDUCTOR  
 \*\* WHERE THESE FIELDS ARE BLANK, PROVIDE INSULATION & CONDUIT MATERIAL PER THE CONDUIT & WIRE MATERIAL SCHEDULE.

FEEDER ID NOMENCLATURE:  
 1 - INDICATES FEEDER SIZED TO COMPENSATE FOR VOLTAGE DROP  
 1 - GROUND TYPE (MAY BE BLANK)  
 U = EQUIPMENT GROUND CONDUCTOR REMOVED FOR SERVICE ENTRANCE FROM UTILITY  
 P = PARITY-SIZED EQUIPMENT GROUND CONDUCTOR  
 X = EXISTING FEEDER TO REMAIN UNLESS OTHERWISE NOTED  
 T = UPSIZED GROUND CONDUCTORS FOR TRANSFORMER SECONDARY  
 2 - CONDUCTOR AMPACITY  
 3 - TOTAL NUMBER OF PHASE AND GROUND ('NEUTRAL') CONDUCTORS  
 4 - CONDUCTOR MATERIAL: C = COPPER, A = ALUMINUM  
 5 - SPECIAL (MAY BE BLANK)  
 I = ISOLATED GROUND (PROVIDE CONTINUOUS INSULATED ISOLATED EQUIPMENT GROUNDING CONDUCTOR(S) FROM INSULATED ISOLATED GROUND BAR(S) TO RESPECTIVE UPSTREAM SERVICE ENTRANCE OR DERIVED SYSTEM GROUNDING ELECTRODE CONDUCTOR AS APPLICABLE.

SUPPLY TO	SUPPLY FROM	FEEDER ID	FEEDER	INSULATION	CONDUIT**	DEMAND (A)	VD %	NOTES
EX-L1A								
EX-L3A								
EX-L4A								
EX-L4B								
EX-LP-1								
EX-LP-2								
EX-LP-A								
M1								
UTILITY-1								
--- MSB480	UTILITY-1	U1240-4C	(4) SETS OF (4) #350 KCMIL CU IN 3" CONDUIT EACH 75C RATED			302 A	0.069	
--- C1	MSB480	170-4C	(2) SETS OF (4) #850 KCMIL CU (1) #2 AWG CU GND. IN 3" CONDUIT EACH 75C RATED			302 A	0.281	
--- TMSB208	MSB480	855-4C	(3) SETS OF (4) #200 KCMIL CU (1) #10 AWG CU GND. IN 3" CONDUIT EACH 75C RATED			0 A	0.069	
--- EX-MSB208	TMSB208	11675-4C	(5) SETS OF (4) #800 KCMIL CU (1) #10 AWG CU GND. IN 3" CONDUIT EACH 75C RATED			0 A	0.069	
UTILITY-2								
--- CT CABINET	UTILITY-2	U400-4C	(2) SETS OF (4) #30 AWG CU IN 2" CONDUIT EACH 75C RATED			0 A	0	
--- G1	CT CABINET	400-4C	(2) SETS OF (4) #30 AWG CU, (1) #3 AWG CU GND. IN 2-1/2" CONDUIT EACH 75C RATED			0 A	0	
--- T2	GHP1	130-3C	(3) #1 AWG CU, (1) #6 AWG CU GND. IN 1-1/2" CONDUIT 75C RATED			0 A	0	
--- G2	T-GLP1	T255-4C	(4) #250 KCMIL CU, (1) #2 AWG CU GND. IN 3" CONDUIT 75C RATED			0 A	0	
--- T-PP1	GHP1	T75-4C	(4) #250 AWG CU, (1) #6 AWG CU GND. IN 2" CONDUIT 75C RATED			0 A	0	
--- EX-PP-1	T-PP1	XC-MANUAL	(5) SETS OF (4) #30 AWG CU IN 2" CONDUIT EACH 75C RATED			0 A	0	



26T-008 - PARTIAL SINGLE LINE DIAGRAM NOT TO SCALE

**KEYED SINGLE-LINE DIAGRAM NOTES**

- EXISTING SERVICE ENTRY @ BUILDING: REUSE EXISTING CONDUIT AND WIRING TO FEED NEW MAIN SWITCHBOARD FROM UTILITY TRANSFORMER. EXTEND CONDUIT AND WIRING ON EITHER END AS NECESSARY FOR NEW WORK.
- EXISTING SERVICE ENTRY @ NEW GYM: NEW 480/277V 3PH 4W POLE MOUNTED TRANSFORMER. OLD CONDUIT AND WIRING TO BE DISCONNECTED AND REMOVED. NEW SERVICE ENTRY IN NEW GYM TO BACKFEED EXISTING 90S WING PANELS.

MECHANICAL ELECTRICAL ENGINEERS  
 WWW.KLHENGINEERS.COM  
**KLH ENGINEERS**  
 KOHRS LONNEMANN HELL ENGINEERS, INC.  
 159 ALEXANDRIA PIKE, SUITE 111  
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 NEW YORK, NEW YORK

**Grandview Elementary School HVAC Reno.**  
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 DATE: 10-13-2023  
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ELECTRIC POWER - SINGLE LINE DIAGRAM

EP601  
 1" REFERENCE  
 KLH PROJECT # 24599





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**PANEL SCHEDULE LEGEND**

- \*\* = WIRE SIZED TO COMPENSATE FOR VOLTAGE DROP
- (#) = REFER TO DRAWINGS FOR SPECIFICATIONS
- (-) = NEW CIRCUIT TO EXISTING CIRCUIT BREAKER
- (->) = CONNECT BRANCH CIRCUIT, WHICH WAS DISCONNECTED FROM ANOTHER SOURCE AS PART OF SELECTIVE DEMOLITION. TO POLE SPACE(S) INDICATED. DETERMINE EXACT POLE ASSIGNMENT(S) BASED ON EXISTING COLOR CODING OF THE BRANCH CIRCUIT CONDUCTOR INSULATION. PROVIDE NEW BREAKER IF REQUIRED
- (A) = PROVIDE ARC FAULT CIRCUIT INTERRUPTER (AFCI) CIRCUIT BREAKER
- (AG) = PROVIDE COMBINATION ARC FAULT (AFCI) / GROUND FAULT (GFCI) CIRCUIT INTERRUPTER CIRCUIT BREAKER
- (ERM) = PROVIDE ENERGY REDUCTION MAINTENANCE (REDUCED ENERGY) CIRCUIT BREAKER
- (EX) = EXISTING CIRCUIT TO REMAIN
- (G) = PROVIDE GROUND-FAULT CIRCUIT INTERRUPTER (GFCI) CIRCUIT BREAKER
- (GE) = PROVIDE GROUND-FAULT EQUIPMENT PROTECTION (GFE) CIRCUIT BREAKER
- (H) = PROVIDE HANDLE TIE
- (L) = PROVIDE LOCK-ON DEVICE
- (L) = PROVIDE ELECTRONIC LONG AND INSTANTANEOUS ADJUSTABILITY
- (LS) = PROVIDE ELECTRONIC LONG, SHORT, AND INSTANTANEOUS ADJUSTABILITY
- (LSIA) = PROVIDE ELECTRONIC LONG, SHORT, INSTANTANEOUS, AND GROUND-FAULT ALARM ADJUSTABILITY
- (LSIG) = PROVIDE ELECTRONIC LONG, SHORT, INSTANTANEOUS, AND GROUND-FAULT ADJUSTABILITY
- (LT) = PROVIDE LOCK-OUT/TAG-OUT DEVICE
- (SL) = SEE THE SINGLE LINE DIAGRAM / SCHEDULE FOR WIRE SIZE AND VOLTAGE DROP
- (ST) = PROVIDE SHUNT TRIP CIRCUIT BREAKER

**PANEL SCHEDULE GENERAL NOTES**

- A. PROVIDE HACR RATED BREAKERS ON ALL MOTOR LOADS.
- B. ALL CONDUCTORS SHOWN ARE COPPER.
- C. ALL VOLTAGE DROP CALCULATIONS AND COMPENSATED WIRE SIZES ARE BASED ON RIGHT ANGLE CIRCUIT LENGTHS. ACTUAL VOLTAGE DROP MAY VARY BASED ON INSTALLED WIRE LENGTH.
- D. VOLTAGE DROP CALCULATIONS AND WIRE SIZES SHOWN IN THE PANEL SCHEDULES ARE FOR HOMERUN CONDUCTORS ONLY. FOR CIRCUITS WITH MORE THAN 1 DEVICE, THESE SIZES ASSUME THE CONDUCTORS DOWNSTREAM OF THE HOMERUN DEVICE ARE THE MINIMUM SIZE REQUIRED BY THE NEC BASED ON THE RATING OF THE CIRCUIT. WHERE THIS IS NOT THE CASE, IT HAS BEEN INDICATED ON THE DRAWINGS. VOLTAGE DROP TO THE FARTHEST DEVICE HAS BEEN CALCULATED TO NEVER EXCEED 5%.
- E. RECEPTACLE LOADS CALCULATED AT 100% OF FIRST 10KVA, 50% OF REMAINDER. MOTOR LOADS CALCULATED AT 125% OF THE LARGEST MOTOR, 100% OF ALL OTHER MOTORS.

**PANEL NAME: GHP1**

SUPPLY FROM: CT CABINET      BUSSING: COPPER OR ALUMINUM      MOUNTING: SURFACE      PHASE: New Construction  
 LOCATION: GYM LOBBY 138      MAINS RATING (A): 400      FAULT CURRENT (A):      SURGE SUPPRESSION: Yes  
 DISTRIBUTION SYSTEM: 480/277V 3PH 4W      MAINS TYPE: 100% ELECTRONIC LSIG ER...      SHORT CIRCUIT RATING (A): 14000      ULSE: Yes  
 FEEDER: (2) SETS OF (4) #30 AWG CU IN 2-1/2" CONDUIT EACH 75C RATED      FEEDER ID: 400-4C      LUGS TYPE:      200% NEUTRAL:  
 ISOLATED GROUND:

CKT	CIRCUIT DESCRIPTION	VD%	AWG	GND	TRIP	FRAME	POLE	A	B	C	POLE	FRAME	TRIP	GND	AWG	VD%	CIRCUIT DESCRIPTION	CKT
1																		2
3	T-PP1	SL	SL	SL	175 A	175 A	3		0.00									4
5																		6
7									0.00									8
9	T-GLP1	SL	SL	SL	125 A	125 A	3		0.00									10
11																		12
13																		14
15																		16
17																		18
19																		20
21																		22
23																		24
25																		26
27																		28
29																		30
31																		32
33																		34
35																		36
37																		38
39																		40
41																		42
TOTAL CONNECTED LOAD: 0.0 kVA    0.0 kVA    0.0 kVA																		
LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	NOTES:	BREAKER QUANTITIES (NEW ONLY)													
					(1) 125A / 3P, (1) 175A / 3P													
PANEL TOTALS																		
TOTAL CONNECTED LOAD: 0.0 kVA																		
DEMAND CALCULATION NOTES:																		
TOTAL DEMAND: 0.0 kVA																		
TOTAL DEMAND AMPS: 0 A																		

**PANEL NAME: GLP1**

SUPPLY FROM: T-GLP1      BUSSING: COPPER OR ALUMINUM      MOUNTING: SURFACE      PHASE: New Construction  
 LOCATION: GYM LOBBY 138      MAINS RATING (A): 250      FAULT CURRENT (A):      SURGE SUPPRESSION:      ULSE:  
 DISTRIBUTION SYSTEM: 208/120V 3PH 4W      MAINS TYPE: THERMAL MAGNETIC      SHORT CIRCUIT RATING (A): 10000      LUGS TYPE:      200% NEUTRAL:  
 FEEDER: (4) #250 KCMIL CU (1) #2 AWG CU GND IN 3" CONDUIT 75C RATED      FEEDER ID: T255-4C      ENCLOSURE TYPE: NEMA 1      ISOLATED GROUND:

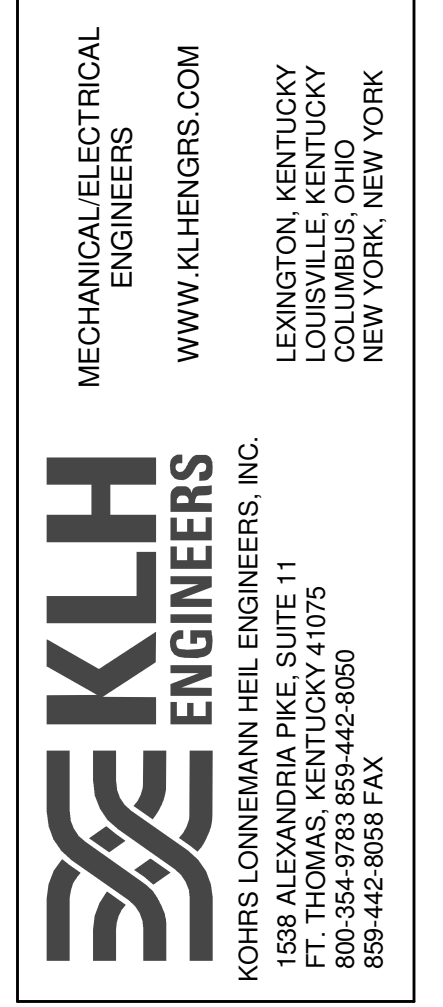
CKT	CIRCUIT DESCRIPTION	VD%	AWG	GND	TRIP	FRAME	POLE	A	B	C	POLE	FRAME	TRIP	GND	AWG	VD%	CIRCUIT DESCRIPTION	CKT
1																		2
3																		4
5																		6
7																		8
9																		10
11																		12
13																		14
15																		16
17																		18
19																		20
21																		22
23																		24
25																		26
27																		28
29																		30
31																		32
33																		34
35																		36
37																		38
39																		40
41																		42
TOTAL CONNECTED LOAD: 0.0 kVA    0.0 kVA    0.0 kVA																		
LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	NOTES:	BREAKER QUANTITIES (NEW ONLY)													
PANEL TOTALS																		
TOTAL CONNECTED LOAD: 0.0 kVA																		
DEMAND CALCULATION NOTES:																		
TOTAL DEMAND: 0.0 kVA																		
TOTAL DEMAND AMPS: 0 A																		

**SWITCHBOARD: MSB480**

SUPPLY FROM: UTILITY-1      FAULT CURRENT (A):      SHORT CIRCUIT RATING (A): 14000  
 LOCATION: ELECTRICAL C11      ENCLASURE TYPE: NEMA 1  
 DISTRIBUTION SYSTEM: 480/277V 3PH 4W      SURGE SUPPRESSION: Yes  
 MAINS RATING (A): 2000      ULSE: Yes  
 MAINS TYPE: 100% ELECTRONIC LSIG ERM WITH DEMAND METERING      ISOLATED GROUND:  
 200% NEUTRAL:      MOUNTING: PAD  
 BUSSING: COPPER OR ALUMINUM      PHASE: New Construction  
 FEEDER ID: UT240-4C  
 FEEDER: (4) SETS OF (4) #350 KCMIL CU IN 3" CONDUIT EACH 75C RATED

NOTES:

CKT	TRIP	FRAME	POLES	VD%	AWG	GND	CIRCUIT DESCRIPTION	Load
1	800 A	800 A	3	SL	SL	SL	TMSB208	0.00 kVA
2	508 A	508 A	3	SL	SL	SL	C-1   COOLING	251.07 kVA
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	BREAKER QUANTITIES (NEW ONLY)				
Cooling	251071 VA	100.00%	251071 VA	(1) 508A / 3P, (1) 800A / 3P				
PANEL TOTALS								
TOTAL CONNECTED LOAD: 251.1 kVA								
DEMAND CALCULATION NOTES:								
TOTAL DEMAND: 251.1 kVA								
TOTAL DEMAND AMPS: 302 A								



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 DATE: 10-13-2023  
 PROJECT #: 24599.00

ELECTRIC  
 POWER -  
 PANEL  
 SCHEDULES

**EP603**  
 1" REFERENCE  
 KLH PROJECT #  
 24599